2007.07.12 HW renewal

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 4
1130 North Westcott Road, Schenectady, New York 12306-2014
Phone: (518) 357-2069 • **FAX:** (518) 357-2460
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

CERTIFIED MAIL - RETURN RECEIPT REQUESTED
7003 0500 0004 6719 8471

July 12, 2007

William Morris
Vice President of Environmental Affairs
Norlite Corporation
628 South Saratoga Street, PO Box 694
Cohoes, New York 12047

RE: DEC # 4-0103-00016/00016
Final Renewed
Part 373 HW/APC Permit
Norlite Corp.
Cohoes, Albany County

Dear Mr. Morris,

Enclosed is the renewed Part 373 Hazardous Waste Management & Air Pollution Control permit. The Department has modified the draft permit noticed on March 23, 2005 to address the comments received during the public comment period. The enclosed responsiveness summary provides Department's response to each of the comments and the list of changes made to the draft permit.

Note that the permit becomes effective immediately upon issuance. The permit is effective for five years from the date of issuance. If you have any questions please contact this office at (518) 357-2455.

Sincerely,

William J. Clarke

William J. Clarke
Regional Permit Administrator
Region 4

NorliteHWRenCoverltr072007.wpd

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER	EFFECTIVE DATE
4-0103-00016/00016	Original Issuance Date: 7/12/20007 Modified: January 18, 2008
FACILITY/PROGRAM NUMBER(S) F[illegible] I.D. # NYD080469935	EXPIRATION DATE(S) July 12, 2012

PERMIT

Under the Environmental Conservation Law (ECL)

TYPE OF PERMIT (Check All Appropriate Boxes)

☐ NEW ☒ RENEWAL ☐ MODIFICATION ☐ PERMIT TO CONSTRUCT ☒ PERMIT TO OPERATE

☐ ARTICLE 15, TITLE 5: PROTECTION OF WATER	☐ ARTICLE 17, TITLES 7, 8: SPDES	☒ ARTICLE 27, TITLE 9; 6NYCRR 373: HAZARDOUS WASTE MGMT.
☐ ARTICLE 15, TITLE 15: WATER SUPPLY	☒ ARTICLE 19: AIR POLLUTION CONTROL	☐ ARTICLE 34: COASTAL EROSION MANAGEMENT
☐ ARTICLE 15, TITLE 15: WATER TRANSPORT	☐ ARTICLE 23, TITLE 27: MINED LAND RECLAMATION	☐ ARTICLE 36: FLOODPLAIN MANAGEMENT
☐ ARTICLE 15, TITLE 15: LONG ISLAND WELLS	☐ ARTICLE 24: FRESHWATER WETLANDS	☐ ARTICLES 1, 3, 17, 19, 27, 37: 6NYCRR 380: RADIATION CONTROL
☐ ARTICLE 15, TITLE 27: WILD, SCENIC & RECREATIONAL RIVERS	☐ ARTICLE 25: TIDAL WETLANDS	☐ ARTICLE 27, TITLE 3, 6NYCRR 364: WASTE TRANSPORTER
☐ 6NYCRR 608: WATER QUALITY CERTIFICATION	☐ ARTICLE 27, TITLE 7: 6NYCRR 360: SOLID WASTE MANAGEMENT	☐ OTHER:

PERMIT ISSUED TO	TELEPHONE NUMBER
Norlite Corporation	(518) 235-0401
ADDRESS OF PERMITTEE: P.O. Box 694, Cohoes, New York	
CONTACT PERSON FOR PERMITTED WORK: William Morris, Vice President of Environmental Affairs	TELEPHONE NUMBER: (518) 235-0401
N[illegible]E AND ADDRESS OF PROJECT/FACILITY: [illegible]ite Corporation, P.O. Box 694, Cohoes, New York, 12047	
LOCATION OF PROJECT/FACILITY: 628 South Saratoga Street (State Route 32)	

COUNTY	TOWN/CITY/VILLAGE	WATERCOURSE/WETLAND NO.	NYTM COORDINATES
Albany	Cohoes	Salt Kill Creek	E: 606.3 N: 4 734.2

DESCRIPTION OF AUTHORIZED ACTIVITY: Authorization to operate a hazardous waste management facility for storage of specified hazardous wastes in 5 to 85 gallon capacity containers with a total capacity of 14,685 gallons, storage/treatment in fifteen tanks with a total capacity of 155,579 gallons and incineration as a fuel in two rotary kiln industrial furnaces producing lightweight aggregate at a maximum firing rate of 10.3 gpm each.

Permit page modified : 1/18/2008

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

REGIONAL PERMIT ADMINISTRATOR:	ADDRESS	
William J. Clarke	NYS DEC, Region 4 Headquarters 1130 North Westcott Road, Schenectady, NY 12306	
AUTHORIZED SIGNATURE: William J Clarke	DATE: 1/16/2008	Page 1 of 9

PERM-GEN WPT (7/20/93)

Special Conditions

FOR ARTICLE 27 , Title 9; 6 NYCRR Part 373
Hazardous Waste Management Permit

1. This permit is based on the assumption that the information in the permit application submitted on December 1, 1996 and revised as indicated below (thereafter referred to as the application) is complete and accurate and that the facility will be operated as specified in the application. Any inaccuracies or incompleteness found in the information may be grounds for the termination or modification of this permit and potential enforcement action.

Complete Application Documents

a. 6 NYCRR Part 373 Permit Application dated December 1, 1996 and subsequent revisions submitted to date.
b. Trial Burn Report submitted in August 1999 and Risk Burn Phase II report of September 2001 with their subsequent revisions.
c. Human Health & Ecological Risk Assessment Reports submitted in April 2002 with their subsequent revisions.

2. The Permittee must operate the facility in strict accordance with the modules and attachments to this permit specified below:

Module I:	General Provisions
Module II:	Corrective Action Requirements
Module III:	Storage in Containers
Module IV:	Storage in Tanks
Module V:	Light Weight Aggregate Kilns (LWAKs) Requirements
Attachment A	Part A Application
Attachment B:	Facility Information
Attachment C:	Waste Characteristics
Attachment D:	Process Information
Attachment E:	Ground Water Monitoring
Attachment F:	Procedures to prevent hazards
Attachment G:	Contingency Plan
Attachment H:	Training Requirements
Attachment I:	Closure plan & Financial Requirements
Attachment J:	Waste Minimization
Attachment K	Certification
Attachment L	Standard Operating Procedures
Attachment M:	Drawings
Attachment N:	Best Management Practice Plan
Attachment O:	Fugitive Dust Plan
Attachment P:	Noise Control Plan

3. Pursuant to the Environmental Conservation Law, Article 3-0119, all the analyses performed to comply with the analysis requirements of this permit shall be performed by laboratories certified in the appropriate categories by the New York State Department of Health, Environmental Laboratory Approval Program

or to Include weekends, on those infrequent occasions when it is faced with unusual demand, or when routine operations have been disturbed by weather conditions or maintenance."

The word "infrequent shall be defined per The American Heritage College Dictionary as: "1. Not occurring regularly; occasional or rare; *an infrequent guest.* 2. Situated or placed at rather wide intervals, as in time or space."

By March 31, 2008 the Permittee shall submit for the Department's review and approval a protocol and schedule for conducting, completing and submitting a new Noise Impact Analysis by October 1, 2008. This protocol shall include taking ambient noise readings at Norlite property line locations adjacent to the nearest residential properties in all directions from the Norlite facility during two or more continuous 24 hour time periods during warm weather conditions (i.e. residential windows likely to be open) under full operating conditions of the entire Norlite facility. The results shall include tabular noise readings with noise frequency breakdowns, one hour Leqs, geographic depictions of noise readings, ambient noise readings with and without Norlite generated noise including high frequency sounds from Norlite as well as any needed noise mitigation measures. The noise operating standards found in 6NYCRR360-1.14(p) shall be applied to the entire Norlite facility only after submission of the noise study and review by the Department, discussion of the results with Norlite and a written non adjudicable determination by the Department to apply these standards.

The Permittee shall evaluate the need to revise the Noise Control Measures, Best Management Plan and Fugitive Dust Control Plan annually after the effective date of the permit; revise these plans; as recommended in these reports, submit the revisions or a notice of no change to the Department by March 31st of each year and implement the plans Including any revisions within 30 days of the Department's approval of the plans.

10. All drop & hook trucks are limited to a 48 hours stay at the Tanker Staging area (as shown in Drawing # NY003-3732) of the facility not including holidays, Saturdays & Sundays. Permittee shall park no more than 13 trucks, tankers or rolloffs or combinations of them in Tanker Staging Area. No hazardous waste transfer of either bulk of drummed waste is permitted in Tanker Staging Area.

11. An account to fund the Department's monitoring of the Permittee's compliance with the terms hereof shall be established with the Department as follows:

(a) Beginning January 1, 2005, funds as required to support the monitoring requirements shall be provided to the Department for funding of environmental compliance activities related to the operation of Permittee's Facility. This sum is based on annual Environmental Monitor service costs of: one (1) full-time environmental monitor; indirect and direct non-personal service costs,; and equipment; and the laboratory costs outlined in subparagraph (c). These costs are subject to revision as stated in subparagraphs (b) and (c). Until the Department determines that the Environmental Monitor is no longer required, subsequent annual payments shall be made to maintain an account balance sufficient to meet the next year's anticipated expenses.

The Permittee shall be billed annually for each fiscal year beginning April 1, 2005. The Permittee's payments shall be due within 30 days of receiving a bill from the Department. Each annual bill will be in an amount sufficient to fund environmental monitoring activities for the entire fiscal year.

(b) The Department may revise the required payment on an annual basis to include all costs of monitoring to the Department based on annual Environmental Monitor service costs of one (1) full-time environmental monitor. The annual revision may take into account the following factors: salary increases/decreases; changes in fringe or travel costs; and indirect and direct non-personal service costs increases/decreases.

Permittee shall revise & implement Traffic control provisions of EAF annually and submit it to the Department by March 31 of each year.

14. Within 90 days of the effective date of this permit the Permittee shall submit to the Department a report providing recommendations to reduce the frequency of automatic waste feed cutoffs (including cutoffs initiated prior to reaching the permit limit set forth in condition D(1) of Module V of this permit) resulting from the inadequate hood pressure in the light weight aggregate kilns #1 & #2. This report shall include an engineering evaluation of the kilns operation and their automatic control systems and shall be prepared by a qualified independent NYS professional engineer. Upon the Department's acceptance, the Permittee shall implement its recommendations within 90 days of its receipt.

15. The Permittee shall install, operate, and maintain on-site wind speed and wind direction continuous recording equipment. The installation, operation, and maintenance of the monitoring equipment shall be done in accordance with NYSDEC program policy DAR-2, "Oversight of Private Air Monitoring Networks". The Permittee shall follow the DAR-2 guidance for informational networks. In accordance with DAR-2, NYSDEC Division of Air Resources will, as appropriate, provide oversight of the following elements: design and installation, operation, data transmission and receipt, QA/QC, data review, and data reporting. Within 75 days after the effective date of the permit, and in accordance with DAR-2, the Permittee shall submit a detailed written plan containing all the technical specifics of the monitoring program and a schedule for installation and operation of the monitoring equipment.

16. The Pemittee shall sample and analyze clinker (i.e. expanded shale) for metals and Organics on monthly & annual basis respectively to ensure that it meets the non-waste water standards of 6 NYCRR Part 376.4(j). Additionally, at the Department's request, the Permittee shall sample and analyze clinker for metals & Organics six & two times per year respectively. The Permittee may cease to perform the Department requested organic analysis after two years of the effective date of this permit, provided that, no organic is detected in the clinker samples analyzed during those two years. The sampling & analysis required by this condition shall be preformed as per Attachment C of this permit.

17. The Permittee shall construct and maintain the secondary containment system for Truck Unloading Area 2, and to the extent it is not subject to 6NYCRR373-2.9(f) Truck Unloading Area 1 in compliance with the following provisions:

    (a) Transfer of hazardous substances must take place within a transfer station which is equipped with a permanently installed secondary containment system.

    (b) This containment system must:

        (I) be capable of collecting leaks and spills which are likely to occur during the transfer including leaks or spills from connections, couplings, vents, pumps and valves, hose failure or overturning of a container. Open-ended fill lines must be located within the secondary containment system;

        (ii) be designed and constructed with a permeability rate to the substance(s) transferred of less than 1×10^{-6} cm/sec. Properly designed concrete which has water stops on all seams and is compatible with the substance(s) stored or other equivalent or superior material satisfies this requirement;

        (iii) be designed, installed, and operated to prevent any migration of hazardous substances, components of hazardous substances or degraded products, out of the system to the soil, groundwater, or surface waters before cleanup occurs. The system does not have to be designed to contain the gaseous component of a spill;

Special Conditions

FOR ARTICLE 27 , Title 9; 6 NYCRR Part 373
Hazardous Waste Management Permit

Changes (1/18/2008 Permit Modification)	Description of Changes
Permit Effective Date P.1 of 9	Effective date for this permit changed to 1/16/2008. The permittee's 8/9/2007 hearing request objecting to this permit (issued on 7/12/2007) stayed its original effective date. Therefore, the permittee was governed by the prior SAPA extended permit provisions until this permit modification which resolves the objections and hearing request. In addition the Department has determined not to make the provisions of this permit retroactive to 7/12/2007.
Special Condition 9 pp. 4, 5 of 9	This condition was replaced with language: 1) mirroring nighttime finishing plant operating hour restrictions in the Fugitive Dust Control Plan, 2) requiring a new Noise Impact Analysis and 3) the noise operating standards found in 6NYCRR360-1.14(p) shall be applied to the entire Norlite facility only after submission of the noise study and review by the Department, discussion of the results with Norlite and a written non-adjudicable determination by the Department to apply these standards.
Special Condition 11(d) p. 6 of 9	Correction of a typographical error. Changed "sampling" to "samples".
Special Condition 17 pp. 7, 8 of 9	The opening paragraph was changed to clarify that this condition applies to Unloading/Loading Area 2 and Area 1 to the extent Area 1 is not subject to 6NYCRR373-2.9(f) secondary containment requirements. Also, the last paragraph was changed to require that storm water must be removed from the area and associated sump to allow for the containment volume meeting the provisions in Special Condition 17. Changed "with" to "within" in the last sentence of Special Condition 17.b.i to make the sentence read more clearly.
Condition A(1) in Module III p. 1 of 4	This condition was changed to clarify that unloading and loading operation that occur in permitted container storage areas shall have secondary containment meeting the requirements in Special Condition III.B.
Condition C(10)(A) in Module V p. 4 of 17	This condition was changed to clarify that the condition applies to used oil mixed with Waste Fuel A and/or virgin oil.
Condition C(10)(B) in Module V P. 5 of 17	This condition was changed to clarify that the condition applies to used oil mixed with Waste Fuel A and/or virgin oil.
Special Conditions p. 9 of 9	This page was added to describe the changes made in this permit modification..

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DEC PERMIT NUMBER	EFFECTIVE DATE
4-0103-00016/00016	July 12, 2007
FACILITY/PROGRAM NUMBER(S)	EXPIRATION DATE(S)
EPA I.D. # NYD080469935	July 12, 2012

PERMIT

Under the Environmental Conservation Law (ECL)

TYPE OF PERMIT (Check All Appropriate Boxes)

☐ NEW ☒ RENEWAL ☐ MODIFICATION ☐ PERMIT TO CONSTRUCT ☒ PERMIT TO OPERATE

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☐ ARTICLE 15, TITLE 15: LONG ISLAND WELLS	☐ ARTICLE 24: FRESHWATER WETLANDS	☐ ARTICLES 1, 3, 17, 19, 27, 37; 6NYCRR 380: RADIATION CONTROL
☐ ARTICLE 15, TITLE 27: WILD, SCENIC & RECREATIONAL RIVERS	☐ ARTICLE 25: TIDAL WETLANDS	☐ ARTICLE 27, TITLE 3, 6NYCRR 364: WASTE TRANSPORTER
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PERMIT ISSUED TO	TELEPHONE NUMBER
Norlite Corporation	(518) 235-0401
ADDRESS OF PERMITTEE	
P.O. Box 694, Cohoes, New York	
CONTACT PERSON FOR PERMITTED WORK	TELEPHONE NUMBER
William Morris, Vice President of Environmental Affairs	(518) 235-0401
NAME AND ADDRESS OF PROJECT/FACILITY	
Norlite Corporation, P.O. Box 694, Cohoes, New York, 12047	
LOCATION OF PROJECT/FACILITY	
628 South Saratoga Street (State Route 32)	

COUNTY	TOWN/CITY/VILLAGE	WATERCOURSE/WETLAND NO.	NYTM COORDINATES
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By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified (see page 2) and any Special Conditions included as part of this permit.

Regional PERMIT ADMINISTRATOR:	ADDRESS
William J. Clarke	NYS DEC, Region 4 Headquarters 1130 North Westcott Road, Schenectady, NY 12306
AUTHORIZED SIGNATURE: William J. Clarke	DATE: 7/12/2007

PERM-GEN WPT (7/20/93)

GENERAL CONDITIONS

Inspections

1. The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3). A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Permit Changes and Renewals

2. The Department reserves the right to modify, suspend or revoke this permit when:
   a) the scope of the permitted activity is exceeded or a violation of any condition of the permit or provisions of the ECL and pertinent regulations is found;
   b) the permit was obtained by misrepresentation or failure to disclose relevant facts;
   c) new material information is discovered: or
   d) environmental conditions, relevant technology, or applicable law or regulation have materially changed since the permit was issued.

3. The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms, fees or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

4. The permittee must submit a renewal application at least:
   a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and
   b) 30 days before the expiration of all other permit types.

5. Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Other Legal Obligations of Permittee

6. The permittee has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature and by whomever suffered, arising out of the project described in this permit and has agreed to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from this project.

7. The permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

8. The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required for this project.

Special Conditions

FOR ARTICLE 27 , Title 9; 6 NYCRR Part 373
Hazardous Waste Management Permit

(ELAP), if ELAP issues certifications in such categories. The permittee shall also: a) assure any vendor laboratory used will use the permittee's sample control numbers, 2) assure the vendor laboratory and its own have a comprehensive quality assurance and control program to address testing procedures and chain of custody of samples and 3) take full responsibility for the results it obtains and uses from vendor and its own laboratories.

4. The Permittee shall inform the Department within 24 hours of receipt of analytical results that indicate a total PCB concentration of greater than 10 ppm in any individual load. The Permittee shall identify in this report the supplier or generator of the waste load.

5. Any modification to the permit or regulated activities, as well as permit renewals, must be submitted in duplicate and in PDF electronic format for prior approval to the Regional Permit Administrator at NYSDEC, Region 4, 1130 North Westcott Road, Schenectady, New York 12306, with one copy to NYSDEC, Bureau of Hazardous Waste Regulation, Combustion Permitting Section, 625 Broadway, Albany, New York 12233-7251 and USEPA Region II, Hazardous Waste Permits Branch, 290 Broadway, New York, New York 10278. Any submittals of plans, reports, etc. made in order to comply with the permit conditions shall be sent as per condition H of Module I of this permit.

6. The Permittee shall install fence on the south end of the facility from the south gate to the quarry by no later than 60 days from the effective date of this permit.

7. Permittee is to log all complaints from the public including actions taken to address these concerns and submit them to the Department on a monthly basis.

Permittee is to report all leaking trucks to DEC's on-site monitor and in his absence to Region 4 office immediately on arrival, impound them, take all necessary measures to stop the leak, and clean up any spilled material on site.

9. The Permittee shall comply with the recommended control measures found in the approved Noise Impact Analysis, Technical Report AA-1790 (dated 9/24/90) and the Fugitive Dust Control Plan by Sci-Tech (dated 10/95 and updated 12/14/01). Once implemented, the Permittee shall maintain all fugitive dust control measures in compliance with the plan. In addition, the Permittee is also responsible for maintaining compliance with the Norlite Best Management Practices Plan (Revision 1 dated 4/30/92 and as revised 10/26/95). The Permittee shall submit the Noise Impact Analysis referenced above within 15 days of the effective date of this permit. The Permittee shall evaluate the need to revise the Noise Control Measures, Best Management Plan and Fugitive Dust Control Plan annually after the effective date of the permit; revise these plans if appropriate; submit the revisions or a notice of no change to the Department by March 31st of each year; and implement the plans including any revisions.

   In addition, the Permittee shall not perform the following activities before 8:00 am or after 11:00 pm:

   - Cleaning the kilns
   - Starting up loud machines and conveyors
   - Using equipment to load product or move raw material

10. All drop & hook trucks are limited to a 48 hours stay at the Tanker Staging area (as shown in Drawing # NY003-3732) of the facility not including holidays, Saturdays & Sundays. Permittee shall park no more than 13 trucks, tankers or rolloffs or combinations of them in Tanker Staging Area. No hazardous waste transfer of either bulk of drummed waste is permitted in Tanker Staging Area.

Special Conditions

FOR ARTICLE 27 , Title 9; 6 NYCRR Part 373
Hazardous Waste Management Permit

11. An account to fund the Department's monitoring of the Permittee's compliance with the terms hereof shall be established with the Department as follows:

(a) Beginning January 1, 2005, funds as required to support the monitoring requirements shall be provided to the Department for funding of environmental compliance activities related to the operation of Permittee's Facility. This sum is based on annual Environmental Monitor service costs of: one (1) full-time environmental monitor; indirect and direct non-personal service costs,; and equipment; and the laboratory costs outlined in subparagraph (c). These costs are subject to revision as stated in subparagraphs (b) and (c). Until the Department determines that the Environmental Monitor is no longer required, subsequent annual payments shall be made to maintain an account balance sufficient to meet the next year's anticipated expenses.

The Permittee shall be billed annually for each fiscal year beginning April 1, 2005. The Permittee's payments shall be due within 30 days of receiving a bill from the Department. Each annual bill will be in an amount sufficient to fund environmental monitoring activities for the entire fiscal year.

(b) The Department may revise the required payment on an annual basis to include all costs of monitoring to the Department based on annual Environmental Monitor service costs of one (1) full-time environmental monitor. The annual revision may take into account the following factors: salary increases/decreases; changes in fringe or travel costs; and indirect and direct non-personal service costs increases/decreases. If such a revision is required, the Department will notify the Permittee of such a revision and a written explanation of the basis for any modification either with the annual bill or upon written request by the Permittee. Such annual revisions do not constitute permit modifications.

(c) The costs set forth in subparagraph (a) shall include laboratory sampling and analytical costs and fees. These costs and fees will be fixed at an annual maximum cost of $40,540 per year, for 3 years. Payment of these fees shall be included in the annual bill issued pursuant to subparagraph (a) above. After the initial 3-year period, the amount of sampling and analytical costs and fees to be paid per year, for each subsequent three-year period thereafter, shall be set forth in a separate Memorandum of Understanding ("MOU"). If Norlite and the Department can not agree on the amount for this MOU by the date that Norlite must pay the next annual payment, the cost for that year will be equal to the amount paid in the previous year plus an inflation adjustment and the dispute shall be resolved pursuant to a permit modification hearing. This adjustment shall be calculated by multiplying the amount paid during the previous year and quotient obtained by dividing of the most recent Implicit Price Deflator for Gross National Product established by the U.S. Department of Commerce in its Survey of Current Business by the deflator for the previous year.

(d) These funds required under subparagraph (c) shall not be used to pay for any off-site sampling costs or for analyzing sampling taken off-site.

(e) Upon a determination by the Department that the Environmental Monitor is no longer required as well as a determination that all outstanding costs have been paid, the unexpended balance of the fund will be returned to Norlite.

(f) Payments are to be in advance of the period in which they will be expended. Failure to make the required payments shall be a violation of this permit. The Department reserves all rights to take appropriate action to enforce the above payment provisions.

(g) Prior to making its annual payment, the Permittee will receive and have an opportunity to review an annual work plan that the Department will undertake during the year.

Special Conditions

FOR ARTICLE 27 , Title 9; 6 NYCRR Part 373
Hazardous Waste Management Permit

12. The Permittee shall prepare and submit a Compliance Report on or before April 1st of every year describing the facility's record in complying with all DEC permits and the conditions contained therein for the previous calender year including complaints received and how responded to. It shall also include a projection of key compliance elements and milestones in the forthcoming calender year.

13. The permittee shall adhere to the truck traffic routing and maximum truck trip numbers identified in the Environmental Assessment Form (EAF) dated 11/93 and most recently revised 11/95. If complaints regarding truck traffic operating during off hours are received which are of a continuing nature and are substantiated by the Department then the Department at its discretion may impose restrictions on the hours which the permittee may allow trucks to enter or exit the facility. Such operating hour restrictions shall be no more stringent than:

- No trucking operations on Sundays or the following holidays: New Years, Labor Day, Independence Day, Memorial Day, Thanksgiving Day and Christmas Day.*
- Monday through Friday trucking operations limited to 6:30 AM to 6 PM. Saturday trucking operations limited to 8 AM to 4 PM.*

*These restrictions shall not apply to emergency fuel/LGF deliveries. Late truck arrivals due to circumstances beyond the operator's control (e.g. weather, traffic and breakdowns) shall be permitted to enter and park in the authorized truck staging or unloading areas.

Permittee shall revise & implement Traffic control provisions of EAF annually and submit it to the Department by March 31 of each year.

14. Within 90 days of the effective date of this permit the permittee shall submit to the Department a report providing recommendations to reduce the frequency of automatic waste feed cutoffs (including cutoffs initiated prior to reaching the permit limit set forth in condition D(1) of Module V of this permit) resulting from the inadequate hood pressure in the light weight aggregate kilns #1 & #2. This report shall include an engineering evaluation of the kilns operation and their automatic control systems and shall be prepared by a qualified independent NYS professional engineer. Upon the Department's acceptance, the permittee shall implement its recommendations within 90 days of its receipt.

15. The permittee shall install, operate, and maintain on-site wind speed and wind direction continuous recording equipment. The installation, operation, and maintenance of the monitoring equipment shall be done in accordance with NYSDEC program policy DAR-2, "Oversight of Private Air Monitoring Networks". The permittee shall follow the DAR-2 guidance for informational networks. In accordance with DAR-2, NYSDEC Division of Air Resources will, as appropriate, provide oversight of the following elements: design and installation, operation, data transmission and receipt, QA/QC, data review, and data reporting. Within 75 days after the effective date of the permit, and in accordance with DAR-2, the permittee shall submit a detailed written plan containing all the technical specifics of the monitoring program and a schedule for installation and operation of the monitoring equipment.

16. The pemittee shall sample and analyze clinker (i.e. expanded shale) for metals and Organics on monthly & annual basis respectively to ensure that it meets the non-waste water standards of 6 NYCRR Part 376.4(j). Additionally, at the Department's request, the permittee shall sample and analyze clinker for metals & Organics six & two times per year respectively. The permittee may cease to perform the Department requested organic analysis after two years of the effective date of this permit, provided that, no organic is detected in the clinker samples analyzed during those two years. The sampling & analysis required by this condition shall be preformed as per Attachment C of this permit.

Special Conditions

FOR ARTICLE 27 , Title 9; 6 NYCRR Part 373
Hazardous Waste Management Permit

17. The Permittee shall construct and maintain secondary containment systems for all unloading/loading areas that comply with the following provisions:

(a) Transfer of hazardous substances must take place within a transfer station which is equipped with a permanently installed secondary containment system.

(b) This containment system must:

(i) be capable of collecting leaks and spills which are likely to occur during the transfer including leaks or spills from connections, couplings, vents, pumps and valves, hose failure or overturning of a container. Open-ended fill lines must be located with the secondary containment system;

(ii) be designed and constructed with a permeability rate to the substance(s) transferred of less than 1×10^{-6} cm/sec. Properly designed concrete which has water stops on all seams and is compatible with the substance(s) stored or other equivalent or superior material satisfies this requirement;

(iii) be designed, installed, and operated to prevent any migration of hazardous substances, components of hazardous substances or degraded products, out of the system to the soil, groundwater, or surface waters before cleanup occurs. The system does not have to be designed to contain the gaseous component of a spill;

(iv) be constructed, coated, or lined with materials that are compatible with the substances to be transferred and the environment. The system must have sufficient strength and thickness to withstand wear, hydrostatic forces, frost heaving and weathering. It must support without failure, any vehicle brought into the transfer station, and must have a foundation which prevents failure due to settlement, compression, or uplift;

(v) be equipped with a sump and either a manually controlled pump or siphon, manually controlled dike valve, or any other manually controlled drainage system to permit the drainage of liquids resulting from leaks, spills, and precipitation. Control of the pump, siphon or valve must be possible from outside of the diked area. All drainage systems must be locked in a closed position when a transfer of a hazardous substance is in progress. Spilled or leaked substances must be removed from the containment system within twenty-four (24) hours; and

(vi) contain the volume of any leak or spill likely to occur at the transfer station.

(c) Stormwater must be pumped from slop tanks and catch tanks to allow for the containment of the volume required by paragraph 17(b)(vi) above.

This permit authorizes only the hazardous waste units identified in this permit as permitted units. This permit does not authorize other units to operate.

If this Permit conflicts with Regulations which are in effect on the date of final issuance of this Permit, the more stringent requirement applies.

A. EFFECT OF PART 373 PERMIT

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of: the conditions contained herein, with its attachments, including any subsequent Department approved changes to the attachments, and the applicable regulations contained in 6NYCRR Parts 370 through 374, 376, 621 and 624 that are referenced herein. The applicable regulations or requirements are those which are in effect on the date of final issuance of this Permit, except for those requirements not included in the permit which:

(1) Become effective by statute, including amendments thereto;
(2) Are promulgated under 6NYCRR Part 376, as modified (Land Disposal Restrictions);
(3) Are promulgated under 6NYCRR 373-3.27, 373-3.28, and 373-3.29, as modified (air emission standards); and
(4) Are other requirements promulgated under 6NYCRR 373-1.6(e).

The Permittee is authorized to store hazardous waste in containers & tanks; blend hazardous waste in tanks and incinerate them in Light Weight Aggregate Kilns (LWAKs). The Permittee is required to conduct corrective action in accordance with the conditions of this Permit. Any storage, treatment, or disposal of hazardous waste not authorized in this Permit is prohibited unless exempt from 6NYCRR Part 373. Issuance of this Permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of federal, State or local laws or regulations.

The hazardous waste management units, activities and types and quantities of hazardous waste to be managed which are authorized by this Permit are listed in the Modules III, IV & V of this permit. These are:

amendments to those documents are enforceable by this permit, upon approval, or acceptance by the Department, unless the Department specifically specifies otherwise in writing. Upon approval, the provisions of each such document will be binding upon the Permittee and have the same legal force and effect as the requirements of this Permit.

B. PERMIT DOCUMENTS

The attachments specified in Special Condition 2of this permit are part of this Permit, are binding upon the Permittee and have the same legal force and effect as the requirements of this Permit.

Future modifications to this Permit, including modifications to its attachments, shall be addressed according to 6NYCRR 373-1.7. The Permittee must submit copies to the Regional Permit Administrator and as required in Section H of this Module, of the replacement: Revised Part A application, pages, sections, and/or attachments to the permit along with the application request for a permit modification. The Permittee shall place a revision date on all pages submitted as part of the proposed permit modification application.

The Permittee must provide and maintain a log of all modifications made to this Permit. The log shall contain at a minimum the following information regarding an approved modification: (1) the name of the specific documents being modified (e.g., contingency plan, security requirements, hazardous waste unit operations, etc.); (2) the pertinent page, section, and/or attachment of this Permit and Permit Application documents subject to modification; (3) the revision date of the modifications; (4) a brief statement regarding the nature of the modifications; and (5) the effective date of the modification to this Permit. The Permittee shall place the log at the beginning of this Permit along with a copy of the Department's approval letter/s, when applicable.

Upon receipt of a permit modification issued by the Department, the Permittee must update the log and replace the pages, sections, and/or attachments in the Permit with the modified Part A, pages, sections, and/or attachments in the permit copy maintained by the Permittee

C. GENERAL REQUIREMENTS FOR THIS PART 373 PERMIT

The Permittee must comply with 6NYCRR Subpart 373-1 as follows:

1. General 6NYCRR 373-1.1

a) 6NYCRR 373-1.1(f) - Uniform Procedures;

b) 6NYCRR 373-1.1(g) - Enforcement;

c) 6NYCRR 373-1.1(h) - Severability; and

d) 6NYCRR 373-1.1(i) - Terms Used.

2. Requirement for Permit 6NYCRR 373-1.2

6NYCRR 373-1.2(d): Owners and operators of hazardous waste management facilities must have a Part 373 permit during the active life of a unit/s, including the closure period.

A RCRA Part B Permit issued by the United States Environmental Protection Agency under 40 CFR Parts 270 and 124 does not relieve an owner or operator of the responsibility for obtaining a permit pursuant to this Part. Facilities which currently have a permit issued pursuant to Part 360 of this Title for the management of hazardous waste and qualify for the extension allowed under the State Administrative Procedures Act (SAPA), have authorization to operate until final administrative and judicial disposition of a permit application is made. Both of these facilities must also comply with the requirements of Subpart 373-3 of this Part and the applicable interim status provisions of this Subpart except subdivision 373-1.3(g).

3. Signatories to Permit Applications and Reports 6NYCRR 373-1.4(a)(5)

a) 6NYCRR 373-1.4(a)(5)(i) - Applications;
b) 6NYCRR 373-1.4(a)(5)(ii) - Reports;
c) 6NYCRR 373-1.4(a)(5)(iii) - Changes to authorization; and
d) 6NYCRR 373-1.4(a)(5)(iv) - Certification.

4. Recordkeeping 6NYCRR 373-1.4(g)

5. Permit Conditions 6NYCRR 373-1.6

a) 6NYCRR 373-1.6(a) - Conditions applicable to all permits;
b) 6NYCRR 373-1s6(a)(s) - Duty to Comply;
c) 6NYCRR 373-1.6(a)(2) - Duty to reapply;
d) 6NYCRR 373-1.6(a)(3) - Need to halt or reduce activity not a defense;
e) 6NYCRR 373-1.6(a)(4) - Duty to mitigate;
f) 6NYCRR 373-1.6(a)(5) - Proper operation and maintenance;
g) 6NYCRR 373-1.6(a)(6) - Permit actions;
h) 6NYCRR 373-1.6(a)(7) - Property rights;
i) 6NYCRR 373-1.6(a)(8) - Duty to provide information;
j) 6NYCRR 373-1.6(a)(9)(i) through (iv) - Inspection and entry;
k) 6NYCRR 373-1.6(a)(10)(i) through (iii) - Monitoring and records;
l) 6NYCRR 373-1.6(a)(11) - Signatory Requirements;
m) 6NYCRR 373-1.6(a)(12)(i) through (xi) - Reporting requirements;

n) 6NYCRR 373-1.6(a)(13) - Information Repository(also, see Section C.9(a)(3) of this module below;

o) 6NYCRR 373-1.6(d)(1)(i) through (iii) - Schedules of compliance;

The Permittee must comply with the compliance schedules listed in Module - II Corrective Action Requirements and the special conditions of this permit.

p) 6NYCRR 373-1.6(d)(2)(i) through (iv) - Alternative schedules of compliance.

6. Requirements for recording and reporting of monitoring results 6NYCRR 373-1.6(b)

The Permittee must comply with the recording, reporting and monitoring requirements listed in this permit.

The Permittee must use, maintain and install monitoring equipment and methods and report monitoring results as specified in this Permit (including the permit application) and 6NYCRR Subpart 373-2. The Permittee must conduct required monitoring with the type, intervals and frequency sufficient to yield data which are representative of the monitoring activity including, when appropriate, continuous monitoring.

7. Permit Modifications 6NYCRR 373-1.7

a) 6NYCRR 373-1.7(a) - Transfer of Permits;
b) 6NYCRR 373-1.7(b) - Modification of permits;
c) 6NYCRR 373-1.7(c) - Minor modifications of RCRA delegated permits;
d) 6NYCRR 373-1.7(d) - Major Modifications;
e) 6NYCRR 373-1.7(e) - Announcement of Determinations;
f) 6NYCRR 373-1.7(f) - Temporary Authorizations; and
g) 6NYCRR 373-1.7(g) - Newly Regulated Wastes and Units.

8. Expiration and Continuation of Permits 6NYCRR 373-1.8

This permit shall be in effect for a fixed term of five years from the date of its issuance.

Complete applications for permit renewal must be submitted at least 180 days before the expiration date of this Permit pursuant to 6NYCRR 373-1.8(b) to the addresses in Section H of this Permit module below. Renewal applications with a significant change (as defined in paragraph 373-1.10(a)(1) of this Subpart) are subject to the requirements of section 373-1.10.

Prior to processing the renewal application the Department will determine whether the application is complete. In order for the renewal application to be complete the Permittee must:

a) Satisfy the general requirements for complete application contained in 6 NYCRR Part 621 (Uniform Procedure Regulations)

b) Include all information required, both general and specific to the type of the facility in accordance with the laws, regulations and analytical requirements in effect at the time.

At any time during the review of the renewal application the Department may request in writing any additional information which is necessary for determining the completeness of the application. Failure to provide such information by the date specified in the request may be grounds for denial of the application and the extension allowed pursuant to§ 401.2. of the State Administrative Procedures Act.

Should the Permittee cease the hazardous waste management activities allowed by this Permit prior to the expiration of this Permit, the Permittee must continue to comply with the applicable corrective action conditions and requirements stipulated in Module II of this Permit. pursuant to 6 NYCRR Subpart 373-1.6(d). In addition, the Permittee shall submit a renewal application pursuant to 6NYCRR Subpart 373-1.8(b) prior to this Permit's expiration unless and until all the Permittee's corrective action obligations have been completed. In the alternative, the Permittee may execute an order on consent for corrective action pursuant to Environmental Conservation Law (ECL) Section 71-2727(3) with the Commissioner at least 180 days prior to the expiration date of this Permit.

9. Public Participation (including 6NYCRR 373-1.10)

a) Expanded Public Participation (6NYCRR 373-1.10)

(1) 6NYCRR 373-1.10(a) Pre-application Public Meeting and Notice

The permittee is required to hold a pre-application public meeting and a Public Notice for the Part 373 Permit application for a new unit or for a permit renewal application which propose a significant changes in operation.

(2) 6NYCRR 373-1.10(b) Public Notice Requirements at the Application Stage

(3) 6NYCRR 373-1.10(c) Information Repository.

The permittee shall establish and maintain an information repository as required by the Department's letter dated October 20, 2004.

b) The permittee shall perform the following public outreach activities:

(1) Provide reasonably advance public notices about stack tests to be conducted on theseLWAKs;

(2) Provide Facility Familiarization Tours periodically or upon request;

(3) Arrange and conduct public meeting to address concerns on facility operations when requested by the Department or the public.

(4) Set up and maintain a web site accessible to public. At a minimum, this website would contain the following information:

- Name and address of the facility
- Name and telephone number of the facility contact for complaints
- Upcoming events that may affect the facility's operations
- Dates of trial burns, stack tests and RATAs
- Dates, times and locations for the public meetings

D. FINAL STATUS STANDARDS FOR THIS PART 373 PERMIT

The Permittee must comply with 6NYCRR Subpart 373-2, and the referenced sections of the Permit Application, as follows:

1. General 6NYCRR 373-2.1

a) 6NYCRR 373-2.1(c) - Imminent Hazard Action.

2. General Facility Standards 6NYCRR 373-2.2

a) 6NYCRR 373-2.2(a) - Applicability;
b) 6NYCRR 373-2.2(b) - Facility ownership transfer;
c) 6NYCRR 373-2.2(d) - Required Notices;
d) 6NYCRR 373-2.2(e) - General Waste Analysis (Attachment C of the Permit);
e) 6NYCRR 373-2.2(f) - Security (Attachment F of the Permit);
f) 6NYCRR 373-2.2(g) - General inspection requirements (Attachment F of the Permits;
g) 6NYCRR 373-2.2(h) - Personnel training (Attachment H of the Permit);

h) 6NYCRR 373-2.2(i) - General requirements for ignitable, reactive, or incompatible wastes (Attachment C, D & F of the Permit);

The Permittee shall submit any revisions to "Norlite Laboratory Quality Manual" Version 7, May 2006 to the Department prior to finalizing and implementing the same. The submission shall be made in a draft format to the Department in advance of implementing the revisions. The Department will inform the permittee if the proposed revisions are unacceptable within 30 days of its receipt. If the Department does not respond within 30 days of its receipt, the revisions will automatically become final & effective on the 31st day of its receipt by the Department.

3. Preparedness and Prevention 6NYCRR 373-2.3

The Permittee must comply with Attachment F of the Permit and 6NYCRR 373-2.3 as follows:

a) 6NYCRR 373-2.3(a) - Applicability;
b) 6NYCRR 373-2.3(b) - Design and operation of facility;
c) 6NYCRR 373-2.3(c) - Required equipment;
d) 6NYCRR 373-2.3(d) - Testing and maintenance of equipment;
e) 6NYCRR 373-2.3(e) - Access to communications or alarm system;
f) 6NYCRR 373-2.3(f) - Required aisle space; and
g) 6NYCRR 373-2.3(g) - Arrangements with local authorities.

4. Contingency Plan and Emergency Procedures 6NYCRR 373-2.4

The Permittee must comply with Attachment G of the Permit and 6NYCRR 373-2.4 as follows:

a) 6NYCRR 373-2.4(a) - Applicability;
b) 6NYCRR 373-2.4(b) - Purpose and implementation of contingency plan;
c) 6NYCRR 373-2.4(c) - Content of contingency plan;
d) 6NYCRR 373-2.4(d) - Copies of contingency plan;
e) 6NYCRR 373-2.4(e)s- Amendment of contingency plan;
f) 6NYCRR 373-2.4(f) - Emergency coordinator; and
g) 6NYCRR 373-2.4(g) - Emergency Procedures.

5. Manifest System, Recordkeeping and Reporting 6NYCRR 373-2.5

a) 6NYCRR 373-2.5(a) - Applicability;
b) 6NYCRR 373-2.5(b) - Manifest requirements;
c) 6NYCRR 373-2.5(c) - Operating record;
d) 6NYCRR 373-2.5(d) - Availability, retention, and disposition of records;

e) 6NYCRR 373-2.5(e) - Annual report;
f) 6NYCRR 373-2.5(f) - Unmanifested waste report; and
g) 6NYCRR 373-2.5(g) - Additional reports.

The Permittee must retain for inspection by the Department the permit modification log required by Section B, the operating record, documentation to demonstrate compliance with the financial requirements of this Permit, the referenced sections of the Permit Application that are made part of this Permit, and any subsequent Department approved changes to the contents of that Application.

These documents include, but are not limited to, the most recent Department approved: waste analysis plan; contingency plan; closure plan(s); security, inspection, and personnel training requirements; and final engineering documents for all hazardous waste treatment, storage, and disposal units subject to this Permit and for all ongoing corrective action remedies pertinent to solid waste management units and areas of concern either remediated or being remediated pursuant to this Permit.

6. Releases from Solid Waste Management Units 6NYCRR 373-2.6

The Permittee must comply with all the applicable provisions stipulated in 6NYCRR 373-2.6(a) through (k) for "regulated units" and with 6NYCRR 373-2.6 (l) for corrective action at solid waste management units; and must also comply with the conditions stipulated in Module II - Corrective Action Requirements for Solid Waste Management Units and Areas of Concern; and comply with the groundwater monitoring plan approved by the Department, including all subsequent revisions approved by the Department that address the means to implement and achieve compliance with the aforementioned conditions for site-wide contaminated groundwater.

7. Closure 6NYCRR 373-2.7

The Permittee must comply with Attachment I of the Permit and 6NYCRR 373-2.7 for the closure of the hazardous waste management unit(s) (i.e., Container storage area, storage tanks & secondary containment & LWAKs & associated feed system and air pollution control devices), as follows:

a) 6NYCRR 373-2.7(b) - Closure performance standard;
b) 6NYCRR 373-2.7(c) - Closure plan; amendment to plan;
c) 6NYCRR 373-2.7(d) - Closure; time allowed for closure;
d) 6NYCRR 373-2.7(e) - Disposal or decontamination of equipment, structures and soils;
e) 6NYCRR 373-2.7(f) - Certification of closure.

The Permittee shall propose to NYSDEC , prior to beginning of closure of hazardous waste units, the final and specific choice of sampling points, number of samples, type of sampling to be performed and analysis for verification of the effectiveness of decontamination of these units; these will be reviewed and approved at the time of their closure by NYSDEC. These determinations will be based upon the past history of operating practices and types of wastes handled at the facility. The operating record, the record of spills, the types of waste released, location of spills in the facility and the condition of secondary containment systems will also provide data to be used in these determinations. The flexibility afforded by this approach will allow compliance with closure regulations and requirements that will be in effect at the time of closure. Sampling procedures and the locations and the total number of samples required will be determined based on the information gathered at the time of closure. The verification of decontamination will be based on NYSDEC's regulatory clean up standards at the time of closure.

8. Financial Requirements 6NYCRR 373-2.8

The Permittee must comply with Attachment I of the Permit and 6NYCRR Subpart 373-2.8 for meeting the financial requirements for the hazardous waste management unit(s) (i.e., Container storage area, storage tanks & secondary containment & LWAKs & associated feed system and air pollution control devices) when required, as follows:

a) 6NYCRR 373-2.8(a) - Applicability;
b) 6NYCRR 373-2.8(b)e Definition of terms as used in this section;
c) 6NYCRR 373-2.8(c) - Cost estimates for closure;

The Permittee must update closure cost estimates annually, update financial assurance for the same, record the changes in the operating record and submit to the Department to the addresses listed in Section H of this Permit module a written a summary of the changes and inflation adjustment calculations on or before the anniversary date of this Permit or per the required sections of Part 373-2.8(c)(2), which reads in part, "The Permittee must adjust closure cost estimate for inflation within 60 days prior to the anniversary date of the financial instruments used. For owners and operators using the financial test or corporate guarantee., the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the commissioner as specified in section 373-2.8(d)(5)(iii) of this Part.". Also, the Permittee must revise the closure cost estimate no later than 30 days after the commissioner has approved the request to modify the closure plan, if the change in the closure plan increased the cost of closure.

d) 6NYCRR 373-2.8(d) - Financial assurance for closure;

Closure Cost estimate:$ 1,229,997 (July 1st, 2003 dollars)

Amount of financial assurance provided in the application: $ 1,221,310 (as of 04/30/04) .
Financial Instrument: Trust

Within 60 days of the effective date of this permit, the Permittee shall submit to the Department an updated financial assurance for the above closure costs($ 1, 229,997) adjusted for inflation using available inflation factor for subsequent years.

e) 6NYCRR 373-2.8(g) - Use of a mechanism for financial assurance for closure;
f) 6NYCRR 373-2.8(h) - Liability requirements;
g) 6NYCRR 373-2.8(i) - Incapacity of owners or operators, guarantors, or financial institutions;
h) 6NYCRR 373-2.8(j) - Wording of the instruments;

The Permittee must obtain approval in writing from the Department prior to the change, for any changes to the instrument/s and/or mechanism/s; e.g., type of instrument/s and/or mechanism/s, the issuing company/institution/s and/or a reduction in the dollar amount/s.

9. Air Emission Standards 6NYCRR 373-2.27, 373-2.28 and 373-2.29

The Permittee must comply with all applicable requirements of 6NYCRR 373-2.27, 373-2.28 and 373-2.29 as follows:

a) 6NYCRR 373-2.27 Air Emission Standards for Process Vents; and
b) 6NYCRR 373-2.28 Air Emission Standards for Equipment Leaks.
c) 6NYCRR 373-2.29 Air Emission Standards for Tanks, Surface Impoundments, and Containers.

E. LAND DISPOSAL RESTRICTIONS

The Permittee must comply with all applicable provisions in the current 6NYCRR Part 376 for the land disposal of hazardous waste.

F. WASTE ANALYSIS AND QUALITY ASSURANCE

The Permittee must obtain representative samples of wastes and other materials to be analyzed pursuant to this Permit. The Permittee must perform the sampling and analysis required by this Permit in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (Third Edition (November 1986), as amended by Updates: I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (April 1998), and later approved revisions), hereinafter referred to as "SW-846";

Appendix 19 of 6NYCRR Part 371; or an equivalent method approved by the Department.

The Permittee shall conduct a quality assurance program to ensure that the sampling, analysis and monitoring data are technically accurate and statistically valid. The quality assurance program must be in accordance with Chapter One and the requirements of applicable method(s) of SW-846, or an equivalent method approved by the Department.

As required by ECL 03-0119, any laboratory (Permittee or contract) used by the Permittee to perform analysis pursuant to this Permit must be certified by the New York State Department of Health Environmental Laboratory Approval Program (ELAP) in the appropriate categories of analysis, if ELAP issues certifications in such categories. If the Permittee uses a contract laboratory to perform analysis required by this Permit, then the Permittee shall review the off-site laboratory's QA/QC procedures and confirm that it meets waste analysis and quality assurance provisions of this Permit.

The document entitled "Norlite Laboratory Quality Manual" Version #7.0, May 2006 is incorporated by reference in this permit. Any revisions to be made to this plan should be approved by the Department.

G. ORAL REPORTS

The oral reports required by 6NYCRR 373-1.6(a)(12)(vi) and 373-2.4(g)(4)(ii) must be made to both the Department using the New York State 24 - hour oil and hazardous material spill notification number (800) 457-7362 and the National Response Center using its 24-hour number (800) 424-8802, or any designated telephone numbers which may subsequently replace those listed above.

H. PLANS, REPORTS, SPECIFICATIONS, IMPLEMENTATION, RENEWAL AND MODIFICATION APPLICATIONS, AND OTHER SUBMITTALS

1. All submittals required by the Permit must be submitted to the addresses listed below.

a) One (1) copy of all submittals to both:

Regional Solid & Hazardous Materials Engineer
New York State Department of Environmental Conservation
Region 4 Office
1130 North Westcott Road
Schenectady, NY 12306

and

Chief, RCRA Programs Branch
Division of Environmental Planning and Protection
U.S. Environmental Protection Agency, Region II
290 Broadway [22nd floor]
New York, NY 10007-1866

b) One (1) copy of all submittals except for that specific only to corrective action to:

Chief, Bureau of Hazardous Waste Regulation
Division of Solid & Hazardous Materials
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7251

This includes all submittals pertaining to the permitted hazardous waste management units. For submittals pertaining to the waste reduction requirements of Section I, the submittal of two (2) copies to the above address is required.

c) Two (2) copies of all corrective action documents to:

Chief, Bureau of Hazardous Waste & Radiation Management
Division of Solid & Hazardous Materials
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7258

d) One copy of the application to renew or modify this Permit must be submitted to the following, in addition to the above addresses:

Regional Permit Administrator
NYS Department of Environmental Conservation
Region 4 Office
1130 North Westcott Road
Schenectady, NY 12306

2. The Permittee shall submit plans, reports, specifications, implementation schedules and any subsequent amendments required by this Permit to the Department for review and comment. If the Department determines that any plan, report, specification, schedule or respective

amendment required by this Permit is deficient either in whole or in part, the Permittee shall either promptly respond to the comments or make revisions to the submission consistent with the Department's comments. Within a reasonable time frame specified by the Department, a final plan, report, specification, schedule or respective amendment shall be submitted to the Department for approval. An extension of the due date for any submittal may be granted by the Department based on the Permittee's documentation that sufficient justification for the extension exists.

I. WASTE REDUCTION REQUIREMENTS

The Permittee shall comply with the requirements of Article 27, Title 9, Section 27-0908 of the New York State Environmental Conservation Law. All reports and submittals required by Section 27-0908 to be submitted to the Commissioner shall be sent to the addresses specified in Section H above.

J. DEFINITIONS

For the purpose of this Permit, terms used herein shall have the same meaning as those in 6NYCRR 370 through 374 and 376 and the terms defined in this Permit, unless this Permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

1. Action Levels. For purposes of this Permit, action levels are hazardous constituent concentrations for a specific environmental medium which if exceeded indicate a potential threat to human health or the environment. The exceedance of action levels may trigger further investigations, studies, and corrective measures. Where available, action levels are based on appropriate promulgated standards established for a specific environmental medium. When promulgated standards are not available, action levels can be media-specific hazardous constituent concentrations derived from non-promulgated human health risk data or environmental risk data with the latter levels being protective of aquatic life or wildlife. An action level may be set at the background level for a hazardous constituent for which data are inadequate to set a human health or environmental health-based level.

2. Areas of Concern (AOC). Pursuant to the authority granted by 6NYCRR 373-1.6(c)(2), an area of concern has been defined for purposes of this Permit to mean an area at the facility, or an off-site area, which is not at this time known to be a solid waste management unit (SWMU), where hazardous waste and/or hazardous constituents are present, or are suspected to be present, as a result of a release from the facility. The term shall include areas of potential or suspected contamination as well as actual contamination. Such area(s) may require study and a

determination of what, if any, corrective action may be necessary. All permit references to and conditions for SWMUs shall apply to areas of concern.

3. Environment. Pursuant to ECL Article 27, Title 9, Section 27-0901, environment means any water, water vapor, any land including land surface or subsurface, air, fish, wildlife, biota and all other natural resources.

4. Release. For purposes of this Permit, release includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment of any hazardous waste, including hazardous constituents, unless expressly authorized under the terms of this Permit or otherwise permitted under law (e.g., SPDES permitted discharges).

5. Solid Waste Management Unit (SWMU). For purposes of this Permit, SWMU includes any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of hazardous or solid wastes. Such units include any area at the facility at which solid wastes have been routinely and systematically released.

PART 373 PERMIT
MODULE II - CORRECTIVE ACTION REQUIREMENTS
FOR SOLID WASTE MANAGEMENT UNITS AND
AREAS OF CONCERN

A. APPLICABILITY

1. Statute and Regulations. Article 27, Title 9, Section 27-0913, and 6NYCRR 373-2.6(l) requires corrective action, including Corrective Action beyond the facility boundary where necessary to protect human health and the environment, for all releases of hazardous wastes, including hazardous constituents, from any solid waste management unit ("SWMU") at a storage, treatment or disposal facility seeking a 6NYCRR Part 373 permit, regardless of the time at which waste was placed in such unit. Pursuant to 6NYCRR 373-1.6(c)(2) the Commissioner may impose permit conditions as the Commissioner determines necessary to protect human health and the environment (e.g., Areas of Concern (AOC(s))).

2. Solid Waste Management Units and Areas of Concern. The conditions of this Module apply to:

   (a) All the SWMUs and AOCs listed in this Module individually or in combinations;

   (b) Any additional SWMU(s) and AOC(s) identified during the course of groundwater monitoring, field investigations, environmental audits or other means as described in Module Condition C. below;

   (c) SWMUs and AOCs located on-site and/or off-site are identified in Table II-1:

Table II-1

Solid Waste Management Units/ Areas of Concern (SWMUs/AOCs)		Action
Number	**SWMUs/AOCs**	**NFA/RFI**
1	Tank Storage (LLGF, SLGF processing Building, In-ground Storage and Equalization tanks)	RFI Phase-I
2	Kiln Supply Pump house	NFA
3	Incinerator/Energy Recovery Units	NFA

4	Surface Impoundments (Settling Pond and Adjacent De-watering Area)	RFI Phase- II*
5	Waste Piles Areas 1 Thru 5	RFI Phase-I**
6	Filter/Tank Sludge Storage Areas	NFA
7	Tanker/Truck Roll off Staging Area	RFI Phase-I
8	Employee Parking Lot discharge Area & Floor Drain	RFI- Phase I
9.	Shale Fine Land Fill	RFI Phase II***
10.	Shale Fine Leachate Pond	NFA
11.	Interim Waste Water Treatment/Sludge Container Staging Area	RFI-Phase I
12.	Transformer Pad Vicinity and Scrap Yard Area Soils	RFI-Phase II
13.	Salt Kill Creek	NFA
14.	North and East Site Perimeter Fence Area	RFI-Phase I
15.	Maintenance Garage	NFA
16.	Quarry Pond	RFI-Phase I
17.	Industrial Sewers/Hazardous Waste Feed Pipelines	RFI-Phase I‡

* South End Only, **Waste Piles 1, 3, 4 and 5, NFA-No Further Action, RFI-RCRA Facility Investigation, *** Continued Groundwater Monitoring, ‡ see appendix E

(d) The Permittee need not undertake corrective action at any aforementioned SWMU(s) and/or AOC(s) identified in Table II-1 as No Further Action (NFA) provided there is no evidence of the release(s) of hazardous waste(s) or constituent(s) from the SWMU(s) and/or AOC(s) threatening human health or the environment.

(e) A determination of No Further Action shall not preclude the Commissioner from modifying this Permit at a later date to require further investigations, studies, monitoring, or corrective measures, if new information or subsequent analysis indicates the release(s) or likelihood of release(s) that could pose a threat to human health or the environment.

B. STANDARD CONDITIONS FOR CORRECTIVE ACTION

1. Work Plans. All work plans submitted pursuant to this Module shall include:
   (a) Quality Assurance/Quality Control protocols to ensure that data generated is valid and supported by documented procedures;
   (b) Other plans, specifications and protocols, as applicable;
   (c) A schedule for starting specific tasks, completing the work and submitting progress and final reports; and
   (d) Plans for the treatment, storage, discharge or disposal of wastes to be generated by activities described therein.

2. Quality Assurance/Quality Control.

   (a) Any laboratory to be used pursuant to such work plans required by this Module must be approved by the Commissioner prior to work plan implementation. Certification by the New York State Department of Health Environmental Laboratory Approval Program in the relevant analytical services is required.

   (b) The minimum Quality Assurance/Quality Control data and information, that shall be delivered with all sample analyses required by this Module, is detailed in Appendix A of this Permit Module. If any information/ data requirement is missing in Appendix A, the permittee shall conform to the requirements of SW-846 (latest edition).

3. Health/Safety Plans. The Permittee shall develop, according to applicable Federal, State and local requirements, and submit to the Commissioner, health and safety plans for the tasks required under this module II. This is to ensure that the health and safety of project personnel, plant personnel and the general public are protected. These plans are not subject to approval by the Commissioner.

4. Guidance Documents. When preparing the submissions described in this Permit Module, the Permittee shall take account of applicable guidance documents issued by the U.S. Environmental protection Agency and the New York State Department of Environmental Conservation in a manner reflecting reasonable technical considerations.

5. Prior Submissions. The Permittee may have already submitted portions of information, plans, or reports required by this Permit Module and its Appendices to the Commissioner pursuant to the terms of previous applications, consent orders, or plans. For those items the Permittee contends were submitted to the Commissioner, the Permittee may cite the specific document(s) it believes adequately addresses each of the individual items requested by this Permit Module and its Appendices. The references, by document(s) shall be placed in the appropriate sections of the submissions that require the referenced information and data. If the Commissioner, determines that it does not possess any of the referenced information, plans, or reports that the Permittee claims were previously submitted, the Commissioner will notify the

Permittee and the Permittee shall submit the referenced documents within the time frame specified within the notification.

6. Compliance Schedule For Interim Corrective Measures (ICMs).

(a) If at any time it is determined by the Commissioner that a release or, based on site-specific circumstances, a threatened release of hazardous wastes, including hazardous constituents from a SWMU, an AOC or a combination of SWMUs ans/or AOCs poses a threat to human health or the environment, or that such condition jeopardizes the Permittee's ability to comply with any governmental permit, a focused interim corrective measures study shall be submitted to the Commissioner for approval within thirty (30) calendar days or at such time as specified in the notice of such a determination. This study shall consider, among other relevant factors, the character, the extent, direction, the rate of release, the proximity to population, the exposure pathways, the effects of delayed action, and the evaluations of appropriate ICM(s) or the selection of a pragmatic and presumptive ICM.. Upon approval of the study by the Commissioner, the Permittee shall implement the required ICM as specified by the Commissioner. Should a selected ICM involve an engineered action; e.g., pump and treat, then its design, implementation schedule and subsequent construction completion certification shall require approvals by the Commissioner. Nothing herein precludes the Permittee from taking immediate action to address the conditions described herein and promptly notifying the Commissioner.

(b) In the event the Permittee discovers, a release or, based on site-specific circumstances, a threatened release of hazardous waste, including hazardous constituents, from a SWMU, an AOC, or a combination of SWMUs and/or AOCs , that poses a threat to human health or the environment, the Permittee shall identify interim corrective measures to mitigate this threat. The Permittee shall immediately summarize the nature and magnitude of the actual or potential threat and nature of the ICM being considered and notify the Commissioner. Within thirty (30) calendar days of notifying the Commissioner, the Permittee shall submit to the Commissioner, for approval, a focused CMS and follow the progression of events identified in Module Condition B. 6(a) above.

(c) The following factors may be considered by the Commissioner or the Permittee in determining the need for interim corrective measures:
(i) Time required to develop and implement a final corrective measure;
(ii) Actual and potential exposure of human and environmental receptors;
(iii) Actual and potential contamination of groundwater and sensitive ecosystems;
(iv Concentration of hazardous constituents, in soils that have the potential

to migrate to the air, groundwater or surface water; and

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

7. Determination of No Further Action.

(a) Based on the results of an RFI for a particular SWMU, an AOC, or combination of SWMUs, and/or AOCs, and other relevant information, the Permittee may submit an application to the Commissioner for a major permit modification in accordance with 6 NYCRR Part 373 permit modification regulations identified in Module I of this Permit to terminate the subsequent corrective action requirements of this Module. This permit modification application must contain information demonstrating no release(s) of hazardous wastes, including hazardous constituents, from the SWMU(s) and/or AOC(s) that pose a threat to human health or the environment.

(b) If, based upon review of the Permittee's request for a permit modification, the results of the RFI, and other information, including comments received during the forty-five (45) calendar day public comment period required for permit modifications, the Commissioner determines that the release(s) or the suspected release(s) investigated either are non-existent or do not pose a threat to human health or the environment, the Commissioner may grant the requested modification.

(c) A determination of no further action shall not preclude the Commissioner from implementing the following actions:

(i) Modifying this Permit at a later date to require the Permittee to perform such investigations as necessary to comply with the requirements of this Permit Module and its Appendices if new information or subsequent analysis indicates that there are, or are likely to be, releases from SWMUs/AOCs that may pose a threat to human health or the environment; and

(ii) Requiring continual or periodic monitoring of air, soil, groundwater, or surface water/sediment or subsurface gas, if necessary, to protect human health and the environment, when site-specific circumstances indicate the release(s) of hazardous waste, including hazardous constituents, are likely to occur from any SWMU(s) and/or AOC(s).

8. Compliance Schedule For Reporting And Submissions.

(a) The Permittee shall submit, to the Commissioner, signed progress reports, as specified in approved work plans pursuant to this Permit, of all activities (i.e.,

SWMU Assessment, Interim Measures, RCRA Facility Investigation, Corrective Measures Study) conducted pursuant to the provisions of the Corrective Action Compliance Schedules of this Permit Module, beginning no later than thirty (30) calendar days after the Permittee is first required to begin implementation of any requirement herein. These reports shall contain:

(i) A description of the work completed during the reporting periods
(ii) Summaries of all findings made during the reporting period;
(iii) Summaries of all changes made during the reporting period;
(iv) Summaries of all contacts made with representatives of the local community and public interest groups during the reporting period;
(v) Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;
(vi) Changes in personnel conducting or managing the corrective action activities during the reporting period;
(vii) Projected work for the next reporting period; and
(viii) Copies of daily reports, inspection reports, laboratory/monitoring data, etc., generated during the reporting period.

(b) Upon request, copies of other relevant reports and data not identified in Module Condition B.8.(a) shall be made available to the Commissioner.

(c) The Commissioner may require the Permittee to conduct new or more extensive assessments, investigations, or studies, based upon information provided in the progress reports referred to in Module Condition B.8(a) above, or upon other supporting information.

(d) All work plans, reports, studies, designs and schedules required by the conditions of this Permit Module and Attachment B are upon approval of the Commissioner, incorporated into this Permit by reference and become an enforceable part of this Permit. Any noncompliance with such approved work plans, reports, studies, designs and schedules shall constitute noncompliance with this Permit. Extensions of the specified final compliance dates for submissions may be granted by the Commissioner in accordance with the major permit modification procedures stipulated in Module I of this Permit.

9. Compliance with Governmental Requirements.

During investigative activities, interim corrective measures, and final corrective measures, (including, but not limited to, equipment decommissioning, excavation and unit demolition) required under this Module, the Permittee shall ensure that the transportation, treatment, storage, discharge, and disposal of all contaminated materials generated as a result of such activities (including, but not limited to, soils, sediments, liquids, tanks, pipes, pumps, rubble, debris, and structural materials) are performed in an environmentally sound manner pursuant to all applicable Federal,

State and local requirements and that is protective of public health and the environment. Nothing in this Module shall be construed to require the Permittee to proceed in a manner which is in violation of any such requirements.

10. Notifications.

(a) Notification of groundwater contamination. If at any time the Permittee discovers that hazardous constituents in groundwater that may have been released from a SWMU or AOC at the facility have migrated beyond the facility boundary in concentrations that exceed action levels, the Permittee shall, within fifteen (15) calendar days of discovery, provide written notice to the Commissioner and any person who owns or resides on the land which overlies the contaminated groundwater.

(b) Notification of air contamination. If at any time the Permittee discovers that hazardous constituents in air have been released from a SWMU or AOC at the facility have or are migrating to areas beyond the facility boundary in concentrations that pose a threat to human health, and that residences or other places at which continuous, long-term exposure to such constituents might occur are located within such areas, the Permittee shall, within fifteen (15) calendar days of such discovery:

(i) Provide written notification to the Commissioner; and

(ii) Initiate any actions that may be necessary to provide notice to all individuals who have or may have been subject to such exposure.

(c) Notification of residual contamination. If hazardous wastes or hazardous constituents in solid waste management units or areas of concern, or which have been released from a SWMU or AOC, will remain in or on the land, including groundwater, after the term of the permit has expired, the Commissioner may require the Permittee to record a notation in the deed to the facility property or in some other instrument which is normally examined during title search that will, in perpetuity, notify any potential purchaser of the property of the types, concentrations, and locations of such hazardous wastes or hazardous constituents. The Commissioner may require such notice as part of the corrective measures selection process.

C. COMPLIANCE SCHEDULE FOR ASSESSMENT OF NEWLY IDENTIFIED SWMUS AND AOCS.

1. Notification of Assessment. The Permittee shall notify the Commissioner, in writing, of any additional SWMU(s) and/or AOC(s) not listed in this Module, which are identified during the course of groundwater monitoring, field investigations, environmental audits, or other means within fifteen (15) calendar days after discovery.

2. SWMU/AOC Assessment Report. Within thirty (30) calendar days after notifying the Commissioner, the Permittee shall submit a SWMU/AOC Assessment Report. This Report must provide, at a minimum, the following information for each newly identified SWMU/AOC:
   (a) Type and function of unit/area;
   (b) Location of each unit/area on a topographic map of appropriate scale;
   (c) Dimensions, capacities, and structural descriptions of the unit/area (supply available engineering drawings);
   (d) Dates that the unit/area was operated;
   (e) Description of the wastes that were placed or spilled at the unit/area;
   (f) Description of any known releases from the unit/area (to include groundwater data, soil analyses, air monitoring data, and/or surface water/sediment data);
   (g) The results of any sampling and analysis required for the purpose of determining whether releases of hazardous wastes, including hazardous constituents, have occurred, are occurring, or are likely to occur from the unit/area; and
   (h) Whether this unit/areas, individually or in combination with other units/areas described in Module Condition A.2. is a significant source of contaminant release.

3. SWMU/AOC Sampling and Analysis Plan. Within thirty (30) calendar days after submittal of the SWMU/AOC Assessment Report required in Module Condition C.2., the Permittee shall submit to the Commissioner for approval a Plan in accordance with the most recent version of the NYS RCRA Quality Assurance Project Plan Guidance, for any sampling and analysis of groundwater, land surface and subsurface strata, surface water/sediment or air, as necessary to determine whether a release of hazardous waste, including hazardous constituents, from such unit(s) and/or area(s) has occurred, is likely to have occurred, or is likely to occur. The SWMU/AOC Sampling and Analysis Plan must demonstrate that the sampling and analyses program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste, including hazardous constituents, from the newly-discovered SWMU(s) and/or AOC(s) to the environment.

4. Subsequent Assessment Actions. Following submission of the SWMU/AOC Assessment Sampling and Analysis Plan set forth in Module Condition C.3., subsequent activities for the Plan shall proceed in accordance with the following schedule:

   (a) Meeting between the Permittee, and the New York State Department of Environmental Conservation (Department) to discuss Plan comments, as appropriate; and

   (b) Submission of a revised Plan to the Commissioner for approval within thirty

(30) calendar days of the above-described meeting. (If the above referenced meeting is determined not to be necessary, the Permittee shall submit a revised Plan to the Commissioner, according to a schedule specified by the Department, not to exceed forty-five (45) calendar days after Permittee's receipt of Plan comments from the Commissioner); and

(c) Begin implementation of the SWMU/AOC Sampling and Analysis Plan within thirty (30) calendar days following written approval from the Commissioner for the Plan.

5. SWMU/AOC Sampling and Analysis Report. Within thirty (30) calendar days of receipt by the Permittee of validated analytical data generated under the approved SWMU/AOC Sampling and Analysis Plan, the Permittee shall follow reporting requirements in the approved Plan and submit a SWMU/AOC Sampling and Analysis Report to the Commissioner. The Report shall describe all results obtained from the implementation of the approved Plan.

6. Assessment Conclusions. Based on the results of the SWMU/AOC Sampling and Analysis Report, the Commissioner shall determine the need for further investigations at the specific unit(s) covered in the SWMU/AOC Assessment Report. If the Commissioner determines that such investigations are needed, the Commissioner shall, by written notification, require the Permittee to prepare and submit for approval a RCRA Facility Investigation Work Plan, including an implementation schedule. Following the implementation of the RFI Work Plan the Permittee shall submit for approval the RFI Report. If the Commissioner after reviewing the RFI Report determines that a Corrective Measures Study (CMS) or an Interim Corrective Measures (ICM) is required the Commissioner shall, by written notification, require the Permittee to prepare and submit for approval the CMS and/or ICM, including implementation schedules. All approved submissions submitted pursuant to this Permit condition shall be made part of this Permit.

D. COMPLIANCE SCHEDULE AND NOTIFICATION REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES AT SWMUS AND AOCS.

The Permittee shall notify the Commissioner, in writing, of any newly discovered release(s) of hazardous **wastes, including hazardous constituents, discovered during the course of** groundwater monitoring, field investigation, environmental auditing, or other activities no later than fifteen (15) calendar days after discovery. Such newly-discovered release(s) may be from the newly-identified unit(s)/area(s), from the unit(s)/area(s) for which, based on the findings of the RFA, the Commissioner had previously determined that no further investigation was necessary, or from the unit(s)/area(s) investigated as part of an RFI. Based on the information provided in the notification, the Commissioner shall determine the need for further investigation of the release(s). If the Commissioner determines that such investigations are needed, the Commissioner shall, by written notification, require the

Permittee to prepare a RCRA Facility Investigation Work Plan, including an implementation plan. *Following the implementation of the RFI Work Plan the Permittee shall submit for approval the RFI Report. If the Commissioner after reviewing the RFI Report determines that a Corrective Measures Study (CMS) or an Interim Corrective Measures (ICM) is required the Commissioner shall, by written notification, require the Permittee to prepare and submit for approval the CMS and/or ICM, including implementation schedules. All approved submissions submitted pursuant to this Permit condition shall be made part of this Permit.*

E. CORRECTIVE ACTION REQUIREMENTS.

1. Compliance Schedule For RCRA Facility Investigation (RFI) Work Plan At Accessible SWMUs and AOCs.

   (a) On the basis of the RCRA Facility Assessment-Preliminary Review dated December 1991(as revised), Part 373 renewal permit application dated 1996, March 31,1997 NYSDEC Central Office letter to Norlite Corporation, other reports/documents prepared for the facility and the site inspection on June 1, 2004, the Commissioner has determined that there has been a release of hazardous waste and/or constituents from the following SWMU(s), or combination of SWMU(s), and/or AOC(s) identified in Module Condition A.2. that require the implementation of an RFI:

Solid Waste Management Units/ Areas of Concern (SWMUs/AOCs)		
Number	**SWMUs/AOCs**	**Action**
1	**Tank Storage Area (LLGF, SLGF processing building, In-ground Storage and Equalization tanks)**	**RFI-Phase I**
2	**Surface Impoundments (Settling Pond and Adjacent De-watering Area)-South End**	**RFI-Phase II**
3	**Waste Piles Areas 1, 3,4 and 5**	**RFI-Phase I**
4	**Tanker/Truck Roll off Staging Area**	**RFI-Phase I**
5	**Employee Parking Lot Discharge Area & Floor Drain**	**RFI-Phase I**
6.	**Shale Fine landfill**	**RFI Phase II***

7.	**Interim Waste Water Treatment/Sludge Container Staging Area**	**RFI-Phase I**
8.	**Transformer Pad and Scrap Yard Area Soils**	**RFI- Phase II**
9.	**North East Site Perimeter Fence Area**	**RFI-Phase I**
10.	**Quarry Pond**	**RFI-Phase I**
11.	**Industrial Sewers/Hazardous Waste Feed Pipelines**	**RFI-Phase I** ‡

*Continued Groundwater Monitoring, ‡ see appendix E

(b) Within 90 calendar days of the effective date of this Permit, for the SWMU(s) and/or AOC(s) identified in Module Condition E.1(a), the Permittee shall submit to the Commissioner for approval a RCRA Facility Investigation Work Plan, based on outlines included in appendices B and E of this permit.

(c) Following submission of the RFI Work Plan subsequent activities for the Plan shall proceed in accordance with the following schedule:

(i) Meeting between the Permittee and the Department to discuss Plan comments, as appropriate; and

(ii) Submission of a revised Plan to the Commissioner for approval within thirty (30) calendar days of the above-described meeting. (If the above-referenced meeting is determined not to be necessary, the Permittee shall submit a revised Plan to the Commissioner, according to a schedule specified by the Department, not to exceed forty-five (45) calendar days after Permittee's receipt of Plan comments from the Commissioner).

2. Compliance Schedule For RCRA Facility Investigation (RFI) Work Plan At Inaccessible SWMUs and/or AOCs.

On the basis of the RCRA Facility Assessment-Preliminary Review dated December 1991, as revised), Part 373 renewal permit application dated 1996, March 31,1997 NYSDEC Central Office letter to Norlite Corporation and other reports/documents prepared for the facility, there are **no inaccessible** SWMUs and/or AOCs identified in Module Condition A.2. at present time, that require the implementation of an RFI.

3. Compliance Schedule For RCRA Facility Investigation (RFI) Work Plan Implementation, RFI Report And Summary Report Submissions.

(a) No later than thirty (30) calendar days after written notification by the Commissioner approving the RFI Work Plan, the Permittee shall begin implementation of the Plan according to the schedules made part of the approved RFI Work Plan.

(b) Within sixty (60) calendar days of receipt by the Permittee of validated analytical data generated under the approved RFI Work Plan, the Permittee shall submit to the Commissioner for approval the RFI Final Report and Summary Report. The RFI Final Report must contain adequate information to support further corrective action decisions at the facility and/or off-site, should such actions be necessary. The RFI Final Report shall describe the procedures, methods, and results of all facility investigations of SWMUs and AOCs and their releases, including information on the type and extent of contamination at the facility and/or off-site, sources and migration pathways, and actual or potential receptors. It shall present all information gathered under the approved RFI Work Plan.

(c) Following submission of the RFI Report and Summary Report set forth in Module Condition E.3.(b), subsequent activities for the Reports shall proceed in accordance with the following schedule:

(i) Meeting between the Permittee and the Department to discuss Report comments, as appropriate; and

(ii) Submission of a revised Reports to the Commissioner for approval within forty-five (45) calendar days of the above-described meeting. (If the above-referenced meeting is determined not to be necessary, the Permittee shall submit revised Reports to the Commissioner, according to a schedule specified by the Department, not to exceed forty-five (45) calendar days after Permittee's receipt of Report comments from the Commissioner).

(d) After the Commissioner approves the RFI Final Report the Permittee shall, within thirty (30) calendar days of receipt of approval, notify all individuals on the facility mailing list established by the Permittee of the availability of the RFI Final Report. The RFI report must be retained and made available in a single centralized and easily accessible location. The Permitte shall also mail a copy of the approved Summary Report to all individuals on the facility mailing list who desire to receive such report. The approved notification concerning RFI report must clearly state and describe the process by which the RFI summery report can be requested by the interested parties.

4. Compliance Schedule For Interim Corrective Measures (ICMs).

(a) The Commissioner has identified the following ICM(s) to be implemented by the Permittee:

None Identified at present time

(b) The permittee shall submit for approval an interim corrective measure work plan, the design and construction implementation schedule for the ICM within thirty (30) calender days after notification from the commissioner requiring implementation of interim corrective measure or after notifcation to the commissioner of the actual or potential threat to human health or environment.

(c) The Permittee must submit to the Commissioner thirty (30) calendar days after the ICM Design Plan approval , documents establishing financial assurance for conducting the interim measures. The Permittee must continue to demonstrate financial assurance unless otherwise notified by the Commissioner.

5. Requirements For A Corrective Measures Study (CMS).

(a) Should a CMS that evaluates alternative remedies be required, the Commissioner shall notify the Permittee in writing when the CMS will be submitted. The submission time will take into consideration the extent of the remediation that needs to be implemented. This notice shall identify the hazardous constituent(s) which have exceeded target cleanup level(s) that are considered a threat to human health and the environment given site specific exposure conditions or due to additive exposure risk. The notification shall specify the target cleanup levels for hazardous constituents detected in each medium of concern, and may also specify corrective measure alternatives to be evaluated by the Permittee during the CMS. The CMS shall:

(i) Summarize the results of the investigations and, if applicable, of any bench-scale or pilot tests conducted;

(ii) Provide a detailed description of the corrective measures evaluated and include an evaluation of how each corrective measure alternative meets the standards set forth in Module Condition E.6.(a); and

(iii) Contain any additional information to support the Commissioner in the corrective measure selection decision-making process, described under Module Condition E.6.

(b) The Permittee will not need to prepare and submit for approval a CMS that evaluates remedial alternatives when the Department and the Permittee agree that a pragmatic and presumptive remedy. The Permittee shall instead submit a focused CMS that includes a conceptional design for this presumptive remedy and explain how it meets the pertinent requirements of Condition E.6., within sixty (60) calender days following notification by the Department.

6. Corrective Measure(s) Selection.

(a) Based on the information presented in the CMS, and any further evaluations of additional corrective measures under this study, the Commissioner shall select the corrective measure(s) that at a minimum will meet the following standards:

(i) Be protective of human health and the environment;

(ii) Attain media target cleanup levels selected by the Commissioner during the corrective measures selection process;

(iii) Control the source(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases of hazardous waste, including hazardous constituents, that might pose a threat to human health and the environment; and

(iv) Meet all applicable waste management requirements.

(b) In selecting the corrective measure(s) which meets the standards for corrective measures established under Module Condition E.6.(a), the Commissioner shall consider the following evaluation factors, as appropriate:

(i) Long-term reliability and effectiveness. Any potential corrective measure(s) may be assessed for the long-term reliability and effectiveness it affords, along with the degree of certainty that the corrective measure(s) will prove successful. Factors that shall be considered in this evaluation include:

(1) Magnitude of residual risks in terms of amounts and concentrations of hazardous waste, including hazardous constituents, remaining following implementation of the corrective measure(s), considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes, including hazardous constituents:

(2) The type and degree of long-term management required, including monitoring and operation and maintenance;

(3) Potential for exposure of humans and environmental receptors to remaining hazardous wastes, including hazardous constituents, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal or containment;

(4) Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated hazardous wastes, including hazardous constituents, and their residuals; and

(5) Potential need for replacement of the corrective measure(s).

(ii) Reduction of toxicity, mobility or volume. A potential corrective measure(s) may be assessed as to the degree to which it employs

treatment that reduces toxicity, mobility or volume of hazardous wastes, including hazardous constituents. Factors that shall be considered in such assessments include:

(1) The treatment processes the corrective measure(s) employs and materials it would treat;

(2) The amount of hazardous wastes, including hazardous constituents, that would be destroyed or treated;

(3) The degree to which the treatment is irreversible;

(4) The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes, including hazardous constituents; and

(5) All concentration levels of hazardous waste, including hazardous constituents, in each medium that the corrective measure(s) must achieve to be protective of human health and the environment.

(iii) The short-term effectiveness of a potential corrective measure(s) may be assessed considering the following:

(1) Magnitude of reduction of existing risks;

(2) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a corrective measure(s), including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment; and

(3) Time until full protection is achieved.

(iv) Implementability. The ease or difficulty of implementing a potential corrective measure(s) may be assessed by considering the following types of factors:

(1) Degree of difficulty associated with constructing the technology;

(2) Expected operational reliability of the technologies;

(3) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(4) Availability of necessary equipment and specialists;

(5) Available capacity and location of needed treatment, storage and disposal services; and

(6) Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the corrective measure(s).

(v) Cost. The types of costs that may be assessed include the following:

(1) Capital costs;

(2) Operation and maintenance costs;

(3) Net present value of capital and operation and maintenance costs; and

(4) Potential future corrective measure costs.

7. Compliance Schedule For Corrective Measures Study ("CMS") Scope of Work and Report

(a). The Commissioner shall notify the Permittee in writing when the CMS will be submitted. The submission time will take into consideration the extent of the remediation that needs to be implemented. The permittee shall submit for approval a CMS Plan within sixty (60) calendar days after the written notification by the Commissioner for a CMS.

(b). The permittee shall submit for approval revisions to the CMS Plan within thirty (30) calendar days after meeting with the Department to discuss Plan comments, or within forty-five (45) calendar days when no meeting is scheduled.

(c). The Permittee shall begin to implement the CMS Plan within Sixty (60) calendar days following written approval of the CMS Plan.

8. Compliance Schedule For CMS Final Report.

(a). The Permittee shall submit for approval a CMS Final Report within Sixty (60) calendar days after completion of the CMS.

(b). The Permittee shall submit for approval revisions to the CMS Final Report within thirty (30) calendar days after meeting with the Department to discuss Report comments or within forty-five (45) calendar days when no meeting is scheduled.

9. Permit Modification for Corrective Measure(s).

(a) Based on information the Permittee submits in the RFI Report, the CMS and other information, the Commissioner will propose the final corrective measure(s) and public notice a major permit modification in accordance with 6 NYCRR Part 373 permit modification regulations identified in Module I of this Permit. The major permit modification and a Statement of Basis (SB) discussing the proposed final corrective measure(s) will be public noticed together.

(b) Within thirty (30) calendar days after this Permit modification has been issued, the Permittee shall demonstrate in writing to the Commissioner financial assurance for completing the approved final corrective measure(s).

10. Modification of the Compliance Schedules.

(a) If at any time the Permittee determines that modification of any Compliance Schedule of this Permit Module, including Attachment B, is necessary because such schedules cannot be met, the Permittee must:

(i) Notify the Commissioner with proposed modifications within fifteen (15) calendar days of determining that a schedule cannot be met.; and

(ii) Provide an explanation why the current schedule cannot be met.

(b) The Commissioner shall notify the Permittee in writing of the final decision regarding the Permittee's proposed modification to the Compliance Schedule.

(c) Modifications to the Compliance Schedule for non-specific final compliance dates pursuant to this procedure does not constitute a re-issuance of this Permit. However, any modification to extend a specific final compliance date will be considered a major permit modification and will be processed in accordance with 6 NYCRR Part 373 permit modification regulations identified in Module I of this Permit.

(d) All other modifications to this Permit Module must be made in accordance with Module I of this Permit.

PART 373 PERMIT
Module II: Appendix-A

COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

A Report Narrative should accompany each submission, summarizing the contents, data and QA/QC results and all relevant circumstances of the work.

A. Parameter requested.

B. Sample Number or Numbers, Matrix, and:

1. Date and time collected;
2. Date extracted and/or digested;
3. Date and time analyzed; and
4. Chain of custody report and/or form, including confirmation of unbroken chain of custody, intact sample packaging and container seals and adequate temperature and/or other preservation.

C. Results [b,e,f]

1. Sample Results;
2. Duplicate;
3. Blanks[a];
4. Matrix Spike; matrix spike duplicate; blank spike; and
5. Surrogate recoveries, if applicable.

D. Supporting QA/QC[b]

1. Methodology;
2. Method detection limits, instrument detection limits[c];
3. Linear curves[d];
4. Percent solids for soils, sludges, sediments, and where otherwise applicable;
5. Calculations[d];
6. Cleanup procedures;
7. Data validation procedures, results, and completed data validation checklists; and
8. Documentation which illustrates how blank water is determined to be analyte-free.

In addition to submitting the above, all sample data and its QA/QC data as specified in

SW-846, latest edition, Chapter 1, must be maintained accessible to NYSDEC either in hard copy or on magnetic tape or disk (computer data files). The data, if requested by NYSDEC, should be formatted as described in SW-846, latest edition, Chapter 1. This requirement may be changed in the future to mandate computer data files, accessible to NYSDEC on request.

This does not obviate the requirement to do the QA/QC specified in each individual EPA-approved method.

Components for RCRA submissions for non-contract Lab Protocols.
If CLP, then CLP deliverables are required, unless otherwise stated in the approved plan.

a The data should include all blanks (trip, equipment rinse, method and instrument blanks) as specified in the sampling and analysis plan, guidance and regulation.

b Supporting QA/QC should be specific to the RCRA samples analyzed.

c Every effort practicable must be made to achieve detection limits below regulatory limits and comparable to or better than the Practical Quantification Limits specified in the EPA-approved methods. In no case, will reporting limits above the specified PQL's be accepted without extensive and complete documentation to the Department.

d These may not need to be submitted if adequate QA/QC summaries validating the data, including calibration control charts, correlation coefficients, etc., are submitted. The Report Narrative should describe the data validation and explain discrepancies. The supporting data should be provided to NYSDEC upon request, without restriction. Calibration data must include date and time of analysis.

e Frequencies of blanks, duplicates, spikes, surrogates, calibrations, standard reference materials, etc., should be as stated in the approved sampling and analysis plan, the approved analytical methods and the SW-846 latest edition, Chapter 1, requirements. If there are any perceived conflicts, these should be resolved with NYSDEC in advance of sampling.

f Spiking for metals, organics or other parameters must be done before sample preparation (i.e. before digestions, extractions etc.) unless otherwise stated in the approved plan. Furnace analysis for metals will still require post-digestion spikes on all samples analyzed by this technique.

PART 373 PERMIT
Module II: Appendix-B

Scope of Work For A
RCRA Facility Investigation

I. INTRODUCTION

The permittee shall undertake a RCRA Facility Investigation ("RFI") that should include the development of several component plans and supporting reports relevant to the specific investigations to be undertaken pursuant to this Permit. Component plans and reports must be prepared and submitted in accordance with the Compliance Schedules in Module Condition E. and Appendix D of this Part 373 permit.

The purpose of this RFI is to characterize the nature, extent, direction, rate, movement and concentration of releases of hazardous waste and/or constituents from Solid Waste Management Units and Areas of Concern at the facility including areas off-site impacted by the release(s) from the facility and to gather all necessary data to support the Corrective Measures Study. This Appendix is to serve as guidance for conducting an RFI. Therefore, all of the material addressed in this Appendix may not apply to the units or areas to be investigated by the Respondent. The Respondent should consult with Department representatives before beginning the RFI process regarding which Appendix items need to be addressed during the investigations. The permittee shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA Facility Investigation.

The RFI Scope of Work includes several tasks:

Task I: A report on the Description of Current Conditions.

Task II: A report on the Pre-Investigation Evaluation of Corrective Measures.

Task III: RFI Management Plans including:

A. The Project Management Plan;
B. The Data Management Plan;
C. The Quality Assurance Project Plan;
D. The Health and Safety Plan; and
E. The Community Relations Plan.

Task IV: The Facility Investigation.

Task V: Investigative Analysis.

Task VI: Laboratory, Bench Scale, and Pilot Studies.

Task VII: Reports.

The report on Description of Current Conditions should comprise all available and relevant information and data on the facility's background, SWMU(s) and AOC(s) characterization, nature and extent of contamination, potential receptors, and prevailing corrective action implementation. Data and information gathered during any previous investigations, remediations, or inspections and other relevant data should be included in the submittal. That information and data may then be used to focus subsequent field investigations and development of the respective work plans for the SWMU(s) and AOC(s) to be investigated as part of this Permit. If the permittee maintains that relevant information and data has been submitted, the Respondent should cite such submittal(s). The permittee shall refer to Module Condition B.5. on addressing prior submittals.

The report on Pre-Investigation Evaluation of Corrective Measures will identify potential technologies that may be considered by the permittee for subsequent implementation. These alternative technologies will focus the RFI to collect the necessary data for their proper evaluation.

The RFI Management Plans shall provide the necessary information that will assure that the following objectives are met:

- Proper management of all aspects of the RFI project including tracking of project milestones. Schedules and tracking methods shall be established for RFI tasks and report submittals (Project Management Plan);

- Satisfactory presentation of data and results developed by the RFI. Data management procedures shall be established to effectively process data such that relevant data descriptions are readily accessible and accurately maintained (Data Management Plan);

- Generation of valid data during the RFI investigation. QA/QC procedures shall be established to describe and document data quality (Quality Assurance Project Plan);

- Implementation of appropriate health and safety measures during the RFI. Health and safety procedures shall be established to ensure the health and safety of the investigative team(s) and the general public during the RFI (Health and Safety Plan); and

- Provision for informing the community of the results of the RFI (Community Relations Plan).

The Facility Investigation shall focus on procedures and techniques that will be utilized during field investigations to characterize the environmental setting and the contaminant release(s) from the SWMU(s) and AOC(s). Characterization of the environmental setting

will be necessary to determine monitoring locations and to aid in defining the boundaries of the contaminated unit(s) and area(s). The permittee shall characterize each environmental media, as deemed necessary by the Department, to provide information that can be used to determine the rate and extent of the contaminant release(s). Characterization of the contaminant release(s) from the SWMU(s) and AOC(s) will be necessary to determine the nature, extent, direction, rate, movement and concentration of the contaminant plume(s).

Since a potentially broad spectrum of situations involving information on a specific release(s) may exist at the beginning of the RFI, a flexible, phased approach for the release investigation may be necessary. The Respondent may begin with an evaluation of existing data and propose the collection of additional data as necessary to characterize the release. The permittee may consider incorporating appropriate screening techniques, i.e., soil gas, geophysical methods, as the initial phase of field investigation for the RFI.

Based on existing data and/or data collected by appropriate screening techniques, the Respondent may develop a conceptual model of the release. This model may then be used to plan and develop subsequent investigations. The permittee shall then develop work plans for the subsequent investigative program(s), as deemed necessary by the Department, utilizing conventional monitoring techniques capable of release(s) verification and/or characterization.

An Investigative Analysis shall be carried-out on the data generated by the Facility Investigation. The analysis shall focus on the quality of data generated and on establishing the nature, extent, direction, rate, movement and concentration of contamination.

Laboratory and/or Bench Scale Studies shall be performed to assess corrective measure technologies that may be applicable for remediating the SWMU(s), the AOC(s), and the environmental contamination investigated by the permittee. The information gathered from such studies will assist the permittee in selecting the alternative technologies for evaluation during the Corrective Measures Study.

Progress reports on the Facility Investigation and Laboratory Bench Scale Studies shall be submitted quarterly in addition to a final RFI Report and Summary Report.

II. TASK I: DESCRIPTION OF CURRENT CONDITIONS

The permittee shall submit a report for Task I containing available and relevant information and data on the facility's background, SWMU(s), AOC(s), contamination, receptors, and remediation undertaken pertinent to the specific SWMU(s) and AOC(s) to be investigated as part of this Permit.

A. Facility Background

The permittee shall summarize the regional location, pertinent boundary features,

general facility physiography, geology, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. The information shall include:

1. Map(s) depicting the following:

   (a) General geographic location;

   (b) Property lines, with the owners of all adjacent property clearly indicated;

   (c) Topography and surface drainage depicting all waterways, wetlands, floodplains, water features, drainage patterns, and surface-water containment areas;

   (d) All above and underground tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;

   (e) All known past and present solid or hazardous waste treatment, storage or disposal areas;

   (f) All process sewers;

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

   (h) The locations of all production, withdrawal, and groundwater monitoring wells at the facility and within the vicinity of the facility. These wells shall be clearly labeled and ground and top of casing elevations and construction details included (these elevations and details may be included as an attachment).

All maps shall be consistent with the requirements set forth in 6NYCRR Subpart 373-1.5(a)(2)(xix) and be of sufficient detail and accuracy to locate and report all current and future work performed at the site.

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

3. Approximate dates or periods and description of past product, raw material, and waste spills; identification of the materials spilled; the amount spilled; the location where spilled; and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response.

B. SWMU and AOC Characterization

The permittee shall submit available and relevant information that will characterize the wastes, the SWMU(s) and the AOC(s) where wastes have been placed, collected or removed including: type; quantity; physical state; disposition (containment or nature of deposits); and facility characteristics affecting the release(s) (e.g., facility security, and engineered barriers). The information should include:

1. SWMU and AOC Characteristics:

   (a) Location of unit/area (located on facility map);
   (b) Type of unit/area;
   (c) Design features;
   (d) Operating practices (past and present);
   (e) Period of operation;
   (f) Age of unit/area; and
   (g) General physical conditions.

2. Waste Characteristics:

   (a) Type of waste placed in the unit/area:

      (i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);

      (ii) Quantity; and

      (iii) Chemical composition (e.g., Appendix VIII hazardous constituents).

   (b) Physical and chemical characteristics of waste and its constituents:

      (i) Physical state (solid, liquid, gas);

      (ii) Physical description (e.g., powder, oily sludge);

      (iii) Temperature;

      (iv) pH;

      (v) General chemical class (e.g., acid, base, solvent);

      (vi) Molecular weight;

      (vii) Density;

      (viii) Boiling point;

(ix) Viscosity;

(x) Solubility in water;

(xi) Cohesiveness of the waste;

(xii) Vapor pressure;

(xiii) Flash point; and

(xiv) Other relevant properties.

(c) Migration and dispersal characteristics of the waste constituents and procedures used in making the determination:

(i) Sorption;

(ii) Biodegradability, bioconcentration, biotransformation;

(iii) Photodegradation rates;

(iv) Hydrolysis rates;

(v) Chemical transformations; and

(vi) Volatilization rates.

C. Nature, Extent, Direction, Rate, Movement and Concentration of Contamination

The permittee shall submit available and relevant information on the nature, extent, direction, rate, movement and concentration of the release(s) from the SWMU(s) and the AOC(s). This information and data should include:

1. Summary of available monitoring data and qualitative information on locations and levels of contamination at the facility and within the vicinity of the facility if contamination has migrated off-site.

2. Summary of all potential contaminant migration pathways including available information on geology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality.

D. Potential Receptors

The permittee shall submit available and relevant information describing the human populations and environmental systems that are susceptible to exposure by the contaminant release(s) from the SWMU(s) and the AOC(s). Data on observable

effects or bioassays for ecosystems should accompany this submittal if available. The information shall include:

1. Local uses and possible future uses of groundwater:

   (a) Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial);

   (b) Location of groundwater users including wells and discharge areas (identify on a map); and

   (c) The well(s) pump rate(s) and the well(s) depth(s).

2. Local uses and possible future uses of surface waters draining from the facility:

   (a) Domestic and municipal (e.g. potable and lawn/gardening watering);

   (b) Recreational (e.g. swimming, fishing);

   (c) Agricultural;

   (d) Industrial; and

   (e) Environmental (e.g. fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including, but not limited to:

   (a) Recreation;

   (b) Hunting;

   (c) Residential;

   (d) Commercial;

   (e) Zoning; and

   (f) Relationship between population locations and prevailing wind direction.

4. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A description of the ecology overlying and adjacent to the facility.

6. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any endangered or threatened species near the facility.

E. Corrective Action Implementation

The permittee shall submit documentation on corrective measures (remedial measures) undertaken on-site or off-site at the facility. Remedial actions should include any interim corrective measures, RCRA closures, State or Federal Superfund activities. This documentation shall include:

1. Objectives of the remediation and how it is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility;

2. Design, construction, operation, and maintenance requirements;

3. Schedules for design, construction and monitoring; and

4. Schedule for progress reports.

III. TASK II: PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURES

The permittee shall submit a report for Task II that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.).

IV. TASK III: RFI MANAGEMENT PLANS

The permittee shall submit RFI Management Plans as part of the RFI Work Plan. The Plans shall address the methods and procedures necessary to manage the RFI, to describe data developed by the RFI, to gather and ensure valid RFI data, to protect the health and safety of investigators and the general public, and to keep the community informed about the RFI.

A. Project Management Plan

The permittee shall prepare a Project Management Plan that shall include a discussion of the management approach, schedules, and personnel utilized during the RFI. That Plan shall include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This Plan shall also document the overall management approach to the RCRA Facility Investigation that will assure

adherence to tasks and reporting schedules. The schedule for completing the RFI should reflect the schedules set forth in Module Condition E. and Appendix D. The schedule shall reflect dates for submittal of various RFI Work Plan components, dates for starting and accomplishing specific tasks associated with the RFI, and dates for reporting information from specific tasks to the Department.

B. Data Management Plan

The permittee shall prepare a Data Management Plan to document and track investigation data and results. This Plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The Plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include, but not be limited to the following:

(a) Unique sample or field measurement code;

(b) Sampling or field measurement location and sample or measurement type;

(c) Sampling or field measurement raw data;

(d) Laboratory analysis ID number;

(e) Property or component measured; and

(f) Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

(a) Unsorted (raw) data;

(b) Results for each medium, or for each constituent monitored;

(c) Data reduction for statistical analysis;

(d) Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

(e) Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

(a) Display sampling location and sampling grid;

(b) Indicated boundaries of sampling area, and areas where more data are required;

(c) Display levels of contamination at each sampling location;

(d) Display geographical extent of contamination;

(e) Display contamination levels, averages, and maxima;

(f) Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and

(g) Indicate features affecting intramedia transport and show potential receptors.

C. Quality Assurance Project Plan (QAPjP)

The permittee shall prepare a QAPjP to document each phase of investigative work and all sampling and monitoring procedures to be implemented during the RFI. The following activities shall be covered in the QAPjP: sampling, field measurements and sample analysis performed during the investigations. This Plan shall ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. The QAPjP(s) shall be developed in accordance with the following guidance documents, "RCRA Quality Assurance Project Plan Guidance," "SW-846," and "Technical Enforcement Guidance Document." The Plan shall address all of the sixteen (16) essential QA/QC elements stipulated in the "RCRA Quality Assurance Project Plan Guidance." A summary of the QA/QC elements that shall be in the Plan is found in the subsequent paragraphs.

1. Data Quality Objectives

The QAPjP shall include, but not be limited to the following:

(a) Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;

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

(c) Description of the rational used to assure that the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition or an environmental condition; and

(d) Description of the measures to be taken to assure that data sets can be compared to each other.

2. Sampling and Field Measurements

The QAPjP shall include, but not be limited to the following:

(a) Sampling and field measurement locations, depths, etc.;

(b) Collecting all necessary ancillary data;

(c) Conditions under which sampling and field measurements should be conducted;

(d) Media to be sampled and addressed by field measurements (e.g., groundwater, air, soil, sediment, etc.);

(e) Parameters to be measured and where;

(f) The frequency of sampling and field measurements and length of sampling period;

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

(h) Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

(i) Documenting field sampling and measurement operations and procedures, including;

(i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);

(ii) Procedures and forms for recording raw data and the exact location, time, and specific considerations associated with sample and data acquisition;

(iii) Documentation of specific sample preservation method;

(iv) Calibration of field devices;

(v) Collection of replicate samples and measurements;

(vi) Submission of field-biased blanks, where appropriate;

(vii) Potential interferences present at the facility;

(viii) Construction materials and techniques, associated with monitoring wells and piezometers;

(ix) Field equipment listing and sample containers;

(x) Sampling and field measurement order; and

(xi) Decontamination procedures.

(j) Selecting appropriate sample containers;

(k) Sample preservation; and

(l) Chain-of-Custody, including:

(i) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and

(ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Sample Analysis

The QAPjP shall include, but not be limited to the following:

(a) Chain-of-custody procedures, including:

(i) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;

(ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

(iii) Specification of laboratory sample custody procedures for sample handling, storage, and disbursement for analysis.

(b) Sample storage procedures and storage times;

(c) Sample preparation methods;

(d) Analytical procedures, including:

(i) Scope and application of the procedure;

(ii) Sample matrix;

(iii) Potential interferences;

(iv) Precision and accuracy of the methodology; and

(v) Method detection limits.

(e) Calibration procedures and frequency;

(f) Data reduction, validation and reporting;

(g) Internal quality control checks, laboratory performance and systems audits and frequency, including:

(i) Method blank(s);

(ii) Laboratory control sample(s);

(iii) Calibration check sample(s);

(iv) Replicate sample(s);

(v) Matrix-spikes sample(s);

(vi) "Blind" quality control sample(s);

(vii) Control charts;

(viii) Surrogate samples;

(ix) Zero and span gases; and

(x) Reagent quality control checks.

(h) Preventive maintenance procedures and schedules;

(i) Corrective action (for laboratory problems); and

(j) Turnaround time.

D. Health and Safety Plan

The permittee shall prepare a Health and Safety Plan for the protection of the investigative team(s), workers, and general public which may be exposed to hazards.

1. The Health and Safety Plan shall include, but not be limited to the following:

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

(b) Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted;

(c) List key personnel and alternates responsible for site safety, response operations, and for protection of public health;

(d) Delineate work areas;

(e) Describe levels of protection to be worn by personnel in work areas;

(f) Establish procedures to control site access;

(g) Describe decontamination procedures for personnel and equipment;

(h) Establish site emergency procedures;

(i) Address emergency medical care for injuries and toxicological problems;

(j) Describe requirements for an environmental surveillance program;

(k) Specify any routine and special training required for responders; and

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

2. The Facility Health and Safety Plan shall be consistent with:

(a) NIOSH Occupational Safety and Health Guidance Manual for

Hazardous Waste Site Activities (1985);

(b) EPA Order 1440.1 - Respiratory Protection;

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

(d) Facility Contingency Plan;

(e) EPA Standard Operating Safety Guide (1984);

(f) OSHA regulations particularly in 29 CFR §§ 1910 and 1926;

(g) State, local, and other federal agency (e.g., DOD, DOE) regulations; and

(h) Other EPA guidance as provided.

E. Community Relations Plan

The permittee shall prepare a plan on disseminating information to the public regarding investigation activities and results. The plan should identify who will be notified and will receive summary RFI reports.

V. TASK IV: THE FACILITY INVESTIGATION

The permittee shall submit a workplan that shall address the techniques and procedures necessary to characterize the environmental setting at and within the vicinity of the facility and the media-specific contamination resulting from the release(s) by the SWMU(s) and the AOC(s). The part of the workplan that addresses field sampling and measurement activities shall meet the sampling plan requirements stipulated in the "RCRA Quality Assurance Project Plan Guidance."

A. Environmental Setting

The permittee shall submit an appropriate plan on collecting information to supplement existing information on the environmental setting at the facility and in the vicinity of the facility. Sufficient information shall be collected by the permittee to characterize only those environmental media impacted by the release(s) from the SWMU(s) and the AOC(s):

1. Hydrogeology

The permittee shall conduct a program to characterize the hydrogeologic conditions at the facility and the off-site areas where contamination has migrated. The program shall provide relevant information on geology and

hydrogeology that should include, but not be limited to the following facts:

(a) A description of the regional and facility specific geologic and hydrogeologic characteristics which affect groundwater flow both beneath and within the vicinity of the facility, including:

(i) Regional and facility specific geomorphology and stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;

(ii) Structural geology: description of local and regional structural features (e.g., folds, faults, joints, and fractures);

(iii) Identification and characterization of areas and amounts of recharge and discharge;

(iv) Regional and facility specific groundwater flow patterns; and

(v) Characterize seasonal variations in the groundwater flow regime.

(b) An analysis of any topographic features that might influence the groundwater flow system.

(c) Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways (i.e., the aquifers and any intervening saturated and unsaturated units), including:

(i) Hydraulic conductivity and porosity (total and effective);

(ii) Lithology, grain size, sorting, degree of cementation;

(iii) An interpretation of hydraulic interconnections between saturated zones; and

(iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

(d) Based on field studies and cores, structural geology and hydrogeologic cross sections, a description of the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways, including:

(i) Sand and gravel deposits in unconsolidated deposits;

(ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

(iii) Zones of higher permeability or low permeability that might direct and restrict the flow of contaminants;

(iv) The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and

(v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.

(e) Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

(i) Water-level contour and/or potentiometric maps;

(ii) Hydrologic cross sections showing vertical gradients;

(iii) The flow system, including the vertical and horizontal components of flow; and

(iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

(f) A description of man-made influences that may affect the hydrogeology, identifying:

(i) Active and inactive local water-supply and production wells with an approximate schedule of pumping; and

(ii) Man-made hydraulic structures (sewers, pipelines, French drains, ditches, unlined ponds, septic tanks, outfalls, retention areas, etc.).

2. Soils

The permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). The

program shall provide relevant information on soil characterization that should include, but not be limited to the following facts:

(a) SCS soil classification;
(b) Surface soil distribution;
(c) Soil profile, including ASTM classification of soils;
(d) Transects of soil stratigraphy;
(e) Hydraulic conductivity (saturated and unsaturated);
(f) Relative permeability;
(g) Bulk density;
(h) Porosity;
(i) Soil sorptive capacity;
(j) Cation exchange capacity (CEC);
(k) Soil organic content;
(l) Soil pH;
(m) Particle size distribution;
(n) Depth of water table;
(o) Moisture content;
(p) Effect of stratification on unsaturated flow;
(q) Infiltration;
(r) Evapotranspiration;
(s) Storage capacity; and
(t) Mineral content.

3. Surface Water and Sediment

The permittee shall conduct a program to characterize the surface-water bodies in the vicinity of the contaminant release(s). The program shall provide relevant information on surface water and sediment characterization that should include, but not be limited to the following facts:

(a) Description of the temporal and permanent surface-water bodies including:

(i) For lakes and estuaries: location, elevation, surface area, inflow-outflow characteristics, depth, temperature stratification, and volume;

(ii) For impoundments: location, elevation, surface area, depth, volume, inflow-outflow characteristics, freeboard, and purpose of impoundment;

(iii) For rivers, streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, inflow-outflow characteristics, seasonal fluctuations, and flooding tendencies (i.e., 100 year

event);

(iv) Drainage patterns; and

(v) Evapotranspiration.

(b) Description of the chemistry of the surface water. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH_3, NO_3^-/NO_2, PO_4^{-3}), chemical oxygen demand, total organic carbon, and specific contaminant concentrations.

(c) Description of sediment characteristics including:

(i) Deposition area;

(ii) Thickness profile; and

(iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, and pH).

4. Air

The permittee shall conduct a program to characterize the climate at the facility and in the vicinity of the facility when contamination migrates off-site. The program shall provide relevant information on climatic conditions that should include, but not be limited to the following facts:

(a) A description of the following parameters:

(i) Annual and monthly rainfall averages;

(ii) Monthly temperature averages and extremes;

(iii) Wind speed and direction;

(iv) Relative humidity/dew point;

(v) Atmospheric pressure;

(vi) Evaporation data;

(vii) Development of inversions; and

(viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence.

(b) A description of topographic and man-made features which affect air flow and emission patterns, including:

(i) Ridges, hills or mountain areas;

(ii) Canyons or valleys;

(iii) Surface-water bodies (e.g., rivers, lakes, bays, etc.);

(iv) Wind breaks and forests;

(v) Buildings; and

(vi) Existing man-made air emission sources (e.g., industrial processes, residences, etc.).

B. Contamination Characterization Plan

The permittee shall submit a workplan on collecting analytical data to supplement existing data on groundwater, soils, surface water, sediment, air and subsurface gas contamination. This data shall be sufficient to define the nature, extent, origin, direction, and rate of movement of contaminant plume(s) in the environmental medium impacted by the release(s) from the SWMU(s) and AOC(s).

1. Groundwater Contamination

The permittee shall conduct a program to characterize any plume(s) of contamination at the facility and any plume(s) that have migrated off-site. The program shall provide relevant information on groundwater contamination that should include, but not be limited to the following facts:

(a) A description of the horizontal and vertical extent of any immiscible or dissolved plume(s);

(b) The horizontal and vertical direction of contamination movement;

(c) The velocity of contaminant movement;

(d) The horizontal and vertical concentration profiles of contaminant constituents in the plume(s);

(e) An evaluation of factors influencing the plume movement, specific

contaminant movement, and specific contaminant transformation (e.g., physical, chemical, biological, etc.); and

(f) An extrapolation of future contaminant movement.

2. Soil Contamination

The permittee shall conduct a program to characterize the contamination of the soil and rock units above the water table in the vicinity of the contaminant release(s). The program shall provide relevant information on soil contamination that should include, but not be limited to the following facts:

(a) A description of the vertical and horizontal extent of contamination.

(b) A description of relevant contaminant chemical properties within the contaminant source area and plume. This includes contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation.

(c) Specific contaminant concentrations.

(d) The velocity and direction of contaminant movement.

(e) An extrapolation of future contaminant movement.

3. Surface-Water and Sediment Contamination

The permittee shall conduct a program to characterize the contamination in surface-water bodies resulting from the contaminant release(s) at the facility. The program shall provide relevant information on surface water and sediment contamination that shall include, but not be limited to the following facts:

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

(b) The horizontal and vertical direction of contaminant movement;

(c) The contaminant velocity;

(d) An evaluation of the physical, biological and chemical factors influencing contaminant movement;

(e) An extrapolation of future contaminant movement; and

(f) The toxicity of the sediment and adjacent water column to aquatic life.

4. Air Contamination

The permittee shall conduct a program to characterize the particulate and gaseous contaminants released into the atmosphere. The program shall provide relevant information on air emissions that should include, but not be limited to the following facts:

(a) A description of the horizontal and vertical direction and velocity of contaminant movement;

(b) The rate and amount of the release; and

(c) The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

5. Subsurface Gas Contamination

The Permittee shall conduct a program to characterize subsurface gas contamination in the soil. The program shall provide relevant information on subsurface gas contamination that should include, but not be limited to the following facts:

(a) A description of the horizontal and vertical extent of subsurface gas migration;

(b) The chemical composition of the gases being emitted;

(c) The rate, amount, and density of the gases being emitted; and

(d) Horizontal and vertical concentration profiles of the subsurface gases emitted.

VI. TASK V: INVESTIGATION ANALYSIS

The permittee shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature, rate, and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study.

A. Data Analysis

The permittee shall analyze all facility investigation data outlined in Task IV and prepare a report on the nature, rate, and extent of contamination at the facility including sources and migration pathways. The report shall describe the nature and extent of contamination (qualitative/ quantitative) in relation to background levels indicative for the area.

B. Protection Standards

The permittee shall identify all relevant and applicable standards and action levels (e.g., health based guidance values) for the protection of human health and the environment.

VII. TASK VI: LABORATORY AND BENCH SCALE STUDIES

The permittee shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Respondent shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

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

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

The permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

VIII. TASK VII: REPORTS

A. Progress Reports

The permittee shall provide signed progress reports as required by Module Condition B.7.(a).

B. Draft and Final Reports

The permittee shall prepare a RCRA Facility Investigation ("RFI") Report as required by Module Condition E.6. The RFI Report shall present all information gathered under the approved RFI Workplan.

PART 373 PERMIT
Module II: Appendix-C

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY

I. PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken. This Appendix serves as guidance for developing a CMS and much of its content may not be applicable, especially when developing a focused CMS addressing a presumptive remedy. Respondent should consult with Department representatives before beginning the CMS process regarding which Appendix items need to be addressed during the study. The permittee will furnish the personnel, materials, and services necessary to prepare the corrective measure study, except as otherwise specified.

II. SCOPE

The Corrective Measure Study consists of four tasks:

Task I: Identification and Development of the Corrective Measure Alternative or Alternatives

A. Description of Current Situation
B. Establishment of Corrective Action Objectives
C. Screening of Corrective Measures Technologies
D. Identification of the Corrective Measure Alternative or Alternatives

Task II: Evaluation of the Corrective Measure Alternative or Alternatives

A. Technical/Environmental/Human Health/Institutional
B. Cost Estimate

Task III: Justification and Recommendation of the Corrective Measure or Measures

A. Technical
B. Human Health
C. Environmental

Task IV: Reports; A. Progress and B. Final

III. TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified Preliminary Corrective Measure Technologies (Task II of Appendix B), the permittee shall identify, screen, and develop the alternative or alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The permittee shall provide an update to information presented in Task I of the RFI to the Commissioner regarding previous response activities and any interim measures which have or are being implemented at the facility. The permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation ("RFI"). The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The permittee, in conjunction with the Department, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA and New York State guidance, and the requirements of any applicable federal and state statutes. At a minimum, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 6NYCRR 373-2.6.

C. Screening of Corrective Measure Technologies

The permittee shall review the results of the RFI and reassess the technologies specified in Task II and identify additional technologies which are applicable at the facility. The permittee shall screen the preliminary corrective measure technologies identified in Task II of the RFI and any supplemental technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on

inherent technology limitations. Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

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

2. Waste Characteristics

   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternative or Alternatives

The permittee shall develop the corrective measure alternative or alternatives based on the corrective action objectives and analysis of the Preliminary Corrective Measure Technologies, as presented in Task II of the RFI and as supplemented following the preparation of the RFI Final Report. The permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable. Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Respondent shall document the reasons for excluding technologies, identified in Task II, as supplemented in the development of the alternative or alternatives.

IV. TASK II: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The permittee shall describe each corrective measure alternative that passes through the Initial Screening in Task I of Appendix C and evaluate each corrective measure alternative and it's components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

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

1. Technical

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

(a) The permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

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

(ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in

the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

(b) The permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

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

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

(c) The permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

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

(ii) Time has two components that shall be addressed: (1) the time it takes to implement a corrective measure; and (2) the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

(d) The permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Among the factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

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

3. Human Health

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

4. Institutional

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

B. Cost Estimate

The permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital, operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

   (a) Direct capital costs include:

      (i) Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure;

      (ii) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

      (iii) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

      (iv) Buildings and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

   (b) lndirect capital costs include:

      (i) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

      (ii) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

      (iii) Startup and shakedown costs: Costs incurred during corrective measure startup; and

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

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

   (a) Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

   (b) Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

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

   (d) Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

   (e) Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues generated during operations;

   (f) Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

   (g) lnsurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

   (h) Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

   (i) Other costs: Items that do not fit any of the above categories.

V. TASK III: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include

summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Commissioner will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks II and III of Appendix C. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

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

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;

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

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

B. Human Health

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

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

VI. TASK IV: REPORTS

A. Progress Reports

The permittee shall provide the Commissioner with signed progress reports as required by Module Condition B.8.(a).

B. Corrective Measures Study ("CMS") Final Report

The permittee shall prepare a CMS Final Report as required by Module Condition E.8. The CMS Final Report shall include all information gathered under the approved CMS Work plan. The CMS Final Report shall at a minimum include:

1. A description of the facility;

   (a) Site topographic map and preliminary layouts.

2. A summary of the corrective measure or measures;

   (a) Description of the corrective measure or measures and rationale for selection;

   (b) Performance expectations;

   (c) Preliminary design criteria and rationale;

   (d) General operation and maintenance requirements; and

   (e) Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

   (a) Field studies (groundwater, surface-water, soil, air); and

   (b) Laboratory studies (bench scale, pilot scale).

4. Design and Implementation Precautions;

   (a) Special technical problems;

   (b) Additional engineering data required;

   (c) Permits and regulatory requirements;

   (d) Access, easements, right-of-way;

   (e) Health and safety requirements; and

(f) Community relations activities.

5. Cost Estimates and Schedules;

(a) Capital cost estimate;

(b) Operation and maintenance cost estimate; and

(c) Project schedule (design, construction, operation).

PART 373 PERMIT
Module II: Appendix D
Compliance Schedule

I. Compliance Schedule For Interim Corrective Measures.

A. Pursuant to Module Condition B.6.(a), Permittee shall submit for approval an interim corrective measures study within thirty (30) calendar days following the date of the notification by the Commissioner requiring implementation of interim corrective measures.

B. Pursuant to Module Condition B.6.(b), Permittee shall submit for approval an interim corrective measures work plan within thirty (30) calendar days after notifying the Commissioner of the actual or potential threat to human health or the environment.

II. Compliance Schedule For Reporting.

A. Pursuant to Module Condition B.8.(a), Permittee shall submit signed progress reports as specified in approved work plans of all activities conducted in accordance with the provisions of this Permit Module, beginning no later than thirty (30) calendar days after the Permittee is first required to begin implementation of any such requirement.

III. Compliance Schedule for Notification

A. Pursuant to Module II Condition B.10.(a), Permittee within fifteen (15) calendar days; after discovering facility releases of hazardous constituents in groundwater have migrated off-site, shall notify the Commissioner and off-site owners or residents on land overlying such contamination.

B. Pursuant to Module II Condition B.10.(b), Permittee within fifteen (15) calendar days; after discovering facility releases of hazardous constituents in air have or are migrated off-site, exceeding action levels, shall notify the Commissioner and off-site individuals subject to such long-term exposure.

IV. Compliance Schedule For Assessment of Newly Identified SWMUs and AOCs.

A. Pursuant to Module Condition C.1., Permittee shall notify the Commissioner, in writing, of any additional SWMU(s) and/or AOC(s) within fifteen (15) calendar days after discovery.

B. Pursuant to Module Condition C.2., Permittee shall submit a SWMU/AOC Assessment Report within thirty (30) calendar days after notifying the Commissioner of any additional SWMU(s) and/or AOC(s).

C. Pursuant to Module Condition C.3., Permittee shall submit for approval a SWMU/AOC Sampling and Analysis Plan within thirty (30) calendar days after submittal of the SWMU/AOC Assessment Report.

D. Pursuant to Module Condition C.4.(b), Permittee shall submit for approval revisions of the SWMU/AOC Sampling and Analysis Plan within thirty (30) calendar days after meeting with the Department to discuss Plan comments or within forty-five (45) calendar days after Permittee's receipt of Plan comments when no meeting is scheduled.

E. Pursuant to Module Condition C.4.(c), Permittee shall begin to implement the SWMU/AOC Sampling and Analysis Plan within thirty (30) calendar days following written approval of the Plan.

F. Pursuant to Module Condition C.5., Permittee shall submit a SWMU/AOC Sampling and Analysis Report within thirty (30) calendar days of receipt by the Permittee of validated analytical data generated under in the approved SWMU/AOC Sampling and Analysis Plan.

V. Compliance Schedule And Notification Requirements For Newly-Discovered Releases At SWMUs and AOCs.

A. Pursuant to Module Condition D., Permittee shall notify the Commissioner, in writing, of any newly-discovered releases at SWMUs and/or AOCs, no later than fifteen (15) calendar days after such discovery.

VI. Compliance Schedule For RCRA Facility Investigation (RFI) Work Plan, Work Plan Implementation, RFI Report And Summary Report Submissions

A Pursuant to Module Condition E.1.(b), the permittee shall submit for approval a RCRA Facility Investigation (RFI) workplan, for the SWMU(s) and/or AOC(s) identified in Module Condition E.1.(a), that includes a Report on Current Conditions within 90 calendar days of the effective date of this Permit.

B. Pursuant to Module Condition E.1 (c) (ii), the permittee will submit a revised Plan to the Commissioner within thirty (30) calendar days after meeting with the Department to discuss comments from the commissioner on the plan, or within forty-five (45) calendar days when no meeting is scheduleds.

C. Pursuant to Module Condition E.3.(a), the Permittee shall begin implementation of the Plan, according to the schedules made part of the approved RFI Work Plan, no later than thirty (30) calendar days after written notification by the Commissioner

approving the RFI Work Plan.

D. Pursuant to Module Condition E.3.(b)., Permittee shall submit for approval the RFI Final and Summary Reports within Sixty (60) calendar days after receipt by the Permittee of validated analytical data generated under the approved work plan.The RFI Final Report shall describe the procedures, methods, and results of all facility investigations of SWMUs and AOCs and their releases, including information on the type and extent of contamination at the facility and/or off-site, sources and migration pathways, and actual or potential receptors. It shall present all information gathered under the approved RFI Work Plan.

E. Pursuant to Module Condition E.3.(c)(ii), Permittee shall submit for approval revisions to the RFI Final and Summary Reports within forty-five (45) calendar days after meeting with the Department to discuss Report comments, or within forty-five (45) calendar days when no meeting is scheduled.

F. Pursuant to Module Condition E.3.(d), Permittee shall mail the notification to all individuals on the facility mailing list within thirty (30) calendar days of receipt of Report approval.

VII. Compliance Schedule For Corrective Measures Study ("CMS") Scope of Work.

A. Pursuant to Module Condition E.7.(a), Should a CMS that evaluates alternative remedies be required, the Commissioner shall notify the Permittee in writing when the CMS will be submitted. The submission time will take into consideration the extent of the remediation that needs to be implemented. The permittee shall submit for approval a CMS Plan within sixty (60) calendar days after the written notification by the Commissioner for a CMS.

VIII. Compliance Schedule For CMS Implementation.

A. Pursuant to Module Condition E.7.(c), Permittee shall begin to implement the CMS Plan within Sixty (60) calendar days following written approval of the CMS Plan.

B. Pursuant to Module Condition E.7.(b), Permittee shall submit for approval revisions to the CMS plan within thirty (30) calendar days after meeting with the Department to discuss the Department's comments on the plan, or within forty-five (45) calendar days after permittee's receipt of Department's comments on the plan, when no meeting is scheduled.

XV. Compliance Schedule For CMS Final Report.

A. Pursuant to Module Condition E.8.(a), Permittee shall submit for approval a CMS

Final Report within Sixty(60) calendar days after completion of the CMS.

B. Pursuant to Module Condition E.8.(b), Permittee shall submit for approval revisions to the CMS Final Report within thirty (30) calendar days after meeting with the Department to discuss Report comments or within forty-five (45) calendar days when no meeting is scheduled.

XVI. Compliance Schedule For Financial Assurance for Corrective Measure(s)

A. Pursuant to Module Condition E.9.(b), Permittee shall demonstrate financial assurance for completing the approved corrective measure(s) within thirty (30) calendar days after this Permit has been modified.

XVII. Modification of the Compliance Schedules

A. Pursuant to Module Condition E.10.(a)(i), Permittee shall submit proposed modification of any Compliance Schedule within fifteen (15) calendar days of determining that a schedule cannot be met.

PART 373 PERMIT
Module II: Appendix E

RFIs- RCRA FACILITY INVESTIGATION WORK PLAN OUTLINE

On the basis of the RCRA Facility Assessment-Preliminary Review dated December 1991(as revised), Part 373 renewal permit application dated 1996, March 31,1997 NYSDEC Central Office letter to Norlite Corporation, other reports/documents prepared for the facility and Visual site inspection on June 1, 2004, it is determined that it will be necessary to conduct RCRA Facility Investigations(see table E1) to determine presence (RFI Phase I) and/or extent of contamination (RFI Phase II) at different SWMUs/AOCs (table E-1) located at the facility. Table E-1 outlines the type of samples, locations, parameter and analytical methods to be employed. The facility must also evaluate and provide, as a part of RCRA Facility Investigation, information concerning current status of all other above or below ground industrial pipelines/sewers, that previously or currently handled hazardous waste or liquids containing hazardous constituents.

Sampling Rationale

A. Soil Sampling

Samples from soil borings shall be collected at the SWMUs/AOCs in order to detect suspected and potential soil contamination.

B. Groundwater Sampling

Groundwater sampling shall be performed at the SWMUs/AOCs to identify releases or potential releases of hazardous constituents in the groundwater from these SWMUs/AOCs.

C. Surface Water Sampling

Sampling of surface water in the quarry pond is recommended in an effort to detect any contamination due to the past activity in the area.

D. Sediments

Sampling of sediments in the surface impoundment and the dewatering area is recommended in an effort to detect any contamination due to the presence of waste in those SWMUs/AOCs.

All soil, sediment and groundwater sampling and analysis will follow the protocols established in SW-846, Test Methods for Evaluating Solid Waste (3rd edition or most current). The Permittee may propose another analytical method, subject to NYSDEC and EPA approval. Also sampling and analysis will be performed in accordance with the most current version of the NYSDEC Quality Assurance Project Plan Guidance. Data deliverables shall be category B as per the 2000 NYSDEC Analysis Service Protocol (ASP).

The Permittee must provide in the work plan justification or rationale for all proposed sampling locations*. This justification must be based on a detailed presentation of available hydrologic, soil/statigraphic information and other previous waste management and clean-up activities.

Required Detection Level

A. The expected detection level for each parameter shall be specified by the Permittee in the Work Plan.

B. The detection limit for contaminants in soils must be no greater than 1/5 of the corresponding health-based criteria or action level for soils. For those parameters which are both carcinogens and systemic toxicants, the detection level shall be based upon the lower of the two. The detection levels for contaminants in the groundwater will be the corresponding groundwater protection standards.

C. The detection levels for the soil samples collected around the Area of Concern shall be the same as those for the background samples, if background samples are collected.

Table E-1

SWMUs/AOCs	Action	Sample Matrix/ locations*	Sample Parameter	Analytical Method SW846[1]
Tank Storage Area (LLGF, SLGF processing Building, In-ground Storage and Equalization tanks)	RFI-I	soil	VOC's, SVOC's, Pesticides, RCRA Metals	8260B 8270C,8081 6010B,7471A
Surface Impoundments (Settling Pond and Adjacent De-watering Area)-South End Only	RFI-II	sediment	VOC's, SVOC's, Pesticides, RCRA Metals	8260B 8270C,8081 6010B,7471A
Waste Piles Areas 1,3,4 and 5	RFI-I	soil	VOC's, SVOC's, Pesticides, RCRA Metals	8260B 8270C,8081 6010B,7471A
Tanker/Truck Roll off Staging Area	RFI-I	soil	VOC's, SVOC's, RCRA Metals	8260B 8270C, 6010B,7471A
Employee Parking Lot Discharge Area & Floor Drain	RFI-I	soil[2]/ groundwater	VOC's, SVOC's,RCRA Metals	8260B 8270C,6010B, 7471A, 7470
Shale Fine Landfill	RFI-II	Groundwater[3]	VOC's, SVOC's, Pesticides, RCRA Metals	8260B 8270C,8081 6010B,7470
Interim Waste Water Treatment/Sludge Container Staging Area	RFI-I	soil	VOC's, SVOC's, Pesticides, RCRA Metals	8260B 8270C,8081 6010B,7471A
Transformer Pad and Scrap Yard Area Soils	RFI-II	soil[4]/ Groundwater	VOC's, SVOC's, PCB'ss RCRA Metals,	8260B,8270C, 8082,6010B, 7470 7471A
North & East Site Perimeter Fence Area	RFI-I	soil[5]	VOC's, SVOC's, RCRA Metals	8260B 8270C 6010B,7471A
Quarry Pond	RFI-I	surface water	VOC's, SVOC's, RCRA Metals	8260B 8270C 6010B,7470

1. Most current version SW846

3.___ Soil samples will be collected within first 12" from the surface and every 2-3 feet thereafter to the water table. At least one boring must be located in the area where fuel oil/diesel discharge was observed.

3. Groundwater monitoring/investigation may be omitted if the facility provides a documentary evidence of an approved closure and a summery of results from periodic groundwater sampling conducted for this SWMU.

4. Soil samples will be collected within first 12" from the surface and every 2-3 feet thereafter to the water table. Soil borings must be taken where oil/diesel discharge were detected.

5. Soil samples along the North East boundary of the facility must be taken. Two samples from each location, one within 6" of the surface and next 2-3 feet deep must be taken. The sampling locations onsite and off site along the property boundary must be determined based on anticipated areas of maximum impact from the facility air discharge.

* The sample locations will be proposed by the Permittee and subject to the USEPA and NYSDEC approval.

Industrial Sewers/hazardous Waste Feed Pipeline Evaluation:

Rationale:

To Determine the potential for, or actual releases from those below and above ground sections of a industrial waste feed pipelines/ sewer that previously or currently handled hazardous waste or liquids containing hazardous constituents.

Process:

This first step in the evaluation process is to identify and determine the status of the industrial feed pipelines and sewer system at the facility. To provide this information, the permittee must evaluate the current status of all above or below ground industrial feed pipelines/sewers, that previously or currently handled hazardous waste or liquids containing hazardous constituents. This information must be submitted within sixty (60) calendar days from Permit issuance or after being informed by the Commissioner, in a document titled, "Current Industrial Sewer Condition Report" to the New York State Department of Environmental Conservation (NYSDEC). The scope of information to be provided will include , but not limited to, the following aspects concerning industrial sewers and waste feed pipelines.

1. Physical characterizations of the industrial feed pipeline/sewers:
   a. Age;
   b. Diameter and construction materials of pipe and manholes;
   c. Previous repairs: date of repair, method of repair, cause of integrity breach, cleanup of contaminated environmental media;
   d. Location of industrial sewer/feed pipe including laterals indicated on a site plan of the facility; and
   e. Elevation of industrial sewer relative to the groundwater table.
2. Materials/wastewater conveyed by the industrial pipe /sewers:
   a. Hazardous constituents or hazardous waste transported by the system;
   b. Concentration of constituents in wastewater; and

c. Current volume handled by the system.

3. Results of previous integrity evaluations of the industrial pipes/sewers(if any):
   a. Reason for evaluation;
   b. Date of evaluation; and
   c. Results for evaluation.
4. Plans to upgrade the industrial sewer and/ or feed pipe system (if any):
   a. Proposed type of upgrading and relocating industrial sewers/piping above ground, installation of double walled pipe with leak detection, segregating waste streams, etc; and
   b. Time frame for proposed work.

5. Plan to decommissiona
   a. proposed steps in decommissioning
   b. Time frame for proposed work

Based upon the available information, the NYSDEC will evaluate the industrial feed pipe/sewer system in terms of its potential to release waste, and if so, the potential impact on human health and the environment. Based on this initial evaluation, if the threat to human health and the environment exists, it is likely that integrity testing and repairing of the industrial sewer will be required.

The NYSDEC will take into account the facility's plans to upgrade the industrial sewer and feed pipe system when making the decision to require an integrity test. If the proposed upgrade is acceptable, and completed within an acceptable time frame, integrity testing may not be necessary. However, when the industrial pipe/sewers are decommissioned, testing may be necessary to evaluate environmental media contaminated by past releases.

PART 373 PERMIT
MODULE IIIs- STORAGE IN CONTAINERS

A. AUTHORIZED STORAGE AREA, WASTE TYPES AND STORAGE VOLUME.

The Permittee may receive following hazardous wastes from off-site facilities and store them in containers in the following container storage areas up to the volumes listed, subject to the terms of this Permit:

STORAGE AREA	WASTE TYPE	WASTE CODES	CONTAINER SPECIFICATIONS	MAXIMUM PERMITTED QUANTITY (including non-hazardous wastes & other material)
SLGF Processing Building	As per Attachment C of this permit	As per Attachment C of this permit	5, 15, 30 or 55* gallon steel, plastic or fiber** containers meeting U.S. Department of Transportation specifications	Total 9,900 gallons in specified size containers
Truck Unloading Area #1	As per Attachment C of this permit	As per Attachment C of this permit	5, 15, 30 or 55* gallon steel, plastic or fiber** containers meeting U.S. Department of Transportation specifications	Total 4,785 gallons in specified size containers

* Up to 85 gallons over packs can be used to secure leaking/damaged drums.
** Only dry solid hazardous waste will be stored in the fiber drums.

(1) Permittee shall only store hazardous wastes described in Attachment C of this permit. All container unloading and loading operations occurring in the storage areas listed in Condition A above shall have secondary containment meeting the requirements of Condition B of this module.

(2) Permittee shall stack the drums containing hazardous wastes on no more than three drums high. Larger drums shall not be stacked over smaller drums/containers.

(3) Permittee may open or empty drums only in the SLGF building and only when the

vapor collection system is fully operating. The Permittee may open the drums in the Unloading Areas only for sampling.

4. Container storage in the Truck Unloading Area #1 is permitted when only one truck is parked in the Unloading Area #1. These containers shall be stored at the storage location shown in Drawing NY003-2475-1, Revision 11.

5. Loading and/or unloading of hazardous waste drums shall be performed only in Truck Unloading Area or SLGF processing building. Emptying of hazardous waste drums into permitted tanks shall be done only in the SLGF building.

The Permittee must comply with 6NYCRR 373-2.9 as cited below and with Attachment D of this permit.

B. CONTAINMENT 6NYCRR 373-2.9(f)

Container storage areas must have a containment system that is designed, constructed and operated as specified in Attachment D of this Permit and as follows:

1. A base must underlay the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

2. The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquid resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.

3. The containment system must have sufficient capacity to contain the volume of the largest container or 10 percent of the total volume of containers, whichever is greater. Containers that do not contain free liquids need not be considered in this determination.

4. Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in B.(3) above to contain any run-on which might enter the system.

5. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

6. Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by Paragraph B.1. above. However, these containers must be elevated not to be in contact with any accumulated liquid.

7. The Permittee shall perform at least on a biennial basis integrity assessment of these

secondary containment systems. This assessment shall be performed by an independent professional engineer registered in New York state and experienced in this type of work and shall provide remedy if the containment system is found to the inadequate. This assessment report shall be submitted to the Department within 30 days of its date. Permittee shall implement the remedy provided by the engineer no later than 90 days from the date of the assessment.

C. CONDITION OF CONTAINERS 6NYCRR 373-2.9(b)

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects, deterioration of liner) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit. Each such occurrence shall be recorded in the inspection log and maintained as part of the operating record required by Module I, Condition D.5.(c); Subpart 373-2.5(c). If any leaking container threatens human health or the environment, the Permittee must immediately report the situation as specified in Module I, Condition G, (i.e., Oral Reports).

D. COMPATIBILITY OF WASTE WITH CONTAINERS 6NYCRR 373-2.9(c)

The Permittee must use a container made of or lined with materials which will not react with, and is otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired and in accordance with Attachment D of this permit.

E. MANAGEMENT OF CONTAINERS 6NYCRR 373-2.9(d)

(1) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

(2) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(3) Containers holding hazardous waste must be marked with the words "Hazardous Waste" and with other words identifying their contents. Such containers must be stored in a clearly designated area separate from nonhazardous wastes and other materials storage areas.

(4) When stacking pallets of hazardous wastes, the bottom pallet must always contain 4 drums so that the upper pallet is well balanced. Stacked pallets will not exceed 3 pallet high.

(5) All wastes and raw materials stored in an area designated for hazardous wastes are subject to all the terms and conditions of this permit.

F. INSPECTIONS 6NYCRR 373-2.9(e)

The Permittee must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and/or the containment system caused by corrosion or other factors at least weekly and comply with the Inspection Plan in the Permit Attachment F which may require a more frequent inspection schedule. Loading and unloading areas must be inspected daily when in use (373-2.2(g)(2)(iv)). The Permitte shall store drums as per drawings NY003-3008 & NY003-2475-1. The Permittee must maintain a minimum aisle space of 3 feet between single or double rows of containers and between container and wall, to allow for the unencumbered movement of containers, the personnel performing inspections or emergency responders.

G. SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE 6NYCRR 373-2.9(g)

The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line.

H. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTE 6NYCRR 373-2.9(h)

(1) The Permittee shall not place incompatible wastes or incompatible wastes and materials in the same container.

(2) The Permittee shall not place hazardous wastes in an unwashed container that previously held an incompatible waste or material.

(3) A container holding a hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from those other materials or protected from them by means of a dike, berm, wall, or other device.

I. CLOSURE 6NYCRR 373-2.9(i)

At closure, all hazardous wastes and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous wastes or hazardous waste residues must be decontaminated or removed. Any contaminated residues or soils must be reported to the Department within 3 days of discovery and before any treatment or removal occurs. The Permittee must comply with the Closure Plan incorporated into this Permit pursuant to Module I.

J. AIR EMISSION STANDARDS 6NYCRR 373-2.9(j)

The owner or operator shall manage all hazardous wastes placed in containers in accordance with the applicable requirements of sections 373-2.27, 373-2.28 and 373-2.29 of this Subpart, with special attention to paragraphs: (a); (c); (d) and (g) through (k) of 373-2.29 of this Subpart.

PART 373 PERMIT
MODULE IV - STORAGE & BLENDING IN TANK SYSTEMS

A. AUTHORIZED TANK SYSTEMS AND WASTES

The Permittee is authorized to accept the following hazardous wastes and to use the following tank systems for the storage and blending of these hazardous wastes subject to the terms of this permit:

Permitted Tank	Maximum permitted storage Capacity (in gallons)	Waste Description	Permitted EPA Hazardous Waste Code No.
100A	8,613	As per Attachment C of this permit	As per Attachment C of this permit
100B	8,613		
100C	8,613		
200A	9,271		
200B	8,613		
200C	8,613		
300	26,682		
400	26,682		
500	26,682		
600	17,974		
101A	1,174		
101B	1,174		
102A	1,174		
102B	1,174		
SP100	527		

The Permittee must operate and maintain the tank systems in accordance with the portions of the Permit Attachment D and with 6NYCRR 373-2.10 as cited below:

High level automatic feed cutoffs system in each of the tanks (except dispersion tank) must correspond to a volume equal to or less than the maximum permitted storage capacities shown above.

For tank systems used to store or treat materials that are defined as hazardous waste in the future, the Permittee must comply with 6NYCRR 373-2.10(b) and 6NYCRR 373-1s7(g).

B. DESIGN AND INSTALLATION OF NEW OR REPLACEMENT OR MODIFIED TANK SYSTEMS OR COMPONENTS 6NYCRR 373-2.10 (c)

(1) For new, modified or replacement hazardous waste tank systems or components [such as the secondary containment system] which the Permittee proposes to construct in the future, the Permittee must, prior to construction, submit to the Commissioner an application to modify this permit including design plans, specifications and a written assessment of the tank systems' structural integrity as required by 6NYCRR 373-2.10(c) and obtain a permit modification.

> [Note: For any new, modified or replacement tanks which may be proposed to be constructed at the facility in the future shall be equipped with appropriate mechanical agitators. A permit modification is required to authorize the construction and operation of such "future"new tank systems.]

(2) The Permittee must ensure that proper handling procedures are followed to prevent damage to the new tank system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified, installation inspector or an independent, qualified, professional engineer registered in New York, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any of the following items:

(i) weld breaks;
(ii) punctures;
(iii) scrapes of protective coatings;
(iv) cracks;
(v) corrosion, and
(vi) other structural damage or inadequate construction/installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

(3) New tank systems or components that are placed underground and that are backfilled must be provided with a backfill material that is a non-corrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

(4) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leaks in the system must be performed prior to the tank system being covered,

enclosed or placed into use.

(5) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

(6) The Permittee must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under 6NYCRR 373-2.10(c)(1)(iii), or other corrosion protection if the commissioner believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

(7) The Permittee must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of Condition (2) through (6) above that attest that the tank system was properly designed and installed and that repairs, pursuant to Condition (2) and (4) above were performed. These written statements must also include the certification statement as required in 6NYCRR 373-1.4(a)(5)(iv).

(8) The Permittee may not use any tank until:

a. The Permittee has submitted to the Department by Certified Mail or hand delivery a letter signed by the Permittee and a NY registered Professional Engineer stating that the tank has been constructed or modified in compliance with the permit (6NYCRR 373-1.6(a)(12)).

b. A Department representative has inspected the newly constructed or modified tank and has found it is in compliance with the conditions of the permit or

c. If, with in 15 days of the date of submission of the letter in clause "a." above the Permittee has not received notice from the Department of its intent to inspect, the "prior" inspection requirement, clause "b." above, is waived and the Permittee may use the tank, per Part 373-1.6(a)(12)(ii)('b')('2').

C CONTAINMENT AND DETECTION OF RELEASES 6NYCRR 373-2.10(d)

(1) In order to prevent the release of hazardous wastes or hazardous constituents to the environment, secondary containment must be provided for tank systems that meets the requirements of 6NYCRR 373-2.10(d) and Attachment D & M of this permit.

(2) Secondary containment systems must be:

(i) designed, installed, and operated to prevent any migration of wastes or accumulated

liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system; and

(ii) capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(3) Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of Condition C.(2) except for:

(i) Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;

(ii) Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;

(iii) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and pressurized aboveground piping systems with automatic shut-off devices (e.g. excess flow check valves, flow metering shutdown devices, loss of pressure activated shut-off devices) that are visually inspected for leaks on a daily basis.

D. GENERAL OPERATING REQUIREMENTS 6NYCRR 373-2.10(e)

(1) The Permittee shall operate the tank systems authorized in Condition IV.A of this module as specified in Attachment D of this permit.

(2) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode or otherwise fail.

(3) The Permittee must use appropriate controls and practices to prevent spills and overflows from tank or containment systems as described in Attachment D. These include:

(i) spill prevention controls (e.g., check valves, dry disconnect couplings);

(ii) overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

(iii) maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

(4) The Permittee must comply with the requirements of Condition F below, if a leak or spill occurs from a tank system.

(5) The Permittee must mark all tanks with the words "Hazardous Waste" and with other words that identify the contents of the tank. For underground tanks, the markings must be placed on sign in the area above the tank.

(6) When loading & off loading hazardous waste tanker trucks or trailers in the

Loading/Unloading areas #1 & 2, the permittee shall operate vent collection system.

E INSPECTIONS 6NYCRR 373-2.10(f)

The Permittee must inspect tank systems and components pursuant to the Permit and the following:

(1) The Permittee must follow the schedule and procedure for inspecting overfill controls in the Permit.

(2) The Permittee must inspect at least once each operating day:

(i) aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

(ii) data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; and

(iii) the construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

(3) The Permittee shall perform the following :

(i) at least on a biennial basis, the permittee shall empty, clean and inspect all permitted tanks in Condition A of this module for leaks, bulges, buckles, pitting & corrosion and measure shell thicknesses (only for the above ground tanks) to determine estimated service life as described in Attachment D of this permit. The above assessment shall be performed by an independent professional engineer registered in New York State and experienced in this type of work. This assessment report shall be submitted to the Department within 30 days of its date. The permittee shall commence implementing the remedies/recommendations of the engineer within 60 days of the assessment.

(ii) at least on a biennial basis, the permittee shall test tanks 300, 400, 500 & 600 in Condition A of this module using EZY 3 Locator Plus test method indicated in the most recent NYSDEC SPOT#2 memorandum as described in Attachment D of this permit. The test shall be performed by personnel experienced and certified to perform EZY 3 Locator Plus test method. The tank testing reports shall be submitted to the Department within 30 days of the test.

(iii) at least once in three years, the permittee shall perform integrity assessment of the secondary containment systems for all tanks listed in Condition A. The above assessment shall be performed by an independent professional engineer experienced in this type of work. This assessment report shall be submitted to the Department within 30 days of its

date. The permittee shall commence implementing the remedies/recommendations of the engineer within 60 days of the assessment.

(4) The Permittee must inspect cathodic protection systems, at a minimum, according to the following schedule to ensure that they are functioning properly:

(i) the proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter; and

(ii) all sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e. every other month).

(5) The Permittee must remedy any deterioration or malfunction found (373-2.2(g)(3)).

(6) The Permittee must document in the operating record of the facility those items in paragraphs E.(1) through E.(5).

(7) The permittee shall submit an annual certification by a Professional Engineer registered in the State of New York, certifying to the integrity of the secondary containment system for the scrubber water re-circulation tanks.

F RESPONSE TO LEAKS OR SPILLS AND DISPOSITION OF LEAKING OR UNFIT-FOR-USE TANK SYSTEMS 6NYCRR 373-2.10(g)

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the Permittee must satisfy the following requirements:

(1) Cessation of use; prevent flow or addition of wastes. The Permittee must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(2) Removal of waste from tank system or secondary containment system.

(i) If the release was from the tank system, the Permittee must, within 24 hours after detection of the leak or, if the Permittee demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tanks system.

(ii) If material was released to a secondary containment system all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

(3) Containment of visible releases to the environment. The Permittee must immediately conduct a visual inspection of the release and, based upon that inspection:

(i) prevent further migration of the leak or spill to soils or surface water; and

(ii) remove, and properly dispose of, any visible contamination of the soil or surface water.

(4) Notifications, reports.

(i) Any release to the environment, except as provided in 4 (ii) below, must be reported to the Commissioner within 24 hours of its detection. If the release has been reported pursuant to 6 NYCRR Part 595.3, that report will satisfy this requirement. (Note: Use the DEC spill hotline number (800) 457-7362; or from outside of New York State (518) 457-7362; or any designated telephone numbers which may subsequently replace those listed above. Also, see requirements in Module I Section G., Oral Reports.)

(ii) A leak or spill of hazardous waste is exempted from the requirements of (4) if it is:

('a') less than or equal to a quantity of one pound; and

('b') immediately contained and cleaned-up.

(iii) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Commissioner:

('a') likely route of migration of the release;

('b') characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

('c') results of any monitoring or sampling conducted in connection with the releases (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the commissioner as soon as they become available;

('d') proximity to downgradient drinking water, surface water, and populated areas; and

('e') description of response actions taken or planned.

(5) Provision of secondary containment, repair, or closure.

(i) Unless the Permittee satisfies the requirements of (5)(ii) and (iii), the tank system must be closed in accordance with Condition G of this Module IV.

(ii) If the cause of the release was a spill that has not damaged the integrity of the system, the Permittee may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(iii) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

(6) Certification of major repairs. If the Permittee has repaired a tank system in accordance with Condition (5)above, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the Permittee has obtained a certification by an independent, qualified, professional engineer registered in New York in accordance with subparagraph

373-1.4(a)(5)(iv) of this Title that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the Commissioner within seven days after returning the tank system to use.

(Note: The Commissioner may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under ECL Article 71 requiring corrective action or such other response as deemed necessary to protect human health or the environment.)

(Note: See paragraph 373-2.2(g)(3) of this Part for the requirements necessary to remedy a failure. Also, 40 CFR Part 302 may require the owner or operator to notify the National Response Center of certain releases.)

G CLOSURE AND POST-CLOSURE CARE 6NYCRR 373-2.10(h)

(1) At closure of a tank system, the Permittee must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless paragraph 371.1(d)(4) of this Title applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in 6NYCRR 373-2.7 and 2.8 and Module I of this Permit.

Note: This Permit does not supercede or alter the requirements of the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) standard for Confined Spaces including "Permit Spaces"which are applicable to the closure activities that involve the entry by personnel into tanks.

(2) If the Permittee demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in paragraph (1) of this subdivision, then the Permittee must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (see 6NYCRR 373-2.14(g)). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the Permittee must meet all of the requirements for landfills specified in 6NYCRR 373-2.7 and 2.8.

H SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES 6NYCRR 373-2.10(i)

(1) Ignitable or reactive waste must not be placed in tank systems, unless:

(i) the waste is treated, rendered, or mixed before or immediately after placement in the

tank system so that:

('a') the resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under 6NYCRR 371.3(b) or (d), and

('b') 6NYCRR 373-2.2(i)(2) is complied with.

(ii) the waste is stored or treated /in such a way that it is protected from any material or conditions that may cause the waste to ignite or react, or

(iii) the tank system is used solely for emergencies.

(2) The Permittee of a facility where ignitable or reactive wastes are stored or treated in a tank must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code" (see 6NYCRR 370.3(e)).

I SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES 6NYCRR 373-2.10(j)

(1) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless paragraph 373-2.2(i)(2) of this subpart is complied with.

(2) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless paragraph 373-2.2(i)(2) of this Subpart is complied with.

J AIR EMISSION STANDARDS 6NYCRR 373-2.10(k)

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of sections 373-2.27, 373-2.28 and 373-2.29 of this Subpart, with attention to paragraphs: (a) through(e), and (h) through (k) of 373-2.29 of this Subpart.

PART 373 PERMIT
MODULE V- LIGHT WEIGHT AGGREGATE KILNS (LWAKs) Requirements
EP1 AND EP2

A. CONSTRUCTION AND MAINTENANCE

(1) The Permittee shall operate and maintain the LWAKs, and their ancillary systems including but not limited to the closed vent system, air pollution control systems, waste, raw shale & fuel feed systems, clinker (product) cooler systems and process control & monitoring systems in accordance with this permit, its attachments, permittee's standard operating procedures and 6NYCRR Part 374-1.8.

(2) No modification to the LWAKs and their Air Pollution Control (APC) systems shall be made which would affect the achievement of the performance standards in Condition B, of this Module or any other operating conditions specified in the permit without first obtaining written approval from the Commissioner. This includes any changes to the APC systems, LWAKs physical construction including their feed (i.e. hazardous waste a/k/a LLGF, all types of oils, virgin fuels, LLGF vapors & raw shale) delivery system, closed vent system, process instrumentation, APC residues collection & management systems & clinker cooler systems, continuous emission monitoring instruments and automatic waste feed cutoff systems specified in condition D(1).

B. PERFORMANCE STANDARD

The Permittee shall maintain the LWAKs so that, when operated in accordance with the operating requirements specified in this permit, it will meet the following performance standards:

(1) The LWAKs must achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated in this permit for each waste feed. The POHCs designated in the hazardous waste feed are monochlorobenzene, carbon tetrachloride and perchloroethylene. The DRE shall be determined using the method specified in 6NYCRR 374-1.8(e).

(2) The LWAKs must not emit particulate matter in excess of 0.08 grains per dry standard cubic feet, when corrected for 7% oxygen in the stack gas in accordance with the formula specified in 6NYCRR 374-1.8(f).

(3) The permittee must control hydrogen chloride (HCl) and chlorine (Cl_2) emissions from the each LWAK stack such that the rates of emission of HCl and Cl_2 do not exceed 2.0 lbs/hr and 0.01 lb/hr respectively. These emission limits will be met by limiting the total feed rate of chlorine to the LWAKs as provided in Condition C of this module.

(4) The permittee must control emission of products of incomplete combustion (PICs) from the LWAKs such that the carbon monoxide (CO) levels in the stack gas, shall not

exceed 100 ppmv on an hourly rolling average basis (i.e., over any 60 minute period) continuously corrected to 7% oxygen, dry gas basis as explained in Condition D(3) of this module. CO and oxygen shall be continuously monitored and recorded by continuous emission monitors (CEMs) in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in Appendix 49 of 6 NYCRR Subpart 374-1.

(5) The permittee must control emissions of toxic metals from the LWAKs by limiting the total feed rate of each metal into the unit, as specified in Condition C(6) of this module

(6) SO_2 stack emissions shall not exceed 30 lbs/hr/kiln.

(7) Stack emissions of nitrogen oxides measured as NO_2 shall not exceed 61 lbs/hr/kiln.

(8) Compliance with the operating conditions specified in this permit will be regarded as compliance with the above performance standards. However, evidence that compliance with such permit conditions is insufficient to ensure compliance with the above performance standards may be "information" justifying modification, revocation, or suspension of the permit pursuant to 6NYCRR 621.14.

C. LIMITATION ON KILN FEEDS TO BE BURNED AND/OR ACCEPTED:

(1) The permittee may feed raw shale to the LWAKs to produce light weight aggregate (LWA). The Permittee may feed natural gas, no. 2, 4, 6 fuel oil, diesel & kerosene (virgin or re-refined), On-specification used oil (as defined in 6 NYCRR Part 374-2), off-specification used oil (as defined in 6 NYCRR Part 374-2), Waste Fuel A (as defined in 6 NYCRR Part 225-2.2(b)(9)), Waste Fuel B (except B-2) (as defined in 6 NYCRR Part 225-2.2(b)(10)), comparable fuels (as defined & meeting the requirements of 6 NYCRR Part 371.4(i)) and LLGF (i.e. liquid hazardous waste as described in Attachment C of this permit) from the front end of the kiln. The Permittee may burn LLGF in conjunction with one or more of the streams listed above.

(2) No LLGF or combination of LLGF & other feeds (except raw shale) listed in condition C(1) above, as fed to the LWAKs, shall exceed the design thermal capacity of 62M BTU/hr per kiln on an hourly rolling average basis.

(3) The total chlorine (both organic & inorganic) fed to the LWAKs through LLGF or combination of LLGF & other feeds listed in condition C(1) above shall not exceed 82.3 lb/hr per kiln on a 12 hour rolling average basis.

(4) The permittee shall not incinerate feeds listed in condition C(1) above containing over 25 ppm total PCBs (defined as the sum of the quantified Arochlors using Method 8082).

(5) The permittee shall not accept and incinerate any feeds listed in condition C(1) above (other than raw shale) in solid form generated from any on-site or off-site remedial or corrective action activities.

(6) The emission and mass feed rates of metals to the LWAKs through LLGF or combination of LLGF & other feeds listed in condition C(1) above shall not exceed the limits specified in the following table:

Metals	Maximum permitted emission rate per kiln lb/hr	Maximum permitted Total (i.e. metals fed through all feeds listed in C(1)) Metals Feed Rate [A&B] per kiln (lb/hr- 12 hour rolling average basis)	Maximum permitted Metals feed rate Rate [A&B] through all feeds listed in C(1) except raw shale per kiln (lb/hr--12 hour rolling average rolling basis)
Antimony	3.89E-05	0.31	0.22
Arsenic	1.03E-04	1.08	0.21
Barium	8.77E-05	12.17	0.97
Beryllium	9.66E-06	0.099	0.012
Cadmium	3.86E-05	0.36	0.32
Chromium(T)	1.04E-04	7.78	5.98
Copper	3.50E-04	13.12	9.48
Lead	6.60E-05	6.36	4.03
Mercury	1.68E-03	0.008s	0.0064
Nickel	9.74E-04	7.06	6.16
Selenium	1.32E-05	0.17	0.12
Silver	2.09E-05	0.18	0.13
Thallium	4.86E-05	0.35	0.26
Zinc	2.30E-03	25.61	10.32

[A] Sampling, analysis and feed planning prior to feeding streams listed in C(1) shall be performed in accordance with the approved Waste Analysis Plan, Attachment C of the permit.

[B] Permittee shall feed LLGF to the kiln only from the tanks which are continuously mechanically agitated. Permittee shall not feed streams listed in C(1) to the kiln directly from the portable containers, drums, loader, dump truck or truck tanker etc.

(7) No material (except raw shale) fed to the kilns shall be in solid form. The physical form of the feed streams listed in C(1) shall be a pumpable liquid with a viscosity not exceeding 3000 SUS at 80°F and % sediment not to exceed 8.3 % when measured by ASTM D1796-97. The Permittee shall not feed Solid LGF (i.e. SLGF) or SLGF blended with LLGF. The permittee may feed tank bottom & filter sludge which contains free

liquid as per SW 846 Method 9095A.

(8) The Permittee shall not accept and/or burn the following:

(a) Listed hazardous waste containing pesticides and/or herbicides or characteristics hazardous waste codes D012 to D017, D020 and D031.

(b) Hazardous Wastes, Off-specification used oil, Waste Fuel A, Bsand non-hazardous wastes with total PCBs (defined as the sum of the quantified Arochlors using Method 8082) greater than 25 ppm or any regulated PCBs wastes as defined in 6NYCRR 371 and 40 CFR Part 761. The Permittee shall provide written notice to the Department of any LLGF, off-Specification used oil fuel or Waste Fuel A shipment received with a total PCBs greater than 10 ppm within 24 hours of receipt of the analytical results.

(c) Hazardous Wastes, On-specification used oil, Off-specification used oil, Waste Fuel A, B and non-hazardous wastes containing polychlorodibenzo-p-dioxins (PCDD), polychlorodibenzo-p-furans (PCDF) or hazardous wastes with the following waste codes: F020, F021, F022, F023, F026, F027 and F028.

(d) Hazardous waste prohibited from thermal treatment pursuant to 6 NYCRR 376.1(c)(3), this permit and its attachments.

(e) Waste Fuel B-2 as defined in 6NYCRR Part 225-2.2(b)(10).

(f) Radioactive mixed waste.

(9) The permittee shall feed mined raw shale only from the back-end of the kilns to manufacture light weight aggregate. The permittee shall not feed contaminated shale or soil to the kilns to manufacture light weight aggregate.

(10)

[A] No used oil (on or off-specification) or used oil (on or off-specification) mixed with Waste Fuel A and/or virgin oils can be accepted unless analyzed prior to acceptance and off loading in accordance with 6 NYCRR 374-2 and the permittee's waste analysis plan (Attachment C). For the used oil (on or off-specification) or used oil (on or off-specification) mixed with Waste Fuel A and/or virgin oils to be stored, burned and/or sold, the permittee shall meet the requirements of 6 NYCRR 374-2 and must ensure that the following additional criteria are met:

(a) Such oil

(I) is not a hazardous waste as defined by 6NYCRR 371 and the criteria found in this permit and attachments.
(ii) has a PCB concentration of 25 ppm or less.
(iii) is not an admixture of listed hazardous waste as defined in 6 NYCRR 371.4.

(iv) is not an admixture of comparable fuels as defined in 6 NYCRR 371s4(i)

(b) (i) Mixture of such oil and characteristics hazardous waste, which no longer exhibits any characteristic, is allowed to be burned as used oil but such mixing only by the used oil generator is allowed. The permittee is prohibited from blending used oil with any hazardous waste for any purpose.

(ii) Mixture of such oil and characteristics hazardous waste, which exhibits any characteristics identified in 6NYCRR 371s3, are subject to 6 NYCRR 370 through 374-1 and 376.

(c) Storage of such oil in tanks previously used for storage of hazardous wastes is not allowed unless such tanks have been cleaned and decontaminated as per 6NYCRR 373, this permit and its attachments prior to their use for used oil storage.

(d) Such oil containing more than or equal to 1000 ppm of total halogens is presumed to be hazardous waste and must be burned as hazardous waste complying with all the operating requirements in Module VII.D of this permit unless the presumption of mixing with hazardous waste can be rebutted by demonstrating that the used oil does not contain hazardous waste (for example by using an analytical method from most updated SW-846 to show that the concentrations of individual halogenated solvents listed in waste codes F001 and F002 are less than 100 ppm). Records of analysis conducted to rebut the presumption of mixing with hazardous wastes, must be retained at the facility for at least three years. Rebuttable presumption must be applied at the time of acceptance from the permitted transporter.

(e) The storage of such oil (except unadulterated on-specification used oil) must be in compliance with 6 NYCRR 360-14.3(e).

(f) If such oil meets the definition of Waste Fuel A (as defined in 6 NYCRR 225-2.2) and is intended to be stored, burned and/or sold, the permittee must meet the requirements of 6 NYCRR 225-2.

(g) Mixture of such oil and a waste which is hazardous solely because it exhibits the characteristic of ignitability (as defined in 6 NYCRR 371.3(b)) shall meet the requirements of 6 NYCRR 360-14 and 6 NYCRR 374-2 provided that the mixture does not exhibit the characteristic of ignitability. Such mixing only by the used oil generator is allowed.

[B] No Waste Fuel A or mixture of Waste Fuel A with used oil (on or off-specification) and/or virgin oils can be accepted unless analyzed prior to acceptance and off-loading in accordance with the permittee's waste analysis plan (Attachment C). For this oil to be stored, burned and/or sold, the permittee must meet the applicable requirements of 6 NYCRR 225-2 and must ensure that the following are met:

(a) Such oil

(i) is not a hazardous waste as defined by 6NYCRR 371 and the criteria found in this permit and attachments.
(ii) has a PCB concentration of 25 ppm or less.
(iii) is not an admixture of listed hazardous waste. as defined in 6 NYCRR 371.4.
(iv) is not an admixture of comparable fuels as defined in 6 NYCRR 371s4(i)

(b) (i) Mixture of such oil and a characteristics hazardous waste, which no longer exhibits any characteristic, is allowed to be burned as Waste Fuel A, but such mixing is allowed by the used oil generator only. The permittee is prohibited from blending Waste Fuel A with any hazardous waste for any purpose.

(ii) Mixture of such oil and characteristics hazardous waste, which exhibits any characteristics identified in 6NYCRR 371.3, are subject to 6 NYCRR 370 through 374-1 and 376.

(c) Storage of such oil in tanks previously used for the storage of hazardous wastes is not allowed unless such tanks have been cleaned and decontaminated as per 6NYCRR 373, this permit and its attachments prior to their use for used oil storage.

(d) Such oil containing more than or equal to 1000 ppm of total halogens is presumed to be hazardous waste and such Waste Fuel A or its mixture must be burned as hazardous waste complying with all the operating requirements in Module VII.D of this permit unless the presumption of mixing with hazardous waste can be rebutted by demonstrating that such Waste Fuel A or its mixutre does not contain hazardous waste (for example by using an analytical method from most updated SW-846 to show that the concentrations of individual halogenated solvents listed in waste codes F001 and F002 are less than 100 ppm). Records of analysis conducted to rebut the presumption of mixing with hazardous wastes, must be retained at the facility for at least three years. Rebuttable presumption must be applied at the time of acceptance from the permitted transporter.

(e) Storage of such oil (except unadulterated on-specification used oil) must be in compliance with 6 NYCRR 360-14.3(e).

(f) If such oil meets the definition of used oil of 6 NYCRR 374-2 and is intended to be stored, burned and/or sold, the permittee must meet the requirements of 6 NYCRR 374-2.

(g) Mixture of such oil and a hazardous waste which is hazardous solely because it exhibits the characteristic of ignitability (as defined in 6 NYCRR 371.3(b)) must meet the requirements of 6 NYCRR 360-14 and 6 NYCRR

374-2 provided that the mixture does not exhibit the characteristic of ignitability. Such mixing is allowed by the used oil generator only.

D. OPERATING CONDITIONS

(1) During operation of the LWAKs, hazardous wastes(LLGF), non-hazardous waste, Comparable fuels (as defined in 371.4(I)) if fed through LLGF tanks and Waste fuel B (as defined in 6NYCRR 225-2) shall not be fed into nor burned in the LWAKs unless the LWAKs meet the operating conditions set forth in Conditions C and & D of this module. By definition, startup and shutdown and waste feed cutoffs do not meet these operating conditions and therefore do not allow the feed into and burning of these materials in the LWAKs with the exception that after a waste feed cutoff the feed into and burning in the LWAKs of Waste Fuel A and/or off-specification used oil (as defined 6NYCRR 374-2.2) is permitted.

When all of the above materials are not being fed into and burned in the LWAKs, the permittee is restricted to feeding into and burning in the LWAKS natural gas, no. 2, 4, or 6 fuel oil, diesel & kerosene (virgin or re-refined), comparable fuel if fed through other than LLGF tanks or On-specification used oil (as defined in 6NYCRR 374-2 and this permit, Section C above) subject to the applicable provisions of 6NYCRR Part 374-2 and the requirements and emission limits found in the applicable NYS air emissions regulations. Waste Fuel A and Off specification used oil is also allowed during normal (non startup or shutdown modes) operation in the absence of hazardous waste, (LLGF) non-hazardous waste & Waste Fuel B in accordance with 6 NYCRR 225-2 and 374-2 respectively as well as the conditions in this permit.

The burning of Waste Fuel A & Off-specification used oil during normal operation in the absence of hazardous waste shall cease immediately any time the hourly rolling average carbon monoxide levels in the stack are at or above 500 parts per million at 7% Oxygen, dry as measured under D(3).

The permittee shall install and maintain an interlock system that will prevent burning liquid hazardous waste when the hourly rolling average Carbon Monoxide levels register >100 ppm while burning it with Waste Fuel A, B or Off-Specification Used Oil or On-Specification Used Oil or Comparable Fuels or natural gas or No. 2, 4 or 6 fuel oil or diesel or kerosene.

The feeds specified in condition C.1 shall be fed as per following table.

No.	Feed Description	Modes of LWAKs Operation		
		Normal Operation	Operation immediately after HW AWFCO	Startup & Shut Down of LWAKs
1	a) Hazardous waste (HW i.e. LLGF) with or without any of the feed streams described in this table b) Non-Hazardous waste & any stream handled through HW tank system c) Waste Fuel B	The permittee shall comply with operating conditions set forth in conditions C & D of this module.	The permittee is prohibited from feeding & burning these feed streams.	The permittee is prohibited from feeding & burning these feed streams.
2	Waste Fuel A and/or Off-Specification Used oil	If fed in absences of HW, the permittee shall comply with Carbon monoxide limit specified in Condition D.3.	The permittee shall comply with Carbon monoxide limit specified in Condition D.3.	The permitte is prohibited from feeding & Burning Waste Fuel A and/or Off-Specification used oil.
3	On-Specification Used oil	The permittee shall meet applicable provisions of 6 NYCRR 374-2 and NYS Air emissions regulations.	The permittee shall meet applicable provisions of 6 NYCRR 374-2 and NYS Air emissions regulations.	The permittee shall meet applicable provisions of 6 NYCRR 374-2 and NYS Air emissions regulations.
4	Comparable fuels when fed through HW storage/blending tanks	The permittee shall comply with conditions C & D of this module.	The permittee is prohibited from feeding & burning comparable fuel.	The permittee is prohibited from feeding & burning comparable fuel.
5	Comparable fuels when fed through its dedicated storage tanks system	The permittee shall meet provisions of 6 NYCRR 371-4(i) and applicable NYS Air emissions regulations.	The permittee shall meet provisions of 6 NYCRR 371-4(i) and applicable NYS Air emissions regulations.	The permittee shall meet provisions of 6 NYCRR 371-4(i) and applicable NYS Air emissions regulations.

No.	Feed Description	Modes of LWAKs Operation		
		Normal Operation	Operation immediately after HW AWFCO	Startup & Shut Down of LWAKs
6	Virgin Fuels and natural gas	The permittee shall meet applicable NYS Air emissions regulations.	The permittee shall meet applicable NYS Air emissions regulations.	The permittee shall meet applicable NYS Air emissions regulations.

(2) The Permittee shall control fugitive emissions from the combustion zone and the back end of the LWAK by continuously maintaining a negative kiln pressure at the hood of the kiln and maintaining the baghouse pressure drop below the maximum operating limit as specified in Condition D.3 of this module. If the hood pressure operating limit specified in the table below is exceeded, the permittee shall immediately & automatically cutoff hazardous waste (i.e. LLGF) feed to the kiln. Immediately after such cutoff, the permittee shall visually inspect the kilns for fugitive emissions. If the visual inspection reveals fugitive emissions, permittee shall immediately cease burning other liquid feed streams (other than the virgin fuels & on-specification used oil) and take appropriate corrective measures to control the fugitive emissions. The permittee shall resume feeding LLGF and other liquid streams after the fugitive emissions are stopped. Such fugitive emission incidences shall be reported in the monthly report in accordance with condition Module V.D.(9).

(3) The Permittee shall feed wastes described in Condition C of this module to the LWAK only under the following operating conditions. The Permittee shall operate, monitor, maintain and calibrate the systems specified below to automatically activate the alarm and cut off the hazardous waste to the LWAK at the levels specified below when the operating conditions deviate from the limits established below. This table below does not apply while solely burning on-specification used oil, Comparable Fuels, natural gas, Fuel oil No. 2 , 4, 6, diesel and/or kerosene.

The alarms and the automatic waste feed cutoff (AWFCO) systems listed below shall be tested in accordance with Condition E(3) of this module to ensure that, for each interlocked parameter, deviations from the allowed operating limits will result in a pre-cutoff alarm activation and/or an automatic cutoff of LLGF & Off-Specification used oil/Waste Fuel A as applicable. The permittee shall follow calibration and automatic waste feed cutoff check procedure specified in Attachment D of this permit.

Operating Parameters (measured by instrument tag #s provided in Appendix D-17 of Attachment D)	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit[2]	Monitoring/ Recording7 Frequency	Calibration Frequency
Hazardous Waste (LLGF) feed rate, gpm[9]	HRA[1]	9.0 gpm (HRA[1])	>10.3 gpm (HRA[1])	Monitor Continuously[3] & recordaHRA every minute	Monthly
Off- Specification used Oil, Waste Fuel A, B feed rate (when co-fired with HW), gpm	HRA[1]	HRA Limit shall be set for each certified tank to comply with the feed rate limits of total chlorine, metals & Btu in condition (C) above.	HRA Limit shall be set for each certified tank to comply with the feed rate limits of total chlorine, metals & Btu in condition (C) above.	Monitor Continuously[3] & record HRA[1] every minute	Monthly
Kiln Back-end Temp. (^{0}F) Minimum Maximum	 HRA[1] HRA[1]	 910 1010	 < 896 >1030	Monitor Continuously[3] & record HRA every minute	Monthly
Stack gas Carbon Monoxide, ppm @ 7% O_2, dry[6]	HRA[1]	60 400	>100 while burning LLGF >500 while burning Waste Fuel A or Off-specification used oil in absence of LLGF (see condition D(1))	Monitor Continuously[3] & record HRA every minute	Daily calibration Quarterly CE Test. Annual Performance Specification Test as per Appendix 49 of 6 NYCRR Subpart 374-1.

Operating Parameters (measured by instrument tag #s provided in Appendix D-17 of Attachment D)	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit[2]	Monitoring/ Recording7 Frequency	Calibration Frequency
Stack gas Oxygen (dry) %	HRA[1]	none	none	Monitor Continuously[3] & record HRA every minute	Daily calibration Quarterly CE Test. Annual Performance Specification Test as per Appendix 49 of 6 NYCRR Subpart 374-1.
Stack gas flow rate wet scfm	HRA[1]	44,500	>45,000	Monitor Continuously[3] & record HRA every minute	Monthly visual inspection. Quarterly clean up. Annual Relative Accuracy test as per Performance Specification 6, 40 CFR Part 60, Appendix B.
Kiln (i.e. Hood) pressure, "wg	INST[3]	-0.08	>-0.05	Monitor Continuously[3] & record maximum reading in a minute every minute[7]	Monthly
Baghouse[4] pressure drop, "wg	HRA[1]	< 5.6	< 5.1	Monitor Continuously[3] & record HRA every minute	Monthly
Scrubber Water Re-circulation rate, gpm	HRA[1]	194	< 180	Monitor Continuously[3] & record HRA every minute	Monthly calibration. Annual calibration by outside contractor.
Heat exchanger outlet temperature (^{0}F)	HRA[1]	448	> 453	Monitor Continuously[3] & record HRA every minute	Monthly
Inlet Temperature to Baghouse, ^{0}F	HRA[1]	390	>400	Monitor Continuously[3] & record HRA every minute	Monthly

Operating Parameters (measured by instrument tag #s provided in Appendix D-17 of Attachment D)	Averaging Period	Alarm Set-point	Automatic Waste Cutoff Limit[2]	Monitoring/ Recording7 Frequency	Calibration Frequency
Shale feed rate, tph	HRA[1]	21.0 (HRA[1])	>22[5] (HRA[1])	Monitor Continuously[3] &arecord HRA every minute	Monthly
Lime feed rate, lb/hr	HRA[1]	< equivalent of 3.3 lb/hr of lime per lb/hr chlorine feed	< equivalent of 3.2 lb/hr of lime per lb/hr chlorine feed	Monitor Continuously[3] & record HRA every minute	Monthly
Re-circulation tank pH	HRA[1]	8.2	<7.9	Monitor Continuously[3] & record HRA every minute	Monthly
Ventruri Pressure, drop, "wg	HRA[1]	3.5"	< 2.9"	Monitor Continuously[3] &arecord HRA every minute	Monthly
Ducon scrubber pressure drop "wg	HRA[1]	2.0"	< 1.5"	Monitor Continuously[3] & record HRA every minute	Monthly
Scrubber water blow down, gpm	HRA[1]	17	< 16.2	Monitor Continuously[3] & record HRA every minute	Monthly calibration. Annual calibration by outside contractor.
LLGF Line pressure, psig	HRA[1]	40	< 35	Monitor Continuously[3] &arecord HRA every minute	Monthly
LLGF atomization pressure, psig	HRA[1]	60	<a52	Monitor Continuously[3] & record HRA every minute	Monthly

1. Hourly Rolling Average (HRA) is a average of immediately preceding 60 one minute average values. The permittee shall ignore periods of time when one minute average values are not available for calculating HRA. When one minute average values become available again, the first one minute average value is added to the previous 59 values to calculate the HRA.

2. The permittee shall operate the LWAKs with the functioning system that immediately and automatically cuts off the LLGF when: a) the values for operating parameters exceed their limits of the "Automatic Waste Cutoff limit" column in the table of condition D(3) above b) the process monitoring instrument (including CO & O2 monitors)

malfunctions and c) any component of the automatic waste feed cutoff system fails. Automatic waste cutoff shall be without any time delay unless specifically mentioned.

The permittee shall operate the LWAKs with the functioning system that immediately and automatically cuts off the Off-specification used oil/Waste Fuel A when: a) CO concentration exceeds 500 ppma@ 7% O2, dry on HRA basis while solely burning off-specification used oil/Waste fuel A b) the process monitoring instrument (including CO & O2 monitors) malfunctions and c) any component of the automatic waste feed cutoff system fails. Automatic waste cutoff shall be without any time delay unless specifically mentioned.

3. Continuous means reading taken at least once every 15 seconds.

4. The Permittee shall continuously operate all three bag house modules while burning hazardous waste (i.e. LLGF).

5. Hazardous wastes (i.e. LLGF) may be fed to the LWAKs for a maximum period of 30 minutes prior to introducing shale to the kilns, provided that all other operating conditions specified in the table of Condition D(3) above are met prior to feeding hazardous wastes (i.e. LLGF). If a cessation of shale feed results during operation, the Permittee shall, within 30 minutes, stop the hazardous waste (i.e. LLGF) feed to the kilns if the shale feed has not been restored within 30 minutes of its stoppage.

6. Instantaneous CO concentration should be corrected for 7% O_2 using following formula prior to calculating hourly rolling average corrected CO concentration.

$$Instantaneous\,CO\,ppmv(dry)\,@\,7\%\,O_2 = CO(14.0/21.0 - O_2)$$

where: CO= Instantaneous CO ppmv (dry) reading
O_2= Instantaneous O_2 % (dry) reading corresponding to instantaneous CO reading

7. The permittee shall retain all the instantaneous and one minute average readings of all parameters (except for hood pressure & feeds flow rates) listed above for at least two hours. The permittee shall retain instantaneous readings of the hood pressure for at least two hours. The permittee shall retain all the instantaneous and one minute average readings of feeds flow rates listed above for at least thirteen hours. All readings recorded as per the "Monitoring/Recording[7] Frequency" column in the above table shall be retained until the closure of the facility.

(4) The permittee shall maintain the minimum back end temperature limit specified in the table of condition D(3) while hazardous waste or hazardous waste residues remains in the combustion chamber.

(5) The permittee shall duct combustion gases through entire air pollution control system all the time LWAKs are operating.

(6) The permittee shall monitor & record the operating parameters listed in condition D(3) above all the time while operating the LWAK. If the monitoring instrumentation for any of the operating parameters (listed in 1st column) malfunctions, LLGF feed will be cutoff automatically and the Permittee may continue or initiate feeding Off-specification used oil/Waste Fuel A provided that the Carbon Monoxide (CO) & Oxygen monitors are functioning properly and the CO concentration is below 500 ppmv at 7% oxygen. The permittee shall not start or restart LLGF &/or Off-specification used oil/Waste Fuel A feeds after AWFCO until all the applicable operating parameters are within the specified limits in condition D(3) above.

(7) The permittee shall investigate the cause of each AWFCO and take appropriate corrective measures to minimize future AWFCOs and record the findings in the operating records and report in the monthly report required by the condition D(9) below.

(8) Permittee shall notify the Department (NYSDEC) within 72 hours if the automatic waste feed cutoff (AWFCO) system (including AWFCOs initiated prior to reaching the conditions set forth in D(1) of this module and AWFCOs initiated for parameters not in the condition D(1) of this module) has been activated 25 times or more in any calendar month period. AWFCOs caused by power outages shall not be included in this total. When a AWFCO is registered by the instruments for exceedance of conditions set forth in Condition D(3), following another AWFCO which has been initiated prior to reaching the conditions set forth in Condition D (3) of this module, these two cutoffs will be counted as one AWFCO provided all liquid waste feeds to the incinerator have been cutoff by the first AWFCO to occur . Each automatic waste feed cutoff after each startup shall be counted as one, irrespective of the duration of operation between each startup and cutoff. The notification shall include an explanation of the reasons for the AWFCOs and actions taken to prevent such frequent shutdowns.

If and when the automatic waste feed cutoff system has been activated as described above more than 50 times in a calendar month operating period, Permittee shall submit a report identifying the problem(s) and recommendation(s) & implement the remedy(s) such that the unit will operate within 25 AWFCO cutoff limits. Such report must be prepared and certified by an independent New York State registered professional engineer knowledgeable in hazardous waste incineration. The report must be submitted to the Department within 15 days of the 50th cutoff.

(9) The Permittee shall report all process deviations from allowed operating limits listed in the permit and a summary of operations in a monthly report. This report must be filed by 21st of the following month with the appropriate office of NYSDEC. If the 21st falls on weekend or legal holiday, monthly report is to be filed by following Monday or first day after the legal holiday, respectively. At a minimum, the report must address the following items:

a. Process Operating Summary for each of kilns

- start & end time and hours the unit was operated with hazardous waste (LLGF)
- brief explanation of the reasons for downtime

b. Continuous Monitor Operating Summary for each of kilns

- for each parameter exceeding the Automatic Waste Feed Cutoff (AWFCO) limit set forth in Condition D(3) and/or Operational cutoffs (i.e. OPCOs- cutoffs initiated prior to reaching AWFCO limit) during the calender month, list the following:

* parameter
* whether the cutoff resulted from activation of AWFCO or OPCO system
* AWFCO and/or OPCO limit, as applicable

* number of AWFCOs and/or OPCOs, as applicable
* number of AWFCOs and/or OPCOs, for the calender year to date
* cause of each AWFCOs and/or OPCOs
* corrective action taken for each AWFCOs and/or OPCOs
* duration, start and end time and date of each AWFCOs and/or OPCOs

- for the CO and O_2 monitors found to exceed the acceptable drift range during an audit or a daily span check, list the following:

* parameter
* date
* indicated drift
* corrective action performed

c. Feed Rate Summary (while burning LLGF only & LLGF with On & Off-Specification Used oil, Waste Fuel A, Comparable fuel, natural gas, diesel, kerosene, Fuel Oil # 2,4 & 6) for each of kilns

(i) For each batch of raw shale, hazardous waste (i.e. LLGF), and oils Off-Specification Used oil & Waste Fuel A fed to each of the LWAKs provide:

- amount of each feed mentioned above burned in the kilns
- flow rates of the feed mentioned above,
- start and end time of each feeds,
- concentrations of metals (mentioned in condition C(6)) & total halogens,
- heat content of each feed stream (except raw shale),
- specific gravity (for feeds whose flow rates are measured in volume),
- total mass feed rate of metals (mentioned in condition C(6)) and total halogen (in lb/hr) fed to the kiln, and
- total thermal input (in MMBtu/hr)

(ii) For each batch of On Specification Used oil, Comparable fuel, natural gas, diesel, kerosene, Fuel Oil # 2,4 & 6 fed to each of the LWAKs provide:

- start and end time of each feeds,
- specific gravity (for feeds whose flow rates are measured in volume),
- heat content of each feed stream,
- total thermal input (in MMBtu/hr),
- total mass feed rate of metals (mentioned in condition C(6)) and total halogen (in lb/hr) fed to the kiln, if the total mass feed rates from each of the these streams is greater than 1.0% of the permitted feed rates mentioned in 3rd column of condition C(6) & condition C(3) respectively.

d. for Off-Specification Used oil/Waste Fuel A (while burning in the absence of LLGF) burnt in each of the kilns provide:

- Date, starting and ending time Off-specification Used Oil and/or Waste Fuel A was burnt
- BTU, specific gravity, Metals & total halogen concentration

e. For each of the kilns provide following information on fugitive emissions:

- Date & Time of fugitive emissions observed
- Location of emission
- Corrective action taken
- Date & Time of corrective action taken

E. MONITORING AND INSPECTION

(1) The Permittee shall install, maintain, calibrate, and operate monitoring equipment which continuously records operating parameters specified in condition D(3) required by 6NYCRR 374-1.8(c)(5)(viii).

(2) The LWAK and associated equipment shall be inspected, at least daily, for leaks, spills, fugitive emissions, and signs of a malfunction & tampering as required by 6NYCRR 374-1.8(c)(5)(viii)('c').

(3) The Permittee shall perform testing of the automatic waste feed cut off systems and all associated alarms specified in Conditions D(3) of this module by simulating upset conditions for each parameter, as required by 6NYCRR 373-2.15(g)(3). The automatic waste feed cutoff system and alarm levels shall be tested at least monthly for all system parameters providing there is continuing testing performed on at least one system parameter on a random basis once at least every 7 days to verify proper operation of the control valves. If the Permittee experiences an automatic WFCO or OPCO (i.e. automatic WFCOs initiated prior to reaching the cutoff limits set forth in D(1) of this module) during the preceding six days, the Permittee may document this event as a test. If the testing data shows significant deviations, the Department reserves the right to require more frequent testing.

(4) The monitoring and inspection data required by Conditions E(1), E(2) and E(3) must be recorded and the records must be placed in the operating log as required by 6NYCRR 374-1s8(c)(5)(viii)('e').

(5) Upon request of the Commissioner, the Permittee shall conduct the trial burn testing to confirm the emissions standards of 6NYCRR 374-1.8(e) through (h). These trial burn test shall follow the procedure and the protocol to be approved by the Commissioner.

(6) The permittee shall conduct training for all kiln burner operators according to the most updated Incinerator Operator Training and Certification program.

(7) The Air Pollution Control dust (i.e. multiclone & baghouse residues and waste water treatment sludge) must meet the requirements listed under 6 NYCRR. Part 374-1.8(m), this permit and its attachment.

(8) The product (i.e. clinker) shall meet the requirements of 6 NYCRR 374-1.3, this permit and its attachments.

F. CLOSURE

The Permittee shall close the LWAKs and all associated equipment as required by 6NYCRR 374-1.8(c)(5)(xi) and as described in this permit and its attachments.

ATTACHMENT A

SECTION A PART A APPLICATION

Permit Application (1 Page)
RCRA Subtitle C Site Identification Form (3 pages)
Hazardous Waste Permit Information Form (18 Pages)
Facility Photographs (five)

SECTION A

PERMIT APPLICATION

The permit application consists of a completed Part A Application with general and specific information as required by 6NYCRR Subpart §373-1.5. Certain technical data, such as design drawings and specifications, and engineering studies and reports are certified by a professional engineer registered in New York State in accordance with the provisions of 6NYCRR §373-1.5.

This permit application is for the operation of facilities to store, incinerate or burn hazardous waste and waste oil for energy recovery, and the tank storage of Low Grade Fuel (LGF) and the container storage of LGF, sludge and any ancillary materials associated with the process.

The lead operator responsible for Norlite's hazardous waste management activities and person whom questions should be directed to is:

Timothy F. Lachell
Plant Manager
Phone: (518) 235-0401

OMB#: 2050-0175 Expires 12/31/2003

MAIL THE COMPLETED FORM TO: Appropriate EPA ional or State Office.

United States Environmental Protection Agency

RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (See instructions on page 25)

CHECK CORRECT BOX(ES)

Reason for Submittal:

- ☐ To provide initial notification (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities).
- ☐ To provide subsequent notification (to update site identification information).
- ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application.
- ☒ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment# 1).
- ☐ As a component of the Hazardous Waste Report.

2. Site EPA ID Number (See instructions on page 26)

EPA ID Number: NYD 080 469 935

3. Site Name (See instructions on page 26)

Name: Norlite Corporation

4. Site Location Information (See instructions on page 26)

Street Address: 628 South Saratoga Street

City, Town, or Village: Cohoes | State: New York

County Name: Albany | Zip Code: 12047

5. Site Land Type (See instructions on page 26)

Site Land Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

6. North American Industry Classification System (NAICS) Code(s) for the (See instructions on ge 26)

A. 212325 | B. 562211

C. | D.

7. Site Mailing Address (See instructions on page 27)

Street or P. O. Box: P.O. Box 694

City, Town, or Village: Cohoes

State: New York

Country: United States | Zip Code: 12047

8. Site Contact Person (See instructions on pages 27)

First Name: William | MI: C | Last Name: Morris

Phone Number: (518) 235-0401 | Phone Number Extension: 4014

9. Legal Owner and Operator of the Site (See instructions on pages 27 and 28)

A. Name of Site's Legal Owner: United Oil Recovery, Inc. | Date Became Owner (mm/dd/yyyy): 12/01/1995

Owner Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

B. Name of Site's Operator: United Oil Recovery, Inc. | Date Became Operator (mm/dd/yyyy): 12/01/1995

Operator Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other

EPA ID No. NYD980469315

10. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. See instructions on pages 28 to 32)

Hazardous Waste Activities

1. Generator of Hazardous Waste
(choose only one of the following three categories)

- ☒ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or
- ☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities (check all that apply)

- ☐ d. United States Importer of Hazardous Waste
- ☐ e. Mixed Waste (hazardous and radioactive) Generator

For Items 2 through 6, check all that apply:

- ☐ **2. Transporter of Hazardous Waste**
- ☒ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.
- ■ **4. Recycler of Hazardous Waste (at your site)** Note: A hazardous waste permit may be required for this activity.
- **5. Exempt Boiler and/or Industrial Furnace**
  - ☐ a. Small Quantity On-site Burner Exemption
  - ■ b. Smelting, Melting, and Refining Furnace Exemption
- ■ **6. Underground Injection Control**

B. Universal Waste Activities

1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. (check all boxes that apply):

	Generated	Accumulated
a. Batteries	☐	☐
b. Pesticides	■	☐
c. Thermostats	☐	☐
d. Lamps	☐	☐
e. Other (specify) _____	☐	☐
f. Other (specify) _____	☐	☐
g. Other (specify) _____	☐	☐

☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

1. Used Oil Transporter - Indicate Type(s) of Activity(ies)
- ■ a. Transporter
- ☐ b. Transfer Facility

2. Used Oil Processor and/or Re-refiner - Indicate Type(s) of Activity(ies)
- ☐ a. Processor
- ☐ b. Re-refiner

☒ **3. Off-Specification Used Oil Burner**

4. Used Oil Fuel Marketer - Indicate Type(s) of Activity(ies)
- ■ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes (See instructions on page 33)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

EPA ID No. NYD084699355

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes

12. Comments (See instructions on page 33)

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (See instructions on page 33)

Signature of owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
[signature]	William Morris, VP, Environmental Affairs	7/30/04

OMB #: 2050-0034 Expires 10/31/02

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT INFORMATION FORM

1. Facility Permit Contact (See instructions on page 35)	First Name: William	MI: C	Last Name: Morris
	Phone Number: (518) 235-0401		Phone Number Extension:
2. Facility Permit Contact Mailing Address (See instructions on page 35)	Street or P.O. Box: P.O. Box 694		
	City, Town, or Village: Cohoes		
	State: New York		
	Country: United States		Zip Code: 12047
3. Legal Owner Mailing Address and Telephone Number (See instructions on page 36)	Street or P.O. Box: P.O. Box 694		
	City, Town, or Village: Cohoes		
	State: New York		
	Country: United States	Zip Code: 12047	Phone Number (518) 235-0401
4. Operator Mailing Address and Telephone Number (See instructions on page 36)	Street or P.O. Box: P.O. Box 694		
	City, Town, or Village: Cohoes		
	State: New York		
	Country: United States	Zip Code: 12047	Phone Number (518) 235-0401
5. Facility Existence Date (See instructions on page 36)	Facility Existence Date (mm/dd/yyyy): 08/28/1978		

6. Other Environmental Permits (See instructions on page 36)

A. Permit Type (Enter code)	B. Permit Number	C. Description
N	NY004880	Surface Water Discharge Permit

7. Nature of Business (Provide a brief description; see instructions on page 37)

Norlite Corporation produces an expanded shale, lightweight aggregate by the rotary kiln process. Norlite uses spent solvents, oils and certain industrial waste as process fuel in the kilns. Air emissions are controlled with a fabric filter (baghouse) followed by a wet scrubber system. Norlite also stores and blends wastes from off-site generators for use onsite or for offsite transfer.

8. Process Codes and Design Capacities (See instructions on page 37)

PROCESS CODE - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 9.*

B. PROCESS DESIGN CAPACITY - *For each code entered in column A, enter the capacity of the process.*

1. AMOUNT - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*

2. UNIT OF MEASURE - *For each amount entered in column B(1), enter the code in column B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units for each corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Hour; Liters Per Hour; or Million Btu Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, or Refining Furnace	
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed In 40 CFR §260.10	
T94	Containment Building - Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
	Miscellaneous (Subpart X)	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V

UNIT OF MEASURE	UNIT OF MEASURE CODE
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Million Btu Per Hour	X

UNIT OF MEASURE	UNIT OF MEASURE CODE
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu Per Hour	I

8. Process Codes and Design Capacities (*Continued*)

XAMPLE FOR COMPLETING Item 8 (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	B. (2) Unit of Measure (Enter code)	C. Process Total Number of Units	For Official Use Only
X 1	S 0 2	5 3 3 . 7 8 8	G	0 0 1	
1	S 0 1	14,685	G	0 0 2	
2	S 0 2	155,579	G	0 1 5	
3	T 0 1	155,579	G	0 1 5	
4	T 8 3	1,236	E	0 0 2	
5					
6					
7					
8					
9					
10					
11					
12					
13					

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item 9.

9. Other Processes (*See instructions on page 37 and follow instructions from Item 8 for D99, S99, T04 and X99 process codes*)

Line Number (Enter #s in sequence with Item 8)	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY (1) Amount (Specify)	B. (2) Unit of Measure (Enter code)	C. Process Total Number of Units	D. Description of Process
X 1	T 0 4				In-situ Vitrification
1					
2					
3					
4					

10. Description of Hazardous Wastes (See instructions on page 37)

EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in column A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C. UNIT OF MEASURE - *For each quantity entered in column B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	*CODE*	*METRIC UNIT OF MEASURE*	*CODE*
POUNDS	*P*	*KILOGRAMS*	*K*
TONS	*T*	*METRIC TONS*	*M*

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate the waste will be stored, treated, and/or disposed at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of Item 10.D(1).*
3. *Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 10.E.*

2. PROCESS DESCRIPTION: *If a code is not listed for a process that will be used, describe the process in Item 10.D(2) or in Item 10.E(2).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING Item 10 (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)			(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	P	T 0 3	D 8 0		
X 2	D 0 0 2	400	P	T 0 3	D 8 0		
X 3	D 0 0 1	100	P	T 0 3	D 8 0		
X 4	D 0 0 2						Included With Above

10 Description of Hazardous Wastes (*Continued; use additional sheets as necessary*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D001	10,000	T	S01 S02 T83	
2	F001	4,000	T	S01 S02 T83	
3	F002	4,000	T	S01 S02 T83	
4	F003	4,000	T	S01 S02 T83	
5	F005	4,000	T	S01 S02 T83	
6	D002	1,000	T	S01 S02 T83	
7	D003	1,000	T	S01 S02 T83	
8	D004	1,000	T	S01 S02 T83	
9	D005	1,000	T	S01 S02 T83	
10	D006	1,000	T	S01 S02 T83	
11	D007	1,000	T	S01 S02 T83	
12	D008	1,000	T	S01 S02 T83	
13	D009	1,000	T	S01 S02 T83	
14	D010	1,000	T	S01 S02 T83	
15	D011	1,000	T	S01 S02 T83	
16	D018	1,000	T	S01 S02 T83	
17	D019	1,000	T	S01 S02 T83	
18	D021	1,000	T	S01 S02 T83	
19	D022	1,000	T	S01 S02 T83	
20	D023	1,000	T	S01 S02 T83	
21	D024	1,000	T	S01 S02 T83	
22	D025	1,000	T	S01 S02 T83	
23	D026	1,000	T	S01 S02 T83	
24	D027	1,000	T	S01 S02 T83	
25	D028	1,000	T	S01 S02 T83	
26	D029	1,000	T	S01 S02 T83	
27	D030	1,000	T	S01 S02 T83	
28	D032	1,000	T	S01 S02 T83	
29	D033	1,000	T	S01 S02 T83	
30	D034	1,000	T	S01 S02 T83	
31	D035	1,000	T	S01 S02 T83	
32	D036	1,000	T	S01 S02 T83	
33	D037	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
34	D038	1,000	T	S01 S02 T83	
35	D039	1,000	T	S01 S02 T83	
36	D040	1,000	T	S01 S02 T83	
37	D041	1,000	T	S01 S02 T83	
38	D042	1,000	T	S01 S02 T83	
39	D043	1,000	T	S01 S02 T83	
40	F004	1,000	T	S01 S02 T83	
41	F032	1,000	T	S01 S02 T83	
42	F034	1,000	T	S01 S02 T83	
43	F035	1,000	T	S01 S02 T83	
44	F037	1,000	T	S01 S02 T83	
45	F038	1,000	T	S01 S02 T83	
46	F039	1,000	T	S01 S02 T83	
47	K001	1,000	T	S01 S02 T83	
48	K002	1,000	T	S01 S02 T83	
49	K003	1,000	T	S01 S02 T83	
50	K004	1,000	T	S01 S02 T83	
51	K005	1,000	T	S01 S02 T83	
52	K006	1,000	T	S01 S02 T83	
53	K007	1,000	T	S01 S02 T83	
54	K008	1,000	T	S01 S02 T83	
55	K009	1,000	T	S01 S02 T83	
56	K010	1,000	T	S01 S02 T83	
57	K011	1,000	T	S01 S02 T83	
58	K013	1,000	T	S01 S02 T83	
59	K014	1,000	T	S01 S02 T83	
60	K015	1,000	T	S01 S02 T83	
61	K016	1,000	T	S01 S02 T83	
62	K017	1,000	T	S01 S02 T83	
63	K018	1,000	T	S01 S02 T83	
64	K019	1,000	T	S01 S02 T83	
65	K020	1,000	T	S01 S02 T83	
66	K022	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
67	K023	1,000	T	S01 S02 T83	
68	K024	1,000	T	S01 S02 T83	
69	K025	1,000	T	S01 S02 T83	
70	K026	1,000	T	S01 S02 T83	
71	K027	1,000	T	S01 S02 T83	
72	K028	1,000	T	S01 S02 T83	
73	K029	1,000	T	S01 S02 T83	
74	K030	1,000	T	S01 S02 T83	
75	K046	1,000	T	S01 S02 T83	
76	K048	1,000	T	S01 S02 T83	
77	K049	1,000	T	S01 S02 T83	
78	K050	1,000	T	S01 S02 T83	
79	K051	1,000	T	S01 S02 T83	
80	K052	1,000	T	S01 S02 T83	
81	K060	1,000	T	S01 S02 T83	
82	K061	1,000	T	S01 S02 T83	
83	K062	1,000	T	S01 S02 T83	
84	K083	1,000	T	S01 S02 T83	
85	K084	1,000	T	S01 S02 T83	
86	K085	1,000	T	S01 S02 T83	
87	K086	1,000	T	S01 S02 T83	
88	K087	1,000	T	S01 S02 T83	
89	K093	1,000	T	S01 S02 T83	
90	K094	1,000	T	S01 S02 T83	
91	K095	1,000	T	S01 S02 T83	
92	K096	1,000	T	S01 S02 T83	
93	K100	1,000	T	S01 S02 T83	
94	K101	1,000	T	S01 S02 T83	
95	K102	1,000	T	S01 S02 T83	
96	K103	1,000	T	S01 S02 T83	
97	K104	1,000	T	S01 S02 T83	
98	K105	1,000	T	S01 S02 T83	
99	K111	1,000	T	S01 S02 T83	

10 Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
100	K112	1,000	T	S01 S02 T83	
101	K113	1,000	T	S01 S02 T83	
102	K114	1,000	T	S01 S02 T83	
103	K115	1,000	T	S01 S02 T83	
104	K116	1,000	T	S01 S02 T83	
105	K117	1,000	T	S01 S02 T83	
106	K118	1,000	T	S01 S02 T83	
107	K136	1,000	T	S01 S02 T83	
108	K141	1,000	T	S01 S02 T83	
109	K142	1,000	T	S01 S02 T83	
110	K143	1,000	T	S01 S02 T83	
111	K144	1,000	T	S01 S02 T83	
112	K145	1,000	T	S01 S02 T83	
113	K147	1,000	T	S01 S02 T83	
114	K148	1,000	T	S01 S02 T83	
115	K149	1,000	T	S01 S02 T83	
116	K150	1,000	T	S01 S02 T83	
117	K151	1,000	T	S01 S02 T83	
118	K152	1,000	T	S01 S02 T83	
119	K156	1,000	T	S01 S02 T83	
120	K157	1,000	T	S01 S02 T83	
121	K158	1,000	T	S01 S02 T83	
122	K159	1,000	T	S01 S02 T83	
123	K161	1,000	T	S01 S02 T83	
124	P002	1,000	T	S01 S02 T83	
125	P003	1,000	T	S01 S02 T83	
126	P005	1,000	T	S01 S02 T83	
127	P007	1,000	T	S01 S02 T83	
128	P010	1,000	T	S01 S02 T83	
129	P011	1,000	T	S01 S02 T83	
130	P012	1,000	T	S01 S02 T83	
131	P013	1,000	T	S01 S02 T83	
132	P014	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
133	P016	1,000	T	S01 S02 T83	
134	P017	1,000	T	S01 S02 T83	
135	P018	1,000	T	S01 S02 T83	
136	P021	1,000	T	S01 S02 T83	
137	P022	1,000	T	S01 S02 T83	
138	P023	1,000	T	S01 S02 T83	
139	P028	1,000	T	S01 S02 T83	
140	P026	1,000	T	S01 S02 T83	
141	P027	1,000	T	S01 S02 T83	
142	P029	1,000	T	S01 S02 T83	
143	P030	1,000	T	S01 S02 T83	
144	P034	1,000	T	S01 S02 T83	
145	P036	1,000	T	S01 S02 T83	
146	P038	1,000	T	S01 S02 T83	
147	P041	1,000	T	S01 S02 T83	
148	P042	1,000	T	S01 S02 T83	
149	P046	1,000	T	S01 S02 T83	
150	P048	1,000	T	S01 S02 T83	
151	P049	1,000	T	S01 S02 T83	
152	P054	1,000	T	S01 S02 T83	
153	P060	1,000	T	S01 S02 T83	
154	P062	1,000	T	S01 S02 T83	
155	P064	1,000	T	S01 S02 T83	
156	P067	1,000	T	S01 S02 T83	
157	P068	1,000	T	S01 S02 T83	
158	P069	1,000	T	S01 S02 T83	
159	P074	1,000	T	S01 S02 T83	
160	P077	1,000	T	S01 S02 T83	
161	P082	1,000	T	S01 S02 T83	
162	P084	1,000	T	S01 S02 T83	
163	P093	1,000	T	S01 S02 T83	
164	P099	1,000	T	S01 S02 T83	
165	P101	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
166	P103	1,000	T	S01 S02 T83	
167	P104	1,000	T	S01 S02 T83	
168	P105	1,000	T	S01 S02 T83	
169	P110	1,000	T	S01 S02 T83	
170	P113	1,000	T	S01 S02 T83	
171	P114	1,000	T	S01 S02 T83	
172	P116	1,000	T	S01 S02 T83	
173	P118	1,000	T	S01 S02 T83	
174	P119	1,000	T	S01 S02 T83	
175	P120	1,000	T	S01 S02 T83	
176	P121	1,000	T	S01 S02 T83	
177	P188	1,000	T	S01 S02 T83	
178	P190	1,000	T	S01 S02 T83	
179	P191	1,000	T	S01 S02 T83	
180	P204	1,000	T	S01 S02 T83	
181	U001	1,000	T	S01 S02 T83	
182	U002	1,000	T	S01 S02 T83	
183	U003	1,000	T	S01 S02 T83	
184	U004	1,000	T	S01 S02 T83	
185	U005	1,000	T	S01 S02 T83	
186	U006	1,000	T	S01 S02 T83	
187	U007	1,000	T	S01 S02 T83	
188	U008	1,000	T	S01 S02 T83	
189	U009	1,000	T	S01 S02 T83	
190	U010	1,000	T	S01 S02 T83	
191	U012	1,000	T	S01 S02 T83	
192	U015	1,000	T	S01 S02 T83	
193	U016	1,000	T	S01 S02 T83	
194	U017	1,000	T	S01 S02 T83	
195	U018	1,000	T	S01 S02 T83	
196	U019	1,000	T	S01 S02 T83	
197	U020	1,000	T	S01 S02 T83	
198	U021	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (Continued; Additional Sheet)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
199	U022	1,000	T	S01 S02 T83	
200	U024	1,000	T	S01 S02 T83	
201	U025	1,000	T	S01 S02 T83	
202	U027	1,000	T	S01 S02 T83	
203	U028	1,000	T	S01 S02 T83	
204	U030	1,000	T	S01 S02 T83	
205	U031	1,000	T	S01 S02 T83	
206	U034	1,000	T	S01 S02 T83	
207	U035	1,000	T	S01 S02 T83	
208	U037	1,000	T	S01 S02 T83	
209	U039	1,000	T	S01 S02 T83	
210	U041	1,000	T	S01 S02 T83	
211	U042	1,000	T	S01 S02 T83	
212	U043	1,000	T	S01 S02 T83	
213	U044	1,000	T	S01 S02 T83	
214	U045	1,000	T	S01 S02 T83	
215	U046	1,000	T	S01 S02 T83	
216	U047	1,000	T	S01 S02 T83	
217	U048	1,000	T	S01 S02 T83	
218	U049	1,000	T	S01 S02 T83	
219	U050	1,000	T	S01 S02 T83	
220	U051	1,000	T	S01 S02 T83	
221	U052	1,000	T	S01 S02 T83	
222	U053	1,000	T	S01 S02 T83	
223	U055	1,000	T	S01 S02 T83	
224	U056	1,000	T	S01 S02 T83	
225	U057	1,000	T	S01 S02 T83	
226	U059	1,000	T	S01 S02 T83	
227	U063	1,000	T	S01 S02 T83	
228	U064	1,000	T	S01 S02 T83	
229	U068	1,000	T	S01 S02 T83	
230	U069	1,000	T	S01 S02 T83	
231	U070	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
232	U071	1,000	T	S01 S02 T83	
233	U072	1,000	T	S01 S02 T83	
234	U073	1,000	T	S01 S02 T83	
235	U074	1,000	T	S01 S02 T83	
236	U075	1,000	T	S01 S02 T83	
237	U076	1,000	T	S01 S02 T83	
238	U077	1,000	T	S01 S02 T83	
239	U078	1,000	T	S01 S02 T83	
240	U079	1,000	T	S01 S02 T83	
241	U080	1,000	T	S01 S02 T83	
242	U081	1,000	T	S01 S02 T83	
243	U082	1,000	T	S01 S02 T83	
244	U083	1,000	T	S01 S02 T83	
245	U085	1,000	T	S01 S02 T83	
246	U086	1,000	T	S01 S02 T83	
247	U087	1,000	T	S01 S02 T83	
248	U088	1,000	T	S01 S02 T83	
249	U089	1,000	T	S01 S02 T83	
250	U090	1,000	T	S01 S02 T83	
251	U091	1,000	T	S01 S02 T83	
252	U092	1,000	T	S01 S02 T83	
253	U093	1,000	T	S01 S02 T83	
254	U094	1,000	T	S01 S02 T83	
255	U095	1,000	T	S01 S02 T83	
256	U096	1,000	T	S01 S02 T83	
257	U097	1,000	T	S01 S02 T83	
258	U098	1,000	T	S01 S02 T83	
259	U099	1,000	T	S01 S02 T83	
260	U101	1,000	T	S01 S02 T83	
261	U102	1,000	T	S01 S02 T83	
262	U103	1,000	T	S01 S02 T83	
263	U105	1,000	T	S01 S02 T83	
264	U106	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
265	U107	1,000	T	S01 S02 T83	
266	U108	1,000	T	S01 S02 T83	
267	U109	1,000	T	S01 S02 T83	
268	U110	1,000	T	S01 S02 T83	
269	U111	1,000	T	S01 S02 T83	
270	U112	1,000	T	S01 S02 T83	
271	U113	1,000	T	S01 S02 T83	
272	U114	1,000	T	S01 S02 T83	
273	U115	1,000	T	S01 S02 T83	
274	U116	1,000	T	S01 S02 T83	
275	U117	1,000	T	S01 S02 T83	
276	U118	1,000	T	S01 S02 T83	
277	U119	1,000	T	S01 S02 T83	
278	U120	1,000	T	S01 S02 T83	
279	U121	1,000	T	S01 S02 T83	
280	U122	1,000	T	S01 S02 T83	
281	U123	1,000	T	S01 S02 T83	
282	U124	1,000	T	S01 S02 T83	
283	U125	1,000	T	S01 S02 T83	
284	U126	1,000	T	S01 S02 T83	
285	U127	1,000	T	S01 S02 T83	
286	U128	1,000	T	S01 S02 T83	
287	U131	1,000	T	S01 S02 T83	
288	U133	1,000	T	S01 S02 T83	
289	U134	1,000	T	S01 S02 T83	
290	U135	1,000	T	S01 S02 T83	
291	U137	1,000	T	S01 S02 T83	
292	U138	1,000	T	S01 S02 T83	
293	U140	1,000	T	S01 S02 T83	
294	U141	1,000	T	S01 S02 T83	
295	U143	1,000	T	S01 S02 T83	
296	U144	1,000	T	S01 S02 T83	
297	U146	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
298	U147	1,000	T	S01 S02 T83	
299	U149	1,000	T	S01 S02 T83	
300	U150	1,000	T	S01 S02 T83	
301	U152	1,000	T	S01 S02 T83	
302	U153	1,000	T	S01 S02 T83	
303	U154	1,000	T	S01 S02 T83	
304	U155	1,000	T	S01 S02 T83	
305	U156	1,000	T	S01 S02 T83	
306	U157	1,000	T	S01 S02 T83	
307	U158	1,000	T	S01 S02 T83	
308	U159	1,000	T	S01 S02 T83	
309	U160	1,000	T	S01 S02 T83	
310	U161	1,000	T	S01 S02 T83	
311	U162	1,000	T	S01 S02 T83	
312	U163	1,000	T	S01 S02 T83	
313	U164	1,000	T	S01 S02 T83	
314	U165	1,000	T	S01 S02 T83	
315	U166	1,000	T	S01 S02 T83	
316	U167	1,000	T	S01 S02 T83	
317	U168	1,000	T	S01 S02 T83	
318	U169	1,000	T	S01 S02 T83	
319	U170	1,000	T	S01 S02 T83	
320	U171	1,000	T	S01 S02 T83	
321	U172	1,000	T	S01 S02 T83	
322	U173	1,000	T	S01 S02 T83	
323	U174	1,000	T	S01 S02 T83	
324	U176	1,000	T	S01 S02 T83	
325	U177	1,000	T	S01 S02 T83	
326	U178	1,000	T	S01 S02 T83	
327	U179	1,000	T	S01 S02 T83	
328	U180	1,000	T	S01 S02 T83	
329	U181	1,000	T	S01 S02 T83	
330	U182	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
331	U183	1,000	T	S01 S02 T83	
332	U186	1,000	T	S01 S02 T83	
333	U187	1,000	T	S01 S02 T83	
334	U188	1,000	T	S01 S02 T83	
335	U190	1,000	T	S01 S02 T83	
336	U191	1,000	T	S01 S02 T83	
337	U193	1,000	T	S01 S02 T83	
338	U194	1,000	T	S01 S02 T83	
339	U196	1,000	T	S01 S02 T83	
340	U197	1,000	T	S01 S02 T83	
341	U201	1,000	T	S01 S02 T83	
342	U202	1,000	T	S01 S02 T83	
343	U203	1,000	T	S01 S02 T83	
344	U206	1,000	T	S01 S02 T83	
345	U207	1,000	T	S01 S02 T83	
346	U208	1,000	T	S01 S02 T83	
347	U209	1,000	T	S01 S02 T83	
348	U210	1,000	T	S01 S02 T83	
349	U211	1,000	T	S01 S02 T83	
350	U213	1,000	T	S01 S02 T83	
351	U214	1,000	T	S01 S02 T83	
352	U218	1,000	T	S01 S02 T83	
353	U219	1,000	T	S01 S02 T83	
354	U220	1,000	T	S01 S02 T83	
355	U221	1,000	T	S01 S02 T83	
356	U222	1,000	T	S01 S02 T83	
357	U223	1,000	T	S01 S02 T83	
358	U225	1,000	T	S01 S02 T83	
359	U226	1,000	T	S01 S02 T83	
360	U227	1,000	T	S01 S02 T83	
361	U228	1,000	T	S01 S02 T83	
362	U235	1,000	T	S01 S02 T83	
363	U236	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)	(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
364	U238	1,000	T	S01 S02 T83	
365	U239	1,000	T	S01 S02 T83	
366	U243	1,000	T	S01 S02 T83	
367	U244	1,000	T	S01 S02 T83	
368	U246	1,000	T	S01 S02 T83	
369	U277	1,000	T	S01 S02 T83	
370	U328	1,000	T	S01 S02 T83	
371	U353	1,000	T	S01 S02 T83	
372	U359	1,000	T	S01 S02 T83	
373	U375	1,000	T	S01 S02 T83	
374	U376	1,000	T	S01 S02 T83	
375	U377	1,000	T	S01 S02 T83	
376	U378	1,000	T	S01 S02 T83	
377	U379	1,000	T	S01 S02 T83	
378	U381	1,000	T	S01 S02 T83	
379	U382	1,000	T	S01 S02 T83	
380	U383	1,000	T	S01 S02 T83	
381	U384	1,000	T	S01 S02 T83	
382	U385	1,000	T	S01 S02 T83	
383	U386	1,000	T	S01 S02 T83	
384	U387	1,000	T	S01 S02 T83	
385	U390	1,000	T	S01 S02 T83	
386	U391	1,000	T	S01 S02 T83	
387	U392	1,000	T	S01 S02 T83	
388	U393	1,000	T	S01 S02 T83	
389	U394	1,000	T	S01 S02 T83	
390	U395	1,000	T	S01 S02 T83	
391	U396	1,000	T	S01 S02 T83	
392	U400	1,000	T	S01 S02 T83	
393	U401	1,000	T	S01 S02 T83	
394	U402	1,000	T	S01 S02 T83	
395	U403	1,000	T	S01 S02 T83	
396	U404	1,000	T	S01 S02 T83	

10. Description of Hazardous Wastes (*Continued; Additional Sheet*)

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	E. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in E(1))
397	U 4 0 7	1,000	T	S	0	1	S	0	2	T	8	3	
398	U 4 1 0	1,000	T	S	0	1	S	0	2	T	8	3	

11. Map (See instructions on page 38)

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

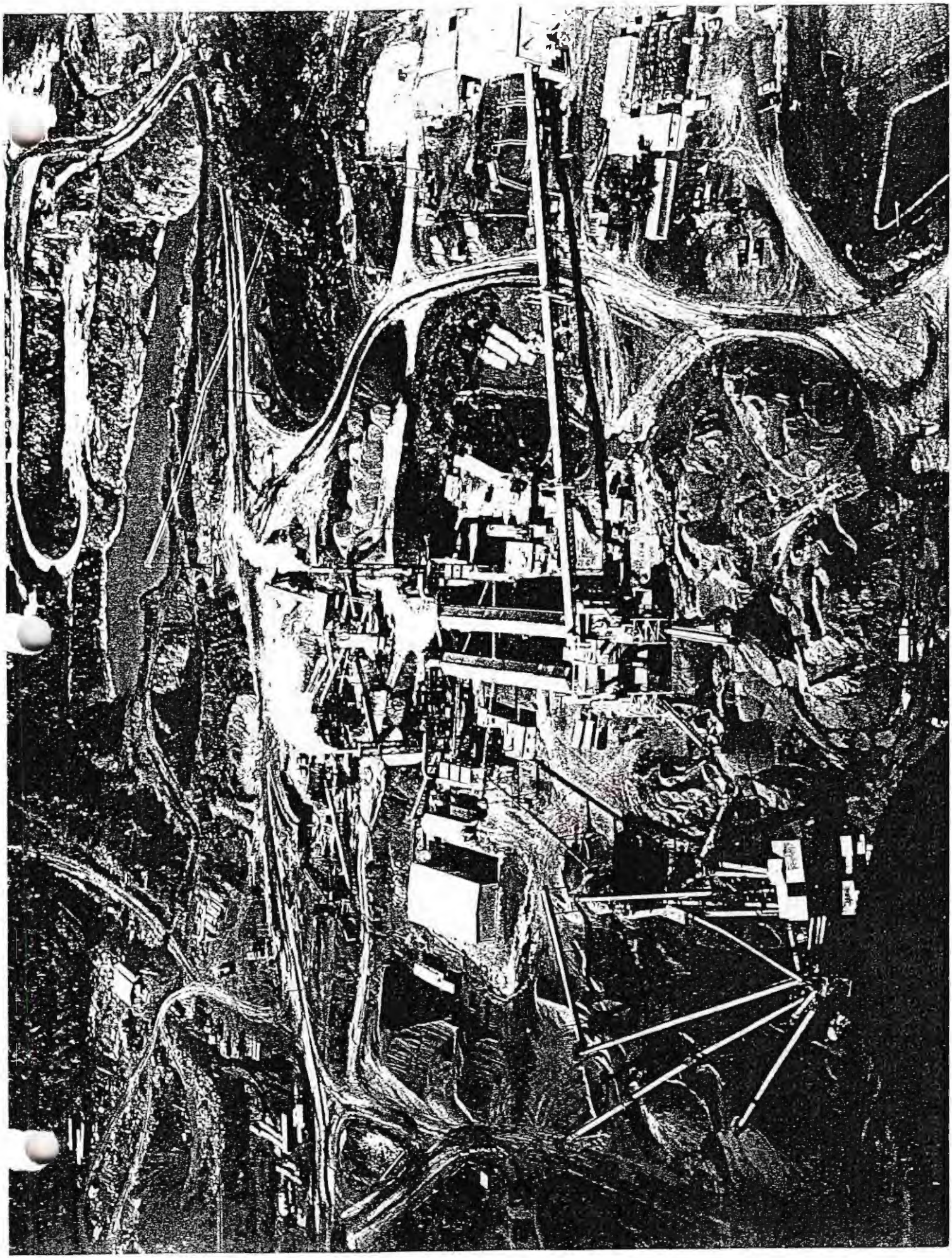
12. Facility Drawing (See instructions on page 39)

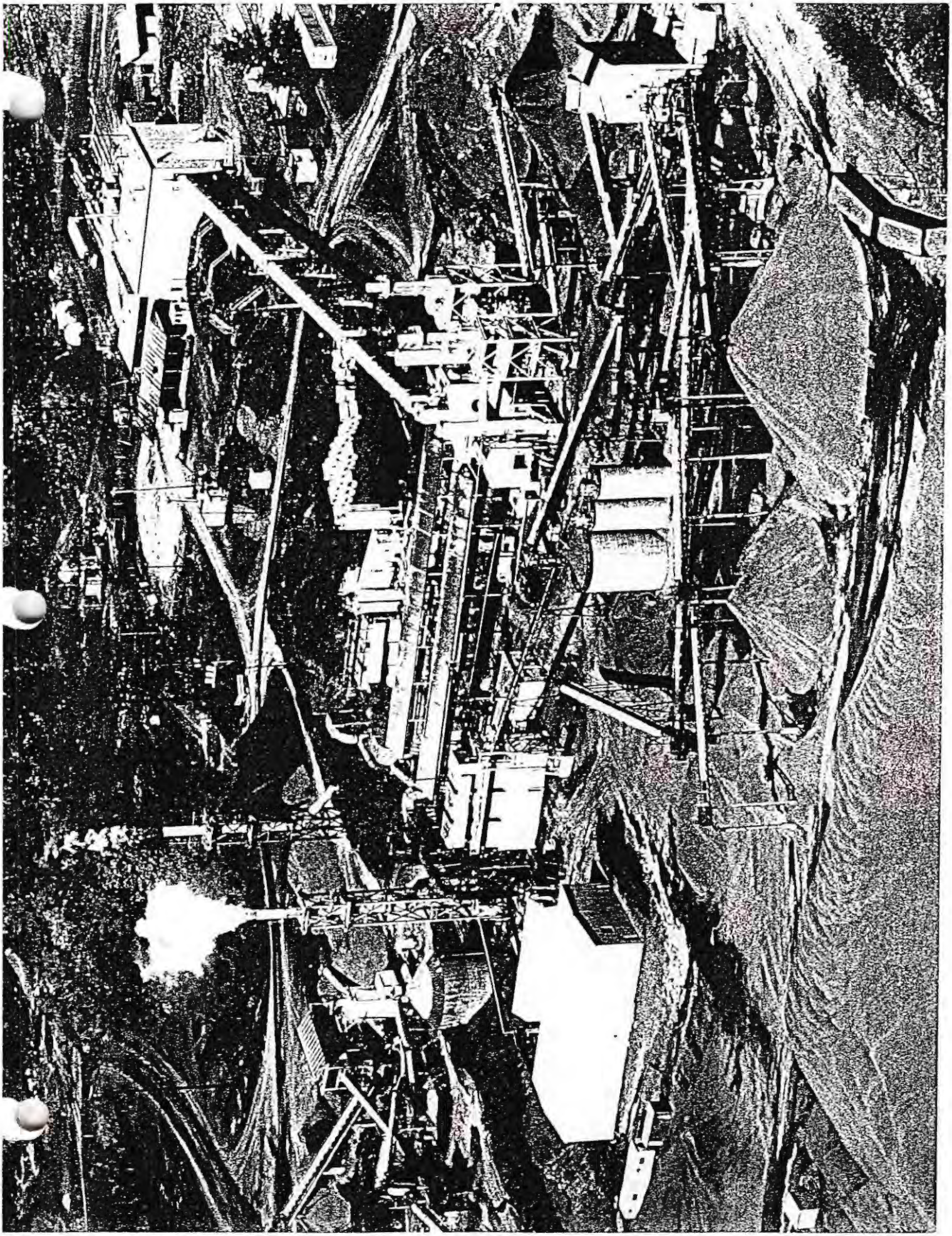
All existing facilities must include a scale drawing of the facility (see instructions for more detail).

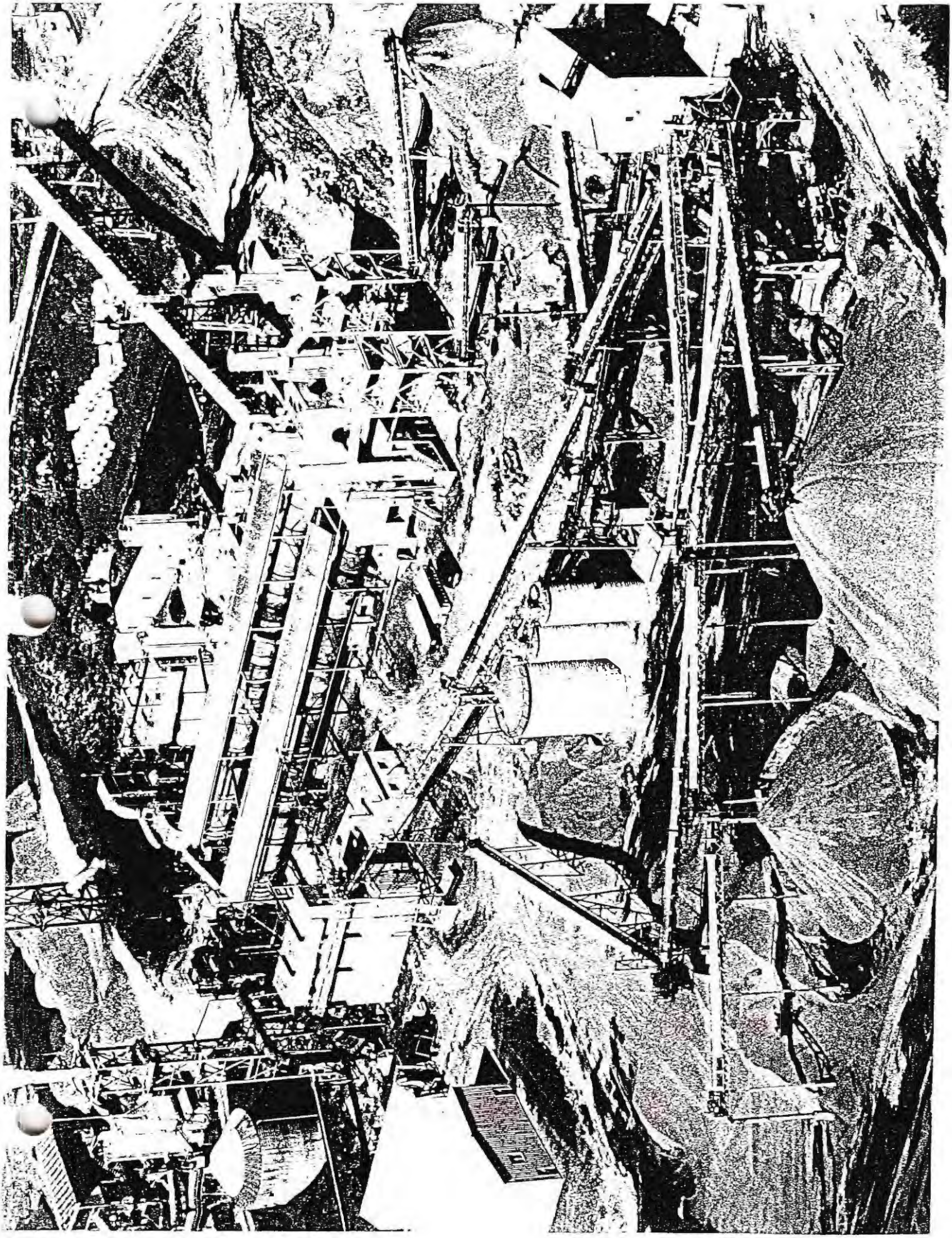
13. Photographs (See instructions on page 39)

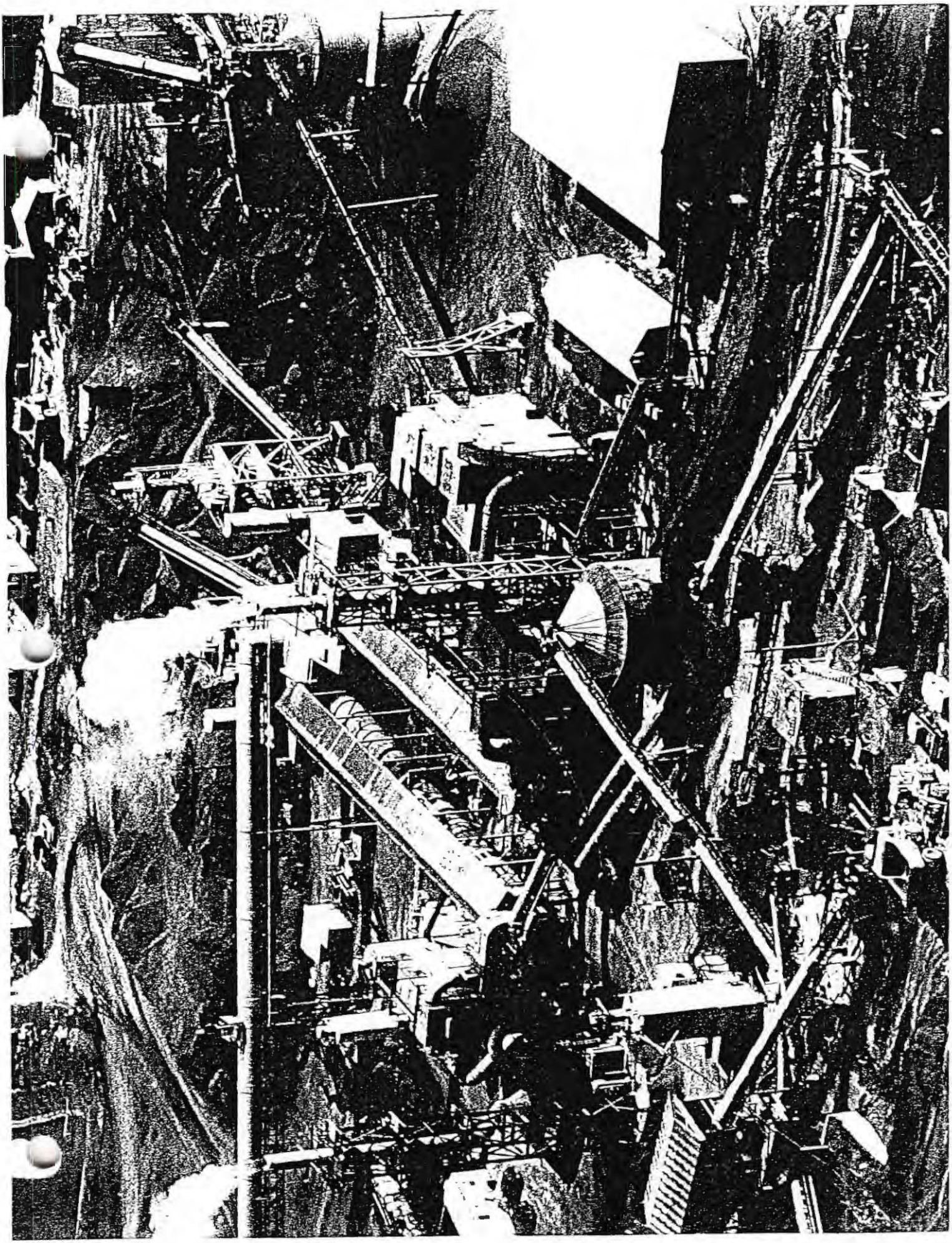
All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

14. Comments (See instructions on page 39)









ATTACHMENT B

SECTION B FACILITY DESCRIPTION

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SECTION B

FACILITY INFORMATION

This Section provides for the following regulatory requirements:

(1) general description 6NYCRR Subpart §373-1.5 (a) (2) (i);

(2) topographical maps 6NYCRR Subpart §373-1.5 (a) (2) (xix);

(3) location information 6NYCRR Subpart §373-1.5 (a) (2) (xi);

(4) and traffic patterns 6NYCRR Subpart §373-1.5 (a) (2) (x).

B-1 General Description of the Facility [6NYCRR Subpart §373-1.5(a)(2)(i)]

Norlite Corporation is located on the southern boundary of the City of Cohoes, New York. Norlite is both the owner and operator of the facility. Norlite's aggregate plant has been in existence since 1956, though the present ownership of Norlite dates from 1995. The facility consists of a production operation and a quarry for shale. Norlite's processing facility occupies about 12 acres of a 221 acres plot owned by Norlite. The street and mailing address is:

Norlite Corporation
628 South Saratoga Street
Cohoes, New York 12047
Phone: (518) 235-0401

The Norlite facility produces an expanded shale aggregate in two dry process rotary kilns. Raw materials are quarried on-site and transported to the kilns via a conveyor system. Kiln No. 1, manufactured by Taylor is 175 feet long, whereas Kiln No. 2, manufactured by Allis-Chalmers, is 180 feet long. Both kilns have an outside diameter of 11 feet and consist of a steel shell lined with 6-inch refractory brick, for an effective inside diameter of 10 feet. The production operation is a mineral beneficiation process, and is used in the production of lightweight building materials and construction products.

Both kilns have identical emission control systems. The systems include both wet and dry emission control devices for the collection and removal of particulate matter, hydrogen chloride (HCl), metals, and other gaseous species.

Norlite uses a mix of energy sources including industrial organic wastes (hazardous waste), waste oil, fuel oil, and natural gas for its two kilns. These materials are liquid (LLGF) and are fed to the kiln at the hot end of the kiln. Temperatures at the flame tip are likely to be in the 3000 degrees Fahrenheit range.

B-1(a) Capacity Authorized (Existing)

Current authorized storage area, waste types and capacity for Liquid Low Grade Fuel (LLGF) is as follows:

AREA[1]	WASTE TYPE	AUTHORIZED VOLUME	MAXIMUM TANK VOLUME
Containers LGF and Solids Processing Building	LGF filter solids/sludges, ancillary waste materials and LGF sludge generated from onsite tank cleaning and tanker truck heel removal operations Liquid LGF from offsite generators. Offsite generated "drop and hook" sealed drummed solid or hazardous waste.[4]	55 Gal Drum[2]	11,770 gallons 214 Drums[3]
Tanker Truck & rolloff staging area	On site generated non liquid solid waste (baghouse bags, personal protective equipment) stored in rolloffs. Offsite generated solid or hazardous waste tanker and transport trucks and rolloff containers for drop and hook and receipt	Up to 50 cubic yard rolloffs, 8,000 gallon tanker trucks, single trailer drum transport trucks; 13 Parking Spaces	13 Parking Spaces (60X200')
Storage/Treatment In Tanks	The following Waste Description & EPA Hazardous Waste Codes applies		
300	to all of the tanks listed in the	24,000 Gal	27,903 Gal
400	Storage/Treatment In Tanks.	24,000 Gal	27,903 Gal
500	Low Grade Fuel (LGF) consisting of	24,000 Gal	27,903 Gal
600	organic wastes (See Waste Analysis	24,000 Gal	18,940 Gal
100A	Plan - for specific wastes)	7,300 Gal	9,491 Gal
100B		7,300 Gal	9,491 Gal
100C		7,300 Gal	9,491 Gal
200A		7,300 Gal	10,663 Gal
200B		7,300 Gal	9,491 Gal
200C		7,300 Gal	9,491 Gal
101A		1,000 Gal	1,266 Gal
101B		1,000 Gal	1,266 Gal
102A		1,000 Gal	1,266 Gal
102B		1,000 Gal	1,266 Gal
Dispersion/Mixer Tank (Solids Reprocessing Bld.)		300 Gal	623 Gal
		TOTAL = 144,100 Gals.	166,454 Gals.

[1] Refer to drawing no. NY003-373-1

[2] Up to 85 gallon over packs can be used to secure leaking/damaged drums.

[3] The total volume stored on site at any time shall not exceed Containers = 11,770 gallons or 214, 55 gallon drums. This figure will increase to 14,700 gallons or 267, 55 gallon drums when the following facility upgrades are completed and operating as per approved plans and permit limits to the satisfaction of the Department and written authorization pursuant to this permit is issued: adding two bays to the truck unloading area (drawing no. NY003-2475-1).

[4] See Waste Analysis Plan, for specific waste codes.

*These tanks were listed as nominal 24,000 gallon tanks. Based on tank information provided in Section D, the tanks are accurately depicted.

B-1(b) Capacity Applied For

The applied for total capacity is as follows:

Total Drum Capacity	14,685 gallons
Total Tank Capacity	155,579 gallons
Total Rolloff Capacity	650 cubic yards

The tank capacity takes into account the measurements performed on the existing tanks to correct errors in previously submitted information. The breakdown of each tank is reflected in the table below:

Tank	Applied For Maximum Storage Volume (gallons)	Maximum Tank Volume (gallons)
100A	8,613	9,491
100B	8,613	9,491
100C	8,613	9,491
200A	9,271	10,663
200B	8,613	9,491
200C	8,613	9,491
300	26,682	27,903
400	26,682	27,903
500	26,682	27,903
600	17,974	18,940
101A	1,174	1,264
101B	1,174	1,264
102A	1,174	1,264
102B	1,174	1,264
SP100	527	623
TOTAL	155,579	166,446

The total rolloff capacity includes receipt of waste for "drop and hook" transfer activities. These transfer activities constitute temporary storage incidental to transport per 373-1.1(d)(XV) and 372.3(a)(6) and are exempt from permitting.

B-2 Topographical Map [6NYCRR Subpart §373-1.5(a)(2)(xix)]

6NYCRR Subpart §373-1.5(a)(2)(xix) requires that the application contain a topographical map containing a variety of specified parameters. The map includes all of the specified parameters. The topographical map and wind rose included in this application are set forth as follows:

Drawing NY003-373-1 is a topographic map with a scale of 1 inch equals 200 feet and contour intervals of 5 feet. Drawing NY003-373-1 shows the facility legal property line boundaries, an area extending 1000 feet beyond the facility property line and surrounding land uses. It also contains the annual wind rose. The annual wind rose is based on data generated by the National Weather Service Station at the Albany, New York Airport. This weather station is located approximately 5.3 air miles west of the site and is the closest station to the site. This drawing also shows the 100-year floodplain area, surface waters including intermittent streams and direction of their flow.

Sanitary wastes are directed to a sanitary sewer located as shown on Figure B-1. Laboratory waste and sample residues are collected and used as fuel.

The special additional information requirements for the protection of the groundwater of 6NYCRR Subpart §373-1.5(a)(3) are not applicable because Norlite does not operate hazardous waste surface impoundments, land treatment units or landfills.

B-3 Facility Location Information [6NYCRR Subpart §373-1.5(a)(2)(xi)and §373-2.2(j)]

The topographical map in Drawing NY003-373-1 shows the 100-year floodplain area at the facility and hazardous waste operations units at the facility. The 100-year floodplain information was obtained from the Flood Hazard Boundary Maps for the City of Cohoes prepared as part of the National Flood Insurance Program.

The hazardous waste operating units at the facility are not located within the 100-year floodplain and therefore are not affected by the 100-year floodplain requirements of 6NYCRR subpart §373-2.2(j)(1). Accordingly, the information requirements of 6NYCRR subpart §373-1.5(2)(xi)(b) are not applicable.

B-4 Traffic Patterns [6NYCRR Subpart §373-1.5(a)(2)(x)]

6NYCRR Subpart §373-1.5(a)(2)(x) requires information on the traffic patterns in and around the vicinity of the facility. The intent of requiring submittal of the traffic related information is to insure that the movement of hazardous waste will be conducted safely to minimize the risk of accident. The traffic patterns at Norlite's facility support such a determination.

The hazardous waste movement at the plant for on-site processing and burning is minimal. Four (4) to seven (7) bulk tank deliveries of liquid waste and one (1) to two (2) truck loads of containers and/or roll offs are received daily on average. Daily volume received averages between 25,000 to 50,000 gallons. Generally two (2) to four (4) truck loads of drums containing the filter sludge, tank sludge and other ancillary waste material (an aggregate of 8,000 to 16,000 gallons) are shipped from the site annually, if not processed through the plant.

In addition to the above, up to 17 trucks per day of transshipments related to transfer station activities are received and/or shipped.

Figure B-1 shows the on-site traffic pattern. All roads are two way. Waste delivery trucks are restricted to the entrance road from Elm Street, the road between the scale and the LGF/hazardous waste unloading area. Traffic

control consists of a manned gatehouse at security gate 1, card access at security gate 2, and various traffic signs (for speed, directional, right of way, caution and flow) throughout the plant.

Fully loaded tankers and trailers of waste have a maximum gross weight of 80,000 lbs. All road surfaces consist of graded and compacted crushed shale as well as road rock base in high truck traffic areas. Roads are designed to accommodate a gross weight in excess of 100,000 pounds of off-highway earth movers.

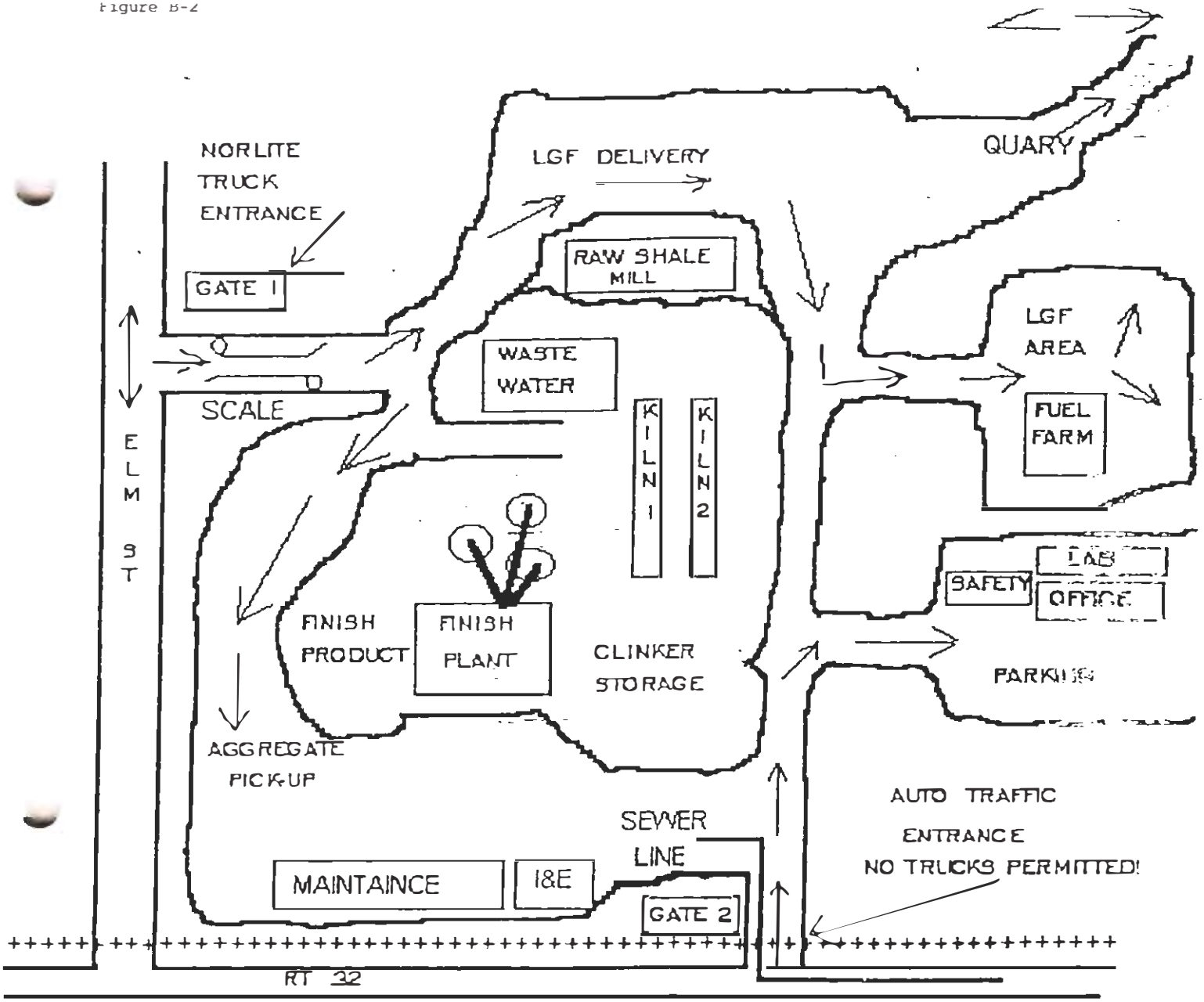
Earth movers and frontend loaders involved in the quarry and raw mill operation are generally confined in that area. Twenty (20) to fifty (50) trailer and dump truck shipments of finished lightweight aggregate and raw shale are made from the site daily. Approximately twenty-five (25) hopper bottom rail cars of lightweight aggregate are shipped from the site weekly. Movement of rail cars and the private siding is under control of the company.

Company pickup trucks, cars, maintenance trucks, fuel truck and water trucks have access to all roads on the site.

Figure B-2 shows the off-site traffic patterns. Trucks making deliveries of LLGF/hazardous waste to the facility proceed from the 23rd Street (Watervliet) exit of Interstate Route I-787 west on 23rd Street in the Town of Watervliet 0.10 miles to Broadway Avenue. Then north 0.2

miles on Broadway Avenue to 25th Street. At 25th Street, the trucks proceed 0.5 miles west to Lansing Lane. At Lansing Lane, the trucks proceed north for 0.6 miles to Elm Street. The trucks proceed east on Elm Street to the entrance road to Norlite, 0.15 miles from Lansing Lane.

The route from I-787 to Lansing Lane is a regularly-traveled truck route for trucks serving industry along 25th Street, Lansing Lane and Elm Street.

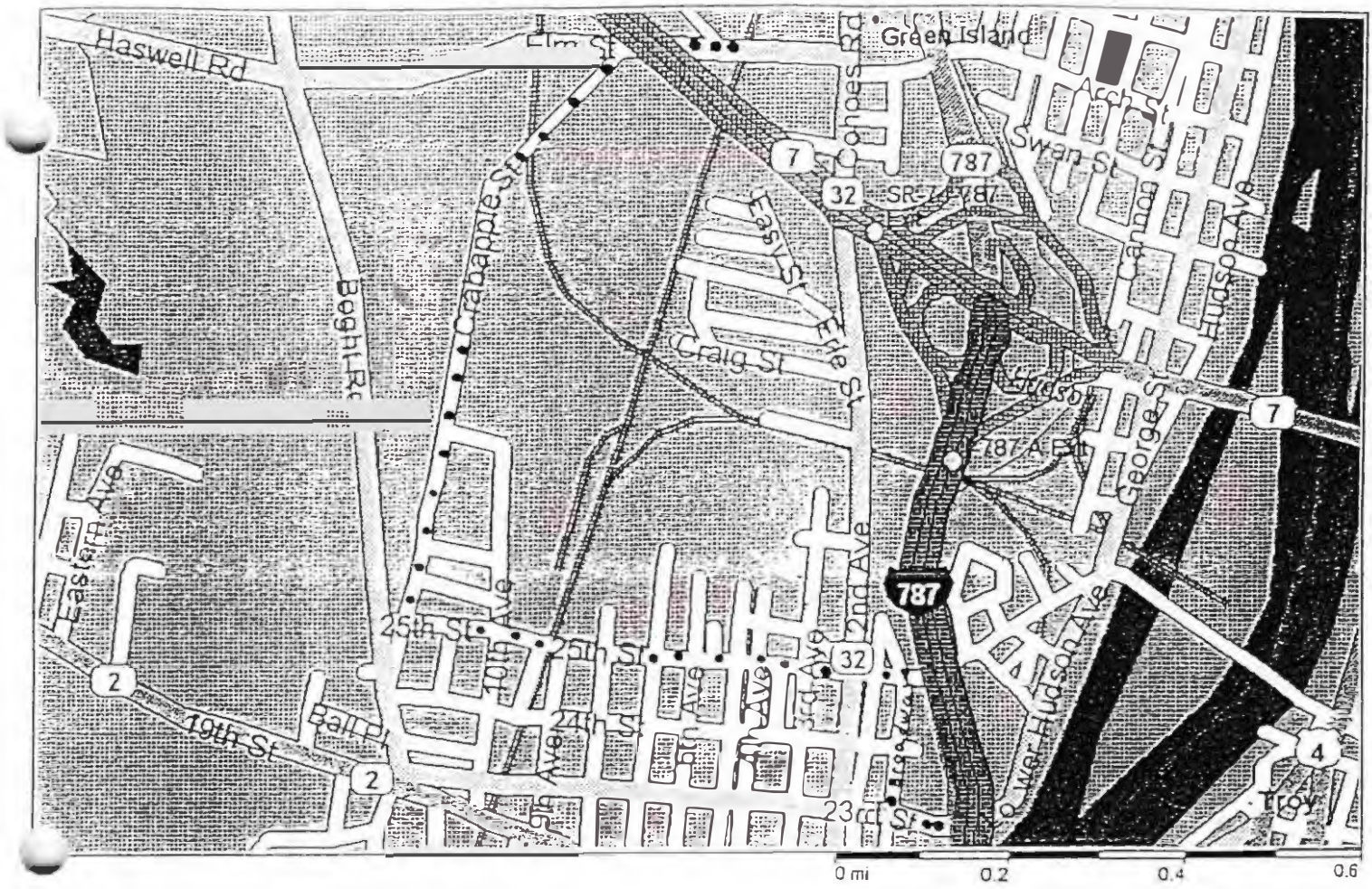


TRAFFIC FLOW

FIGURE B-1

FIGURE B-2

NORLITE DESIGNATED TRUCK ROUTE



The directions are as follows:

- From I-787, take Exit 8, 23rd Street (Watervliet). Off the Exit ramp, proceed 0.1 miles (West) on 23rd Street to Broadway.
- Turn Right onto Broadway and proceed 0.2 miles (North) to 25th Street.
- At 25th Street, turn left and proceed 0.5 miles (West) to Crabapple Street.
- Turn Right onto Crabapple Street and proceed 0.8 miles (North) to Elm Street.
- Turn Right onto Elm Street and proceed 0.2 miles (East) to Norlite Delivery Entrance on the left. (Dirt Road)

ATTACHMENT C

SECTION C WASTE CHARACTERISTICS AND ANALYSIS

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ATTACHMENT C

SECTION C

WASTE CHARACTERISTICS AND WASTE ANALYSIS PLAN

This section describes the chemical and physical nature of hazardous wastes stored at Norlite Corporation and the Norlite Waste Analysis Plan for sampling, testing, and evaluating the wastes to assure that sufficient information is available for their safe handling. This information is submitted in accordance with the requirements of 6NYCRR Subpart §373-1.5(a)(2)(ii) and (iii) and 6NYCRR Subpart §373-2.2(e)(1), (2) and (3) and 6NYCRR Subpart §373-2.2(I). The Waste Analysis Plan was developed using Waste Analysis At Facilities That Generate, Treat, Store And Dispose Of Hazardous Wastes, A Guidance Manual, PB94-963603, OSWER 9938.4-03, April 1994. The entire Section C constitutes the waste analysis plan.

Norlite's hazardous waste activity consists of the tank and container storage of hazardous waste and low grade fuel (LLGF) from various industrial sources, as well as non-hazardous wastes. This low grade fuel is beneficially reused for energy recovery and/or incinerated for destruction by combustion in Norlite's aggregate kilns. Norlite also transships hazardous waste for proper management at other permitted TSDFs. Tank

sludge, filter sludge and ancillary waste materials that are generated in this process are accumulated in drums or containers for proper disposal.

The transportation, storage and burning of hazardous waste in industrial furnaces is regulated under 40 CFR Part §266 of the federal RCRA regulations. These processes are also fully regulated by New York State under the Hazardous Waste Regulations 6 NYCRR Part §370, et sequential, and the Air Pollution Regulations 6 NYCRR Part §200, et sequential.

Norlite receives liquid Low Grade Fuel ("LLGF") from generators and blenders. Blenders of LLGF for energy recovery at Norlite are regulated as specified in 40 CFR Subpart §261.6(c) as owners and operators of facilities that store recyclable materials under all applicable provisions of 40 CFR Parts §264 and §265. Therefore, the characteristics and identification of the source of the recycled material will be made and documented by the Blender. Norlite will verify that the Blender is properly permitted under RCRA for the management of LLGF (hazardous waste fuel) and that they are identifying and characterizing the material they collect from other generators.

In this application, Norlite has stressed the waste characterization necessary for the safe tank and

container storage of its hazardous waste as well as combustion of hazardous waste so that no pretreatment of the waste is necessary. In that regard, Norlite has implemented practices to assure no difficulties with the waste/tank compatibility. Norlite's Waste Analysis Plan has been designed to meet the requirements of the state and federal hazardous waste regulations, the state air pollution regulations and Norlite's own safety needs.

C-1 Facility Description

C-1(a) Description of Facility Processes and Activities

Hazardous wastes are stored at Norlite's facility in four (4) covered tanks with a capacity of 96,000 gallons, six (6) 7300-gallon tanks, four (4) 1,000-gallon tanks, 85-gallon or smaller drum containers, and rolloffs. The design specifications for the container storage area and for the storage tanks are described in Section D. The hazardous wastes received are blended and used as fuel in two lightweight aggregate kilns.

C-1(b) Identification of Hazardous Wastes Managed

Norlite has developed a program to ensure the proper identification of waste with a proper chemical and physical analysis. A LLGF Specification Sheet is submitted by each generator or blender. Exhibit C-1

shows a copy of the LLGF Specification Sheet. This form requires the Generator or Blender to identify itself and provide waste shipping information, waste description, waste source(s), waste analysis, and a list of any hazardous constituents as defined in 40 CFR §261 - Appendix VIII and/or 6NYCRR Part §371 - Appendix 23. The LLGF Specification Sheet also requires a verification by the Generator that the information is accurate, that if any changes occur, the Generator will notify Norlite promptly, and that the LLGF is not regulated as a PCB waste under 40 CFR Part §761.

Norlite reviews the LLGF Specification Sheet to assure that the material to be received can meet the permit limits and the compatibility requirements.

C-1(b)(1) Characteristic Flammable Waste

Typical constituents in D001 Waste may include the following categories that are not otherwise included as a listed waste:

Saturated Aliphatic Hydrocarbons	Amides
Unsaturated Aliphatic Hydrocarbons	Amines
Aromatic Hydrocarbons	Carbamates
Organic Nitro Compounds in an organic solution	Ethers

Phenols or Cresols in an organic solution	Esters
Halogenated Organics	Alcohols
Aldehydes	Ketones

With this array of chemicals, there is only limited potential for reactivity. The absence of incompatibility is verified with a compatibility test as part of the incoming inspection.

C-1(b)(2) Corrosive and Reactive Waste

In addition, certain corrosive D002 wastes may be contained in the LGF received at Norlite. Examples may include such materials as amines like triethanolamine, acetic or propionic acid, formaldehyde and certain amides. Norlite also receives D003 waste in LLGF blends, however, the waste, as received must not exhibit the characteristic. Such wastes are not accepted. Norlite will not accept waste(s), which exhibit the reactivity characteristic pursuant to SOP#4-10. However, certain generator waste streams may still require the D003 waste number designation to ensure compliance with Land Disposal Restriction (LDR) and waste characterization requirements.

C-1(b)(3) Toxicity Characteristic Wastes

In addition, combustible waste that may have heavy metals content, which makes it characteristically hazardous is acceptable if the metal content is controlled to not exceed the permitted maximum feed rate levels of the metal in the total hazardous waste fed to the kiln. These Waste Codes include the following:

Metal	EPA Waste Code
Arsenic	D004
Barium	D005
Cadmium	D006
Chromium	D007
Lead	D008
Mercury	D009
Selenium	D010
Silver	D011

Waste codes D004 through D011 are prohibited from combustion under the Land Disposal Restrictions (LDR) unless the waste, at the point of generation, meets one or more of the six (6) criteria listed in 6 NYCRR 376.1(c)(3). Norlite will ensure and document on the LLGF Specification Sheet that waste streams with any of these codes are acceptable for combustion pursuant to the LDR regulation prior to accepting such waste for combustion.

The following toxicity characteristic organic wastes are accepted if they are within the specifications listed herein (e.g., BTU Value, total chlorine content, etc.).

EPA Waste Code	Organic Constituent
D018	Benzene
D019	Carbon tetrachloride
D021	Chlorobenzene
D022	Chloroform
D023	o-Cresol
D024	m-Cresol
D025	p-Cresol
D026	Cresol
D027	1,4-Dichlorobenzene
D028	1,2-Dichloroethane
D029	1,1-Dichloroethylene
D030	2,4-Dinitrotoluene
D032	Hexachlorobenzene
D033	Hexachlorobutadiene
D034	Hexachloroethane
D035	Methyl ethyl ketone
D036	Nitrobenzene
D037	Pentachlorophenol
D038	Pyridine
D039	Tetrachloroethylene
D040	Trichloroethylene

D041	2,4,5-Trichlorophenol
D042	2,4,6-Trichlorophenol
DO43	Vinyl chloride

C-1(b)(4) Listed Non-Specific Source Waste (F Specified Waste)

Norlite will accept waste designated as listed non-specific source waste with the following codes. The definitions of these wastes are found at 40 CFR 261.31 and 6 NYCRR 371.4. These wastes include mixtures and wastes that are derived from the treatment of these wastes so long as they are amenable for treatment at Norlite as discussed in the waste analysis plan.

F001	F002	F003	F004	F005	F032
F034	F035	F037	F038	F039	

C-1(b)(5) Listed Specific Source Waste (K Specified Waste)

Norlite will accept waste from a variety of specific sources including the Petroleum refining industry. These waste codes include the following:

K001	K023	K083	K116
K002	K024	K084	K117
K003	K025	K085	K118
K004	K026	K086	K136
K005	K027	K087	K141
K006	K028	K093	K142
K007	K029	K094	K143
K008	K030	K095	K144
K009	K046	K096	K145
K010	K048	K100	K147
K011	K049	K101	K148
K013	K050	K102	K149
K014	K051	K103	K150
K015	K052	K104	K151
K016	K060	K105	K152
K017	K061	K111	K156
K018	K062	K112	K157
K019		K113	K158
K020		K114	K159
K022		K115	K161

Metal feed rates from LGF blends containing K codes with metals will not exceed permitted levels, due to the feed planning procedures followed by Norlite to comply with metal limits in the permit.

Waste codes K002 through K008, K061 & K100 are prohibited from combustion under the Land Disposal

Restrictions (LDR) unless the waste, at the point of generation, meets one or more of the six (6) criteria listed in 6 NYCRR 376.1(c)(3). Norlite will ensure and document on the LLGF Specification Sheet that waste streams with any of these codes are acceptable for combustion pursuant to the LDR regulation prior to accepting such waste for combustion.

C-1(b)(6) Listed Hazardous Chemical Wastes (U and P Specified Wastes)

Specified listed hazardous chemical product wastes are accepted on a case-by-case basis if the waste is hazardous because of Ignitability or Toxicity, and is otherwise within the specification listed herein.

The following P waste codes are accepted by Norlite provided that the waste received contains less than 5% of the listed chemical. Organo-metallic constituents are restricted based on the metal limits in the 6NYCRR Part §373 permit for LLGF.

P002	P026	P068	P118
P003	P027	P069	P119
P005	P029	P074	P120
P007	P030	P077	P121
P010	P034	P082	P188

P011	P036	P084	P190
P012	P038	P093	P191
P013	P041	P099	P204
P014	P042	P101	
P016	P046	P103	
P017	P048	P104	
P018	P049	P105	
P021	P054	P110	
P022	P060	P113	
P023	P062	P114	
P028	P064	P116	
	P067		

Waste codes P010, P011, P012, P013, P029, P074, P099, P104, P113, P114, P119 and P120 are prohibited from combustion under the Land Disposal Restrictions (LDR) unless the waste, at the point of generation, meets one or more of the six (6) criteria listed in 6 NYCRR 376.1(c)(3). Norlite will ensure and document on the LLGF Specification Sheet that waste streams with any of these codes are acceptable for combustion pursuant to the LDR regulation prior to accepting such waste for combustion.

These listed non-acute categories (U designated wastes), are listed in 6NYCRR Subpart §371.4(d)(6). The following hazardous wastes, as listed in 6NYCRR Subpart §371.4(d)(6), will be accepted.

U001 Acetaldehyde (Ethanol)
U002 Acetone (2-Propanone)
U003 Acetonitrile (Ethane nitrate)
U004 Acetophenone
U005 2-Acetylaminofluorene
U006 Acetyl chloride
U007 Acrylamide
U008 Acrylic acid (2-Propenoic acid)
U009 Acrylonitrile
U010 Azirino(2',3':3,4) pyrrolo(1,2-a)indole-4,7 dione
U012 Aniline
U015 Azaserine
U016 Benz[c]acridine
U017 Benzene, dichloromethyl
U018 Benz (a) anthracene
U019 Benzene
U020 Benzenesulfonic acid chloride
U021 Benzidine
U022 Benzo (a) pyrene
U024 Dichloromethoxy ethane
U025 Dichloroethyl ether
U027 Dichloroisopropyl ether
U028 1,2 Benzenedicarboxylic acid, bis (2-ethylhexyl) ester U029 Methyl bromide
U030 4-Bromophenyl phenyl ether
U031 Butanol (Butyl alcohol)
U034 Chloral
U035 Chlorambucil
U037 Chlorobenzene
U039 P-chloro-m-cresol, Phenol, 4-chloro-3-methyl-
U041 Epichlorohydrin
U042 2-chloroethylvinyl ether, Ethene, (2-chloroethoxy)-
U043 Ethene, chloro

U044 Chloroform (Methane, trichloro)
U045 Methane, chloro (Methyl chloride)
U046 Chloromethyl methyl ether, methane, chloromethoxy-
U047 Beta-Chloronaphthalene
U048 O-Chlorophenol, Phenol, 2 chloro
U049 Benzenamine 4-chloro-2-methyl-hydrochloride, 4-chloro-o-toluidine, hydrochloride
U050 Chrysene
U051 Creosote
U052 Cresols, cresylic acid
U053 Crotonaldehyde
U055 Cumene
U056 Cyclohexane
U057 Cyclohexanone
U059 Daunomycin
U063 Dibenz [a,h] anthracene
U064 Dibenzo [a,i] pyrene
U068 Methane, dibromo-
U069 Dibutyl phthalate
U070 1,2-Dichlorobenzene (o-Dichlorobenzene)
U071 1,3-Dichlorobenzene (m-Dichlorobenzene)
U072 1,4-Dichlorobenzene (p-Dichlorobenzene)
U073 3,3'-Dichlorobenzidine
U074 2-Butene, 1,4-dichloro
U075 Dichlorodifluoromethane
U076 Ethane, 1,1-dichloro
U077 Ethane, 1,2-dichloro
U078 Ethene, 1,1-dichloro (1,1-dichloroethylene)
U079 Ethene, trans 1,2-dichloro (1,2-dichloroethylene)
U080 Methylene, dichloro (Methylene chloride)
U081 2,4-Dichlorophenol
U082 2,6-Dichlorophenol
U083 Dichloropropane

U085 1,2:3,4-Diepoxybutane
U086 N,N'-Diethylhydrazine
U087 0,0-Diethyl S-methyl dithiophosphate
U088 Diethyl phthalate
U089 Diethylstilbesterol
UO90 Dihydrosafrole
U091 3,3'-Dimethoxybenzidine
U092 Dimethylamine
U093 P-Dimethylaminoazobenzene
U094 7,12 Dimethylbenz [a] anthracene
U095 3,3'-Dimethylbenzidine
U096 alpha,alpha-Dimethylbenzylhydroperoxide
U097 Dimethylcarbamoyl chloride
U098 Hydrazine, 1,1-dimethyl-
U099 Hydrazine, 1,2-dimethyl-
U101 2,4-Dimethylphenol
U102 Dimethyl phthalate
U103 Dimethyl sulfate
U105 2,4-Dinitrotoluene
U106 2,6-Dinitrotoluene
U107 Di-n-octyl phthalate
U108 1,4-Dioxane
U109 1,2-Diphenylhydrazine
U110 Dipropylamine
U111 Di-n-propylnitrosamine
U112 Ethylacetate
U113 Ethylacrylate
U114 Ethylenebisdithiocarbamic acid, salts & esters
U115 Ethylene oxide
U116 Ethylenethiourea
U117 Ethyl ether
U118 Ethylmethacrylate
U119 Ethyl methanesulfonate
U120 Fluoranthene
U121 Methane, trichlorofluoro-

U122 Formaldehyde
U123 Formic acid
U124 Furan (Furfuran)
U125 2-Furancarboxaldehyde (Furfural)
U126 Glycidylaldehyde
U127 Hexachlorobenzene
U128 Hexachlorobutadiene
U131 Ethane, 1,1,1,2,2,2-hexachloro
U133 Hydrazine
U134 Hydrofluoric acid
U135 Hydrogen sulfide
U137 Indeno [1,2,3-cd] pyrene
U138 Methane, iodo-
U140 Isobutyl alcohol
U141 Isosafrole
U143 Lasiocarpine
U144 Lead acetate
U146 Lead subacetate
U147 Maleic anhydride
U149 Malononitrile
U150 Melphalan
U152 Methacrylonitrile
U153 Methanethiol
U154 Methanol
U155 Methapyrilene
U156 Methylchlorocarbonate
U157 3-Methylcholanthrene
U158 4,4'-Methylenebis (2-chloroaniline)
U159 Methyl ethyl ketone (Butanone)
U160 Methyl ethyl ketone peroxide
U161 Methyl isobutyl ketone (4-Methyl-2-pentanone)
U162 Methyl methacrylate
U163 N-methyl N'-nitro N-nitroguanidine
U164 Methylthiouracil

U165 Naphthalene
U166 1,4-Naphthalenedione
U167 Alpha-Naphthylamine
U168 Beta-Naphthylamine
U169 Nitrobenzene
U170 P-Nitrophenol
U171 2-Nitropropane
U172 N-Nitrosodi-n-butylamine
U173 N-Nitrosodiethanolamine
U174 N-Nitrosodiethylamine
U176 N-Nitroso-N-ethylurea
U177 N-Nitroso-N-methylurea
U178 N-Nitroso-N-methylurethane
U179 N-Nitrosopiperidine
U180 N-Nitrosopyrrolidine
U181 5-Nitro-o-toluidine
U182 Paraldehyde
U183 Pentachlorobenzene
U186 1,3-Pentadiene (1-Methylbutadiene)
U187 Phenacetin
U188 Benzene, hydroxy (Phenol)
U190 Phthalic anhydride
U191 2-Picoline
U193 1,3-Propane sultone
U194 1-Propanaimine (n-Propylamine)
U196 Pyridine
U197 2,5-Cyclohexadiene-1,4-dione
U201 Resorcinol
U202 Saccharin, & salts
U203 Safrole
U206 Streptozotocin
U207 Benzene,1,2,4,5-tetrachloro
(1,2,4,5-Tetrachlorobenzene)

U208 Ethane,1,1,1,2-tetrachloro(1,1,1,2-Tetrachloroethane)
U209 Ethane,1,1,2,2-tetrachloro(1,1,2,2-Tetrachloroethane)
U210 Ethene, tetrachloro (Tetrachloroethylene)
U211 Methane, tetrachloro (Carbon tetrachloride)
U213 Tetrahydrofuran
U214 Thallium acetate
U218 Thioacetamide
U219 Thiourea
U220 Toluene (Benzene, methyl)
U221 Benzenediamine, ar-methyl-, Toluenediamine
U222 o-Toluidine hydrochloride
U223 Toluene diisocyanate
U225 Methane, tribromo-
U226 Methylchloroform (1,1,1-trichloroethane)
U277 Carbamodithioic acid, diethyl-,2-chloro-2,propenyl ester
U375 Carbamic acid, butyl-, 3-iodo-2-propynyl ester
U376 Carbamodithioic acid,dimethyl-tetraanhydrosulfide with orthothioselenious acid
U377 Potassium n-methyldithiocarbamate
U378 Potassium n-hydroxymethyl-n-methyldi-thiocarbamate
U379 Sodium dibutyldithiocarbamate
U381 Sodium diethyldithiocarbamate
U382 Sodium dimethyldithiocarbamate
U383 Potassium dimethyldithiocarbamate
U384 Metam Sodium
U385 Carbamothioic acid, dipropyl-, S-propyl ester
U386 Carbamothioic acid, cyclohexylethyl-, S-ethyl ester
U387 Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester

U390 Carbamothioic acid, dipropyl-, S-ethyl ester
U391 Carbamothioic acid, butylethyl-, S-propyl ester
U400 Bis(pentamethylene)thiuram tetrasulfide
U401 Bis(dimethylthiocarbamoyl) sulfide
U402 Thioperoxydicarbonic diamide, tetrabutyl
U403 Thioperoxydicarbonic diamide, tetraethyl
U404 Triethylamine
U407 Ethyl Ziram
U410 Tiodicarb
U227 Ethane, 1,1,2-trichloro (1,1,2-trichloroethane)
U228 Trichloroethene (trichloroethylene)
U235 Tris(2,3-dibromopropyl) phosphate
U236 Trypan blue
U238 Ethyl carbamate (urethane)
U239 Xylene (Benzene, dimethyl)
U243 1-Propene, 1,1,2,3,3,3-hexachloro-
U244 Thiram
U246 Cyanogen bromide
U328 o-Toluidine
U353 p-Toluidine
U359 Ethanol, 2-ethoxy-
U392 Butylate
U393 Copper dimethyldithiocarbamate
U394 A2213
U395 Diethylene glycol, dicarbamate
U396 Ferbam

C-1(c) Specification of the Low Grade Fuel

LLGF usually has a flash point of 200°F or lower. The LLGF is not reactive. However, LLGF may be a Toxic waste as defined in 6NYCRR Subpart §371.3(e) because the heavy metal and organic compound concentration may exceed the

limits set forth in that section. Also, LLGF may contain a characteristic corrosive waste.

Norlite stores the LLGF in its storage tanks or in a container storage area. The tanks and containers are located in a diked area. The design and operation for the tanks and containers are described in Section D, Section F (under Inspection), and Section G -- the Emergency and Contingency Plan. The LLGF, having been pre-screened, is non-corrosive to the glass-lined (Tanks 300-600) or carbon steel (Tanks 100 A,B,C and 200 A,B,C) storage tanks designed with suitable corrosion allowance. The necessary specification for the fuel has been provided to the suppliers, and has been confirmed with their LLGF Specification Sheet, and with the Norlite analysis provided prior to burning and unloading.

C-1(d) Waste Generated Onsite

Hazardous wastes are generated from the cleaning of the LGF storage tanks, they also include filter sludge generated during the off-loading of the LLGF into the storage tank, and ancillary waste material such as absorbent pads, contaminated personnel protective equipment, glass sample jars, laboratory pipets from sampling and analysis. The waste is generally contaminated with waste solvent and alcohol. The sludge

is hazardous because of Ignitability and Toxicity. The sludge is manifested, at a minimum, with the following waste classifications: D001, F001, F002, F003 and F005 due to its ignitable characteristic and the presence of solvent as well as being a "derived from" waste. Between tank cleanings, Norlite records all listed waste codes that are stored in each tank so that all applicable "derived from" waste codes are properly applied to the residuals.

The tank cleaning operation is conducted periodically based on estimates of sludge quantity in the storage tank. The sludge generated by the tank cleaning operation is removed from the tanks and placed in drums for disposal. Norlite has contracted with an experienced environmental contractor for the tank cleaning operation. The cleaning of one storage tank generates from approximately 20 to 80 drums. These drums are temporarily stored in the truck containment area while the contents are being analyzed and arrangements are being made for disposal. Generally, the drums are disposed of within three to six weeks from the date of generation. Tanks are usually cleaned and the sludge removed on an annual basis.

If the tank bottom sludge contains free liquids as shown by EPA Method 9095A, it can be characterized as LLGF by this waste analysis plan and tested per the LLGF

testing parameters and criteria and transferred to onsite tanks for burning in the kilns. If the tank bottom sludge does not contain free liquids, it will be shipped offsite for proper disposal.

The LLGF filters are the bell strainers that the trucks discharge through first. They contain coarse metal baskets to remove debris that is large enough to damage the pumps or plug the piping. These filters are cleaned daily during delivery operations, generally after each load. The filters are opened and the collected solids are scraped and shoveled out. The filter sludge is stored in the drum container storage area. If the filter sludge contains free liquids as shown by EPA Method 9095A, it can be characterized as LLGF by this waste analysis plan and tested per the LLGF testing parameters and criteria and transferred to onsite tanks for burning in the kilns. If the filter sludge does not contain free liquids, it will be shipped offsite for proper disposal. The drums will then be loaded and disposed of at a licensed TSD Facility.

The sludge and filter sludge (primarily waste solvent and alcohol) have proven to be compatible with the storage containers which are constructed of low carbon steel that meets U.S. Department of Transportation specifications No. 17C. The drums are labeled and dated and are kept closed except during the loading/disposing

of the waste material. The drums are spaced according to the plan set forth in Section D. The filter sludge and tank sludge are Ignitable with a flash point less than 140 degrees Fahrenheit. Norlite has found the filter sludge and tank sludge not to be Corrosive or Reactive. They are typically Toxic because of heavy metal and organic compound concentrations that exceed the Toxicity Characteristic limits set forth in 6NYCRR §371.3(c).See Sections D-2 and D-4 for further information on tank and filter cleaning.

Norlite also generates a wastewater onsite that is separate from the scrubber wastewater. Wastewater from the secondary containment systems is collected and pumped to the LLGF tanks to be managed as LLGF. This includes stormwater from the outside tanker staging area. Scrubber waste water is treated in the waste water treatment plant and is not pumped to the LLGF tanks.

C-1(e) Used Oil Fuel and Waste Fuel A

Norlite is a generator, marketer and burner of used oil as defined under 6 NYCRR 374-2 and is subject to § 374-2.2, § 374-2.4 and § 374-2.5.

Norlite uses nonhazardous waste fuels that can be defined as used oil under 40 CFR 279 and 6 NYCRR 374-2,

or Waste Fuel A as defined in 6 NYCRR 225-2 except PCB limits in this permit must be lower, as per Table WAP-1. This fuel is used to supplement the hazardous waste LLGF in operating the lightweight aggregate kilns. Used oil is classified as either specification used oil fuel or off-specification used oil fuel. Specification used oil fuel is defined as used oil meeting the following criteria:

Parameter	Limitation
Arsenic	< 5 ppm
Cadmium	< 2 ppm
Chromium	< 10 ppm
Lead	< 100 ppm
Flash Point	> 100°F
Total Halogens	< 4,000 ppm*
PCBs	< 2 ppm.

*any used oil containing greater than or equal to 1,000 ppm total halogens is considered a hazardous waste because it is presumed to be mixed with listed hazardous waste. This presumption may be rebutted by demonstrating that the used oil does not contain listed hazardous waste constituents pursuant to 40 CFR 279.10(b)(ii) and 6 NYCRR 374-2.2(a)(2)(i).

Used oil that does not meet this specification is considered off-specification used oil fuel. Norlite uses specification used oil fuel for start up and shutdown of the kilns and any time the units are not operating under the Part 373 permit parameters (e.g. after an automatic waste feed cut off (AWFCO)). This fuel is considered equivalent to virgin fuel oils and may be used in place of virgin fuels as they are described in the permit.

Waste Fuel A is defined under § 225-2 as any waste oil, fuel oil or mixture of these to be burned which contains between 25 and 250 parts per million (by weight) lead and which meets the limitations of Table 2-1 of section 225-2.4 [reproduced below] of this Subpart and does not contain chemical waste.

FUEL CONSTITUENTS/PROPERTY

Constituent/Property	*Allowable*
Polychlorinated Biphenyls	Less than 50 ppm[1][2]
Total Halogens	1,000 ppm[1] maximum
Sulfur	See Subpart 225-1 for fuel sulfur limitations
Lead	250 ppm[1] maximum
Gross Heat Content	125,000 (Btu/gal) minimum

[1] Parts per million (ppm) by weight (water free basis) of fuel

[2] PCB limits in this permit are <25 ppm, with notification if waste fuel PCB is >10 ppm.

Off-specification used oil fuel and/or Waste Fuel A are not used during start up or shutdown of the kilns. They are used as the primary supplement to the hazardous waste LLGF when required by the operators. While being co-fired with the LLGF, Norlite ensures that the total metals and chlorine feed rates are not exceeded by the off-specification used oil fuel and/or Waste Fuel A. These fuels may also be used after an AWFCO provided the

carbon monoxide hourly rolling average (HRA) is below 500 ppm.

These fuels are characterized upon receipt at the facility. In order for Norlite to accept specification used oil fuel, it must be demonstrated, prior to receipt, that it meets the specification listed above. This is primarily done by Norlite onsite analysis but may also be done by submission of analysis from marketer of the used oil fuel. Similarly, Waste Fuel A loads must also be scrutinized to ensure that it meets the definition at 6 NYCRR 225-2 and this is performed by Norlite onsite analysis only. Off-specification used oil fuel is also sampled and analyzed prior to receipt.

Oil meeting the definition of specification used oil fuel may be used for start up or shut down of the kiln, after AWFCOs, and after AWFCOs of Off-Specification Used Oil Fuel/Waste Fuel A due to carbon monoxide levels over 500 ppm.

C-1(f) Comparable Fuels

Pursuant to 6 NYCRR 371-4(i), a generator may choose to classify a hazardous waste as a comparable fuel provided the waste stream meets the benchmark established in the regulation. The benchmark is based on #2 fuel oil and the waste stream may not have any significant

concentrations of organic compounds or metals as defined in the regulation. Should a generator classify a waste stream as a comparable fuel and satisfy the regulatory requirements in 6 NYCRR 371-4(i), Norlite will accept the stream as a fuel and use it in lieu of or in addition to virgin fuels and specification used oil fuel. Although Norlite will rely on the sampling and analysis plan required of the generator under 6 NYCRR 371-4(i), sampling and analysis of each load will be performed to confirm heat content, bottom sediment and PCBs. Norlite will analyze one load of every ten loads of each comparable fuel stream for the full LLGF analysis described on Table WAP-1 to ensure the full quality and consistency of the comparable fuel.

Norlite will manage comparable fuels in used oil tanks as described in Section D of this application. Should Norlite manage a comparable fuel in the LLGF tanks, the comparable fuel will be managed only as LLGF and subject to this waste analysis plan as such. Norlite will comply with all applicable requirements of 6 NYCRR 371.4(i).

C-1(g) Remedial Waste

Norlite Corporation shall not accept hazardous waste from remedial activities unless it is in pumpable liquid form and has heat content of at least 5,000 BTUs per pound. This means that the only candidate waste

streams from a remedial action are those streams that essentially meet the description of LLGF and have a minimum heat value. Any remedial waste accepted will be considered LLGF and handled as such. If the pumpability of the candidate waste stream is in question, its viscosity will be tested as indicated on Table WAP-1 for LLGF.

C-1(h) Waste Fuel B

Norlite routinely accepts Waste Fuel B waste streams with the exception of Waste Fuel B-2, PCB wastes, which is specifically prohibited from receipt and burning. Waste Fuel B is characterized in Air Guide 17 as used motor oil with concentrations of lead over 250 ppm, "burnable chemical waste" contaminated with PCBs, and "burnable chemical waste" with low or high concentrations of chlorine. Essentially, all the LLGF accepted and characterized by Norlite can also be considered Waste Fuel B. In addition to the hazardous waste, nonhazardous waste can also meet the definition of Waste Fuel B. Any nonhazardous waste streams, with the exception of used oil streams discussed elsewhere in this plan, will be managed in the same manner as the hazardous waste fuels routinely accepted. Reviewing 6 NYCRR Part 200, it appears that compliance with RCRA Subpart O and the Hazardous Waste Combustors MACT requirement ensures compliance with 6 NYCRR 225-2.4. All Waste Fuel B is

handled in the exact same manner as ILGF from acceptance to burning.

C-2 Waste Analysis Parameters

The waste analysis parameters considered by Norlite are presented in Table WAP-1 as they relate to each hazardous waste, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, off-specification used oil fuel and Waste Fuel A managed at the facility. Table WAP-1 also addresses the parameters that are considered for the shale feed, comparable fuels, specification used oil fuel, natural gas and fuel oils.

C-2(a) Rationale for Parameter Selection

An accurate representation of a waste's physical and chemical properties is critical in determining its acceptability at Norlite. Accordingly, the waste analysis parameters must provide sufficient information to ensure:

- Compliance with applicable regulatory requirements (e.g., LDR regulations, newly identified or listed hazardous wastes)

- Conformance with permit conditions (i.e., ensure that wastes accepted for management fall within the scope of

the facility permit, and process performance and air emission standards can be met)

· Safe and effective waste management operations (i.e., ensure that no wastes are accepted that are incompatible or inappropriate given the type of management practices used by the facility).

C-2(b) Special Parameter Selection Requirements

Norlite is subject to regulations promulgated at 40 CFR 266 Subpart H and 6 NYCRR 374-1.8 for boilers and industrial furnaces that burn hazardous wastes. These regulations establish control standards for emissions of toxic organic compounds, toxic metals, hydrogen chloride, chlorine gas, and particulate matter from the burning of hazardous wastes in boilers and industrial furnaces (BIFs). Therefore, analysis of these parameters are considered in this plan. Norlite has performed a trial burn in which the facility's destruction removal efficiency (DRE) for organic wastes was demonstrated and its system removal efficiency (SRE) was derived for metals. The data from the trial burn is used to determine the allowable feed rate of metals and chlorine to the kilns. The DRE was demonstrated using principal organic hazardous constituents (POHCs) that are

considered difficult to incinerate and are rated on the Thermal Stability Index.

As a result of special nature of a combustion facility, the contribution of all feed streams, hazardous waste or otherwise, are considered. Therefore, the off-specification used oil fuel/Waste Fuel A that is co-fired with hazardous waste and Waste Fuel B streams is characterized to account for its contribution of the key parameters as is the specification used oil fuel, comparable fuels, natural gas and virgin fuel oils. The shale raw material that becomes the lightweight aggregate is also characterized to account for its contribution of metals to the process.

C-3 Sampling Procedures

Sampling is performed using the procedures described in EPA SW-846, 3rd Edition, September 1986, Chapter 9.

C-3(a) Incoming Loads, Bulk

Sampling of the LLGF, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, off-specification used oil/Waste Fuel A, specification used oil, comparable fuels and virgin fuels from each tanker is accomplished with an aluminum coliwasa sampler with a teflon stopper. The sampling tool

is similar to that described in EPA SW-846, Third Edition, 9/86, Chapter 9. Section 9.2.2.4 and reference in Part 371 - Appendix 19. Aluminum is used because of its non-sparking characteristics. Previous testing experience shows the aluminum not to be corroded, and it also minimizes the risk of breakage.

Sampling is accomplished through the top hatch of the tank truck. Since the coliwasa is 96", it ensures that a full cross-section of the tank truck can be sampled. Sufficient sample is taken to fill a 500 ml glass jar. If there is more than one compartment, a proportional representation is taken from each compartment. In this case, composite samples will be taken from the top, middle, and bottom third of the truck.

Between each use of a sampler, it is washed and rinsed to assure the removal of any contamination from previous samples. Likewise, the pitchers are rinsed between each use.

Approximately, a 500 ml. aliquot is taken to perform the waste analysis and waste evaluation. The aliquot is labeled and carried to the laboratory analysis.

After analysis, the remainder of the sample is stored in its glass jar with a teflon lined cap. The jar is marked to indicate the following:

Date Received
Norlite Sample Number
Generator

Each sample will be stored in the flammable storage refrigerator at a temperature of 4°C for at least three months or until the material has been burned or until all questions are resolved regarding the received material, whichever is longer.

At the time of sampling, Norlite will compare the sample to the LLGF Specification Sheet provided by the Generator. With the LLGF Specification Sheet as a reference, each waste stream can be checked for proper name and identification and to ensure that the wastestream has not changed significantly.

C-3(b) Incoming Loads, Drums

The coliwasa sampler, hollow tube, or thief is employed to sample the drums of waste received from generators off-site. At least 100 ml is taken as a representative sample of each drum. Norlite performs 100% sampling of drums and each drum sample goes through the compatibility procedures as well as visual inspection.

A composite sample is also prepared for each unique waste stream by randomly selecting the samples from 10% of the drums for each unique waste stream. The composite samples will be made up of no more than five (5) individual drum samples. For example, if a waste stream is contained in eighty (80) drums, eight (8) samples will be selected to make two (2) composite samples to represent the waste stream. The composite samples are managed in the same manner as the incoming bulk samples with respect to labeling and storage. Further details on container management are provided in SOPs in the attachments to the Waste Analysis Plan.

Samples of drums are taken in order to complete the analysis required in the waste analysis plan as described in Section C-5(j).

C-3(c) Storage Tanks

As necessary, storage tanks are sampled for confirmatory analysis or to obtain waste material for compatibility determinations. This is performed on a grab basis for the agitated storage tanks by using the sampling port on the side of the tanks. For the non-agitated tanks, a composite of sample is taken from the top third, middle third, and bottom third of the tank.

C-3(d) Shale

Norlite operates an active shale quarry onsite. Once or twice per month, shale is blasted and conveyed to the primary crushing plant for sizing prior to introduction to the kiln. Norlite must consider the contribution of metals and chlorine to the kiln from the shale. Raw shale samples will be collected from the blasted shale after every blast. There will be four (4) grab samples taken and composited for analysis. The samples are taken from four (4) different areas of the blast in order to obtain a representative sample. Grab samples will be composited in a clean "ZIPLOCK" style plastic bag for delivery to the onsite laboratory.

This composite sample for the blast will be prepared by randomly selecting a portion of the sample and crushing it so that it passes through a 100 mesh filter. The prepared sample is then analyzed for metals and total halogens.

C-3(e) Wastes Generated Onsite

The tank sludge is accumulated in the containers on the storage pad. Each container is labeled indicating when accumulation in the containers has occurred. The containers are sampled when 80 or more containers have

been accumulated. A single sample from a single drum will be taken for every twenty (20) drums of tank sludge generated per tank cleaning. Taking one sample from any of the twenty drums should be representative of the waste in all twenty drums. The samples are not composited and each sample is analyzed for the parameters required by the disposal vendor or for Norlite's 6NYCRR Part §373 incinerator parameters, if the sludge is incinerated on-site. If the waste is not uniform, more samples will be taken and composited to assure representativeness.

Filter cleaning wastes are sampled in the same manner as the tank sludge wastes although they may be composited.

A clean metal or glass coliwasa, hollow tube, or sample thief is used to sample since it is known that the waste is not corrosive to these materials. All samples are stored in glass quart containers with lined caps. Cleaning of the sampler and containers is accomplished by the method used to rinse the coliwasa sampler used for tank truck. Alternatively, the sampler equipment can be disposed as a waste following Norlite procedures.

C-3(f) Retained Samples

For future reference, approximately a 300 ml. sample representative of each LLGF delivery will be placed in a clean glass jar with a teflon lined cover. The jar top marked to indicate the following:

A. Date received
B. Norlite sample number
C. Generator

Each such sample will be stored in the flammable storage refrigerator at a temperature of 4°C for at least three months or until the material has been burned or until all questions are resolved regarding a material, whichever is longer.

C-4 Laboratory Testing and Analytical Methods

With the exception of select organic constituent analysis (i.e. pesticide and dioxin/furan analysis), analyses, including PCBs and other analyses under this waste analysis plan, as listed below in this paragraph, are performed by the onsite analytical laboratory. The Norlite Laboratory is certified under New York State ELAP and the national ELAP programs. A quality assurance/quality control ("QA/QC") program has been set

up for the Norlite laboratory for the parameters analyzed:

specific gravity
quantity verification
heat of combustion (BTU)
total halogens
compatibility
viscosity
PCBs
metals.

Additionally, a QA/QC program has been established by a primary outside contract laboratory. This independent laboratory provides for the analysis of pesticides when required. The outside laboratory will also perform organic analysis listed in Table WAP-1 for organic constituents as may be required on an annual basis for Generators and Blenders as well as perform duplicate analysis of those parameters performed onsite as a quality control check. Other SW-846 organic analysis methods that are not listed in Table WAP-1 may be substituted if they are more clearly applicable. When a method is substituted for one of the Table WAP-1 listed methods, the Department will be notified of the substitution together with an explanation of the reason and with a description of the waste stream in the next monthly report. Additionally, for analysis submitted by

a Generator or Blender, Norlite requires that the analysis be performed using the methods contained in this plan and that the analysis is performed by a laboratory that is certified under NYS ELAP. The results of all analyses will be kept on file at Norlite for each waste stream and will be included in the facility operating record.

C-4(a) Specific Gravity

The specific gravity is measured by the hydrometer method because of the ease and reliability, or by measuring the weight per unit volume of material. Small quantities of sludge or sampling discoloration do not affect the method. Neither does evaporation affect the results significantly. The hydrometer reading is taken in a 100 ml. Graduated cylinder in accordance with Norlite SOP#4-003. The specific gravity result is used as an indicator of conformity of the waste to the original preshipment waste stream characterized. If the result does not agree within 10% with the original preshipment waste, the generator will be contacted and the shipment waste samples further evaluated. If it is determined that the shipment can be handled within compliance with Norlite's permit, based on further analysis and discussions with the generator, then the waste will be accepted.

C-4(b) Quantity Verification

Each tanker truck load of LLGF will be weighed before and after unloading, and the net weight determined. The quantity verifications is recorded on the scale ticket which is filed with the hazardous waste manifest as part of the record of delivery, Quantity verification for shipments of containers will be by piece count.

C-4(c) Compatibility

A 100 ml. Portion of the representative sample from each LLGF delivery is mixed in a container with a 600 ml. Portion of a LLGF sample representative of the storage tank into which the LLGF is to be unloaded (for Tanks 300-600). For the smaller LLGF storage tanks, 100A,B&C and 200A,B&C, a 100 ml aliquot is used for the tank sample, since these tanks are of similar capacity to a tanker load. A thermometer will be used to measure any temperature rise. Observations of the mixed samples are made at least every five minutes for up to 30 minutes to determine if any adverse reactions have taken place particularly heat generation and polymerization. A temperature rise of 10^0C is used since that will be large enough to indicate a reaction has occurred. If the temperature rise is between 5^0C and 10^0C, special handling

consideration concerning the rate of blending will be made.

In addition, ASTM D-34 Proposal P. 168 provides a compatibility chart for hazardous waste. The relevant part on the chart is included in Norlite SOP#4-005 to assist the laboratory in recognizing possible incompatibilities.

C-4(d) Heat of Combustion

A portion of the sample from each LLGF delivery shall be used to determine heat of combustion by Parr oxygen bomb calorimeter in accordance with ANSI/ASTM method D240-02, "Standard Test Method for Heat of Combustion Of Liquid Hydrocarbon Fuels by Bomb Calorimeter". Heat of combustion calculations will be recorded on the Norlite Corporation Low Grade Fuel Analysis Report. The following Parr Instrument Company manuals are also referred to as part of the heat of combustion analytical method:

(1) Parr Instrument Company Manual No. 147, "Instructions for the 1341 Plain Jacket Oxygen Bomb Calorimeter."

(2) Parr Instrument Company Manual No. 148, "Instructions and Methods for Parr Oxygen Bombs."

Calibration procedures are as described in the Parr Instrument Company Manual using Benzoic Acid. Each bomb is recalibrated every six months or before being put into service. Experience shows the Bomb Calibration factor does not change over the period of use. A complete combustion results in a decomposition of organics and the residue is triply rinsed with water for use in the chlorine analysis, therefore the decontamination is part of the procedure. If oxidation has not fully occurred, then a cleaning with soap, water and a solvent, and then rinsing with water is performed on the bomb. Sample analysis is conducted in duplicate for at least every 20th sample. Procedures are described in the "Instructions and Methods for Parr Oxygen Bombs."

C-4(e) Halogen Determination

The total halogen content is determined in accordance with SW-846 Method 5050 with the silver nitrate titration. At this time, using these methods for chlorine analysis will constitute the "total halogen" analysis since fluorine, bromine and iodine contribute positive interference to the methods and chlorine is the predominant halogen in the waste received at Norlite.

Should better speciation be necessary based upon information received from the generator, the Method 5050 combustate shall be analyzed using SW-846 Method 9056 (ion chromatography method). The concentrations of the individual halogens would then be summed to yield a value for "total halogens".

The total halogen determination is made using the test washings from the heat of combustion, employing a silver nitrate titration with dichloroflourescein indicator. Total halogen calculations are recorded on the Norlite Corporation, Low Grade Fuel Analysis Report Form.

The total halogen determination for shale includes the Parr Bomb preparation, SW-846 Method 5050, followed by Method 9056 for analysis.

C-4(f) Viscosity

Pumpability of the material is required. The waste is fed through the inner stainless steel pipe and the atomization air or steam is provided through the outer pipe. Atomization pressure is maintained as specified in the permit. See Section D-5(b).

The viscosity of the material will be determined in accordance with ASTM Method D2983-03 at ambient temperature as needed. The viscosity is measured using a Brookfield Test to verify the pumpability of the waste. If the sample of the waste appears to be too viscous to be effectively pumped at the fuel farm, the laboratory will perform this procedure. Viscosity above 3000 SUS @ 80 deg F will be considered unpumpable.

C-4(g) Metals

The laboratory will perform analysis for the 14 metals described in the permit. The methods employed are as described in SW-846, with Method 3050B normally used for sample preparation for LLGF and used oil/Waste Fuel A samples. Mercury analysis is performed by Method 7470A on the Method 3050B digestate. Pending submittal of equivalency data and subsequent Department approval, Method 3052 will be used. The shale samples are also prepared by Method 3050B, as was performed for the shale samples taken as part of the Trial Burn and Supplemental Risk Burn. Mercury analysis on the shale is performed by Method 7471A. Modification or deviations of procedures, if necessary, to achieve the reported detection limits will be documented with the data and reported in the monthly report to the Department.

The metals for analysis and the analytical methods used for them are:

Metal	Method
Arsenic	6010B
Barium	6010B
Beryllium	6010B
Cadmium	6010B
Chromium	6010B
Copper	6010B
Lead	6010B
Mercury	7471A (on shale)
	7470A (on liquid fuel digestate)
Nickel	6010B
Selenium	6010B
Antimony	6010B
Silver	6010B
Zinc	6010B
Thallium	6010B

C-4(h) PCBs

PCB analysis will be by EPA SW-846 Method 8082 or its updates with a detection limit of not greater than 2 ppm for each Aroclor. Norlite will normally achieve a detection limit of 1 ppm for each Aroclor. All positive

PCB results will be analyzed with a matrix spike or matrix spike duplicates. LLGF samples, representative of no more than five (5) deliveries may be composited in equal proportions by volume for PCB analysis. LLGF samples and used oil/Waste Fuel A samples shall not be combined in composite samples for PCB analysis.

Should initial analysis indicate PCB concentrations in composite samples greater than the quotient of 25 ppm divided by the number of samples in the composite, samples representative of each delivery comprising the composite will be analyzed for PCBs. Only those deliveries indicating PCB concentrations of less than 25 ppm of total PCBs will be unloaded into the storage tanks and burned. For the purposes of this waste analysis plan, "25 ppm of total PCBs" is defined as the sum of the quantified Aroclors from Method 8082. Norlite will provide the Department notice of any LLGF, off-specification used oil fuel, or Waste Fuel A shipment received with a PCB concentration greater than 10 ppm of total PCBs within 24 hours of receipt of the analytical results. Norlite will not accept or incinerate wastes containing over 25 ppm of total PCBs.

C-4(i) Bottom Sediment

Norlite performs ASTM Method D1796-97 in order to determine the percent bottom sediment in a sample. This test is a standard centrifuge test that separates mixtures into their immiscible layers. Norlite will not feed LLGF to the kilns that has bottom sediment in excess of 8.3%.

C-5 Special Procedural Requirements

This section of the waste analysis plan describes the procedures used to apply the sampling and analytical procedures to the hazardous wastes and raw materials managed at the facility.

C-5(a) Hazardous Waste Characterization

An LLGF Specification Sheet, found in Appendix C-5, or its equivalent, will be completed and signed by each Generator and Blender. This document will be reviewed and approved by Norlite prior to any shipment of hazardous waste to the facility. The LLGF Specification Sheet will be reviewed and updated on an annual basis and if and when the described waste stream changes. The waste stream will be reviewed by having the Generator or Blender certify that the waste stream has not changed or

having them fill out a new LLGF Specification Sheet. Support documentation for the certification decision will be filed and will be available onsite for review by the Department. Each re-evaluation for waste streams from Blenders will include a new waste stream analysis as will waste streams from generators that are found to be variable or less consistent.

Norlite does not accept polychlorodibenzo-p-dioxin (PCDD) or polychlorodibenzo-p-furan (PCDF) containing wastes and hazardous wastes listed as F020, F021, F022, F023, F026, F027 and F028. Any waste stream presented for approval that contains PCDD or PCDF will be denied approval. Wastes containing PCBs are restricted to those containing less than 25 ppm total PCBs, as defined as the sum of the Aroclors quantified by EPA Method 8082. Additionally, Norlite will not accept waste containing PCBs that are regulated under 40 CFR Part 761 or are defined as PCB waste under 6 NYCRR 371, regardless of the PCB concentration. Norlite will notify the Department within 24 hours of receipt of the analytical results, if waste containing greater than 10 ppm of total PCBs is received.

C-5(a)(1) Generator

In addition to the LLGF Specification Sheet and as documentation for the information contained therein, a Generator, for the first time and at least annually, must provide the following information:

(a) Analysis for BTU, Total Halogen, Ash, Norlite's 14 regulated metals and PCB content. Norlite's on-site lab may perform this analysis for the generator.

(b) The identity of any hazardous constituents identified in Appendix 23 to 6NYCRR Part §371 known or suspected to be present in the wastestream must be disclosed. Any analysis performed to identify such hazardous constituents must be performed in accordance with SW-846 methods for the target compounds. The analysis must achieve the method's detection limit, corrected for any dilution required for the extract of the sample's matrix. A generator need only conduct the test necessary to identify the hazardous constituents that are suspected of being present.

(c) For those wastes produced by a known process, all chemicals present in concentrations in excess of 5% must be identified accounting for 100% of the composition. The components listed should include volatile aromatic organics, volatile chlorinated organics, other volatile organics, semi-volatile organics and nonvolatile organics. This information must be substantiated by analytical data or other documentation (such as material safety data sheets).

(d) For those wastes produced by a process which is less well characterized, the Generator must produce an analysis identifying all chemicals present in concentrations in excess of 5 percent and Appendix 23 to 6NYCRR Part §371 constituents that have a substantial concentration (in excess of 100 ppm) accounting for approximately 100 percent of the composition. The analysis should include one or more of the analyses identified on Table WAP-1 LLGF Verification.

(e) Waste produced by known processes are those where the hazardous constituents can be identified and documented without need for analysis and the concentration limits can be

estimated with sufficient accuracy to assure Norlite that the PERMIT LIMITS and Acceptance Limits in WAP-1 will be met and the EPA criteria for acceptable process knowledge (as defined in the EPA Document "Waste Analysis At Facilities That Generate, Treat, Store, And Dispose Of Hazardous Wastes, A Guidance Manual", OSWER 9938.4-03, April 1994, Sections 1.5 and 1.5.2) are met. Waste produced by processes that are less well characterized are wastestreams not meeting the foregoing definition.

C-5(a)(2) Blenders

Blenders are subject to the similar requirements as Generators. Prior to receiving a load for the first time from a Blender, the Blender must complete a LLGF Specification Sheet and submit a copy of its waste analysis plan. Norlite will work with the Blender to assure that the Blender's fuel meets Norlite's PERMIT LIMITS and Acceptance Limits in WAP-1. This objective can be achieved by the Blender providing information and analyses on the component waste streams or producing information and analyses on a representative sample of the blended fuel. The same criteria applicable to Generators applies to Blenders.

A Blender must provide the following information:

(a) Analysis for BTU, Total Halogen, Ash, Norlite's 14 regulated metals and PCB content. Norlite's on-site lab may perform this analysis for the blender.

(b) The identity of any hazardous constituents identified in Appendix 23 to 6NYCRR Part §371 known or suspected to be present in the waste stream must be disclosed. Any analysis performed to identify such hazardous constituents must be performed in accordance with SW-846 methods for the target compounds. The analysis must achieve the method's detection limit, corrected for any dilution required for the extract of the sample's matrix. A blender need only conduct the test necessary to identify the hazardous constituents that are suspected of being present. If testing is required, the test could either be done on a representative sample of the blended fuel or by doing the requisite analysis on the component waste stream that cannot be adequately identified by other means.

(c) For those wastes produced by a known process, all chemicals present in concentrations in excess of 5% must be identified accounting for

100% of the composition. The components listed should include volatile aromatic organics, volatile chlorinated organics, other volatile organics, semi-volatile organics and nonvolatile organics. This information must be substantiated by analytical data or other documentation (such as material safety data sheets).

(d) For those wastes produced by a process which is less well characterized, the Blender must produce an analysis identifying all chemicals present in concentrations in excess of 5 percent and Appendix 23 to 6NYCRR Part §371 constituents that have a substantial concentration (in excess of 100 ppm) accounting for approximately 100 percent of the composition. The analysis should include one or more of the analyses identified in WAP-1 LLGF Verification.

(e) Waste produced by known processes are those where the hazardous constituents can be identified and documented without need for analysis and the concentration limits can be estimated with sufficient accuracy to assure Norlite that the PERMIT LIMITS and Acceptance Limits in WAP-1 will be met and the EPA criteria

for acceptable process knowledge (as defined in the EPA Document "Waste Analysis At Facilities That Generate, Treat, Store, And Dispose Of Hazardous Wastes, A Guidance Manual", OSWER 9938.4-03, April 1994, Sections 1.5 and 1.5.2) are met. Waste produced by processes that are less well characterized are waste streams not meeting the foregoing definition.

(f) Blenders will not be required to identify the name and location of their Generators. Blenders will be required to identify the Standard Industrial Code(s) or the industrial group of their Generators. Norlite is attempting to maintain flexibility with its handling of Blenders, while, at the same time, ensuring that it will not accept any LLGF that would prevent it from meeting its PERMIT LIMITS and Acceptance Limits in WAP-1, adversely impairing plant operations, or is ineligible for thermal treatment by regulation.

(g) Blenders are required under 6 NYCRR Part §373 and 40 C.F.R. Part §264 or 265 to have their own approved waste analysis plan. The flexible approach identified herein will avoid duplication of sampling effort and, at the same

time, provide adequate safeguard that only acceptable LLGF will be received by Norlite. Norlite will inspect and ensure that each Blender's waste analysis plan adequately addresses waste characterization and critical LDR requirements with respect to combustion. If a Blender is permitted to manage hazardous wastes for which Norlite is not permitted, then Norlite will notify the Blender in writing of the discrepancy and subsequent prohibition.

C-5(a)(3) Onsite Generated Wastes

Occasionally the storage tanks need to be cleaned out, generating a tank bottom material. The tank sludge will have an EPA waste designation number depending on the material collected for burning (e.g., F001, F002, F003, F005 and/or D001). The sludge from the tank bottom will be a semi-solid. This material may contain paint or ink solids or other solid or semi-solid polymeric materials.

The identification of the sludge is made by completing a waste profile sheet as required by the disposal vendor. Since the waste is a "derived from" hazardous waste, analysis is not required to perform a hazardous waste determination. The analyses that are

performed are those required by the disposal vendor in order to assure the safe storage, transport and management by reuse for energy recovery or incineration of this material. Typical requirements for each shipment may include analysis for the toxic metals.

The characteristics of this waste typically contain 30%-50% organic constituents, including solvents and oil. The remaining is polymer and solids. The flashpoint is less than 140°F.

The filtered solids from the offloading pad are a similar waste stream to the tank bottom sludge and are managed in the same way.

The personal protective equipment that is contaminated with the waste is characterized using generator knowledge so no sampling and analysis take place. The waste is characterized as "derived from" waste based upon the waste stream with which it is contaminated.

Wastewater from the secondary containment units is pumped to LLGF tanks. Before the water is pumped to the tanks, a sample is taken and analyzed for LLGF parameters as listed in Table WAP-1.

C-5(b) Hazardous Waste and Used Oil/Waste Fuel A Receipts

After a waste stream (which includes LLGF, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, remedial waste; as defined above, and nonhazardous waste; including waste water) has been characterized as described above, the material may be scheduled for delivery to the facility. When the waste arrives, the manifest (or other shipping paper as for the used oil deliveries) is inspected and the load is sampled as described in Section C-3. The following PARAMETERS are analyzed from each bulk or containerized delivery of Low Grade Fuel - specific gravity, heat of combustion, total halogen content, 14 metals, compatibility and solid content (visual determination). A composite of not more than 5 LLGF or used oil samples is analyzed for PCBs. The LLGF samples are not combined with the used oil/Waste Fuel A samples for PCB compositing.

If a load is within the PERMIT LIMITS, it is accepted for unloading to the tanks. However, if a load exceeds the PERMIT LIMITS, the load is reviewed to see whether it can be blended to or within the PERMIT LIMITS. "PERMIT LIMITS" refers to the actual "as-fired" limits for the fuel in the kilns. If the material cannot be blended, the load is not to be unloaded and the truck is to be

removed from the site as soon as possible. The reason for the rejection is noted in item 19 of the manifest and a copy of the manifest returned to the Generator. Norlite will provide the Department written notification of the rejection in accordance with 6NYCRR Subpart §373-2.

Typically, Norlite will accept LLGF that is up to 25 times the permitted feed rate of a constituent. Any LLGF that is over this threshold warrants careful consideration regarding its acceptability. Norlite will accept up to 100 times the permitted feed rate of a constituent depending on the volume of the LLGF with the very high concentrations of metals or total halogens and the volume and characteristics of the LLGF on hand as well as the LLGF that is expected to be received in the near future. For example, an LLGF load with 100 times the concentration of copper may be acceptable if the volume is only 100 gallons and the remainder of the LLGF in the plant is very low in copper.

Norlite will not accept any LLGF or other waste stream as defined above that exceed the acceptance limits described above or specified in Table WAP-1.

Off-specification used oil fuel/Waste Fuel A loads are sampled in the same way that hazardous waste LLGF loads are sampled, which is described in Section C-3.

They are analyzed for the same parameters as the hazardous waste LLGF since the fuel will be co-fired with the LLGF and Norlite must consider all feed streams to the kiln while burning hazardous waste. The analysis will be reviewed to ensure that the fuel meets the definition of Waste Fuel A found at 6 NYCRR 225-2. For used oil that is shipped to Norlite as specification used oil fuel and will be used at Norlite as specification used oil fuel, the load will be sampled and analyzed for the parameters necessary to demonstrate that it does indeed meet the specification. Norlite may use analysis provided by the marketer of the used oil fuel to make this demonstration but will analyze the load for PCBs and Total Halogens. If Norlite accepts specification used oil fuel and intends to co-fire it with the LLGF, as is done with the Waste Fuel A, then the specification used oil fuel shall be analyzed for the same parameters as the LLGF since Norlite must consider all feed streams to the kiln while burning hazardous waste. Specification used oil that is accepted for burning at the pilot nozzle is also sampled and analyzed. The results for the pilot fuel specification used oil are averaged as discussed in Section C-5(d).

Norlite will not accept any off-specification used oil fuel/Waste Fuel A that exceeds the acceptance limits described above or specified in Table WAP-1.

When Norlite accepts comparable fuels, a sample is taken and analyzed for heat content and total halogens. One load in each ten loads of each comparable fuel waste stream will be analyzed for all parameters for LLGF deliveries. No comparable fuels will be accepted that fail to meet the requirements of 6 NYCRR Part 371.4(i).

Virgin fuel oils and natural gas are not sampled and analyzed.

C-5(c) Receipt of Hazardous Wastes Containing Pesticides and Herbicides

Norlite does not accept listed hazardous waste that is listed for containing pesticides and/or herbicides or characteristic hazardous waste for EPA Waste Numbers D012-D017, D020 and D031.

C-5(d) Blended LLGF for Burning

When preparing a tank of LLGF (which includes Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, remedial waste; as defined above, and nonhazardous waste; including waste water) for burning, Norlite determines the heat value of the fuel and the concentration of metals and total halogens in the fuel. This is accomplished by 1)

calculation based upon the original analysis of the fuel that makes up the tank, or 2) sampling and analysis of the tank. Each load of LLGF is sampled and analyzed upon receipt as described in Section C-5(b). A control procedure will prevent the burning of any waste until the BTU, Total Halogens, PCB, and metal parameters have been verified. An analysis form (WAP-2) will be completed for each tank burned indicating the analyzed or calculated values for each permit parameter, the dates of analysis and/or calculation, and the date of authorization to burn the waste from the designated tank. The tank will be locked while being filled and will not be unlocked until the PCBs, Metal, Specific gravity, and Halogen content is completed, verified and shown to be below PERMIT LIMITS. The tanks are locked with physical pad locks on the bottom and top valves and the recirculation valve. The volume of the tanks is measured using either ultrasonic or radar level gauges. These units do not require routine maintenance and are set based upon the vertical distance from the top of the tank to the bottom. They measure the distance from the top of the tank to the liquid level and calculate the percentage of the vessel that is filled with liquid. They are relatively accurate while the agitators are in operation because the top of the liquid remains fairly level.

C-5(d)(i) LLGF & Off-Specification Used Oil/Waste Fuel A Kiln Feed by Calculation

The calculation for BTU, Halogen content, and PCB will be accomplished by using a weighted average of the results analyzed for the tank or for the received loads of LLGF that were placed in the tank:

$$\frac{(Vol_1)(X_1)+(Vol_2)(X_X)^{+\cdots}}{(Vol_{total})} = X_{total}$$

After a tank of LLGF has been burned, a reading of the level of the tank is taken and reported to the laboratory. The laboratory personnel will consider this residual volume the next time the tank is used to make a fuel blend. All transfers of LLGF within the tank farm are reported to the laboratory by telephone or two-way radio so that an accurate accounting of fuel analysis and transfer is kept and logged. Appendix C-4 provides an example of the transfer log used to track the LLGF movements.

The results of the heat value, metals and total halogens calculations of the LLGF tank are used to prepare a WAP-2 form documenting the heat value, metals

and total halogens feed to the kiln. These feed rates must be in compliance with the LLGF limits in the Part §373 Permit.

Norlite uses the same procedure for separately determining the contribution of heat value, metals and total halogens from the Off-Specification Used Oil/Waste Fuel A feed, which is called "Kiln Oil" on the WAP-2 sheets. This is the feed that comes from Tank 9 and is co-fired through the main burner assembly with the LLGF.

C-5(d)(ii) LLGF & Off-Specification Used Oil/Waste Fuel A Kiln Feed by Analysis

Due to the propagation of error that can potentially occur in the calculation method described above, Norlite randomly confirms the calculated values through sampling and analysis. On a weekly basis, a storage tank is sampled as described in Section C-3(c) and analyzed. The subject tank will be one that has multiple waste transfers and has not been thoroughly emptied over the previous week.

When a storage tank is tested for confirmation of the calculated results it is tested for total halogens, ash, and the ten regulated BIF metals (i.e., antimony,

arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium) and for four additional metals (copper, nickel, selenium and zinc) which are monitored as part of the permit. PCBs are not reanalyzed.

The results of the metals and total halogens analyses of the LLGF (Liquid Low Grade Fuel) tank sample are used to prepare a WAP-2 form documenting the metals and total halogens feed to the kiln. The metals and total halogens feed rates from LLGF must be in compliance with the LLGF metals limits in the Part §373 Permit. When an analysis is performed to confirm the calculation, the analysis will be used to complete the WAP-2 form for the tank. Confirmation criteria and corrective action developed with the Department will be applied.

Norlite uses the same procedure for separately determining the contribution of heat value, metals and total halogens from the Off-Specification Used Oil/Waste Fuel A feed, which is called "Kiln Oil" on the WAP-2 sheets. This is the feed that comes from Tank 9 and is co-fired through the main burner assembly with the LLGF.

Norlite LGF laboratory personnel will sign and date the WAP-2 form. An authorized Norlite supervisor will

also review and sign the form prior to release of the tank.

The following Norlite personnel will be trained and are authorized to execute form WAP-2:

LGF LABORATORY PERSONNEL
Laboratory Director
Q.C. Technicians

SUPERVISORY PERSONNEL
Plant Manager
Laboratory Director
Q.C. Technicians
Kiln Supervisors

One copy of all written laboratory analysis reports and signed WAP-2 forms will be maintained in the operating record until closure of the facility in accordance with 6 NYCRR 373-2.5 (c)(2)(iii).

Compliance with metals and total halogens limits is determined on a lbs/hr basis, consistent with standards in the BIF regulations under 40 CFR 266.102(e)(6), and the manner in which the Trial Burn, Air Dispersion Modeling and Risk Assessment evaluations were performed by ENSR. Since the ultimate goal is to control emission rates to allowable levels, the important compliance

objective is to control metals and total halogens feed rates on a lbs/hr basis. Concentration limits are not necessary since LLGF is fed from agitated tanks but are provided in the application for convenience.

Compliance with allowable halogen and thermal input feed rates is planned in accordance with the SOP 4-009 which is titled "Process Control Procedure - Preparation for and Incineration of Waste Blends Containing High Concentrations of Organic Halogens or High BTU Materials".

C-5(e) Special Precautions for Ignitable and Incompatible Wastes

The LLGF blends are ignitable or combustible. Norlite has taken special precautions to meet all the requirements for the storage of ignitable wastes. The precautions are described in Sections D and F of this Application. As described above, hazardous waste streams are tested for compatibility with the other wastes and materials (i.e. waste water, comparable fuels, remedial waste, nonhazardous waste, used oils, Waste Fuels B) with which they are being stored. Any waste stream or other material which fails this compatibility test during the characterization and approval process will be denied approval. Any approved waste streams that fail the

compatibility test when a shipment arrives onsite will be rejected. When generating waste onsite, Norlite does not combine the wastes generated from different storage tank cleanings unless the compatibility test is performed and the materials are deemed compatible.

C-5(f) Combustion prohibition for inorganic wastes

As part of the waste characterization process described in this plan, Norlite will ensure compliance with the dilution prohibition as a substitute for treatment requirements. Listed in Appendix 54 of 6 NYCRR 376 are hazardous wastes for which combustion is inappropriate and, therefore, prohibited. Norlite will not accept for combustion any wastes listed in this appendix unless, the waste, at the point of generation or after bona fide treatment (such as cyanide destruction prior to combustion), specifically meets one of the exceptions found in 6 NYCRR 376.1(c)(3)(i) through (vi).

C-5(g) Shale Analysis

Shale is sampled as described in Section C-3(d). The results for each blasted shale composite analysis are used in calculating and confirming allowable metal feed rates and total halogens feed rate for all raw shale to

the kilns, as well as the total metal feed rate and total halogens feed rate to the kilns. The composite analysis is considered valid for the entire batch of blasted shale. The term of feed represented by this composite sample shall be from the point of blast to the next blast.

The metal and total halogen feed rate limits for shale are calculated based upon the total feed rate limits shown in Table WAP-1 minus the total feed rate limit for LLGF and off-specification used oil fuel/Waste Fuel A or the actual feed rate for LLGF and off-specification used oil fuel/Waste Fuel A. For example, the total feed rate for Lead is 6.3597 lb/hr. If the contribution of Lead from fuel is at the fuel limit of 4.0349 lb/hr, then the maximum contribution from shale can be no more than 2.3248 lb/hr. If the contribution from Lead is not at its maximum in the fuel, say 3.0349 lb/hr, then the maximum contribution from shale can be no more than 3.3248 lb/hr.

If the metals and total halogens in the shale are within these feed limits or concentration limits, then no reduced allowable shale feed rate is needed for the batch blast. If the concentration of any metal and total halogens feed rate results in an exceedance of the limits above, then the allowable shale feed rate must be reduced

in proportion to the measured metal concentration until the batch of shale is processed or the concentration in the fuel is reduced. Form WAP-3 is used by the laboratory to calculate the allowable shale feed rate, up to a permitted maximum of 22 tons/hour. The form is posted in each kiln control room until the next quarry blast analysis is completed.

C-5(h) Bevill Exclusion Determination for APC Wastes

Pursuant to NYCRR 374-1.8(m), a residue from a boiler or industrial furnace that burns hazardous waste may be excluded from the definition of a hazardous waste if it meets the requirements of the section. This section of the regulation allows the owner/operator the opportunity to compare the waste-derived residues from the unit with normal residues or compare the concentrations of constituents of concern from the waste-derived residues with published health-based limits.

Norlite demonstrates that the concentrations of toxic constituents of concern (COCs) are below the health-based limits in 40 CFR 266 Appendix VII as referenced in 6 NYCRR 374 Appendix 47. This method is consistent with 6 NYCRR 374-1.8(m)(2)(ii).

C-5(h)(i) Nonmetal Constituents

Through the sampling and analysis plans described below, the residues from the baghouse and the multiclone APC devices and the filtercake produced from the treatment of the scrubber blowdown shall be analyzed for constituents of concern that are derived from 6 NYCRR Part 371 Appendix 23 (See Table 1). The list of constituents contains most of the compounds listed in Appendix VII of 40 CFR Part 266 and all of the compounds listed in Appendix VIII of 40 CFR Part 266. In order for the residues to be excluded from the definition of hazardous waste under this part of the regulation, the concentrations shall be less than those listed in Appendix VII. For the nonmetallic constituents that are not listed in Appendix VII, the concentrations must be less than the level of detection of the analytical method (using analytical procedures prescribed in SW846) or less than 0.002 µg/kg, whichever is higher. Should any of these constituents be found at concentrations that exceed the health risk-based standards listed in Appendix VII, the results will be compared to the standards for F039 nonwastewaters found in 6 NYCRR Part 376. Should the results exceed these F039 standards for these constituents, the residues will be considered hazardous waste and ineligible for the Bevill Exclusion.

Analysis for the nonmetal constituents will be performed on an annual basis. The list of analytes for the Bevill Exclusion is found in Appendix C-1.

C-5(h)(ii) Metal Constituents

As described in the sample and analysis plans for this protocol, the residues from the baghouse and multiclone APC devices and the filtercake produced from the treatment of the scrubber blowdown shall be compared to the Toxicity Characteristic Leaching Procedure (TCLP) extract concentration limits found in Appendix VII of 40 CFR Part 266. In order for the residues to be excluded from the definition of hazardous waste under this part of the regulation, the concentrations shall be less than those listed in Appendix VII. The metals analysis will be performed on a monthly basis.

C-5(h)(iii) Bevill Exclusion Sampling and Analysis Plan

The regulation requires that the waste-derived residue be sampled and analyzed as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Based upon the consistency of the operation and the inherent unlikelihood of organic

constituents being found in the residues, Norlite will sample and analyze for organics on an annual basis and the metals on a monthly basis. Norlite shall sample the residue from the baghouse and the multiclone on the same kiln (i.e. Kiln #1 or Kiln #2). Over a 24-hour period, grab samples will be taken on a two-hour interval resulting in twelve (12) grab samples taken. These samples shall be composited to yield a 24-hour composite sample. Norlite will also draw and analyze a sample of the wastewater treatment plant filter cake that is generated during the sampling event. As a contingency, the remainder of grab sample material shall be retained for control purposes. A sampling log shall be kept indicating the sampling time, location and sampler. Sample jars shall be labeled with the sample date, time and location. The resulting composite samples shall be clearly labeled with the sample date, sample ID (material), time span and sample location.

The samples shall be submitted to a NYS ELAP-certified laboratory for analysis. Analysis shall include the TCLP extraction of the sample and analysis of the extract for the metals listed in Appendix VII of 40 CFR Part 266. For nonmetal constituents, samples shall be extracted and analyzed by the prescribed methods found in SW-846.

C-5(i) LDR Determination for Clinker

Hazardous waste LLGF is received and burned as fuel for energy recovery at Norlite. However, pursuant to 6 NYCRR 374-1.3(a)(2), the clinker must meet the following criteria in order to be used as a unrestricted product if Norlite is incinerating hazardous waste for the purposes of destruction:

- The product must not exhibit a characteristic of a hazardous waste; and
- The product must meet the nonwastewater Universal Treatment Standards (UTS) found in 40 CFR 268.48.

Norlite has proposed to incinerate solid hazardous wastes, termed "SLGF", and hazardous waste wastewater, separate from the LLGF feed. These two activities will not occur unless successfully demonstrated during an additional Trial Burn or "Miniburn". If Norlite engages in either or both of these activities, then the clinker becomes subject to 6 NYCRR 374-1.3(a)(2) and will follow the procedures indicated here.

Based on the thermal process, the clinker will not exhibit the characteristics of ignitability, corrosivity or reactivity. Indeed, the material is quite inert. The material should also not be expected to contain any organic compounds or leachable metals. However, due to

varied feed and the remote possibility that some organic compounds might survive the temperature in the kiln, Norlite shall perform sampling and analysis of the clinker to ensure that it meets the UTS. Since the clinker does contain metals, sampling and analysis shall also be performed for metals using the TCLP to show that the clinker does not exhibit the toxicity characteristic for metals and also meets the UTS. Norlite will sample and analyze clinker for metals and organics on monthly & annual basis, respectively, to ensure that it meets the nonwastewater standards of 6 NYCRR Part 376.4(j). Additionally, at the Department's request, Norlite shall sample and analyze clinker for metals & organics six & two times per year, respectively. Norlite may cease to perform the Department requested organic analysis after two years of the effective date of this permit, provided that, no organic is detected in the clinker samples analyzed during those two years.

This sampling will be performed on a grab basis as required by the LDR. Norlite shall sample and analyze the clinker for metals on a monthly basis and the organics on an annual basis. Norlite does not expect a monthly analysis for organic compounds to be necessary due to the nature of the operation.

The samples shall be submitted to an ELAP-certified lab for analysis. Analysis shall include the TCLP extraction of the sample and analysis of the extract for the metals. For organic constituents, samples shall be extracted and analyzed by the prescribed methods found in SW-846 (See Soxhlet Method 3540C in Table WAP-1). The list of analytes for the clinker LDR demonstration is found in Appendix C-2.

C-5(j) Incoming Drums

The samples taken as described in Section C-3(b) are composited and analyzed as described below:

- Compatibility: 100% of the drums are sampled and analyzed individually for compatibility as described in Section C-4(c). Tests for oxidizer, peroxide and water are performed as necessary if there is any reason to suspect their presence.
- Heat Value, Halogens, Specific Gravity, PCBs and Ash: Samples from 10% of the drums of each waste stream are composited and tested for these parameters. Each composite is made up of no more than five (5) individual samples. If a waste stream is contained in more than fifty (50) drums, more than one composite sample is

made for the waste stream. The analyses are performed as described in Section C-4.

- Metals: Drums are usually emptied into Tank 200A and then the tank's contents are sampled and analyzed to determine the metals concentrations for blending purposes. The composite samples described above are not analyzed for metals. Should drums be emptied into a tank other than 200A, the tank's contents are sampled and analyzed to determine the metals concentrations.

C-5(k) Receipt of Specification Used Oil Fuel

When Norlite receives a load of specification used oil fuel, the facility ensures that the marketer has performed the requisite analysis to certify the used oil as specification. No oil will be accepted from a marketer as specification used oil if the marketer has not analyzed it. Process knowledge is not acceptable to certify or claim that used oil is specification. Norlite will sample the specification used oil and analyze it for heat content, PCBs and halogens. Since, the metal content of this product is fairly consistent and, since the flowrate of this product to the kiln is comparatively low, Norlite will establish an average concentration of each metal of concern through analysis, performed on

samples taken by the facility. The analysis will be performed by the onsite laboratory using the same procedures used to analyze the LLGF for metals content. These concentrations will be used to calculate the feed rate of the metals to the kilns. A monthly average of metals contribution will be maintained by averaging the metal concentrations measured over the previous month. The feedrates obtained in this calculation will be used as the feedrate for the current month. For the calculation of metals contribution to the kilns from specification used oil fuel used for pilot fuel, a flow rate of one and one half gallons per minute will be used. A higher flowrate will be used if the kilns usage exceeds this flowrate. These contributions will be documented on the WAP-2 sheet.

NYSDEC has agreed that contributions of metals and total halogens from the specification used oil fuel as pilot fuel that do not exceed one percent of the maximum permitted total feedrate of each metal or total halogens need not be considered.

C-5(1) Receipt of Comparable Fuels

Comparable fuels will only be accepted at the facility after the generator has complied with 6 NYCRR 371-4(i) and Norlite has notified of its intent to accept the comparable fuel stream. Each load will be sampled

and analyzed for heat content, bottom sediment & water, and PCBs. Viscosity will be tested only as necessary. The metal feed rates will be calculated based on the concentrations established by the generator's feed stream analysis plan. Norlite will analyze one load of every ten loads of each comparable fuel stream for the full LLGF analysis described on Table WAP-1 to ensure the full quality and consistency of the comparable fuel. When necessary, these contributions will be documented on the WAP-2 sheet.

NYSDEC has agreed that contributions of metals and total halogens from the comparable fuels used as pilot fuel that do not exceed one percent of the maximum permitted total feedrate of each metal or total halogens need not be considered.

C-5(m) Determining Input Contributions From The Pilot Fuels & Cooling Water

In addition to the main burner assembly which feeds LLGF and Off-specification used oil fuel/Waste Fuel A (Natural gas is fed from the main burner assembly in the absence of the two liquid fuels), the kilns maintain a pilot flame from one or two pilot nozzles at one time. One pilot runs on natural gas and the other pilot runs on virgin fuel oil, specification used oil fuel and comparable fuels. Norlite also feeds plant water, drawn

from the quarry and treated, through the main nozzle to cool and shape the flame. Norlite considers the contribution of metals, total halogens and heat content to the kiln from the pilot and cooling water as described below.

C-5(m)(i) Natural Gas as Pilot Fuel

Contributions of metals and total halogens from natural gas do not approach 1.0% of the feedrate limits for the fuel found in Table WAP-1. Since the contributions of these constituents are negligible, they are not considered or entered on the WAP-2 sheet.

There is a significant contribution of heat from the natural gas pilot. Under normal operation, the natural gas pilot contributes about 10 to 12 million BTU/hr to the process. The exact heat contribution from this feed is accounted for on each WAP-2 sheet based on usage.

Norlite repeats the input calculations if the feed rate changes for the pilot.

C-5(m)(ii) Virgin Fuel Oil as Pilot Fuel

Contributions of metals and total halogens from virgin fuel oil do not approach 1.0% of the feedrate

limits for the fuel found in Table WAP-1. Since the contributions of these constituents are negligible, they are not considered or entered on the WAP-2 sheet. For this determination, Norlite used the published emission rates found in AP-42 Table 1.3-11 and assumed no credit for system removal efficiency. The emission factors are based on No. 6 fuel oil and are considered to be worst case of all the virgin fuel oils (Diesel, Kerosene, No.2, No.4 and No.6) that can be employed at Norlite. These are found in Appendix C-3.

There is a significant contribution of heat from the virgin fuel oil. For example, under normal operation, the virgin oil pilot contributes about 12 million BTU/hr to the process. This is at a feed rate of 1.5 gallons/minute. The exact heat from this feed is accounted for on each WAP-2 sheet when it is used.

Norlite repeats the input calculations if the feed rate changes for the pilot.

C-5(m)(iii) Comparable Fuels as Pilot Fuel

Pursuant to 6 NYCRR 371-4(i), comparable fuels must meet the specification of No.2 Fuel Oil as listed in the regulation. The generator of a comparable fuel must comply with extensive analytical requirements and

notification requirements for a hazardous waste to be excluded under this provision. Additionally, this waste analysis plan requires Norlite to perform periodic analysis for metal and total halogens content and each load is analyzed for heat content. Any comparable fuel not meeting the specification in 6 NYCRR 371-4(i) will be rejected or managed as LLGF.

Based on the specification in 6 NYCRR 371-4(i), comparable fuels can contribute a significant amount of metals or halogens through the pilot nozzle. Since the contributions of these constituents are possible, they will be considered and entered on the WAP-2 sheet if their contributions exceed 1.0% of the maximum allowable liquid feed rate.

There is a significant contribution of heat from the comparable fuel. The total heat input will be calculated based on the flowrate and heat content of the fuel. The heat contribution from this feed is accounted for on each WAP-2 sheet.

Norlite repeats the input calculations if the feed rate or the heat value of the comparable fuel changes for the pilot.

C-5(m)(iv) Cooling Water in Main Nozzle

Plant water is fed through the main nozzle to cool and shape the flame in order to optimize conditions for aggregate formation. The plant water is drawn from the pond in the quarry and treated by softening and filtration. The water has no heat value and does not contain significant concentrations of halogens or regulated metals. Since the contributions of these constituents are negligible, they are not considered or entered on the WAP-2 sheet. An analysis of the cooling water is presented in Appendix C-3.

C-5(m)(v) Specification Used Oil Fuel as Pilot Fuel

Specification used oil fuel is the pilot fuel of choice. The oil meets the specification found in 6 NYCRR 374-2.2(b). An expanded analysis of it shows that the oil can contribute slightly more significant contributions of halogens and certain metals. Typically, copper and zinc are present at concentrations that can contribute over 1.0% of the total mass feed rate to the kiln. The heat and halogens can be significant as well. As a result, the contributions of these constituents are included on the WAP-2 sheet and are set at a maximum feed rate.

procedures described in Section C-5(a). For the re-evaluation, the Generator or Blender may certify that the waste stream has not changed provided there has been no evidence that the waste stream has changed. Support documentation for the certification decision will be filed and will be available onsite for review by the Department.

C-6(b) Hazardous Waste and Used Oil/Waste Fuel A Receipts

As described in Section C-5(b), all shipments of hazardous waste and used oil/Waste Fuel A are sampled and analyzed. All containers of wastes are sampled and composites are prepared as discussed in Section C-3. Specification used oil fuel is sampled and analyzed for PCBs and total halogens, at a minimum This occurs only after the supplier has provided analysis proving the used oil meets the used oil specification.

On a monthly basis, a random shipment from a Blender will be sampled and analyzed for pesticide and herbicide constituents. The sample will be taken from a shipment that has been characterized as being absent of pesticide and herbicide constituents.

On a quarterly basis, a random shipment from a Blender will be sampled and analyzed for PCDD/PCDF even though the characterization indicates these constituents to be absent.

The SW-846 Methods and acceptance criteria listed in Table WAP-1 shall be used for the analyses.

C-6(c) Onsite Generated Wastes

Wastes generated onsite are characterized at least annually. They are typically characterized when generated if they are to be reintroduced to Norlite's process or when they are shipped offsite to an authorized treatment facility.

C-6(d) Storage Tanks Prior To Burning

On a weekly basis, at least one (1) tank of LLGF will be sampled and analyzed prior to burning as per Sections C-3(c) and C-5(d)(ii). The purpose of this sampling will be to confirm the accuracy of the calculations used to certify tanks for burning since every shipment of hazardous waste is sampled and analyzed for the key permit parameters. The confirmation criteria and corrective action developed with the Department will be applied.

C-7 Laboratory Quality Assurance/Quality Control

Norlite has developed a quality assurance/quality control (QA/QC) plan that provides for the attainment of desired quality levels in its onsite laboratory. The QA/QC plan has been designed to meet or exceed the guidance criteria of the United States Environmental Protection Agency and the New York State Department of Environmental Conservation. This QA/QC plan document has been designed to assure that the analytical results provided by the laboratory are reliable and valid (including the qualities of accuracy, precision, completeness, representativeness, and comparability.) Norlite's QA/QC program and the list of methods for which the laboratory is certified has been submitted separately. As required by NELAP, this document will be reviewed and modified on a periodic basis. Any revisions will be forwarded to NYSDEC for review.

Norlite obtained state and national certification (NYS ELAP 11526 & NELAP NYS11526) to conduct some analyses onsite as listed in Section C-4. On a monthly basis, a random LLGF sample will be split and submitted to an independent, NYS ELAP certified laboratory for metals, total halogens and heat content. A relative difference in the results between the laboratories that

is >25% for any analytes will trigger investigation, corrective action, and repeat of the split sampling event for those analytes and matrices for that month. The results from each laboratory will be included in the monthly report to NYSDEC for comparison. On occasion, an independent, NYS ELAP certified laboratory may be utilized to confirm a result if an instrument in Norlite's laboratory is down for repairs or other reasons unknown.

C-8 Recordkeeping and Reporting

Norlite maintains records of waste characterization forms, characterization analysis data received from the customer, shipping papers (manifests), land disposal restriction forms, receiving analyses, documentation of all waste stream sampling and analysis performed onsite on specific waste streams, and burn analyses at the facility. The laboratory also maintains their own QA/QC records pursuant to their QA/QC plan. The laboratory also maintains copies of the analytical reports received from outside laboratories.

Waste characterization sheets are filed separately. They include MSDSs if provided by the generator. The file may also contain the land disposal restriction form

if the generator doesn't submit one with every load of the waste stream.

The manifests are filed with the land disposal restriction form (if provided), a copy of the weight ticket and a copy of the laboratory analysis.

There is also a file for completed, signed copies of the WAP-2 and WAP-3 sheets.

C-9 Tables

Tables WAP-1, WAP-2 and WAP-3 follow below.

TABLE WAP-1
WASTE ANALYSIS PLAN

STREAM[2]	PARAMETER	ANALYTICAL METHOD[1][3]	TECHNIQUE	DETECTION LIMIT	RATIONAL FOR PARAMETER	PERMIT LIMITS	ACCEPTANCE LIMITS	SAMPLING AND ANALYSIS FREQUENCY
LLGF, OSUOF, WFA	Specific Gravity	ASTM-1298-85 Norlite SOP#04-012	Mass/Vol Measurement	(+/-) 0.002	Waste Verification			each load
LLGF, OSUOF, WFA	Viscosity	ASTM-D2983	Brookfield	Pumpability	3000 SUS @ 80°F			when necessary
LLGF, CF	Bottom Sediment	ASTM-D1796-97 Norlite SOP#04-049	Centrifuge	0.50%	Solids Determination	<8.3%		for blended tanks when necessary
LLGF, OSUOF, WFA, CF, SUOF	Heat of Combustion BTU	ASTM-D240 Norlite SOP#4-013	Oxygen Bomb	100 BTU/lb	Assess Burning Efficiency Requirements			each load
LLGF, OSUOF, WFA,SUOF	Total Halogens	ASTM D808 (D2361) Norlite SOP#4-014	EPA 5050 and Modified EPA 9253 or EPA 9056	1,000 ppm	Halogen Content Required	82.3 lb/hr	<100,000 mg/kg	each load and one blended tank weekly
LLGF	Compatibility	Norlite SOP#4-005	Thermal Mixing	2 Degree C Temp Rise	Ensure Materials are compatible		5 Degree C Temp Rise	each load
		Oxidzer	Spot Test	Neg / Pos	Verify compliance with permit limits			each load
		Peroxide	Spot Test	Neg / Pos	Verify Absence of a Peroxide			each load
LLGF, OSUOF, WFA, CF, SUOF	PCB	EPA 8082 Norlite SOP#4-017 & Norlite SOP#4-018	GC	2 ppm per Aroclor	Compliance with permit limits	25 ppm total as sum of Aroclors	25 ppm total as sum of Aroclors	each load
LLGF, OSUOF, WFA, SUOF	Arsenic	EPA 3050B/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	0.2095 lb/hr	<4300 mg/kg	each load, one blended LLGF tank weekly
	Beryllium	EPA 3050B/6010	ICP	0.02 mg/kg	Verify Metals Below Permit Levels	0.0119 lb/hr	<243 mg/kg	each load, one blended LLGF tank weekly
	Cadmium	EPA 3050B/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.3192 lb/hr	<6500 mg/kg	each load, one blended LLGF tank weekly
	Chromium	EPA 3050B/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	5.9849 lb/hr	<12,200 mg/kg	each load, one blended LLGF tank weekly
	Copper	EPA 3050B/6010	ICP	0.10 mg/kg	Verify Metals Below Permit Levels	9.4838 lb/hr	<100,000 mg/kg	each load, one blended LLGF tank weekly
	Lead	EPA 3050B/6010	ICP	0.14 mg/kg	Verify Metals Below Permit Levels	4.0349 lb/hr	<82,000 mg/kg	each load, one blended LLGF tank weekly
	Barium	EPA 3050B/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	0.9731 lb/hr	<20,000 mg/kg	each load, one blended LLGF tank weekly
	Mercury	EPA 3050B/7470A	Cold Vapor	95 ug/kg	Verify Metals Below Permit Levels	0.0064 lb/hr	<130 mg/kg	each load, one blended LLGF tank weekly
	Nickel	EPA 3050B/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	6.1640 lb/hr	<100,000 mg/kg	each load, one blended LLGF tank weekly
	Antimony	EPA 3050B/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	0.2222 lb/hr	<4500 mg/kg	each load, one blended LLGF tank weekly
	Selenium	EPA 3050B/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.1200 lb/hr	<2400 mg/kg	each load, one blended LLGF tank weekly
	Silver	EPA 3050B/6010	ICP	0.11 mg/kg	Verify Metals Below Permit Levels	0.1345 lb/hr	<2700 mg/kg	each load, one blended LLGF tank weekly
	Thallium	EPA 3050B/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	0.2626 lb/hr	<5300 mg/kg	each load, one blended LLGF tank weekly
	Zinc	EPA 3050B/6010	ICP	0.12 mg/kg	Verify Metals Below Permit Levels	10.3243 lb/hr	<150,000 mg/kg	each load, one blended LLGF tank weekly
LLGF	Pesticides	EPA 8081A/8141A/ 8151A	GC and GC/MS		Verify Absence	must be absent	must be absent	one load monthly
	Organic Hazardous Constituents	EPA 8260B/8270B	GC/MS		Verify Absence or Presence			initially and whenever the stream changes significantly
	PCDD/PCDF	EPA 8290	GC/MS		Verify Absence at EPA 8290 detection limits	Verify Absence at EPA 8290 detection limits	Verify Absence at EPA 8290 detection limits	one load quarterly

TABLE WAP-1
WASTE ANALYSIS PLAN

STREAM[2]	PARAMETER	ANALYTICAL METHOD[1][3]	TECHNIQUE	DETECTION LIMIT	RATIONAL FOR PARAMETER	PERMIT LIMITS	ACCEPTANCE LIMITS	SAMPLING AND ANALYSIS FREQUENCY
Raw Shale	Arsenic	EPA 3050B/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	1.0752 lb/hr *		each blast
	Beryllium	EPA 3050B/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.0990 lb/hr *		each blast
	Cadmium	EPA 3050B/6010	ICP	0.02 mg/kg	Verify Metals Below Permit Levels	0.3628 lb/hr *		each blast
	Chromium	EPA 3050B/6010	ICP	0.02 mg/kg	Verify Metals Below Permit Levels	7.7800 lb/hr *		each blast
	Copper	EPA 3050B/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	13.1200 lb/hr *		each blast
	Lead	EPA 3050B/6010	ICP	0.06 mg/kg	Verify Metals Below Permit Levels	6.3597 lb/hr *		each blast
	Barium	EPA 3050B/6010	ICP	0.07 mg/kg	Verify Metals Below Permit Levels	12.1700 lb/hr *		each blast
	Mercury	EPA 7471A	Cold Vapor	50 ug/kg	Verify Metals Below Permit Levels	0.0081 lb/hr *		each blast
	Nickel	EPA 3050B/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	7.0600 lb/hr *		each blast
	Antimony	EPA 3050B/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	0.3093 lb/hr *		each blast
	Selenium	EPA 3050B/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	0.1728 lb/hr *		each blast
	Silver	EPA 3050B/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.1781 lb/hr *		each blast
	Thallium	EPA 3050B/6010	ICP	0.07 mg/kg	Verify Metals Below Permit Levels	0.3497 lb/hr *		each blast
	Zinc	EPA 3050B/6010	ICP	0.08 mg/kg	Verify Metals Below Permit Levels	25.6093 lb/hr *		each blast
	Total Halogen	EPA 5050/9056	Bomb/Ion Chromatog		Verify Total Halogens Below Permit Levels	82.3 lb/hr *		each blast
Clinker	Metals	EPA 1311	ICP (Cold Vapor for Hg)	varied	Verify that Clinker meets LDR	6 NYCRR 376.4		monthly
	Volatile Organics	EPA 5035/8015B/8021B/ 8260B	GC and GC/MS	varied	Verify that Clinker meets LDR	6 NYCRR 376.4		annually
	Semivolatile Organics	EPA 3540C/8270B/8081A 8290/8082	GC and GC/MS	varied	Verify that Clinker meets LDR	6 NYCRR 376.4		annually
Multiclone Dust, Baghouse Dust, FilterCake	Metals	EPA 1311	ICP (Cold Vapor for Hg)	varied	Ensure Eligibility for Bevill Exclusion	6 NYCRR 374-1.8(m)		monthly
	Volatile Organics	EPA 5035/8015B/8021B/ 8260B	GC and GC/MS	varied	Ensure Eligibility for Bevill Exclusion	6 NYCRR 374-1.8(m)		annually
	Semivolatile Organics	EPA 3540C/8270B/8081A 8290/8082	GC and GC/MS	varied	Ensure Eligibility for Bevill Exclusion	6 NYCRR 374-1.8(m)		annually

(1)EPA in this table = EPA SW-846 Method

(2) LLGF = Liquid Low Grade Fuel (which includes Hazardous Waste, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, remedial waste, nonhazardous waste; including waste water), SUOF = Specification Used Oil Fuel; OSUOF = off-specification used oil fuel; WFA = Waste Fuel A; CF = Comparable Fuels

(3) The most updated official version of each method is used

* minus LLGF, OSUOF, Waste Fuel A contribution

WAP-2
Norlite Corporation
LGF Tank Certification

Kiln:

Tank #:
Total Gallons:
Date Released:
LGF DCS: 633.11
KOCS: 635.09
POCS: 769.73

File# 123456
Kiln Oil File# 654321
Pilot Oil File # 987654

Max LGF(G/Min) 10.1
Max Kiln Oil(G/Min) 1.0
Max Pilot Oil(G/Min) 1.5
Lime Feed (Lbs/hr) x2.7 109

Tank Contributions

Date	Source	CTRL#	Manifest#	Gallons
	Norlite			

Max BTU/Hr=	**62,000,000**
Kiln Oil BTU/Gal=	134,347
Kiln Oil BTU/Hr=	8,060,823
LGF Oil BTU/Hr=	41,449,597
Pilot Oil BTU/Hr=	11,923,761
Pilot Gas BTU/Hr=	0
Main Gas BTU/Hr=	0
Total BTU/Hr=	**61,434,180**

Analytical Information

Parameter	LGF (Lbs/Hr)	Kiln Oil (Lbs/Hr)	Pilot Oil (Lbs/Hr)	Liquid Total (Lbs/Hr)	Maximum Feed Limits(Lbs/Hr)	Max Liquid Feed (Lbs/Hr)
Halogens	39.785	0.21592	0.33439	40.3357	82.3	–
Ash	119.36	2.41833	4.48086	126.2554	–	–
Arsenic	0.0002	0.00002	0.00003	0.0003	1.08	0.21
Beryllium	0.0000	0.00000	0.00001	0.0001	0.099	0.012
Cadmium	0.0039	0.00002	0.00001	0.0040	0.36	0.32
Chromium	0.1091	0.00044	0.00031	0.1098	7.78	5.98
Copper	1.1316	0.01030	0.01682	1.1587	13.12	9.48
Lead	0.1268	0.00446	0.00385	0.1351	6.36	4.03
Barium	0.0942	0.00643	0.00748	0.1081	12.17	0.97
Mercury	0.0005	0.00004	0.00007	0.0006	0.0081	0.0064
Nickel	0.3711	0.00014	0.00003	0.3713	7.06	6.16
Antimony	0.0001	0.00001	0.00026	0.0004	0.31	0.22
Selenium	0.0002	0.00002	0.00003	0.0002	0.17	0.12
Silver	0.0001	0.00003	0.00049	0.0006	0.18	0.13
Thallium	0.0002	0.00002	0.00003	0.0002	0.35	0.26
Zinc	1.2178	0.25206	0.48488	1.9547	25.61	10.32

Date: LGF Laboratory Authorization: _____

Date: Supervisor Authorization: _____

Tank Usage Details

Date	Time	Action	Notes	Burner

WAP-3
Norlite Corporation
Shale Feed Certification

File#:
Kiln#

Shale Batch#:

Date Of Blast:

Date Released:

Max Feed Rate:	22 ton/hr
Alarm Set Point:	21 ton/hr
WFCO Set Point:	21.5 ton/hr
Lime Feed Rate: (x2.7)	4 lbs/hr

Parameter	Conc. (mg/g)	Feed Rate (lbs/hr)	Max Shale (lbs/hr)	Burner Approval	
Arsenic	0.07	0.0031	1.0797	Date:	Chris Dinova
Beryllium	0.60	0.0264	0.0989	Date:	Ken Messercola
Cadmium	0.03	0.0013	0.3560	Date:	Mike Houck
Chromium	20.05	0.8822	7.6702	Date:	Pete Monticup
Copper	49.59	2.1820	11.9613	Date:	Mike McNally
Lead	21.61	0.9508	6.2249	Date:	Jim Guerin
Barium	123.53	5.4353	12.0619	Date:	Bill Clairmont
Mercury	0.10	0.0044	0.0075	Date:	Bob Santspree
Nickel	29.06	1.2786	6.6887	Date:	Dan Messercola
Antimony	0.04	0.0018	0.3096	Date:	Gary Oliver
Selenium	0.04	0.0018	0.1698	Date:	Jerry Moller
Silver	0.04	0.0018	0.1794	Date:	Dave Cheney
Thallium	0.05	0.0022	0.3498		
Zinc	64.09	2.8200	23.6553		
Chlorine	30.07	1.3231	--		

*Maximum Shale (lbs/hr) is equal to Maximum Total feed minus the Liquid Feed.
**Metals Digestion Completed By SW-846 3050B
**Chlorine analysis completed by SW-846 9056 with preparation by SW-846 5050
** Mercury Digestion & Analysis completed by SW-846 7471A

Date: Laboratory Approval:

Date: Operations Approval:

Supervisor Approval

Date:	Stan Ashline:
Date:	Armond Depres
Date:	Brian Roberts
Date:	Tim Passer

Batch Completed Date:

APPENDIX C-1

Bevill Determination for Norlite APC Wastes

Table 1

NONMETALLIC ANALYTE	CAS No.	METHOD SW-846
1,1,1,2-TETRACHLOROETHANE	630-20-6	8260
1,1,1-TRICHLOROETHANE	71-55-6	8260
1,1,2,2-TETRACHLOROETHANE	79-34-5	8260
1,1,2-TRICHLOROETHANE	79-00-5	8260
1,1-DICHLOROETHANE	75-34-3	8260
1,1-DICHLOROETHENE	75-35-4	8260
1,2,3-TRICHLOROPROPANE	96-18-4	8260
1,2,4,5-TETRACHLOROBENZENE	95-94-3	8270
1,2,4-TRICHLOROBENZENE	120-82-1	8260/8270
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	8260/8270
1,2-DIBROMOETHANE	106-93-4	8260
1,2-DICHLOROBENZENE	95-50-1	8270
1,2-DICHLOROETHANE	107-06-2	8260
1,2-DICHLOROPROPANE	78-87-5	8260
1,2-DINITROBENZENE	528-29-0	8270
1,2-DIPHENYLHYDRAZINE	122-66-7	8270
1,3,5-TRINITROBENZENE	99-35-4	8270
1,3-DICHLOROBENZENE	541-73-1	8270
1,3-DINITROBENZENE	99-65-0	8270
1,4-DICHLOROBENZENE	106-46-7	8270
1,4-DINITROBENZENE	100-25-4	8270
1,4-DIOXANE	123-91-1	8260
1,4-NAPHTHOQUINONE	130-15-4	8270
1,4-PHENYLENEDIAMINE	106-50-3	8270
1-ACETYL-2-THIOUREA	591-08-2	8270
1-BUTANOL	71-36-3	8015
1-CHLORONAPHTHALE	90-13-1	8270
1-NAPHTHYLAMINE	134-32-7	8270
1-PROPANOL	71-23-8	8015
2 CHLOROETHYL VINYL ETHER	110-75-8	8260
2,3,4,6-TETRACHLOROPHENOL	58-90-2	8270
2,4,5-TRICHLOROPHENOL	95-95-4	8270
2,4,6-TRICHLOROPHENOL	88-06-2	8270
2,4-DICHLOROPHENOL	120-83-2	8270

2,4-DIMETHYL PHENOL	105-67-9	8270
2,4-DINITROPHENOL	51-28-5	8270
2,4-DINITROTOLUENE	121-14-2	8270
2,6-DICHLOROPHENOL	87-65-0	8270
2,6-DINITROTOLUENE	606-20-2	8270
2-ACETYLAMINOFLUORENE	53-96-3	8270
2-BUTANONE (MEK)	78-93-3	8260
2-CHLOROANILINE	101-14-4	8270
2-CHLOROETHANOL	107-07-3	8260
2-CHLORONAPHTHALE	91-58-7	8270
2-CHLOROPHENOL	95-57-8	8270
2-CYCLOHEXYL-4,6-DINITROPHENOL	131-89-5	8270
2-HEXANONE	591-78-6	8260
2-METHYLNAPHTHALE	91-57-6	8270
2-METHYLPHENOL	95-48-7	8270
2-NAPHTHYLAMINE	91-59-8	8270
2-NITROANILINE	88-74-4	8270
2-NITROPHENOL	88-75-5	8270
2-NITROPROPANE	79-46-9	8260
2-PENTANONE	107-87-9	8260
2-PICOLINE	109-06-8	8260/8270
3,3'-DICHLOROBENZIDINE	91-94-1	8270
3,3'-DIMETHOXYBENZIDINE	119-90-4	8270
3,3'-DIMETHYL BENZIDINE	119-93-7	8270
3-CHLOROPROPIONITRILE	542-76-7	8260
3-METHYLCHOLANTHRENE	56-49-5	8270
3-METHYLPHENOL	108-39-4	8270
3-NITROANILINE	99-09-2	8270
4,4'-DDD	72-54-8	8081
4,4'-DDE	72-55-9	8081
4,4'-DDT	50-29-3	8081
4,6-DINITRO-2-METHYLPHENOL	534-52-1	8270
4-AMINOBIPHENYL	92-67-1	8270
4-BROMOPHENYL PHENYL ETHER	101-55-3	8270
4-CHLORO-3-METHYLPHENOL	59-50-7	8270
4-CHLOROANILINE	106-47-8	8270
4-METHYL-2-PENTANONE (MIBK)	108-10-1	8260
4-METHYLPHENOL	106-44-5	8270
4-NITROANILINE	100-01-6	8270

4-NITROPHENOL	100-02-7	8270
5-NITRO-o-TOLUIDINE	99-55-8	8270
7,12-DIMETHYLBENZ(a)-ANTHRACENE	57-97-6	8270
a-BHC	319-84-6	8081
ACENAPHTHYLENE	208-96-8	8270
ACENAPTHENE	83-32-9	8270
ACETONE	67-64-1	8260
ACETONITRILE	75-05-8	8260
ACETOPHENONE	98-86-2	8270
ACROLEIN	107-02-8	8260
ACRYLONITRILE	107-13-1	8260
ALDRIN	309-00-2	8081
ALLYL ALCOHOL	107-18-6	8015
ALLYL CHLORIDE	107-05-1	8260
ANILINE	62-53-3	8270
ANTHRACENE	120-12-7	8270
ARAMITE	140-57-8	8270
b-BHC	319-85-7	8081
b-PROPIOLACTONE	57-57-8	8260
BENZ(a)ANTHRACENE	56-55-3	8270
BENZENE	71-43-2	8260
BENZIDINE	92-87-5	8270
BENZO(a)PYRENE	50-32-8	8270
BENZO(b)FLUORANTHENE	205-99-2	8270
BENZO(g,h,i)PERYLENE	191-24-2	8270
BENZO(k)FLUORANTHENE	207-08-9	8270
BENZYL CHLORIDE	100-44-7	8260
BIS(2-CHLOROETHOXY)METHANE	111-91-1	8270
BIS(2-CHLOROETHYL)ETHER	111-44-4	8270
BIS(2-CHLOROISOPROPYL)ETHER	108-60-1	8270
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	8270
BROMOACETONE	598-31-2	8260
BROMOCHLOROMETHANE	74-97-5	8260
BROMODICHLOROMETHANE	75-27-4	8260
BROMOFORM	75-25-2	8260
BROMOMETHANE	74-83-9	8260
BUTYL BENZYL PHTHALATE	85-68-7	8270
CARBON DISULFIDE	75-15-0	8260
CARBON TETRACHLORIDE	56-23-5	8260

CHLORAL HYDRATE	302-17-0	8260
CHLORDANE	57-74-9	8081
CHLOROBENZENE	108-90-7	8260
CHLOROBENZILATE	510-15-6	8270/8081
CHLORODIBROMOMETHANE	124-48-1	8260
CHLOROETHANE	75-00-3	8260
CHLOROFORM	67-66-3	8260
CHLOROMETHANE	74-87-3	8260
CHLOROPRENE	126-99-8	8260
CHRYSENE	218-01-9	8270
CIS-1,3-DICHLOROPROPENE	10061-01-5	8260
CIS-1,4-DICHLORO-2-BUTENE	1476-11-5	8260
CROTON ALDEHYDE	4170-30-3	8260/8015
DI-N-BUTYL PHTHALATE	84-74-2	8270
DI-N-OCTYL PHTHALATE	117-84-0	8270
DIALLATE	2303-16-4	8270/8081
DIBENZ(a,h)ANTHRACENE	53-70-3	8270
DIBENZ(a,j)ACRIDINE	224-42-0	8270
DIBENZO(a,e)PYRENE	192-65-4	8270
DIBENZOFURAN	132-64-9	8270
DIBROMOMETHANE	74-95-3	8260
DICHLORODIFLUOROMETHANE	75-71-8	8260
DIELDRIN	60-57-1	8081
DIETHYL PHTHALATE	84-66-2	8270
DIETHYLSTILBESTROL	56-53-1	8270
DIHYDROSAFFROLE	56312-13-1	8270
DIMETHOATE	60-51-5	8270
DIMETHYL PHTHALATE	131-11-3	8270
DIMETHYLAMINOAZOBENZENE	60-11-7	8270
DIPHENYLAMINE	122-39-7	8270
DISULFOTON	298-04-4	8270
ENDOSULFAN I	959-98-8	8081
ENDOSULFAN II	33213-65-9	8081
ENDOSULFAN SULFATE	1031-07-8	8081
ENDRIN	72-20-8	8081
ENDRIN ALDEHYDE	7421-93-4	8081
EPICHLOROHYDRIN	106-89-8	8260
ETHANOL	64-17-5	8015
ETHYL ACETATE	141-78-6	8015

ETHYL METHACRYLATE	97-63-2	8260
ETHYLBENZENE	100-41-4	8260
ETHYLENE OXIDE	75-21-8	8260/8015
FLUORANTHENE	206-44-0	8270
FLUORENE	86-73-7	8270
HEPTACHLOR	76-44-8	8081
HEPTACHLOR EPOXIDE	1024-57-3	8081
HEPTACHLORODIBENZO-p-DIOXINS	NA	8290
HEPTACHLORODIBENZOFURANS	NA	8290
HEXACHLOROBENZENE	118-74-1	8270
HEXACHLOROBUTADIENE	87-68-3	8270
HEXACHLOROCYCLOPENTADIENE	77-47-4	8270
HEXACHLORODIBENZO-p-DIOXINS	NA	8290
HEXACHLORODIBENZOFURANS	NA	8290
HEXACHLOROETHANE	67-72-1	8260/8270
HEXACHLOROPHENE	70-30-4	8270
HEXACHLOROPROPENE	1888-71-7	8270
HYDROQUINONE	123-31-9	8270
INDENO(1,2,3-cd)PYRENE	193-39-5	8270
IODOMETHANE	74-88-4	8260
ISOBUTYL ALCOHOL	78-83-1	8015
ISODRIN	465-73-6	8270/8081
ISOPHORONE	78-59-1	8270
ISOPROPYL ALCOHOL	67-63-0	8015
ISOPROPYLBENZENE	98-82-8	8260
ISOSAFROLE	120-58-1	8270
KEPONE	143-50-0	8270
LINDANE	58-89-9	8081
m-XYLENE	108-38-3	8260
MALEIC ANHYDRIDE	108-31-6	8270
MALONONITRILE	109-77-3	8260
METHACRYLONITRILE	126-98-7	8260
METHANOL	67-56-1	8015
METHAPYRILENE	91-80-5	8270
METHOXYCHLOR	72-43-5	8081
METHYL METHACRYLATE	80-62-6	8260
METHYL METHANESULFONATE	66-27-3	8270
METHYL PARATHION	298-00-0	8270
METHYLENE CHLORIDE	75-09-2	8260

N,N-DIMETHYLANILINE	101-61-1	8270
N-NITROSODI-N-BUTYLAMINE	924-16-3	8270
N-NITROSODI-N-PROPYLAMINE	621-64-7	8270
N-NITROSODIETHYLAMINE	55-18-5	8270
N-NITROSODIMETHYLAMINE	62-75-9	8270
N-NITROSODIPHENYLAMINE	86-30-6	8270
N-NITROSOMETHYLETHYLAMINE	10595-95-6	8270
N-NITROSOMORPHOLINE	59-89-2	8270
N-NITROSOPIPERIDINE	100-75-4	8270
N-NITROSOPYRROLIDINE	930-55-2	8270
n-PROPYLAMINE	107-10-8	8260
NAPHTHALENE	91-20-3	8270
NICOTINE	54-11-5	8270
NITROBENZENE	98-95-3	8260/8270
NITROQUINOLINE-1-OXIDE	56-57-5	8270
O,O,O-TRIETHYL PHOSPHOROTHIOATE	126-68-1	8270
o-TOLUIDINE	95-53-4	8270
o-TOLUIDINE	95-53-4	8260
o-XYLENE	95-47-6	8260
OCTAMETHYL PYROPHOSPHORAMIDE	152-16-9	8270
p-BENZOQUINONE	106-51-4	8270
p-XYLENE	106-42-3	8260
PARALDEHYDE	123-63-7	8260/8015
PCB'S (1016-1260)	VARIOUS	8082
PCNB	82-68-8	8081
PENTACHLOROBENZENE	608-93-5	8270
PENTACHLORODIBENZO-p-DIOXINS	NA	8290
PENTACHLORODIBENZOFURANS	NA	8290
PENTACHLOROETHANE	76-01-7	8260
PENTACHLORONITROBENZENE	82-68-8	8270
PENTACHLOROPHENOL	87-86-5	8270
PHENACETIN	62-44-2	8270
PHENANTHRENE	85-01-8	8270
PHENOL	108-95-2	8270
PHORATE	298-02-2	8270
PHTHALIC ANHYDRIDE	85-44-9	8270
PRONAMIDE	23950-58-5	8270
PROPYLTHIOURACIL	51-52-5	8270

PYRENE	129-00-0	8270
PYRIDINE	110-86-1	8260/8270
RESORCINOL	108-46-3	8270
SAFROLE	94-59-7	8270
STRYCHNINE	57-24-9	8270
t-BUTYL ALCOHOL	75-65-0	8015
TETRACHLORODIBENZO-p-DIOXINS	NA	8290
TETRACHLORODIBENZOFURANS	NA	8290
TETRACHLOROETHENE	127-18-4	8260
TETRAETHYL DITHIOPYROPHOSPHATE	3689-24-5	8270
TOLUENE	108-88-3	8260
TOLUENE DIISOCYANATE	584-84-9	8270
TOXAPHENE	8001-35-2	8081
TRANS-1,2-DICHLOROETHENE	156-60-5	8260
TRANS-1,3-DICHLOROPROPENE	10061-02-6	8260
TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	8260
TRICHLOROETHENE	79-01-6	8260
TRICHLOROFLUOROMETHANE	75-69-4	8260
TRIS(2,3-DIBROMOPROPYL) PHOSPHATE	126-72-7	8270
VINYL ACETATE	108-05-4	8260
VINYL CHLORIDE	75-01-4	8260

Bevill Determination for Norlite APC Wastes

Table 2

by TCLP - EPA Method 1311

METALLIC ANALYTE	Cas No.
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-7
Cadmium	7440-43-9
Chromium	7440-47-3
Lead	7439-92-1
Mercury	7439-97-6
Nickel	7440-02-0
Selenium	7782-49-2
Silver	7440-22-4
Thallium	7440-28-0

APPENDIX C-2

Norlite Corporation Clinker Analysis

List of Organic Universal Treatment Standard Constituents

Table 1

Organic Constituent	CAS No.	METHOD SW-846
1,1,1,2-TETRACHLOROETHANE	630-20-6	8260
1,1,1-TRICHLOROETHANE	71-55-6	8260
1,1,2,2-TETRACHLOROETHANE	79-34-5	8260
1,1,2-TRICHLOROETHANE	79-00-5	8260
1,1-DICHLOROETHANE	75-34-3	8260
1,1-DICHLOROETHENE	75-35-4	8260
1,2,3-TRICHLOROPROPANE	96-18-4	8260
1,2,4,5-TETRACHLOROBENZENE	95-94-3	8270
1,2,4-TRICHLOROBENZENE	120-82-1	8260/8270
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	8260/8270
1,2-DIBROMOETHANE	106-93-4	8260
1,2-DICHLOROBENZENE	95-50-1	8270
1,2-DICHLOROETHANE	107-06-2	8260
1,2-DICHLOROPROPANE	78-87-5	8260
1,2-DIPHENYLHYDRAZINE	122-66-7	8270
1,4-DICHLOROBENZENE	106-46-7	8270
1,4-DINITROBENZENE	100-25-4	8270
1,4-DIOXANE	123-91-1	8260
1-BUTANOL	71-36-3	8015
2 CHLOROETHYL VINYL ETHER	110-75-8	8260
2,3,4,6-TETRACHLOROPHENOL	58-90-2	8270
2,4,5-TRICHLOROPHENOL	95-95-4	8270
2,4,6-TRICHLOROPHENOL	88-06-2	8270
2,4-DICHLOROPHENOL	120-83-2	8270
2,4-DIMETHYL PHENOL	105-67-9	8270
2,4-DINITROPHENOL	51-28-5	8270
2,4-DINITROTOLUENE	121-14-2	8270
2,6-DICHLOROPHENOL	87-65-0	8270
2,6-DINITROTOLUENE	606-20-2	8270
2-ACETYLAMINOFLUORENE	53-96-3	8270
2-BUTANONE (MEK)	78-93-3	8260

2-CHLOROANILINE	101-14-4	8270
2-CHLORONAPHTHALE	91-58-7	8270
2-CHLOROPHENOL	95-57-8	8270
2-METHYLPHENOL	95-48-7	8270
2-NAPHTHYLAMINE	91-59-8	8270
2-NITROANILINE	88-74-4	8270
2-NITROPHENOL	88-75-5	8270
3-METHYLCHOLANTHRENE	56-49-5	8270
3-METHYLPHENOL	108-39-4	8270
4,4'-DDD	72-54-8	8081
4,4'-DDE	72-55-9	8081
4,4'-DDT	50-29-3	8081
4,6-DINITRO-2-METHYLPHENOL	534-52-1	8270
4-AMINOBIPHENYL	92-67-1	8270
4-BROMOPHENYL PHENYL ETHER	101-55-3	8270
4-CHLORO-3-METHYLPHENOL	59-50-7	8270
4-CHLOROANILINE	106-47-8	8270
4-METHYL-2-PENTANONE (MIBK)	108-10-1	8260
4-METHYLPHENOL	106-44-5	8270
4-NITROANILINE	100-01-6	8270
4-NITROPHENOL	100-02-7	8270
5-NITRO-o-TOLUIDINE	99-55-8	8270
a-BHC	319-84-6	8081
ACENAPHTHYLENE	208-96-8	8270
ACENAPTHENE	83-32-9	8270
ACETONE	67-64-1	8260
ACETONITRILE	75-05-8	8260
ACETOPHENONE	98-86-2	8270
ACROLEIN	107-02-8	8260
ACRYLONITRILE	107-13-1	8260
ALDRIN	309-00-2	8081
ANILINE	62-53-3	8270
ANTHRACENE	120-12-7	8270
ARAMITE	140-57-8	8270
b-BHC	319-85-7	8081
BENZ(a)ANTHRACENE	56-55-3	8270
BENZENE	71-43-2	8260
BENZO(a)PYRENE	50-32-8	8270
BENZO(b)FLUORANTHENE	205-99-2	8270

BENZO(g,h,i)PERYLENE	191-24-2	8270
BENZO(k)FLUORANTHENE	207-08-9	8270
BIS(2-CHLOROETHOXY)METHANE	111-91-1	8270
BIS(2-CHLOROETHYL)ETHER	111-44-4	8270
BIS(2-CHLOROISOPROPYL)ETHER	108-60-1	8270
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	8270
BROMOCHLOROMETHANE	74-97-5	8260
BROMOFORM	75-25-2	8260
BROMOMETHANE	74-83-9	8260
BUTYL BENZYL PHTHALATE	85-68-7	8270
CARBON DISULFIDE	75-15-0	8260
CARBON TETRACHLORIDE	56-23-5	8260
CHLORDANE	57-74-9	8081
CHLOROBENZENE	108-90-7	8260
CHLOROBENZILATE	510-15-6	8270/8081
CHLORODIBROMOMETHANE	124-48-1	8260
CHLOROETHANE	75-00-3	8260
CHLOROFORM	67-66-3	8260
CHLOROMETHANE	74-87-3	8260
CHRYSENE	218-01-9	8270
CIS-1,3-DICHLOROPROPENE	10061-01-5	8260
DI-N-BUTYL PHTHALATE	84-74-2	8270
DI-N-OCTYL PHTHALATE	117-84-0	8270
DIBENZ(a,h)ANTHRACENE	53-70-3	8270
DIBENZO(a,e)PYRENE	192-65-4	8270
DIBROMOMETHANE	74-95-3	8260
DICHLORODIFLUOROMETHANE	75-71-8	8260
DIELDRIN	60-57-1	8081
DIETHYL PHTHALATE	84-66-2	8270
DIMETHYL PHTHALATE	131-11-3	8270
DIMETHYLAMINOAZOBENZENE	60-11-7	8270
DIPHENYLAMINE	122-39-7	8270
DISULFOTON	298-04-4	8270
ENDOSULFAN I	959-98-8	8081
ENDOSULFAN II	33213-65-9	8081
ENDOSULFAN SULFATE	1031-07-8	8081
ENDRIN	72-20-8	8081
ENDRIN ALDEHYDE	7421-93-4	8081
ETHYL ACETATE	141-78-6	8015

ETHYL METHACRYLATE	97-63-2	8260
ETHYLBENZENE	100-41-4	8260
ETHYLENE OXIDE	75-21-8	8260/8015
FLUORANTHENE	206-44-0	8270
FLUORENE	86-73-7	8270
HEPTACHLOR	76-44-8	8081
HEPTACHLOR EPOXIDE	1024-57-3	8081
HEXACHLOROBENZENE	118-74-1	8270
HEXACHLOROBUTADIENE	87-68-3	8270
HEXACHLOROCYCLOPENTADIENE	77-47-4	8270
HEXACHLORODIBENZO-p-DIOXINS	NA	8290
HEXACHLORODIBENZOFURANS	NA	8290
HEXACHLOROETHANE	67-72-1	8260/8270
HEXACHLOROPROPENE	1888-71-7	8270
INDENO(1,2,3-cd)PYRENE	193-39-5	8270
IODOMETHANE	74-88-4	8260
ISOBUTYL ALCOHOL	78-83-1	8015
ISODRIN	465-73-6	8270/8081
ISOSAFROLE	120-58-1	8270
KEPONE	143-50-0	8270
m-XYLENE	108-38-3	8260
METHACRYLONITRILE	126-98-7	8260
METHANOL	67-56-1	8015
METHAPYRILENE	91-80-5	8270
METHOXYCHLOR	72-43-5	8081
METHYL METHACRYLATE	80-62-6	8260
METHYL METHANESULFONATE	66-27-3	8270
METHYL PARATHION	298-00-0	8270
METHYLENE CHLORIDE	75-09-2	8260
N-NITROSODI-N-BUTYLAMINE	924-16-3	8270
N-NITROSODI-N-PROPYLAMINE	621-64-7	8270
N-NITROSODIETHYLAMINE	55-18-5	8270
N-NITROSODIMETHYLAMINE	62-75-9	8270
N-NITROSODIPHENYLAMINE	86-30-6	8270
N-NITROSOMETHYLETHYLAMINE	10595-95-6	8270
N-NITROSOMORPHOLINE	59-89-2	8270
N-NITROSOPIPERIDINE	100-75-4	8270
N-NITROSOPYRROLIDINE	930-55-2	8270
NAPHTHALENE	91-20-3	8270

NITROBENZENE	98-95-3	8260/8270
o-XYLENE	95-47-6	8260
p-XYLENE	106-42-3	8260
PCB'S (1016-1260)	VARIOUS	8082
PENTACHLOROBENZENE	608-93-5	8270
PENTACHLORODIBENZO-p-DIOXINS	NA	8290
PENTACHLORODIBENZOFURANS	NA	8290
PENTACHLOROETHANE	76-01-7	8260
PENTACHLORONITROBENZENE	82-68-8	8270
PENTACHLOROPHENOL	87-86-5	8270
PHENACETIN	62-44-2	8270
PHENANTHRENE	85-01-8	8270
PHENOL	108-95-2	8270
PHORATE	298-02-2	8270
PHTHALIC ANHYDRIDE	85-44-9	8270
PRONAMIDE	23950-58-5	8270
PYRENE	129-00-0	8270
PYRIDINE	110-86-1	8260/8270
SAFROLE	94-59-7	8270
TETRACHLORODIBENZO-p-DIOXINS	NA	8290
TETRACHLORODIBENZOFURANS	NA	8290
TETRACHLOROETHENE	127-18-4	8260
TOLUENE	108-88-3	8260
TOXAPHENE	8001-35-2	8081
TRANS-1,2-DICHLOROETHENE	156-60-5	8260
TRANS-1,3-DICHLOROPROPENE	10061-02-6	8260
TRICHLOROETHENE	79-01-6	8260
TRICHLOROFLUOROMETHANE	75-69-4	8260
TRIS(2,3-DIBROMOPROPYL) PHOSPHATE	126-72-7	8270
VINYL CHLORIDE	75-01-4	8260

Norlite Corporation Clinker Analysis

List of Metals to be Analyzed for Hazardous Waste Characteristic and LDR Compliance

Table 2

METALLIC ANALYTE	Cas No.
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-7
Cadmium	7440-43-9
Chromium	7440-47-3
Lead	7439-92-1
Mercury	7439-97-6
Nickel	7440-02-0
Selenium	7782-49-2
Silver	7440-22-4
Thallium	7440-28-0
Vanadium	7440-62-2
Zinc	7440-66-6

APPENDIX C-3

NORLITE CORPORATION
PILOT FUEL CONTRIBUTION CALCULATIONS

	Liquid Feed Limits	Fuel Oil[1]	Spec Used Oil Fuel[2]	Quarry Plant Water[3]
Arsenic	0.2095	1.32E-04	3.34E-05	None Detected
Beryllium	0.0119	3.60E-05	1.34E-05	None Detected
Cadmium	0.3192	3.98E-04	9.36E-06	None Detected
Chromium	5.9849	8.45E-05	3.14E-04	None Detected
Copper	9.4838	1.76E-04	1.68E-02	None Detected
Lead	4.0349	1.51E-04	3.85E-03	None Detected
Barium	0.9731	2.57E-04	7.48E-03	3.08E-04
Mercury	0.0064	3.60E-05	6.69E-05	None Detected
Nickel	6.164	8.45E-03	3.34E-05	None Detected
Antimony	0.2222	5.25E-04	2.61E-04	None Detected
Selenium	0.12	6.83E-04	2.68E-05	None Detected
Silver	0.1345	no data	4.88E-04	None Detected
Thallium	0.2626	no data	2.68E-05	None Detected
Zinc	10.3243	2.91E-03	4.85E-01	None Detected
Halogens	82.3	3.47E-02	3.34E-01	Not Tested

All units are pounds/hour

[1]Norlite burns less than 100 gallons per hour; the AP-42 data is presented at 1000 gallons per hour. This table presents Norlite's calculated emissions with no credit taken for the APC system. Also note that the data for Beryllium and Mercury are derived from the distillate fuel emission factors since they are higher than for No 6 oil.

[2]Typical analysis used for demonstration purposes only; detection limits are used instead of zero

[3] Quarry water is typically fed at a maximum rate of five (5) gallons/minute. The metal mass feed rate is calculated at this rate.

Table 1.3-10. EMISSION FACTORS FOR TRACE ELEMENTS FROM DISTILLATE FUEL OIL COMBUSTION SOURCES*

EMISSION FACTOR RATING: E

Firing Configuration (SCC)	Emission Factor ($lb/10^{12}$ Btu)										
	As	Be	Cd	Cr	Cu	Pb	Hg	Mn	Ni	Se	Zn
Distillate oil fired (1-01-005-01, 1-02-005-01, 1-03-005-01)	4	3	3	3	6	9	3	6	3	15	4

* Data are for distillate oil fired boilers, SCC codes 1-01-005-01, 1-02-005-01, and 1-03-005-01. References 29-32, 40-44 and 83. To convert from $lb/10^{12}$ Btu to pg/J, multiply by 0.43.

Table 1.3-11. EMISSION FACTORS FOR METALS FROM UNCONTROLLED NO. 6 FUEL OIL COMBUSTION[a]

Metal	Average Emission Factor[b, d] ($lb/10^3$ Gal)	EMISSION FACTOR RATING
Antimony	5.25E-03[c]	E
Arsenic	1.32E-03	C
Barium	2.57E-03	D
Beryllium	2.78E-05	C
Cadmium	3.98E-04	C
Chloride	3.47E-01	D
Chromium	8.45E-04	C
Chromium VI	2.48E-04	C
Cobalt	6.02E-03	D
Copper	1.76E-03	C
Fluoride	3.73E-02	D
Lead	1.51E-03	C
Manganese	3.00E-03	C
Mercury	1.13E-04	C
Molybdenum	7.87E-04	D
Nickel	8.45E-02	C
Phosphorous	9.46E-03	D
Selenium	6.83E-04	C
Vanadium	3.18E-02	D
Zinc	2.91E-02	D

[a] Data are for residual oil fired boilers, Source Classification Codes (SCCs) 1-01-004-01/04.

[b] References 64-72. 18 of 19 sources were uncontrolled and 1 source was controlled with low efficiency ESP. To convert from $lb/10^3$ gal to $kg/10^3$ L, multiply by 0.12.

[c] References 29-32,40-44.

[d] For oil/water mixture, reduce factors in proportion to water content of the fuel (due to dilution). To adjust the listed values for water content, multiply the listed value by 1-decimal fraction of water (ex: For fuel with 9 percent water by volume, multiply by 1-0.9=.91).

NORLITE ANALYTICAL LABORATORY REPORT

LAB/PROFILE NUMBER:	N/A	**DATE/TIME RECEIVED:**	11/21/06 11:00
GENERATOR NAME:	NORLITE	**DATE SAMPLED:**	11/21/06 11:00
GENERATOR SAMPLE ID:	003	**MATRIX:**	AQUEOUS
COMMENTS:	SAMPLE RECEIVED INTACT		

TOTAL METALS

ICP METALS DIGESTION/ANALYSIS EPA METHOD 200.7
MERCURY DIGESTION/ANALYSIS EPA METHOD 245.2

ANALYTE	RESULTS	PQL	UNITS	DATE ANALYZED
MERCURY	ND < 0.2	0.2	µg/L	11/27/06
ARSENIC	ND < 34	34	µg/L	11/27/06
BARIUM	123	4	µg/L	11/27/06
BERYLLIUM	ND < 3	3	µg/L	11/27/06
CADMIUM	ND < 6	6	µg/L	11/27/06
CHROMIUM	ND < 11	11	µg/L	11/27/06
COPPER	ND < 5	5	µg/L	11/27/06
IRON	1,268	34	µg/L	11/27/06
NICKEL	ND < 22	22	µg/L	11/27/06
LEAD	ND < 34	34	µg/L	11/27/06
SELENIUM	ND < 25	25	µg/L	11/27/06
ZINC	ND < 51	51	µg/L	11/27/06
SULFUR	99	76	mg/L	11/27/06
ANTIMONY	ND < 20	20	µg/L	11/27/06

APPENDIX C-4

DAILY TANKER UNLOADING / TRANSFER SHEET

TANK LOCKS L = Locked U = Unlocked

OUTSIDE TANK LINE

DATE	TK-100B	TK-100C	TK-200B	TK-200C	TK-3	TK-4	TK-5	TK-6	TIME
11/20/2006									

Signature: CONDITIONS AS FOUND

MORNING LEVELS

TK-100A	TK-100B	TK-100C	TK-200A	TK-200B	TK-200C	TK-3	TK-4	TK-5	TK-6	WASTE OIL	M1	M2	R1	R2

Page 2

ON PAD TIME	OFF PAD TIME	TRUCK #	FROM TANK #	START LEVEL	STOP LEVEL	Transferred GALLONS	TO TANK #	START LEVEL	STOP LEVEL	Transferred GALLONS	(Y/N) MUFFIN Monster	(Y/N) TANK RINSE	Gallons HEEL	SIGNATURE
13:00	13:10	X-[illegible]	M1	3239	2267		[illegible]	[illegible]						
14:00		[illegible]	200B	6025	1200		4	20928	25675	4747				
		Unload	Laure				200B	R-	3400	4874				
		X-[illegible]	M2	9716	648	9068	R1	11551	19214	7663				
		X-[illegible]	R2	11389	7384	4000	Laure	[illegible]						
		CPC					200B	3900	7025	3125	Y			CH
		CR					200C	R-	525	1521	Y			CH
		Darrell					200C	525	6025	5500				
		X-[illegible]	R2	7384	648		Unload	Madison	[illegible]					CH
		C37					R2	648	2915	2267				
		C3[illegible]					R2	2915	4858	1943				
		C31					R2	4858	8529	3671				
		TA42					R2	8529	14682	6153				

EVENING LEVELS

TK-100A	TK-100B	TK-100C	TK-200A	TK-200B	TK-200C	TK-3	TK-4	TK-5	TK-6	WASTE OIL	M1	M2	R1	R2
7025	1200	7025	—	7025	6025	25675	25675	(6)	18082					

TANK LOCKS L = Locked U = Unlocked

OUTSIDE TANK LINE

DATE	TK-100B	TK-100C	TK-200B	TK-200C	TK-3	TK-4	TK-5	TK-6	TIME
11/20/06	L	L	L	L	L	L	L	L	1650

Signature: CONDITIONS AS LEFT

December 4, 2006 Section C (Waste Characteristics)

APPENDIX C-5

Norlite Corporation
628 South Saratoga Street
Cohoes, New York 12047
Phone: (518) 235-0401 Fax: (518) 235-0233

WASTE STREAM PROFILE No. _____

Approved for Acceptance: ❑ Yes ❑ No
Reviewed by: _____ Date _____
Approved by: _____ Date _____

PLEASE ATTACH: All Material Safety Data Sheets (MSDS), Analysis Reports, Handling Precautions, Additional Hazard Information, Support Data & Comments.

GENERATOR INFORMATION

Site Name _____
Address _____
_____
Mailing Name _____
Address _____
_____
EPA I.D. # _____
Technical Contact _____
Phone # _____ Fax # _____
Shipping Contact _____
Phone # _____ Fax # _____

Billing Name _____
Address _____
_____
Contact _____
Phone # _____ Fax # _____
Transporter Name _____
Address _____
_____
EPA I.D. # _____
Contact _____
Phone # _____ Fax # _____

WASTE DESCRIPTION

Generators Name For Waste _____
Process Generating Waste _____

SHIPPING INFORMATION

DOT Shipping Name _____
DOT Hazard Class _____ Packing Group _____ UN/NA No. _____
EPA Hazardous Waste Codes _____
Estimated Volume _____
Container Type: ❑ Bulk ❑ Drum ❑ Roll-Off

PHYSICAL CHARACTERISTICS @ 70 F

Color _____ ❑ Liquid ❑ Single Phase
Odor _____ ❑ Semi-Liquid ❑ Bi-Layered
Specific Gravity _____ ❑ Solid ❑ Multi-Layered
pH _____ % Solids _____ % Water _____
Viscosity: ❑ Low ❑ Medium ❑ High

WASTE ANALYSIS

Heat of Combustion _____ Btu's/lb. Flash Point _____ °F
Halogens _____ % Sulfur _____ % Ash _____ %
PCB's _____ ppm Corrosivity _____ mm/yr.

OTHER COMPONENTS

Herbicides _____ ppm Cyanide _____ ppm
Pesticides _____ ppm Sulfide _____ ppm
Dioxins _____ ppm PBB _____ ppm

CHEMICAL COMPOSITION - (Totals to 100%)

_____	_____%	_____	_____%
_____	_____%	_____	_____%
_____	_____%	_____	_____%
_____	_____%	_____	_____%
_____	_____%	_____	_____%
_____	_____%	_____	_____%
_____	_____%	_____	_____%
_____	_____%	_____	_____%

TOTAL METALS

Antimony (Sb)	_____ ppm	Lead (Pb)	_____ ppm
Arsenic (As)	_____ ppm	Mercury (Hg)	_____ ppm
Barium (Ba)	_____ ppm	Nickel (Ni)	_____ ppm
Beryllium (Be)	_____ ppm	Selenium (Se)	_____ ppm
Cadmium (Cd)	_____ ppm	Silver (Ag)	_____ ppm
Chromium (Cr)	_____ ppm	Thallium (Tl)	_____ ppm
Copper (Cu)	_____ ppm	Zinc (Zn)	_____ ppm

OTHER CHARACTERISTICS (Yes/No)

Reactive _____ Infectous _____ Explosive _____
Biological _____ Pyrophoric _____ Radioactive _____

List Acute Hazardous Wastes as defined in 40CFR 261.33(e) or 6NYCRR 371.4(d)(5). List any Hazardous Constituents as defined by 40CFR 261 Appendix VIII. Describe any special handling requirements associated with this waste system.

CERTIFICATION: I attest and certify that all information provided is complete and accurate. This low grade fuel is properly described with no willful omissions and that all known or suspected hazards have been disclosed and the low grade fuel is not a PCB waste that is defined in 40 CFR 761.3. Any changes or additional information obtained about this waste stream will be promptly conveyed to the Norlite Corporation.

Print Name and Title _____ Signature _____ Date _____

ATTACHMENT D

SECTION D PROCESS INFORMATION

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ATTACHMENT D

SECTION D

PROCESS INFORMATION

This Section provides for the following information and regulatory requirements.

(1) Description of Container Area(s)
- (a) condition of containers 6NYCRR Subpart 373-2.9(b);
- (b) compatibility of waste with containers 6NYCRR Subpart 373-2.9(c);
- (c) management of containers 6NYCRR Subpart 373-2.9(d);
- (d) inspections 6NYCRR Subpart 373-2.9(e);
- (e) containment 6NYCRR Subpart 373-1.5(b)(1) and Subpart 373-2.9(f);
- (f) special requirements for ignitable or reactive waste 6NYCRR Subpart 373-2.9(g), and
- (g) special requirements for incompatible waste 6NYCRR Subpart 373-1.5(b)(4) and Subpart 373-2.9(h).

(2) Description of Tank Systems
- (a) assessment of tank system 6NYCRR Subpart 373-1.5(c)(1);
- (b) dimensions and capacity of each tank 6NYCRR Subpart 373-1.5(c)(2);
- (c) description of feed systems, safety

cutoffs, bypass systems, and pressure controls 6NYCRR Subpart 373-1.5(c)(3);

(d) a diagram of piping, instrumentation, and process flow for each tank system 6NYCRR Subpart 373-1.5(c)(4);

(e) description of materials and equipment used to provide external corrosion protection 6NYCRR Subpart 373-1.5(c)(5) and Subpart 373-2.10(c)(2),(3),(4), and (5);

(f) description of secondary containment system for each tank system 6NYCRR Subpart 373-1.5(c)(7) and Subpart 373-2.10(d)(1), (2), (3), (4), (5), and (6);

(g) spill and overflow controls 6NYCRR Subpart 373-1.5(c)(9) and Subpart 373-2.10(e)(2), and

(h) requirements for ignitable or reactive waste 6NYCRR Subpart 373-1.5(c)(10) and Subpart 373-2.10(i) and (j).

(3) Tanker Unloading

(4) Tanker Cleaning and Testing

(5) Kilns

(a) Direct Kiln Feed

(b) Kiln Operations

(c) Air Pollution Control System

(d) Waste Feed Cut-Offs (WFCOs)

(e) Operation with a Baghouse Module Removed For Maintenance

(f) Maintenance of Scrubber System

Norlite's process control computer(s) will be used to log all flow rate data for LLGF. The current report includes LLGF flow rate, both on a continuous (one minute average) and HRA basis.

D-1 Description of Container Areas

The truck unloading/containment and container storage areas are shown in Drawings Nos. NY003-3008, NY003-3319 and NY003-2475-1.

The tanker staging area is used for staging waste tankers and trailers prior to unloading. This area is also used for "drop and hook" transfer station activities in compliance with § 372.3(a)(6) and (7). This area is not used for transfer of drums between trucks. Truck-to-Truck drum transfers can only take place in unloading areas #1 and #2 or through the solids processing building as shown in Drawing NY003-2475-1.

In addition, drums are loaded and transported by truck for treatment, storage or disposal at other off-site permitted TSD facilities. Norlite therefore also functions as a transfer facility for facilitating movement of waste to other permitted treatment facilities. The types of transfer operations practiced by Norlite are covered in more detail in Norlite SOP #6-001, "TRANSFER STATION SCENARIOS PRACTICED AT NORLITE".

Norlite has provisions for:

1029 square foot container storage area (9,900 gallons capacity) suitable for storage of 180 drums

1440 square foot container storage area is used as an unloading area for two trucks (4,785 gallons capacity) suitable for storage of 87 containers

The tanker staging area can also be used to store roll-offs. This area is 200 feet by 60 feet, and has space for staging up to 13 trucks, tanks wagons and/or roll-off containers.

D-1(a) Condition of Containers [6NYCRR Subpart 373-2.9(b)]

Drums are identified with the label that is attached as Figure D-3 with the dates marked on the drums when the filling operation commenced. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or it begins to leak, it will be overpacked or pumped out. Any spilled material will be picked up by using an absorbent (e.g., pads or absorbent materials) or washed and pumped into a vacuum truck. All containers will be made or lined with materials which will not react with, and be otherwise compatible with, the hazardous waste to be contained therein. At a minimum the containers will meet the DOT standards.

D-1(b) Compatibility of Waste with Containers [6NYCRR Subpart 373-2.9(c)]

Steel, plastic or fiber 55-gallon drums or less are used at the facility to store the LLGF filter sludge or waste received from off-site generators. All drums used or received at the Norlite facility will meet U.S. Department of Transportation Specifications.

D-1(c) Management of Containers [6NYCRR Subpart 373-2.9(d), 373-2.9(f)(2) and 373-1.5(b)(2)]

The drum storage area is located as shown in Drawings Nos. NY003-3008 and NY003-2475-1. All drums received or used are of the removable head type or bung hole top openings. Drums received from off-site generators are unloaded and stored in the drum processing building or truck unloading area #1 (see Drawing No. NY003-3008). During times that drums are being stored in the unloading Area #1 only one truck will be parked in that unloading area.

The drum stacking pattern for the maximum arrangement of drums in each area is shown in Drawing No. NY003-2475-1. Drums are stacked up to 3 tiers in height. Figure D-4 shows the stacking pattern for containers other than 55-gallon drums on pallets. The pallets will only be arranged as shown on Drawing No. NY003-3008 regardless of the size of the containers on the pallets.

The contents of the drums are transferred to the LLGF tanks in the drum processing area shown in Drawing NY003-3008. Liquids are transferred to the LLGF tanks using a vacuum transfer line to Tank 200A or are pumped onto a truck

and subsequently transferred. Containers with solids or semi-solids are processed using a drum tipper which empties the drum contents into the dispersion/mixer tank (Tank SP100). The solids and semi-solids that are processed here include but are not limited to tank bottom sludges from fuel tanks and oil tanks, resinous chemicals and materials, still bottoms, paint mixtures and sludges, truck heels from waste shipped to Norlite. LLGF or fuel oil is introduced to flush the material through the macerating pump. The contents are recirculated through the macerating pump and the high shear mixing tank until the solids are reduced and well dispersed and the mixture is fluid enough to be pumped to Tank 200A through the vacuum transfer line. All drums are kept closed except when adding or removing material. The types of solids and semi-solids managed through this process are generally oily sludges, tank bottoms, partially-cured paint and varnish materials, sorbents contaminated with organic materials and viscous resins. Any of these materials are generated off-site and the sorbents, tank bottoms and oily sludges are also generated on-site.

The containers are off-loaded at unloading area #1 or directly into the solids processing building shown in Drawing NY003-2475-1. Space is available for 2 trucks at the solids processing building. The trucks will backup to a point where the end of the truck will be over the containment structure. For unloading area #1, the trucks will be parked up to the point of the floor sumps and the area directly behind the floor sumps will be left clear to provide sufficient space to unload, sample, label and move drums to their storage locations. Only one pallet row of

containers may be stored in the unloading area at the far end of Unloading Area #1. Two trucks may also be parked in Unloading Area #2, to consolidate drums between trailers as described in Norlite's Standing Operating Procedures #6-001, "TRANSFER STATION SCENARIOS PRACTICED AT NORLITE". Tank Wagons may also be parked in Unloading Area #2 as shown in Drawing NY003-2475-1. In the event any spill does occur, the spill is contained, and will be promptly remediated with the spill control equipment described in Section G, Contingency Plan.

The container capacity in the container storage areas includes all hazardous waste, nonhazardous waste and raw material containers/rolloffs. The locations for container storage areas are summarized in the table below:

CONTAINER STORAGE AREAS

Storage Area	Container Capacity	Capacity (Gallons)	Drawing No.	Area (Sq.Ft.)	Containment Volume (Gals)	% of Required Containment
Truck Unloading Area #1	87 (55 gal drum eq)	4,785	NY003-3008 NY003-2475-1	1,440	9,048	1891 *when used for drum storage
LLGF & Solids Processing Bldg.	180 (55 gal drum eq)	9,900	NY003-3008 NY003-2475-1	1,029	2,042	194
Tanker Staging Area (as related to rolloffs)	13 (50 cu.yd rolloffs)	650 cu. yds.	NY003-3319	12,000		N/A - solids only

The Container Capacity is based on 55-gallon drums. The total volume Capacity is based on the maximum number of 55-

gallon drums that can be stored in the storage area. Although most containerized waste received and stored at the facility is in 55-gallon drums, Norlite also receives waste in containers with capacities of 5, 15, and 30 gallons. 85-gallon overpacks are also used to manage smaller, damaged or leaking containers. While the Container Capacity listed in the table above may be exceeded if the facility is storing a large number of smaller containers, the total volume Capacity will not exceed the volume listed above.

Required Aisle Space - The storage area floor plan as shown in Drawing No. NY003-3008 is the only stacking pattern allowed. The patterns are designed to provide sufficient aisle space for the unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment.

After each drum has been emptied, designated personnel will inspect the drum to ensure that the drum is empty in accordance with 6 NYCRR 371.1(h). The employee will check to see that the drum has been satisfactorily emptied and will then have the drum returned to proper storage until it can be shipped to a drum reclaimer or to an appropriate disposal facility.

D-1(d) Inspections [6NYCRR Subpart 373-2.9(e)]

Container storage areas are inspected at least weekly for signs of severe rusting, apparent structural defects or showing signs of leakage. They are also inspected for proper and legible labeling, unstable/tilting drums, and duration of

storage (i.e. < one year per LDR) Inspection schedules and procedures are described in Section F.

D-1(e) Containment [6NYCRR Subpart 373-1.5(b)(1) and Subpart 373-2.9(f)]

Two separate truck unloading areas exist directly adjacent to each other and south of the drum processing building. Both truck unloading/containment areas are constructed of eight (8) inches of reinforced concrete which is designed for an H-20 highway loading. This is adequate for the largest LLGF truck received.

D-1(e)(i) Basic Design Parameters, dimensions, and materials of construction [6NYCRR 371-5.(b)(1)(i)]

The drum processing area is separated from the truck unloading/containment area by a concrete berm with a scupper providing overflow to the truck unloading/containment area. It is constructed of reinforced concrete with a design strength of 4,000 lbs/in^2 and sealed to the existing slab. A 3-1/2 inch high concrete curb has been installed around the perimeter of the storage area with a scupper overflowing to the truck containment area.

The area is pitched toward the scupper as shown in Drawing NY003-3008. The drum storage area is coated with Protectoline 900 floor finish (or its equivalent) which is a protective phenolic coating. It is applied to the concrete slab and to

the curbing at a thickness of 3/32" in accordance with the manufacturer's recommended procedure. Protectoline 900 floor finish has excellent solvent and abrasion resistance and good weathering characteristics. Selection Data of the product is included as Figure D-2. Details of the joints on the concrete pad, including both the truck unloading/containment and drum storage areas, are given on Drawing NY003-3008. A urethane sealant is used in the joints, SIKAFLEX-1(a) elastic sealant, a copy of the technical data is attached as Figure D-1. The sealant has short term resistance to organic solvents and it is compatible with the types of liquids delivered to Norlite. The unloading area and container storage area are sized to provide more than 100% secondary containment for the 87 containers stored in this area.

D-1(e)(ii) Drainage [6NYCRR 372-1.5(b)(ii)]

The current pad is presently in good condition, free of any gaps, holes or cracks. The scupper constructed in the curb between the drum storage area and the truck unloading/containment storage area allows any large spills (greater than 340 gallons) to overflow into the truck unloading/containment area providing tertiary containment. The pad is regularly inspected as discussed in Section F to insure that it remains intact and in good condition. All drum storage areas as well as the truck unloading/containment area and unloading pumps are covered by a roof to preclude collection of rainwater in these areas.

D-1(e)(iii) Capacity of the Containment System [6NYCRR 371-5(b)(1)(iii)]

The containment capacity of each truck unloading/containment area is 9,048 gallons and 22,991 gallons, respectively. This provides greater than 110% containment of the largest volume tank truck received, 6,500 gallons or tractor/ trailer rig received (80 drums x 55 gal = 4400 gals). Secondary containment calculations for storage areas are provided on the drawings.

D-1(e)(iv) Preventing or Managing Run-On [6NYCRR 371-5(b)(1)(iv)]

Run-on is prevented from entering all containment areas by the presence of a 3-1/2 inch curb at the perimeter of the storage area. In addition, the land surrounding all containment area is graded to encourage drainage away from the area. Run-off is prevented from leaving the containment area by the 3-1/2 inch curb at the perimeter of the storage area. The storage areas are sufficiently above the ground that run-on is not a threat.

D-1(e)(v) Overflow Prevention [6NYCRR 371-5 (b)(1)(v)]

Overflow Prevention - Containment structures in the storage areas are checked at least weekly. If liquids are detected, the source is immediately corrected and liquids removed, ensuring that the maximum containment capacity is

available in the unlikely event that another spill or leak should occur. All liquids removed from a secondary containment system are evaluated as a hazardous waste in accordance with the Waste Analysis Plan.

Sumps - The drum processing building has a sump installed in the southeast corner of the building. Spilled material or washwater flows to and is collected in the sump which is pumped out with a truck. The sumps in the truck unloading/containment area only contain spilled material or water and must be pump out with a truck or the offloading pumps. The sumps are pumped out within 24 hours of collecting material. The material is characterized as described in Section C and pumped to an appropriate storage tank.

D-1(f) Special Requirements for Ignitable or Reactive Waste [6NYCRR Subpart 373-2.9(g)]

The location of all storage areas is more than fifty (50) feet from the facility property line.

D-1(g) Special Requirements for Incompatible Waste [6NYCRR Subpart 373-1.5(b)(4) and Subpart 373-2.9(h)]

Due to the prescreening process described in Section C, Norlite does not store incompatible wastes or wastes that are incompatible with the storage tanks or containers.

D-1(h) Air Emission Standards for Containers [6NYCRR Subpart 373-2.9(h)]

Containers employed by Norlite for the storage of hazardous waste require Container Level 1 controls as defined in 6NYCRR Subpart 373-2.29(g)(3). Most containers are in light liquid service but their capacity is less than 121 gallons.

D-2 Description of Tank Systems

The LLGF tank system is used to deliver hazardous and nonhazardous waste to the kilns. These wastes include the LLGF, acceptable remedial wastes, waste water for incineration and nonhazardous wastes. Any nonhazardous wastes or other fuels, such as off-specification used oil, Waste Fuel B, virgin fuel, fuels meeting the comparable fuels exclusion, specification used oil and Waste Fuel A that is delivered to the kilns from the LLGF tank system, described below, is fed as if it were hazardous waste. Any Waste Fuel B that meets the definition of hazardous waste will be pumped to the LLGF tanks and handled as such.

Waste Fuel A and off-specification used oil fuel arefed to the kilns through Tank 9, outside the LLGF tank farm.

Virgin fuel, fuels meeting the comparable fuels exclusion and specification used oil are fed to the kilns from Tanks R1, R2, M1 and M2 which are located adjacent to Tank 9. The delivery system from these tanks is a dedicated line that has no interconnection with the LLGF delivery system.

Storage and blending tanks include 155,579 gallons

capacity in four (4) covered storage tanks and seven (7) above ground tanks at the fuel farm and four (4) above ground tanks in the equalization room at the kilns. Tanks 100A,B,C and 200B,C are carbon steel shell and were constructed according to ASME Code Section VIII with a design pressure of 20 psi and design temperature of 100°F. The maximum operating temperature of the vessel is 100°F with a maximum operating pressure of 6 psig. After nozzle modifications, the vessels were recoded according to ASME Code Section VIII for a working pressure of 25 psig. Tank 200A is a stainless steel vacuum vessel.

Tank cleaning operations are conducted as needed with an estimated frequency of once every 12 to 24 months. Accumulated LLGF sludge is removed from the tanks using confined space entry procedures. Personnel move the accumulated semi-solids to a vacuum hose connected to a vacuum truck. The waste is either placed in drums or another tank for treatment based upon its characteristics and if it passes the criteria found in the Waste Analysis Plan, Section C-(1)(d). It is estimated that the cleaning of a storage tank will generate between 20 to 80 drums. The cleaning of tanks is generally done on a staggered basis. If drums are used to store the sludge, they will be temporarily stored in the truck unloading/containment area which will be used as a staging area for the drums prior to disposal.

D-2(a) Assessment of Tank System [6NYCRR Subpart 373-1.5(c)(1)]

Norlite has had an independent engineer review the

integrity testing on the tanks using 6 NYCRR 373-2.10(b) as reference.

Tank thickness measurements, if possible, will be conducted when the tanks are emptied and cleaned. In the past, measurements were made on the inside of the tank using an ultrasonic thickness gage such as Panametrics Model 5230. The glass coating on some of the inside of the tanks impact the accuracy of the foregoing measurement device. Norlite is currently investigating an alternative measurement device or technique and will resume tank thickness measurements when an alternative measurement device is reasonably available. It would not be possible, however, to take thickness measurements from the outside of the tank since the polyethylene liner system and clay cover system would have to be disturbed to expose the tank. Excavation of the tank would jeopardize the integrity of these systems. The location of the testing sites is shown on Stetson-Harza sheet, Figure D-5.

D-2(b) Dimensions and Capacity of Each Tank [6NYCRR Subpart 373-1.5(c)(2)]

The following table shows the current data of each tank at the time of application:

TANK #	DIAMETER	SIDE LENGTH	SHELL THICKNESS	MAX. CAPACITY (GALS.)
300	10'11"	40'10"	>3/8"	27,903
400	10'11'	40'10"	>3/8"	27,903
500	10'11'	40'10"	>3/8"	27,903
600	9'2"	39'3"	>3/8"	18,940
100A	11'0"	11'0"	1/4"	9,491
100B	11'0"	11'0"	1/4"	9,491
100C	11'0"	11'0"	1/4"	9,491
200A	11'0"	11'1"	3/4"	10,663
200B	11'0"	11'0"	1/4"	9,491
200C	11'0"	11'0"	1/4"	9,491
101A	5'	7'6"	1/4"	1,264
101B	5'	7'6"	1/4"	1,264
102A	5'	7'6"	1/4"	1,264
102B	5'	7'6"	1/4"	1,264
SP100	4'8"	4'7"	1/4"	623

*All dimensions are nominal

Tanks 300 and 400 were built in 1947 for the Blatz Brewing Company were installed in March 1986. Tanks 500 and 600 were built in 1940 for the Schlitz Brewing Company and were installed in March 1986. The four tanks were made by the A.O. Smith Corporation.

D-2(c) Description of Feed Systems, Safety Cutoffs, Bypass Systems, and Pressure Controls [6NYCRR Subpart 373-1.5(c)(3)]

Tank level is indicated in gallons by a ultrasonic or

radar level indicator with digital readouts (See Figure D-8). The level range is 12 inches off the bottom to full capacity. Since the agitators do not create any significant waves or splashing, the agitators do not interfere with the tank level indicators. The indicators do not experience drift so they are calibrated when put into service. No additional calibration is required. Tank pressure is indicated by a pressure gauge mounted on the vent of the tank. Pressure relief is provided by rupture discs (see Section D-2(c)(1)). Tank 200A tank level is determined by manual gauging and sampling.

A high level alarm switch is included in the level indicator for Tanks 100A,B,C and 200B,C. The switch will operate when the tank level is 12 inches from the top. The switch actuates a solenoid valve in the discharge pipe of these tanks. For Tank 200A, the vacuum pump automatically shuts off when the tank is full due to the lack of airflow.

For Tanks 300, 400, 500 and 600, a fire safe valve is in the discharge pipe from the tank. This is a spring-loaded gate valve with a 180°F fusible link that actuates at low pressure.

Each tank (100A,B,C; 200A,B,C; 300-600) is equipped with a rupture disc. Tanks 100A,B,C and Tanks 200B,C have 6-inch discs that fail at 20 psig pressure and 8 inches H_2O vacuum. Because it is a vacuum vessel, Tank 200A is equipped with a 6-inch disc that fails at 20 psig only. Tanks 300, 400, 500 and 600 use 3-inch discs that fail at 20 psig pressure and 8 inches H_2O vacuum. And Tanks 101A,B

and 102A,B have 6-inch discs that fail at 20 psig pressure and 2 psig. The nitrogen vent from the tank is directly piped to the aggregate kiln eliminating any atmospheric emissions during normal operation. The tanks vent to the kiln at pressures greater than 6 psig. During tank filling operations venting is provided to the kiln whereas when the tank is emptied during fueling for the kiln, nitrogen is supplied to the tank. Rupture disc certifications are found in Figure D-16.

For kiln fueling operation from Tanks 100B, 100C, 200B and 200C, the manual valve on the tank outlet is opened and the outlet pump is turned on. For Tanks 300, 400, 500, and 600 after the mixers have been installed, the manual valves on the kiln supply line and tank return are adjusted to provide the proper LLGF flow to the kiln and return to the top of the tank.

The following table indicates the circulation and agitation ability of each tank:

TANK #	Agitators	Recirculation	Recirculation by return from kilns
300	yes	yes	yes
400	yes	yes	yes
500	yes	yes	yes
600	yes	yes	yes
100A	yes	yes	yes
100B	yes	yes, from the bell	yes
100C	yes	yes, from the bell	yes
200A	yes	yes	yes
200B	yes	yes, from the bell	yes
200C	yes	yes, from the bell	yes
101A	yes	yes	yes
101B	yes	yes	yes
102A	no	yes	yes
102B	yes	yes	yes
SP100	yes	no	no

For Tanks 300, 400, 500 and 600; if there is a breach in the first liner, a leak would be detected by liquid exiting onto the containment slab from the tell-tale pipe under the tank. This pipe is a 4" perforated drain pipe that is positioned under the center of the tank and directly on top of the clay liner. The perforations face downward, and any liquid leaking from a tank and through the synthetic liner enters the pipe and runs out onto the pump containment slab. The flow capacity of the four inch perforated PVC drain pipe under the four covered tanks has sufficient flow capacity to handle small leaks. It is not intended that this pipe handle large flows such as a

rupture, nor will the perforations permit it. The sloped clay and polyethylene liner system directs large flows to containment areas. The specifications directed the PVC pipe installer to take precaution to prevent clogging: large size gravel, approximately 1 inch, was installed as a covering for the drain pipe. The pipes are wrapped with a geotextile filter fabric to prevent sand from clogging the drain pipes. The PVC pipe between the tanks and the spill containment slab is non-perforated as shown on NY003-5430.

Daily pump inspections are scheduled as shown in Section F. The LLGF storage area including pumps is inspected three times each shift as indicated on the Trunnion Operators Shift LLGF Inspection Report.

D-2(d) Diagram of Piping, Instrumentation, and Process Flow for Each Tank System [6NYCRR Subpart 373-1.5(c)(4)]

The piping and instrumentation diagram for the LLGF system is shown Drawings NY003-1311, NY003-1312, NY003-1314, NY003-1315, NY003-5010, NY003-1317 and NY003-1903. Each pair of tanks have identical loading, unloading, and control systems. The compatibility of the solvents with the carbon steel piping and the tanks is specified in the attached compatibility charts from "Technology for the Storage of Hazardous Liquids," NYSDEC January 1983 as Figure D-6.

The tanks are filled with LLGF by off loading trucks at

the truck unloading areas. For Tanks 200A,B,C and 100A,B,C; a high level switch on each tank shuts down all the transfer pumps if the switch is activated. The level switches are set to activate when the level reaches 12 inches from the top of the tank. Each tank is equipped with a level indicator, pressure and vacuum rupture discs and nitrogen blanketing.

For Tanks 300, 400, 500 and 600; there is a network of leak detection piping that was installed. This system consists of perforated drain pipes wrapped with filter fabric installed above each of the HDPE geo-membranes. The lower set of drain pipes discharge to the secondary spill containment area as shown. The liner is sealed to the drain pipes at the locations where the pipes pass through the liner. The sealing method is as follows: a prefabricated boot is slipped over the penetrating pipe. The base sheet is welded to the HDPE liner with a fusion welding gun. The boot, also of HDPE, is strapped to the pipe with a butyl seal and a 3/4" stainless steel band. Information on the method as well as further quality assurance data is provided in Figure D-7. The upper set of "tell-tale" drain pipes are installed as shown on NY003-5430. These pipes do not discharge to the spill containment slab but instead are used to pump out any liquid which collects above the upper HDPE geo-membrane.

D-2(e) Description of Materials and Equipment Used to Provide External Corrosion Protection [6NYCRR Subpart 373-1.5(c)(5)and Subpart 373-2.10 (c)(2), (3),(4), and (5)]

Tanks 300, 400, 500 and 600 are glass-lined (approximately 1/16 inch) for chemical and corrosion resistance. Glass-lined tanks have been shown to be very resistant to a variety of chemicals in a wide range of concentrations including solvents. For any failures in the glass lining, the 3/8" carbon steel shell will provide sufficient protection. Reported corrosion rates for solvents being stored with carbon steel are between 0.002 and 0.02 in/yr ("Corrosion Data Survey," 1967 Edision, G.A. Nelson, National Association of Corrosion Engineers). Using a median value of 0.011, and the assured shell thickness, the service life is calculated and presented in Figure D-9.

Corrosion to the external shell of the tanks will be prevented by the application of a corrosion resistant coating. Surface preparation was accomplished by sandblasting per SSPC-SP6 (commercial blast) prior to coating. Two coats of 5-7 mils each of Carbomastic 15 were then applied. The tanks were inspected for complete coverage by a registered professional engineer. The specifications for Carbomastic 15, an aluminum epoxymastic manufactured by Carboline are attached as Figure D-10.

A cathodic protection system was installed for additional corrosion protection. This system is shown on Drawing NY003-5430. The material in which the tanks are imbedded is also slightly alkaline, a condition which further inhibits corrosive activity. The clay cap and liner system also prevents groundwater from being introduced to the medium surrounding the tanks. The entire installation as described provides a complete system of corrosion protection and prevention (see Figure D-15). To protect against static electric charges, all the tanks were grounded in a loop, thereby reducing the charge separation.

A piping and instrumentation diagram showing the storage tanks, instrumentation, and valving is shown on Drawing NY003-1317. Inlet and outlet valving are manually operated except for the fire safe valve and solenoid valve on the tank outlet.

The tanks were tested for tightness prior to and after back filling with a soap test after pressurizing the tanks. A visual test was done on the external coating prior to backfilling. The cathodic protection system was also tested in accordance to the manufacturer's recommendation.

D-2(f) Description of Secondary Containment System [6NYCRR Subpart 373-1.5(c)(7)and Subpart 373-2.10 (d) (1), (2), (3), (4),(5), and (6)]

The four covered LLGF tanks are imbedded in two (2) feet of coarse sand compacted with a vibrating plate to

provide uniform support along the entire length of the tank. Beneath the sand is an impermeable liner consisting of the following components that were installed as follows:

-- one (1) 40 mil. HDPE geo-membrane.

-- one (1) layer consisting of 6"-12" compacted clay and sand.

-- one (1) 40 mil HDPE geo-membrane.

-- one (1) layer consisting of 12" of clay installed in two (2) 6" lifts compacted to 1×10^{-7} cm/sec.

(See Figure D-11 - Clay Liner Specifications.)

This system provides essentially three (3) impermeable barriers between the tank outer shell and the area beneath the compacted clay liner. The bottom of the excavation as well as the clay liner and HDPE geo-membranes are sloped towards the pump containment slab. The liner system was installed with seams necessary to connect the sections of geo-membrane. The liner system is extended upward on the sides and ends of the tanks and extended to connect with the pump containment slab.

The clay cover was installed to extend beyond the ends and sides of the tank and slopes down to the ground to prevent lateral transfer of rainwater towards the tanks.

The clay cover is shown on Drawing NY003-5430.

Norlite has installed secondary containment on Tanks 300, 400, 500 and 600. The secondary containment consists of an impermeable liner which discharges to a concrete pad (the pump pad) that has been coated with an impermeable coating. That sealant is the same sealant that has been used to coat the truck unloading pad and is described in Figure D-2.

D-2(g) Spill and Overflow Controls [6NYCRR Subpart 373-1.5(c)(9) and Subpart 373-2.10(e)(2)]

Tanker Unloading Area:

Any small spill is contained in the 100 gallon curbed area around the pump/strainer and collected with a vacuum truck or spill absorbents. Spills greater than 100 gallons will overflow into the 340 gallon drum storage area providing secondary containment. For even larger spills, tertiary containment is provided by the scupper overflowing into the truck unloading/containment area (9,048 gallons for Area #1 and 22,991 gallons for Area #2).

Removal Of Liquids From Other Containment Systems:

For small spills, a vacuum truck or an absorbent is used to remove the spilled liquid. The containment absorbent is placed in a 55 gallon drum and stored in the drum storage area. For larger spills, vacuum trucks are used to remove the liquid. The procedure for cleaning

sumps in the LLGF building is provided as SOP#6-004 titled "LLGF Building Sump Clean Out".

Tanks:

The LLGF tanks have level controls and automatic pump cutoffs to prevent overflows. In the event of a failure of this system, Tanks 300, 400, 500 and 600 are equipped with 4-inch pipes that direct any overflow from the tanks to the containment system inside the LLGF building. This 4-inch line is shown on Drawing NY003-5432. The tanks in the LLGF building would simply overflow into the containment system in which they are located.

D-2(h) Requirements for Ignitable or Reactive Waste [6NYCRR Subpart '373-1.5(c)(10) and Subpart '373-2.10(i) and (j)]

The specifications for joints, flanges and threaded connections are presented in the piping specification in Figure D-12. For threaded connections, the sealant is teflon tape or paste. Its compatibility with solvents shown in Figure D-6. Flanges are joined with compressed gaskets, Garlock Style 8748. The compatibility of this material with solvents is shown in the attached Garlock "Guide for Choice of Gasketing" as Figure D-13.

The compatibility of the tanks with solvents is shown in the charts referenced above. In addition, corrosion charts for solvents and carbon steel are attached from "Corrosion Data Survey," 1967 Edition, G.A. Nelson,

National Association of Corrosion Engineers as Figure D-14.

Norlite has not found LLGF to be reactive but it is ignitable. There are no sources of ignition such as an open flame and no smoking is permitted in the vicinity of the storage tanks. All electrical devices in the area are explosion proof, Class 1, Division 1 and 2, as required. Oxygen is excluded from the tank by the nitrogen blanketing system and all vapors are vented from the tank to the aggregate kiln eliminating any vapor discharge or build-up around the tanks. All the tanks are grounded to prevent the generation of static electricity. The inlet fill pipe and the mixing nozzles both direct liquid entry to the bottom of the tank eliminating any falling liquid from a top entry nozzle that could produce static free charges on the surface of the liquid. The tanks are located more than 50 feet from the facility property line and from the nearest building as requirements in the National Fire Protection Association's "Flammable and Combustible Liquids Code" (1981).

D-2(i) Air Emission Requirements for Tanks [6NYCRR 373-2.10(k)]

All tanks at Norlite are subject to Tank Level 2 Controls as defined in 6NYCRR 373-2.29(e)(4). As described above, the tanks are closed and are protected with a nitrogen blanket. The tanks are vented to kilns through a

closed-vent system in order to incinerate emissions.

D-2(j) Air Emission Standards for Equipment Leaks [6NYCRR 373-2.28]

Norlite complies with the operation, marking, inspection and repair requirements in 6 NYCRR 373-2.28 for all pumps, pressure release devices, sampling connections, valves, flanges and other connections. All of these devices are considered to be in light liquid service.

D-3 Tanker Unloading

Norlite personnel trained in unloading operations are present at all times during unloading. A delivery hose with quick disconnect couplings is connected between the tank truck and the hose connection. The tank truck vent is opened prior to opening the bottom outlet valve, and the LLGF is pumped to the proper tank. When the truck unloading is finished, the pump is allowed to suck air while the remainder of the liquid makes it to the pump. After that, the pump is shut off and the delivery hose is disconnected.

Norlite can unload two tank trucks at one time using separate pumps on the LLGF unloading pad or the vacuum pump associated with Tank 200A. LLGF from the tank truck can be off loaded and directed to any one of the 10 LLGF storage tanks at the fuel farm. The LLGF is blended with other

tank contents to form a desired mixture allowed by the Norlite Waste Analysis Plan. The off-loading pumps are protected by strainer baskets which prevent large solid particles from damaging the pump impeller and housing. The solids collected in the strainer baskets are placed into a 55 gallon drum for future processing. When a truck is offloaded, the fluid is first directed through the in-line Muffin Monster, a cam tooth shredding device before entering the strainer basket and pump.

The Model 30001 Muffin Monster has 13 cam-shaped teeth in a helical stack which is turned by a 3 HP motor and a 29:1 gear reducer. The motor turns the teeth to shred any solid materials in the LLGF as it is drawn through the Muffin Monster by the off loading pump. The cam teeth are constructed from 4130 steel and hardened to a tensile strength of 45-50 Rockwell C. The Muffin Monster is controlled by a remote control station which senses motor speed and current. In the event that the cam teeth jam with a solid particle, the controller automatically stops the motor and reverses the cam teeth to free the object. The controller will reverse the cam teeth three times before shutting the unit down and signaling the operator that the Muffin Monster will have to be cleared manually.

D-4 Tank Cleaning and Testing

The tanks will be emptied and cleaned on an individual, staggered basis. LLGF will be pumped to the other tanks to

as low a level as practical. The circulating transfer pump will be locked out and the inlet and outlet tank valves locked to prevent addition of LLGF into the tank being cleaned. The manhole will be opened and the remaining liquid will be removed with a vacuum truck. This LLGF will then be transferred to one of the other LLGF tanks. A person with proper protective equipment will then enter the tank and remove the solid material with non-sparking tools. The LLGF sludge is removed through the use of a vacuum truck. If the sludge passes the criteria for LLFG found in the Waste Analysis Plan, Section C-(1)(d), the material may be discharged to another tank for onsite treatment. There are no special provisions for the tank sludge with respect to offloading, blending or burning. The vacuum truck is offloaded as described in Section D-3. Blending is performed to meet the burning requirements of the kiln operators. This includes insuring that the LLGF blend is pumpable and is not so laden with solids that it plugs the burner nozzle. If the sludge cannot be managed within these requirements, it must be sent offsite for treatment. If the material fails to pass the criteria for LLGF, it is transferred to drums for subsequent storage or shipped directly offsite in the vacuum truck. If drums are used for onsite storage, they are then sampled, sealed, labeled and managed as described in Section C.

When the sludge removal is complete, the interior of the tank is inspected. The inspection consists of visual observation for leaks, bulges, buckles, pitting or

corrosion. Integrity testing shall now be performed in accordance with Estabrook EZY 3 Locator Plus test method, a recommended method from NYSDEC SPOTS #2 memorandum. The following table indicates the current status of the tank inspections.

TANK #	Assessment	Inspector	Last Inspection	PE Certification?
300	EZY Locator	Dan Ulwin	05/04	No*
400	EZY Locator	Dan Ulwin	10/04	No*
500	EZY Locator	Dan Ulwin	10/04	No*
600	EZY Locator	Dan Ulwin	04/04	No*
100A	UL-142	Harvey King	12/03	Yes
100B	UL-142	Harvey King	12/03	Yes
100C	UL-142	Harvey King	08/03	Yes
200A	UL-142	Harvey King	01/04	Yes
200B	UL-142	Harvey King	12/03	Yes
200C	UL-142	Harvey King	12/03	Yes
101A	UL-142	Harvey King	12/03	Yes
101B	UL-142	Harvey King	12/03	Yes
102A	UL-142	Harvey King	12/03	Yes
102B	UL-142	Harvey King	12/03	Yes
SP100	UL-142	Harvey King	12/03	Yes

* Mr. Ulwin is a certified inspector for this method

D-5 Kilns

The kilns are operated in a countercurrent fashion with raw material feed (shale) entering at the "back-end" of the kiln(s) and fuels being fired from the opposite (burner) end(s). Gas temperatures in the burning zone are

maintained in the range of approximately 2200°F to 3000°F. A schematic of the process is shown in Drawing NY003-5006.

D-5(a) Removed

D-5(b) Kiln Operations and Safety

Raw materials are quarried on-site and are conditioned by crushing and screening. The conditioned shale feed is stored in a silo and fed to the kiln via a gravimetric conveyor. Calcination of the shale occurs at a product temperature of approximately 1700°F to 2000°F. Within this temperature range the shale reaches a point of incipient fusion where it is in a semi-plastic state which allows internal gases to expand, thereby creating voids. As the expanded product leaves the burning zone it begins to cool. Cooling continues as the product drops out of the kiln into a clinker cooler. The cooled vitreous clinker is then discharged and stockpiled. The shale feed rate limit to the kiln is 22 tons per hour.

Heat is supplied to the kiln by firing fuels as described in the table below. All fuel is injected countercurrent to the product flow through the kiln via burners at the discharge (front) end of the kiln. Virgin Fuel Oil, Specification Used Oil Fuel and Comparable Fuels are fed from Tanks R1, R2, M1 and M2, located in the tank farm adjacent to Tank 9. This delivery system is not interconnected to the LLGF delivery system in any way. No

hazardous or nonhazardous waste is delivered to the kiln through this system.

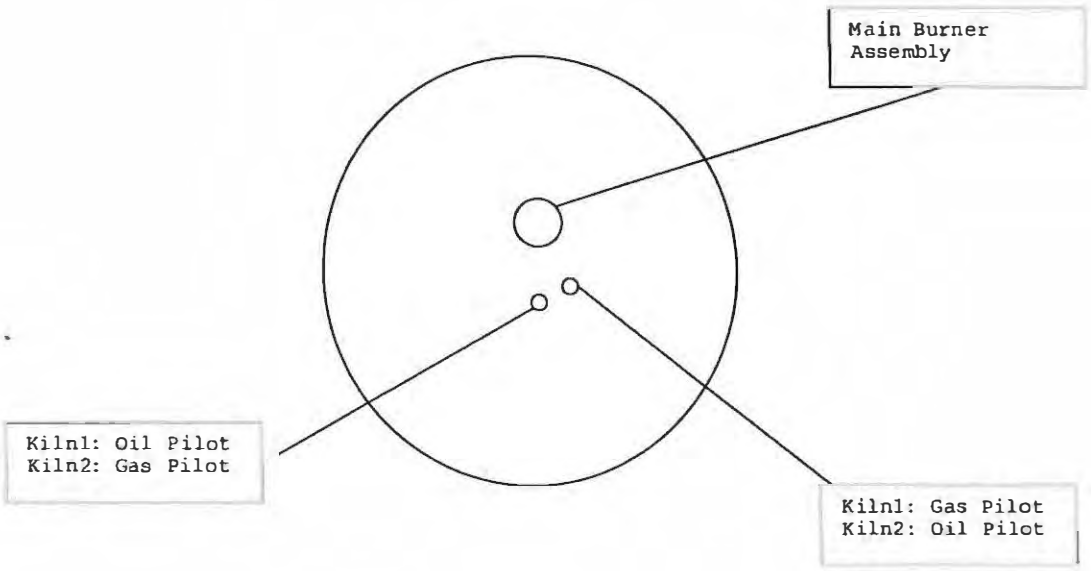
Feed:	Flow Measurement Instrument:	Units:	Recorded (manual/auto)	Inst/MRA/HRA	Data Stored	AWFCO Valve
LLGF/Waste Fuel B	Micro Motion	GPM	Auto	MRA/HRA	Yes	Yes
On-Spec Used Oil	Micro Motion	GPM	Manual	Begin/End of Shift	Yes	No
Off-Spec Used Oil	Micro Motion	GPM	Auto	MRA/HRA	Yes	Yes[4]
Waste Fuel A	Micro Motion	GPM	Auto	MRA/HRA	Yes	Yes[4]
Natural Gas	NA[1]	Therms	Auto[1]	Monthly[2]	Yes	No
Diesel Fuel/ Kerosene/Comparable Fuels/ Fuel Oil #2, 4, 6	Micro Motion	GPM	Manual	Begin/End of Shift[3]	Yes	No
Water	RotoMeter	GPM	Manual	NA	Yes	No
Vapors	NA	NA	No	NA	NA	No
Air: -Primary -Atomization	Both use a Rosemount Pressure Transmitter	Psig Psig	NA Auto	Inst. HRA	No Yes	No Yes

Note: NA - Not Applicable
1 - metered by utility company.
2 - includes Kiln 1 & 2.
3 - depends on feed thru on-spec or off-spec feed line.
4 - AWFCO valve only applies when Carbon Monoxide (CO) is over 500 ppm.

The various feed streams to the kiln are delivered based on the table below:

Feed:	Storage:	Kiln Delivery:
LLGF/Waste Fuel B	LLGF Tanks	Main Burner Assembly
On-Spec Used Oil	M1,M2,R1,R2	Oil Pilot
Off-Spec Used Oil	Tank 9	Main Burner Assembly
Waste Fuel A	Tank 9	Main Burner Assembly
Natural Gas	NA	Main Burner Assembly Natural Gas Pilot
Diesel Fuel/ Kerosene/Comparable Fuels/ Fuel Oil #2, 4, 6	M1,M2,R1,R2	Oil Pilot
Water	NA	Main Burner Assembly
Vapors	NA	Main Burner Assembly
Air: -Primary & Atomization	NA	Main Burner Assembly

Each kiln has three injection points for these feeds: the main burner assembly; the oil pilot; and the natural gas pilot. They are situated in the front end wall of the kiln as shown below:



Typical kiln combustion gas and material retention times are 15 seconds and 45 minutes, respectively. Draft for the kiln is supplied by a Barrons induced draft fan. Secondary combustion air is supplied by forced draft (clinker cooler) fans. Secondary combustion air is preheated by passing it through a moving bed of hot product in the clinker cooler.

LLGF is pumped to the kiln's main burner at a maximum rate of 10.3 gpm. Fuel is supplied to the burner nozzle through an inner pipe while atomization air (or steam) is supplied through a concentric outer pipe.

Each kiln is manned on an around-the-clock basis by the burner operator from the kiln control room. The burner operator can monitor critical operating variables from the control room via a computerized data acquisition system (DAS). The burner operator can also make operational set point changes via the computer system. Equipment stop/start circuitry is housed in the kiln control room or in the field via motor control centers. All field instrument signals are processed through an Allen Bradley Programmable Logic Controller (PLC). Information from the PLC is gathered by the DAS and processed into visual information for the use of the burner operator. The PLC is in control of the Automatic Waste Feed Cutoff System (AWFCO) as described in Section D 5 (d) at all times and operates independent of the DAS.

The burner operator is assisted by the kiln field operator and the mechanic who are responsible for activities outside the control room and burner floor area. The kiln field operator and mechanic perform routine inspections, make field only parameter adjustments, and perform routine mechanical maintenance of the kiln and air pollution control systems.

The burner operator in conjunction with the kiln field operator and mechanic make routine system adjustments to maintain the kiln at optimum conditions for the production of light weight aggregate while maintaining the system within the operating window as set forth by the AWFCO system.

In the event an AWFCO operating parameter has an excursion outside the operating window, LLGF is automatically cutoff by the AWFCO system. The burner operator will switch to an alternate fuel such as natural gas or oil until corrections are made to bring the operation within the operating window.

In the event a non-AWFCO operating parameter has an excursion, the burner operator will attempt to make system corrections to bring the parameter within specification. Should the corrections not bring the parameter within specifications, the excursion will ultimately cause one or multiple AWFCO parameters to trigger the AWFCO system to operate.

In the event of a power failure, all systems shutdown including, but not limited to, LLGF flow, fuel farm feed systems, raw shale feed, main flame, etc. All systems require manual restart. A virgin fuel is fired to bring all operating parameters within the operating window prior to commencing LLGF feed.

The main flame of the kiln is either self-sustaining or sustained by the presence of a virgin fuel pilot. The main flame and the pilot flame are monitored by an electronic eye to have proof positive that a flame exists. In the event of a loss of signal by the electronic eye, the virgin fuel feed to the pilot, the main natural gas valve, the LLGF AWFCO valve, and the used oil feed valve are closed and a manual reset is required to re-establish a proof positive of flame. Should operating parameters fall

outside the operating window during a flame failure, a virgin fuel is fired to bring all operating parameters within the operating window prior to commencing LLGF feed.

D-5(c) Air Pollution Control System

Both kilns have identical emission control systems. The systems include both wet and dry emission control devices for the collection and removal of particulate matter, metals, hydrogen chloride (HCl), and other gaseous species. The principal collection mechanisms employed by these devices are sedimentation, condensation, impaction, filtration and interception for particulates and metals, and absorption for HCl and other gaseous species.

Combustion gases and entrained particulates exiting the kiln pass through a mechanical collector, a Barrons multiple cyclone unit (multiclone), to remove large particulate matter. Particulates removed by this device accumulate in a hopper from which they are pneumatically conveyed to the Dust Storage Silos. Dust from these silos is beneficially used in a block mix product.

Gases exiting the multiclone then pass to an air cooler, a closed cycle air to air heat exchanger. Process gases enter the heat exchanger at approximately 900°F and exit at approximately 450°.

Following the heat exchanger, a three-module baghouse (fabric filter) is provided to remove fine particulates which are entrained in the gas. The baghouse is designed

for operation on two modules while the third module is down for maintenance, however, hazardous waste is not fed unless all three modules are online. Hydrated lime ($Ca(OH)_2$) is continuously fed to the baghouse to enhance particulate removal and help control acid gases. Accumulated particulates and (partially) reacted lime is removed from the filter media by sequentially pulsing a small fraction of the filter bags at a time with compressed air. Particulates so removed accumulate in a hopper from which they are pneumatically conveyed to Dust Storage Silos. Like particulates removed from the multiclone, baghouse dust is beneficially used in a block mix product. A modulating damper located upstream of the baghouse automatically adjusts baghouse inlet gas temperatures (if required) to the range of 375°F to 400°F ($\pm$ 5°F) by tempering with ambient air.

Immediately downstream of the baghouse is an induced draft fan which draws tertiary combustion air through the kiln, multiclone, heat exchanger and baghouse and provides forced draft to exhaust combustion gases through the wet scrubbers and mist elimination units. Additionally, the fan provides induced draft for a hood installed over the kiln shale feed chute to capture any fugitive emissions emanating from this area.

Two wet scrubbers are provided to capture particulates and to remove acid gases which escape capture/removal in the baghouse. The first is a BECO Venturi (MMV) scrubber. This scrubber is of a rod design which utilizes stainless

steel tubes installed in rows across the throat to provide a series of smaller throats. The intent is to provide the effect of a small venturi throat without incurring the high pressure drop typically associated with conventional high efficiency venturi scrubbers. Further, the tubes provide additional impaction surfaces for enhanced particulate and HCl collection.

Clean water atomization headers are located at the entrance of the scrubber to cool and saturate combustion gases. The scrubbing medium is a sodium carbonate (soda ash) solution which is introduced through nozzles located directly above the venturi module. This solution is recycled through the unit at approximately 200 gpm and, at equilibrium, contains approximately 10% dissolved solids consisting principally of sodium carbonate, sodium chloride and/or sodium sulfate. Scrubbing solution is also injected into the transition segment located immediately downstream of the venturi scrubber.

Excess water/scrubbing solution drains from the venturi exit elbow to a settling/recycle tank. The pH of the solution in the recycle tank is continuously monitored by a pH probe and automatically maintained at a pH of 7.9 or greater by the introduction of a 5% sodium carbonate solution. A portion of the recirculated solution is removed (blown down) from the recycle pump discharge to maintain a stable solids concentration in the system. The blowdown rate ranges between 4 and 20 gpm, depending on the quantity of fuel burned as well as the chloride and sulfur contents.

The second scrubber is a (Ducon) polishing scrubber/mist eliminator. This unit consists of a bundle of tubular baffles which are designed to capture droplets of scrubber solution entrained in gases exiting the BECO scrubber. Additionally, a mesh-type mist eliminator is fitted at the top of the unit, immediately preceding the exhaust stack. The mist eliminator is kept clean by a water spray. Finally, scrubbed gases are exhausted to the atmosphere, 120 feet above grade, via a 48 inch diameter stack.

D-5(d) Waste Feed Cut-Offs (WFCOs)

Kiln process operations are controlled from a central control room by an operator who oversees a computer-based control system. In addition to routine fail-safe features, a series of waste feed cut-offs are programmed into the control system to assure that LLGF is only fed to the kiln under prescribed conditions. This ensures that wastes will be properly destroyed and exhaust gases suitably treated before discharge to the environment. Any deviation from prescribed conditions will result in immediate interruption, i.e., cut-off, of waste feed to the kiln. The following off-specification conditions will activate a WFCO:

* LLGF feed rate in excess of prescribed limit,
* Shale feed rate above prescribed limit,
* Combustion gas velocity, as measured by induced

draft fan, current draw, above prescribed limit,

* Carbon monoxide concentration (at baghouse outlet) above prescribed limit:
* Baghouse inlet temperature above prescribed limit,
* Baghouse pressure drop below prescribed limit,
* Ducon scrubber pressure drop
* Venturi scrubber pressure drop
* Scrubber water recirculation flow rate below prescribed limit,
* Scrubber solution, minimum pH
* Loss of lime feed to baghouse, as measured by feeder motor current draw,
* Kiln pressure exceeds prescribed limits, and
* Kiln exit gas temperature below or above prescribed limit.

All of these WFCO conditions are shown on attached Drawings NY003-5006 and NY003-5001.

Changes to the programming or WFCO and alarm points require prior management and NYSDEC review and approval consistent with Norlite'S Standing Operating Procedure #5-011, "CONFIGURATION AND MAINTENANCE CONTROL PROCEDURES KILN CONTROL AND CONTINUOUS EMISSIONS MONITORING SYSTEMS".

D-5(e) **REMOVED**

D-5(f) **Maintenance of Scrubber System and Baghouse System**

The procedure for performing routine scrubber

maintenance is provided in Norlite's Standard Operating Procedures #2-001, "-Preparation for and Performance of Routine Scrubber Maintenance - Draining and Cleaning Scrubber Internals".

Each kiln is equipped with a baghouse as described in Section D-5 (c). Bag leakage or failure is detected by a relative increase in suspended solids present in the scrubber water blow down process stream.

Baghouse maintenance can be done while the kiln is in operation or on a shutdown basis. The procedures are the same except that during a shutdown no fuel is fired or lightweight aggregate is produced and all three modules may be opened at one time.

Upon determination that baghouse maintenance is required, the kiln ceases operation on LLGF and commences firing a virgin fuel while continuing to produce light weight aggregate. Each of the three baghouse modules are checked individually via the clean air plenum of the baghouse. The inlet damper to a module is closed. The door to the clean air plenum is opened and an inspection of the tube sheet is conducted. A leaking or failed bag will show signs of dust buildup at the top of the bag and in the very near vicinity of the bag. Any suspected bag is removed and replaced with a new bag. When one module is complete, the door is closed, the inlet damper is opened and the procedure is repeated for each module.

Upon completion of baghouse maintenance, and when the operating parameters are within the LLGF operating window, LLGF feed to the kiln commences.

Figure D-1

Sikaflex - 1a
Elastic Sealant/Adhesive

Technical Data

DESCRIPTION: Sikaflex - 1a is a premium-grade, high -performance, moisture-cured, 1-component, polyurethane-base, non-sag elastomeric sealant.

WHERE TO USE: Designed for all types of joints with maximum depth of 1/2 in. Excellent for small joints and fillets... windows, door frames, reglets, flashing, glazing, and many construction adhesive applications. Suitable for vertical and horizontal joints; readily placeable at 40F. Has many applications as an elastic adhesive between materials with dissimilar coefficients of expansion.

ADVANTAGES:

* Easy, low-cost, ready-to-use
* Eliminates time, effort, and equipment for mixing, filling cartridges, pre-heating or thawing, and cleaning of equipment
* High elasticity - Cures to a tough, durable, flexible consistency with exceptional cut- and tear- resistance
* Excellent adhesion - Bonds to most construction materials...without primer in most cases
* Long life
* Excellent resistance to aging, weathering
* Proven in tough climates around the world
* USDA- and FDA- approved ※
* Approved for use in contact with potable water
* Resists fuel, mineral oils, and dilute minerals, plant and animal fats
* Odorless, non-staining. Can be painted over with water-, oil-and rubber-base paints. Since some paints, dry slowly and the surface may remain slightly tacky, a preliminary test is essential.
* Meets Fed Spec TT-S-00230C, Type II Class A
* Meets EPA regulations on water extractability
* Meets Canadian Standard 19-GP-16A,Type II

※ Chemically acceptable to the U.S. Department of Agriculture for use in meat and poultry processing area under federal inspection. Meets FDA Regulation Title 21 on indirect Food Additives, as found in Part 174; Part 175, Paragraph 175.105; Part 177, Paragraph 177.1680, and Paragraph 177.2600, being composed of ingredients acceptable and transporting food.

Figure D-2

PHENOLINE ® 300
FLOOR FINISH

Selection Data

Generic Type: A heavy duty modified phenolic floor coating

General Properties: Self priming heavy duty floor coating applied by trowel at a thickness of 3/22" (2.4mm). Resistant to most acids (except strong oxidizing acids) alkalies, solvents, salts, food products, oils and water. Gives a non-skid surface even when covered with liquid at 75° F (24° C). Excellent adhesion characteristics, with no primer necessary. Withstands non-continuous spillage at temperature up to 250° F (121° C).

Recommended Use: For protection of floors subjected to severe attack and physical abuse. Used where high impact resistance in loading areas is required. Excellent for laboratory floors, filing rooms, process tank and storage areas and other critical services. Used by all industries including chemical processing, fertilizer, pulp and paper, food processing, pharmaceutical, petroleum and plating.

Not Recommended For: Continuous spillage of hot or concentrated oxidizing acids.

Chemical Resistance Guide:

Exposure	Splash and Spillage
Acids	Very Good
Alkalies	Excellent
Solvents	Excellent
Salt	Excellent
Water	Excellent

Temperature Resistance:

Continuous:	180°F (82° C)
Non-Continuous:	250° F (121° C)

DUDICK PROTECTO LINE 900
VINYL ESTER LINING/TOPPING

Selection Data

General: Protecto-Line 900 system is a thermosetting vinyl ester resin. Provides high protection against concentrations of organic acids, inorganic acids and solvents. It exhibits superior resistance to alkali and solvent concentration because the vinyl ester epoxy has no hydrolyzable ester groups. The few ester groups which are present are formed at the molecular terminals where stability is provided by steric hinderance from the methyl group of the methacrylic acid. A silica filled basecoat and topcoat and 9.8 oz. woven fiberglass roving reinforcement from a tough, corrosive resistant system for concrete and steel exposed to general chemical environments.

Property:

Tensile Strength	2,400 PSI
Flexural Strength	8,600 PSI\
Compressive Strength	12,500 PSI
Hardness (Barcol)	70-75
Coefficient of Expansion (n X 10^{-5} in./in./°f)	12-15

Chemical Resistance: Organic Acids Inorganic Acids Salts Oils Alkali Solutions
Protecto-Line 800/900 systems are highly resistant to a wide range of caustic and acids, chemicals, salts and oils.

Specifications: Lining shall be a 1/8" thick silica filled vinyl ester based resin, consisting of a deep penetrating primer, a 1/16" basecoat, 9.8 oz. woven fiberglass roving and a 1/16" topcoat as manufactured by Dudick Corrosion-Proof, Inc. Materials shall be applied in accordance with manufacture's recommended practices.

Proteco-Line System: The Protecto-Line system uses several layers of thermosetting, filled vinyl ester resins to build-up the protection that vulnerable steel and concrete need in chemically oriented manufacturing or processing operations. When fully cured, the separate elements lose their individual identity and become a single, monolithic topping.

Each of the five elements in the system not only provides its own special function, but also supports the other elements.

Primer: Protecto-Line Primer 27 is designed to prevent sand-blasted steel from developing rust bloom prior to the application of a Proteco-Line system, Concrete must always be primed to aid in the "wetting out" required for good bonding.

Basecoat: Protecto-Line 800/900 vinyl ester resins are filled with silica or carbon, depending on the chemical environment involved. The filler reduces the coefficient of expansion and provides a thixotropic base on which to embed the fiberglass or synthetic roving.

DUDICK PROTECTO LINE 900
VINYL ESTER LINING/TOPPING
Continued

Reinforcement: A woven fiberglass or synthetic fabric is used to help bridge small surface cracks and provide additional strength to resist thermal shock. It is applied to the wet basecoat and becomes an integral part of it, acting much the same as reinforcing bar does in concrete.

Saturant: Protecto-Line vinyl ester resins is used to wet out the reinforcing fabric, thus providing a mechanical and chemical bond.

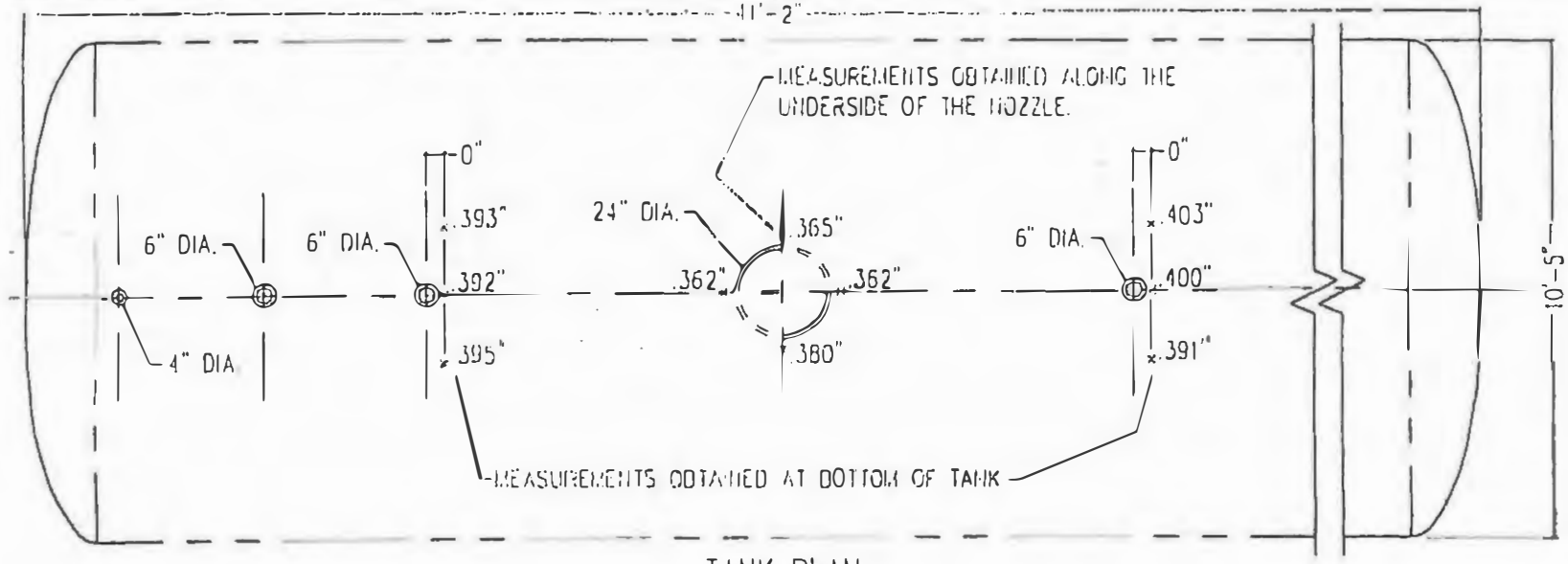
Topcoat: Protecto-Line silica or carbon filled vinyl ester resins provide an abrasion resistant and chemical resistant outer barrier. Inert aluminum oxide fillers can be added to this coat to significantly increase skid and abrasion resistance/

Figure D-3

HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERATOR INFORMATION:
NAME
ADDRESS
PHONE
CITY
STATE
ZIP
EPA ID NO.
MANIFEST DOCUMENT NO.
ACCUMULATION START DATE
EPA WASTE NO.
D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX
HANDLE WITH CARE!
STYLE WM6
Printed by LABELMASTER, Div. of AMERICAN LABELMARK CO., CHICAGO, IL 60646

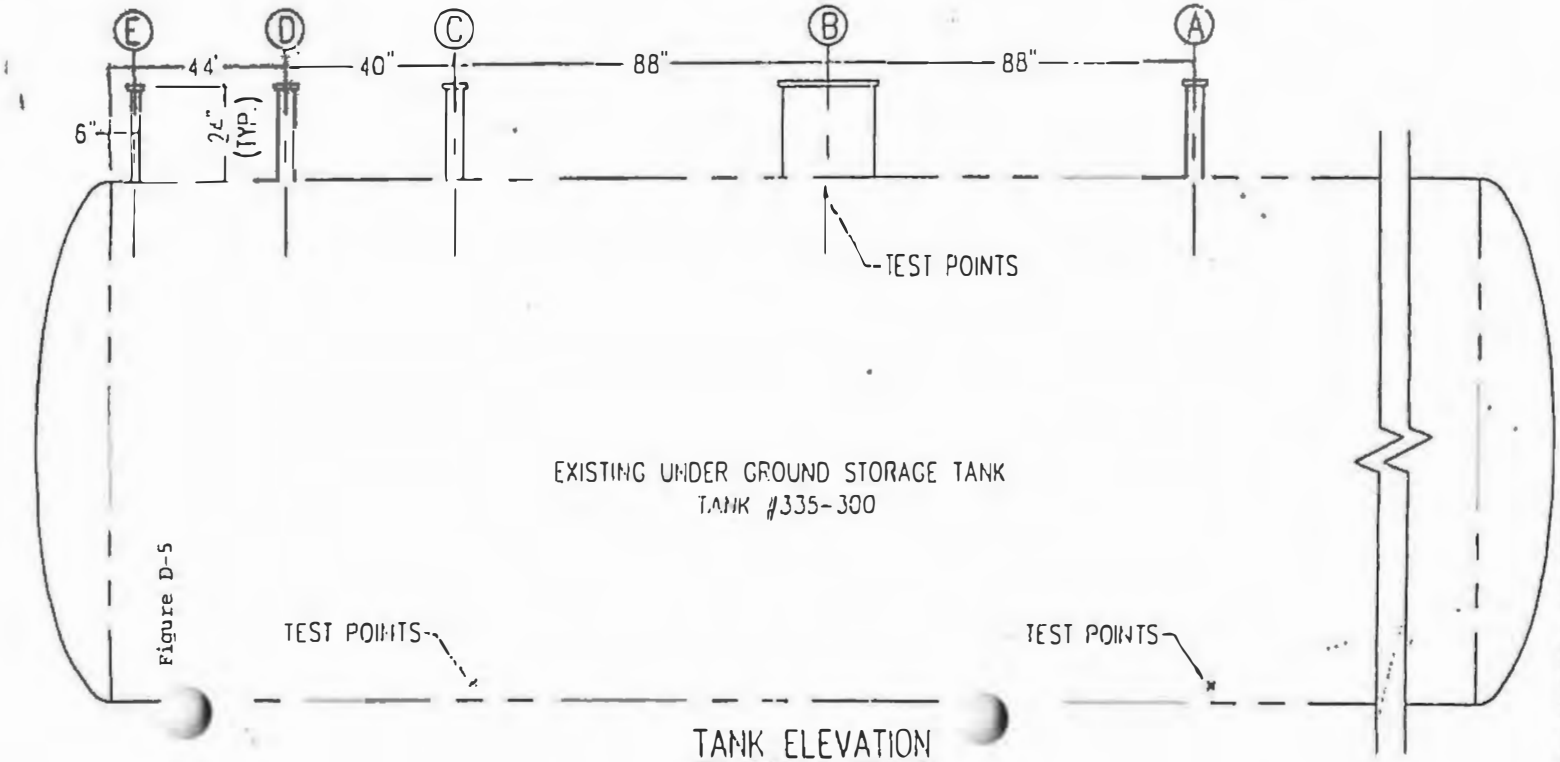
Figure D-4

<REMOVED>



TANK PLAN

SCALE: 1/4" = 1'-0"



TANK ELEVATION

NOTES:

1. MEASUREMENTS OBTAINED AT THE BOTTOM OF THE TANK WERE MADE BY REMOVING SMALL SECTIONS OF GLASS AND READING SHELL METAL THICKNESS.
2. MEASUREMENTS OBTAINED AT THE UNDERSIDE OF NOZZLE (B) WERE MADE ON EXISTING EXPOSED META

0	ISSUED	
NO.	DESCRIPTION	DATE
	REVISIONS	
PROJECT:	AGITATOR INSTALLA	N
CLIENT:	NORLITE CORP.	
TITLE:	TANK #335-300 &	ST LOCATIO
DWG #:	WA-94152-C-	
SHEET 1 OF 1	DATE 09/2	JOB NO.

Figure D-5

(Change 12/06) Section D Process Description

Page D-81 of Pages

Figure D-6

COMPATABILITY CHART FOR FLUIDS, SEALS AND METALS

Resistance of Metals & Gasket Materials to Various Compounds

CODE: G = Good; F = Fair; P = Poor

FLUID	METAL					SEAL MATERIAL					FLUID	METAL					SEAL MATERIAL				
	ALUMINUM	BRONZE	IRON	STEEL	ST. STEEL	BUNA	BUTYL	NEOPRENE	TEFLON	VITON		ALUMINUM	BRONZE	IRON	STEEL	ST. STEEL	BUNA	BUTYL	NEOPRENE	TEFLON	VITON
Acetaldehyde	G	P	G	G	G	P	G	P	G		Cyclohexane	G	G	G	G	G	G	P	G	G	G
Acetate Solvents - Crude	G	F	F	F	G	P	P	G	G		Cyclohexanol	G	G	G	G	G	G		G	G	G
Acetate Solvents - Pure	G	G	G	G	G	P		G	G		Cyclohexanone	G	G	P	G	G	P	F	P	G	
Acetic Acid - Pure	G	G	P	P	G	F	F	F	G												
Acetic Anhydride	G	P	F	P	G	G	G	G	G		Detergent Oils			G	G	G	G		G	G	G
Acetic - Glacial	G	G	P	P	G	G	G	G	G	P	Diacetone Alcohol	G	G	G	G	G	P	G	F	G	
Acetone	G	G	G	G	G	P	G	F	G	P	Dichlorobenzene	G	G	P	P	G	P	P	P	G	G
Acetyl Acetone	G	G	G	G	G	P	P	P	G		Dichloro Ethane	G	G		G	G	F			G	
Acetyl Chloride	F	F	F	G	G				G		Dichloro Ethylene	G	G	G	G	G	P	P	P	G	
Acrylonitrile	G	G	G	G	G	P	F	G	G		Diesel Oil	G	G	G	G	G	G			G	
Aliphatic Hydrocarbons	G	G	G	G	G	G	P	G	G	G	Diethyl Ether	G	G	G	G	G	F		G	G	
Aluminum Chloride	F	F	P	P	F	G	G	G	G		Diethyl Phthalate		G	G	G	G	P		P	G	
Aluminum Nitrate	G		P	P	G	G	G	G	G		Diethylene Glycol	G	G	G	G	G	G		G	G	G
Aluminum Sulphate	G	F	P	P	G	G	G	G	G												
Ammonium Hydroxide	F	P	G	G	G	G	G	G	G		Ethyl Acetate	G	G	G	G	G	P	F	F	G	
Ammonium Liquors	F	P	G	G	G				G		Ethyl Alcohol	G	G	G	G	G	G	G	G	G	G
Ammonium Nitrate	G	P	G	G	G	G	G	G	G		Ethyl Benzene	G	G	F	F	G	P	P	P	G	
Ammonia, Anhydrous	G	P	G	G	G	G	G	G	G		Ethyl Benzoate	G	G	G	G	G	G	P	P	G	G
Ammonia, Aqua	F	P	G	G	G	F	G		G		Ethyl Chloride	G	G	G	G	G	G	G	G	G	G
Amyl Alcohol	G	G	G	G	G	G	G	G	G	G	Ethyl Ether	G	G	G	G	G	F	F	F	G	
Anthracene	G	G	G	G	G				G		Ethylene Chloride	G	G	P	G	G				G	
Aromatic Hydrocarbons	G	G	G	G	G	G	F	F	G	G	Ethylene Glycol	G	G	G	G	G	G	G	G	G	G
Asphalt	G	G	G	G	G	F	F	F	G		Ethylene Oxide	G	F	G	G	G	F		P	G	
Aviation Gasoline	G	G	G	G	G	G		G	G	G											
											Fatty Acids	G	F	P	P	G	G	F	F	G	G
Beer - Beer Wort	G	G	F	F	G	P	G	G	G	G	Foods	G				G				G	
Benzene - Benzol	G	G	G	G	G	P	F	P	G	F	Formaldehyde	G	G	F	F	G	G	G	G	G	G
Benzyl Alcohol	G	G	P	P	G	P	G	G	G	G	Formic Acid	G	F	P	P	G	P	G	P	G	
Benzyl Chloride	P	P	P	P	G	P	G	P	G		Freon, Dry	G	G	G	G	G	G	F	P	G	G
Brines		G					G		G		Fuel Oil	G	G	G	G	G	G	P	G	G	G
Butadiene	G	G	G	G	G	G			G	G											
Butane	G	G	G	G	G	G	P	G	G	G	Gas, Natural - Manufactured	G	G	G	G	G	G	P	P	G	G
Butyl Acetate	G	G	G	G	G	P	F	F	G		Gasolene, Sour	G	F	F	F	G	G	P	G	G	G
Butyl Alcohol - Butanol	G	G	G	G	G	G	G	G	G	G	Gasolene, Motor	G	G	G	G	G	G	P	G	G	G
Butyl Ether	G	G			G	F		P	G		Gasolene, Aromatic	G	G	G	G	G	F	P	P	G	
Butylene	G	G	G	G	G	G			G	G	Gasolene, Aviation	G	G	G	G	G	F	P	P	G	G
											Glycerine - Glycerol	G	G	G	G	G	G	G	G	G	G
Calcium Hydroxide	F	G	G	G	G	G	G	G	G	G	Grease	G	G	G	G	G	G	F	G	G	G
Calcium Nitrate	F	G	G	G	G	G		G	G	G											
Carbitol Solvents	G	G				G	G	G	G	G	Heptane	G	G	G	G	G	G		G	G	G
Carbolic Acid - Phenol	G	G	P	P	G	P	P	P	G		Hexane	G	G	G	G	G	G	P	G	G	G
Carbon Disulphide	G	F	G	G	G	P	P		G	G	Hexanol - Hexyl Alcohol	G	G	G	G	G	G		G	G	G
Carbon Tetrachloride	F	G	F	G	G	F	F	F	G		Hi-Boiling Naptha		G			G				G	G
Carbonic Acid	G	P	P	P	G	P	G	G	G		Hi Flash Naptha		G			G				G	G
Castor Oil	G	G	F	F	G	G	G	G	G	G	Hydraulic Oil		G			G	G	G	F	G	G
China Wood Oil - (Tung Oil	G	G	F	F	G	G		G	G	G	Hydrochloric Acid 150°	P	P	P	P	P	G	G	G	G	G
Chlorobenzene	P	G		G				G	G		Hydrogen Peroxide	G	P	P	P	G	G	G	G	G	G
Chloroform		G			G	P		P	G		Hydrogen Sulphide, Wet	G	F	G	G	G	F	G	F	G	
Chromium	G	G	G	G	G	P	P	P	G												
Cinnamaldehyde	G	G	G	G	G	P	P	P	G		Isobutane	G	G	G	G	G	G	P	G	G	G
Creosote - Dry	F	F	G	G	G	F	F	F	G		Isobutene		G			G	G			G	G
Creosote Gas	F	G	G	G	G				G		Isopropyl Acetate	G	G	G	G	G	P	G	P	G	
Cresylic Acid	G	G	F	F	G	P		P	G		Isopropyl Alcohol	G	G	F	G	G	F	G	F	G	G
Crude Oils	G	F	P	P	G	G	F	G	G	G	Isopropyl Ether	G	G	G	G	G	G	P	F	G	G
Cutting Oils	G	G	G	G	G	G	G	F	G	G											
Cyclohexane	G	G	G	G	G	G	G	G	G	G	Jet Fuel JP 4 JP 5	G	G	G	G	G	G	P	F	G	G
Cyclohexanol	G	G	G	G	G	P	P		G	G											
Cyclohexanone	G	G	G	G	G	P	P	P	G		Kerosene	G	G	G	G	G	G	P	G	G	G
Cymene	G	G	G	G	G	G	P	P	G	G											
Decane	G	G	F	F	G	P		P	G		Lacquer Solv.	G	G	F	F	G	P	F	P	G	
Decene	G	G	F	F	G	P		P	G		Lactic Acid	G	G	G	G	G	G			G	G

Figure D-6 continued

COMPATABILITY CHART FOR FLUIDS, SEALS AND METALS

FLUID	METAL					SEAL MATERIAL				
	ALUMINUM	BRONZE	IRON	STEEL	ST. STEEL	BUNA	BUTYL	NEOPRENE	TEFLON	VITON
Lard - Lard Oil	G	G	G		G	G	F	G	G	G
Linseed Oil	G	G	G	G	G	G	G	G	G	G
Lube Oil	G	G	G	G	G	G	F	G	G	G
Methyl Alcohol - Methanol	G	G	G	G	G	G	G	G	G	G
Methyl Amyl Alcohol	G	G			G	F		F	G	
Methyl Amyl Acetate	G	G			G	F		F	G	
Methyl Acetate	G	G	G	G	G	F		F	G	
Methyl Chloride	F	F	F	F	G	F	F	F	G	
Methyl Ether	G	G			G	F		F	G	
Methyl Ethyl Ketone	G	G	G	G	G	F	F	F	G	F
Methyl Isobutyl Ketone	G	G	G	G	G	F	F	F	G	F
Methyl Propyl Ketone	G	G	G	G	G	F		F	G	F
Methylene Chloride	F	G	G	G	G	F		F	G	
Milk	G	F	F	F	G	G	G	G	G	G
Mineral Oils	G	G	G	G	G	G	F	F	G	G
Molasses	G	G	G	G	G	G		G	G	G
Naptha	G	G	G	G	G	G	F	F	G	G
Naphthalene	G	G	G	G	G	F	F	F	G	
Naptha Solvents	G	G	G	G	G	G	F	F	G	G
Natural Gas	G	G	G	G	G	G	F	G	G	G
Nitric Acid - (Conc.)	F	F	F	F	G	F	F	F	G	
Nitric Acid, Crude	F	F	F	F	G	F	F	F	G	
Nitric Acid, Diluted	F	F	F	F	G	F	G	F	G	
Nitrobenzene	G	G	G	G	G	F	G	F	G	
Nitrobenzene	G	G	G	G	G	F	G	F	G	
Nitromethane	G	G	G	G	G	F	G	F	G	
Nitropropane	G	G	G	G	G	F	G	F	G	
Nitrogen Fertilizers	G		G	G	G	G		G	G	G
Octyl Alcohol	G	G			G	F		G	G	G
Olive Oil	G	G			G			G	G	G
Oleic Acid	G	F	F	F	G	F	G	G	G	
Organic Fruit Juices	G	F	F	F	G	F	G	F	G	
Palm Oil	G	G	F	F	G			G	G	
Paraffin Oil	G		G	G	G			G	G	
Peanut Oil	G	G	F	F	G			G	G	
Pentane	G	G	G	G	G	G		G	G	G
Perchloroethylene	G	G	G	G	G				G	
Petroleum Ether	G	G	G	G	G	G	F	F	G	G
Petroleum Naptha	G	G	G	G	G	G		F	G	G
Petroleum Oils	G	G	G	G	G	G	F	G	G	G
Petroleum Solvents	G	G	G	G	G	G		F	G	G
Phenol	G	F	F	F	G	F	G	F	G	
Phosphoric Acid, Crude	F	F	F	F	G	F	G	F	G	
Phosphoric Acid, Pure 45%	F	F	F	F	G	F	G	F	G	
Pine Oil	G	G			G	F	F	F	G	
Potassium Hydroxide	F	F	F	G	G	F	G	G	G	
Propylene	G	G	G	G	G	F	F	F	G	
Propane	G	G	G	G	G	G	F	G	G	G
Propionic Acid	G	G	F	F	G	F	F	F	G	
Propyl Alcohol, Propanol	G	G	G	G	G	G	G	G	G	G
Propylene Glycol	G	G		G	G	G	G		G	G
Prodylene Oxide	G	G	G	G	G				G	

FLUID	METAL					SEAL MATERIAL				
	ALUMINUM	BRONZE	IRON	STEEL	ST. STEEL	BUNA	BUTYL	NEOPRENE	TEFLON	VITON
Rapeseed Oil	G	G			G			G	G	
Sewage	G		G		G	G	F	F	G	G
Skydrol		G			G	G			G	G
Sodium Bicarbonate	G	G	F	F	G	G	G	G	G	G
Sodium Bisulphite	F	F	P	P	G	G	G	G	G	G
Sodium Carbonate	F	F	G	G	G	G	G	G	G	G
Sodium Chloride	F	F	G	G	G	G	G	G	G	G
Sodium Cyanide	P	P	G	G	G	G	G	G	G	G
Sodium Hydroxide	P	P	G	G	G	F	G	F	G	
Sodium Hypochlorite	P	P	P	P	G	F	F	F	G	
Sodium Metaphosphate	F	F	F	F	G	G	G	F	G	G
Sodium Nitrate	G	F	G	G	G	G	G	F	G	G
Sodium Perborate	G	F	F	G	G	G	G	G	G	G
Sodium Peroxide	G	F	F	F	G	F	G	F	G	
Sodium Phosphate, Mono-Basic	G	F	F	F	G	G	G	G	G	G
Sodium Phosphate, Di-Basic	F	F	F	F	G	G	G	G	G	G
Sodium Phosphate, Tri-Basic	F	F	G	G	G	G	G	G	G	G
Sodium Silicate	P	F	G	G	G	G	G	G	G	G
Sodium Sulphate	G	G	G	G	G	G	G	G	G	G
Sodium Sulphide	P	P	G	G	G	G	G	G	G	G
Sodium Thiosulphate	G	F	F	F	G	G	G	G	G	G
Soya Bean Oil	G	G	F	F	G	G	G	G	G	G
Stoddard Solvent	G	G	G	G	G	G	P	F	G	G
Styrene	G	G	G	G	G	P	P	P	G	
Sugar	G	G			G		G	G	G	
Sulphur, Dry	G	P	G	G	G	F	F	F	G	
Sulphur, Chloride	P	P	F	F	F	F	P	F	G	
Sulphuric Acid - 10% Cold	P	P	P	P	G	G	G	G	G	G
Sulphuric Acid - 10% Hot	P	P	P	P	F	G	G	G	G	G
Sulphuric Acid - 10-75% Cold	P	P	P	P	F	F	G	F	G	
Sulphuric Acid - 10-75% Hot	P	P	P	P	F	F	G	F	G	
Sulphuric Acid - 75-95% Cold	P	P	G	G	G	F	G	F	G	
Sulphuric Acid Fuming	P	P	G	G	F	P	P	P	G	
Sulphuric Acid Fuming Hot	P	P	G	G	F	P	P	P	G	
Synthetic Lubricants		G			G	F	P	F	G	G
Tar	G	G	G	G	G	G	P	G	G	G
Tetraethyl Lead		G			G				G	
Toluene - Toluol	G	G	G	G	G	G	P	G	G	G
Trichloroethylene	G	G	G	G	G	P	P	P	G	
Tung Oil	G	G	F	F	G	G	G	G	G	G
Turbine Oil					G	G		G	G	G
Turpentine	G	F	F	F	G	G	P	F	G	G
Varnish	G	G	F	F	G	G	P	G	G	G
Varsol	G	G	G	G	G				G	
Vegetable Oils	G	G	G	G	G	G	G	G	G	G
Water, Fresh	G	F	G	G	G	G	G	G	G	G
Water, Sea	F	F	F	F	G				G	G
Xylene - Xylol	G	G	G	G	G	P	P	P	G	

July 23, 1985

Norlite Corp.
628 S. Saratoga Street
Cohoes, NY 12047

ATTENTION: K.D. Hedges

Dear Mr. Hedges:

The Poly-America 40 mil High Density Polyethylene installed for your "low grade fuel" system was installed following the manufacturers installation procedures. Also, seam testing was performed in accordance with the American Society for Testing and Materials Standard D4437-84. All flat seams were vacuum checked.

If I can be of any further assistance, please let me know.

Sincerely,

Donald J. Kuhn
President
SLC CONSULTANTS/CONSTRUCTORS, INC.

DJK/rs

SLC Consultants/Constructors, Inc.

September 23, 1985

Norlite Corp.
628 So. Saratoga Street
Cohoe, NY 12047

ATTENTION: Mr. Hedges

Dear Mr. Hedges:

In response to your inquiry I am presenting the following information:

1. The personnel that have been working at your site were either Kenneth W. Kuhn or Wayne S. Less. Mr. Kuhn has been installing synthetic liners since 1978 and Mr. Less since 1980. Some of the projects are depicted on the enclosed sheets. Both men have millions of square feet of installation experience. Both are college graduates with extensive construction experience.
2. The flat welds were performed using a Leister Automatic Hot Air Welding machine, X-10. A picture is attached. Please note that there is no operating manual available from the manufacturer. This is very unusual but true. The Leister X-10 is the same machine that was used to seal the High Density Polyethylene liner at the Love Canal in 1984. In fact, one of our machines was rented to the contractor.
3. Any repairs or penetrations were done with a Wegener "WEG12M" extrusion welder. The operating manual is attached.
4. Seam testing was performed by using a vacuum box in accordance with ASTM D4437-84, copy attached.
5. The liner used was supplied by Poly-America, Inc. A brochure is attached. Please note on the second page the picture of the Leister X-10 welder. The thickness of the sheet supplied was 40 mil.

If any more details are required, please contact me.

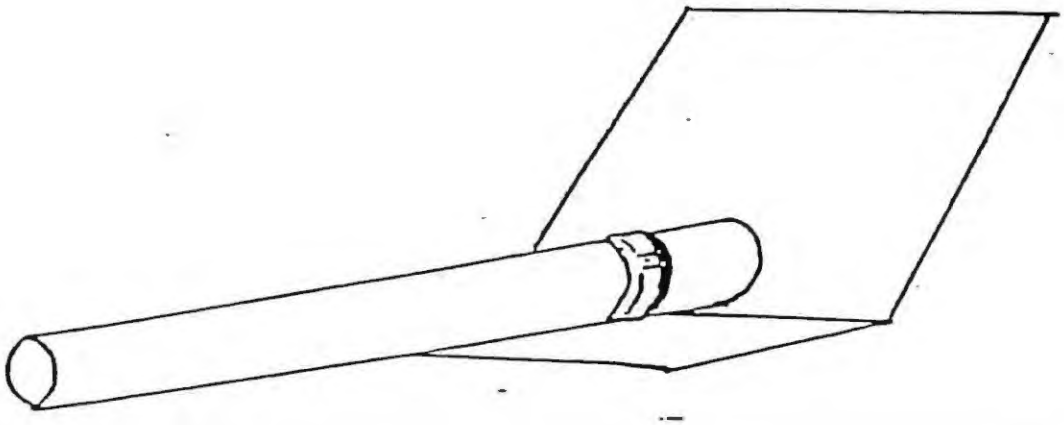
Sincerely,

Donald J. Kuhn
President
SLC CONSULTANTS/CONSTRUCTORS, INC.

DJK/rs
Enc.

Figure D-7 continued

PIPE PENETRATION DETAILS



A prefabricated boot is slipped over penetration pipe. The base sheet is welded to the HDPE liner with a Wegener Fusion Welding Gun. The boot is strapped to pipe with a butyl seal and 3/4" stainless steel band.

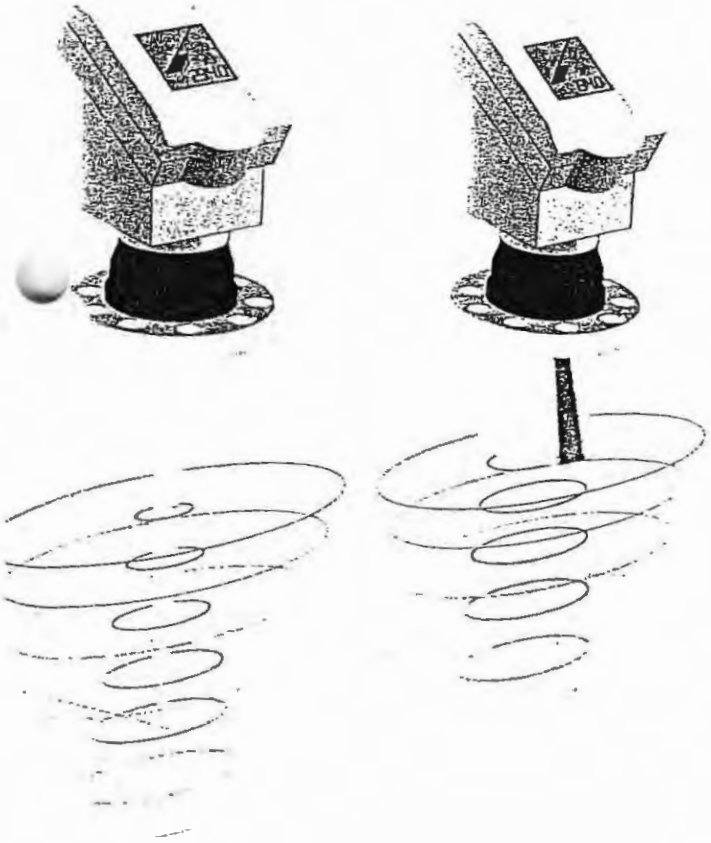
All work done by experienced liner installation workers under close supervision.

Norlite Corp.
628 S. Saratoga St.

VEGAPULS Radar Level Sensors

Figure D-8

Ohmart/VEGA offers the widest variety of radar gauges on the market. The VEGAPULS 50 Series is a new generation of loop powered, low-cost level measurement sensors that are designed for use in simple measurement environments. The VEGAPULS 56 HT with its unique ceramic antenna makes radar level measurement possible in high temperature applications. The VEGAPULS 81, used in conjunction with advanced EchoFox™ software, is designed for use in heavily agitated process vessels. With this large selection of radar gauges, designed for a vast array of process applications, Ohmart/VEGA excels in providing customers with optimal solutions to their level and specialty measurement applications.



Microwave pulse signal transmitted to product surface.

Reflected pulse signal returned from product surface to sensor antenna.

Principle of Operation

Pulse
The sensor transmits energy in the form of microwave pulses. These pulses are directed toward a specific target that reflects the energy back to an antenna.

Target
The amount of energy that returns to the antenna depends on the reflective properties of the material being measured. Reflectivity can be determined by examining two characteristics, conductivity and dielectric constant (DK).

Return to the Antenna
The transit time of the microwave pulse that returns to the antenna is measured and used to calculate the distance to the target.

Reflectivity
Conductive products such as water, acids, etc., have very good reflectivity and can be measured regardless of the DK value. For non-conductive materials, the DK value alone determines the reflectivity. Materials with a low DK absorb a large portion of the microwaves transmitted by the radar sensor, thus reducing [illegible] antenna.

Figure D-8 continued

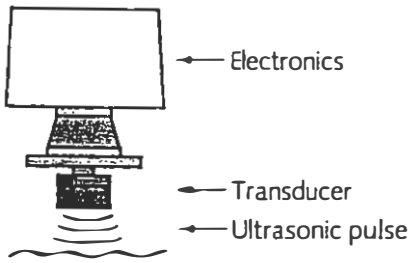
Ultrasonic continuous level measurement

One of 12 Ohmart/VEGA advanced technologies

The VEGASON ultrasonic transducers and electronics represent one of twelve technologies available from Ohmart/VEGA for level detection and continuous measurement. Given the parameters of a level problem it is often the best technology that can be applied relative to both performance and economics. Other Ohmart/VEGA technologies include miniature and point level ultrasonics, nuclear, capacitance, pulse radar, microwave barrier, vibration, hydrostatic, electromechanical, conductive, and total interface profile. The quality of our range of VEGASON ultrasonic level transmitter models is attested by thousands of successful applications worldwide, especially in the measurement of difficult solids, granules, and powders.

Ultrasonic measuring principles

VEGASON ultrasonic transducers are located at the top of the tank or silo. Piezoelectric high-performance crystals are used within the transducer. Short ultrasonic pulses are emitted to the product surface. The pulses reflected by the product are received by the transducer operating as transmitter and receiver. The time taken to receive the reflected pulse is measured by the electronics, and is linear with and proportional to the distance between the face of the transducer and the product, provided that the density of the airspace remains constant. The reflection time is then converted into a level value for display/output purposes. Due to the use of high-energy pulses non-contact measurement of liquids and solids is possible with this continuous measuring principle.



19 models *new short and long range options*

Ohmart/VEGA offers nineteen ultrasonic VEGASON models covering ranges from 12 inches to 196 feet. In addition, Ohmart offers a wide range of miniature and standard ultrasonic gap switches, transducers, and transmitters, which completes the product offering for measuring levels of liquids and solids from a few milimeters in vials to 196 feet for large storage tanks (see Ohmart ultrasonic catalog). This broad range of products provide users with an ideal model for each application. ..... performance and significant cost benefits for many applications where more powerful transducer systems would normally be required.

Figure D-9 MINIMUM SHELL THICKNESS (FROM ASME SECTION VIII)

For 15 psig internal pressure

Shall circumferential stress, UG-27(c)(1)

Allowable stress value
S = 15,000 psi

Joint Efficiency
E = 0.60 (table UW-12 for Type No. (3) butt joint)

$$t = \frac{PR}{SE - 0.6P}$$

$$t = \frac{15\,(116.6875)}{15{,}000\,(0.6) - 0.6\,(15)} = 0.195 \text{ in}$$

Measured Shell Thickness

Tank No.	Thickness in Inches
335-300	0.394
335-400	0.381
335-500	0.387
335-600	0.384

Estimated Service Life

Estimated corrosion rate = 0.011 inches/year

$$\text{Estimated service life} = \frac{\text{Measured thickness - Minimum thickness}}{\text{Corrosion rate}}$$

Tank No.	Estimated Service Life in Years
335-300	18.1
335-400	16.9
335-500	17.5
335-600	17.2

carboline®

Figure D-10

CARBOMASTIC® 15

350 HANLEY INDUSTRIAL COURT • ST. LOUIS, MO. 63144 • 314-644-1000

SELECTION DATA

GENERIC TYPE: High build, modified aluminum epoxy mastic. Part A and Part B mixed prior to application.

GENERAL PROPERTIES: Self priming, high build coating with excellent adhesion to rusted steel and most aged paints. Over ten years proven field performance in corrosive environments. Consult Carboline for case history information. Only a single coat required for most applications. Hand or power tool cleaning is acceptable surface preparation for most surfaces. For severely corroded surfaces, see surface preparation instructions for non-immersion service on back page.

RECOMMENDED USES: Particularly recommended for repainting rusty steel and for upgrading old, deteriorated coatings. Also used where hand cleaned steel is being coated for the first time. Ideal for metal buildings, fences, piping, process equipment, highway bridges and exposed structural steel.

NOT RECOMMENDED FOR: Immersion service in acids, alkalies or solvents.

CHEMICAL RESISTANCE GUIDE:

Exposure	Immersion	Splash and Spillage	Fumes
Acids	NR	Fair	Very good
Alkalies	NR	Good	Excellent
Solvents	NR	Good	Excellent
Salt Water	Excellent*	Excellent	Excellent
Water	Excellent*	Excellent	Excellent

*Discolors to gray.

TEMPERATURE RESISTANCE: (non-immersion)
Continuous: 180°F (82°C)
Non-continuous: 250°F (121°C)

FLEXIBILITY: Excellent WEATHERING: Excellent

ABRASION RESISTANCE: Fair

SUBSTRATES: Rusty steel, aged galvanized steel, or others as recommended.

TOPCOAT REQUIRED: Normally none, but can be topcoated with most generic types. Some alkyd or oil modified paints exhibit poor adhesion. Consult Carboline Technical Service for specific recommendations.

COMPATIBILITY WITH OTHER COATINGS: May be used over most generic types of coatings which are tightly adhering and properly prepared; inorganic and organic zinc primers. A test patch is recommended for use over existing coatings.

SPECIFICATION DATA

THEORETICAL SOLIDS CONTENT OF MIXED MATERIAL:

	By Volume
Carbomastic 15	90% ± 2%

RECOMMENED DRY FILM THICKNESS PER COAT: (Measured in addition to the rust or steel substrate) 5 mils (125 microns) minimum. For severe exposures 7 mils (175 microns) minimum is recommended.

THEORETICAL COVERAGE PER MIXED GALLON*:
1444 mil sq. ft. (36.0 sq. m/l @ 25 microns)
289 sq. ft. at 5 mils (7.2 sq. m/l @ 125 microns)

*NOTE: Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

SHELF LIFE: 24 months minimum.

COLORS: Aluminum only. May bronze under certain application and curing conditions. Aluminum color will return upon weathering. In order to obtain a highly reflective, uniform appearance, a topcoat of Carboline 1265 may be applied.

GLOSS: Not applicable.

ORDERING INFORMATION

Prices may be obtained from Carboline Sales Representative or Main Office. Terms – Net 30 days.

SHIPPING WEIGHT:

	2's	10's
Carbomastic 15	25 lbs. (11.4 kg)	119 lbs. (54.1 kg)
Carbomastic Thinner	8 lbs. in 1's (3.6 kg)	40 lbs. in 5's (18.2 kg)

FLASH POINT: (Pensky-Martens Closed Cup)

Carbomastic 15 Part A	200°F (93°C)
Carbomastic 15 Part B	94°F (34°C)
Carbomastic Thinner	73°F (23°C)

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...the technical data contained herein are true and accurate at the date of issuance and are subject to change without ...

APPLICATION INSTRUCTIONS

Figure D-10 continued

ese instructions are not intended to show product recommendations for specific service. They are issued as an aid in determining correct surface preparation, mixing instructions, and application procedure. It is assumed that the proper product recommendations have been made. These instructions should be followed closely to obtain the maximum service from the materials.

SURFACE PREPARATION: Remove any oil or grease from surface to be coated with clean rags soaked in Carboline Thinner #2 or toluol.

Steel: For water immersion service, dry abrasive blast to a Near White Metal Finish in accordance with SSPC-SP 10 to a degree of cleanliness in accordance with NACE #2 to obtain a 1-3 mil (25-75 micron) blast profile.

For non-immersion service, clean per Power Tool or Hand Tool in accordance with SSPC-SP 3 or SSPC-SP 2, respectively, to a cleanliness defined by SSPC-St 2 pictorial standards. Alternatively, for more severe environments, dry abrasive blast per SSPC-SP 7 (brush-off blast) to a degree of cleanliness defined by SSPC-Sa 1 pictorial standards. Water blasting is an acceptable means of preparing the surface to a cleanliness defined by SSPC-St 2.

MIXING: Mix separately, then combine and mix in the following proportions:

	2-Gal. Kit	10-Gal. Kit
Carbomastic 15 Part A	1 Gal.	5 Gals.
Carbomastic 15 Part B	1 Gal.	5 Gals.

Thin up to 25% by volume with Carbomastic Thinner.

'T LIFE: Four hours at 75°F (24°C) when thinned 25%, ∕o hours at 75°F unthinned and one hour at 90°F (32°C) unthinned. Pot life ends when the coating becomes too viscous to use.

APPLICATION TEMPERATURES:

	Material	Surfaces
Normal	65-85°F (18-29°C)	65-85°F (18-29°C)
Minimum	50°F (10°C)	40°F (4°C)
Maximum	90°F (32°C)	130°F (54°C)

	Ambient	Humidity
Normal	65-85°F (18-29°C)	35-80%
Minimum	40°F (4°C)	0%
Maximum	100°F (38°C)	95%

Do not apply when the surface temperature is less than 5°F (2°C) above the dew point.

Special thinning and application techniques may be re-ɔ-red above or below normal conditions.

SPRAY: Use adequate air volume for correct operation.

Use a 50% overlap with each pass of the gun. On irregular surfaces, coat the edges first, making an extra pass later.

NOTE: The following equipment has been found suitable, however, equivalent equipment may be substituted.

Conventional: Use 1/2" minimum I.D. material hose. Hold gun 8-10 inches from the surface and at a right angle to the surface.

Mfr. & Gun	Fluid Tip	Air Cap
Binks #18 or #62	67	67B
DeVilbiss P-MBC or JGA	D	64
	Approx. .086" I.D.	

Airless: Use 3/8" minimum I.D. material hose. Hold gun 12-14 inches from the surface and at a right angle to the surface.

Mfr. & Gun	Pump*
DeVilbiss JGB-507	OFA-514
Graco 205-591	President 30:1 or Bulldog 30:1
Binks Model 500	Mercury

*Teflon packings are recommended and available from pump manufacturer.

Use a .023 to .027" tip with 2400 psi.

BRUSH OR ROLLER: Use clean, short, natural bristled brush or medium nap roller. Work coating into all irregularities. Brush or roller application may result in a non-uniform bronze color.

DRYING TIMES:

Between coats:	6 days at 40°F (4°C)
	3 days at 60°F (16°C)
	24 hours at 75°F (24°C)
	18 hours at 90°F (32°C)
Final cure:	20 days at 40°F (4°C)
	10 days at 60°F (16°C)
	5 days at 75°F (24°C)
	3 days at 90°F (32°C)

CLEANUP: Use Carboline Thinner #2 or xylol.

STORAGE CONDITIONS:
Temperature: 45-110°F (7-43°C) Humidity: 0-100%

CAUTION: CONTAINS FLAMMABLE SOLVENTS. KEEP AWAY FROM SPARKS AND OPEN FLAMES. IN CONFINED AREAS WORKMEN MUST WEAR FRESH AIRLINE RESPIRATORS. HYPERSENSITIVE PERSONS SHOULD WEAR GLOVES OR USE PROTECTIVE CREAM. ALL ELECTRICAL EQUIPMENT AND INSTALLATIONS SHOULD BE MADE AND GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. IN AREAS WHERE EXPLOSION HAZARDS EXIST, WORKMEN SHOULD BE REQUIRED TO USE NONFERROUS TOOLS AND TO WEAR CONDUCTIVE AND

Figure D-11

CLAY LINER FOR SOLVENT FUEL STORAGE TANK AREA

Specifications

1.0 SITE PREPARATION

a. Areas to receive liner installation shall be cleared of brush, stumps, trees, rocks and other obstructions.

b. Where present, topsoil shall be stripped from cleared areas and stored at the direction of the Owner. Topsoil shall be kept clean and free of subsoil, debris and stones larger than two inches.

c. Unsuitable material, including brush, trees, stumps, etc., shall be removed from the site for disposal in accordance with state and local laws.

d. Excess soil and rock material may be used for regrading as directed by the Engineer.

e. The solvent fuel tank storage area shall be graded as shown on the plans and sections, and as directed by the Engineer.

2.0 SOIL LINER

Furnish all labor and materials to install a low permeability liner in the solvent fuel storage tank area.

a. The liner shall consist of two (2) synthetic membranes placed above a one foot thick layer of clay material. A layer of 6" - 12" of compacted clay and sand will be installed between the two synthetic membranes.

b. The clay material shall have a maximum permeability of 1×10^{-7} cm/sec. The bottom one foot of clay material, below the polyethylene sheet, will be placed in 6 inch compacted lifts. Compaction shall be to the degree necessary to obtain the required permeability as demonstrated by laboratory testing of the chosen liner material. The upper one foot of clay

above the synthetic liner may be placed in a one foot thick layer, and shall be sloped toward the adjacent collection basin.

c. In the case of the cohesive brown clay and silt material from the clay liner borrow area located on the Norlite property, the required compaction shall be 95 percent of Modified Proctor Density (ASTM D 1557). (To be verified by laboratory testing)

d. The synthetic membranes shall consist of 40 mil minimum thickness, high density polyethylene (HDPE), or equivalent material resistant to organic solvents. The synthetic membranes shall be installed with no tears or punctures.

e. A graded, granular drainage blanket shall be installed directly above the low permeability liner material. The graded granular materials shall conform to the gradation requirements tabulated below.

GRADATION REQUIREMENTS
DRAINAGE BLANKET

COARSE

	Sieve Size	Percent Passing by Weight
Crushed Stone or Screened Gravel NYSDOT size No. 1) or (ASTM Size No. 57)	1 - inch	100
	1/2 - inch	90-100
	1/4 - inch	0-15
	1-1/2 - inch	100
	1 - inch	95-100
	1/2 - inch	25-60
	No. 4	0-10
	No. 8	0-5

FINE

Filter Sand	1/4 - inch	100
	No. 50	0-35
	No. 100	0-10
	No. 200	0-2

Figure D-12

Stetson-Dale

1225 Peoples Avenue, Troy, NY 12180 / (518) 274-8663

PIPING SPECIFICATIONS

SPEC. LGF				PIPING MATERIAL Carbon Steel
ISSUE 1		REV. 0		SERVICE LIMITS 150 psig @ 300°F
ITEM	DIAMETER	CONN	CLASS	MATERIAL SPECIFICATION
PIPE	½ - 1½" 2 - 6"	S.E. Plain	Sch 80 Sch 40	Seamless carbon steel per ASTM A106 or A53 Gr. B
FITTING	½ - 1½" 2 - 6"	S.E. B.W.	2000# Sch 40	Forged carbon steel ASTM A105 Seamless carbon steel ASTM A234 or A106
FLANGES	½ - 1½"	Slip-on	150#	Forged carbon steel ASTM A105
UNION	None			
BOLTING	Bolt Studs - cadmium plated carbon steel A307 Gr. 2 Nuts - cadmium plated carbon steel A563 Gr. A			
GASKETS	Compressed asbestos Garlock Style 8748			
SEALANT	Teflon tape for threaded connections			

STATE OF NEW YORK
DALE ENGINEERING COMPANY INCORPORATED
LICENSED PROFESSIONAL ENGINEER
NO. 076

Figure D-13

Table
Page D-63 of D-81 Pages

Basis for Choice of Gasketing

O = ...erred
O = ...factory

PRODUCT	BASIC COMPOSITION	STYLE	MEDIA: Pressure, Temperature	Acids: Mild	Acids: Corrosive	Alkalies: Mild	Alkalies: Corrosive	Gases: Air & Dry Inerts	Gases: Steam, Organic	Gases: Extreme	Oils: Petroleum	Oils: Synthetic, Organic	Solvents: Aromatic (Benz., etc.)	Solvents: Aliphatic (Hex., etc.)	Solvents: Chlorinated	Solvents: Inorganic (Acids, etc.)	Water & Salt Solutions	Food Prep. & Sanitation Requirements	COMMENTS
Compressed Asbestos	White Asbestos, SBR Binder	900/7735	NA	O		O	O	O	●	•							●	●	O	Prime General Service
Compressed Asbestos	White Asbestos, SBR Binder	7006/7819	NA	O		O	O	O	●								O	O		Medium Grades
Compressed Asbestos	White Asbestos, SBR Binder	7021	NA	O		O	O	O	O		●						O	O		Hot Oil Resistant
Compressed Asbestos	White Asbestos, Neoprene Binder	7228	NA	O		O	O	O	O		●		O	●	O	O	O	O		Prime for Oils
Compressed Asbestos	White Asbestos, Neoprene Binder	9057	NA	O		O	O	O	O		O					●	O	O		Prime for Refrigerants
Compressed Asbestos	White Asbestos, Nitrile Binder	8748	NA	O		O	●	O	O		●	●	●	O	●		O	O		General Solvent Service
Compressed Asbestos	Blue Asbestos, SBR Binder	7705	NA	O	O	O	O	O	O		O						O	O		Acid Resistant
Compressed Asbestos	Wire Inserted, White Asbestos, SBR Binder	1000	NA	O		O	O	O	O								●	●		Heavy Duty Steam
Homogeneous Rubber	Natural Rubber	6023	35	O		O		O										O	●	Soft Tan Gum Rubber
Homogeneous Rubber	SBR	152	50	O		O		O										●		
Homogeneous Rubber	SBR	91	60	O		O		O										●		
Homogeneous Rubber	SBR	22	80	O		O		O										●	●	Prime "Red Rubber"
Homogeneous Rubber	SBR	353	80	O		O		O										O		
Homogeneous Rubber	Neoprene	8312	50	O		O		O			O			O		O		O		
Homogeneous Rubber	Neoprene	7986	60	O		O		O			●			●		O		O		
Homogeneous Rubber	Neoprene	8639	70	O		O	O	O			O	O		O		O		O		
Homogeneous Rubber	Neoprene	7797	80	O		O	O	O		(	●			O		●		O		
Homogeneous Rubber	Nitrile	9122	60	O		O	O	O			●		●	●				O		
Homo...eous Rubber	Nitrile	8495	70	O		O	O	●			●	O	●	●				O		
Homo...eous Rubber	Nitrile	8459	80	O		O	O	●			●	O	●	●				O		
Homo...eous Rubber	EPDM	9712	50	●		●	●	●									O	O		Excellent Ozone Resistance
Homo...eous Rubber	EPDM	8314	60	●		●	●	●									O	O		Excellent Ozone Resistance
Fiberi...ed Rubber	SBR Rubber, 10-oz. Cotton Chafer	19	80					O										●		1/32", uses 5-oz. Cotton Sheeting
Dupl...m	SBR Rubber, 20-oz. Hose Duck	619	50					O										●		Heavy Cotton Reinforcement
Dupl...m	Neoprene, 20-oz. Hose Duck	7992	50					●										O		Heavy Cotton Reinforcement
Dupl...m	Neoprene, 13-oz. Nylon	8798	70					●			O							O		Prime General Duty
Dupl...m	Nitrile, 4.5-oz. Nylon	9205	50					O			●	O						O		Very Sensitive
Woven ...sbestos	White Asbestos, White SBR Impregnated	605	NA	O		O		O									●	O		Soft and Conforming
Vege...e Fiber	Cellulose Fiber, Cork, Glue, Glycerine	660	NA					O			●	O	O	O	O					Soft, Resilient, Non-water
Vege...e Fiber	Cellulose Fiber, Glue, Glycerine	681	NA					O			●	O	O	O	O					Firm, Non-water
PTFE	PTFE plus Inert Filler	GYLON	NA	O	●	●	●	O	●	●	O	O	●	●	●	O	O	O	●	Low Cold Flow
Flexible ...Graphite	Pure Graphite	GRAPH-LOCK	NA	O	●	●	●	●	O		●	●	●	●	●	●	●	O		Very High Temperatures
Fiberglass ...ss	Fiberglass, Elastomer	THERMO-SIL	NA	O		O		●									●	●		Soft and Conforming

...o Compressed Asbestos sheet has never been officially approved by any governmental or ...pendent laboratory for oxygen service. Despite the fact that we have many satisfied customers ...ved this product for years in oxygen service, we cannot guarantee its fitness for such use.

NA=not applicable

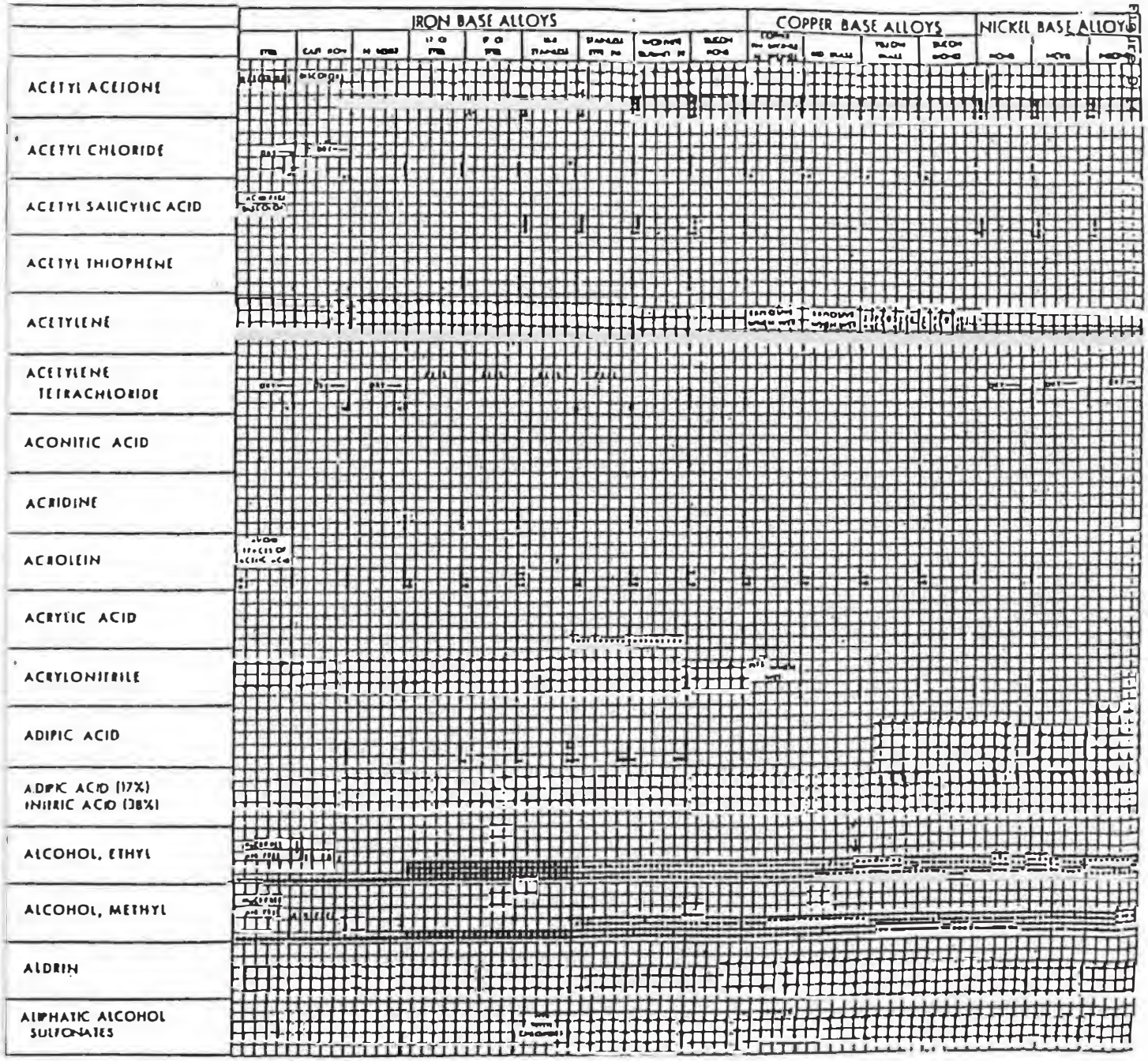
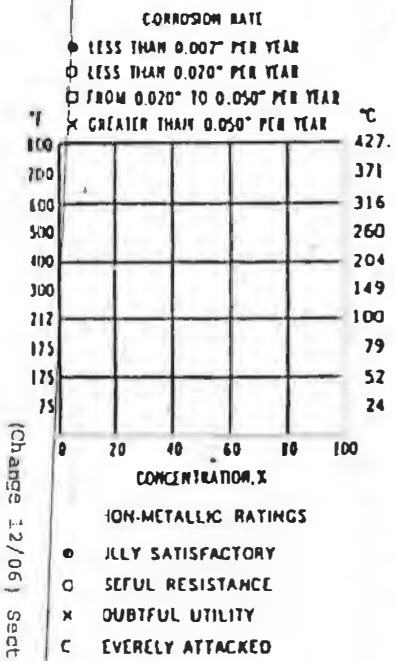


Figure D-X

CORROSION RATE
- LESS THAN 0.002" PER YEAR
- LESS THAN 0.020" PER YEAR
- FROM 0.020" TO 0.050" PER YEAR
- X GREATER THAN 0.050" PER YEAR

°F: 800, 700, 600, 500, 400, 300, 212, 175, 125, 75
°C: 427, 371, 316, 260, 204, 149, 100, 79, 52, 24
0, 40, 60, 80, 100
CONCENTRATION, %

N-METALLIC RATINGS
- ● LY SATISFACTORY
- ○ FUL RESISTANCE
- × IBTFUL UTILITY
- □ ERELY ATTACKED



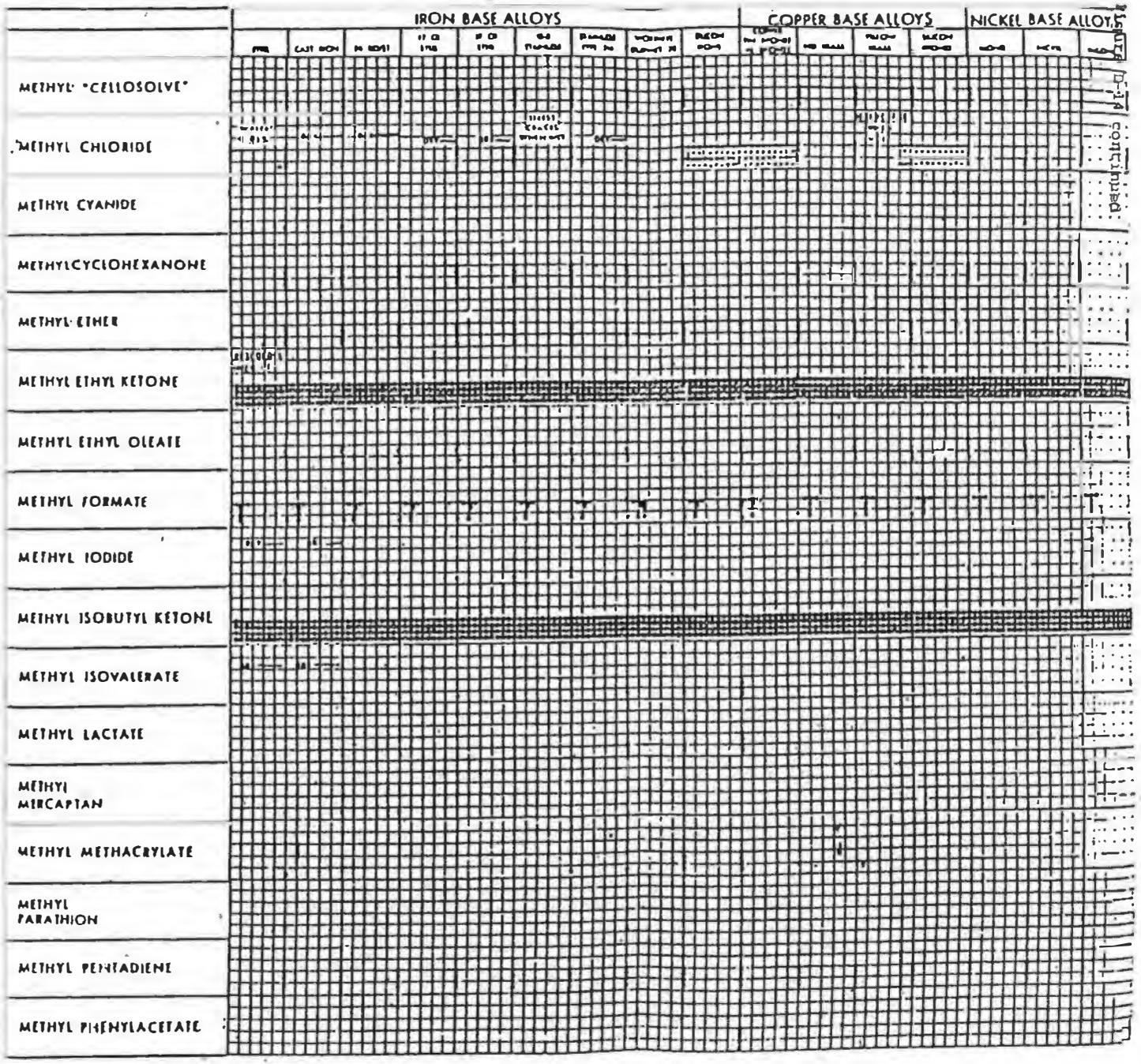
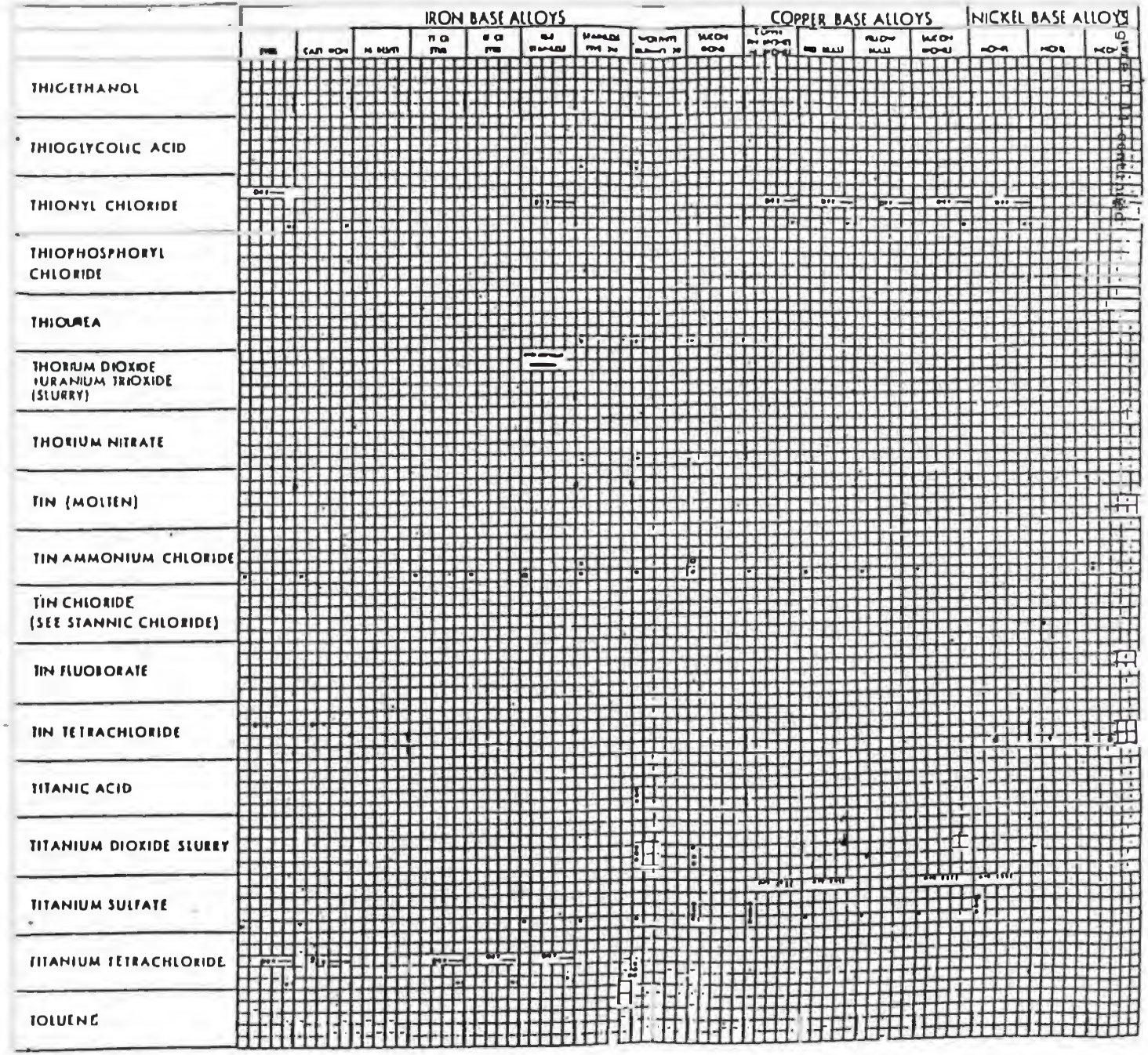
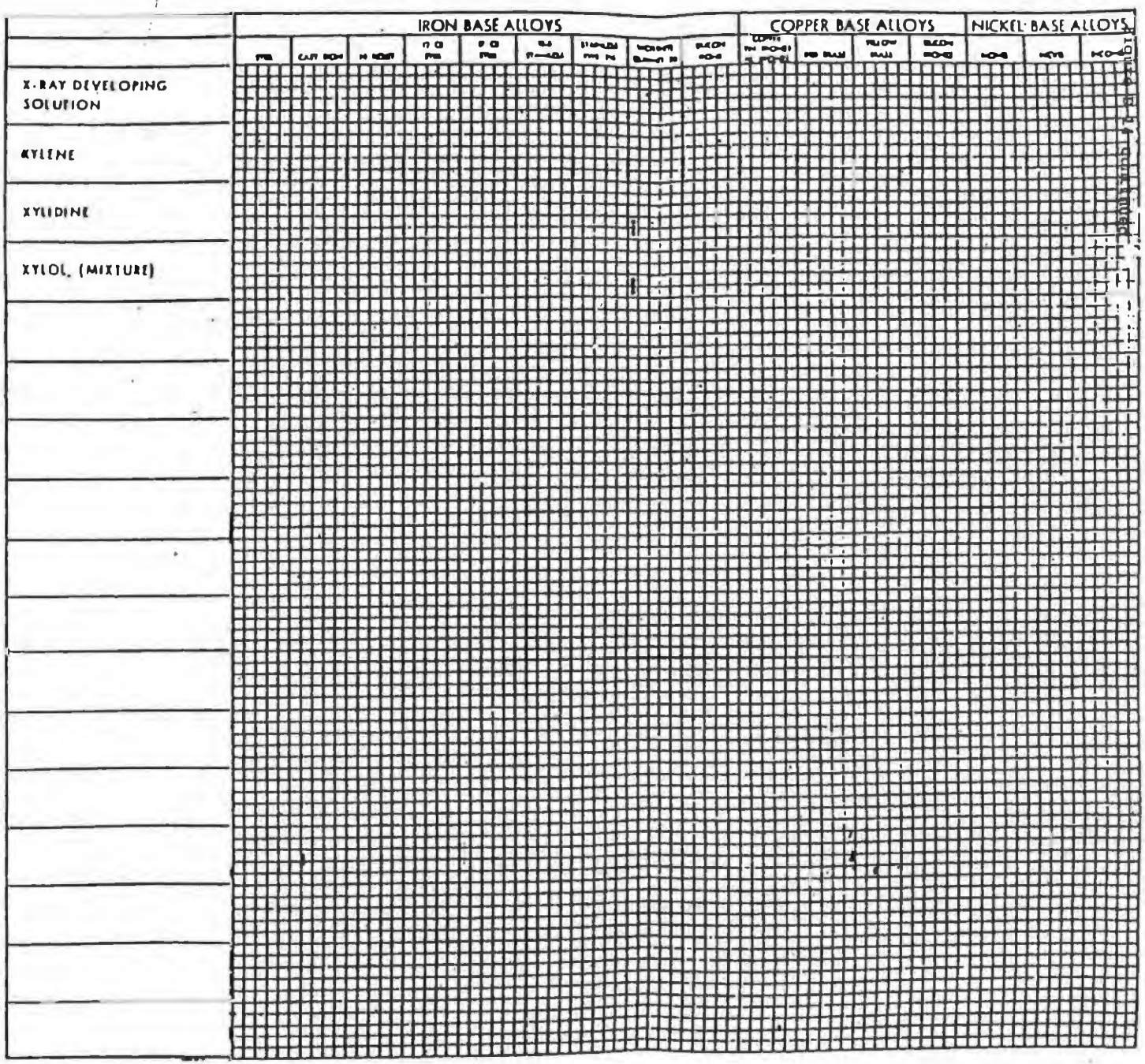


Figure D-14 continued


IRON BASE ALLOYS
COPPER BASE ALLOYS
NICKEL BASE ALLOYS
THIOETHANOL
THIOGLYCOLIC ACID
THIONYL CHLORIDE
THIOPHOSPHORYL CHLORIDE
THIOUREA
THORIUM DIOXIDE +URANIUM TRIOXIDE (SLURRY)
THORIUM NITRATE
TIN (MOLTEN)
TIN AMMONIUM CHLORIDE
TIN CHLORIDE (SEE STANNIC CHLORIDE)
TIN FLUOBORATE
TIN TETRACHLORIDE
TITANIC ACID
TITANIUM DIOXIDE SLURRY
TITANIUM SULFATE
TITANIUM TETRACHLORIDE
TOLUENE
CORROSION RATE
● LESS THAN 0.002" PER YEAR
○ LESS THAN 0.020" PER YEAR
□ FROM 0.020" TO 0.050" PER YEAR
× GREATER THAN 0.050" PER YEAR
°F
°C
427
371
316
260
204
149
100
79
52
24
0
20
40
60
80
100
CONCENTRATION, %
ION-METALLIC RATINGS
● JLLY SATISFACTORY
○ SEFUL RESISTANCE
× OUBTFUL UTILITY
□ EVERELY ATTACKED



CORROSION RATE

- ● LESS THAN 0.002" PER YEAR
- ○ LESS THAN 0.020" PER YEAR
- □ FROM 0.020" TO 0.050" PER YEAR
- × GREATER THAN 0.050" PER YEAR

°F	°C
800	427
700	371
600	316
500	260
400	204
300	149
212	100
175	79
125	52
75	24

0 20 40 60 80 100

CONCENTRATION, %

IN-METALLIC RATINGS

- ● LY SATISFACTORY
- ○ EFUL RESISTANCE
- × OBTFUL UTILITY
- □ VERELY ATTACKED

Figure D-4, Sheet 1 of 2

SPECIFICATION STANDARD
GALVANIC ANODE CATHODIC PROTECTION SYSTEM
ENGINEERING, MATERIALS AND INSTALLATION

1.0 GENERAL

Work under this section is subject to all the requirements of the Contract Documents, including the General Conditions, and Special Conditions of the Specifications.

2.0 SCOPE OF WORK

2.1 It is the intent under the conditions of this Contract that the Contractor under this section, provide the services of a NACE Corrosion Specialist for the purpose hereinafter specified. As such, said Specialist shall be considered the Contractor's Agent.

2.2 All fees and/or other charges for services rendered by the Contractor's corrosion engineering Specialist and/or firm shall be included completely and totally under this Contract.

2.3 The cathodic protection system work shall include the furnishing and installation of all electrical work, wiring, conduits, fittings, anodes, bonding, thermite brazing, holiday detection, and all other work and items required for a complete and functioning cathodic protection system with a minimum design life of 20 years. .

2.4 Cathodic protection using galvanic anodes shall be provided for underground metallic structures as follows:

2.5 The cathodic protection system shown on the drawings shall be confirmed as adequate for the soil and tank conditions by the corrosion engineering specialist.

3.0 REFERENCE STANDARDS

3.1 The cathodic protection installation shall comply with applicable requirements codes, laws and ordinances of Federal, State, and local bodies having jurisdiction; the requirements of the local power company; the electrical requirements and/or codes of insurance underwriters; the Standards of the

National Electrical Manufactures Association (NEMA); Underwriters' Laboratories (UL); the Institute of Electrical and Electronics Engineers (IEEE); the National Association of Corrosion Engineers (NACE), including applicable supplements, bulletins, and special rulings.

3.2 Where more stringent requirements than code are shown or specified, the more stringent requirements shall apply. All electrical items shall be UL listed or labeled, where such listing or labeling is obtainable.

4.0 RELATED WORK SPECIFIED ELSEWHERE

4.1 Dielectric couplings, protective pipe coating, wrapping, and patching will be provided by the Contractor.

4.2 Backfilling other than specified herein for anodes will be provided by the Contractor.

5.0 STANDARD PRODUCTS

Materials and equipment submitted for approval under this specification shall be a product of a manufacturer regularly engaged in the manufacture of the product, shall be the respective manufacturer's standard design and shall meet the requirements of the specifications.

6.0 MATERIALS AND EQUIPMENT

6.1 ANODE

6.1.1 The dimensions of magnesium anodes shall be the standard anode sizes for the weights specified. Magnesium anodes shall be Dow Galvomag and shall conform to the following specifications:

Aluminum (Al)	0.10% maximum
Manganese (mn)	0.50% to 1.30%
Zinc (Zn)	0.00
Silicon (Si)	0.00
Copper (Cu)	0.02% maximum
Nickel (Ni)	0.001% maximum
Iron (Fe)	0.03% maximum
Other Impurities - each	0.05% maximum
- total	0.03% maximum
Magnesium (Mg)	Balance

6.1.2 All anodes shall come prepackaged in special backfill material consisting of 75% ground hydrated gypsum, 20% powdered bentonite and 5% anhydrous sodium sulfate. The backfill shall have a grain size such that 100% is capable of passing through a 20 mesh screen and 50% will be retained by a 100 mesh screen. The backfill mixture shall be firmly packaged around the magnesium anode within a cotton bag by means of adequate vibration.

For standard cast ingots, the magnesium anode weight of backfill required, shall be as follows:

Magnesium Anode (in pounds)	Backfill (in pounds)	Total Weight (per Anode)
3	6	9
5	9	14
9	15	24
17	25	42
20	50	70
32	38	70
48	48	96

6.1.3 Anode lead wires shall be No. 12 AWG solid copper conductors with TW insulation. Lead wires shall be a minimum of ten feet in length.

6.1.4 Standard sized magnesium anodes shall be cast with a perforated, galvanized steel core, with the weight of the core not to exceed 0.10 pounds per linear foot. One end of the anode shall be recessed to expose the core for the lead wire connection. The lead wire shall be silver soldered to the core and the connection fully insulated by filling the recess with an electrical potting compound.

6.2 CONDUCTORS

6.2.1 All conductors shall be copper.

6.2.2 No. 12 AWG wire shall have TW insulation which complies with Federal Specification J-C-30. The contractor shall have the option of substituting polyethylene insulation for TW.

6.2.3 No. 8 AWG wire or larger shall be cathodic protection cable specifically designed for the purpose, shall comply with ASTM D 1248 and shall be insulated with high molecular weight polyethylene, type I, class C, grade 5.

6.2.4 The minimum thickness of insulation at any point shall not be less than 90 per cent of the nominal wall thickness. The wall thickness for AWG size No. 8 through No. 2 shall be 7/64" and for sizes No. 1 through No. 4/0, 8/64".

6.3 TEST STATIONS

Test Stations shall be of the flush mounted type with cast iron covers. Handley PT4R5L or approved equal are acceptable.

6.4 PERMANENT REFERENCE CELLS

Permanent reference cells shall be direct burial copper/copper sulfate electrodes for underground use, prepackaged in special backfill material and have a minimum design life of 15 years.

6.5 THERMITE BRAZING

Thermite brazing of electrical connections shall be Erico "Cadweld", or approved equal.

6.6 COATING

Coating compound shall be cold applied coal-tar base mastic or approved pipe line coating such as Royston A-51.

6.7 FLANGE INSULATION

Flange insulation shall consist of full faced, neoprene faced phenolic gaskets with full length Mylar sleeves and double, phenolic washers as manufactured by PSI or approved equal. High temperature kits shall be used if temperatures exceed 200°F

6.8 CASING SEALS

Hard rubber casings seals shall be used where the pipe passes through concrete walls. These shall be as manufactured by Thunderline Corporation or approved equal.

7.0 SUBMITTALS

7.1 SHOP DRAWINGS

Figure D-15 continued

7.1.1 As soon as practicable and within thirty (30) days after the date of receipt of notice to proceed, and before any material or equipment is purchased, the Contractor shall submit for approval a complete list, in quadruplicate, of materials and equipment to be incorporated in the work.

7.1.2 The list shall include catalog numbers, cuts, diagrams, drawings and other descriptive data as may be required by the owner. No consideration will be given to partial lists submitted from time to time. Approval will be based on the manufacturer's published ratings. Any materials and equipment listed which are not in accordance with the specification requirements will be rejected.

7.2 CERTIFICATION

7.2.1 Certification shall be submitted with the shop drawings giving the name of the firm, the number of years of experience and a list of not less than ten of the firm's cathodic protection installations, five years old or more, which have been tested and found satisfactory.

7.2.2 The installation shall be supervised by a member of the National Association of Corrosion Engineers (NACE) accredited as a Corrosion Specialist. The name and qualifications of the supervisor shall be submitted with the shop drawings.

8.0 INSTALLATION

8.1 MAGNESIUM ANODES

8.1.1 All anodes shall be magnesium and shall be installed at the locations indicated on the Drawings.

8.1.2 All anodes shall be installed in native soil, a minimum of three feet from the structure to be protected and below the center line of that structure.

8.1.3 Anode lead wires shall be thermite brazed to the structure except for test station locations where the anode lead shall terminate on a test station lug with a lead wire thermite brazed to the structure.

8.1.4 Anodes shall be backfilled with native soil - sand or rock is not permissible.

8.2 WIRING

8.2.1 Underground wires, cables, and connections shall be buried at a minimum depth of 2"0" below grade, with a 6" minimum separation from other underground structures.

8.2.2 All splices and repairs to damaged cable associated with a cathodic protection system shall be sealed against moisture penetration.

8.2.3 All wiring shall be backfilled with material free from rocks and debris which could damage the insulation.

8.3 THERMITE BRAZING

8.3.1 Thermite brazing techniques shall comply with the manufacturer's recommendations. Only proper size cartridges and welders will be permitted.

8.3.2 Prior to brazing, an area of piping three inches square shall be cleaned to bright metal with a grinder or file.

8.3.3 The slag shall be removed from the completed braze with a hammer.

8.3.4 The adequacy of each braze shall be demonstrated by gently striking the top of the connection with a hammer.

8.3.5 The cleaned piping surface, including the brazed connection and any exposed copper wire, shall be coated with a cold applied coal tar compound. Recommended coating materials are Kopper's Bitumastic #50 or Royston Handicaps.

8.4 TEST STATIONS

8.4.1 Test stations shall be provided where indicated on the Drawings and shall be installed in accordance with the details given.

8.4.2 Test leads shall be #12 AWG solid copper conductors with TW insulation.

8.4.3 Thermite brazing techniques shall comply with this specification.

8.5 BONDS

8.5.1 Electrical continuity shall be provided along all underground metallic piping to be provided with cathodic protection by installing bond cables across every underground mechanical coupling.

8.5.2 Bonding techniques shall be in accordance with the details shown on the Drawing.

8.5.3 All bond cables shall be #4 AWG stranded copper cable with high molecular weight polyethylene insulation.

8.5.4 Thermite brazing techniques shall comply with this specification.

8.6 INSULATION

8.6.1 Flange insulation shall be provided to electrically isolate portions of the pipelines.

8.6.2 Where the pipe passes through concrete walls, the wall shall be sleeved and seals shall be placed between the pipe and the sleeve to provide both electrical isolation of the piping and a moisture seal.

8.6.3 Insulating materials shall be inspected and tested by the contractor to assure the integrity of the insulating joint.

8.6.4 No metallic structures shall be permitted in contact with the electrically isolated section of underground piping.

8.7 COATING INSPECTION

8.7.1 All coatings shall be visually inspected for "holidays" and "breaks" during construction. Electrical tests shall be conducted in the field with a portable high voltage, low amperage holiday detector. Electrical field testing shall conform to the procedure outlined hereafter. The contractor shall provide the electrical inspection equipment and shall furnish an operator for the equipment.

8.7.2 The electrical test equipment shall be portable low amperage adjustable voltage, pulse-type holiday detector. The holiday detector shall be furnished with a coil spring electrode for use with large coated pipe areas and a suitable brush type electrode for smaller coated bolt and structural surfaces.

11.0 TESTING

Figure D-15 continued

11.1 The corrosion engineering specialist and/or firm shall conduct tests of the cathodic protection system after completion of the installation. Testing will be performed in accordance with accepted practices as recommended by the National Association of Corrosion Engineers.

11.1.1 All insulating fittings shall be tested to insure proper electrical isolation.

11.1.2 Structure-to-soil potential measurements shall be made at representative locations throughout the system.

11.1.3 Magnesium anode current outputs shall be recorded at all test stations in order to evaluate the system performance.

11.1.4 The cathodic protection system shall be adjusted in such a manner as to comply with the criteria for protection as given in NACE RP-01-69.

11.2 The corrosion engineering specialist shall be responsible for cooperating with owners of foreign structures in order to coordinate corrosion control measures. Joint cathodic interferences tests shall be conducted with all interested parties to insure that the subject cathodic protection system is neither adversely affecting other underground metallic structures nor experiencing detrimental effects from neighboring cathodic protection systems.

11.3 In the event that interference problems are detected, the corrosion engineering specialist shall cooperate with the companies involved until a mutually satisfactory solution is reached.

11.4 A written report shall be submitted to the contractor and shall include all test data, and analysis of the data and instructions for operation and maintenance of the cathodic protection system.

12.0 GUARANTEE

12.1 All material and equipment shall be guaranteed for a period of one year from the date of the Final Report. Upon receipt of notice from the owner of failure of any part of the system during the guarantee period, new replacement parts shall be furnished and installed by the contractor at no additional cost. This guarantee is limited to defects in workmanship and materials.

F - 8

BRADLEY ENGINEERING, P.C.
CONSULTING ENGINEER
Figure M-1 Continued
Bald Mt. Road
Box 206, R. D. 6
Troy, New York 12180

8 November, 1988

Norlite Corporation
P.O. Box 694
629 S. Saratoga Street
Cohoes, New York 12047

Subject: Fuel Lines Pressure Tests

During the period of 10/13/88 thru 10/16/88 the LGF lines from the transfer pump station to the kiln pump house were pressure tested to ascertain that they were pressure tight.

The green line was pressurized to 60 psi at 1500 hrs. 10/13/88 . A check of the line pressure at 0800 hrs. 10/14/88 indicated a residual pressure of 58 psi. The line proved to be pressure tight.

On 10/14/88 a test of the yellow and white lines was began. The yellow and white lines were pressurized to 60 and 58 psi respectively. The white line did not hold pressure. A check of the line brought to light the fact the packing of one inline valve was leaking. The valve was isolated and the line at 1600 hrs. was pressurized to 60 psi. A check of the pressure in the two lines was made at 0900 hrs. on 10/15/88. The white line maintained pressure at 59 psi. The yellow line had dropped to 56 psi. A check of the line gave an indication of a possible gasket leak on a segmented ball valve. It was decided to isolate the valve and retest. The system was isolated and pressurized to 60 psi. A check of the line was made at 0830 hrs. on 10/16/88. The pressure reading was holding at 59 psi.

It is our conclusion that the LGF pipelines from the transfer pumps to the kiln pump house are pressure tight and that they remain satisfactory for handling the Low Grade Fuels that they were designed to handle.

For Bradley Engineering, P.C.

William D. Bradley, P.E.

CERTIFICATION

Continental Disc® Corporation
3160 W. Heartland Drive • Liberty, MO 64068-3385 USA • (816) 792-1500 • Fax (816) 792-2277 / 5447

Manufactured and Tested under an ISO-9001 Certified Quality System. TUV-CERT Certificate Reg. No. 12 100 9200. Inspection Certificate EN 10 204 3.1.B: 1991

Date: 9/ 6/01

Sold To: NORLITE CORP.

S.O. No: 01-09-090-00

Customer Order No: 981307

Item: 01

Mfg No: 340727

Quantity: 5

FOR TANKS 100A, 100B, 100C 200B, 200C

Type: 6" CAL-VAC (FS) Continental Rupture Disc

Material: 316 SS Top Section
Teflon Seal
Teflon Girdle

Requested Rupture Pressure and Temperature:
POS RATED: 20 psig MAX @ 80 deg F
VAC PRESSURE RATING: 8 MIN to 14 MAX in. water @ 80 deg F

* POS Burst Test Results:
1) 17.9 2) 17.0

VAC Burst Test Results:
1) 10.0 2) 11.0

Stamped Rupture Pressure and Temperature:
17.5 psig @ 80 deg F
VAC PRESSURE RATING: 8 MIN to 14 MAX in. water @ 80 deg F

Ambient Rupture Pressure and Temperature:
17.7 psig @ 72 deg F

CONTINENTAL DISC CORPORATION

DIRECTOR OF QUALITY ASSURANCE

*Certified Chart Number: 511FY
(Chemical Analysis Available Upon Request)

Figure D-16 continued

CERTIFICATION

Continental Disc® Corporation
3160 W. Heartland Drive • Liberty, MO 64068-3385 USA • (816) 792-1500 • Fax (816) 792-2277 / 5447

Manufactured and Tested under an ISO-9001 Certified Quality System. TUV-CERT Certificate Reg. No. QA211. Inspection Certificate EN 10 204 3.1.B: 1991

Date: 7/28/01

Sold To: NORLITE CORP.

S.O. No: 01-07-486-00

Customer Order No: 980807

Item: 01

Mfg No: 339359

Quantity: 5

FOR TANKS 3,4,5,6

Type: Special 6" ENVIROSEAL III Continental Rupture Disc For 150# ANSI Bolting Per SC 12136

Material: NON-ASBESTOS GASKET
316 SS TOP SECTION
TEFLON SEAL
316 SS TOP SECTION
NON-ASBESTOS GASKET

REQUESTED RUPTURE PRESSURE AND TEMPERATURE:
POS BURST PRESSURE: 12 MIN to 15 MAX psig @ 72 deg F
VAC BURST PRESSURE: 2 MIN to 4 MAX psig @ 72 deg F

BURST TEST RESULTS: POS: 1) 12.5 2) 14.1
VAC: 1) 3.13 2) 3.33

STAMPED RUPTURE PRESSURE AND TEMPERATURE:
POS BURST PRESSURE: 12 MIN to 15 MAX psig @ 72 deg F
VAC BURST PRESSURE: 2 MIN to 4 MAX psig @ 72 deg F

CONTINENTAL DISC CORPORATION

Dean Dachenhausen

Figure D-16 continued

CERTIFICATION

Continental Disc® Corporation
3160 W. Heartland Drive • Liberty, MO 64068-3385 USA • (816) 792-1500 • Fax (816) 792-2277 / 5447

Manufactured and Tested under an ISO-9001 Certified Quality System. TUV-CERT Certificate Reg. No. 12 100 9200. Inspection Certificate EN 10 204 3.1.B: 1991

Date: 9/13/01

Sold To: NORLITE CORP.

S.O. No: 01-08-890-00

Customer Order No: 981231

Item: 01

Mfg No: 340922

Quantity: 2

FOR TANKS
101A, 101B
102A, 102B

Type: 3" CAL-VAC (FS) Continental Rupture Disc

Material: 316 SS Top Section
Teflon Seal
Teflon Girdle

Requested Rupture Pressure and Temperature:
POS RATED: 20 psig MAX @ 80 deg F
VAC PRESSURE RATING: 8 MIN to 14 MAX in. water @ 80 deg F

POS Burst Test Results:
1) 17.0 2) 18.4

VAC Burst Test Results:
1) 11.5 2) 11.5

Stamped Rupture Pressure and Temperature:
17.7 psig @ 80 deg F
VAC PRESSURE RATING: 8 MIN to 14 MAX in. water @ 80 deg F

Ambient Rupture Pressure and Temperature:
17.9 psig @ 72 deg F

CONTINENTAL DISC CORPORATION

Dean Bodenhausen

DIRECTOR OF QUALITY ASSURANCE

Figure D-16 continued

CERTIFICATION

Continental Disc® Corporation
3160 W. Heartland Drive • Liberty, MO 64068-3385 USA • (816) 792-1500 • Fax (816) 792-2277 / 5447

Manufactured and Tested under an ISO-9001 Certified Quality System. TUV-CERT Certificate Reg. No. 12 100 9200. Inspection Certificate EN 10 204 3.1.B: 1991

Date: 1/17/02

Sold To: NORLITE CORP.

S.O. No: 02-01-296-00

Customer Order No: 982374

Item: 03

Mfg No: 344757

Quantity: 2

FOR TANK 200A

Type: 6" CDCV (FS) Continental Rupture Disc

Material: 316 SS Top Section
Teflon Seal
316 SS Vacuum Support

Requested Rupture Pressure and Temperature:
RATED: 20 psig MAX @ 80 deg F

* Burst Test Results:
1) 17.1 2) 19.1

Stamped Rupture Pressure and Temperature:
18.1 psig @ 80 deg F

Ambient Rupture Pressure and Temperature:
18.3 psig @ 72 deg F

CONTINENTAL DISC CORPORATION

Dean Dobenhausen

DIRECTOR OF QUALITY ASSURANCE

Certified Chart Number: 503AR
(Chemical Analysis Available Upon Request)

Appendix D-1

Automatic Waste Feed Cut Off (AWFCO) & alarm testing & instrumentation calibration procedures for Light Weight Aggregate Kilns (LWAKs)

-Operator shuts off LGF and switches to gas/specification used oil.
-Wait for 2 consecutive minutes of "0.0" LGF flow printed on the DEC printout
-Insert WFCO key and turn from "NORMAL" to "WFCOs"
-Inform I&E of which parameter is to be tested
-Enter actual reading for each parameter that initiates each alarm level
-Unless otherwise noted, I&E will initiate each alarm without Compliance interaction
-Prior to and following each WFCO, you must witness the opening and closing of the WFCO valve
-After each WFCO, hit the "WFCO" button once, then the "Acknowledge" button once. Repeat with the "OPCO" button

	PARAMETERS	SCREEN	NOTES
		INSIDE - KILN CONTROL ROOM	
1)	LLGF Flow Rate	OPCO	Instruct to I&E to bring flow up to each action level, record reading at each stage and ensure wfco valve closes.
2)	Kiln Pressure	OPCO	Once set at "-0.05" the alarms will activate every 5 seconds until the WFCO
3)	ID Fan Amps	OPCO	I&E will increase amps for each action level.
4)	High LGF CO	OPCO	Burner goes to gas, I&e brings CO level to each action level.
5)	High Used Oil CO	OPCO	Burner goes to gas, observe Used Oil cutoff valve operation.
6)	Used Oil Feed Rate	OPCO	Go to "Burner" screen, then "Display LGF/Oil Flow,.", then "New Hi-Hi Setpoint", enter "5.0", hit "Download New Set Point", then "Done" Go to OPCO screen for alarms. When done, return Oil feed to WAP specs.
7)	Low Recycle pH	Scrubber	Go to "Scrubber" screen, note which probe is lit (red), inform I&E and record. The pH will be accurately displayed on the Scrubber screen (there is a delay on the OPCO screen).
8)	High Shale Feed Rate	Kiln	Once I&E removes the plug, the Shale Feed Rate will read "0.0", thusly tripping the Shale Feed Alarm (#9) and OPCO/WFCO. After inserting the meter, the high feed alarms can be activated
9)	Shale Feed	Kiln	see above
10)	Atomization Pressure	OPCO	Instruct to I&E to bring pressure down to each action level, record reading at each stage and ensure wfco valve closes.
11)	Scrubber Blowdown Flow	Scrubber	Instruct to I&E to bring flow down to each action level, record reading at each stage and ensure wfco valve closes.
		OUTSIDE - MCC CONTROL ROOM	
10)	Heat Exchanger Exit Temp.	Kiln	Wait for I&E to remove plug and insert meter. Alarms will activate. Reset alarms. Instruct I&E to increase temp. to each action level, continually tell I&E what the temp. is reading.
11)	Kiln Exit Gas Temperature (low HRA)	Kiln	Ask I&E to bring the temp back to normal and wait the needed minute. Ensure the temp. is within spec. Switch the WFCO key back to "WFCOs" and proceed
12)	Kiln Exit Gas Temperature (high HRA)	Kiln	Continue from #11
13)	Stack Gas Flow Rate	Scrubber	Wait for I&E to remove plug and insert meter. Alarms will activate. Reset alarms. Instruct I&E to increase stack gas flow rate to each action level, continually tell I&E what rate is.
14)	High Baghouse Inlet Temp.	Baghouse	Prior to I&E meter placement, go to the Baghouse screen, touch the "Auto" button. When it reads "Manual" continue the test. (Check with the kiln operator first to see if any system adjustments should be made first). After test, switch back to "Auto".
15)	Baghouse Pressure Drop (high)	Baghouse	Alarm will flash "High baghouse pressure warning". Also check "alarms" screen.
16)	Baghouse Pressure Drop (low)	OPCO	
17)	Scrubber Recirculation Rate	OPCO	Inform I&E and record which pump/meter is being used.
18)	Venturi Pressure Drop	OPCO	
19)	Ducon Pressure Drop	OPCO	
20)	Lime Feed	WFCO	Remove WFCO key, insert into "Lime Feed" switch, turn to off, wait for alarm and valve closure, return key to "On".

	Kiln #	Norlite Corporation				Test Start:	
INSIDE	Date:	WFCO TESTING PARAMETERS				Test End:	
	PARAMETER	ALARM SETPOINT	OPCO	WFCO	STATUS	NORLITE SIGN OFF / DATE	NYS DEC SIGN OFF / DATE
Burner Goes to Gas							
MACT OPL	CARBON MONOXIDE - LGF (hra)	60 ppm	75 ppm	100 ppm @ 7% O_2	Alarm OPCO WFCO		DEC sign off is Not Applicable.
RCRA OPL	HIGH CO @ BAGHOUSE OUTLET (HRA)	60 ppm	75 ppm	101 ppm @ 7% O_2	Alarm OPCO WFCO		
RCRA OPL	HIGH USED OIL CO (HRA)	400 ppm	500 ppm		Alarm OPCO		
RCRA OPL	HIGH USED OIL FEED RATE *(setpoint @ 5.0)*	4.5 gpm	5.0 gpm		Alarm OPCO		
Burner Goes to Spec. Oil							
MACT OPL	MAXIMUM TOTAL WASTE (LGF) FEED RATE (hra)	9 gpm	10.0 gpm	10.1 gpm	Alarm OPCO WFCO		
MACT OPL	MAXIMUM PUMPABLE WASTE FEED RATE (hra)	9 gpm	10.0 gpm	10.1 gpm	Alarm OPCO WFCO		
RCRA OPL	LGF FEED RATE (HRA)	9.0 gpm	10.0 gpm	10.1 gpm	Alarm OPCO WFCO		
MACT SPAN	TOTAL WASTE (LGF) FEED RATE	0-20 gpm	19 gpm	20 gpm	OPCO WFCO		
MACT OPL	MAXIMUM KILN PRESSURE ("w.c.) (instantaneous)	-0.05" w.c.	-0.04" w.c.	0.0" w.c.	Alarm OPCO WFCO		
RCRA OPL	KILN PRESSURE	-.05" H_2O	-.05" for 10 secs.	-.05" for 15 sec.	Alarm OPCO WFCO		
MACT SPAN	KILN PRESSURE ("w.c.)	-2.0 to +1.0	-1.8, +0.8	-2.0, +1.0	OPCO WFCO		
RCRA OPL	HIGH COMBUSTION GAS VELOCITY (ID FAN AMPS - HRA)	400	402	404 @ max. damper setting of 60% open	Alarm OPCO WFCO		

Example

Norlite Corporation

WFCO TESTING PARAMETERS, CONTINUED

INSIDE	PARAMETER	ALARM SETPOINT	OPCO	WFCO	STATUS	NORLITE SIGN OFF / DATE	NYS DEC SIGN OFF / DATE
MACT OPL	MAXIMUM SHALE FEED RATE (hra)	21.0 tph	21.0 tph	22.0 tph	Alarm OPCO WFCO		DEC sign off is Not Applicable.
RCRA OPL	HIGH SHALE FEED RATE TPH (HRA)	21	21	22	Alarm OPCO WFCO		
RCRA OPL	SHALE FEED	0	Off 25 mins.	Off 30 mins.	Alarm OPCO WFCO		
MACT SPAN	SHALE FEED RATE	0-40 tph	35 tph	40 tph	OPCO WFCO		
MACT OPL	MINIMUM SCRUBBER LIQUID pH (hra) METER: A B	8.2	8.1	8.0	Alarm OPCO WFCO		
RCRA OPL	LOW RECYCLE TANK pH (HRA) *PROBE A B*	8	8	7.9	Alarm OPCO WFCO		
MACT SPAN	SCRUBBER LIQUID pH METER: A B	9.5 - 10.5	10.0	10.5	OPCO WFCO		
MACT OPL	MINIMUM SCRUBBER BLOWDOWN RATE (hra)	15.5 gpm	15.2 gpm	15.0 gpm	Alarm OPCO WFCO		
MACT SPAN	KILN 1 SCRUBBER BLOWDOWN RATE	0-50 gpm	45 gpm	50 gpm	OPCO		
	KILN 2	0-67 gpm	52 gpm	67 gpm	WFCO		
MACT OPL	MINIMUM LGF ATOMIZATION PRESSURE (hra) (psig)	56 psi	54 psi	52 psi	Alarm OPCO WFCO		
MACT SPAN	LGF ATOMIZING AIR PRESSURE (psi)	0-200	180	200	OPCO WFCO		

Example

Norlite Corporation

WFCO TESTING PARAMETERS, CONTINUED

OUTSIDE	PARAMETER	ALARM SETPOINT	OPCO	WFCO	STATUS	NORLITE SIGN OFF / DATE	NYS DEC SIGN OFF / DATE
MACT OPL	MINIMUM KILN BACK-END TEMPERATURE (hra)	(3)	(5)	(6)	Alarm		DEC sign off is Not Applicable
		876 °F	871 °F	866 °F	OPCO		
					WFCO		
MACT SPAN	KILN BACK-END TEMPERATURE	0-1400 °F	(10) 1300 °F	(11) 1400 °F	OPCO		
					WFCO		
RCRA OPL	KILN EXIT GAS (back end)	(12)	(13)	(14)	Alarm		
	low temp (OMA) (switch to normal)	876 °F	871 °F	866 °F	OPCO		
					WFCO		
	low temp (HRA)	(1)	(2)	(4)	Alarm		
		885 °F	880 °F	875 °F	OPCO		
					WFCO		
	high temp (HRA)	(7)	(8)	(9)	Alarm		
		1010 °F	1022 °F	1025 °F	OPCO		
					WFCO		
	high temp (OMA) (switch at "normal")	(15)	(16)	(17)	Alarm		
		1090 °F	1095 °F	1100 °F	OPCO		
					WFCO		
MACT OPL	HEAT EXCHANGER EXIT TEMPERATURE (hra)				Alarm		
		448 °F	450 °F	453 °F	OPCO		
					WFCO		
MACT SPAN	HEAT EXCHANGER EXIT TEMPERATURE	0-700 °F	650 °F	700 °F	OPCO		
					WFCO		
MACT OPL	MAXIMUM BAGHOUSE INLET TEMPERATURE (hra) (manual)	(1)	(2)	(4)	Alarm		
		390 °F	397 °F	399 °F	OPCO		
					WFCO		
RCRA OPL	HIGH BAGHOUSE INLET TEMP. (OMA) *manual*	(1)	(3)	(5)	Alarm		
		390 °F	398 °F	400 °F	OPCO		
					WFCO		
MACT SPAN	BAGHOUSE INLET TEMPERATURE	0-700 °F	600 °F	700 °F	OPCO		
					WFCO		
RCRA OPL	BAGHOUSE PRESSURE DROP						
	high pressure (OMA)	9.4" H_2O			Alarm		
	low pressure (OMA)				Alarm		
		5.3" H_2O	5.0" H_2O	4.8" H_2O	OPCO		
					WFCO		

turn both WFCO keys off when doing OMA. Each take 1-minute to activate.

reset alarms and have BE Temp in normal range before doing OMA.

do in the order that they are numbered. HRA's first, then go to normal mode and do OMA's

Make sure WFCO keys are back to WFCO mode before you do HX

be sure to set mode to Manual for baghouse wfco, then set back to Auto when completed.

Example

Norlite Corporation

WFCO TESTING PARAMETERS, CONTINUED

	PARAMETER	ALARM SETPOINT	OPCO	WFCO	STATUS	NORLITE SIGN OFF / DATE	NYS DEC SIGN OFF / DATE
RCRA OPL	SCRUBBER WATER				Alarm		DEC sign off is Not Applicable.
	RECIRCULATION FLOW	194 gpm	190 gpm	<184 gpm	OPCO		
	LOW (OMA) *Pump: A B*				WFCO		
MACT SPAN	SCRUBBER RECIRCULATION RATE PUMP: A B	0-250 gpm	245 gpm	250 gpm	OPCO		
					WFCO		
MACT OPL	MINIMUM VENTURI PRESSURE DROP (hra)	(1)	(2)	(3)	Alarm		
		3.5" w.c.	3.2" w.c.	2.9" w.c.	OPCO		
					WFCO		
RCRA OPL	VENTURI PRESSURE DROP (OMA)	(4)	(5)	(6) <2.0" unless corrected in 3 min.	Alarm		
		2.5"	2.3"		OPCO		
					WFCO		
MACT SPAN	VENTURI PRESSURE DROP	0.0" -10" w.c.	9.8" w.c.	10.0" w.c.	OPCO		
					WFCO		
RCRA OPL	DUCON PRESSURE DROP (OMA)				Alarm		
		2.0	1.8"	<1.5" unless corrected in 3 min.	OPCO		
					WFCO		
MACT OPL	MINIMUM SCRUBBER TANK LIQUID LEVEL (hra) (% OF TANK HEIGHT)				Alarm		
		47%	45%	43%	OPCO		
					WFCO		
MACT SPAN	SCRUBBER TANK LIQUID LEVEL (% OF TANK HEIGHT)	0-100%	95%	100%	OPCO		
					WFCO		
MACT SPAN	STACK GAS FLOW RATE (wet scfm)	0-60,000 wscfm	59,000 wscfm	60,000 wscfm	OPCO		
					WFCO		
MACT OPL	MINIMUM LIQUID TO GAS RATIO (gpm/1000 scfm)				Alarm		
		4.2	4.1	4.0	OPCO		
					WFCO		
RCRA OPL	LIME FEED						
			Off		OPCO		
MACT OPL	MINIMUM LIME FEED RATE				Alarm		
	(lb/hr) (hra)	290	280	270	OPCO		
	(both wfco keys in and in wfco mode)				WFCO		
MACT SPAN	LIME FEED RATE (lb/hr) Feeder# ___	0-500	450	500	OPCO		
					WFCO		
MACT OPL	MINIMUM LIME CARRIER FLOW RATE (cfm) Blower# ___				Alarm		
		200	175	152	OPCO		
					WFCO		
MACT SPAN	LIME CARRIER FLOW RATE (cfm)	0-300	280	300	OPCO		
					WFCO		

Example

alarms will appear in order of numbering

Turn off both RCRA and MACT WFCO keys and put RCRA WFCO key into Lime WFCO and turn to WFCO mode. MACT WFCO key should be in normal mode for this one.

Both WFCO keys in (MACT and LIME) and both in WFCO mode.

Monitored Kiln 1 Parameter	Instrument Description	Span and Units of Measurement	Instrument Accuracy	Tag No. / Comments	Daily*/Monthly Calibrations Procedure#
Kiln Combustion Chamber Pressure	Rosemount 1151 DP	-2.0 to + 1.0 in. w.c.	± 0.1 in. w.c.	Tag # DPT-5203	Monthly OM 3-07A
LGF Flow Rate	Micromotion DL 100	0 – 20 gpm	± 0.2% of rate	Tag # MM-4301	Monthly OM 3-07F
LLGF Lance Atomizing Pressure	Rosemount 1151 DP	0 – 200 psi	± 0.1 psi	Tag # PT-9104	Monthly OM 3-07B
Kiln Back-End (Exit) Temperature	Rosemount 3044C	0 – 1,400 °F	± 0.18°F	Tag # TT-4303	Monthly OM 3-07C
Heat Exchanger Exit Temperature	Rosemount 3044C	350 – 550 °F	± 0.18°F	Tag # TT-4301	Monthly OM 3-07C
Baghouse Inlet Temperature	Rosemount 3044C	0 - 700 °F	± 0.18°F	Tag # TT-4302	Monthly OM 3-07C
Venturi Differential Pressure	Rosemount 1151 DP	0 – 10 in w.c.	± 0.1 in. w.c.	Tag # DPT-4401	Monthly OM 3-07A
Scrubber Blowdown Rate	Fischer Porter 10D1475	0 – 50 gpm	± 0.5% of rate	Tag # FT-1508	Monthly OM 3-07D
Baghouse Differential Pressure	Rosemount 1151 DP	0-15 in w.c.	± 0.1 in. w.c.	Tag # DPT-4303	Monthly OM 3-07A
Scrubber Recirculation Rate	Fischer Porter 10D1475	0 – 250 gpm	± 0.5% of rate	Tag # FT-4403 A/B Redundant Instr.	Monthly OM 3-07 D
Scrubber Liquid pH	Rosemount 2081 pH	0 – 14 pH units	± 0.02 pH units	Tag # 4401 A/B Redundant Instr.	Daily* OM 3-07G
Dry Sorbent (Lime) Feed Rate	AccuRate 602M	0 – 500 lb/hr	± 2.0% of rate	Tag # Lime_Feed	Monthly OM 3-07I
Kiln Production Rate (Shale Feed Rate)	AccuRate MPC200	0 – 40 tph	± 0.25–1.0% of rate	Tag # AR-4301	Monthly OM 3-07H
Flue Gas Flow Rate	Fluid Components International, LLC Model GF90	0 – 60,000 wet scfm	Annual RATA	Tag # FT-5555	Annual RATA OM 3-07M
Stack Oxygen Analyzers	Siemens / CISCO	0 – 25 %	0.5% oxygen absolute difference	Tag # B7-066/067 Redundant Instr.	Daily* OM 3-07K
Stack Gas CO Concentration Corrected to 7% O_2	Siemens / CISCO	0 – 200 and 0 – 3,000 ppm [a]	3% of span.(a)	Tag # B7-889/890 Redundant Instr.	Daily* OM 3-07K

Monitored Kiln 1 Parameter	Instrument Description	Span and Units of Measurement	Instrument Accuracy	Tag No. / Comments	Daily*/Monthly Calibrations Procedure #
Ducon Differential Pressure	Rosemount 1151 DP	0 – 10 in w.c.	± 0.1 in. w.c.	Tag # DPT-4402	Monthly OM 3-07A
LGF Feed Line Pressure	Rosemount 1151 DP	0 – 110 PSI	± 0.1 psi	Tag # PT-9106	Monthly OM -07B
Used Oil Feed Rate	Micromotion DS101	0 – 20 GPM	± 0.2% of rate	Tag # MM-4303	Monthly OM 3-07F

(a) A 10,000 ppm default value is used when the 3,000 ppm span is exceeded.

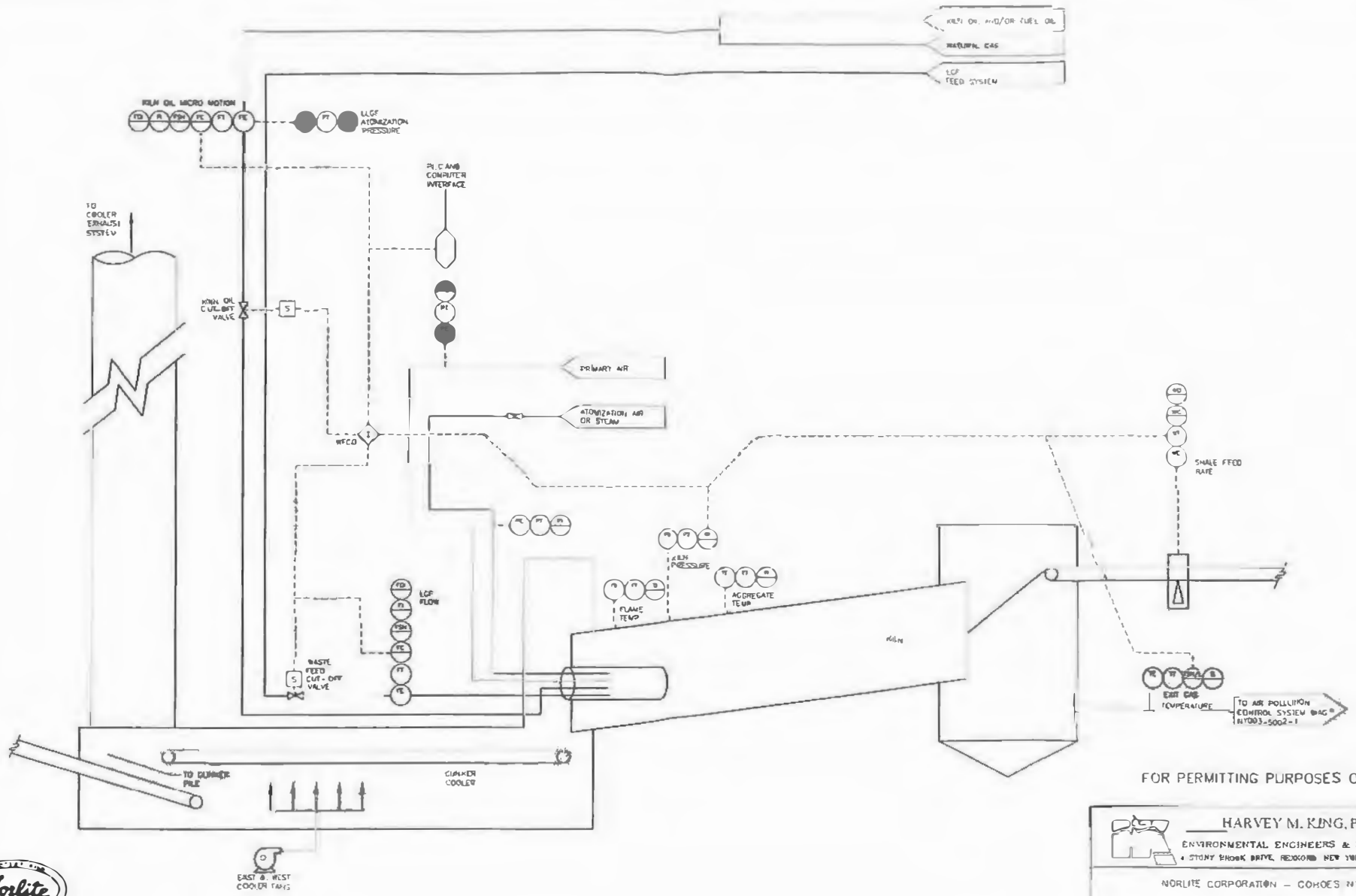
*Daily calibrations are done on the scrubber pH and the carbon monoxide and oxygen units.

Monitored Kiln 2 Parameter	Instrument Description	Span and Units of Measurement	Instrument Accuracy	Tag No./ Comments	Daily*/Monthly Calibrations Procedure #
Kiln Combustion Chamber Pressure	Rosemount 1151 DP	-2.0 to + 1.0 in. w.c.	± 0.1 in. w.c.	Tag # DPT-2104	Monthly OM 3-07A
LGF Feed Rate	Micromotion DL 100S223SU	0 – 20 gpm	± 0.2% of rate	Tag # MM-2401	Monthly OM 3-07F
LLGF Lance Atomizing Pressure	Rosemount 1151 DP	0 – 200 psi	± 0.1 psi	Tag # PT-2305	Monthly OM 3-07B
Kiln Back-End (Exit) Temperature	Rosemount 3044C	0 – 1,400 °F	± 0.18°F	Tag # TT-2105	Monthly OM 3-07C
Heat Exchanger Exit Temperature	Rosemount 3044C	350 – 550 °F	± 0.18°F	Tag # TT-2403	Monthly OM 3-07C
Baghouse Inlet Temperature	Rosemount 3044C	0 - 700 °F	± 0.18°F	Tag # TT-2404	Monthly OM 3-07C
Venturi Differential Pressure	Rosemount 1151 DP	0 – 10 in w.c.	± 0.1 in. w.c.	Tag # DPT-2303	Monthly OM 3-07A
Scrubber Blowdown Rate	Fischer Porter 10D1475	0 – 67 gpm	± 0.5% of rate	Tag # FT-2508	Monthly OM 3-07D
Baghouse Differential Pressure	Rosemount 1151 DP	0 – 15 in w.c.	± 0.1 in. w.c.	Tag # DPT-2405	Monthly OM 3-07A
Scrubber Recirculation Rate	Fischer Porter 10D1475	0 – 250 gpm	± 0.5% of rate	Tag # FT-2507 A/B Redundant Instr.	Monthly OM 3-07 D
Scrubber Liquid pH	Rosemount 2081 pH	0 – 14 pH units	± 0.02 pH units	Tag # 2509 A/B Redundant Instr.	Daily* OM 3-07G
Dry Sorbent (Lime) Feed Rate	AccuRate 602M	0 – 500 lb/hr	± 0.12% of rate	Tag # Lime_Feed	Monthly OM 3-07I
Kiln Production Rate (Shale Feed Rate)	AccuRate MPC200	0 – 40 tph	± 0.25–1.0% of rate	Tag # AR-2401	Monthly OM 3-07H
Flue Gas Flow Rate	Fluid Components International, LLC Model GF90	0 – 60,000 wet scfm	Annual RATA	Tag # FT-5555	Annual RATA OM 3-07M
Stack Oxygen Analyzers	Siemens / CISCO	0 – 25 %	0.5% oxygen absolute difference	Tag # AO2-611 and F6-279 Redundant Instr.	Daily* OM 3-07K

Monitored Kiln 2 Parameter	Instrument Description	Span and Units of Measurement	Instrument Accuracy	Tag No. / Comments	Daily*/Monthly Calibrations Procedure #
Stack Gas CO Concentration Corrected to 7% O_2	Siemens / CISCO	0 – 200 and 0 – 3,000 ppm [a]	3% of span. (a)	Tag # XO7-400 and F6-187 Redundant Instr.	Monthly OM 3-07K
Ducon Differential Pressure	Rosemount 1151 DP	0 – 10 in w.c.	± 0.1 in. w.c.	Tag # DPT-2508	Monthly OM 3-07A
LGF Feed Line Pressure	Rosemount 1151 DP	0 – 110 PSI	± 0.1 psi	Tag # PT-2302	Monthly OM 3-07B
Used Oil Feed Rate	Micromotion DU100-SS-1	0 – 20 GPM	± 0.2% of rate	Tag # MM-2402	Monthly OM 3-07F

[a] A 10,000 ppm default value is used when the 3,000 ppm span is exceeded.

*Daily calibrations are done on the scrubber pH and the carbon monoxide and oxygen units.



FOR PERMITTING PURPOSES ONLY

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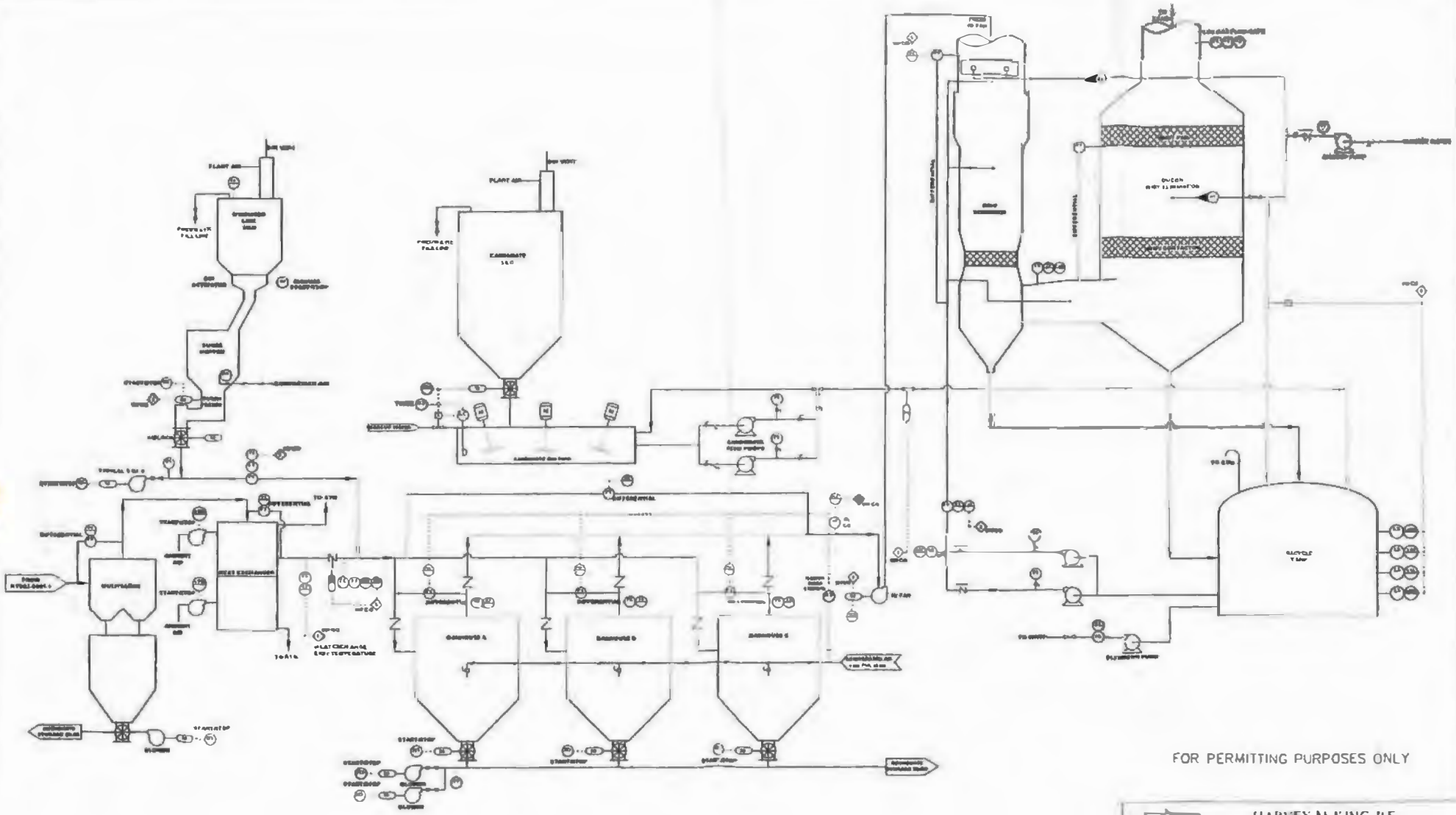
NORLITE CORPORATION – COHOES NY

MACT PLAN

KILN PROCESS & INSTRUMENTATION DIAGRAM

DRAWN BY TVB	DATE 02/16/04	APPROVED BY:
ENGINEER	FILE NAME	DRAWING NO. NY003-5001-1

INFORMATION PRESENTED ON THIS DRAWING WAS COMPILED FROM CURRENT FIELD DATA AND ORIGINAL DESIGN DRAWINGS PREPARED BY ENSR CONSULTING & ENGINEERING



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Norlite

INFORMATION PRESENTED ON THIS DRAWING HAS BEEN COMPILED FROM CURRENT FIELD DATA AND ORIGINAL DESIGN DRAWINGS PREPARED BY ENSR CONSULTING & ENGINEERING

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NORLITE CORPORATION — COHOES, NY
MACT PLAN
POLLUTION CONTROL
PROCESS & INSTRUMENTATION DIAGRAM

T.V.B	02/16/04	
		NY003-5002-1

NORLITE CORPORATON
Policy Number: OM 3-07A
Effective Date: 9/03
Revised: 10/03

LOW PRESSURE CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Low Pressure settings. (instrument calibrated in inches of water)

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Attach communication device to transmitter.
2. Close isolation valves.
3. Attach pump and pressure calibrator to Hi side of pressure sensor.
4. Open Lo side of pressure sensor.
5. Open pump valve to check zero-take readings from communication device.
6. Close pump valve and pup up pressure to ¼ upper range value-take readings.
7. Pump pressure to ½ upper range value-take readings.
8. Pump pressure to ¾ upper range value-take readings.
9. Pump pressure to upper range value-take readings.
10. If readings are out of drift, adjust transmitter to pressure calibrator readings.
11. Put equipment back to normal operating condition.

NORLITE CORPORATON
Policy Number: OM 3-07B
Effective Date: 9/03
Revised: 10/03

HIGH PRESSURE CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for High Pressure settings. (instrument calibrated in pounds per square inch)

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Attach communication device to transmitter.
2. Close isolation valves.
3. Attach pump and pressure calibrator to Hi side of pressure sensor.
4. Open pump valve to check zero-take readings from communication device.
5. Close pump valve and pump up pressure to ¼ upper range valve-take readings.
6. Pump pressure to ½ upper range value-take readings.
7. Pump pressure to ¾ upper range value-take readings.
8. Pump pressure to upper range value-take readings.
9. If readings are out of drift, adjust transmitter to pressure calibrator readings.
10. Put equipment back to normal operating condition.

NORLITE CORPORATON
Policy Number: OM 3-07C
Effective Date: 9/03
Revised: 10/03

TEMPERATURE THERMOCOUPLE CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Temperature Thermocouple settings.

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Attach communication device to transmitter.
2. Take sensor wires off transmitter and attach wires from temperature simulator in their place.
3. Dial in Low range value on temperature simulator-take readings from communications device.
4. Dial in value ¼ of upper range value-take readings.
5. Dial in value ½ of upper range value-take readings.
6. Dial in value ¾ of upper range value-take readings.
7. Dial in upper range value-take readings.
8. Adjust transmitter if necessary.
9. Put equipment back to normal operating condition.

NORLITE CORPORATON
Policy Number: OM 3-07D
Effective Date: 9/03
Revised: 10/03

SCRUBBER FLOW CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Scrubber Flow settings.

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Remove transmitter cover.
2. Unplug transmitter power and communication ribbon connector.
3. Attach simulator ribbon connector and power plug from simulator.
4. Plug in simulator to outlet power.
5. Dial simulator to Low range signal-take readings from amp meter and transmitter.
6. Dial in signal ¼ of upper range value-take readings.
7. Dial in signal ½ of upper range value-take readings.
8. Dial in signal ¾ of upper range value-take readings.
9. Dial in signal for upper range value-take readings.
10. If readings are out of drift, adjust transmitter to simulator signal reading.
11. Put equipment back to normal operating conditions.

NORLITE CORPORATON
Policy Number: OM 3-07F
Effective Date: 9/03
Revised: 10/03

FLOWS (MICROMOTION) CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Flows (Micromotion) settings.

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Attach communication device to transmitter.
2. Change output reading from gallons per minute to pounds per minute.
3. Zero the totalizer.
4. Weigh bucket for tare weight.
5. Take sample in the basket and weigh-write down reading.
6. Write down totalizer reading form communication device and zero totalizer.
7. Take three samples and average.
8. If sample average and totalizer average is out of drift-redo test.
9. Put equipment back to normal operating condition.

NORLITE CORPORATON
Policy Number: OM 3-07G
Effective Date: 9/03
Revised: 10/03

DAILY pH (SCRUBBER) CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Daily pH (Scrubber) settings.

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Calibrate hand held pH tester.
2. Clean pH probes with acid.
3. Take sample of scrubber water and test with hand held tester.
4. Check reading against transmitter reading.
5. If readings are out of drift, attach communication device to the transmitter and standardize.
6. Two point calibrate if a new probe is installed.

NORLITE CORPORATON
Policy Number: OM 3-07H
Effective Date: 9/03
Revised: 10/03

SHALE FEED CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Shale Feed settings.

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Close silo plate to shut off shale feed and auto zero feeder.
2. Weigh buckets for tare weight.
3. Calculate belt speed by averaging three tachometer readings.
4. Open silo plate.
5. Take three shale sample grabs and average the weights.
6. Calculate the tons per hour and compare this to the current shale set point.
7. If the readings are not within drift, adjust the feeder and take two more sample grabs.
8. Put equipment back to normal operating condition.

NORLITE CORPORATON
Policy Number: OM 3-07I
Effective Date: 9/03
Revised: 10/03

LIME FEEDER CALIBRATION

I. PURPOSE

Provide a consistent and reliable procedure for the calibration of equipment for Lime Feeder settings.

II. SCOPE

Continuous Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Department

IV. PROCEDURES

1. Run feeder at designated setting.
2. Measure revolutions per minute of Helix drive shaft.
3. Calculate output of feeder.
4. Compare output of feeder to target weight-if outside drift, adjust drive speed.
5. Put equipment back to normal operating condition.

NORLITE CORPORATON
Policy Number: OM 3-07K
Effective Date: 9/03

CONTINUOUS EMISSIONS MONITORING SYSTEM-CALIBRATION

I. PURPOSE

Provide a procedure for the calibration of the Continuous Emissions Monitoring System (CEMS).

II. SCOPE

Continuous Emissions Monitoring Systems

III. RESPONSIBILITIES

Instrumentation and Electrical Personnel (I & E)

IV. PROCEDURE

Calibration for CO-Low

1. Press and hold the blue CO-Low button on selected unit for 5 seconds. (The unit will automatically zero and span its self.)
2. Adjust the analyzer as necessary.
3. When the calibration is finished print out results.

Calibration for CO-Hi

1. Press and hold the blue CO-High button on selected unit for 5 seconds. (The unit will automatically zero and span its self.)
2. Adjust the analyzer as necessary.
3. When the calibration is finished print out the results.

Calibration for Oxygen

1. Press and hold blue Oxygen button on selected unit for 5 seconds. (The unit will automatically zero and span its self.
2. Adjust the analyzer as necessary.
3. When the calibration is finished print out the results.

NORLITE CORPORATON
Policy Number: OM 3-07M
Effective Date: 6/04
Revision Date: 1/05, 2/05

STACK GAS FLOW METER

I. PURPOSE

Provide a consistent and reliable procedure for the Stack Gas Flow Meter.

II. SCOPE

Stack Gas Flow Meter

III. RESPONSIBILITIES

Compliance/I & E Department

IV. PROCEDURE

MONTHLY

1. The Stack Gas Flow Meter will be visually inspected each month.
    a. Visually inspect electrical connections, enclosures, electrical cables and the flow element mounting connections for any signs of physical damage and/or deterioration.
    b. Compare readings from control room to reading in field.

QUARTERLY

1. Each quarter the stack probe will be removed from the stack and cleaned.
    a. Remove stack probe and clean.
    b. Look for any signs of damage and/or deterioration.

ANNUAL

1. A RATA will be conducted on an annual basis for certification.
    a. Certify instrument is in compliance.

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 HEAT EXCHANGER EXIT TEMP

MFG: ROSEMOUNT

MODEL#: 3044C 0-700 DEG.(F) = 4-20mA

SERIAL#: 171129

TAG#: TT-4301

LOCATION: HEAT EXCHANGER EXIT DUCT (ground level)

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 F	0	4.00mA			0 F		
2	175 F	175	8.00mA			175 F		
3	350 F	350	12.00mA			350 F		
4	525 F	525	16.00mA			525 F		
5	700 F	700	20.00mA			700 F		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6540201
	MODEL: 1062 J/K	CERTIFICATION DUE: 1/27/05
	MFG: ROSEMOUNT	SERIAL:
	MODEL: 268/275	CERTIFICATION DUE: NONE
	MFG: NBS "K"THERMOCOUPLE	SERIAL: 2295035
	MODEL: 6C-K-I-83-8-R-13 5"	CERTIFICATION DUE: 9/5/04

DRIFT ACCEPTANCE: +/- 10F

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: LIME FEEDERS

MFG: ACCURATE

RANGE: 225-500 LBS/HR

LOCATION: K2 MCC

TAG# AC-101, AC-102, AC-103

TEST EQUIPMENT USED

MFG: AVO MODEL: 359986

SERIAL: 2097.206086

CERTIFICATION DUE: 7/23/04

LIME FEEDER #	FEEDER SETTING	TARGET RPM	RPM HELIX DRIVE SHAFT	(RPM)(.139) = ft Displaced by 2.25 1/2 helix/ft	(40lbs) Bulk Density / ft Hydrated Lime	Target Weight
1	225	40.5				225
1	300	54				300
1	375	67.5				375
1	450	81				450
1	500	90				500
2	225	40.5				225
2	300	54				300
2	375	67.5				375
2	450	81				450
2	500	90				500
3	225	40.5				225
3	300	54				300
3	375	67.5				375
3	450	81				450
3	500	90				500

CALIBRATION DATE:

INSTRUMENT TECHNICIAN:

COMMENTS: NO ADJUSTMENT NECESSARY IF WITHIN (+) OR (-) 5%

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SHALE FEED RATE

MFG: ACCURATE

MODEL#: MPC 200 RICE LAKE SCALE MODEL# IQ355

SERIAL#: 3335 TAG# AR-4301 SERIAL# 115822

RANGE: 0-40 TPH = 4-20mA CERT. DUE 12/03

LOCATION: KILN 1 CONTROL ROOM, UNDER SHALE SILO

FIRST GRAB SAMPLE		BUCKET #1	
GROSS WEIGHT	_____ lbs	TARE WEIGHT	_____ lbs
NET WEIGHT	_____ lbs		
SECOND GRAB SAMPLE		BUCKET # 2	
GROSS WEIGHT	_____ lbs	TARE WEIGHT	_____ lbs
NET WEIGHT	_____ lbs		
THIRD GRAB SAMPLE		BUCKET # 3	
GROSS WEIGHT	_____ lbs	TARE WEIGHT	_____ lbs
NET WEIGHT	_____ lbs		

AVERAGE TOTAL SCALE WEIGHT _____ lbs

CURRENT SHALE SETPOINT _____ TPH

FIRST TACH READING	_____ fpm
SECOND TACH READING	_____ fpm
THIRD TACH READING	_____ fpm
AVERAGE TACH READING	_____ fpm

CALCULATE THE TPH OF THE MATERIAL TAKEN USING THIS FORMULA

(BELT SPEED) (GRAB SAMPLE AVE. / LENGTH OF GRAB) (60) / 2000 = TPH

(fpm) (lbs. / 35 ft.) (60min/hr) / 2000 lbs./ton = TPH

IF THE TPH FROM THE TEST IS NOT WITHIN .5 TON OF THE CURRENT SETPOINT, THE EMPIRICAL SPAN MUST BE CHANGED. (menu #5)

CALIBRATION DATE:	INSTRUMENT TECHNICIAN:

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 LGF FEED RATE

MFG: MICROMOTION

MODEL#: DL100S223SU RICE LAKE SCALE MODEL# IQ355

SERIAL#: 232414 TAG# MM-4301 SERIAL# 115822

RANGE: 0-20 GPM = 4-20mA CERT. DUE 12/03

LOCATION: KILN 1 GAS ROOM

FIRST GRAB SAMPLE

GROSS WEIGHT _____ lbs

NET WEIGHT _____ lbs

BUCKET #1

TARE WEIGHT _____ lbs

SECOND GRAB SAMPLE

GROSS WEIGHT _____ lbs

NET WEIGHT _____ lbs

BUCKET # 2

TARE WEIGHT _____ lbs

THIRD GRAB SAMPLE

GROSS WEIGHT _____ lbs

NET WEIGHT _____ lbs

BUCKET # 3

TARE WEIGHT _____ lbs

AVERAGE TOTAL SCALE WEIGHT _____ lbs

MICROMOTION TOTALIZER WEIGHTS

1st GRAB _____ lbs

2nd GRAE _____ lbs

3rd GRAB _____ lbs

AVERAGE MICROMOTION TOTALIZER WEIGHTS _____ lbs

DIFFERENCE BETWEEN SCALE AVG. AND TOTALIZER AVG _____ lbs

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

DRIFT ACCEPTANCE: +/- 1.0lbs

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: K1 BACK END GAS TEMP

MFG: ROSEMOUNT

MODEL#: 3044C 0-1400 DEG.(F) = 4-20mA TYPE K

SERIAL#: 0050090

TAG#: TT-4303

LOCATION: MULTICLONE PLATFORM 2ND LEVEL

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 F	0	4.00mA			0 F		
2	350 F	350	8.00mA			350 F		
3	700 F	700	12.00mA			700 F		
4	1050 F	1050	16.00mA			1050 F		
5	1400 F	1400	20.00mA			1400F		

CALIBRATION DATE:

INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6540201
	MODEL: 1062 J/K	CERTIFICATION DUE: 1/27/04
	MFG: ROSEMOUNT	SERIAL:
	MODEL: 268/275	CERTIFICATION DUE: NONE
	MFG:	SERIAL:
	MODEL:	CERTIFICATION DUE:

DRIFT ACCEPTANCE: +/- 10 °F

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER RECIRCULATION FLOW RATE "B"

MFG: FISHER PORTER

METER MODEL#: 10D1475PN15PL29AY12A1112X2, SERIAL# 92W440865

CONVERTER MODEL#: 50XM13BXKD10AAAC224, SERIAL# 93W013335

TAG#: FT-4403B 0-250 GPM

LOCATION: RECIRCULATION TANK AREA

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 GPM	0.0 m/s	4.00mA			0 GPM		
2	62.5 GPM	5.9 m/s	8.00mA			62.5 GPM		
3	125 GPM	11.8 m/s	12.00mA			125 GPM		
4	187.5 GPM	17.7 m/s	16.00mA			187.5 GPM		
5	250 GPM	23.7 m/s	20.00mA			250 GPM		

CALIBRATION DATE: | INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: FISHER PORTER	SERIAL: 46707
	MODEL: 55XC4130A	CERTIFICATION DUE: N/A
	MFG: FLUKE	SERIAL: 956500114
	MODEL: 87	CERTIFICATION DUE: 6/20/04
	MFG: FLUKE	SERIAL: 65220856
	MODEL: 76	CERTIFICATION DUE: 7/23/04

DRIFT ACCEPTANCE: +/- 10 GPM

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER RECIRCULATION FLOW RATE "A"

MFG: FISHER PORTER

METER MODEL#: 10D1475PN15PL29AY12A1112X2, SERIAL# 94W445135

CONVERTER MODEL#: 50XM13BXKD10AABC224, SERIAL# 93W034754

TAG#: FT-4403A 0-250 GPM

LOCATION: RECIRCULATION TANK AREA

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 GPM	0.0 m/s	4.00mA			0 GPM		
2	62.5 GPM	5.9 m/s	8.00mA			62.5 GPM		
3	125 GPM	11.8 m/s	12.00mA			125 GPM		
4	187.5 GPM	17.7 m/s	16.00mA			187.5 GPM		
5	250 GPM	23.7 m/s	20.00mA			250 GPM		

CALIBRATION DATE: | INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: FISHER PORTER	SERIAL: 46707
	MODEL: 55XC4130A	CERTIFICATION DUE: N/A
	MFG: FLUKE	SERIAL: 956500114
	MODEL: 87	CERTIFICATION DUE: 6/20/04
	MFG: FLUKE	SERIAL: 65220856
	MODEL: 76	CERTIFICATION DUE: 7/23/04

DRIFT ACCEPTANCE: +/- 10 GPM

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER BLOWDOWN FLOW RATE

MFG: FISHER PORTER

METER MODEL#: 10D1475SN09PL29KY12A1112C2, SERIAL# 99W003139

CONVERTER MODEL#: 50XM13BXKD10AAAC224, SERIAL# 92W442690

TAG#: FT-1508 0-50 GPM

LOCATION: RECIRCULATION TANK AREA

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 GPM	0.0 m/s	4.00mA			0 GPM		
2	12.5 GPM	23.7 m/s	8.00mA			12.5 GPM		
3	25.0 GPM	47.3 m/s	12.00mA			25.0 GPM		
4	37.5 GPM	70.9 m/s	16.00mA			37.5 GPM		
5	50.0 GPM	94.6 m/s	20.00mA			50.0 GPM		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: FISHER PORTER	SERIAL: 46707
	MODEL: 55XC4130A	CERTIFICATION DUE: N/A
	MFG: FLUKE	SERIAL: 956500114
	MODEL: 87	CERTIFICATION DUE: 6/20/04
	MFG: FLUKE	SERIAL: 65220856
	MODEL: 76	CERTIFICATION DUE: 7/23/04

DRIFT ACCEPTANCE: +/- 5.0 GPM

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER BLOWDOWN PH #1"B"

MFG: ROSEMOUNT

MODEL#: 2081 PH

SERIAL#: D92-90765 TAG# 4401B

RANGE: 3.5 - 10.5 = 4-20mA

LOCATION: RECIRCULATION TANK

EQUIPMENT USED: ROSEMOUNT 268

TEST POINTS	IDEAL INPUT	ACTUAL INPUT	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
2	7.0 PH	7	12.0mA			7.0 PH		
3	10.00 PH	10	18.8mA			10.00 PH		

CALIBRATION DATE: | INSTRUMENT TECHNICIAN:

DRIFT ACCEPTANCE: +/- 0.5 pH

COMMENTS: USE BUFFER SOLUTIONS OF 7 AND 10

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER BLOWDOWN PH #1"A"

MFG: ROSEMOUNT

MODEL#: 2081 PH

SERIAL#: A-95 33996 TAG# 4401A

RANGE: 3.5 - 10.5 = 4-20mA

LOCATION: RECIRCULATION TANK

EQUIPMENT USED: ROSEMOUNT 268

TEST POINTS	IDEAL INPUT	ACTUAL INPUT	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
2	7.0 PH	7	12.0mA			7.0 PH		
3	10.00 PH	10	18.8mA			10.00 PH		

CALIBRATION DATE:

INSTRUMENT TECHNICIAN:

DRIFT ACCEPTANCE: +/- 0.5 pH

COMMENTS: USE BUFFER SOLUTIONS OF 7 AND 10

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 HOOD PRESSURE

MFG: ROSEMOUNT

MODEL#: 1151 D/P -2.0" - 1.0" H_2O = 4-20 mA

SERIAL#: 1501169

TAG#: DPT-5203

LOCATION: KILN 1 CONTROL ROOM

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	-2.00"H2O	-2.00	4.00mA			-2.00"H2O		
2	-1.25"H2O	-1.25	8.00mA			-1.25"H2O		
3	-0.50"H2O	-0.50	12.00mA			-0.50"H2O		
4	0.25"H2O	0.25	16.00mA			0.25"H2O		
5	1.00"H2O	1.00	20.00mA			1.00"H2O		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6599902/C19004
	MODEL: 1091/1091	CERTIFICATION DUE:3/24/04 6/20/04
	MFG: TRANSMATION	SERIAL: 8467002
	MODEL: SD0312G	CERTIFICATION DUE: 10/21/04
	MFG: TRANSMATION	SERIAL: 10279201
	MODEL: SD0412G	CERTIFICATION DUE: 8/25/04

DRIFT ACCEPTANCE: +/- 0.25 " H2O

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 BAGHOUSE INLET TEMP

MFG: ROSEMOUNT

MODEL#: D5NAB4 0-700 DEG.(F) = 4-20mA

SERIAL#: 0329566 03/00

TAG#: TT-4302

LOCATION: BAGHOUSE INLET DUCT

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 F	0	4.00mA			0 F		
2	175 F	175	8.00mA			175 F		
3	350 F	350	12.00mA			350 F		
4	525 F	525	16.00mA			525 F		
5	700 F	700	20.00mA			700 F		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6540201
	MODEL: 1062 J/K	CERTIFICATION DUE: 1/27/04
	MFG: ROSEMOUNT	SERIAL:
	MODEL: 268/275	CERTIFICATION DUE: NONE
	MFG:	SERIAL:
	MODEL:	CERTIFICATION DUE:

DRIFT ACCEPTANCE: +/- 10 °F

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER VENTURI DIFFERENTIAL PRESSURE

MFG: ROSEMOUNT

MODEL#: 1151 D/P 0-10" H_2O = 4-20 mA

SERIAL#: 1111087

TAG#: DPT-4401

LOCATION: SCRUBBER PLATFORM

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0"H_2O	0	4.00mA			0"H_2O		
2	2.5"H_2O	2.5	8.00mA			2.5"H_2O		
3	5.0"H_2O	5.0	12.00mA			5.0"H_2O		
4	7.5"H_2O	7.5	16.00mA			7.5"H_2O		
5	10.0"H_2O	10.0	20.00mA			10.0"H_2O		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6599902/C19004
	MODEL: 1091/1091	CERTIFICATION DUE: 3/24/04 6/20/04
	MFG: TRANSMATION	SERIAL: 8467002
	MODEL: SD0312G	CERTIFICATION DUE: 10/21/04
	MFG: TRANSMATION	SERIAL: 10279201
	MODEL: SD0412G	CERTIFICATION DUE: 8/25/04

DRIFT ACCEPTANCE: +/- 0.5" H2O

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 LGF FEED LINE PRESSURE

MFG: ROSEMOUNT

MODEL#: 1151 D/P 0-110 PSI = 4-20 mA

SERIAL#: 1467010

TAG#: PT-9106

LOCATION: INSIDE KILN 1 GAS ROOM

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 PSI	0	4.00mA			0 PSI		
2	27.5 PSI	27.5	8.00mA			27.5 PSI		
3	55 PSI	55	12.00mA			55 PSI		
4	82.5 PSI	82.5	16.00mA			82.5 PSI		
5	110 PSI	110	20.00mA			110 PSI		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6599902/C19004
	MODEL: 1091/1091	CERTIFICATION DUE:3/29/05 6/24/05
	MFG: TRANSMATION	SERIAL: C19687
	MODEL: SS1410G	CERTIFICATION DUE: 6/24/05
	MFG: AMETEK	SERIAL: M851680-2
	MODEL: MOD CAL	CERTIFICATION DUE: 1/23/05

DRIFT ACCEPTANCE:= +/- 5 PSI

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 LGF ATOMIZATION AIR PRESSURE

MFG: ROSEMOUNT

MODEL#: 1151 D/P 0-200 PSI = 4-20 mA

SERIAL#: 1486596

TAG#: PT-9104

LOCATION: OUTSIDE KILN 1 CONTROL ROOM

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0 PSI	0	4.00mA			0 PSI		
2	50 PSI	50	8.00mA			50 PSI		
3	100 PSI	100	12.00mA			100 PSI		
4	150 PSI	150	16.00mA			150 PSI		
5	200 PSI	200	20.00mA			200 PSI		

CALIBRATION DATE:

INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6599902/C19004
	MODEL: 1091/1091	CERTIFICATION DUE:3/29/05 6/24/05
	MFG: TRANSMATION	SERIAL: C19687
	MODEL: SS1410G	CERTIFICATION DUE: 6/24/05
	MFG: AMETEK	SERIAL: M851680-2
	MODEL: MOD CAL	CERTIFICATION DUE: 1/23/05

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 BAGHOUSE DIFFERENTIAL PRESSURE

MFG: ROSEMOUNT

MODEL#: 1151 D/P 0-15" H_2O = 4-20 mA

SERIAL#: 1474790

TAG#: DPT-4303

LOCATION: KILN 1 MCC BLOCK HOUSE

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0"H_2O	0	4.00mA			0"H_2O		
2	3.75"H_2O	3.75	8.00mA			3.75"H_2O		
3	7.5"H_2O	7.5	12.00mA			7.5"H_2O		
4	11.25"H_2O	11.25	16.00mA			11.25"H_2O		
5	15.0"H_2O	15.0	20.00mA			15.0"H_2O		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6599902/C19004
	MODEL: 1091/1091	CERTIFICATION DUE:3/29/05 6/24/05
	MFG: TRANSMATION	SERIAL: 8467002
	MODEL: SD0312G	CERTIFICATION DUE: 10/28/05
	MFG: TRANSMATION	SERIAL: 10279201
	MODEL: SD0412G	CERTIFICATION DUE: 8/31/05

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 WASTE OIL FEED RATE

MFG: MICROMOTION

MODEL#: DS100S128SU 950323 RICE LAKE SCALE MODEL# IQ355

SERIAL#: 183743 TAG# MM-4303 SERIAL# 115822

RANGE: 0-20 GPM = 4-20mA CERT. DUE: 12/05

LOCATION: KILN 1 GAS ROOM

FIRST GRAB SAMPLE

GROSS WEIGHT _____ lbs

NET WEIGHT _____ lbs

BUCKET #1

TARE WEIGHT _____ lbs

SECOND GRAB SAMPLE

GROSS WEIGHT _____ lbs

NET WEIGHT _____ lbs

BUCKET # 2

TARE WEIGHT _____ lbs

THIRD GRAB SAMPLE

GROSS WEIGHT _____ lbs

NET WEIGHT _____ lbs

BUCKET # 3

TARE WEIGHT _____ lbs

AVERAGE TOTAL SCALE WEIGHT _____ lbs

MICROMOTION TOTALIZER WEIGHTS

1st GRAB _____ lbs

2nd GRAB _____ lbs

3rd GRAB _____ lbs

AVERAGE MICROMOTION TOTALIZER WEIGHTS _____ lbs

DIFFERENCE BETWEEN SCALE AVE. AND TOTALIZER AVE. _____ lbs

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

DRIFT ACCEPTANCE: +/- 1.0 lbs

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: KILN 1 SCRUBBER DUCON DIFFERENTIAL PRESSURE

MFG: ROSEMOUNT

MODEL#: 1151 D/P 0-10" H_2O = 4-20 mA

SERIAL#: 2246599

TAG#: DPT-4402

LOCATION: SCRUBBER PLATFORM

TEST POINTS	IDEAL INPUT SIGNAL	ACTUAL INPUT SIGNAL	IDEAL OUTPUT	OUTPUT AS FOUND	OUTPUT AS LEFT	IDEAL INDICATOR	INDICATOR AS FOUND	INDICATOR AS LEFT
1	0"H_2O	0	4.00mA			0"H_2O		
2	2.5"H_2O	2.5	8.00mA			2.5"H_2O		
3	5.0"H_2O	5.0	12.00mA			5.0"H_2O		
4	7.5"H_2O	7.5	16.00mA			7.5"H_2O		
5	10.0"H_2O	10.0	20.00mA			10.0"H_2O		

CALIBRATION DATE: INSTRUMENT TECHNICIAN:

TEST EQUIPMENT USED	MFG: TRANSMATION	SERIAL: 6599902/C19004
	MODEL: 1091/1091	CERTIFICATION DUE:3/29/05 6/24/05
	MFG: TRANSMATION	SERIAL: 8467002
	MODEL: SD0312G	CERTIFICATION DUE: 10/28/05
	MFG: TRANSMATION	SERIAL: 10279201
	MODEL: SD0412G	CERTIFICATION DUE: 8/31/05

COMMENTS:

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: STACK GAS FLOW METER KILN #1

MFG: FCI

MODEL#: GF90

SERIAL#: 244110A

CERT. DUE: 11/05

TAG#: FT-5555

LOCATION: KILN 1 MCC

METER READING FIELD:

METER READING CONTROL ROOM:

METER READING DIFFERENCE:

VISUAL INSPECTION (STACK):

VISUAL INSPECTION (ELECTRONICS):

DATE:

INSTRUMENT TECHNICIAN:

DRIFT ACCEPTANCE +/- 5%

COMMENTS:

QUARTERLY CLEANINGS:

MARCH

JUNE

SEPTEMBER

DECEMBER

NORLITE CORPORATION

INSTRUMENT CALIBRATION DATA SHEET

NAME: STACK GAS FLOW METER KILN #2
MFG: FCI
MODEL#: GF90
SERIAL#: 246163
CERT. DUE: 11/05
TAG#: FT-5555
LOCATION: KILN 2 MCC

METER READING FIELD:
METER READING CONTROL ROOM:
METER READING DIFFERENCE:
VISUAL INSPECTION (STACK):
VISUAL INSPECTION (ELECTRONICS):
DATE:

INSTRUMENT TECHNICIAN:

DRIFT ACCEPTANCE +/- 5%
COMMENTS:

QUARTERLY CLEANINGS:

MARCH
JUNE
SEPTEMBER
DECEMBER

ATTACHMENT E

SECTION E GROUNDWATER MONITORING

Groundwater Monitoring E-1

SECTION E

GROUNDWATER MONITORING

6NYCRR Subpart §373-1.5(a)(3) specifies certain additional information requirements for owners of hazardous waste surface impoundments, piles, land treatment units and landfills regarding the protection of groundwater. Likewise, 6NYCRR Subparts §373-2.6, §373-2.12, §373-2.13 and §373-2.14 requires owners of hazardous waste surface impoundments, waste piles, land treatment units or landfills to implement a groundwater protection plan. Norlite does not operate any of the foregoing facilities and, thus, it is not subject to the information or monitoring requirements of 6NYCRR Subparts §373-1.5(a)(3), §373-2.6, §373-2.11, §373-2.12, §373-2.13 or §373-2.14.

ATTACHMENT F

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SECTION F

PROCEDURES TO PREVENT HAZARDS

The information provided in this section is submitted in accordance with the following requirements:

F-1 6NYCRR Subpart §373-1.5(a)(2)(iv) and Subpart §373-2.2(f)--General Security Provisions

F-2 6NYCRR Subpart §373-1.5(a)(2)(v) and Subpart §373-2.2(g) Inspection Schedule

F-3 6NYCRR Subpart §373-1.5(a)(2)(vi) and Subpart §373-2.3 - - Preparedness and Prevention Requirements

F-4 6NYCRR Subpart §373-1.5(a)(2)(viii)- - Spill Prevention, Containment and Countermeasures Plan

F-5 6NYCRR Subpart §373-1.5(a)(2)(ix) and Subpart §373-2.2(i)- - Prevention of Accidental Ignition and Reaction of Ignitible, Reactive or Incompatible Wastes

F-1

Security [6 NYCRR Subpart §373-1.5 (a) (2) (iv) and §373-2.2(f)]

Norlite employs personnel who provide coverage Monday through Friday from 6AM to 10PM ans Saturday 6AM to 12PM at the main plant entrance (Elm Street). The main entrance is closed on Sundays and holidays. Access to the second plant entrance, at Saratoga street, is controlled by Key Card activated security gate. Norlite personnel monitor the active portion of the facility and its operating conditions twenty four hours per day, 365 days per year.

F-1(a)(1)

24-Hour Surveillance System [6NYCRR Subpart §373-2.2(f)(2)(i)]

Norlite operates its facility 24 hours per day, 365 days per year. During periods of normal kiln operation, at least three employees are on duty at the site at all times. Ample lighting is provided throughout Norlite's facility except for the quarry area which does not contain hazardous waste and which usually does not operate at night. In addition, most plant areas are connected to an internal telephone system which is also used for communications outside the plant. During periods the kilns are not operated, at least one employee is on duty at the site at all times. Norlite employees conduct periodic inspections of the active portion of the facility.

F-1(a)(2)

Barrier and Means to Control Entry

{6NYCRR Subpart §373-2.2(f)(2)(ii)]

Due to the large area of the site (200 acres), a facility security fence is not practical. However, Norlite has installed a security fence to control entry to the hazardous waste storage area which includes the drum storage, bulk and loading/unloading areas. Norlite will install a fence on the south end of the facility from the south gate to the quarry.

The kiln area will not be provided with a security fence. However, this area is continuously monitored by Norlite personnel, to prevent unauthorized access.

Fenced areas will remain locked at all times except during periods of loading and unloading. During these times, Norlite personnel will be in attendance.

Employees are provided with key cards to gain access to the facility from South Saratoga Street. Guests who arrive from South Saratoga Street must contact the office from outside the gate using the intercom system that is provided. The gate is monitored by closed circuit video so the office personnel can visually observe the traffic. Employees and Guests may enter on the south side of the facility by way of Elm Street. This gate is secured by a manned guard shack and controlled access is possible twenty-four hours per day.

F-1(b) Warning Signs [6NYCRR Subpart §373-2.2(f)(3)]

Signs which are legible from a distance of 25 feet are posted at the entrance of the active portion of the Norlite facility, as well as the Low Grade Fuel (LLGF) storage tank area, drum storage area, unloading area, and the kiln area. These signs are visible from all angles of approach, and bear the legend **"DANGER - UNAUTHORIZED PERSONNEL KEEP OUT'** and, where required, **"No Smoking".**

F-1(c) Waiver [6 NYCRR Subpart §373-2.2(f)(1)]

The provisions of 6NYCRR Subpart §373-2.2(f)(1) authorize a waiver from the security provisions of 6NYCRR Subpart §373-2.2(f)(2) and (3) if a facility can demonstrate that unknowing or unauthorized persons or livestock would not injure themselves or cause a RCRA violation upon entering the active portion of the facility. Norlite does not request a waiver at this time.

F-1(d) LLGF Truck Delivery Procedures

Deliveries of LLGF to Norlite must be scheduled in advance of arrival at the facility. Only those transporters possessing insurance necessary for hazardous waste transportation will be permitted to deliver LLGF to

Norlite. In addition, transporters are required to possess a waste transporter permit, which is site-specific to Norlite and is issued by NYSDEC. The LLGF delivery procedure is detailed in Figure F-2.

F-2 Inspection Schedule [6 NYCRR Subpart §373-1.5 (a) (2) (v), §373-2.2(g)(2), §373-2.9 (e), and §373-2.10(d)]

F-2(a) General Inspection Requirements [6NYCRR Subpart §373-2.2 (g) (1)]

Norlite conducts regular inspections of the facility for equipment malfunctions, structural deterioration, operator errors, and discharges that could cause or lead to the release of hazardous waste constituents or are important to preventing, detecting, or responding to environmental or human health hazards.

Figure F-1 presents the schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, operating and structural equipment, the container storage area and the tank storage area, and tanks (internally and externally) and the rotary kilns (incinerator/energy recovery units). The items listed in the table are considered important because of their role in preventing, detecting, or responding to environmental or human health hazards. A copy of Figure F-1 and the inspection log is kept by Norlite at its facility.

F-2(b)

Types of Problems [6NYCRR Subpart §373-2.2(g)(2)(iii)]

Figure F-1 identifies the types of problems which are to be looked for during the inspection.

F-2(c)

Frequency of Inspection [6NYCRR Subpart §373-2.2(g)(2)(iv), §373-2.9(e), §373-2.10(d) and §373-2.15(g)]

Figure F-1 lists the recommended frequency of the inspection for each item. The frequency of inspections vary for items on the schedule. Those items most subject to deterioration and severe consequences from operator error or equipment malfunction are generally inspected with greater frequency. At a minimum, the inspection schedule includes the items and frequencies called for in 6NYCRR Subpart §373-2.9(e), §373-2.10(d) and §373-2.15(g).

F-2(d)

Specific Inspection Procedures

Inspections of hazardous waste management facilities are the responsibility of the following Norlite personnel:

1. Compliance Personnel
2. Kiln Field Operator
3. Safety Manager
4. Environmental Manager
5. Fuel Farm Operator
6. Burner Operator

Each person is responsible for regular inspections of various portions of the hazardous waste management facilities and initiation of corrective action if deficiencies are noted. These reports are submitted each day to the, Safety Manager, Environmental Manager, Plant Manager, and all facility/supervisors. The Plant Manager will have overall responsibility for prevention of hazards.

Training provided for these positions is outlined in Section H.

The inspection reports identified herein are subject to change but the schedule and items identified in Figure F-1 are required elements of any update. Prior to using a new form, Norlite will apply for a permit modification to change the form allowed by the permit. Before Norlite uses any new forms, the Department must issue the Part 373 Permit modification.

F-2(d)(1) **Kiln Field Operator's Shift LLGF Inspection Report**

Three times each night shift, the Kiln Field Operator on duty is required to inspect the LLGF storage area and to record results of each inspection on the "Kiln Field Operator's Shift LLGF Inspection Report" form. Information required on the inspection report includes the Kiln Field operator's name, date and time of inspection, item of inspection, typical problems encountered and observations. A copy of the "Kiln Field Operator's Shift LLGF Inspection

Report" is attached to this part as Figure F-3. A file of "Kiln Field Operator's Shift LLGF Inspection Reports' are maintained at the facility and are part of the inspection log.

F-2(d)(2) Fuel Farm Operator's Daily LLGF Inspection Report

Daily, the fuel farm operator on duty is required to inspect the LLGF storage area including containers and LLGF pumps and lines and to record results of each inspection on the "Fuel Farm Operator's Daily LLGF Inspection Report" forms. Information required on the inspection report includes the fuel farm operator's name, date and time of inspection, item of inspection, typical problems encountered and observations. A copy of the "Fuel Farm Operator's Daily LLGF Inspection Report" is attached to this part as Figure F-4. A file of "Fuel Farm Operator's Daily LLGF Inspection Reports" are maintained at the facility and are part of the inspection log.

F-2(d)(3) Burner Operator's Shift Log

The burner operator on duty is required to inspect the LLGF portion of the rotary kiln operation and to record results of these inspections on the "Burner Shift Log" form. Due to the nature of the burner position and the need to continuously monitor fuel usage, burning zone, temperatures and overall operation of the rotary kiln (incinerator/energy recovery unit) to produce acceptable

lightweight aggregate, the inspections are ongoing with operation of the kiln. Any potential problem will immediately be seen and corrective action initiated. Information required on the report includes the burner operator's name, date, day, item of inspection, type of problem encountered and observations. A copy of the "Burner Operator's Shift Log" is attached to this part as Figure F-5. A file of "Burner Operator's Shift Logs' are maintained at the facility and are a part of the inspection log.

F-2(d)(4) Weekly Environmental (RCRA) Inspection Report

Weekly, the Compliance Section is required to make a comprehensive inspection of the LLGF storage area including containers, the LLGF pump area, the LLGF building, pipe tunnel, and the kiln burner area. The results of each inspection are recorded on the "Weekly Environmental and LLGF Inspection Report" form. Information required on the inspection report includes the Compliance Representative's name, date and time of inspection, item of inspection, typical problems encountered and observations. A copy of the "Weekly Environmental and LLGF Inspection Report is attached to the part as Figure F-6. Weekly Environmental and LLGF Inspection Reports are maintained at the facility and are part of the inspection log.

F-2(d)(5) LLGF Tank Inspection Report

Annually, based upon the schedule for tank cleaning, each below ground bulk LLGF storage tank (i.e. tanks no. 300, 400, 500 and 600) is inspected and tested as described below:

1. Following the removal of tank sludges, each tank is visually inspected for structural integrity particularly noting evidence or signs of potential leaks, buckles, bulges or excessive corrosion. Tank entry protocol is included with Figure F-7.

2. Exposed tank appurtenances such as access ports, nozzles, joints, valves and piping are inspected for signs of excessive corrosion, plugging or leaks.

3. If a tank has not undergone integrity testing during the previous 12 months by an independent inspector utilizing the Estabrook EZY Locator Plus method, that tank will be vacuum tested in accordance with the protocols outlined in Section D.

4. Each tank shell is tested for thickness determination as described in Section D.

5. The results of the inspection programs are documented on the form presented in Figure F-7. A file of these reports is maintained at the facility as part of the inspection log.

On an annual basis, each below ground tank is integrity tested utilizing the Estabrook EZY Locator Plus method. The six above ground tanks (i.e. tanks no. 100A, 100B, 100C, 200A, 200B and 200C) and the four equalization tanks (T101A, T101B, T102A and T102B) will undergo integrity testing once every five years by an independent inspector since they will be inspected on a daily basis for leaks. The results of the tests are maintained at the facility and are part of the operating record.

In addition to the RCRA Subpart BB monitoring, an integrity assessment is conducted on the transfer lines from the pumps to the kilns on an annual basis. The results of the tests are maintained at the facility and are part of the operating record.

Also, on an annual basis, the cathodic protection system on the four new tanks is confirmed. The results of the tests are maintained at the facility and are part of the operating record.

On a bimonthly basis (i.e., every two months), the sources of impressed current to the cathodic protection system are tested and recorded. The results of the tests are maintained at the facility.

F-2(e)(1) **Tanks and Tank Storage areas [6NYCRR Subpart §373-2.10(d)]**

The high level switches, the level indicators and the pressure gauges on the tanks are visually inspected daily and measurements are recorded in the Kiln Field Operator's Daily LLGF Inspection Report form. In addition, the area surrounding the tank is inspected daily to detect obvious signs of leakage such as wet spots. The results are recorded in the Kiln Field Operator's Daily LLGF Inspection Report form. Also, the aboveground portions of the tanks such as the piping, pipe fittings, and valves are inspected daily for deterioration, corrosion and leakage and the results are recorded in the Kiln Field Operator's Daily LLGF Inspection Report.

F-2(e)(2) **Tank Storage and Spill Containment**

In addition to the secondary containment provided by the liners under the Tanks 300, 400, 500 and 600, the LLGF building, used for Tanks 100A,B,C and 200A,B,C, also serves as a tertiary containment system for the outside tanks. In the event that the secondary containment system fills, liquid will overflow through a pipe to the LLGF storage building. The containment volume of this LLGF building is 33,940 gallons. This volume is sufficient to hold the entire contents of any LLGF tank that should fail.

Inspection of spill containment facilities will be conducted as follows:

Weekly - Containment areas are inspected weekly by the Compliance Section for the items listed in Figure 1. Details of inspection items are recorded on the "Weekly Environmental (RCRA) Inspection Report" (Figure F-6).

Daily - The spill containment for loading/unloading areas, container sampling areas and drums stored in the unloading areas will be inspected for any spills.

F-2(f) Container and Container Storage Area [6NYCRR Subpart § 373-2.9(e)]

Section D provides a description of the container storage facility and storage layout.

Daily, the containers and container storage area are inspected to insure proper aisle space, stacking and closed lids. Weekly, the containers are inspected for proper labeling, leaking, deterioration and corrosion, and the containment system is inspected for various signs of erosion, deterioration, cracks or leakage. Drums stored in the truck unloading area are sorted on pallets to facilitate inspection for leaks. The results are recorded in the "Weekly Environmental (RCRA) Inspection Report". Drum handling protocol is outlined in Figure F-8.

F-2(g) Remedial Action [6NYCRR Subpart §373-2.2(g)(3)]

If inspections reveal that non-emergency maintenance is

needed, this will be completed as soon as possible to preclude further damage and reduce the need for emergency repairs. If a hazard is imminent or has already occurred, remedial action will be taken immediately. Norlite personnel will notify the appropriate authorities in accordance with the Contingency Plan and initiate remedial actions. In the event of an emergency involving the release of hazardous constituents to the environment, efforts will be directed towards containing the hazard, removing it, and subsequently decontaminating the affected area. Norlite's Contingency Plan is described in and attached to Section G of the application.

F-2(h) Inspection Log [6NYCRR Subpart §373-2.2(g)(4)]

A file of LLGF Inspection Reports is maintained in the main office at the facility. This file constitutes the inspection log. The file includes the following;

1. "Kiln Field Operator's Shift LLGF Inspection Report"
2. "Fuel Farm Operator's Pre-Shift & Daily LLGF Inspection Report"
3. "Burner Operator's Shift Log"
4. "Weekly Environmental (RCRA) Inspection Report"
5. "LLGF Tank Inspection Report"

As required by 6NYCRR Subpart §373-2.2(g)(4), records of inspections are kept for at least three years from the date of inspection.

F-3

Waiver of Preparedness and Prevention Requirements [6NYCRR Subpart §373-1.5(a)(2)(vi) and §373-2.3]

Norlite does not wish to request a waiver of the preparedness and prevention requirements under 6NYCRR Subpart §373-2.3. Requirements of this Subpart are primarily addressed in Section D, Section F, and Section G of this application.

F-3(a)

Required Equipment [6NYCRR Subpart §373-2.3(c)]

6NYCRR Subpart §373-2.3(c) requires that all hazardous waste storage facilities be equipped with certain specified equipment unless the facility can demonstrate that none of the hazards posed by the waste at the facility would require a particular type of equipment. Norlite, at this time, is not requesting a waiver to these requirements.

F-3(a)(1)

Internal Communication System and External Communication System [6NYCRR Subpart §373-2.3(c)(1), §373-2.3(c)(2) and §373-2.3(e)]

Norlite has a warning system with a specific alarm signal consisting of a loud horn to initiate evacuation of all plant areas.

Norlite has an internal/external communication system installed in almost all areas of its facility. The locations of the telephones are shown below:

	Internal	External
Office	X	X
Laboratory	X	X
Kiln Office	X	
Burner Rooms	X	X
Primary Control Building	X	X
LLGF Tank Farm	X	X
Waste Water Treatment Plant	X	X
Security Gate #1	X	X

The communication system consists of a privately owned telephone system. Internal communication is conducted via telephones by dialing desired extensions numbers.

In addition to the alarm, the internal telephone system can be used to notify plant personnel as to the emergency's nature and the recommended action plan. From the most

remote section of the hazardous waste storage area, an employee could obtain access to the internal/external communication system in less than a minute.

F-3(a)(2) Emergency Fire Control and Spill Control Equipment [6NYCRR Subpart §373-2.3(c)(3)]

Norlite's fire control and spill control equipment is listed in the Norlite's Contingency Plan which is set forth herein in Section G.

F-3(a)(3) Water Supply System [6NYCRR Subpart §373-2.3(c)(4)]

Norlite's facility has three fire hydrants for use by the fire department in case of an emergency. Norlite is connected to the city of Cohoes water system. In addition, the Salt Kill, which crosses Norlite's facility, is a secondary water supply which could be utilized in an emergency situation.

F-3(b) Aisle Space Requirements {6NYCRR Subpart §373-2.3(f)]

6NYCRR Subpart §373-2.3(f) requires that a facility maintain aisle space sufficient to allow the unobstructed movement of emergency equipment and personnel in case of an

emergency. Aisle space requirements are addressed herein in Sections D and F. Because Norlite's hazardous waste is primarily in tanks, aisle space is not a significant problem. Aisle space is maintained as shown in Drawing NY003-2475-1.

F-3(c) Testing and Maintenance of Emergency Equipment [6NYCRR subpart §373-2.3(d)]

Norlite's safety and emergency equipment is periodically inspected to insure proper operation during emergency. The inspection procedure are described herein. Figure F-1 identifies the items inspected, the problems inspected for and the frequency of the inspection.

F-3(d) Arrangements with Local Authorities [6NYCRR Subpart §373-2.3(g)]

Norlite has made arrangements with local representatives in an effort to coordinate responses to emergency situations and to educate the response agencies on the particular hazards posed by the facilities. To facilitate a response to any emergency, Norlite will maintain an access road from the Northwest section of the property, coordinate portable radio frequencies access and provide detailed facility maps and updates as required. A detailed description of those arrangements is set forth in the Contingency Plan (Section G-II).

Norlite has also made arrangements with West Central Environmental, Inc. to act as emergency response contractors to handle an emergency incident involving hazardous waste that cannot be reasonable handled internally. The details of that arrangement is described in the Contingency Plan (Section G-II).

F-4 Prevention Procedures, Structures, and Equipment [NYCRR Subpart §373-1.5(a)(viii) and §373-2.3(b)]

6NYCRR Subpart §373-1.5(a)(viii) requires that applicant provide information on the procedures that will be taken to prevent accidents during loading and unloading operations, procedures to prevent undue contamination from the surface water runoff from hazardous waste handling area, procedures to prevent groundwater contamination, procedures to mitigate the damages from an equipment failure or power outage and procedures to prevent undue exposure of personnel to hazardous waste. That information is provided below.

F-4(a) Loading/Unloading Operation [6NYCRR Subpart §373-1.5(a)(viii)(A)]

Loading operations at the facility involve intermittent loading of containers for off-site disposal and loading/unloading of hazardous waste containers shipped from generators to Norlite. Containers are loaded/unloaded at the LLGF storage area using a forklift. Drum handling

protocol is presented in Attachment F-7. During loading/unloading operations, spills are unlikely. In the event of an accident, however, the material will be contained with absorbent booms and pads or other materials. Contaminated materials will be handled as discussed in Section D-1(a)(4) and affected areas of the facility and contaminated equipment will be decontaminated.

Unloading operations at the facility involve unloading bulk deliveries of LLGF at the LLGF storage area and unloading containers. Prior to delivery, the transporter must certify that he understands the Norlite delivery and operating procedure as described in Section F. All LLGF unloading operations are subject to the following LLGF unloading regulations which are posted in the area:

LLGF UNLOADING REGULATIONS

NO UNLOADING WITHOUT NORLITE REPRESENTATIVE PRESENT
NO SMOKING
PARK IN DESIGNATED AREA
TURN OFF ENGINE
SET BRAKES
SET WHEEL CHOCKS
SECURE GROUND TO VEHICLE
OPEN TRAILER TANK VENT BEFORE UNLOADING
DO NOT REMOVE GROUND FROM VEHICLE UNTIL:
    HOSES ARE DISCONNECTED AND SECURED
    TRAILER TANK VENTS ARE CLOSED
    YOU ARE READY TO LEAVE THE AREA
DO NOT START ENGINE UNTIL YOU ARE READY TO LEAVE AREA

The mechanisms present in the tanks to prevent overfilling are described in Section D. In addition, the unloading operation is more fully described in Section D-2.

F-4(b) Surface Water Runoff from Hazardous Waste Handling Areas [6NYCRR Subpart §373-1.5(a)(2)(viii)(b) and §373-2.2(j)]

Norlite's hazardous waste handling areas are not within a 100 year flood plain. Norlite has, however, taken precautions to handle surface water runoff from the hazardous waste handling areas. Norlite's runoff control system for its container storage area is described in Section D and its runoff control system for its tank storage area is described in Section D.

F-4(c) Procedure Taken to Prevent Contamination of Water Supplies [6NYCRR Subpart §373-1.5(a)(2)(viii)(c)]

Norlite has taken various precautions to prevent contamination of the surface water and groundwater.

The soils underlying the tank storage area including the unloading area, container storage area and containment dike are of low permeability clays. The permeability of the soils have been laboratory tested. The results of those tests and a discussion of the site geology are included in Norlite's Part 360 application for the additional tank storage that was submitted to the DEC.

Additional copies of that application will be submitted upon request. Accordingly, the migration downward of any contaminants which reached the unprotected ground would be low.

More important, however, groundwater contamination is prevented by eliminating the discharge of hazardous materials into the unprotected ground. The container storage area and truck containment area are constructed of concrete to contain spills. A roof is provided over this area to divert precipitation. Similarly, a spill containment system and precipitation diversion roof is provided for the tank pump and control valve area. Descriptions of the spill containment controls for the container storage area and for the tank storage area including a complete description of the design and construction of the LLGF storage and handling system are in Sections D.

F-4(d) Equipment and Power Failure [6NYCRR Subpart §373-1.5(a)(2)(viii)(d)]

Norlite's hazardous waste handling system is protected from accidental spillage due to power failures and equipment failure. In the event of a brief power interruption, magnetic switches controlling all LLGF pumps at the storage area will trigger causing LLGF flow to stop. The pumps must be restarted manually. The various precautions taken to mitigate equipment failure and power interruptions are explained in Section D.

In case of an equipment failure or power outage, which results in the spillage of hazardous waste, Norlite's emergency coordinator, at his discretion, will implement Norlite's Contingency Plan. The details of the Contingency Plan are set forth in Section G.

F-4(e) Personal Protection Equipment [6NYCRR Subpart §373-1.5(a)(2)(viii)(e)

Norlite takes various precautions to ensure that its personnel are adequately protected from undue exposure to hazardous waste. Norlite's personnel protective equipment is described in the emergency equipment provisions of the Contingency Plan described in Section G. The personnel use of the protective equipment is covered by Norlite's personnel training programs described in Section H. Norlite's personnel training programs satisfies both the requirements of 6NYCRR Subpart §373-2.2(h) and the requirements of the Mine Safety and Health Administrative Standards of 30 C.F.R. Part §46.

F-5 Precautions Taken to Prevent the Ignition of Ignitable, Reactive and Incompatible Wastes [6NYCRR Subpart §373-1.5(a)(2)(vii), §373-2.2(i), §373-2.4(g) and (h) and §373-2.10(f) and (g)]

Norlite generally does not receive or store reactive or corrosive waste. The procedure for acceptance of all waste is described in Section C -- Waste Analysis Plan. This

plan will prevent transportation of reactive or incompatible wastes to Norlite. Testing at Norlite is performed on each delivery prior to unloading to ensure compatibility as outlined in Section F and Section C.

The main safety concern posed by Norlite's storage operations is the potential hazard posed by an accidental ignition of the LLGF. Ignitable wastes are stored only in the following areas of the Plant: LLGF storage tanks and container storage area at the LLGF unloading station.

F-5(a) Precautions to Prevent Ignition of Ignitable Wastes in Tanks [6NYCRR Subpart §373-2.2(i) and §373-2.10(f)]

Norlite has taken numerous precautions to prevent an accidental ignition in the tank storage area including nitrogen blanketing in the tanks. The particulars of the tank design features and the management practices aimed at preventing accidental ignition are described in Section D and F. During container transfer operations to tanks, in the area shown in Drawing NY003-3008, containers are grounded to prevent accidental ignition.

F-5(b) General Precautions for Preventing the Accidental Mixing of Incompatible Wastes [6NYCRR Subpart §373-2.9(h) and §373-2.10(g)]

Norlite takes precautions to prevent the mixing of

incompatible wastes. Prior to accepting any shipment, Norlite does a compatibility analysis on a representative sample from the shipment. Only those deliveries found to be compatible with the current LLGF in the storage tank into which the LLGF is to be accepted and unloaded will be accepted. Norlite has found its compatibility analyses to be reliable. The details of Norlite's waste analysis procedure including its compatibility test are set forth in Section C. Containers are stored in such a manner as to segregate incompatible materials.

F-5(c) **Management of Ignitable or Reactive Wastes in Containers [6NYCRR Subpart § 373-2.9(g)]**

Precautions taken in the container storage area to prevent accidental fire and explosion include the proper storage of containers (e.g., stacking, aisle space, and labeling and sealing of containers), dikes, sump areas and sump pumps, and appropriate warning signs (e.g., signs with legends: "NO SMOKING" and "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT.").

Prior to storage, each container is sealed to prevent precipitation from entering the drum. The containers are labeled to identify the contents of the container and the date wastes were generated. The container storage area is located 500 feet from the closest company property line, which is in compliance with National Fire Code Standards

for outdoor storage of containers holding ignitable or reactive wastes.

FIGURE F-1 INSPECTION SCHEDULE

AREA/EQUIPMENT	SPECIFIC ITEM	TYPES OF PROBLEMS	INSPECTION FREQUENCY
~~Security Devices~~	Signs	Removed, Dirty and Knocked Down	Weekly
Operating and Structural Equipment	Dikes	Erosion, Cracks and Deterioration	
	Tank Cover (Shale)	Erosion	Weekly
	Ramps	Erosion, Uneven Settlement, Wet Spots	Weekly
	Circulating Pumps, Valves & Piping		Weekly
	Concrete Pads, Holding Area	Leaks, Loss of Metal Thickness, Corrosion	Weekly
	Structural Supports	Cracks, Corrosion, Deterioration, Spralling	Weekly
	Gorator	Corrosion, Looseness	Daily
Container Storage Area		Leaks, Corrosion	Daily
	Container Placement & Stacking	Aisle Space & Stacking	
	Sealing of Open Containers	Open Lids	Daily
	Labeling Containers	Improper Identification - Data Missing	Weekly
	Containers	Corrosion, Leaking, Material Defects	Weekly
	Container Pad	Spilling, Cracks, Uneven Settling, Wet Spots	Weekly
	Dikes	Erosion, Wet Spots, Cracks, Deterioration	Daily
	Debris and Refuse	Aesthetics, Poor Housekeeping	Weekly
	Warning Signs	Damaged	Weekly
Loading/Unloading Area	Pad		Weekly
	Sealing of Open Containers	Spilling Cracks, Uneven Settling, Wet Spots	Daily
	Debris and Refuse	Open Lids	Daily
	Labeling Containers	Aesthetics, Poor Housekeeping	Daily
		Improper Identification - Missing Data	Daily

FIGURE F-1 INSPECTION SCHEDULE

AREA/EQUIPMENT	SPECIFIC ITEM	TYPES OF PROBLEMS	INSPECTION FREQUENCY
LGF Storage Building			
Tanks 100A,B,C, & 200A,B,C	Concrete Containment	Spilling, Cracks, Evidence of Leaks	Daily
Piping and Fittings	Corrosion, Leaks,	Deterioration	Daily
Valves	Leaks, Packing	Deterioration	Daily
Equalization Tanks 101A,B,102A,B	Concrete Containment	Spalling, Cracks, Evidence of Leak	Daily
	Piping and Fittings	Corrosion, Leaks, Deterioration	Daily
	Valves	Leaks, Packing Deterioration	Daily
Tank Storage Area and Ancillary			
Equipment (Tank 300,400,500,600)	Containment Area	Liquid Build Up- Due to Tank/Pipe Break	Daily
	Cover (Shale)	Erosion - Wet Spots, Settling	Daily
	Piping and Fittings	Corrosion, Leaks, Deterioration	Daily
	Valves	Leaks, Packing Deterioration	Daily
	Debris and Refuse	Build-Up	Daily
Tank Externally	Vegetation	Growth	Daily
			Daily
Tanks Internally	Tank Shell	Integrity Testing	
Tank Interior			Annual
	Leaks, Bulges, Buckles,	Corrosion, Joints (Welds)	
			Annual

FIGURE F-1 INSPECTION SCHEDULE

AREA/EQUIPMENT	SPECIFIC ITEM	TYPES OF PROBLEMS	INSPECTION FREQUENCY
~~Solids Mixing Tank~~ (Solids Reprocessing Area)	Containment Area	Spalling, Cracks, Evidence of Leaks	Daily
	Piping and Fittings	Corrosion, Leaks, Deterioration	Daily
	Valves	Leaks, Packing Deterioration	Daily
Monitoring Equipment (Process)	LGF Flow Meter	Reading Malfunction	Daily
	Exit Gas Temperature	Reading Malfunction, Electrical Failure	Daily
	Flame/Material Temperature	Reading Malfunction Electrical Failure	Daily
	Carbon Monoxide (CO)	Reading Malfunction, Sensor/Detector Failure	Daily
	Oxygen (O2)	Reading Malfunction, Cell Failure	Daily
	Combustion Gas Velocity (ID Fan)	Electrical Failure, Fan Malfunction	Daily
	Atomizing Air Pressure (Gauge)	Electrical Failure, Compressor Failure	Daily
	Venturi Water Flow	Electrical Failure, Pump Malfunction	Daily
	Scrubber Pressure Drop	Electrical Failure, Pump Failure, Plugging	Daily
	Combustion Air (Fan Amps)	Electrical Failure, Fan Malfunction	Daily
	Kiln Pressure (Gauge)	Reading Malfunction, Plugging, Loss of ID Fan	Daily
	Blowdown Flowrate (Rotometer)	Reading Malfunction, Float Sticking	Daily

Norlite Corporation

628 SO. SARATOGA ST
P.O. BOX 694
COHOES, NY 12047
PHONE (518) 235-0401
FAX (518) 235-0233

Date

Company
Attn:
Address
City, State Zip

Dear:

Norlite Corporation wishes to maintain the highest safety standards for its employees and everyone who visits the facility. Norlite is required to comply with state and federal regulations. Norlite is a mining facility, which is subject to the strict regulations of the Mine Safety and Health Administration (MSHA). Every customer/vender that enters Norlite is also subject to the regulations of MSHA. In order to make your time on site safe and productive, there are certain requirements of all waste transporters.

Enclosed are the following items for review:

1. Norlite's Operating Procedures for Receipt of Low-Grade Fuel.
2. A map of the Norlite designated truck route to facility.
3. A map showing the truck route to be followed once inside the facility.
4. Norlite's waste code acceptance list.
5. Procedure Acknowledgment Form.

Norlite Corporation is required by New York State Department of Environmental Conservation regulation 6 NYCRR Part 372.2 (b)(2)(ii), to retain a copy of the New York State Part 364 Waste Transporter Permits for all transporters to the facility. Norlite Corporation also requests that all transporters supply a copy of their Certificate of Liability Insurance. Please forward your Transporter Permit, Insurance Certificate and the signed Procedure Acknowledgment Form to Andrea Sharp, Compliance Administrative Assistant, before your delivery to Norlite.

If you have any questions, please feel free to contact me at extension 4005. On behalf of Norlite, we look forward to a productive working relationship. Thank you for your time and cooperation.

Sincerely,

Brian Decatur
Health and Safety Manager

Encl.

NORLITE CORPORATION
STANDARD OPERATING PROCEDURE
FOR RECEIPT OF LOW GRADE FUEL

This document specifies the standard operating procedure for the safe, efficient delivery and unloading of Low Grade Fuel (LGF) to Norlite Corporation. All deliveries of LGF to Norlite will follow this procedure.

1. All deliveries must be scheduled with Norlite LGF scheduling personnel at least twenty-four hours in advance. Deliveries are to be made between 7:00 am and 3:00 pm, Monday through Friday.
2. All LGF deliveries must enter the plant via the Elm Street entrance (Security Gate #1).
   a. The directions are as follows:
      - From I-787, take Exit 8, 23rd Street (Watervliet). Off the Exit ramp, proceed 0.1 miles (West) on 23rd Street to Broadway.
      - Turn Right onto Broadway and proceed 0.2 miles (North) to 25th Street.
      - At 25th Street, turn left and proceed 0.5 miles (West) to Crabapple Street.
      - Turn Right onto Crabapple Street and proceed 0.8 miles (North) to Elm Street.
      - Turn Right onto Elm Street and proceed 0.2 miles (East) to Norlite Delivery Entrance on the left. (Dirt Road)
3. Prior to entry, the driver shall perform a visual inspection of the vehicle to identify any leaks. Unsafe conditions will be reported immediately to Norlite's Compliance and/or Safety Department(s).
4. Trucks will proceed to the scale to obtain a full weigh. Upon initial delivery to Norlite, drivers will complete a truck driver orientation before plant entry. All safety rules and regulations must be followed.
5. After weighing, the trucks will proceed to the Fuel Farm where Norlite personnel will take a representative sample of each tanker truck delivery.
6. The Norlite personnel will direct the driver to the unloading containment area or the designated truck staging area. The driver will then deliver the sample and paper work to the Norlite Laboratory.
7. While the truck is inside the Fuel Farm area, the following safety rules must be followed:
   A. **ABSOLUTELY NO SMOKING**
   B. **TURN OFF THE ENGINE**
   C. **SET BRAKES AND WHEEL CHOCKS**
   D. **ATTACH TANKER GROUNDING WIRE TO GROUNDING LOCATION PROVIDED WHILE OFF-LOADING**
   E. **DRIVERS ARE TO WEAR HARD HATS AND SAFETY GLASSES WHEN OUTSIDE THEIR VEHICLE**

8. Prior to off-loading Low Grade Fuel the truck sample will be analyzed for the following parameters:

- Compatibility
- Specific Gravity
- BTU/LB
- Halogens
- %Ash
- Total Metals
- PCB's

9. Containerized waste (Drums) will be handled as follows:
   a. The truck driver will open the trailer and inspect the trailer's contents prior to unloading. The containers will be unloaded from the truck by Norlite Personnel.
   b. As the containers are being unloaded, they will be inspected for damage. Any leaking or damaged containers will be placed in appropriate overpack containers. The overpack containers will be labeled appropriately.
   c. Norlite personnel will verify the drum count after unloading. Any discrepancies in the drum count will be noted on the manifest and appropriate actions will be taken to correct the discrepancy.
10. Once the off-loading/ unloading operation is completed, the truck will proceed to the scale to obtain an empty weight. The paperwork will be completed by Norlite personnel and a copy will be provided to the driver.
11. The truck will exit the plant at Elm Street and follow the designated truck route back to I-787.

Figure F-2 (continued)

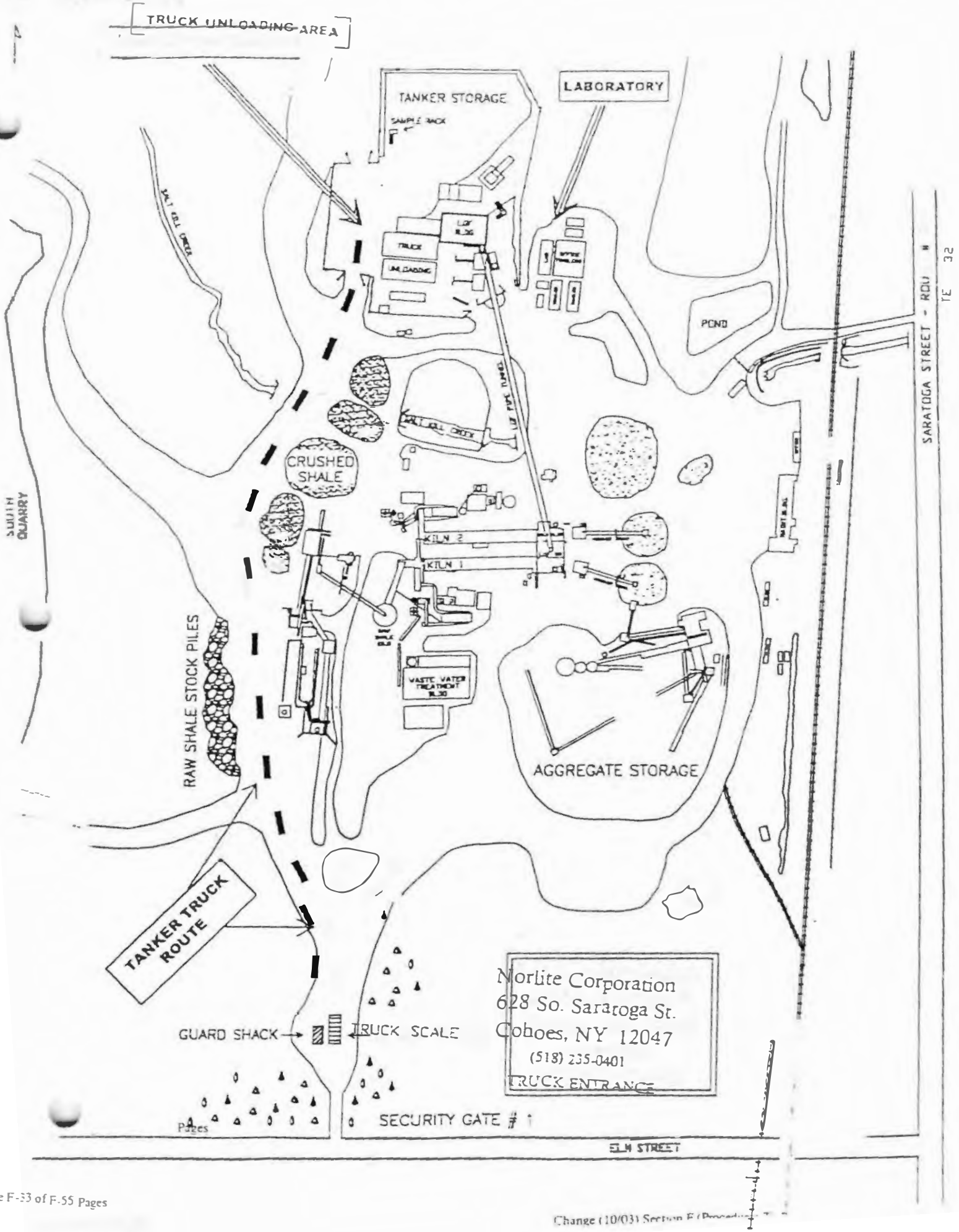
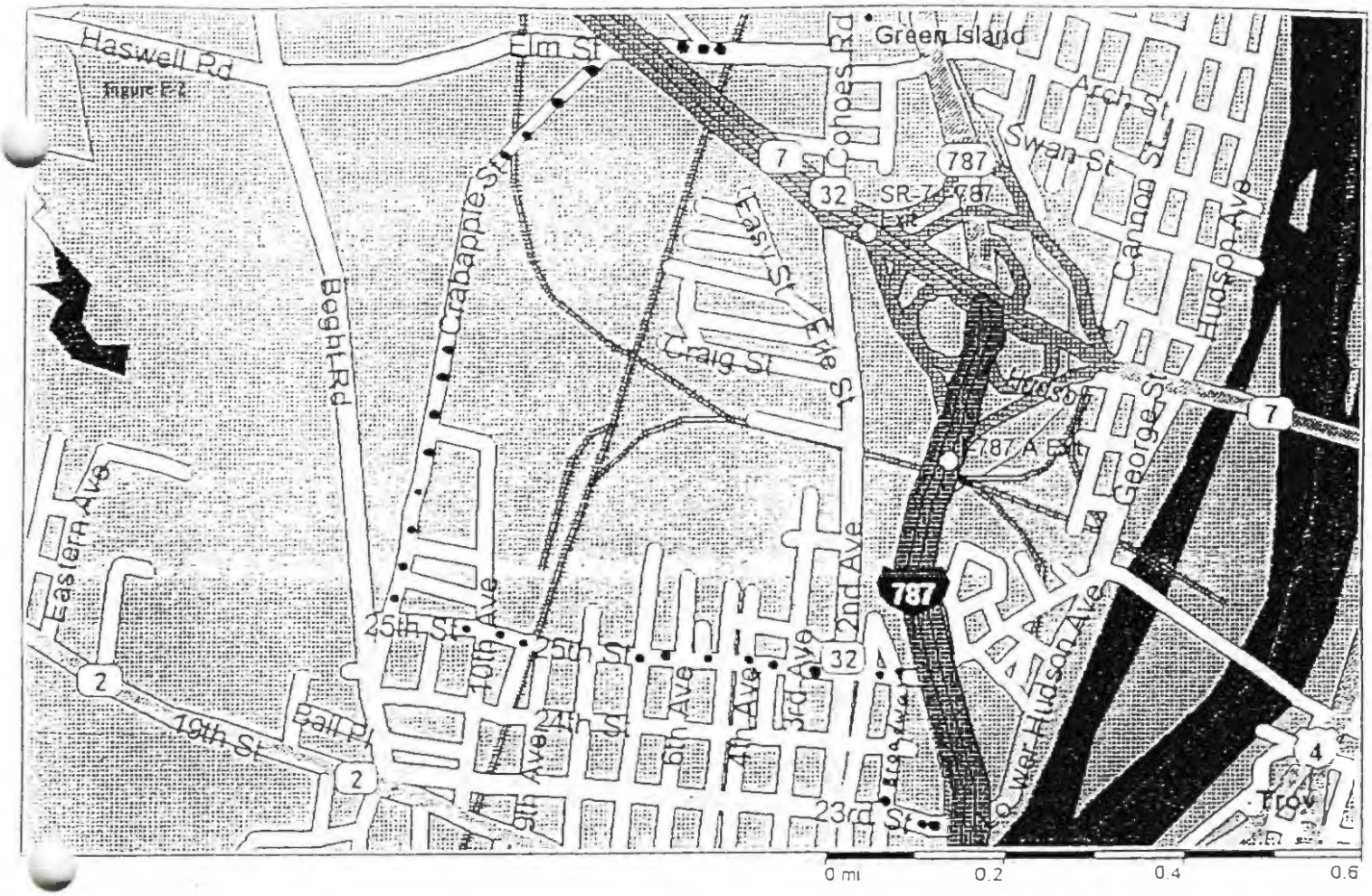


Figure F-2 (continued)

NORLITE DESIGNATED TRUCK ROUTE



The directions are as follows:

- From I-787, take Exit 8, 23rd Street (Watervliet). Off the Exit ramp, proceed 0.1 miles (West) on 23rd Street to Broadway.
- Turn Right onto Broadway and proceed 0.2 miles (North) to 25th Street.
- At 25th Street, turn left and proceed 0.5 miles (West) to Crabapple Street.
- Turn Right onto Crabapple Street and proceed 0.8 miles (North) to Elm Street.
- Turn Right onto Elm Street and proceed 0.2 miles (East) to Norlite Delivery Entrance on the left. (Dirt Road)

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KILN FIELD OPERATORS SHIFT REPORT

NAME_____ DATE_____ SHIFT_____

SUPERVISORS SIGNATURE:_____

WATER READINGS AND SILO LEVELS

QUARRY/CITY WATER READINGS	START	END	GALLONS
KILN1 QUARRY/CITY WATER TOTALIZER			
KILN 1 CAUSTIC TOTALIZER			
KILN 2 QUARRY/CITY WATER TOTALIZER			
KILN 2 CAUSTIC TOTALIZER			
SODA ASH MAKE-UP TOTALIZER			
LIME SILO LEVEL	TIME		
SODA ASH SILO LELEL	TIME		

KILN 1	OIL LEVEL OK	AMOUNT ADDED	SEAL OK
PIER 1 NE			
PIER 1 SE			
PIER 1 NW			
PIER 1 SW			
PIER 2 NE			
PIER 2 SE			
PIER 2 NW			
PIER 2 SW			

KILN 2	OIL LEVEL OK	AMOUNT ADDED	SEAL OK
PIER 1 NE			
PIER 1 SE			
PIER 1 NW			
PIER 1 SW			
PIER 2 NE			
PIER 2 SE			
PIER 2 NW			
PIER 2 SW			
PIER 3 NE			
PIER 3 SE			
PIER 3 NW			
PIER 3 SW			

NOTE PIER 1 IS DISCHARGE PIER

DO OIL DRUMS NEED TO BE EMPTIED AT KILN 2?	PIER 1	PIER 2	PIER 3
KILN 1 PIERS CLEAN			
KILN 2 PIERS CLEAN			
KILN 1 TRUNNION DRIP TRAYS CLEAN			
KILN 2 TRUNNION DRIP TRAYS CLEAN			

1

EA PINNION GEAR AND DUST SEAL INSPECTIONS

	KILN 1	KILN 2	
BULL GEAR GREASED AND KILN 2 OIL LEVEL OIL LEVEL CHECKED			WAS OIL ADDED TO KILN2 GEAR
BEARINGS (EAST AND WEST) GREASED			
ED SEALS MISSING			
SCHARGE SEALS MISSING			
ITIVE EMISSIONS?			

ANY MAINTENANCE REQUIRED IN THIS AREA

ANY MAINTENANCE REQUIRED IN THIS AREA

EDERS, ROTARY VALVES AND BLOWER INSPECTION- RECORD ALL CHANGES

*USE ADDITIONAL SHEETS AS REQUIRED

T	SETTING *NOT FROM WAP 2- ACTUAL SETTING*	LIME FEEDER	ROTARY VALVE	BLOWER SELECTED
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D
	_____lbs./hr	1 2 3	ON OFF	A B C D

ERS GUARDED- REPORT CONDITION

KILN 1 UPPER(NEW) FAN SETPOINT	HZ	KILN 2 MAIN DRIVE SETPOINT	HZ
KILN 2 HEAT EXCHANGER SETPOINT	HZ	K1 SHALE SILO HEAT RUNNING	YES NO
KILN 1 PRIMARY AIR FAN SETPOINT	HZ	IS ANY MAINTENANCE REQUIRED IN THESE AREAS?	
KILN 2 PRIMARY AIR FAN SETPOINT	HZ		

NAME:_____ DATE:_____ SHIFT:_____

RAW SHALE BELTS INSPECTION

	KILN 1 TOP	KILN 1 BOTTOM	KILN 2 TOP	KILN 2 MIDDLE	KILN 2 BOTTOM
SHALE BELTS AND SPLICES IN WORKING CONDITION	YES NO	YES NO	YES NO	YES NO	YES NO
ROLLERS AND RETURNS IN WORKING CONTITION	YES NO	YES NO	YES NO	YES NO	YES NO
WIPERS IN PLACE AND IN GOOD CONDITION	YES NO	YES NO	YES NO	YES NO	YES NO
HEAD PULLEYS AND TAIL PULLEYS GREASED	YES NO	YES NO	YES NO	YES NO	YES NO
K1 N 1 ALL CONVEYOR COVERS AND GUARDS IN PLACE	YES NO	YES NO	YES NO	YES NO	YES NO
K1 N 2 ALL CONVEYOR COVERS AND GUARDS IN PLACE			YES NO	YES NO	YES NO

ROTARY VALVE- SHALE FEED FOR KILN 1 SUPPORT CONDITION	ARE GUARDS IN PLACE	YES NO
VALVE- SHALE FEED FOR KILN 2 CONDITION	ARE GUARDS IN PLACE	YES NO
SHALE FEEDER FOR KILN 1 SUPPORT CONDITION	ARE GUARDS IN PLACE	YES NO
SECONDURATE FEEDER FOR KILN 2 SUPPORT CONDITION	ARE GUARDS IN PLACE	YES NO

K1 N 1 SHALE FEED- IS ANY MAINTENANCE REQUIRED IN THIS AREA

K1 N 2 SHALE FEED- IS ANY MAINTENANCE REQUIRED IN THIS AREA

COOLER SYSYTEM AND COOLER FAN INSPECTION

COOLERS AND COOLER FANS	KILN 1	KILN 2
COOLER DRIVE SYSTEM GREASED	YES NO	YES NO
BARRON EXHAUST SYSTEM GREASED	YES NO	YES NO
EAST COOLER FAN GREASED	YES NO	YES NO
WEST COOLER FAN GREASED	YES NO	YES NO
KILN COOLER AREAS CLEANED	YES NO	YES NO
COOLER SCREWS RUNNING NORTH	YES NO	YES NO

COOLER SCREW RUNNING SOUTH	YES NO	YES NO
DUST DRUMS EMPTIED	YES NO	YES NO
KILN 1 COOLER- IS ANY MAINTENANCE REQUIRED IN THIS AREA		
KILN 2 COOLER- IS ANY MAINTENANCE REQUIRED IN THIS AREA		

NAME:_____ DATE:_____ SHIFT:_____

CLINKER BELTS AND TUNNEL INSPECTION

	KILN 1	KILN 2
BELTS AND SPLICES IN GOOD CONDITION	YES NO	YES NO
HEAD PULLEYS AND TAIL PULLEYS GREASED AND GUARDED	YES NO	YES NO
ROLLERS AND RETURN IN GOOD CONDITION AND GUARDED	YES NO	YES NO
WIPERS IN PLACE AND IN GOOD CONDITION	YES NO	YES NO
PUMP IN TUNNEL IN GOOD CONDITION	YES NO	YES NO
WAS PUMP CHANGED OUT ON YOUR SHIFT	YES NO	YES NO
CLINKER BELT WATER SPRAYS	ON OFF	ON OFF
CLINKER BELT HEAD BOX WATER SPRAYS	ON OFF	ON OFF
TUNNEL CLEAN AT START OF SHIFT	YES NO	YES NO
TUNNEL CLEAN AT END OF SHIFT	YES NO	YES NO
ALL CONVEYOR COVERS IN PLACE	YES NO	YES NO
KILN 1 – ANY MAINTENANCE REQUIRED IN THIS AREA		
KILN 2- ANY MAINTENANCE REQUIRED IN THIS AREA		

AIR COMPRESSORS AND PORTABLE AIR COMPRESSORS

	KILN 1	KILN 2
OIL LEVEL CHECKED	YES NO	YES NO
HOW MUCH OIL WAS ADDED		
AIR COMPRESSOR TEMP		
AIR DRYERS AND AFTERCOOLERS WORKING	YES NO	YES NO

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DRYER RELIEF VALVE WORKING PROPERLY	YES NO	YES NO
PORTABLE COMPRESSOR RUNNING	YES NO	YES NO
FLUIDS CHECKED IN PORTABLE	YES NO	YES NO
PORTABLE RE-FUELED FOR NEXT SHIFT	YES NO	YES NO
ANY MAINTENANCE REQUIRED IN THIS AREA		

NAME:_____ DATE:_____ SHIFT:_____

KILN DUST LEVEL INSPECTION LOG

BAGHOUSE	TIME 1	MOD A	MOD B	MOD C	TIME 2	MOD A	MOD B	MOD C	KILN 1 MULTICLONE	HOPPER LEVEL	HOPPER LEVEL
DIFFERENTIAL PRESSURE (IN MCC)									TIME 1	UPPER	LOWER
OUTLET TEMPERATURE (IN MCC)									TIME 2	UPPER	LOWER
SUCTION LEVEL LOW,MIDDLE, HIGH, NONE									ROTARY VALVE ON	YES OR NO	
ROTARY VALVE RUNNING									RV MAINT NEEDED	YES OR NO	
ROTARY VALVE ADJUSTMENT MADE									BLOWER SELECTED	EAST OR WEST	
VAC TRUCK LOADS TAKEN											
ROTARY VALVE MAINTENANCE NEEDED											
BAGHOUSE BLOWER SELECTED	NORTH OR SOUTH				NORTH OR SOUTH						

BAGHOUSE DUST LINES TO SILO-MAINTNENANCE NEEDED-

MULTICLONE DUST LINES TO SILO-MAINTENANCE NEEDED-

ILN 2 BAGHOUSE	TIME 1	MOD A	MOD B	MOD C	TIME 2	MOD A	MOD B	MOD C	KILN 2 MULTICLONE	HOPPER LEVEL	HOPPER LEVEL
IFFERENTIAL RE (IN MCC)									TIME 1	UPPER	LOWER
ATURE (IN MCC)									TIME 2	UPPER	LOWER
ON LEVEL OW, HIGH, NONE									ROTARY VALVE ON	YES OR NO	
OTARY VALVE UNNING									RV MAINT NEEDED	YES OR NO	
OTARY VALVE DJUSTMENT MADE									BLOWER SELECTED	EAST OR WEST	
AC TRUCK LOADS AKEN											
OTARY VALVE AINTENANCE NEEDED											
AGHOUSE BLOWER LECTED	NORTH OR SOUTH				NORTH OR SOUTH						

AGHOUSE DUST LINES TO SILO- MAINTENANCE NEEDED-

ULTICLONE DUST LINES TO SILO-MAINTENANCE NEEDED-

AS THE VAC TRUCK CLEAN AND READY FOR YOUR USE?

O YOU EMPTY AND CLEAN VAC TRUCK AFTER YOUR USE?

S THE EQ ROOM CLEAN AT THE BEGINNING OF YOUR SHIFT ?

YOU CLEAN FILTER BASKETS DURING YOUR SHIFT?

STE DRUM LEVEL ¼ ½ ¾ FULL

PPE WASTE DRUM LEVEL ¼ ½ ¾ FULL

OM CLEAN AT END OF SHIFT ? ***

ARE DRUMS AND PAILS PROPERLY LABELED?

EQUIRES 1 EMPTY PAIL, DRIP PANS CLEAN AND NO USED PPE

DATE_____ SHIFT_____ NAME_____ SUPERVISOR_____

Figure F-4

...ATION'S PRE-SHIFT & DAILY INSPECTION REPORT

DATE: _____ INSPECTED BY: _____

ITEM	Acceptable	Unacceptable	STATUS	ACTION NEEDED OR TAKEN
ER PAD				
3				
ump 4				
ump 5				
ump 6				
ank 3 Circulators				
ank 4 Circulators				
ank 5 Circulators				
nk 6 Circulators				
pe, Valves, Fittings				
p Pans				
e Extinguisher (2)				
usekeeping				
nk Pressure-300				
nk Pressure-400				
k Pressure-500				
ssure-600				

er Remarks:

F STORAGE BUILDING

p 100A				
p 100B				
p 100C				
p 200A				
p 200B				
p 200C				
Valves, Fittings				
Level				
Extinguisher (2)-Upper Level				
ody Wash-Upper Level				
ket (1)-Upper Level				
shers (2)-Lower Level				
dy Wash-Lower Level				
l Controls				

Figure F-4 (continued)

[illegible] PRE-SHIFT & DAILY INSPECTION REPORT

DATE: _____ *INSPECTED BY:* _____

ITEM	Acceptable	Unacceptable	STATUS	ACTION NEEDED OR TAKEN
STORAGE BUILDING				
Pressure 100A				
ANK Pressure 100B				
ANK Pressure 100C				
ANK Pressure 200A				
ANK Pressure 200B				
ANK Pressure 200C				
GF Data System				
useKeeping				
leways Clear				
hts				
ner Remarks:				
ROUNDS				
ice and Gates				
s Maintained				
ns Empty				
tion				
elways Clear				
ts				
s of Erosion or HW Release				
r Remarks:				
EAK ROOM				
ekeeping				
of LGF Hazards				
Remarks:				
KER STAGING AREA				
Water Removed				
f Contamination Leaks				
rks:				

FUEL FARM OPERATOR'S PRE-SHIFT & DAILY INSPECTION REPORT

Figure F-4 (continued)

ATE: _____ *INSPECTED BY:* _____

ITEM	Acceptable	Unacceptable	STATUS	ACTION NEEDED OR TAKEN
EFLOADING PAD				
04				
mp 204				
el Oil Pump 107				
ffin Monsters				
loading Filters				
ses				
usekeeping				
ard Drums (# of)				
Hazardous Drums (# of)				
Extinguisher				
ts				
er Remarks:				
JM STORAGE BLDG.				
skeeping				
ums (# of)				
Hazardous Drums (# of)				
Extinguisher (3)				
Blanket (1)				
Body Wash				
r Aisle Space				
r Stacking				
r Labeling				
Remarks:				
OIL TANK AREA				
keeping				
ump				
ump				
Fittings				
isher (1)				
emarks:				

FUEL FARM OPERATOR'S PRE-SHIFT & DAILY INSPECTION REPORT

Figure F-4 (continued)

ATE: _____ INSPECTED BY: _____

ITEM	Acceptable	Unacceptable	STATUS	ACTION NEEDED OR TAKEN
BUILDING OUTSIDE				
inguisher (2)				
hts				
TILITY BUILDING-BOILER ROOM				
usekeeping				
lers				
ssure Washer				
er Remarks:				
'LITY BUILDING - MCC ROOM				
sekeeping				
lectrical Covers Closed				
System Panel				
Oil Leak Detector				
Oxygen Monitor				
tem				
narks:				
ITY BUILDING-FIRE SYSTEM ROOM				
ekeeping				
Remarks:				
ER				
Remarks:				

KILN THERMAL INPUT LOG

DATE: _____ SHIFT A B C D KILN 1 2 OPERATOR _____

TIME	TANK WAP 2 #	(1) START TOTALIZER	(2) END TOTALIZER	(3) TOTAL GALLONS	(4) FUEL BTU / GAL	(5) TOTAL BTU	(6) FUEL %Cl	(7) TOTAL PDS Cl	(8) SPECIFIC GRAVITY
	OIL WAP 2 #								

CALCULATIONS TABLE

OLUMN	CALCULATION
1	Totalizer
2	Totalizer
3	(2) - (1)
4	Wap II Sheet
5	(3)
6	Wa[illegible]heet

SHIFT TOTALS

LGF Gallons _____ LGF BTU _____

Oil Gallons _____ LGF LBS Cl _____

Figure F-5

Change (1/05) Section F (Procedures To Prevent Hazards)

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BURNER OPERATORS LOG

KILN _____ BURNER _____ SHIFT A B C D DATE / /

	KILN											COOLER				
TIME	CLINKER WT LBS	FEEDER SETTING TPH	STONE TEMP °F	FLAME TEMP °F	BACKEND TEMP °F	KILN HOOD PRESSURE "WC	LGF GPM	WASTE OIL GPM	WATER GPM	NATURAL GAS	ATOM AIR PSI	COOLER SPEED	EAST COOLER FAN	WEST COOLER FAN	FRONT BARRON SPEED	FRONT BARRON AMPS
7:00																
8:00																
9:00																
10:00																
11:00																
12:00																
13:00																
14:00																
15:00																
16:00																
17:00																
18:00																

	SCRUBBER							BAGHOUSE					HEAT EXCHANGER/MC			
TIME	QUENCH TEMP °F	pH	RECYCLE FLOW GPM	VENTURI D.P. "WC	DUCON D.P. "WC	I.D FAN AMPS	I.D FAN SPEED	INLET TEMP °F	DIFF PSI "WC	OXYGEN %	CO CNT PPM	LIME FEED ON / OFF	HX D.P. "WC	HX EXIT TEMP	M.C DIFF PSI "WC	DILUTION DAMPER %
7:00																
8:00																
9:00																
10:00																
11:00																
12:00																
13:00																
14:00																
15:00																
16:00																
17:00																
18:00																

KILN			GAS	END		REMARKS
RAW				START		

Change (10/03) Section F (Procedures To Prevent Hazards)

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BURNER OPERATORS LOG

KILN _____ BURNER _____ SHIFT A B C D DATE ___/___/___

	KILN											COOLER				
TIME	CLINKER WT LBS	FEEDER SETTING TPH	STONE TEMP °F	FLAME TEMP °F	BACKEND TEMP °F	KILN HOOD PRESSURE "WC	LGF GPM	WASTE OIL GPM	WATER GPM	NATURAL GAS	ATOM AIR PSI	COOLER SPEED	EAST COOLER FAN	WEST COOLER FAN	FRONT BARRON SPEED	FRONT BARRON AMPS
19 00																
20 00																
21 00																
22 00																
23 00																
0 00																
1 00																
2 00																
3 00																
4 00																
5 00																
6 00																

	SCRUBBER							BAGHOUSE				HEAT EXCHANGER/MC			
TIME	QUENCH TEMP °F	pH	RECYCLE FLOW GPM	VENTURI D.P. "WC	DUCON D.P. "WC	I.D.FAN AMPS	I.D.FAN SPEED	INLET TEMP °F	DIFF PSI "WC	OXYGEN %	LIME FEED ON / OFF	CO HRA PPM	HX D.P. "WC	HX EXIT TEMP	M.C. DIFF PSI "WC	DILUTION DAMPER %
19 00																
20 00																
21 00																
22 00																
23 00																
0 00																
1 00																
2 00																
3 00																
4 00																
5 00																
6 00																

KILN E' _____ GAS END _____ AVG _____

RAW S' _____ START _____

REMARKS

Change (10/03) Section F (Procedures To Prevent Hazards)

48 of F 55 Pages

WEEKLY ENVIRONMENTAL (RCRA) INSPECTION REPORT

Date & Time: _____ Inspector(s): _____

Area: Fuel Farm Supervisor(s): _____

Figure F-6

ention Supervisor - You are required to review and correct this list. Completed
rm must be returned to the Compliance Dept. for filing (Permit Required).

ITEM	ACCEPTABLE[1] YES	ACCEPTABLE[1] NO	STATUS (or OBSERVATION)[2]	ACTION
PAD - TANKS 3 & 4				
Secondary Containment				
A2. Drip Pans				
A3. Housekeeping				
A4. Pumps				
A5. Valves				
A6. Piping / Fittings				
A7. Fire Extinguisher (1)				
PUMP PAD - TANKS 5 & 6				
B1. Secondary Containment				
B2. Drip Pans				
B3. Housekeeping				
B4. Pumps				
B5. Valves				
B6. Piping / Fittings				
B7. Fire Extinguisher (1)				
ANKS 3-6 GROUND COVER				
C1. Vegetation				
C2. Erosion				
C3. Housekeeping				
ECURITY				
D1. Fencing				
D2. Signs and Locks				
ONTAINER STORAGE AREA				
E1 Non-haz drums				
Haz Drums				
ax. 214 haz drums)				
E4. Corrosion/Leakage				
E5. Drainage				
E6. Container Pad				
E7. Housekeeping				
E8. Signs / Labeling				
E9. Fire Extinguishers (3)				
NKER UNLOADING AREA #1 (north)				
1. Concrete Pad				
2. Pumps				
3. Piping / Fittings				
4. Valves				
5. Safety Shower (1)				
6. Housekeeping				
NKER UNLOADING AREA #2				
1. Concrete Pad				
2. Pumps				
3. Piping / Fittings				
4. Valves				
5. Housekeeping				
KER STAGING AREA				
Spills/Stains on Ground				
Condition of Contained Water				
Housekeeping				

[1] If both YES and NO are checked, the item is considered to be marginally acceptable.

[2] Including Photos. (Even if only YES checked) an entered observation does not imply a violation.

WEEKLY ENVIRONMENTAL (RCRA) INSPECTION REPORT

Date & Time _____ Inspector(s): _____

Area: Fuel Farm Supervisor(s):

enium Supervisor- You are required to review and correct this list. Completed
must be returned to the Compliance Dept. for filing (Permit Required).

ITEM	ACCEPTABLE[1] YES	ACCEPTABLE[1] NO	STATUS (or OBSERVATION)[2]	ACTION
ROLL-OFF CONTAINERS				
H1. Condition of Containers				
H2. Absence of Spills				
H3. Covered				
H4. Labels				
H5. Haz. Quantity (Max 160cu yds)				
LGF STORAGE BUILDING				
I1. Tank 100A				
I2. Tank 100B				
I3. Tank 100C				
I4. Tank 200A				
I5. Tank 200B				
I6. Tank 200C				
I7. Pump 100A				
I8. Pump 100B				
I9. Pump 100C				
I10. Pump 200A				
I11. Pump 200B				
I12. Pump 200C				
I13. Grated Trench & Sump				
I14. Secondary Containment				
I15. Housekeeping				
I16. Pipes, Valves, & Fittings				
I17. Fire Extinguishers (5)				
I18. Safety Shower (outside bldg.)				
BRIDGE & TUNNEL				
ing / Fittings				
re Extinguishers (3)				
13. Safety Showers (2)				
14. Housekeeping				
EL OIL STORAGE TANK AREA				
1. Physical Condition of Tank				
2. Cracks, Corrosion, Thinning?				
3. Pipes, Valves, & Pumps				
4. Housing & Foundation Integrity				
5. Housekeeping				
6. Leak detection devices located in utility building)				
7. Fire Extinguishers (2)				
A, B TANKS				
1. Condition of Tanks				
2. Cracks, Corrosion, Thinning?				
3. Pipes, Valves, & Pumps				
4. Containment Condition				
5. Housekeeping				

NTS.

both YES and NO are checked, the item is considered to be marginally acceptable

[2] Remarks (only YES checked an entered observation does not imply a need for corrective action

WEEKLY ENVIRONMENTAL (RCRA) INSPECTION REPORT

Date & Time: _____ Inspector(s): _____

Area: Kiln Area Supervisor(s): _____

Attention Supervisor(s): You are required to review and correct this list. Completed ... must be returned to the Compliance Dept. for filing. (Permit Required)

ITEM	ACCEPTABLE[1] YES		NO		STATUS (for OBSERVATION)[2]	ACTION
HOUSE	K1	K2	K1	K2		
L1. Structure Integrity						
L2. Piping/Fittings						
L3. Housekeeping						
SCRUBBER BUILDING	K1	K2	K1	K2		
M1. Containment Area						
M2. Pumps						
M3. Piping/Fittings						
M4. Valves						
M5. Housekeeping						
KILN	K1	K2	K1	K2		
N1. Backend Seal						
N2. No Dust or Emissions?						
N3. Trunnions						
N4. Not Leaking Oil on Ground?						
N5. Drip Pans in use? (if needed)						
N6. Shell						
BURNER FLOOR AREA	K1	K2	K1	K2		
O1. Piping, Fittings, & Valves						
O2. Pumps						
O3. Fire Extinguishers (1 ea. area)						
O4. Safety Shower (1 ea. area)						
O5. Housekeeping						
EXTRUDER ROOM						
P1. Housekeeping						
P2. Piping/Fittings						
P3. Drums						
Number of Haz. Drums						
Number of Non-Haz Drums						
EQUALIZATION TANKS						
Q1. Tank 101A						
Q2. Tank 101B						
Q3. Tank 102A						
Q4. Tank 102B						

COMMENTS:

[1] If both YES and NO are checked, the item is considered to be marginally acceptable. If item is acceptable (only YES checked) an entered observation does not imply a need for corrective action.

WEEKLY ENVIRONMENTAL (RCRA) INSPECTION REPORT

Date & Time: _____ Inspector(s): _____

Area: Kiln Area Supervisor(s): _____

tention Supervisor(s): You are required to review and correct this list. Completed
must be returned to the Compliance Dept. for filing. (Permit Required)

ITEM	ACCEPTABLE[1] YES	ACCEPTABLE[1] NO	STATUS (or OBSERVATION)[2]	ACTION
LIZATION AREA				
R1. Sump in Basement				
R2 Secondary Containment				
R3. Pumps & Valves				
R4 Safety Shower (1)				
R5. Piping/Fittings				
R6. Fire Extinguishers (4)				
R7. Housekeeping				
R8 Drum Storage Area (< 55 gals.)				
TUNNEL FIRE/LEL/O2 MONITOR AND CONTROL SYSTEM (located in k) cont. room)				
S1 Fire Protection Device				
S2. Smoke Detector				
S3 Oxygen and LEL Monitors				
S4. Automated AFFF System				
S5. Latest Calibration (Quarterly):				
KILN #1 GAS ROOM				
T1 Piping/Fittings				
T2. Housekeeping				
T3. Containment Pad				
WASTEWATER TREATMENT AREA				
U1 Pumps & Valves				
U2 Piping/Fittings				
U3. Containment Area				
U4 Fire Extinguisher (1)				
U5. Housekeeping				
DUST STORAGE SILOS				
V1 [illegible]ternal Condition				
[illegible]bsence of Spills				
[illegible]pings/Fittings				
V4. Bag Vent Functional				
MENTS:				

Date & Time: _____ Inspector(s): _____

Area: Laboratory Supervisor(s): _____

ITEM	ACCEPTABLE[1] YES	ACCEPTABLE[1] NO	STATUS (or OBSERVATION)[2]	ACTION
ABORATORY				
1. Condition of Containers				
2. Condition of Labels				
3. Absence of Spills / Leaks				

ate & Time: _____ Inspector(s): _____

rea: Plant

ITEM	ACCEPTABLE[1] YES	ACCEPTABLE[1] NO	STATUS (or OBSERVATION)[2]	ACTION
IVERSAL WASTE STORAGE				
Containers Labeled / Dated				
Containers Closed				

If both YES and NO are checked, the item is considered to be marginally acceptable
em is acceptable (only YES checked) an entered observation does not imply a need for corrective action.

Supervisor _____ Laboratory Manager _____

Page 5 of 9 Pages Fuel Farm Manager (_____

ANNUAL LGF TANK INTEGRITY REPORT

LGF Tank Integrity Test

TANK NO.	TEST DATE	RESULTS
100A	*	
100B	*	
100C	*	
200A	*	
200B	*	
200C	*	
300		
400		
500		
600		
101A	*	
101B	*	
102A	*	
102B	*	
SP-100	*	

REMARKS:

ii. LGF Tank Pressure Test (Not required if integrity test performed)

TANK NO.	TEST DATE	RESULTS
100A	*	
100B	*	
100C	*	
200A	*	
200B	*	
200C	*	
300		
400		
500		
600		
101A	*	
101B	*	
102A	*	
102B	*	
SP-100	*	

REMARKS:

* - Required once every five years for above ground tanks only

ANNUAL LGF TANK INTEGRITY REPORT

III LGF Tank Internal Inspection (Performed after tank sludge removal)

TANK NO.	DATE	RESULTS
100A		
100B		
100C		
200A		
200B		
200C		
300		
400		
500		
600		
101A		
101B		
102A		
102B		
SP-100		

REMARKS:

IV. Cathodic Protection System Survey

Test Date Results

REMARKS:

V Overall System Assessment Review

Review By

REMARKS:

Figure F-7

DRUM HANDLING PROTOCOL

Drums will be inspected prior to movement for the following:

- Secure Lids

- Proper Drum

- Proper Labeling

Drums will be moved using a manual hand truck to the truck/unloading area.

In the truck loading areas, the drums will be placed on pallets and moved by forklift to the appropriate storage area or the truck unloading pad. If the forklift is not available, the drums will be transferred upright onto the bucket of the front end loader. No more than two drums will be moved at a single time. Drums will be strapped to the loader bucket in a manner much like a seat belt. The bucket of loader will be tilted back slightly to prevent overturning. As an alternative method of transferring drums, drums will be moved by use of a fork lift. Drums will be placed onto a pallet from the loader for off-site transport or on-site storage.

Drums will be inspected after movement for potential damage.

ATTACHMENT G

Norlite's Contingency Plan
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I. Introduction:

The information contained herein is submitted in accordance with the requirements of 6NYCRR, Subpart §373-1.5(a)(2)(vii) and Subpart §373-2.4 and constitutes the Norlite Contingency Plan. The intent of this plan is to have established procedures in place to prevent hazards to human health or the environment from fires, explosions or any unplanned sudden or non sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the Norlite Facility.

Every effort is made to properly handle wastes and minimize emergency situations. This is accomplished by use of state-of-the art equipment, maintenance, procedures and controls, containment measures, employee training and supervision, and routine inspections. In the event of an occurrence, procedures are in place to minimize and control such hazards, and meet the requirements of 6NYCRR Subpart §373-2.4.

The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

A description of the wastes and exact processes is contained in Norlite's Part 373 Renewal Permit Application, Section C. A copy of the Contingency Plan is maintained in the main office of Norlite's facility.

II Coordination Agreements and Copies of Contingency Plan[6NYCRR, Subpart §373-2.4(c)(3),(d)(2) & Subpart §373-2.3(g)]

Norlite has made arrangements with the Cohoes Fire Department and West Central Environmental for response in case of an emergency. The Cohoes Fire Department, through their disaster preparedness agreements, mutual aid agreements and civil defense responsibilities, will coordinate emergency services as required in case of an incident. Their coordination of emergency services will include police, ambulance service, hospitals and mutual aide fire department participation as circumstances warrant.

With respect to the coordination agreements and arrangements with the City of Cohoes Fire Department, Norlite has agreed to provide a mechanism during each year of this permit to enable hazardous materials training for members of the Cohoes Fire Department. The

Cohoes Fire Department Chief and members of his staff have visited the facility on several occasions to review emergency procedures and physical layout. Norlite will acquire and maintain an inventory of 3% AFFF (aqueous film forming foam) agent and three (3) foam eductors to enable the Cohoes Fire Department to apply the foam in the event of a fire. To assist in a response to an emergency at the facility, Norlite will maintain a separate access route from the Northwest. To further aid the Cohoes Fire Department, Norlite will ensure that all fire hydrants are readily accessible and capable of supporting all required fire apparatus.

West Central Environmental is available 24 hours a day, seven days a week for any emergency calls. Norlite will maintain emergency response supplies equal to our own level of response, or in agreement with West Central. Specialized equipment will be supplied by West Central.

Copies of the following documents of Norlite's Part 373 Permit Application; Section B (facility descriptions) and Section C (waste characterizations), have been provided to the Mayor of the City of Cohoes and to the Fire Chief for distribution to the appropriate local authorities. In addition, copies are maintained at the facility in the main office, and in the possession of the emergency response agency.

III. Response Personnel [C.F.R. Subpart §1910.120, 6NYCRR, Subpart §373-2.4 (C) (4) & Subpart §373-2.4(f)]

At all times, there will be at least one employee either on the facility premises or on call (i.e. available to respond to an emergency by reaching the facility within a short period of time) with overall responsibility for incident command and emergency response measures.

Response to any emergency situation will follow the structure of Incident Command-Hazardous Sector Operations, under the regulations of 30CFR Subpart §1910.120.

A. Levels of Command, Response and Structure

1. Incident Commander - has total responsibility for all activities conducted during an emergency response event. His top priorities are the health and safety of: 1-employees, 2-public, 3-environment. Specific responsibilities include:

   a. Identification of materials and conditions

   b. Implement appropriate actions

   c. Assure a safety officer is appointed and all areas are evaluated, safe,

and appropriate PPE is determined

d. Assure a Team Leader is assigned to direct activities

e. Assure a Risk Assessment Officer is assigned to determine hazards.

f. Assure an Equipment Officer is assigned to coordinate equipment use and decontamination

g. Limit the number of personnel at the site

h. Establish and maintain site control

I. Termination activities are appropriate

j. Acts as a liaison between outside agencies and internal activities

k. Usually remains in the "cold zone" or command post

2. Health & Safety Officer - responsible for the health and safety of response personnel and coordinating care of victims in an emergency response event. Specific responsibilities include:

a. Knowledge of the conditions, materials, and hazards

b. Determines and monitors emergency conditions, and can halt operations if unsafe or imminent danger

c. Performs last check of any entry PPE

d. Identifies and monitors signs and symptoms of contamination, exposures, heat stress

e. Coordinates medical response

f. Is found at the access control point and is in constant sight of entry operations

3. Team Leader - responsible for coordination of all operations at the emergency response site and provides exclusive direction for response measures. Specific responsibilities include:

a. Assures all eight steps of hazardous materials mitigation's are met and maintained in conjunction with other officers.

1. Site management
2. Identification of materials involved
3. Hazard and risk assessment
4. Select protective clothing and equipment
5. Resource and information
6. Control hazardous material releases
7. Decontamination activities
8. Termination activities

b. Develops answers to IC's problems

c. Provides direct supervision for all activities in the hazard sector, working in the "hot zone"

4. Risk Assessment Officer - responsible for determining risk assessment by assembling data about materials involved to determine hazards. Specifics include:

a. Determine chemical, physical and health hazards of materials.

b. Determine PPE, equipment and materials necessary

c. Determine evacuation distances and necessity

d. Reports information to other officers as appropriate.

e. Monitors for additional hazards, weather conditions, wind directions, runoff, evaluates control procedures and risk of contamination spread.

f. Works within the "warm zone", assisting the safety officer, Team Leader and Incident commander. Does not enter the "hot zone".

5. Equipment Officer - responsible for coordinating all supplies and equipment necessary for response, decontamination and monitors activities at the access control point to ensure proper decontamination of all that leave this zone. Specifics include:

a. Maintains tools and equipment

b. Identifies and segregates used /

contaminated equipment

c. Determines DECON equipment and methods

d. Maintains "clean" and "dirty" sides

e. Monitors DECON of response personnel and equipment

f. Oversees decontamination of equipment before restoring to use, and ensuring appropriate supplies are replenished

g. Works with Risk Assessment Officer and Safety Officer in the "warm" zone.

6. Emergency Coordinator - responsible for initial assessment of emergency conditions. He will make the determination for initial response, and the determination for additional measures. Specific responsibilities include:

a. Determining type and magnitude of the situation

b. Securing area

c. Directing initial containment measures

d. Reporting to Incident Commander

e. Determining if additional steps must be taken

f. Works with Team Leader in controlling hazard.

7. HAZMAT Technician - trained to aggressively approach the point of a release in order to patch

plug or otherwise stop the release of hazardous substances. Employees, spread through all shifts, are trained in this capacity.

8. 1st Responder Technician - trained to defensively contain releases and prevent spreading. Employees, spread through all shifts, are trained in this capacity.

9. 1st Responder - trained to properly identify and report of emergency or potentially emergency situations. All plant employees are trained at the 1st Responder Awareness level.

B Personnel

The personnel designated to fulfill positions as Incident Commander, Health & Safety Officer, Equipment Officer, Team Leader, and Risk Assessment Officer, have been trained and can fulfill more than one officer capacity if the situation warrants, to effectively manage emergency response operations. These positions may be combined if the situation warrants. The Incident Commander's name and address along with alternative Incident Commander's and other officer's are found in Attachment 1.

If an Incident Commander is not on-site, the Kiln Supervisor will take charge as the Emergency Coordinator until relieved by the Incident Commander. There are four kiln supervisors, providing coverage 24 hours a day, seven days a week.

C. Training

These individuals are thoroughly familiar with all aspects of Norlite's Contingency Plan, the plant's operations and hazardous waste handling activity. In addition, they have the authority and training to commit resources needed to carry out the plan.

If the situation requires additional assistance of off-site spill response personnel, these personnel are trained at the forty hour HAZMAT response level, and are capable to handle the materials present at our facility. They have visited the facility to review emergency procedures and physical layout.

In plant response to fires is limited to our systems capabilities and the use of portable fire extinguishers. There is no fire brigade. Fires that cannot be handled by portable or fixed extinguishers will result in the immediate contact of the Cohoes fire department.

Inforamtion regarding training requirements can be found in Section H, Training Requirements.

IV Implementation of the Contingency Plan [6NYCRR, Subpart §373-2.4(b)(2)]

The decision to implement the Contingency Plan depends on whether or not an imminent, or actual incident threatens human health or the environment. This section offers the Incident Commander guidelines for decisions regarding implementation.

The Contingency Plan **will** be implemented in the following situations:

1. Spill or Material Release
   (a) The spill could result in release of significant quantities of flammable liquids or vapors.
   (b) The spill or release of significant quantities of hazardous liquids or toxic fumes which could threaten human health or the environment.
   (c) The spill contained on-site, but potential exists for ground water contamination.
   (d) The spill cannot be contained on-site, resulting in an off-site soil contamination and/or ground or surface water contamination.

2. Fire and/or Explosions

(a) A fire which could threaten health or the environment.

(b) Contamination could result from the use of the water, or water and chemical fire suppressants.

(C) An imminent danger exists such that an explosion could occur.

(d) An explosion has occurred.

3. Floods, storms or Natural Disasters - If flooding, wind, electrical discharge or other damage occurs due to natural causes which causes an event listed above.

Situations may arise that may not initially fall into the criteria for contingency plan implementation, but could develop into these categories. Therefore, emergency response procedures will be followed, and Contingency Plan implementation will be integrated into our emergency response procedures. Any of the above criteria will result in contacting the Incident Commander and following all procedures.

Steps taken to implement Emergency Response Procedures and the Contingency Plan are outlined in Attachment 2.

V Spill/discharge or Material Release Response Procedures [6NYCRR, Subpart §373-2.4(c)(1) and Subpart §373-2.4(g) and Subpart §373-2.10(d)(3)]

A. Spill Prevention

1. Spill prevention is the ultimate goal of the facility. All activities are performed to minimize the potential for spills of any hazardous materials onto the ground or into waterways. Releases should, by plant design, be contained within secondary containment areas.

2. Other spill prevention measures are accomplished by:

a. Established traffic patterns and traffic control, both on and off site

b. Primary, secondary and tertiary containment within our fuel systems,

c. Specific procedures for handling hazardous and LGF materials

d. training for all employees handling hazardous materials

Specifics can be found in sections C and D of our Part 373 Permit and in Norlite's Safety Manual.

B. Release Detection and Response

While preventing a spill or discharge is essential to the protection of human health and the environment, spill and discharge control is the necessary

and logical response expected in the event of a release whether on land, in water, or in the air.

1. Release Detection

   a. Our primary release detection is visual inspections on a scheduled basis. This includes per shift, daily and weekly visual observations with remediation as necessary.

   b. An additional release detection system involves the "tell-tale" pipes from the secondary containment system for the outside tanks.

   c. Alarms within the Low Grade Fuel system consist of oxygen sensors and LEL sensors. These monitor air quality emissions within the fuel system.

2. Release response

   a. For any release of LGF or other hazardous materials, the Emergency Coordinator and/or the Incident Commander will be notified. Specific steps, outlined in Attachment #2, will be followed.

   b. Any alarms (fire suppression system, air monitoring, etc.) within the LGF system requires immediate evacuation of all personnel in the area of the alarm.

   c. Release to the air involves a highly specialized area of expertise which is considered to be outside the realm of in-

plant response personnel. In cases where major air releases or carbon releases have occurred which could impact on human health and/or the environment, require immediate response for evacuation and assistance from outside personnel.

d. Small releases (less than 55 gallons) will be handled by the appropriate area personnel under the direction of their supervisor or Emergency Coordinator.

e. Large releases (greater than 55 gallons) will be reported to the Incident Commander by the Emergency Coordinator.

The Emergency Coordinator or Incident Commander, according to availability, will immediately contacted to assess the situation and determine appropriate response procedures to be implemented, up to and including implementing the Contingency Plan.

C. Emergency Response Determination

The Emergency Coordinator and/or the Incident Commander will follow the appropriate steps outlined in Attachment 2, to determine the nature of the situation, and evaluate for all or potential hazards that could threaten the health and safety of employees, surrounding community or the environment. At the first available time

after the Emergency Coordinator has put in motion emergency actions to provide for employee and public safety, and to stop and contain the spill, telephone notices shall be made as may be applicable by the Incident Commander or another responsible person as directed by the Incident Commander. The quantity of material spilled / discharged, where spilled/discharged, and the material discharged, dictates the reporting requirements.

D. Agency Notifications

The following list provides relative information on reporting agencies.

AGENCY_	_PHONE
City of Cohoes Fire Department	(518) 237-2211
(For potential for fire, explosion or if situation may impact areas outside of the facility.)	
West Central Environmental	(518) 272-6891
(For spill control and assistance.)	
New York State 24 Hour Oil and Hazardous Material Spill Hotline	(518) 457-7362
Albany County Health Department	445-7835
(For petroleum releases that could contaminate drinking water supply)	
National Response Center (24 hours)	(800) 424-8802
	(202) 426-2675
or US Coast Guard	472-6110
	(212) 264-4860
(Immediate notification as soon as there is knowledge of an oil release that violates water quality standard or causes a sheen on navigable waters.)	
D&H Railroad Operations Control Center	271-4414
(If situation involves or interferes with railroad activity.)	
US EPA Region II	(201) 548-8730

The Emergency Coordinator will use the memo of Emergency Call, Attachment 3, to document all calls.

E. LGF/Discharge Control/Clean-up Procedures

1. The Incident Commander, with the assistance of the Team Leader and Emergency Coordinator must determine if the release can be handled by the company's capabilities or if appropriate external resources must be contacted.

2. Releases that do not extend outside the facility property or pose a significant health and safety risk will be handled by site employees. The following are considered typically to be within this category: Leaks from containers in the storage area; spills during container transfer or loading; spills during tank truck unloading; spills or leakage from piping systems; and/or spills and leakage from pump seals, valves or other equipment. In these cases the Incident Commander will follow procedures in Attachment #2, and will respond appropriately using trained personnel and spill response equipment under the direction of the appropriate Officers or approved procedures.

F. External Control/Cleanup Resources

In the event of a release to the air, soil or water, which could impact on human health and/or the

environment outside of the facility, external resources will be immediately contacted for assistance. Entry for fire fighting, spill control personnel, rescue, or other response activities is prohibited unless specifically authorized by the Incident Commander or Team Leader, and approved by the Safety Officer.

G. Petroleum Releases

1. Upon notification of a release detection of petroleum products, the Emergency Coordinator's response is the same as for other releases and will follow procedures in Attachment #2.

2. Reporting

(a) Petroleum releases must be reported to the DEC within 24 hours of discovery unless they meet all of the following criteria:

(1) The release is known to be less than 5 gallons

(2) The release is contained and under control.

(3) The release has not reached the state's water or any land.

(4) The release is cleaned up within 2 hours of discovery.

(b) File appropriate reports.

(c) For Petroleum releases which are not reportable, they will be handled appropriate under the Emergency Coordinator.

H. Chemical Releases

Upon notification of a release of hazardous chemicals, the Emergency Coordinator's response is the same for other releases and will follow procedures in Attachment #2.

VI Fire/Explosion Procedures [6NYCRR, Subpart §373-2.4(c)(1) and Subpart §373-2.4(g) and Subpart §373-2.10(d)(3)]

A. Controlling fires and/or explosions

Controlling fires is first prevented by minimizing exposures of fuels to oxygen and ignition sources. This is accomplished by proper handling and procedures, good housekeeping, nitrogen blanketing of all fuel tanks and lines, and strict procedures for controlling ignition sources in any areas where fuel is present.

B. Fire/Explosion Detection

1. Oxygen, LEL, heat and infra-red monitors are located throughout the entire fuel system to detect and alert employees to a potential problem in these work areas. The Safety Manager, Emergency Coordinator, or Incident Commander, according to availability, will be immediately contacted to assess the situation and determine the appropriate response procedures to be implemented, up to and including the Contingency Plan.

2. Detection is also accomplished by routine inspections of all work areas.

3. Whenever a fire/explosion is detected the employee's supervisor will be notified and he/she will contact the Emergency Coordinator or the Incident Commander. Appropriate measures will be followed on Attachment #2.

C. Fire/Explosion Control Procedures

1. Upon the discovery of a small, manageable fire, employees are instructed and trained in the use of hand held portable fire extinguishers. These will be used providing the employee is in

a safe position to do so.

2. Our entire fuel system is protected by an automatic AFFF fire suppression system with manual activation, which is designed to handle fires in these areas. It is also designed for the fire department to hook up to, as necessary, if additional fire protection is needed.

3. When a fire could endanger personnel and/or property in a given process area, or throughout the surrounding operations, the local fire department will be contacted for controlling the fire.

VII Emergency Equipment [6NYCRR, Subpart §373-2-4(c)(5)]

Norlite's emergency equipment, its location and a description of its use is described on Attachment 4.

VIII Evacuation Plan [6NYCRR, Subpart §373-2.4(c)(6)]

The Emergency Coordinator will, as circumstances may require, evacuate personnel from the specific plant areas. The Emergency Coordinator will account for all area personnel evacuated.

The following chart generally show the personnel location and the number of personnel typically at each location:

Quarry	3-6
Primary	3
Burner Room (each)	1
Kiln area	4
LGF area	2
Main Office area	20
Security gate	1
I & E	5
Safety	1
Garage	5
Finish Plant	3

At any given moment, however, the actual personnel location may vary from the locations shown on the chart. These numbers reflect weekday operations and designate assigned work areas.

In the event of an uncontrolled release, fire or explosion, the Incident Commander will call for a total evacuation of the facility. Total Plant evacuation is initiated only by the Incident Commander.

The facility has a warning system with a specific alarm signal consisting of a loud horn to initiate evacuation of all plant areas. The evacuation signal will be a continuous three(3) minute blast. In addition

to the alarm, the internal telephone system and hand held portable radios will be used to notify plant personnel as to the emergency's nature and recommended action plan.

Upon signal for a site evacuation, all employees have been instructed as to necessary equipment shut down and will follow those procedures, providing it is safe to do so. All individuals on site will proceed to one of the two security gates, traveling in a cross wind direction. Employees working in the kiln area; which includes the kiln control room, the EQ Tank (101A, 101B, 102A, 102B) area, and half of the LGF tunnel closest to the kiln, will either travel east along the main plant road to Gate #2 or south along the plant road to Gate #1 depending on the wind direction. Employees working at the Fuel farm; which includes the LGF storage building, drums processing building and half of the LGF tunnel closest to the fuel farm, will likewise travel east along the main plant road to Gate #2 or south along the plant road to Gate #1 depending on the wind direction. All visitors will stay under the direction of their escorts. Each of the security gates is at opposite sides of the facility, allowing for distinct evacuation sites.

All individuals on the property are accounted for by either: automated card access, security officer's log, or sign in book. Therefore, all individuals will be accounted for. Vehicles are not permitted at the security gates during a site evacuation to minimize congestion.

IX Post Emergency Clean-up / Restoration [6NYCRR, Subpart §373-2.4(g)(7) and (8)]

A. Storage and Treatment of Released Material

Immediately after an emergency, the Incident Commander will make arrangements for proper treatment, storage and/or disposal of all water and contaminated materials according to New York State and Federal Regulations. Temporary storage of collected material will be in drums or other suitable containers, stored in the LGF storage area. Larger quantities of materials contained and collected by the emergency response contractor would be stored in tank trucks and/or run-off box containers pending completion of disposal arrangements in accordance with New York State and federal regulations. Attempts will be made to treat these materials on-site within the normal process parameters of the waste treatment operations, i.e., released material that has been contained and collected will be incinerated and used for energy recovery purposes if said material is in accordance with Norlite's permit limits. This will be under the coordination of the Risk Assessment Officer and the Lab Manager.

B. Incompatible Wastes [6NYCRR, Subpart §373-2.4(g)(8)(I)]

The Risk Assessment Officer and Lab Manager will insure that incompatible wastes are maintained separately.

X Required Reports [6NYCRR, Subpart §373-2.4 (g) (10)]

A. A thorough investigation must be made into the causes of the emergency and steps taken to prevent a re-occurrence. Operations will not be resumed until the situation has progressed to a point where no hazardous situation is imminent.

B. Prior to the resumption of operations, the Commissioner, and appropriate state and local authorities must be notified that the Facility is in compliance with the following:

1. No waste, that may be incompatible with the released material, is treated, stored, or disposed of until cleanup procedures are complete.
2. All emergency equipment listed in the

Contingency Plan is cleaned and ready for its intended use before operations are resumed.

3. As required by section 373-2.4(g)(10), any emergency event (e.g., fire, explosion, etc.) that required implementing the Contingency plan will be reported in writing within 15 days to the Commissioner, New York State Department of Environmental Conservation. Any releases of reportable quantities will also be appropriately reported. A copy of the reporting form for emergency events is shown in Attachment 6.

XI Amendments to the Contingency Plan [6NYCRR, Subpart § 373-2.4(e)]

The Contingency Plan will be revised and immediately amended, if necessary, whenever:

1. The facility permit is revised.
2. The plan fails in an emergency.
3. The facility changes in its design, construction operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes in the response necessary in an emergency.

4. The list of emergency coordinators changes.

5. The list of emergency equipment materials changes.

EMERGENCY RESPONSE CONTACT LIST

To Be Called In This Order-refer to Confidential Contact List for private numbers

Primary Incident Commander:
Plant Manager: Timothy Lachell*,**
Office: 235-0401 Plant Ext.: 4037

Alternate:
Health and Safety Manager: Brain Decatur*
Office: 235-0401 Plant Ext.: 4005

Alternate:
Fuel Farm Manager: Jeff Nusbaum*
Office: 235-0401 Plant ext.: 4028

Alternate:
Maintenance Manager: Herb Marlow*
Office: 235-0401 Plant Ext.: 4018

*Have been trained as Incident Commanders and may fulfill such position.
** Must be contacted at first available time after the Contingency Plan is implemented.

Initial Emergency Coordinators ***

Kiln Supervisors: 235-0401, ext. 4022 or 4025
Cell phone: 857-5737
Stanley Ashline, Tim Passer, Brian Roberts, Armond Despres
***Only on their appointed shift.

Outside Emergency Responders

City of Cohoes Fire Dept.	237-2211
West Central Environmental	272-6891

Attachment 2

STEPS TAKEN TO IMPLEMENT EMERGENCY RESPONSE PROCEDURES AND CONTINGENCY PLAN

SPILL PROCEDURES

The following steps shall be taken if a situation arises relating to spills, or hazardous materials release. INITIAL RESPONSE GOALS ARE TO PROTECT HUMAN HEALTH, SAFETY AND THE ENVIRONMENT!

Discovery of event by an individual

-Note location of the event and the problem.

-Cease work in affected areas and shut down equipment.

-Secure area, prevent unauthorized personnel from entry.

-Notify Emergency Coordinator.

Step 1: Site Management

-Manage the physical layout of the incident.

-Approach releases from an uphill, upwind side.

-Ensure area is isolated and deny entry via barriers, tape, employee guarding.

-Monitor for breached containers, vapor clouds, unusual odors, or released spills.

-Determine if possible, if anyone is injured.

Step 2: Identification of hazardous Materials

-Determine if possible, without entering area or contacting material, what materials are involved and approximate amount.

-If entry into area is required to identify material, than this will only be done under the direction of the full incident command and emergency response team. No further action can be done at this time except to maintain site control and contact the Incident Commander.

-If a determination can be made as to the material and amount, or if the material is known, the Emergency Coordinator can make the determination for response actions or to contact the Incident Commander.

-For small spills (less than 55 gallons) with known materials, emergency response will be handled under the direction of the Emergency Coordinator. For large spills, or unknown

materials, emergency response will be under the direction of the Incident Commander.

-Identification of unknown materials will be done with level A protection, under the buddy system, with back up response personnel in place. If at this time, and identification can be made, than appropriate procedures will be followed. If identification cannot be made, than outside resources will be contacted to handle the response.

STEP 3: Hazard and Risk Assessment

-After specific identification of a material, hazards and risks must be determined. Labels, containers, shipping papers, Manifests, MSDS, or HAZMAT response guides shall be utilized. This is necessary for determining potential risk from additional spills, fires or explosions, and a safety assessment for responders, employees, community and environment, determining PPE and response equipment.

-Assess possible hazards, both direct and indirect, to human health and environment and determine control methods. These include:

- fire,
- explosion
- toxicity
- wind & direction
- other hazardous materials
- ignition sources

-Determine if incident can be handled by company's capabilities or if external resources are necessary.

-Assess the need for implementing the evacuation plan.

-potential for off-site involvement,

-actual or potential threat to human health and/or extent of injuries sustained.

-Establish "hot", "warm", and "cold" zones.

-These items to be accomplished by the Risk Assessment Officer.

-Notify appropriate emergency service groups if threat of public health or the environment outside the facility.

Step 4: Select PPE and Equipment

-PPE and equipment selection will be based on the material and hazards. If not already determined, this will be done by Equipment Officer.

Step 5: Information and Resource Coordination

-A command post shall be established, close enough to view the site, far enough to prevent contamination and be upwind.

-The command post shall be well marked.

-Representatives from other agencies should be available if needed at the command post.

-Identification of key officers is established at this time if not already done so, via vests or other identification measures.

-Checklists shall be handed out at this time (if not already done so) for each officer and their roles.

Step 6: Control and Containment

-Remove all hazards present, including flammable materials, if safe to do so.

-Spill control will be initiated before leak control measures are implemented.

-Controlling vapors and gasses is limited to shutting off the supply if safe to do so. Additional outside resources will be contacted for assistance.

-Liquids are controlled by diverting, diking, or retaining and absorption or contain or direct to sumps.

-Leak control measures will be taken after spill control has been completed. This is controlling the leak at the source or container. This can be accomplished by:

-Emptying or transferring material

-Diverting flow

-Patching or plugging

Step 7: DECONTAMINATION

-This process makes people, equipment and supplies safe by eliminating harmful substances. This is done under the direction of the Equipment Officer.

-Processes utilized will be either dilution, absorption, or neutralization, or a combination of.

-All affected response personnel, equipment and facilities will be deconned prior to entering the "cold zone".

-Arrange for proper disposal of all contaminated materials, including insuring that incompatible wastes are not mixed with released materials.

Step 8: Termination

-Ensure situation is under control.

-All utilized safety equipment must be inspected to be sure it is cleaned and in a ready state.

-Investigation and documentation of the incident.

-Ensure health monitoring of response personnel if appropriate.

-Notification to proper authorities that activities have been completed.

-Determine when an "all-clear" can be given to resume normal activities.

-File report within 15 days of the emergency action.

The following steps shall be taken if a situation arises relating to fires and/or explosions. RESPONSE GOALS ARE ALWAYS TO PROTECT HUMAN HEALTH, SAFETY, AND THE ENVIRONMENT!

FIRE OR EXPLOSION

Discovery of fire by the individual

-Cease work in affected areas and shut down equipment.

-If safely able to do so, use a portable fire extinguisher to attempt to extinguish fire or manually activate fire suppression system if not already in operation.

-Secure area, prevent unauthorized personnel from entry

-If one extinguisher does not extinguish fire, or the employee is unable to safely use a fire extinguisher, than the employee must immediately contact his supervisor, and notify the emergency coordinator.

Step 1: Site Management

-Manage the physical layout of the fire.

-Approach from an uphill, upwind side.

-Ensure area is isolated and deny entry via barriers, tape, employee guarding.

-Determine approximate size and location of fire.

-Determine, if possible, if anyone is injured.

-If applicable, shut down the supply of gas/oil and/or low grade fuel (LGF).

-If applicable, any tank unloading operations will be stopped and all trucks within the affected area moved to a safe unaffected area, providing it is safe to do so.

Step 2: Identification of materials involved

-Determine if possible, **without entering area,**

what materials are involved and approximate amount.

-Entry into a fire area will only be done by the fire department.

Step 3: Hazard and Risk Assessment

-After specific identification of materials, hazards and risks must be determined. Labels, containers, shipping papers, manifests, MSDS or HAZMAT response guides shall be utilized. This is necessary for determining the risk for potential additional spills, fires/explosions and safety assessment for responders, employees, community and environment.

-Determine if other hazardous/flammable materials are in the area.

-Establish "hot" "warm" and "cold" zones.

-Assess the need for implementing the evacuation plan

-Notify fire department and other appropriate emergency service groups if necessary. Based on materials involved, additional HAZMAT resources may be needed.

Step 4: Select PPE and Equipment

-Since fire fighting is a specialized activity, Norlite employees will not participate in actual fire fighting procedures. They may, however, need to respond for clean-up after the fire is fully extinguished, and the area is determined "safe" by the Fire Chief and the Safety Officer. PPE selection will be done under the Risk Assessment Officer.

Step 5: Information and Resource Coordination

-A command post shall be established, close enough to view the site, far enough and upwind for safety.

-The command post shall be well marked.

-Representatives from other agencies shall be available if needed at the command post.

-Identification of key officers is established at this time, if not already done so, via vests or other identification measures.

-Checklists shall be handed out at this time, if not already done so, for each officer and their roles.

Step 6: Control and Containment

-Control and containment of fires and/or explosions will be handled by the fire department, be completed, and determined "safe" by the Fire Chief and the Safety Officer prior to additional HAZMAT response personnel entering area.

-If off-site HAZMAT response personnel are involved, they will primarily handle spill control and containment measures. Norlite employees will assist as needed, or when activities are within their capabilities.

Step 7: Decontamination

-If activities are performed in a "hot zone" all response personnel will be decontaminated under the direction Equipment Officer.

-Processes utilized will be either dilution, absorption, or neutralization, or a combination of.

-Protect clean up personnel.

-Arrange for proper disposal of all contaminated materials, including insuring that incompatible wastes are not mixed with released materials.

Step 8: Termination

-Ensure situation is under control

-All utilized safety equipment is inspected, cleaned, and restored to a ready state.

-Investigation and documentation of the incident.

-Ensure health monitoring of response personnel, if appropriate.

-Determine when an "all-clear" can be given to resume normal activities.

-Notification to proper authorities that activities have been completed.

-File a report within 15 days of the emergency action.

EMERGENCY COORDINATOR CHECKLIST

Date:_____ Time:_____ Weather:_____

Reported by:_____

Emergency Coordinator:_____

Incident:_____

Location:_____

1. SITE MANAGEMENT

☐ WORK HAS CEASED AND EQUIPMENT SHUT DOWN

☐ AREA IS SECURED FROM UNAUTHORIZED PERSONNEL

☐ IDENTIFY ANY INJURED PERSONNEL - GET MEDICAL ASSISTANCE

☐ IDENTIFY ANY UNUSUAL ODORS, VAPOR OR SMOKE CLOUDS, OR RELEASED SPILLS

☐ IS THEIR AN ACTUAL FIRE? YES NO CALL FIRE DEPARTMENT

☐ ERT MEMBERS AVAILABLE:

1. 2._____

3._____ 4._____

5._____ _____ 6.

7._____ 8.

2. IDENTIFICATION OF HAZARDS

☐ DETERMINE WHAT MATERIALS ARE INVOLVED AND APPROXIMATE AMOUNT WITHOUT ENTERING AREA

1._____ _____

2._____

3._____

☐ IF ENTRY INTO AREA IS NECESSARY FOR IDENTIFICATION, NOTIFY INCIDENT COMMANDER, AND PREPARE FOR ERT-SCBA AND BACK UP NECESSARY. INCIDENT COMMANDER NOTIFIED:_____

☐ DETERMINE IF SMALL OR LARGE SPILL:_____

☐ IF SMALL SPILL OF KNOWN MATERIALS, GO TO STEP 3

☐ IF LARGE SPILL, UNKNOWN MATERIALS, OR FIRE, NOTIFY INCIDENT COMMANDER:_____, MAINTAIN SITE CONTROL AND DEFENSIVE MEASURES ONLY: PROCEED NO FURTHER UNTIL IC HAS BEEN CONTACTED

3. HAZARD AND RISK ASSESSMENT

☐ IF SMALL SPILL REVIEW MSDS AND MANIFEST

☐ OBTAIN AIR QUALITY READINGS IF NECESSARY

TIME:_____ O2:_____ LEL:_____ H2S:_____ CO:_____

☐ OBTAIN AIR SAMPLES OF CONSTITUENTS

CONSTITUENT:_____ QUANTITY:_____

CONSTITUENT:_____ QUANTITY:_____

☐ ASSESS OTHER HAZARDS PRESENT

- ☐ FIRE:_____
- ☐ TOXICITY:_____
- ☐ REACTIVITY:_____
- ☐ OTHER HAZMATS:_____

☐ SITUATION EVALUATED AND DETERMINED (CHECK IF APPLY):

- O SPILL COULD RELEASE SIGNIFICANT QUANTITIES OF FLAMMABLE VAPORS
- O RELEASE OF SIGNIFICANT QUANTITIES OF HAZARDOUS LIQUIDS OR VAPORS WHICH COULD THREATEN HUMAN HEALTH OR THE ENVIRONMENT
- O POTENTIAL FOR GROUND WATER CONTAMINATION
- O SPILL CANNOT BE CONTAINED ON SITE
- O A FIRE THAT COULD THREATEN HEALTH OR ENVIRONMENT
- O CONTAMINATION FROM USE OF FIRE EXTINGUISHING AGENTS
- O IMMINENT DANGER OF EXPLOSION
- O AN EXPLOSION HAS OCCURRED

☐ IF ANY OF THE ABOVE APPLY, NOTIFY IC, AND ACTIVATE THE CONTINGENCY PLAN

☐ REQUIRES NOTIFY IC, BUT DOES NOT MEET CRITERIA OF IMPLEMENTING CONTINGENCY PLAN

4. SELECT PPE AND EQUIPMENT

☐ SELECT PPE AND EQUIPMENT PER ESTABLISHED PROCEDURES

1._____ 2._____

3._____ 4._____

5. INFORMATION AND RESOURCE COORDINATION

☐ REVIEW INFORMATION WITH ANY OFFICERS ON CALL AS NECESSARY

☐ REVIEW HAZARDS WITH ERT

6. CONTROL AND CONTAINMENT

☐ REVIEW PROCEDURES WITH ERT:

1. _____

2. _____

3. _____

☐ SPILL MEASURES IMPLEMENTED FIRST (ABSORBENTS, BOOMS)

☐ LEAK CONTROL AND REPAIR COMPLETED

☐ ALL CONTAINERS PROPERLY LABELED

7. DECONTAMINATION

☐ ALL MATERIALS PROPERLY DISPOSED OF

☐ ALL EQUIPMENT PROPERLY DECONTAMINATED

☐ ALL ERT MEMBERS PROPERLY DECONTAMINATED

8. TERMINATION

☐ ENSURE SITUATION IS UNDER CONTROL

☐ ALL UTILIZED SAFETY EQUIPMENT IS INSPECTED, CLEANED, AND/OR REPLACED PRIOR TO RESUMING OPERATIONS

☐ DETERMINE "ALL CLEAR" TO RESUME NORMAL ACTIVITIES

☐ NOTIFY PROPER OFFICERS AND INCIDENT COMMANDER OF SITUATION

☐ INVESTIGATION AND DOCUMENTATION OF INCIDENT

NOTES: _____

INCIDENT COMMANDER CHECKLIST

Incident: _____ Location: _____

Date: _____ Time: _____

Weather: _____

Incident Commander: _____

Emergency Coordinator: _____

GENERAL

☐ REVIEWED SITUATION WITH EMERGENCY COORDINATOR

☐ FIRE ☐ WASTE SPILL ☐ CHEMICAL SPILL

☐ INCIDENT COMMANDER IDENTIFIED BY VEST

☐ COMMAND POST IDENTIFIED

☐ COMMAND POST IN SAFE LOCATION

☐ STAGING AREA ESTABLISHED

OFFICERS ASSIGNED

☐ SAFETY/HEALTH OFFICER _____

☐ RISK ASSESSMENT OFFICER _____

☐ TEAM LEADER _____

☐ EQUIPMENT OFFICER _____

1. SITE CONTROL

☐ HOT ZONE ESTABLISHED & IDENTIFIED _____

☐ WARM ZONE ESTABLISHED & IDENTIFIED _____

☐ EVACUATION DISTANCES IDENTIFIED _____

☐ EVACUATION COMPLETED AND ALL ACCOUNTED _____

2. IDENTIFICATION OF HAZARD

☐ FIRE _____

☐ 1. MATERIAL & AMOUNT _____

☐ 2. MATERIAL & AMOUNT _____

☐ 3. MATERIAL & AMOUNT _____

☐ 4. MATERIAL & AMOUNT _____

3. HAZARD AND RISK ASSESSMENT

☐ LAB PERSONNEL CONTACTED _____

5. INFORMATION AND RESOURCE COORDINATION

☐ REPORT FROM:

- ☐ RISK ASSESSMENT OFFICER

  HAZARDS EVALUATED

  1. HEALTH _____
  2. FLAMMABILITY _____
  3. REACTIVITY _____
  4. PHYSICAL PROPERTIES _____

- ☐ SAFETY OFFICER
  - ☐ LEVELS _____
  - ☐ PPE SELECTED
  - ☐ SCBA'S NECESSARY YES NO
  - ☐ ENTRY PERSONNEL MEDICALLY CLEARED

- ☐ EQUIPMENT OFFICER
  - ☐ EQUIPMENT SELECTED AND READY
- ☐ TEAM LEADER
  - ☐ ERT READY
  - ☐ SITUATION STATUS

☐ CONDITIONS EVALUATED

☐ SOLUTIONS DEVELOPED

1. _____

RISK _____

2. _____

RISK _____

☐ TEAM LEADER AND OFFICERS ADVISED

☐ OTHER RESPONSE PERSONNEL ADVISED AS NECESSARY

☐ PROPER AGENCIES NOTIFIED

6. CONTROL AND CONTAINMENT

☐ PROPER CONTROL TECHNIQUES USED

☐ SECONDARY CONTAINMENT IN PLACE

☐ CONDITIONS MONITORED

☐ LOCATED AT COMMAND POST

7. DECONTAMINATION

☐ DECON IN PLACE/UPWIND PRIOR TO CONTROL OPERATIONS

- ☐ PROPER DECON USED
- ☐ DECON PERSONNEL WEARING PROPER PPE

8. TERMINATION

- ☐ PROPER AGENCIES NOTIFIED
- ☐ ALL EQUIPMENT DECONTAMINATED
- ☐ ALL PERSONNEL DECONTAMINATED
- ☐ ALL EXPENSES RECORDED
- ☐ ALL WASTES PROPERLY DISPOSED OF
- ☐ MEDICAL MONITORING OF PERSONNEL COMPLETE
- ☐ DEBRIEFING OF INCIDENT COMPLETE
- ☐ "ALL CLEAR" GIVEN

NOTES: _____

HEALTH & SAFETY OFFICER CHECKLIST

Incident:_____ Location:_____

Date:_____ Time:_____

Weather:_____

Incident Commander:_____

Emergency Coordinator:_____

GENERAL

☐ SAFETY OFFICER IDENTIFIED BY VEST

☐ WEARING PROPER PPE

☐ FIRST AID SUPPLIES AVAILABLE

☐ REVIEW OF INCIDENT

☐ FIRE ☐ WASTE SPILL ☐ CHEMICAL SPILL

OFFICERS ASSIGNED

RISK ASSESSMENT OFFICER _____

TEAM LEADER _____

EQUIPMENT OFFICER _____

1. SITE MANAGEMENT

☐ PROPER CONTROL ZONES ESTABLISHED

☐ KNOWS LOCATION OF COMMAND POST, HOT ZONE, COLD ZONE, ENTRY/EXIT POINT

2. IDENTIFICATION OF HAZARDS

☐ FIRE

☐ CHEMICAL IDENTIFIED

1. _____

2. _____

3. HAZARD AND RISK ASSESSMENT

☐ INFORMATION OBTAINED FROM RISK ASSESSMENT

☐ GAS METER READINGS OBTAINED:

O2: _____ LEL: ____ CO: _____ H2S: _____ TIME: _____

☐ CHEMICAL CONCENTRATION & METHODS: 1. _____

2. _____ 3. _____

☐ IDLH IDENTIFIED AS: _____

☐ RISK ASSESSMENT COMPLETED, HAZARDS:

HEALTH: _____

FLAMMABILITY: _____

REACTIVITY: _____

PHYSICAL: _____

IGNITION SOURCES: _____

OTHER HAZMATS: _____

☐ SIGNS/SYMPTOMS OF OVEREXPOSURE IDENTIFIED: _____

_____

_____

☐ TREATMENT FOR EXPOSURE: _____

_____

☐ ADVANCED MEDICAL PERSONNEL CONTACTED: _____

☐ TRANSPORT VEHICLES STAGED: _____

☐ UNKNOWN ENVIRONMENT YES / NO

☐ PERSONNEL ASSIGNED TO ENTRY

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

7. _____ 8. _____

☐ BACK UP PERSONNEL ASSIGNED

1. _____ 2. _____

3. _____ 4. _____

4. SELECT PPE AND EQUIPMENT

☐ RESPIRATORY PROTECTION: _____

☐ CHEMICAL CLOTHING: _____

_____

5. INFORMATION AND RESOURCE COORDINATION

☐ OFFICER MEETING CONDUCTED

☐ OPERATIONS TO BE PERFORMED

1. _____

_____

2. _____

_____

☐ ERT BRIEFED ON OPERATIONS

- ☐ ERT BRIEFED ON HEAT STRESS
- ☐ ERT BRIEFED ON CHEMICAL EXPOSURE SIGN & SYMPTOMS
- ☐ ERT BRIEFED ON EMERGENCY PROCEDURES
- ☐ ERT BRIEFED ON DECON AREA
- ☐ COMMUNICATIONS IN PLACE AND WORKING
- ☐ PERMISSION GIVEN BY IC OR TEAM LEADER TO BEGIN

6. CONTROL & CONTAINMENT

- ☐ ERT MEDICALLY CLEARED FOR ENTRY
- ☐ MONITOR ERT FOR HEAT STRESS, EXPOSURES, PROPER PROCEDURES
- ☐ LOCATED AT ACCESS CONTROL POINT

7. DECONTAMINATION

- ☐ DECON PERSONNEL HAVE PROPER PPE
- ☐ ERT TO DECON WHEN EXITED

8. TERMINATION

- ☐ ALL ERT MEMBERS ACCOUNTED FOR
- ☐ ALL ERT AND OFFICERS DECONNED
- ☐ HEALTH ASSESSMENT OF ERT
- ☐ BRIEF OF HEALTH EFFECTS OF HAZARDS
- ☐ REVIEW OF INCIDENT

NOTES: _____

_____

_____

RISK ASSESSMENT OFFICER CHECKLIST

Incident:_____ Location:_____

Date:_____ Time:_____

Weather:_____

Incident Commander:_____

Emergency Coordinator:_____

GENERAL

☐ RISK ASSESSMENT OFFICER IDENTIFIED BY VEST

☐ MEET AT COMMAND POST

☐ REVIEW OF INCIDENT

☐ FIRE ☐ WASTE SPILL ☐ CHEMICAL SPILL

OFFICERS ASSIGNED

SAFETY OFFICER _____

TEAM LEADER _____

EQUIPMENT OFFICER _____

1. SITE MANAGEMENT

☐ KNOWS LOCATION OF COMMAND POST, HOT ZONE, COLD ZONE,

☐ ENTRY/EXIT POINT

2. IDENTIFICATION OF HAZARDS

☐ FIRE

☐ CHEMICAL IDENTIFIED

1. _____

2. _____

☐ SHIPPING PAPERS/MANIFEST ACQUIRED

☐ MSDS ACQUIRED

☐ LAB PERSONNEL CONSULTED

☐ DOT GUIDEBOOK USED

☐ MANUFACTURER

☐ CHEMTREC

☐ OTHER: _____

3. HAZARD AND RISK ASSESSMENT

☐ WEATHER FORECAST OBTAINED: _____

☐ GAS METER READINGS OBTAINED:

O2: _____ LEL: ____ CO: _____ H2S: _____ TIME: _____

☐ CHEMICAL CONCENTRATION & METHODS: _____

☐ HAZARDS IDENTIFIED

1. HEALTH: _____

2. FLAMMABILITY: _____

3. REACTIVITY: _____

4. PHYSICAL: _____

☐ EVACUATION DISTANCES DETERMINED

1. _____

2. _____

☐ HAZARD MAP CREATED (ZONES) SEE ATTACHED MAP

4. SELECT PPE AND EQUIPMENT

☐ REVIEW PPE WITH SAFETY OFFICER

☐ HAS APPROPRIATE PPE AND EQUIPMENT

5. INFORMATION AND RESOURCE COORDINATION

☐ INFORMATION REVIEWED WITH:

- ☐ INCIDENT COMMANDER
- ☐ TEAM LEADER
- ☐ SAFETY OFFICER
- ☐ EQUIPMENT OFFICER

6. CONTROL & CONTAINMENT

☐ CONTINUE TO MONITOR FOR WEATHER, WIND, RUNOFF, OTHER HAZARDS

☐ EVALUATES CONTROL PROCEDURES

☐ REMAINS IN WARM ZONE

7. DECONTAMINATION

☐ GOES THROUGH DECON AS NECESSARY

8. TERMINATION

☐ FOLLOW UP WITH LAB TO ENSURE PROPER DISPOSAL

☐ REVIEW OF INCIDENT

NOTES: _____

_____

_____

_____

_____

HAZARD ZONE MAP

TEAM LEADER CHECKLIST

Incident: _____ Location: _____

Date: _____ Time: _____

Weather: _____

Incident Commander: _____

Emergency Coordinator: _____

GENERAL

☐ TEAM LEADER IDENTIFIED BY VEST

☐ MEET AT COMMAND POST

☐ REVIEW OF INCIDENT

☐ FIRE ☐ WASTE SPILL ☐ CHEMICAL SPILL

OFFICERS ASSIGNED

SAFETY OFFICER _____

RISK ASSESSMENT OFFICER _____

EQUIPMENT OFFICER _____

PERSONNEL ASSIGNED TO TEAM LEADER

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

7. _____ 8. _____

9. _____ 10. _____

1. SITE MANAGEMENT

☐ KNOWS LOCATION OF COMMAND POST, HOT ZONE, COLD ZONE, ENTRY/EXIT POINT

☐ ALL NECESSARY EMPLOYEES EVACUATED

2. IDENTIFICATION OF HAZARDS

☐ FIRE

☐ CHEMICAL IDENTIFIED

1. _____

2. _____

☐ SHIPPING PAPERS/MANIFEST ACQUIRED

3. HAZARD AND RISK ASSESSMENT

☐ WEATHER FORECAST OBTAINED: _____

SOURCE: _____

☐ GAS METER READINGS OBTAINED:

02: _____ LEL: _____ CO: _____ H2S: _____ TIME: _____

☐ CHEMICAL CONCENTRATION & METHODS: _____

☐ HAZARDS IDENTIFIED

1. HEALTH: _____

2. FLAMMABILITY: _____

3. REACTIVITY: _____

4. PHYSICAL: _____

4. INFORMATION AND RESOURCE COORDINATION

☐ HAZARDS REVIEWED WITH SAFETY OFFICER AND RISK ASSESSMENT

☐ INFORMATION REVIEWED WITH IC

☐ OPERATIONS DISCUSSED

1. _____

2. _____

☐ REVIEW RISKS, HAZARDS, PPE WITH: ERT, SAFETY OFFICER, EQUIPMENT OFFICER

☐ COMMUNICATIONS IN PLACE AND WORKING

5. SELECT PPE AND EQUIPMENT

☐ HAS PROPER PPE & EQUIPMENT FOR HIMSELF AND ERT

6. CONTROL & CONTAINMENT

☐ HAS PERMISSION TO BEGIN ACTIVITIES FROM IC AND SAFETY

☐ OVERSEE PROPER PROCEDURES ARE FOLLOWED

☐ MONITORS ERT FOR EXPOSURES, HAZARDS

☐ FINAL CHECK OF SITE TO ENSURE ACTIVITIES ARE COMPLETED CORRECTLY

7. DECONTAMINATION

☐ GOES THROUGH DECON

☐ ENSURES ERT GOES THROUGH DECON

☐ ENSURES ERT MEDICALLY BRIEFED AND CHECKED

8. TERMINATION

☐ FOLLOW UP WITH LAB TO ENSURE PROPER DISPOSAL

☐ REPORTS ALL ACTIVITIES TO IC

☐ REVIEW OF INCIDENT

NOTES: _____

EQUIPMENT OFFICER CHECKLIST

Incident:_____ Location:_____

Date:_____ Time:_____

Weather:_____

Incident Commander:_____

Emergency Coordinator:_____

GENERAL

☐ EQUIPMENT OFFICER IDENTIFIED BY VEST

☐ MEET AT COMMAND POST

☐ REVIEW OF INCIDENT

☐ FIRE ☐ WASTE SPILL ☐ CHEMICAL SPILL

OFFICERS ASSIGNED

SAFETY OFFICER _____

TEAM LEADER _____ _____

RISK ASSESSMENT OFFICER _____ _____

PERSONNEL ASSIGNED TO EQUIPMENT OFFICER

1._____ 2._____

1. SITE MANAGEMENT

☐ KNOWS LOCATION OF COMMAND POST, HOT ZONE, COLD ZONE, ENTRY/EXIT POINT

☐ IDENTIFIED ANY WATERWAYS, STORM DRAINS, SEWERS

2. IDENTIFICATION OF HAZARDS

☐ FIRE

☐ CHEMICAL IDENTIFIED

1._____

2._____

3. HAZARD AND RISK ASSESSMENT

☐ GAS METER READINGS OBTAINED:

02:_____ LEL:____ CO:_____ H2S:_____ TIME:_____

☐ CHEMICAL CONCENTRATION & METHODS:_____

☐ HAZARDS IDENTIFIED

1. HEALTH:_____

2. FLAMMABILITY:_____

3. REACTIVITY:_____

4. PHYSICAL:_____

☐ VERIFIES EQUIPMENT IN PLACE AND ACCESSIBLE

4. INFORMATION AND RESOURCE COORDINATION

☐ HAZARDS REVIEWED WITH SAFETY OFFICER AND RISK ASSESSMENT

☐ INFORMATION REVIEWED WITH IC

☐ OPERATIONS DISCUSSED

1._____ _____

2. _____

☐ REVIEW RISKS, HAZARDS, PPE WITH: ERT, SAFETY OFFICER, EQUIPMENT OFFICER

☐ COMMUNICATIONS IN PLACE AND WORKING

☐ ESTABLISHES "HOT", "WARM", "DECON" AND "COLD ZONES

☐ SELECTS APPROPRIATE EQUIPMENT, CONTAINERS AND METHODS

☐ DETERMINES DECON METHODS

5. SELECT PROPER PPE AND EQUIPMENT

☐ HAS PROPER PPE & EQUIPMENT FOR HIMSELF AND ERT

☐ HAS PROPER DECON MATERIALS IN PLACE

6. CONTROL & CONTAINMENT

☐ KEEPS "CLEAN" AND "DIRTY" EQUIPMENT SEPARATE

☐ MONITORS CONTAINERS FOR APPROPRIATE HANDLING AND LABELING

☐ MONITORS ERT FOR EXPOSURES, HAZARDS

☐ REMAINS IN "WARM" ZONE

7. DECONTAMINATION

☐ ENSURES ERT GOES THROUGH DECON

☐ ENSURES ALL EQUIPMENT IS DECONNED

☐ DECONTAMINATES HIMSELF WHEN COMPLETED

8. TERMINATION

☐ FOLLOW UP WITH TEAM LEADER TO ENSURE PROPER DISPOSAL

- ☐ REVIEW OF INCIDENT
- ☐ ENSURES SPILL STATIONS & EQUIPMENT ARE RESTOCKED/READY
- ☐ ORDERS ADDITIONAL SUPPLIES AS NECESSARY
- ☐ NOTIFIES IC AND SAFETY ALL EQUIPMENT IS READY FOR START UP OF OPERATIONS

NOTES: _____

Attachment 3

MEMO OF EMERGENCY CALL

Date: Time:_____ Person calling:_____

(date of call) (time of call)

Agency Called (Indicate, by name, who you spoke with):

City of Cohoes Fire Department 237-2211_____

West Central Environmental 272-6891_____

New York State 24 hour Oil and Hazardous Material
Hotline 457-7362_____

Albany County Health Dept. 445-7835 _____ _____

National Response Center (800) 424-8802_____

(202) 426-2675_____

United States Coast Guard 472-6110_____
(after hours) (212) 264-4800_____

D&H Railroad 271-4414 _____

US EPA Region II (201) 548-8730

I am reporting a fire/spill which occurred at (time)

I am of the Norlite Corporation. (518-235-0401)

(name, title)

The fire/spill is at the plant which is located in Albany County on the Southern boundary of the city of Cohoes just West of New York Route 32 & 787. The address is 628 South Saratoga Street, in Cohoes.

1. Describe the nature of the fire/spill:

-Amount _____ (in gallons) spilled or on fire to the extent known.

-Materials involved (i.e. mainly solvents and alcohols or petroleum) to the extent known._____

2. Describe the affected waterways if applicable (salt Kill)_____

3. Describe the possible hazards to human health, or the environment outside of the facility. _____ In addition, if evacuation of local area may or may not be advisable and why._____

ACTION ALREADY TAKEN:

ACTION TO BE TAKEN:

PERSONNEL PRESENT:

PERSONNEL SUMMONED:

Agencies listed below should receive notice from the other agencies notified, however, if the nature of the emergency effects residents of the city of Cohoes and/or Town of Colonie, they will be notified immediately.

-Region IV, DEC
382-0680

-Albany County Health Dept.
445-7835

-City of Cohoes, Corp. Counsel
237-7811

-Town of Colonie
783-2728

EMERGENCY EQUIPMENT

ITEM	LOCATION	DESCRIPTION AND USE
SCBA'S (60 Min)	Safety Truck 2	Rescue purposes in IDLH environment
SCBA's (30 Min)	Through fuel system	Entry use for identifying materials in unknown environments
Full Face	Employee Lockers	Respiratory protection of known materials & concentrations
Disposable Personal Protection Equipment Equipment	Spill Stations, Central Inventory	Chemical Suits, Gloves, Boots, cartridges for chemical hazards
Safety Showers	Throughout fuel system, Waste Water Treatment	Heat traced units, for decontamination
Drum and Containers	Spill Stations, Fuel Farm	To contain and collect materials
100 Fire Extinguishers	Throughout Facility	Type ABC (dry) combustible Material flammable liquid Electrical
Fire Blankets	Within fuel system	Wool blankets for fire Extinguishing
Fire Hydrant #1	South of Salt Kill 100' North of R/R Track	For use by Fire Department for foam application, etc.
re Hydrant #2	South of Salt Kill 400' North of R/R Track	For use by Fire Department for foam application, etc.
Fire Hydrant #3	South of Salt Kill 600' North of R/R Track	For use by Fire Department for foam application, etc.
Absorbent Booms	Spill Station (2) by Gate #2 and Unloading Area	Place across stream to contain and absorb spilled material
Absorbents	Spill Stations and LGF Unloading Area	Absorb spilled material
Crushed Stone	Clinker Storage pile, Primary Area, Finish Area	To contain and absorb materials
Portable Pump	LGF Unloading Area	Transfer spill material into tank
Clay Soil	Over burden storage area	Construct dikes to contain spill
Front Loaders (3)	Quarry, Loading Area	Construct dame and dikes to Contain spills
Vac Truck	Facility Property	To collect materials for transfer
High Pressure Washer	Facility Property	Decontamination surfaces
Sodium Bicarbonate	Waste Water Treatment	Neutralization of Acids
Shovels (Non-Spark Producing)	Spill Station	To build dikes to contain spilled Materials, remove contaminated Soil

ITEM	LOCATION	DESCRIPTION AND USE
First Aid Supplies	Safety Trailer, Safety Truck, Spill Station, Trunnion Trailer	Bandages, compresses, etc.
Emergency Communications system including horn and phones	Office phones, Security Gate #1	Used for external and internal plant Communication
Hand held portable radios	Supervisors, Incident Commander and Officers, Some Hazmat Employees	Internal communications
Wind Socks	Fuel Farm, Kiln, Waste Water Treatment, Finish Plant	Used to identify wind direction in order to determine best evacuation Route
Automated AFFF Alarm System	Fuel System, Control panel at fuel farm And control Room #1	Used to inform facility personnel of AFFF fire suppression system activation
Standpipe System (Fire hose)	Outside LGF pipe tunnel Escape hatches	Used for additional fire fighting capability in Pipe Tunnel
Fire Dept. Connection system	Ground Level. LGF Pipe tunnel escape Hatch ladders	Used to allow fire department to hook into pipe tunnel fire suppression system to supply additional water
Oxygen, LEL, rapid heat rise and flame detectors	LGF Unloading Area and Building, overhead tunnel, equalization Area	Used for detection within the LGF System

ATTACHMENT 5

INJURY/ACCIDENT/INCIDENT EVENT REPORT FORM

Date and time of event:_____

Date and time event reported:_____

Location of event:_____

Reported by:_____ Reported to:_____

TYPE OF EVENT

Injury	First Aid	Medical Treatment		
Accident	Property Damage	Vehicle/Equipment		
Incident	Near Miss	Potential Hazard	Fire	Spill

Describe event (If necessary, use a separate sheet of paper).

Was an incident coordinator notified? Yes No Name:_____
Date:_____

Was 911 contacted? Yes No Time:_____

Employee Signature:_____ Date:_____

Supervisor Signature:_____ Date:_____

Event Report #:_____

WORK AGREEMENT CONTRACT

Agreement between:

NORLITE CORP.
a Corporation of: UNITED OIL RECOVERY
(herein called "Company")

and

WEST CENTRAL ENVIRONMENTAL CORP.
(herein called "Contractor")

West Central Environmental Corp. shall perform all work as outlined in Exhibit "A", Work Specifications, for the period covering June 01, 1997 to termination of the agreement.

Company shall pay Contractor for said work as per rates outlined in Exhibit "B", except hazardous or toxic material, in which case Exhibit "C" rates shall apply.

Company agrees to use West Central Environmental Corp. as their primary (first call) contractor for spill cleanup services as outlined in Exhibit "A", for work beyond the capabilities of their own company.

* This agreement may be terminated by either party upon (30) day written notice.

WORK AGREEMENT CONTRACT

Exhibit "A"	Work Specifications
Exhibit "B"	Agreement Rates
Exhibit "C"	Hazardous Material Rates
Exhibit "D"	Absorbent Pricing

Contractor:

West Central Environmental Corp.

By _____
Title:_____

_____
Witness or Seal

Company:

Norlite Corporation

By_____
Title:_____

_____
Witness or Seal

WORK SPECIFICATIONS
Oil and Chemical Pollution Control and Cleanup Services

Specifications:

Contractor shall perform the following work in accordance with the following specifications.

GENERAL

Subject to the terms and conditions hereto, Contractor agrees to perform all services deemed necessary by Contractor and Company to attempt to correct the conditions herein after described and in connection therewith to supply the Company such equipment and trained personnel as the Company shall deem necessary or desirable, all in accordance with the rate schedule attached hereto.

Properly contain and recover any spilled product or contaminated materials as directed by Companies designated agent.

Contractor shall provide these services on an "as called" basis, 24 hours per day, seven days per week for the total term of the agreement.

SCOPE OF WORK

Contractor shall provide all supervision, material, labor, tools, equipment and transportation, to properly clean up any product spilled on land, in water or that product which has spilled or leaked and migrated into the subsurface as requested by the company. Product is defined as hazardous substance, hazardous material, hazardous waste or industrial waste.

Contractor shall dispose or arrange for disposal of all collected products or contaminated debris in a manner which is approved by the Company and those governmental agencies having jurisdiction.

Contractor shall perform the services herein above described as an independent contractor in a diligent and professional manner on a 24 hour a day basis, 365 days per year at a preset price schedule, (see Exhibit "B").

When weather conditions exist, or other conditions such as earthquakes, hurricanes, major fires, acts of war, acts of omissions of third parties and or other acts of God, the Company and the Contractor shall determine the best practical method of cleanup, if any, that would be required.

SAMPLING
Contractor agrees to collect, analyze and document the sampling of any spilled oil or chemical at the owners request and expense.

CONTRACTOR'S FACILITIES
Contractor agrees to store company owned equipment at Contractor owned, leased facilities as space availability dictates. There will be no charge for the storage of this equipment.

DOCUMENTATION
Contractor will provide recording and photographs and other audio and visual aids for Company to document all aspects of the spill pertaining to conferences, briefings, overnights, inspections and cleanup activity. All of the Contractor's records regarding this documentation will be made available to the Company OSC. Contractor will also provide administrative and operational information to the company in connection with any efforts to mitigate class action suits.

AUDITS
Contractor will grant to Company audit rights in connection with reviewing billing data pertaining to a particular spill.

COMMUNICATIONS
Contractor will coordinate and provide radio and telephone communications as required by the Company OSC.

TRAINING
All personnel provided will meet or exceed the training standards set forth in CFR 29 Part 1910.

RESPONSE
Contractor agrees to respond to an order to mobilize as follows:

1) During Regular Working Hours
Underway with necessary manpower and equipment within one hour after notification.

2) During Off Hours (Nights/Weekends)
Underway with necessary manpower and equipment within (2) hours after notification.

3) Travel Time (Assuming Average Traffic Flow)
In Addition to above, add one hour for every (40) miles from West Central operations centers. This over-the-road transportation will be carried out with West Central owned tractor/trailer units and various rack trucks.

4) In all cases a Contractor representative will be immediately dispatched to the jobsite to assist the company in evaluating the extent of the spill and corrective action to be taken.

Contractor agrees to participate in mobilization drills to evaluate all aspects of emergency preparedness relating to contingency plans.

In the event that the Company is not responsible for the incident, and formally requested by a Federal or State agency to act as its agent to clean up the incident, the Company reserves the right to determine the best practical method to be used by the Contractor.

RATES

All rates utilized under this contract shall be firm for the total period of performance.

Company agrees to pay Contractor for the services berein above described at the rates specified. Terms of payment shall be as follows:
Net 10 days from date of invoice.
Interim bills may be rendered at intervals not less than (7) days during the continuation of jobs requiring more than (7) days for completion.

GEOGRAPHICAL AREAS TO BE SERVICED

Cohoes, NY (Primary)
All others requested (Secondary)

WARRANTIES OF COMPANY

Company agrees to use Contractor as primary (First Call) cleanup firm for all oil and chemical spills within the service area of the manned branch office of West Central Environmental Corp. as outlined for spills outside the capability of Norlite's response and cleanup crew. Company agrees to use Contractor for all major oil and chemical spills.

REPORTS

Contractor shall make reasonable efforts to prepare and deliver each day to Company (or it's agent) a report describing the services performed by contractor on the day preceeding the date on which such report is delivered. Company shall promptly report any errors or omissions in these reports. Such reports will be the basis for invoicing.

Upon payment in full to Contractor for services performed hereunder, Contractor agrees to hold Company harmless with respect to claims by third persons for payment for labor, materials and equipment used by Contractor in connection with Contractor's performance of services pursuant hereto; further, Contractor represents that it has and will maintain in force for the period hereto, insurance for liability for property damage, bodily injury and Workman's Compensation in such amounts and in such form as Contractor deems appropriate under the circumstances. Cerficates evidencing such insurance are ttached herein.

At all times while on Company's premises, Contractor is to observe and be subject to such rules and regulations as Company from time to time may promulgate for security reasons or for minimizing fire and explosion risks and for the maintenance or restoration of good order, and compel observance thereof by Contractor's employees or employees of his subcontractors at all times observe the reasonable rules and regulations while entering, leaving or on Company premises and shall cause them to be removed from such premises upon their failure to comply.

Contractor accepts full exclusive responsibility and liability for payment of federal and state payroll taxes and for contributions for unemployment insurance, old age pensions, annuities, retirement and other benefits, imposed or assessed under any provision of any law, state or federal, and measured by wages, salaries or other remuneration paid or payable by Contractor to employees of Contractor engaged in said work or in any operations incidental thereto, or by voluntary or contractual benefit plans between contractor and its employees which require contributions by Contractor, and agrees that each subcontractor who performs any part of said work will accept the same responsibility and liability with respect to employees of such subcontractor.

SAFETY

The contractor agrees to comply with all OSHA, MSHA, EPA and State environmental requirements. This includes, but is not limited to, the wearing of hard hats, life jackets and the proper clothing based on the job requirements.

PUBLIC RELATIONS

The contractor agrees to compel its employees or representatives not to have communications with the news media. The company will handle all public relations related to all aspects of the spill and the Contractor will comply with the Company policy regarding this matter.

SECURITY

The Contractor will coordinate and provide security at the jobsite as specified by the Company OSC. This is to ensure that all equipment at the the spill site is properly protected against theft and sabotage and all unauthorized persons are kept from entering the spill area and equipment storage areas.

FOOD/LODGING

The Contractor will coordinate and provide for the feeding of work crews and support personnel. Contractor will also provide for sanitary, first aid, portable lighting and berthing accommodations based on the job requirements with prior approval for same being obtained by Company OSC. Contractor will also provide for mobile command posts or trailerized office space if the remoteness of jobsite dictates the need.

PERMITS

The Contractor shall supply copies of all operating permits and authorities, updated annually upon request.

EXHIBIT "B"

P.O. Box 83
ensselaer, N.Y. 12144
518-272-6891
Poughkeepsie, N.Y.
914-471-1400

WEST CENTRAL ENVIRONMENTAL

Syracuse, N.Y.
315-472-6500
Binghamton, N.Y.
607-722-6400

24 HOUR SERVICE

EPA ID #NYD000708271
N.Y.S. Waste Haulers #4A-106

TIME AND MATERIAL RATES

LABOR: **September 1, 1994**

Operations Supervisor	**$65.00/hour**
Foreman	**50.00/hour**
Equipment Operator	**35.00/hour**
Cleaners	**30.00/hour**

Time and one-half charges apply to all hours worked before 8:00 a.m. and after 4:00 p.m. weekdays and all day Saturday. Double time will apply to all hours worked on Sundays and Holidays.

Per diem of $85.00 per day per man will be assessed for jobs of more than one day duration 50 or more miles from point of mobilization.

NOTE:

1) There is a four (4) hour minimum for all labor and equipment listed on weekdays, and an eight (8) hour minimum on Saturday, Sunday and Holidays.
2) All charges are portal to portal for men & equipment; including mobilization & demobilization.
3) Equipment rates do not include operator.
4) Terms are net 10 days with consideration for early payment; interest charges of 1-1/2% per month on all past due accounts.
5) All disposal according to State and Federal rules and regulations to be negotiated.

Equipment

Heavy Duty Vactor	**$ 85.00/hr.**
Vacuum Tractor Trailer	**75.00/hr.**
Bulk Tanker Storage	**150.00/day**
Box Van Tractor Trailer	**65.00/hr.**
Dump Truck 30 yd. Trailer	**65.00/hr.**
Rolloff Containers Rental	**75.00/week**
Rolloff Tractor/Trailer	**65.00/hr.**
Utility Trucks	**15.00/hr.**
Hydro-Laser up to 10,000 Psi	**50.00/hr.**
High Pressure High Temp Up to 3000 Psi	**35.00/hr.**
Small Boat Powered with Outboard Motor	**30.00/hr.**
Small Boat w/o motor	**75.00/day**
m Rental (daily) – 13"	**.55/ft.**
ered Work Boat 50 - 200 H.P.	**30.00/hr.**
Expendables	**Cost + 30%**
Sub-Contractors	**Cost + 30%**
Pumps	**75.00/day**
Generators	**75.00/day**
Steam Unit	**25.00/day**
Oil Scavenger	**300.00/day**
Personal – Autos	**80.00/day**
Oil Skimmers	**80.00/day**
Trans. Hose – 3"	**15.00/day**
Trans. Hose – 2"	**10.00/day**
Trans. Hose – 1-1/4"	**10.00/day**
Oil & Chem. Absorbents	**as per price list**
Scott Paks	**110.00/day**
Spare Bottles	**50.00/day + air**
Breathing Gear – Hose Mask	**400.00/day**
Emergency Response Mobilization Unit	**170.00/hr.**

WORK AGREEMENT CONTRACT

Exhibit "A"	Work Specifications
Exhibit "B"	Agreement Rates
Exhibit "C"	Hazardous Material Rates
Exhibit "D"	Absorbent Pricing

Contractor:

West Central Environmental Corp.

By _____
Title: Vice Pres.

_____
Witness or Seal

Company:

Norlite Corporation

By _____
Title: President

_____
Witness or Seal

To be posted near every phone

INCIDENT COORDINATOR	NEXTEL	HOME	PLANT
Tim Lachell (Plant Manager) (Primary) 31 Cooks Court, Waterford, NY 12188	857-9164	373-9569	x.4037
ian Decatur (Safety Manager) (Alternate) 251 Babcock Lake Rd, Hoosick Falls, NY12090	376-0913	686-9824	x.4005
Jeff Nusbaum (Fuel Farm Manager) (Alternate) 253 Casey Road, Schaghticoke, NY 12154	365-5478		x.4028
Herb Marlow (Maintenance) (Alternate) 14 Grissom Drive, Clifton Park, NY 12065	376-0915	383-3493	x.4018
Security Gate (Elm Street)	-	-	x.4084
PLANT MANAGERS	**NEXTEL**	**HOME**	**PLANT**
Prince Knight (Lab Manager)	857-2969	478-9190	x.4049
Dave Carabetta (President)	(203) 537-3223	(203) 271-2707	x.4014
Bill Morris (Compliance Manager)	(203) 537-2322	(860) 349-1497	-
Kiln Supervisors	857-5737		x.4073
Ken O'Brien Jr. (Aggregate Production Mgr)	376-8634	395-3344	x.4021

FOR PLANT EMERGENCIES - FIRE - POLICE - EMS DIAL 911

LOCAL FIRES	PHONE NUMBER
Cohoes	237-2211
Colonie*	783-2744
LOCAL POLICE	**PHONE NUMBER**
Cohoes	237-5333
Colonie*	783-2744
SPILL RESPONSE	**PHONE NUMBER**
West Central Environmental	272-6891
CHEMTREC	(800) 424-9300
NYSDEC Spill Hotline	457-7362
LOCAL EMERGENCY PLANNING COMMITTEE	765-2351
EPA NATIONAL RESPONSE CENTER	(800) 424-8802
DOCTORS	**PHONE NUMBER**
Access Health 776A Watervliet Shaker Road Latham, NY 12110	782-2200 FAX 786-1875
St. Mary's Hospital	(518) 268-5697
MISCELLANEOUS	**PHONE NUMBER**
SRI Fire Sprinkler Corp.	459-2776
MSHA	489-0573
Niagara Mohawk Power	356-6471

*West of the power lines

4/26/04

NORLITE, 628 SOUTH SARATOGA STREET, COHOES, NEW YORK 12047 235-0401

ATTACHMENT H

SECTION H TRAINING REQUIREMENTS

Norlite Training Requirements.....H-1
ATTACHMENT 1 Training Description. H-4
ATTACHMENT 2 Job Titles & Duties.....H-7

SECTION H

NORLITE'S TRAINING REQUIREMENTS

This section includes a description of Norlite's training program, and an outline of both introductory and continuing training programs to prepare employees to operate and maintain this facility in a safe and compliant manner.

All employees working within the plant will undergo initial, specialized, specific and annual training programs, depending upon their job positions. This will be accomplished via classroom, hands-on, and specific on-the-job training, to ensure compliance with 373-2.2 (h) (1) (i), as it is relevant to their positions. Supervisors and managers will attend training sessions on proper handling and management of hazardous waste materials. A qualified instructor, as per 373-2.2 (h) (1) (ii) will conduct all training programs. Training sessions are designed to cover safety, compliance and health procedures related to activities and procedures at this facility, and follow the requirements of 29CFR, 30CFR, 40CFR, 49CFR, and 373-2.2 (h) (1) (iii), as they apply to the Norlite facility.

All plant employees, supervisors, and managers will attend 24-Hour Initial Training within 6 months of their hire date as per 373-2.2 (h) (2). Until training is completed, the employee will not work unsupervised. All plant employees will participate in annual 8-hour refresher training. This is updated annually to cover new regulations, procedures, and other relevant information and to provide new ways to present materials in accordance with 373-2.2 (h) (3).

Several plant employees will be trained in response to fires, explosions, spills, and groundwater remediation and contamination. These individuals will only respond after training is completed. Each will be trained at the appropriate level of response and will participate in refresher training.

Each department will conduct job specific training for each employee. Each employee will go through job specific training under direction of their supervisor and/or an experienced employee. This is documented on individual training outlines, meeting the requirements of 373-2.2 (h) (4) (iv).

Norlite's training outline and description in accordance with 373-2.2 (h) (4) (iii) is included in Attachment 1. Records that training has been completed will be maintained on file in the training records for at least three years after termination of the employee, in accordance with 373-2.2 (h) (5).

Records, including job title, name, position, job description, education, qualifications, and duties will be maintained at the facility. Job titles and job duties and are included in Attachment 2.

ATTACHMENT 1, SECTION H

CURRENT TRAINING CURRICULUM

DESCRIPTION OF TRAINING

Orientation A 20-minute video overview of basic plant operations and safety regulations. Completed during the first day of employment. A requirement for all individuals working at the facility.

24-Hour Initial Classroom and practical training covering safety and regulatory requirements for working within a mining and a TSD/RCRA facility. This is conducted prior to working without direct supervision and is a conducted only upon initial employment.

Initial Supervisory Classroom and practical training to be given after 24-hour initial training. It is designed for supervisory personnel to ensure compliance with RCRA regulations, including compliance, emergency response, and review of the contingency plan.

Emergency Response Classroom and practical training designed to prepare individuals to properly report and handle releases of hazardous materials. A refresher is completed annually.

Standard Operating Procedures Classroom and practical training covering standard operating procedures (SOP's) relevant to the job titles and duties. This is conducted during initial training and will be updated as needed.

CPR/First- Aid Classroom and practical training covering CPR and first aid for personnel responding to a medical emergency. Refresher training is conducted every two years or as required.

8-Hour Refresher 8-hour classroom and practical training serving as a "refresher" to 24-hour initial training. Basic safety procedures are reviewed in addition to covering any new regulations or

procedures. This is completed annually.

DOT Classroom training covering proper labeling, handling, shipping, and transportation of hazardous materials. Refresher training is given annually.

Incinerator Operator Training and Certification Program Burner operators are trained to understand the kiln process, pollution control equipment and regulatory requirements under RCRA, CAA (MACT Requirements) and the State equivalents. Operators must complete the certification program required by the 40 CFR 63.1206(c)(6) which includes training under the following topics: safety training, Basic Science, Combustion Chemistry, Environmental Regulations, Feedstream Analysis Plan, Operation and Maintenance Plan, Start Up Shutdown and Malfunction Plan, Instrumentation and Control, Continuous Emission Monitoring, and Automatic Waste Feed Cutoff System.

ATTACHMENT 2, SECTION H

JOB TITLES AND DUTIES

The job descriptions and related information as outlined below pertain only to the use and handling of LLGF. Each position requires the performance of additional duties not related to the use and handling of LLGF. These additional duties are not covered in the following job descriptions.

Records of the requisite skill, education, and qualifications of the person(s) filling the position are maintained at Norlite's office.

I. Plant Manager

A. Job Description

1. Responsible for all of Norlite's Operations
2. Supervises the development and technical support of the LLGF Program
3. Supervises Section Managers
4. Interact with regulatory agencies and technical consultants
5. Member of Safety and BMP Committees
6. Keep abreast of regulatory changes
7. Emergency Coordinator

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher Training, DOT, On-the-job training.

II. Plant Engineer

A. Job Description

1. Supervises or performs professional engineering for the LLGF Program
2. Researches and provides specifications for replacement and new facility equipment
3. Writes and/or reviews technical engineering reports
4. Interprets and applies federal, state, and local laws when applying professional engineering principles and practices.
5. Emergency Coordinator

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher, DOT, On-the-job training.

III. Environmental Manager

A. Job Description

1. Coordinate all environmental compliance activities
2. Keep abreast of regulatory changes
3. Member of Safety and BMP Committees
4. Interacts with regulatory agencies and technical consultants
5. Assists with safety and regulatory training
6. Emergency Coordinator

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, DOT, On-the-job training.

IV. Safety Manager

A. Job Description

1. Coordinates and maintains overall facility safety programs
2. Coordinates training of all personnel with regards to hazardous waste operations
3. Maintains personnel training records
4. Coordinates medical surveillance program
5. Member of Safety and BMP Committees

6. Emergency Coordinator

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher, DOT, On-the-job training.

V. Maintenance Manager

A. Job Description

1. Develop and implement a preventative maintenance plan
2. Planning, organizing, and directing plant maintenance and repair work
3. Supervise plant technicians
4. Inspects and evaluates mechanical and electrical components of facility

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher, On-the-job training.

VI. Kiln Supervisor

A. Job Description

1. Supervise Kiln Field Operators, Burner Operators, Wastewater Treatment Plant Operator, and Mechanics
2. Member of Safety and BMP Committees

3. Conducts daily inspections of Fuel Farm and Kiln areas
4. Completes security checks of facility
5. Designated Emergency Contact

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher, DOT, On-the-job training.

VII. Lab Manager

A. Job Description
1. Responsible for all laboratory operations
2. Communicates with all departments within the facility and scheduling of laboratory responsibilities
3. Supervises Lab Technicians
4. Member of Safety and BMP Committees

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher, DOT, On-the-job training.

VIII. Lab Technician

A. Job Description
1. Provides all analytical support for the lab

2. Daily maintenance and cleaning of lab instrumentation

B. Training Requirements: Orientation, 24-Hour Initial, Emergency response, SOP's, Refresher, DOT, On-the-job training.

IX. Fuel Farm Manager

A. Job Description

1. Supervises LLGF unloading/transfer operations
2. Coordinates drum processing activities
3. Responsible for overall housekeeping activities in Fuel Farm area

B. Training Requirements: Orientation, 24-Hour Initial, Initial Supervisory, Emergency Response, SOP's, CPR/First-Aid, Refresher, On-the-job training.

X. Fuel Farm Technician

A. Job Description

1. Responsible for collecting samples of LLGF for lab analysis
2. Conducts LLGF unloading and transfer operations

B. Training Requirements: Orientation, 24-Hour Initial, Emergency Response, SOP's, Refresher, DOT, On-the-job training.

XI. Kiln Field Operator

A. Job Description

1. Assist Burner Operator with kiln operations
2. Daily maintenance of kiln equipment

B. Training Requirements: Orientation, 24-Hour Initial, Emergency Response, SOP's, Refresher, DOT.

XII. Burner Operator

A. Job Description

1. Responsible for kiln operating within all parameters of Automatic Waste Feed Cut Off System (AWFCO)
2. Responsible for production of lightweight aggregate

B. Training Requirements: Orientation, 24-Hour Initial, Emergency response, SOP's, Refresher, DOT, On-the-job training.

XIII. Wastewater Treatment Plant Operator

A. Job Description

1. Monitors and operates the Wastewater Treatment Facility
2. Performs repairs to related piping and pumping systems

3. Conducts routine chemical analysis of wastewater

B. Training Requirements: Orientation, 24-Hour Initial, Emergency Response, SOP's, Refresher, DOT, On-the-job training.

XIV. Mechanic

A. Job Description

1. Maintain, repair, and overhaul facility equipment.

B. Training Requirements: Orientation, 24-Hour Initial, Emergency Response, SOP's, Refresher, On-the-job training.

XV. Runner

A. Job Description

1. Maintain stockroom to ensure adequate supply of replacement equipment
2. Provide support in getting materials needed for plant activities

B. Training Requirements: Orientation, DOT, On-the-job.

ATTACHMENT I

SECTION I CLOSURE PLAN AND FINANCIAL REQUIREMENTS

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SECTION I

CLOSURE PLAN AND FINANCIAL REQUIREMENTS

This Section is submitted in accordance with the requirements of 6NYCRR Subpart §373-1.5 (a) (2) (xiii), (xv), (xvii), Subpart §373-2.7(b) through (f), Subpart §373-2.9(I), Subpart §373-2.10(e), Subpart §373-2.8(c), (d), (h) and (j) and Subpart §373-2.15(h). This plan identifies all steps that will be necessary to partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The plan also addresses the conditions and reasons under which partial closure will occur.

The post-closure care requirements of 6NYCRR Subpart §373-2.7(g) through §373-2.7(j) do not apply to Norlite's facility because Norlite is not a disposal facility nor does it contain any waste piles or surface impoundments. Accordingly, Norlite's closure plan addresses only the requirements of Subpart §373-2.7(b) through §373-2.7(f), §373-2.9(I) (Container Storage), §373-2.10(e) (Tank Storage) and §373-2.15(h) (Incinerators and Energy Recovery Facilities).

In accordance with 6NYCRR Subpart §373-2.7(c)(1), Norlite will maintain an onsite copy of the approved

closure plan and all revisions to the plan until the certification of closure completeness has been submitted and accepted by DEC, in accordance with 6NYCRR Subpart §373-2.7(f). In accordance with 6NYCRR Subpart §373-2.7(c)(3), Norlite will notify the Commissioner at least 180 days prior to the date it expects to begin final closure.

Based on available quarry reserves of shale, the projected operational life of the facility for the production of lightweight aggregate is thirty (30) to fifty (50) years. Therefore, the closure date for closure of the entire facility will be 2033.

Partial closure may also be undertaken at the facility if one of the aggregate kilns is removed from service without replacement. Partial closure, should this occur, would follow the final closure procedures provided therein for only the kiln being removed from service. As such, the partial closure costs are identified as a component of the final closure cost and are not costed separately.

Financial assurance will not be provided for partial closure since partial closures consist solely of replacing units which are included in final closure. At any given time, partial and final closure costs will not exceed final closure costs.

In accordance with 6NYCRR Subpart §373-2.7(f), upon completion of closure, Norlite's owner will submit to the Commissioner a Certificate signed by both Norlite's Owner and by a local independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

I-1 and Closure Plan [6NYCRR Subpart §373-1.5(a)(2)(xiii) Subpart §373-2.7(c)]

I-1(a) Closure Performance Standard [6NYCRR Subpart §373-2.7(b)]

This closure plan was designed to ensure that the facility will not require further maintenance and controls, to minimize or eliminate any threats to human health and the environment, and to avoid the escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

Norlite's facilities which are subject to closure consist of two aggregate kilns, ten hazardous waste storage tanks and related containment systems, two container storage areas, a loading/unloading area, transmission lines, and four kiln equalization tanks. These facilities are described in detail in Sections B

and D.

In order to ensure the removal of all hazardous wastes and residuals, Norlite will excavate all contaminated soils for processing for material recovery or disposal at off-site permitted disposal facilities. Contaminated soil will be characterized by soil sampling and analysis. Norlite will, at the time of partial or final closure, propose criteria concentrations for definition of contamination. These criteria will be submitted to the NYSDEC for review. The sampling program will be conducted in accordance with the protocols presented in Figure I-1. Soil samples will be analyzed for representative parameters in the soil as agreed to by the NYSDEC.

Following removal of all hazardous wastes from the LGF Storage Tank Area, the Truck Containment Area and the Drum Storage Area, the storage tanks will be removed and decontaminated. The soils in the storage tank leachate collection basin will be excavated, stockpiled, sampled and analyzed. Analytical data derived from the sampling program will be used to determine handling or disposal requirements. All LGF handling facilities will be steam cleaned and all wash waters will be collected for proper disposal.

Health and safety procedures will be implemented in

accordance with the protocols presented in Figure I-2.

After removal of the below ground tanks, the above ground tanks and the containment area for the above ground tanks, the hazardous waste storage area will be regarded subsequent to closure to prevent erosion. The following paragraphs discuss in detail efforts to be made at Norlite to satisfy the closure performance standard.

I-1(b) Partial and Final Closure Activities [6NYCRR Subpart §373-2.7(c)(1((I)]

The scope of activity required by partial and final closure are similar as the same type and quantity of equipment is involved. Final closure is scheduled for 2033. Any change in the estimated year of closure will result in Norlite requesting a minor permit modification pursuant to 6NYCRR Subpart §373-1.7(c). It is not anticipated, at this time, that final closure of hazardous waste energy recovery operations, prior to the estimated year of closure (2033), will result in discontinuation of lightweight aggregate production at Norlite. Therefore, closure of hazardous waste energy recovery operations at the kiln may occur in accordance with procedures outlined in Paragraph I-d(4) and the operation of the kiln may continue following closure with the use of non-waste fuel. Thus, dismantling or

demolition of the aggregate kilns and ancillary equipment is not included in the final closure procedures.

Any modifications to Norlite's existing facility equipment, structures, instruments or procedures related to the management of the facility will result in Norlite updating the partial closure plan, and revising the closure plan in accordance with 6NYCRR Subpart §373-2.7(c)(2).

Norlite may also be required to perform partial closure through the removal of one of the aggregate kilns from service or through the replacement of the LGF Storage and/or Handling System due to equipment breakdown, tank rupture or corrosion.

Partial closure involving tank replacement consists of tank closure procedure as described in Paragraph I-1(d)(2). Any soil contamination caused from the partial closure program would be excavated and handled or disposed of as described in Section I-1(d). Closure of any part of the LGF piping network will involve removing the piping and steam cleaning the equipment in the unloading containment area, as described in Paragraph I-1(d).

Partial closure involving removal of one of the aggregate kilns from service consists of disconnecting

the LGF feed lines to the kiln as described in Paragraph I-1(d)(4). Any soil contamination caused from the partial closure program would be excavated and handled or disposed of as described in Paragraph I-1(d). Closure of the LGF feed line will involve removing the piping and steam cleaning the equipment in the unloading containment area as described in Paragraph I-1(d).

Norlite's current operation allows for bulk storage of 155,579 gallons in a total of fifteen tanks. In addition, air pollution control system (APCS) dust residues are stored prior to beneficial use in block mix, in two silos, and/or in a rolloff container storage area.

Health and safety procedures for partial closure will be implemented in accordance with the protocols presented in Figure I-2.

I-1(c) Maximum Waste Inventory [6NYCRR Subpart §373-2.7(c)(1)(ii)]

The following is a detailed description of the maximum possible inventory of wastes in storage at any given time under Norlite's current operating capacity.

LGF Liquid - Upon final closure, if Norlite is no longer permitted to incinerate LGF, it is possible for the fifteen hazardous waste tanks, totaling 155,579 gallons, to be full.

LGF Tank Sludge - As described in Section C and Section D of this application, LGF tank sludge is generated at a rate of 80-55 gallon drums per cleaning of a 27,652 gallon storage tank. The tank sludge is staged, for a period of less than 90 days, in the truck containment area while the contents are sampled and analyzed to determine waste classification for manifesting and/or disposal.

LGF Filter Sludge - As described in Section C and Section D, filter sludge is generated daily. The sludge is stored in banded top drums and transferred to the drum storage area. The drum storage area is capable of containing 267 - 55 gallon drums.

Scrubber Water Treatment - Scrubber water is collected in a 1000 gallon recirculation tank (per kiln) where pH is maintained. The water is then piped to a wastewater equalization tank totaling about 60,000 gallons in tank capacity.

I-1(d) Inventory Removal, Disposal or Decontamination of Equipment [6NYCRR Subpart §373-2.7(c)(iii) and Subpart §373-2.7(e)]

Upon final closure of the Norlite Facilities, all waste sludges will be collected and analyzed, all tanks

and equipment will be decontaminated and dismantled. Soils will be excavated and stockpiled. Soil sampling and analysis will be conducted to determine if the soil is contaminated. Contaminated soil will be either processed off-site for materials recovery or transported off-site for disposal either option occurring at permitted facilities. Any uncontaminated soil will be graded on-site. Containment areas will be steam cleaned and wash waters will be collected and analyzed for proper disposal.

All work described in this Paragraph will be performed in accordance with Health and Safety procedures outlined in Figure I-2.

Extreme caution will be taken to utilize non-sparking tools and equipment during all cleanup and decontamination activities. Strict supervision will include provision for no open flames, hot surfaces, or smoking in and surrounding the work area.

The sludge will be removed from the LGF storage tanks by hand shoveling the material into 55 gallon bank top drums. All drums will be transferred to the truck containment area pending ultimate disposal. Material which is spilled during the removal process will be collected and drummed. Tank cleaning will be conducted by experienced environmental personnel.

Following all waste removal, all piping to and from the LGF storage tanks, including the aboveground pipe tunnel piping to the aggregate kilns, will be purged. Purging activities will include the removal of all liquids in the pipelines, rinsing and steam cleaning all supply lines, vent lines, filters, pumps and valves. The entire LGF piping network between the unloading station, storage tanks and the rotary kilns will be dismantled and transported to the truck containment area, where each piece of equipment will receive a second cleaning with a hot, high pressure spray wash. Chemical neutralizers and spill control pillows will be employed in the event of any spills resulting from pipe drainage during the disconnection and dismantling process. Decontamination of the tanks, piping and equipment will be verified using GC methods of analysis per SW-846 for specific organic that may have been handled in that area on a Standard Wipe test sample. The location and number of samples will be identified at the time of closure. Decontamination will be deemed successful if the resulting analytical results indicate specified parameter concentrations do not exceed regulatory standards. Equipment still contaminated with heavy residues will be drummed and disposed at an off-site permitted hazardous waste disposal facility. Approximately 2000 gallons of waste washwater and residues are anticipated to result from this decontamination.

All baghouse/APCS dust storage silos and scrubber water treatment tanks will also be cleaned with a high pressure spray wash prior to dismantling.

All contaminated washwater, generated as a result of the steam-cleaning process will be pumped into a tanker truck and transported to an off-site licensed treatment storage and disposal facility.

Subsequent to dismantling the piping system, the tank storage area, recirculating pump area, pump house area, unloading containment area, baghouse dust storage areas, scrubber water treatment areas, and spill containment areas will be thoroughly inspected. The areas of soil contamination will be defined based on visual and olfactory evidence. All soils exhibiting signs of contamination will be excavated using a backhoe and front end loader.

In order to ensure the removal of all contaminated soils, a soil sampling program will be conducted. Soil samples will be transported to a laboratory with GC/MS and atomic absorption capabilities. Any contaminated soil posing a threat to the human health or the environment will be excavated and properly handled/disposed. Figure I-1 summarizes the soil sampling program.

If not all the contaminated soils can be practicable removed or decontaminated as identified above, then Norlite will implement post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (see 6NYCRR Subpart §373-2.14(g), including maintenance and monitoring throughout the post-closure period. The plan will meet all applicable requirements of 6NYCRR Subpart §373-2.13 including 2.6.

All shale 'covering' and 'blanketing' in the LGF storage tanks will be excavated and stockpiled. The stockpile, estimated at 400 cubic yards, will be secured with disposal tarp. Six samples of the shale will be collected and analyzed to determine ultimate disposal of the tarped stockpile. Once the waste shale has been characterized the tarp will be drummed and disposed accordingly.

The LGF storage tanks, baghouse/APCS residue storage silos, and scrubber water treatment tanks will be transported to the truck containment facility for decontamination. After removal of the storage tanks and silos, two samples of the bedding material for each tank will be collected and analyzed. Any contaminated material, designated as such by visual or olfactory evidence, will be excavated and properly managed.

A total of 70 representative surface soil samples

will be taken from the container storage area, APCS container storage area, unloading area, storage tank areas, baghouse/APCS dust silo area, wastewater treatment area, recirculating pump area, pump house and spill containment area.

If a spill has overflowed into a clay lined diked area, the impacted portions of the clay liner will be excavated and securely disposed off-site prior to sampling. Soil samples will then be taken from exposed soil beneath the excavated clay liner.

All excavated soils, discarded contaminated equipment and solid residues that cannot be re-used, will be loaded and transported by truck to a licenses treatment, storage and disposal facility. A conservative cost allowance has been made for the disposal of 300 cubic yards, and the entire stockpiled shale quantity.

Subsequent to the removal of all wastes, excavation and disposal of all contaminated soils, and decontamination of all equipment, the LGF handling and tank containment areas and scrubber water containment areas will be decontaminated by a hot, low volume, high pressure spray wash. The concrete will then be removed and disposed of off-site. A total of 80 cu. yd. of concrete is assumed to be generated and disposed of as a hazardous waste.

The interior of the pump house, the drum storage area, the truck unloading containment area (Areas #1 and #2), the containment area for tanks 100A, B and C and 200A, B and C, the primary and secondary spill containment areas and the LGF piping tunnel will be decontaminated. The wash water will be collected by respective facility collection sumps and pumped into a bulk holding tank. The pipe tunnel will be decontaminated after the removal of the LGF lines have occurred. The high pressure spray water used to decontaminate the pipe tunnel will flow by gravity to the LGF tank containment area for Tanks 100A, B, C and 200A, B, C. Approximately 3000 gallons of wash water are anticipated to be used for cleaning the pipe tunnel and these tank containment areas. All sediment collected in the sumps will be removed and drummed. No entrained wash water will be allowed to remain in the sumps.

Prior to leaving any of the site locations undergoing decontamination, decontamination or disposal of personnel protective clothing and equipment will be conducted by removing all bulk material from the boots and spraying, washing and scrubbing with detergent solution. A personnel hygiene program will be implemented. This program will require that all personnel thoroughly wash exposed skin surfaces prior to eating, smoking or leaving the site.

For purposes of developing worst case cost estimates, Norlite has assumed in this closure plan that its existing inventory of LGF along with contaminated soil, baghouse/APCS dust and shale fines will be disposed of off-site. To the extent practical and consistent with its waste minimization plan, however, Norlite anticipates processing such liquid material through its kiln for purposes of energy recovery, and using the baghouse dust in product as part of the beneficial use determination. Materials that cannot be handled by Norlite will be disposed of or managed at an appropriate off-site facility.

I-1(d)(1) Closure of Containers [6NYCRR Subpart §373-2.9(I)]

LGF samples will be removed from the glass sample jars and incinerated in the kiln or, alternatively will be placed in 55-gallon drums. The sample jar caps and sample jars (broken to reduce bulk) will be placed in 55-gallon drums. The LGF samples along with sample jars and caps are expected to fill approximately four 55-gallon drums. The four drums containing the LGF samples and all drums containing the ignitable LGF filter sludge (54) and tank sludge (470) will be loaded and transported by truck for disposal at a licensed treatment, storage and disposal facility. Prior to transporting, six tank sludge samples and one filter sludge sample will be

collected and sent to a laboratory with GX/MS and atomic adsorption or inductively coupled plasma (ICP) capabilities. All drums will be inspected for leaks and structural integrity, and will be properly sealed, labeled and manifested in accordance with New York State and EPA regulations. The eight rolloff containers of solid waste will be transported to an off-site Subtitle C disposal facility.

Following removal of all wastes, the truck containment, drum storage, rolloff container storage, and LGF primary and secondary containment areas will be swept clean. All sweepings will be treated as hazardous and will be drummed and disposed of off-site along with the waste sludges.

The above noted areas will then be sprayed down with a hot, low volume, high pressure spray wash. All wash waters will be collected and stored in the bulk on-site holding tank truck. A wash water sample will be collected and analyzed.

I-1(d)(2) Closure of Tanks, Baghouse Dust Silos, and Wastewater Treatment Tanks [6NYCRR Subpart §373-2.10(e)]

All liquid LGF stored in the ten tanks and two equalization tanks will incinerate in the kiln, or,

alternatively, pumped into tankers and transported to a waste transfer station for analysis and reprocessing as LGF.

All LGF sludge will be removed from the tanks by means of hand shoveling and placed into 55-gallon drums by a qualified environmental contractor. In addition, any residues left in the baghouse dust silos, scrubber water recirculation tank and other wastewater treatment tanks will be removed. Supplied air breathing equipment will be used continuously by all individuals entering the tanks. All contractor personnel engaged in the work will be equipped with solvent resistant coveralls (olefin material, coated and heavy polyethylene film), head protection, neoprene-coated gloves and boots resistant to solvents. Wrists and ankles will be taped (electrical tape) to protect against upward and inward splash. Full-face respirators with organic vapor filter cartridges that seal directly to the mask will be used. Spill control pillows will be employed in the event of any spills resulting from the tank cleaning. Spill saturated spill control pillows will be placed in a 55-gallon steel recovery drum located at the dismantling area for temporary storage. Extreme caution will be taken to utilize non-sparking tools and equipment during tank cleaning activities. Strict supervision will include provision for no open flames, hot surfaces, or smoking in and surrounding the work areas.

All drums containing the ignitable LGF tank sludge will be loaded and transported by truck for disposal at an authorized treatment, storage and incineration and disposal facility.

After removal of the LGF tank sludge, the tanks will be transported to the truck unloading containment area. A stream-cleaning unit will be used to decontaminate the tanks. This process will generate residues in the form of contaminated wash waters. The contaminated wash water will be pumped from the tanks into an on-site holding tank truck and transported to a licensed treatment, storage and disposal facility. The APCS residue storage silos and the scrubber water treatment tanks will be handled in a similar manner to the LGF tanks.

Approximately 20,000 gallons of contaminated wash water are anticipated to be generated during the steam-cleaning of all tanks and ancillary equipment. All ancillary equipment will be detached from the tank. The equipment to be disconnected includes the mixing nozzles, level indicators, piping inlets and piping exits. The pipes will be decontaminated by steam-cleaning and the wash water will be collected in the containment area sumps and pumped into the on-site holding tank truck for disposal.

To assess whether the tank steam-cleaning process has

been successful for the LGF storage tanks, a member of the cleanup team will enter the tank with full protective gear and a combustible gas/oxygen detector. The team member will assess the hazard of the tank by local diffusion measurement of the percent of lower explosive limit of any residual solvent vapor in the tank. The detected presence of measured oxygen levels below 19.5% or of combustible gas above 5% of the Lower Explosive Limit ("LEL") of methane gas will result in the rewashing of the tank.

Next, the concrete slabs supporting the pump sets will be steam-cleaned, as will the entire concrete containment area (slab, tank foundation supports) for tanks 1 and 2. The tanks will be removed and either sold for scrap or resold.

I-1(d)(3) Closure of Excavated Stockpiles

Prior to transporting the six LGF storage tanks to the truck unloading containment area, approximately 600 cubic yards of shale 'covering' and 'blanketing' the storage tanks will be excavated and stockpiled. Six soil samples will be collected from the stockpiled. Six soil samples will be collected from the stockpile and analyzed for representative parameters agreed to by the NYSDEC.

The shale stockpile will be secured by a disposable polyethylene tarp and temporary snow fencing while awaiting sample analysis results pending waste classification.

The shale evidencing contamination will either be processed off-site for material recovery at a permitted facility or transported by truck to a licenses treatment, storage and disposal facility. The 6-inch surface layer of the supporting native soil will be excavated and treated with the stockpile.

I-1(d)(4) Closure of Rotary Kilns [6NYCRR Subpart §373-2.15(h)]

Norlite's two lightweight aggregate kilns are cylindrical, horizontally-mounted rotary kilns. The kilns are constructed of steel shells, with a six-inch refractory lining. The system involves piping and intermediate pumping station for feeding waste from the LGF storage tanks to the kilns, the kilns, a mechanical collector, a heat exchanger, baghouse, a venturi and ducan scrubber for air emissions from the kilns and an exhaust stack.

Since the LGF is filtered prior to burning and due to the very high destruction efficiency of the kilns, there is no remaining hazardous waste residues within the

kilns. Therefore, closure procedures associated with closure of the kiln operations will involve the decontamination and dismantling of waste feed lines to the kilns; disposal of contaminated washwaters generated from decontamination procedures; and, definition, excavation and disposal of any contaminated surface soils, as discussed under Paragraph I-1(d).

As stated in Paragraph I-1(b), if closure of the hazardous waste energy recovery operations at the kiln occur in accordance with the procedures outlined, the operation of the kiln may continue following closure with the use of non-waste fuel. Thus, dismantling or demolition of the aggregate kilns and their ancillary equipment (i.e., air pollution control equipment, etc.) is not included in the final closure procedures. To indicate successful decontamination of the kiln upon cessation of the use of LGF, the kiln will be operated in a "burnout" mode with only auxiliary fuel fired for an appropriate time period, but not less than four hours, maintaining at least the minimum temperature specified in the permit. This will allow for the combustion of any remaining organic constituents within the kiln system. As soon as practical, allowing for the kiln to properly cool prior to entry, a set of wipe samples (minimum of ten locations scattered throughout the kiln) will be taken. Wipe sampling will involve sampling kiln surfaces exposed to the LGF and/or exhaust gases. Each wipe

sample collected will be a 100 sq. cm. sample. Decontamination will be deemed successful if the resulting analytical results for the specified parameters, using appropriate GC methods of analysis in accordance with SW-846, do not exceed regulatory standards in effect at the time of closure.

I-1(e) Schedule for Closure [6NYCRR Subpart §373-2.7(c)(3) and Subpart §373-2.7(d)]

Within 90 days after receipt of the final volume of LGF, all hazardous wastes will be removed or beneficially reused. Within 180 days of this occurrence, the closure activities will be completed. All financial calculations are based on 1996 costs.

The commissioner will be notified by Norlite 180 days before beginning final closure. The proposed schedule for closure is shown in Figure I-3. Final closure will be supervised by a professional engineer, in addition to the owner or operator.

At this time, Norlite does not anticipate needing an extension for closure time.

I-2 Closure Cost Estimate [6NYCRR 373-1.5(a)(1)(xv) and Subpart §373-2.8©

The closure cost information presented herein is submitted in accordance with the requirements of 6NYCRR Subpart §373-1.5(a)(1)(xv) and Subpart §373-2.8(c).

An estimated $1,059,940.46 (1997 Dollars) will be needed to close the Norlite Facilities. In addition, approximately $51,474 (1999 Dollars) will be needed for the post-closure plan. Accordingly, the overall closure cost estimate adjusted for inflation is $1,189,773.33. The closure costs are based on all work being conducted by an independent contractor and presented by activity in Figure I-4. Activities include analysis and removal of waste inventory, decontamination, disposal of wash solvents, soil sampling, excavation and disposal of contaminated soil, and closure Certification. Closure costs for activities pertaining to the closure of the energy recovery operations (aggregate kilns) are incorporated in items B and D of Figure I-4.

The assumption made in the cost estimate are as follows:

A. Removal of Final Waste Inventory: - The waste volume is 118,000 gallons (24 tanker loads) of LGF, 4-55 gallon drums of LGF samples, 470-55 gallon drums

of tank sludge and 50-55 gallon drums of LGF samples, 470-55 gallon drums of tank sludge and 50-55 gallon drums of filter sludge. In addition, up to 267-55 gallon drums of waste from off-site generators may be in storage. This includes baghouse dust and scrubber water anticipated to be present at the time of closure.

B. Decontamination of Storage Tanks, Containment Areas, Piping and Ancillary Equipment: - Decontamination of the LGF storage tanks, the LGF piping network, drum storage area, containment area for tanks 1 and 2, primary and secondary containment areas, construction equipment and hand tools and the truck unloading containment area will be performed by steam cleaning.

C. Removal of Contaminated Waste Water: - It is estimated that a maximum of 25,000 gallons of contaminated washwater will be generated from steam cleaning activities. The contaminated washwater will require treatment at an off-site wastewater treatment facility. A 5,000 gallon mobile tank trailer will be located onsite for duration of closure. If deemed necessary for the proper treatment or disposal, a wastewater sample will be collected and analyzed for the necessary parameters.

D. Excavation and Disposal of Contaminated Soils: - An allowance has been made for the removal and disposal of approximately 700 cubic yards of LGF contaminated soil. It is assumed that 400 cubic yards of contaminated shale will be removed from the LGF storage tank area and a further 300 cubic yards will be removed as a result of designation by visual inspection and soil sampling programs. It is assumed that one cubic yard of soil will weigh approximately 1.4 tons.

E. Soil Sampling Program: - Approximately 70 soil samples will be collected and analyzed. The samples will be analyzed in a laboratory capable of performing a GC scan and a GC/MS scan. Seven duplicate samples will be analyzed by GC/MS for parameter identification confirmation. The soil the date of its original development) to reflect changes in closure cost brought about by inflation. The Department of Commerce's Annual Implicit Price Deflator for Gross National Product will be used to make this adjustment.

I-3 Financial Assurance Mechanism for Closure [6NYCRR Subpart §373-1.5 (a) (2) (xv), Subpart §373-2.8(d), Subpart §373-2.8(j)(1), (2) and (3)]

Norlite has satisfied the requirements of 6NYCRR Subpart §373-2.8 by obtaining an Trust Agreement which conforms to the requirements of 6NYCRR Subpart §373-2(j)(1). This Trust Agreement is between the Norlite corporation the "Settlor" and Citizens Bank, a national bank, the "Trustee", establishing a Fund for the benefit of NYSDEC in the amount of $1,189,773 to be held by the Trustee, IN TRUST. A copy of this Trust Agreement is attached to this Section as Appendix I-1.

Whenever the current closure cost estimate increases to an amount greater than that indicated in Figure I-4, within 60 days after the increase, Norlite will obtain an increase in the Trust Agreement at least equivalent to the increase in the closure cost estimate and will submit evidence of that increase to the Commissioner, or obtain other Financial assurances as specified in 6NYCRR Subpart §373-2.8 to cover the increase.

I-4 Liability Insurance [6NYCRR Subpart §373-1.5(a)(2)(xvii) and Subpart §373-2.8(h)(1) and (5)]

Norlite has obtained liability insurance for sudden and accidental occurrences meeting the requirements of 6NYCRR Subpart §373-2.8(h). A copy of the Certificate of Liability Insurance is attached to this Section as Appendix I-2.

Norlite will continuously provide liability coverage for the facility as required by 6NYCRR Subpart §373-2.8(h) throughout the operating life of the facility. Norlite will not provide liability insurance after the operating life of the facility because Norlite is not subject to the Post-Closure care requirements of 6NYCRR Subpart §373-2.7(g)-(j).

Since Norlite does not operate a "surface impoundment, landfill, or land treatment facility," it is not subject to the financial responsibility requirements for damage caused by non-sudden accidental occurrences.

SURFACE SOIL SAMPLING PROTOCOL

Soil samples will be removed using a sampling tool which will be cleaned with an acetone-hexane-acetone-distilled water rinse prior to use and reuse.

b) All clean tools will be placed on a clean aluminum foil sheet when not being used.

c) A new pair of true-touch gloves will be used for each sample.

d) Samples will be transferred directly to 500 ml or 40 ml vials (where required) and will be sealed with lids lined with Teflon or aluminum foil.

e) Two sample jars will be filled for each sampling location.

f) All rinsing, foil and gloves used in collecting the samples will be disposed of in an on-site drum.

g) Samples will be placed in a cooler with freezer packs and will be sent to an approved laboratory via courier under a chain of custody protocol the day of, or the day following collection.

HEALTH AND SAFETY

General

The safety and health of the public and on-site personnel, and the protection of the environment shall take precedence over cost and schedule considerations for all project work. Norlite's safety coordinator (or designate) will be responsible for decisions regarding when work will be stopped or started based on health and safety considerations.

A. The former LGF Unloading Area, Drum Storage Area, Tank Storage Area and the Primary and Secondary Containment Areas will be considered the 'dirty' zone. All areas outside the noted areas will be considered the 'clean' zone.

B. Prior to the commencement of closure, a snow fence will be erected temporarily to delineate the limits of the dirty zone. This snow fence will remain until the area has been designated by Norlite to be closed, based on soil sampling results. The Norlite temporary fencing will:

(1) physically separate 'clean' and 'dirty' areas,
(2) prevent unauthorized access or personnel or equipment to the 'dirty' zone during closure.

2. Personnel Protection

All personnel in the 'dirty ' zone will be required to wear the following items:

* rubber gloves,
* disposable Tyvek coveralls,
* safety boots,
* rubber overboots,
* safety glasses

The Norlite safety coordinator will be responsible for determining, based on site conditions, when respiratory protection is required. Respiratory protection will consist of half face respirators equipped with organic vapor, acid gas and particulate filter

cartridges that seal directly to the mask. The use of respirators will be based on air quality determined by air monitoring discussed under Item 3.

Strict supervision will include provision for no open flames, hot surfaces, or smoking to be present in or adjacent to the 'dirty' area.

Disposable personnel protection apparel will be placed in a designated disposal drum, located at the entrance/exit to the 'dirty' area, following use. This will be disposed of as hazardous waste.

3. Air Monitoring

At all times of work activity, Norlite will monitor air quality in and adjacent to the work area. Air will be monitored for organic vapors and explosive gases. The Norlite safety coordinator (or designate) will, on the basis of monitoring data, determine the degree and type of respiratory protection required. Explosimeter readings in excess of 20 percent of the lower explosive limit (LEL) or organic vapors in excess of 100 ppm of a single reading or 50 ppm for two successive readings will cause work to cease until a safe atmosphere is restored.

Contaminant Migration Control

All vehicles and construction equipment used in the 'dirty' zone will be decontaminated each time it leaves the 'dirty' zone and at the end of the project. (It should be noted that, trailers which will be loaded with soil at the limit of the clean/dirty area and that do not contact contaminated soils, will not require decontamination).

The truck unloading containment area will be used as a temporary decontamination wash station with limited storage capacity for wash waters. All potentially contaminated equipment or vehicles will be decontaminated at this facility prior to leaving the site. Sufficient cleaning units to provide efficient water pressure cleaning of equipment will be provided at the decontamination station.

Waste wash water will be pumped from the decontamination station sumps to the on-site holding tank on an as required basis. It is expected that the waste wash water will contain relatively low residual contaminant concentrations.

Personnel engaged in vehicle decontamination will wear protection equipment as previously outlined for 'dirty' zone personnel.

FIGURE I-3

ANTICIPATED CLOSURE SCHEDULE

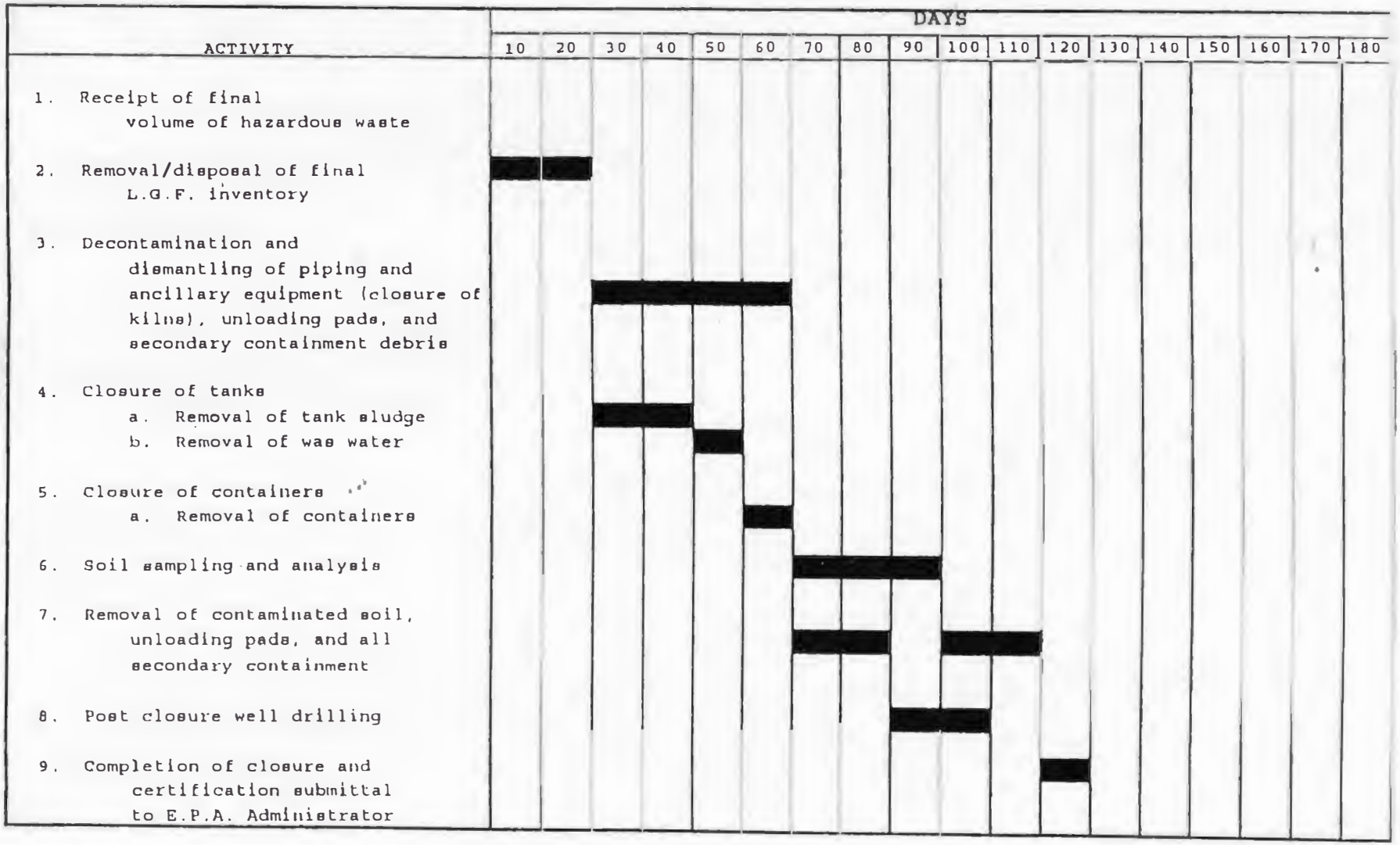


FIGURE I-4

NORLITE CORPORATION CLOSURE COST ESTIMATE

A. CLOSURE OF TANKS, PIPING NETWORK AND KILNS

1 Removal and Disposal of Inventory

a.	Volume of waste - 155,579 gallons Volume of sludge - 38,892 gallons Total Liquid 116,687 gallons Pumping -for a 6500 gallon truck $4.7/1000 gallons For 24 trucks- $155,571/1000X$4.70	$ 731.22
b.	Protective clothing 88 man hours number of persons 11, Protective clothing $25./person	275.00
c.	Transportation at $3.93/mile for 300 miles - $1,179 Number of trucks is 20: (6500X20=125,289 gallons) (RS Means Assembly # 33 19 0207)	23,580.00
d.	Disposal cost of RCRA fuels at $0.60 per gallon 116,679 gallons (Quote from Giant Resource)	70,007.40
e.	Disposal cost Scrubber Water inventory 68,000 Gallons times $0.30 per gallon (STABLEX CANADA)	20,400.00
f.	Baghouse residues (including filter media) - 355 cu.yds x $100/cu. yd.	35,500.00
	Transportation -355/20 X 300 X 3.44 (RS MEANS ASSEMBLY #33 19 0205)	18,318.00
g.	Supervision 40 X $35 (NYSDEC Figures)	1,400.00
	Subtotal A.1	$170,211.62

2. Removal and Disposal of LGF Tanks:

a. Tank Cleaning

i. Underground Tanks (UST): Number of Tanks - 4

Tank Decontamination and verification of cleaning for one UST:

A. Labor (Semi-Skilled) @ $122.64 per man day X 5 days (RS MEANS #33 17 0804)	$ 613.20
B. Equipment @ 830/day X 1.5 days (Per NYSDEC estimates)	1,245.00
C. Wipe Samples Analysis 8 X $300.00 (NYSDEC Figures)	2,400.00
D. Personnel Protective Safety Equipment	

	I/Level C @ $75/man day X 3.5		263.00	
	II/Level B @ $155/man day X 1.5		233.00	
	Monitoring Equip @ $135/day X 2		270.00	
		Subtotal for 1 Tank	$ 5,024.20	
	$5,024.20 X Four Tanks			20,096.80
ii	Collect soil samples around tank area and Analyze: Collect 8 soil samples @ 439/sample X 8 samples (RS MEANS #33 02 0612)			3,512.00
iii	Disposal of miscellaneous waste PPE, etc @ $75/drum X 8 (Quote STABLEX CANADA)			600.00
iv	Assume 50 cu.yds of contaminated Soil Transportation 2 dumpster- 300 miles X $3.44 per mile (RS Means # 33 19 0205)			2,064.00
v	Disposal cost...25 cu.yds X $150 per cu.yd			7,500.00
		Subtotal for covered tank area		$33,772.80
vi	Aboveground Tanks Number of Tanks - 6 (9516)			
	A. Labor @ 122.64/man day X 3 days (RS MEANS 33 17 0804)		$ 367.92	
	B. Equipment @ $830/day X 1 day		830.00	
	C. Wipe Samples Analysis 12 X $ 300.00 (NYSDEC Figures)		3,600.00	
	D. Personnel Protective Safety Equipment			
	I/Level C @ $75/man day X 2		150.00	
	II/Level B @ $155/man day X 1		155.00	
	Monitoring Equipment @ $135/day X 1		135.00	
		Subtotal for 1 Tank	$ 5,237.92	
	$5,237.92 for 6 tanks			$31,427.52
vii	Above ground tanks -- 4 (1,000 gallons)			
	Proportionately, the decontamination cost is- $2,620.32/9516 X 1230 X 4			$ 1,354.77

b. Assume 25% sludge in tanks at closure or 38,892 gallons. Purchase of drums 710 X

	$19.50/drum (Quote Capitol Container)	$ 13,845.00
c.	Purchase sodium hydroxide based cleaner 20 drums @ $150.00/drum	3,000.00
d.	Supervision 100 @ $35/man hr (NYSDEC Figures)	3,500.00
e.	Transportation 10 trips @ $3.44 X 300 (RS Means #33 19 0204)	10,320.00
f.	Disposal Cost $150per X 710 drums (Quote STABLEX CANADA)	106,500.00
g.	Decontamination of Secondary Containment:	

Pump and Spill Containment Pad	700 sq. ft.
Solid LGF Area	432 sq. ft.
Above Ground Tank	3,525 sq. ft.
Equalization Tanks	575 sq. ft.
TOTAL SQ FT	5,232 sq. ft.

Cleaning rate 105 sq. Ft/hr = 50hours
(RS Means #33 17 0813)

i	Supervision 20 hrs X $35 (NYSDEC Figures)	700.00
ii	High Pressure Washing Unit Cost $0.58 per sq.ft. (RS Means #33 17 0813)	3034.56
iii	Disposal of Wash Water at 4.8GPM X 60 X50 Hours= 14400 gallons @ $0.46 per gallon (RS Means #33 17 0813)	6,624.00
iv	Verification of decontamination by analysis 20 samples at $116.66 per (0.5hrs/sample X 18.39 ($116.66/TPH Samples + $125.86 per sample (RS Means #33 22 0114)	2,517.20

Tank Removal

h.	Underground Tanks @ $890.77 X 4 Tanks (RS Means #33 10 9502)	3,563.08
i.	Aboveground Tanks (9516 Gallon) @ the rate of $890.77 (RS Means #33 10 9502)	5,344.62
j.	Aboveground Tanks (1230 Gallon) @ the rate of $890.77 (RS Means #33 10 9502)	3,563.08
	Subtotal A.2	$262,839.43

Decontamination of Storage and Waste Water Tanks

a.	Labor 96 man hours @ $30.00 (COST TO BE WITH TANK DECONTAMINATION)		
b.	Supervision 48 hours X $35 (NYSDEC Figures)		$ 1680.00
c.	Steam Clean Waste Water Tank @ 315.2 sq.ft. X $.79 per sq ft (RS Means # 33 17 0804)		249.01
d.	Waste Water Generation 6.304 hrs X 300 gallons Per hour. Disposal cost 1812 gallons X $0.30 per (Quote STABLEX CANADA)		543.60
e.	Haul Wastewater incl loading & unloading 6000 gallons @ 300 X 9.18 RS Means #33 19 0206		2,754.00
		Subtotal A.3	$ 5,226.61

4. Decontaminating and Dismantling Piping and Ancillary Equipment

a.	Labor, 80 man hours @ $21.56 RS Means Crew: MSHMD		$ 1,724.80
b.	Supervision 40 man hours @ $22.04 RS Means Crew: MSHMD		881.60
c.	Backhoe, 2 days @ $1050		2,100.00
d.	Front End Loader, 2 days X $825		1,650.00
e.	Steam cleaning equipment 5 days X $110		550.00
f.	Pumping equipment - 5 days X $70		350.00
g.	Crane 1 day X $835		835.00
		Subtotal A.4	$ 8,091.40

5. Disposal of Waste Water

a.	Transportation 5 trips X 300 miles X $3.68 RS Means #33 19 0255		$ 5,520.00
b.	Disposal cost - 25000 gallons X $0.30 Quote STABLEX Canada		7,500.00
		Subtotal A.5	$ 13,020.00

6. Closure of Kilns

a.	Burning of fossil fuel for 4 hours Fuel cost 8 gpm x 60 x 4 x $1.04 x 2 = ~$4000		$ 4,000.00
	Labor 4 hours @ $30/hour x 2 kilns		240.00
	Supervision 4 hours @ $35/hour x 2 kilns		280.00
b.	Cleaning Rotary Kilns Labor 100 hrs @ $30/hr		3,000.00

	Waste Disposal 40 drums x $150/drum		6,000.00
	Waste Transportation 1 trip x 300 miles x $3.44/mile		1,032.00
	10 Wipe Samples @ $300/sample		3,000.00
c.	Dust Handling System		
	Labor 80 hours @ $30/hr.		2,400.00
	Waste Disposal 5 drums x $150/drum		750.00
	10 Wipe Samples @ $300/sample		3,000.00
d.	Scrubbing system		
	Labor 100 hours @ $30/hour		3,000.00
	Solids Disposal 10 drums @ $150/drum		1,500.00
	Wash Water Disposal 10 drums x 55 g x $0.30/gal		165.00
	Transportation of drums 1 trip		1,032.00
	10 Wipe Samples @ $300/sample		3,000.00
e.	ID Fans and Stack		
	Labor 40 hours @ $30/hour		1,200.00
	10 Wipe Samples @ $300/sample		3,000.00
f.	Caustic Supply System		
	Labor 40 hours @ $30/hour		1,200.00
	10 Wipe Samples @ $300/sample		3,000.00
	Neutralization Chemicals		100.00
g.	Labor 40 hours @ $30/hour		1,200.00
	Waste Disposal 10 drums @ $150/drum		1,500.00
	10 Wipe Samples @ $300/sample		3,000.00
		Subtotal A.6	$ 46,599.00
		SUBTOTAL OF SECTION A	$505,988.10

B. CONTAINERS

1. Removal and Disposal of Final Inventory

a.	267 Drums of liquids and 50 drums of solids.		
	i. Disposal cost 267 X 55 = 14685 gallons x $0.60/gallon		$8,811.00
	ii Disposal cost 50 x $150/drum		7,500.00
b.	Container Loading $4.66 per pallet @ 317/4		
	X $4.66		370.00
c.	Transportation - 4 trips @ $3.44 per mile		
	X 300 miles (RS Means 33 19 0204)		4,128.00
d.	Supervision 8 man hours X $35		
	(NYSDEC Figures)		280.00

2. Decontamination:

Unloading Areas 1 & 2	4912 Sq Ft
Container Storage Area	1029 Sq Ft
SLGF Staging Area	1218 Sq Ft

Total Area 7159 Sq Ft

Cleaning Rate - 105 Sq Ft/Hr -- 68 hrs

a.	Supervision 43 hrs X $35 (NYSDEC Figures)	1,190.00
b.	High Pressure washing unit cost $ 0.58 SF (RS Means # 33 17 813)	4,152.22
c.	Disposal of Wash Water 4.8 gpm X $0.46	9,008.64
d.	Verification of decontamination by analysis 20 samples at $116.66 per sample (0.5 hrs/sample collection X $57.50, $116.66/TPH Sample = 145.41 X 20 (RS Means #33 02 1732)	2,908.20

3. Roll-Offs Storage Area Decontamination:

b.	Area 30 X 100 = 3000 sq ft Sweeping or dry Vacuuming the pad, and one rinse	500.00
c.	Analysis to verify decontamination	1,460.00
c.	Dispose of Wash Water at 2 gallons/sq ft- 6000 X $0.46/gallon	2,760.00
	SUBTOTAL OF SECTION B	$43,068.06

ANALYSIS, REMOVAL AND DISPOSAL OF CONTAMINATED SOIL

1. Sample Collection and Analysis

a.	Sample Collection	$ 1,100.00
b.	Sample Analysis	
	- 70 Samples by GC Scan @ 171.92	12,950.00
	- 7 Samples by GC/MS Scan @ $525.00	3,675.00

2. Stockpile Shale

a.	Supervision 24 man hours @ $35 (NYSDEC Figures)	840.00
b.	Front End Loader, 2 days @ $825.00	1,650.00
c.	Backhoe, 2 days @ $1050.00	2,100.00

3. Excavated Soil and Shale Stockpile

a.	Supervision @ $35 for 24 hours (NYSDEC Figures)	840.00
b.	Front End Loader, 3 days @ $825.00	2,475.00
c.	Backhoe, 3 days @ $1050.00	3,150.00

Disposal

a.	Transportation by truck, 35 trips @ $3.44 per mile X 300 miles (20 CY) RS Means #33 19 0205		36,120.00
b.	Disposal Cost of 700 cu yds @ $223.50		156,450.00
5.	Regrade Site		
a.	Supervision, 16 man hours @ $35 (NYSDEC Figures)		560.00
b.	Front End Loader 1 day @ $825.00		825.00
c.	Backhoe, 1 day @ $1050		1,050.00
d.	Bulldozer, 2 days @ $925.00		1,850.00
		SUBTOTAL OF SECTION C	$225,635.00
D.	HEALTH AND SAFETY		
1.	Disposal overalls, gloves, respirators cartridges, boots, tape, approximately 150 man hours at $9.00		$ 1,350.00
2.	Temporary snow fencing, disposal tarps		1,675.00
3.	Disposal cost, 15 drums @ $55.00		825.00
		SUBTOTAL OF SECTION D	$ 3,850.00
	CLOSURE CERTIFICATION		
	Professional Engineer, 60 hrs @ $110		$ 6,600.00
		SUBTOTAL OF SECTION E	$ 6,600.00
F.	OVERHEAD AND CONTINGENCY		
1.	Total for A,B,C,D and E $785141.16		
2.	Plus Contingency - 20%		$157,028.22
3.	Administration -15%		$117,771.16
		SUBTOTAL OF SECTION F	$274,799.46
		TOTAL CLOSURE COST in 1997 Dollars	$1,059,940.54

INFLATION

1998	1.011089	$1,071,693.71
1999	1.014471	$1,087,201.68
2000	1.021784	$1,110,885.76
2001	1.023730	$1,137,247.08
2002	1.015356	$1,154,710.20
2003	1.016624	$1,173,906.31

Post Closure Plan Cost Estimate
Figure I-4 (Supplement)

For the purposes of this cost estimate, Norlite assumes that two new monitoring wells will be installed downgradient of any contamination left onsite. The wells will be constructed and developed in a similar fashion to the existing wells onsite. The well construction will be supervised by a qualified hydrogeologist and the Department will be provided with drilling logs for the activity. Sampling will be conducted in a similar fashion to the ongoing groundwater monitoring performed pursuant to Norlite's existing SPDES and Part 360 permit. All well water samples will be analyzed for the site-specific parameters identified in the contaminated soils. All samples will be analyzed using approved USEPA analytical methods in ELAP certified laboratories. Sampling will proceed on a quarterly basis for the first two years. During years three and four, sampling will occur on a semiannual basis and then on an annual basis for years five through nine. Sampling will proceed on a biannual basis out to year thirty.

1.	Two additional monitoring wells, 2" PVC up to 50 feet, 10 foot screen, development	$ 3,954.00
2.	Sampling Event	
	a. Sampling labor and materials for two wells	$400.00
	b. Analytical costs for two wells @$300/sample	600.00
	c. Reporting - 8 hours @ 95.00/hour	760.00
		$1,760.00

Total Cost for Thirty-Year Monitoring	
Well installation and Development	$ 3,954.00
Sample, Analysis and Reporting for 27 sampling events	47,520.00
Total in 1999 Dollars	51,474.00

Inflation

2000	1.021784	$52,595.33
2001	1.023730	$53,843.42
2002	1.015356	$54,670.22
2003	1.016624	$55,579.07

TRUST AGREEMENT

TRUST AGREEMENT, the "Agreement " entered into as of 9/4/96 by and between Norlite Corporation Massachusetts corporation, the Settlor", and Citizens Bank, a national bank, the "Trustee."

WHEREAS, the New York State Department of Environmental Conservation (hereinafter referred to as 'NYSDEC') has established certain regulations applicable to the Settlor, requiring that an owner or operator of a hazardous waste management facility shall provide financial assurance that funds will be available when needed for facility closure and post-closure facility monitoring and maintenance., and

WHEREAS, the settlor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein, and

WHEREAS, the Settlor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

Now, Therefore, the Settlor and the Trustee agree as follows:

Section 1. Definitions. As used it this Agreement:

(a) The term "Settlor" means the owner or operator who enters into this Agreement and any successors or assigns of the Settlor.

(b) The term "Trustee" means the Trustee who enters into this agreement and any successor Trustee.

(c) the term Commissioner" means the Commissioner of the New York State of Environmental Conservation, or the Commissioner's duly appointed designee.

Section 2. Identification of Facilities and Cost Estimates. this Agreement pertains to the facilities and cost estimates identified on attached Schedule A.

Section 3. Establishment of Fund. The Settlor and the Trustee hereby establish a trust fund (hereinafter) referred to as the "Fund) for the benefit of NYSDEC. the Settlor and the Trustee intend that no third party have excess to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B annexed hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The trustee shall not be responsible, nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Settlor. any payments necessary to discharge any liabilities of the Settlor established by NYSDEC.

persons as specified by the Commissioner from the Fund for the Expenditures of such covered activities in such amounts as the commissioner shall direct in writing. In addition, the Trustee shall refund to the Settlors such amounts as the Commissioner specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Settlor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting exchanging, selling, and managing the fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Settlor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, 15 USCA 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government.

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 USCA 80a-1 et seq, including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. the trustee may vote such shares in its descretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

Section 13. Successor Trustee. The Trustee may resign at any time by written notice to the Settlor, which shall be effective 30 days after receipt of such notice unless the Settlor and Trustee agree otherwise. The Settlor may replace the Trustee, but

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the proceeds or the money or to inquire into the validity or expediency of any such sale or other disposition;

(b) Upon resignation, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties constituting the Fund. If for any reason the Settlor cannot or does not act in the event of a

herein granted;

(c) To register any securities held in the fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government: and

(e) To accept additions to the fund from sources other than the Settlor of the Trust.

(f) To contest, compromise, or otherwise settle any claim in favor of the fund or Trustee, or in favor of third persons and against Fund or Trustee.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the fund and all brokerage commissions incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the trustee to the extent not paid directly by the Settlor, and all of the proper charges and disbursements of the Trustee shall be from the Fund.

Section 10. Annual Valuation. the Trustee shall annually, at least 30 days prior to the anniversary date of the Fund, furnish to the Settlor and to the commissioner, a statement confirming the value of the Trust. Any securities in the fund shall be valued at market value as of no more than 60 days prior to the anniversary date of the establishment of the Fund. the failure of the Settlor to object in writing to the Trustee within 90 days after the statement has been furnished to the Settlor and to the commissioner shall constitute a conclusively binding assent by the Settlor, barring the Settlor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Settlor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Settlor.

Section 13. Successor Trustee. the Trustee may resign or the Settlor may replace the Trustee, but such resignation or replacement shall not be effective until the Settlor has appointed a successor Trustee and this successor accepts appointment. the successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Settlor cannot or does not act in the event of

appointment of a [illegible] the successor Trustee shall specify the date on which it assumes [illegible] sent to the Settlor, the commissioner, and the present Trustee by certified mail, return receipt requested, 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Settlor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Settlor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Settlor's orders, requests, and instructions.
All orders, requests, and instructions by the Commissioner to the trustee shall be in writing, signed by the Commissioner, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. the trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Settlor or NYSDEC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Settlor and/or NYSDEC except as provided for herein.

Section 15. Notice of Nonpayment. the Trustee shall notify the Settlor and the commissioner, by certified mail, return receipt requested, within 10 days following the expiration of the 30 day period after the anniversary of the establishment of the Trust, if no payment is received from the Settlor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. this Agreement may be amended by an instrument in writing executed by the settlor, the Trustee and the commissioner or by the Trustee and the commissioner if the Settlor ceases to exist.

Section 17. Irrevocability and Termination. subject to the right of the parties to amend this Agreement as provided in section 16, this trust shall be irrevocable and shall continue until terminated at the written agreement of the settlor, the Trustee, and the Commissioner, or by the trustee and the commissioner, if the Settlor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the settlor.

Section 18. Immunity and Indemnification. the trustee shall not incur personal liability of any nature in connection with any act or omission made in good faith, in the administration of this Trust or in the carrying out of any directions by the settlor or the Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Settlor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Settlor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 20. Interpretation. As used in this agreement, words in the singular include the plural and words in the plural include the singular. the descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused the ...
respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first written. the parties below certify that the wording of this agreement is identical to the wording specified in 6 NYCRR 373-2.8(j)(1) as such regulations were constituted on the date first ...e written.

David Marchetta Jr.
Settlor

Citizens Trust Company
by: David H. Wick III VP
Trustee

STATE OF :
: SS.:
COUNTY OF :

On this 17 day of Sept , 1996 before me personally came David H. Wick, III to me known who, by me duly sworn, did depose and say that (s)he resides in Sandwich, Ma : that (s)he is the Vice President of Citizens Bank , the banking institution described in and which executed ...rust Fund Agreement; and that (s)he signed his/her name thereto by authority of such ...king institution.

Patricia L Sellers
Notary Public

STATE OF CT :
: SS.: MERIDEN
COUNTY OF NEW :
HAVEN

On this 4 day of SEPT , 1996 before me personally came DAVID J. CARBETTA to me known who, by me duly sworn, did depose and say that (s)he resides in CHESHIRE, CT : that (s)he is the PRESIDENT of UNITED OIL RECOVERY, INC the corporation described in and which executed the within Trust Agreement; that (s)he knew the seal of said co...poration; that the seal affixed to said instrument was such corporate seal; that it was so affixe... by order of the board of directors of ...id corporation, and that (s)he signed his/her name by like ...der.

Edward G Lang
Notary Public
EDWARD G LANG
... SUPERIOR COURT

[illegible] AGREEMENT

DATED: 9/4/96

I hereby appoint CITIZENS TRUST COMPANY to act as my Agent to hold in accordance with the provisions outlined herein certain assets which I shall now or hereafter deliver to you. It is understood that as Agent you will:

1. Provide safekeeping for assets.

2. Collect income and principal items as they become due and distribute the income and principal at such intervals and in such manner as may be agreed upon.

3. Pay from the income, or principal if appropriate, all expenses, fees and any accrued interest on purchases.

4. Exercise general investment supervision over the property and buy, sell or deliver assets in your discretion. You are specifically released from all liability for the depreciation or loss due to any purchase, sale, recommendation or other action taken or not taken by you in good faith.

5. Send me detailed statements quarterly showing all principal and income transactions and all assets held in the account.

6. Send me the annual income tax information for the account.

7. Use reasonable efforts to keep informed of called bonds, rights, stock dividends or other matters affecting my property and advise me accordingly. It is understood that you are not to pursue the collection of dividends, interest or principal, by law or in any manner other than through ordinary banking channels, unless instructed by me to do so and at my expense.

8. Buy or sell fractional shares, exercise or sell rights and warrants and vote proxies, in your discretion without liability, unless otherwise agreed upon.

9. Register securities in the name of a nominee.

Your compensation will be in accordance with your schedule of fees in effect from time to time for investment management services, unless otherwise agreed upon.

This agreement shall be governed by the laws of the State of Rhode Island and may be terminated by either of us at any time by notice in writing.

CITIZENS TRUST COMPANY

By: _____

x _____
DAVID CARABETTA (or)
GEORGE CARABETTA, JR.

Rev 9/93

CONF 0171

CITIZENS BANK

CITIZENS TRUST COMPANY
Internal Funds Transfer
Credit

TRAN ID=8080009 09/19/96 FEE=*****
Requesting Party: MICHAEL BRADY
ORG=DUE FROM CSBCT TO CTC

INT BNF=CITIZENS TRUST COMPANY
RFB=FROM COM LN-CT

CITIZENS TRUST COMPANY 1013149 ********952,190.00
870-1
ATTN: KAREN ALMEIDA

12 (4/94)

CITIZENS BANK OF RHODE ISLAND
AGENT FOR NORLITE CORPORATION
IMA U/A DTD 9/4/96

ACCOUNT NUMBER: 1070076868

MARKET PRICES AND INCOME PROJECTIONS ARE FROM SOURCES
WE BELIEVE TO BE RELIABLE BUT ARE NOT GUARANTEED.

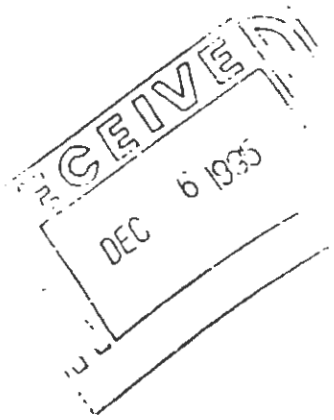
UNITED OIL RECOVERY, INC.
ATTN: DAVID CARABETTA
14-16 WEST MAIN STREET
MERIDEN CT 06451

FOR QUESTIONS CALL:
ACCOUNT MANAGER: NEILA A. BLINE 401-456-7649
INVESTMENT MANAGER: DANA G. MAUCH JR. 401-455-5281

1000475 000002/000009 0003841

ASSET CATEGORY	MARKET VALUE	PERCENT OF ACCOUNT	FEDERAL TAX COST	ESTIMATED ANNUAL INCOME	INCOME YIELD AT MARKET
PRINCIPAL PORTFOLIO					
MONEY MARKET FUNDS	34,577.38	2.78 %	34,577.38	304	0.88 %
U.S. TREASURY OBLIGATIONS	527,226.90	42.35 %	527,307.61	21,375	4.05 %
U.S. GOVERNMENT AGENCIES	99,219.00	7.97 %	100,352.00	3,625	3.65 %
CORPORATE & FOREIGN BONDS	303,894.00	24.41 %	300,037.00	11,650	3.83 %
COMMON EQUITY SECURITIES	192,307.50	15.45 %	173,769.94	3,699	1.92 %
PREFERRED EQUITY SECURITIES	12,185.00	0.98 %	12,575.00	763	6.26 %
DOMESTIC EQUITY MUTUAL FUNDS	25,025.47	2.01 %	22,196.18	195	0.78 %
TAXABLE FIXED INCOME FUNDS	50,495.23	4.06 %	50,495.23	609	1.21 %
PRINCIPAL PORTFOLIO TOTAL	1,244,930.48	100.00 %	1,221,310.34	42,220	3.39 %
TOTAL ASSETS	1,244,930.48	100.00 %	1,221,310.34	42,220	3.39 %

NORLITE



CERTIFIED MAIL

RETURN RECEIPT REQUESTED

December 1, 1995

ECS
Underwriting, Inc.
Eagleview Boulevard
PO Box 646
Exton, PA 19341-0646
(610) 458-0570
Fax (610) 458-5002

Ms. Maggie O'Neil
NYS Department of Environmental Conservation
Division of Hazardous Substances Regulation
50 Wolf Road
Albany, NY 12233

Re: United Oil Recovery, Inc./Norlite Corporation
Policy #NTA2512[illegible]49

Dear Ms. O'Neil:

Enclosed please find the Hazardous Waste Facility Liability Certificate for the above captioned account as required by New York State Law.

Please contact me if you have any questions.

Sincerely,

Barbara W. Deas
Senior Underwriter
[illegible]mental Facilities

[illegible]mmd

[illegible]sure(s)

cc: Mr. Vinnie Falcigno, The Falcigno Group
Timothy J. Donnellon

HAZARDOUS WASTE FACILITY CERTIFICATE OF LIABILITY INSURANCE

1. Reliance Insurance Company, (the "Insurer"), of 4 Penn Center Plaza, Philadelphia, PA 19103 hereby certifies that it has issued a policy of liability insurance (the "Policy") covering bodily injury and property damage to United Oil Recovery, Inc./Norlite Corporation, (the "Insured"), of 136 Gracey Avenue, Meriden, CT 06451-2270 in connection with the Insured's obligation to demonstrate financial responsibility under 6 NYCRR Part 370 et seq. The coverage applies at 628 South Saratoga Street, Cohoes, NY 12047, EPA# NYD080469935 for "sudden and nonsudden accidental occurrences". The limits of liability are $5,000,000 each occurrence and $10,000,000 annual aggregate, exclusive of legal defense costs. The coverage is provided under Policy number NTA2512549, issued on November 30. 1995.

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with the right of reimbursement from the Insured for any payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated by virtue of the Insured's satisfying the financial test for liability coverage as established by the New York State Department of Environmental Conservation (hereafter "NYSDEC") or by the Commissioner of NYSDEC (hereinafter referred to as the "Commissioner") and as specified in 6 NYCRR Part 370 et seq.

(c) Whenever requested by the Commisioner, the Insurer agrees to furnish to the Commissioner a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the Insurer, the Insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the Hazardous Waste Management Facility will be effective only upon written notice, certified mail, return receipt requested, and only after the expiration of sixty (60) days after a copy of such written notice is received by the Commissioner.

(e) Any other termination of the insurance will be effective only upon written notice, certified mail, return receipt requested, and only after the expiration of thirty (30) days after a copy of such written notice is received by the Commissioner.

I hereby certify that the wording of this instrument is identical to the wording specified in 6 NYCRR Part 373-2.8(J)(8) as such regulation was constituted on the date first above written, and that the insurer is authorized by the Superintendent of the New York State Department of Insurance to conduct the business of an insurer or is eligible to provide insurance as an excess or surplus lines insurer in the State of New York.

Timothy J. Donnellon

(Signature of Authorized Representative of Insurer)

Timothy J. Donnellon, Managing Underwriter
Authorized Representative of Reliance Insurance Company

c/o Environmental Compliance Services, Inc.
520 Eagleview Boulevard
P.O. Box 636
Exton, PA 19341-0636

...SURANCE

DATE (MM/DD/YY) 02/25/2003

HE FALCIGNO GROUP, LLC
Peck Street
orth Haven, CT 06473-0436

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

United Industrial Services, A
Div. of United Oil Recovery Inc
(*See Named Insured Attachment)
14-16 West Main Street
Meriden, CT 06451-2270

INSURERS AFFORDING COVERAGE

INSURER A: Greenwich Insurance Company
INSURER B: Indian Harbor Insurance Co.
INSURER C:
INSURER D:
INSURER E:

ERAGES

E POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING Y REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR Y PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH LICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
GENERAL LIABILITY					
[X] COMMERCIAL GENERAL LIABILITY				EACH OCCURRENCE	$ 1,000,000
[ ] CLAIMS MADE [X] OCCUR				FIRE DAMAGE (Any one fire)	$ 100,000
				MED EXP (Any one person)	$ 5,000
	GEC 0008493	2/1/03	2/1/04	PERSONAL & ADV INJURY	$ 1,000,000
				GENERAL AGGREGATE	$ 2,000,000
EN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$ 2,000,000
[ ] POLICY [X] PRO-JECT [ ] LOC					
UTOMOBILE LIABILITY					
[ ] ANY AUTO				COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
[ ] ALL OWNED AUTOS				BODILY INJURY (Per person)	$
[ ] SCHEDULED AUTOS					
[ ] HIRED AUTOS	AEC 0008492	2/1/03	2/1/04	BODILY INJURY (Per accident)	$
[ ] NON-OWNED AUTOS					
MCS-90 incl.				PROPERTY DAMAGE (Per accident)	$
				AUTO ONLY - EA ACCIDENT	$
				OTHER THAN AUTO ONLY: EA ACC	$
				AGG	$
SS LIABILITY				EACH OCCURRENCE	$
OCCUR [ ] CLAIMS MADE				AGGREGATE	$ 5,000,000
	UEC 0008495	2/1/03	2/1/04		$ 5,000,000
DEDUCTIBLE	Umbrella Form				$
RETENTION $ 10,000					$
ERS COMPENSATION AND TERS' LIABILITY				[X] WC STATU-TORY LIMITS [ ] OTH-ER	
	UOR*- WEC0013173	11/30/02	11/30/03	E.L. EACH ACCIDENT	$ 1,000,000
	ZECCO-WEC000475604	11/30/02	11/30/03	E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
				E.L. DISEASE - POLICY LIMIT	$ 1,000,000
Pollution and	PEC 0000964	2/1/03	2/1/04	$5,000,000 occ/$20,000,000 agg	
liation Legal Liab					
tr Poll Liab	PEC 0008946	2/1/03	2/1/04	$3,000,000 occ/ $20,000,000 agg	

OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

HOLDER | ADDITIONAL INSURED; INSURER LETTER:

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

97)

ACORD CORPORATION 1988

ATTACHMENT J

SECTION J WASTE MINIMIZATION

Waste Minimization J-1
Hazardous Waste Reduction Plan 1995 (5 pages)

SECTION J

WASTE MINIMIZATION

Under the provisions of 6NYCRR Subpart §373-2.5(c)(2)(ix) Norlite must provide no less often than annually, that a program is in place to reduce the bvolume and toxicity of hazardous waste that is generated, and the methods used are most practicable. Figure J-1 contains a copy of Norlite's Hazardous Waste Reduction Plan Annual Update for 1995.

Norlite Corporation

628 SO. SARATOGA ST.
P.O. BOX 694
COHOES, N.Y. 12047
TEL.: (518) 235-0401
FAX.: (518) 235-0233

September 4, 1996

Mr. Mattur Balakrisna, P.E.
Hazardous Waste Minimization Section
Bureau of Waste Reduction & Recycling
Division of Solid & Hazardous Materials
New York State Department of Environmental Conservation
50 Wolf Road, Room 212
Albany, New York 12233-7253

Dear Mr. Balakrisna:

Enclosed find the 1995 annual report for Norlite Corporation's Hazardous Waste Reduction Plan. Please consider this report as the annual update to the 1995 Hazardous Waste Reduction Plan previously submitted.

If there are any questions concerning this submittal please feel free to contact me or Richard Wallen at (518) 235-0401.

Sincerely,

NORLITE CORPORATION

William Morris
Environmental Director

Enclosures (2)

cc: Mr. Cliff Van Guilder

Norlite Corporation

Hazardous Waste Reduction Plan
Annual Status Report
For Calendar Year 1995

EPA ID Number: NYD 080469935

628 South Saratoga Street
Cohoes, New York

Prepared August 23, 1996

1.0 Annual Status Update

This report describes the progress achieved in meeting the time schedule for implementing the technically feasible and economically practical waste reduction alternatives presented in Table 2 of the of the 1995 Hazardous Waste Reduction Plan - Biennial Update Report (HWRP)

As required of the Annual Status Report, the Hazardous Waste Generators Summary (Table 1) and the Hazardous Waste Reduction Program Summary (Table 2) have been updated and are enclosed with this submittal.

In November 1995 Norlite Corporation was acquired by United Oil Recovery out of Connecticut.

2.0 Progress Achieved

A status update for the waste reduction options proposed in the 1995 HWRP and in subsequent correspondence are presented in the following table.

Stream ID No.	Waste Name	Waste / Pollution Reduction Option	Date Implemented	Status
001	Filtered Solids	Studies / Elevation	N/A	On-site reuse for energy recovery through dispersion/ reliquification. Planned implementation will be upon demonstration of a auger system utilization during the upcoming trial burn (1st quarter 1997).
002	Tank Solids	On site reuse for energy recovery by burning in process	Revised - Fall 1996	With the sale of the Norlite Corporation in November 1996 many planned improvements and programs were delayed. Since the sale the WWTP was completed and other improvements are pending to allow implementation of this program.
003	Incidental materials	Improve employee awareness,leak detection spill prevention	Ongoing	On schedule
005	Scrubber Blowdown	Wastewater Treatment System installation	March -96	While this system does not offer waste reduction opportunities, it will provide a significant reduction in pollutants that are discharged to the receiving stream.

3.0 Description of Waste Reduction Activities

3.1 Stream ID# 1 Filtered Solids and ID# 2 Tank Solids.

The on-site reuse for energy recovery of the solids from tank truck off-loading and/or storage tank cleaning is an economically feasible reduction opportunity. The 1995 Biennial Update indicated that the Norlite Corporation had abandoned this position. In November 1995 Norlite received a permit modification allowing receipt of drums and solids conditioned on completion of the WWTP. The WWTP was completed in March 1996 and Norlite is in the process of demonstrate an auger feed system to burn solid feed which is typically made up of filter and tank residue which is accumulated in the receiving storage area.,

3.2 Stream ID# 3 Incidental Materials

Norlite has continued to improve employee training programs to increase employee awareness of waste minimization efforts and goals. Secondly, the construction and installation of improved spill containment structures have positively impacted the quantity of materials generated to cleanup spills. The success of the improvements can be measured by the reduction in the quantity of hazardous waste released to the environment through spills. Norlite can not, however, define the total waste reduction in spill generated cleanup materials since these materials are combined with other waste streams such as contaminated personal protective equipment.

It is anticipated that upon successful demonstration of the auger device during the trial burn this spring that Norlite will be able to utilize this system for most if not all incidental materials.

3.3 Stream ID# 5 Scrubber Blowdown

Norlite has completed the WWTP in March 1996 to treat scrubber blowdown and trunnion waste prior to discharge. While this system does not offer waste reduction opportunities, it will provide a significant reduction in pollutants that are discharged to the receiving stream. For the following reasons, there is little to no opportunity to reduce the volume of scrubber blowdown (and trunnion) water:

a. A minimum scrubber blowdown flow rate of 4.4 gpm per unit is prescribed by Norlite's Part 373 Permit.

b. Increased blowdown raters are necessary to prevent scaling and fouling of scrubber internals and piping. APC systems performance could be adversely affected by operating at reduced blowdown rates for sustained periods.

c. Reducing trunnion water flow rate would cause premature equipment failure because this is the principal heat transfer medium for kiln bearing cooling.

d. The addition of trunnion water to the wastewater treatment process is necessary because this water,

   1) requires treatment to meet SPDES discharge limits,
   2) reduces the consumption of raw materials (acid) in the process, and
   3) provides cooling of the blowdown stream prior to discharge.

Company Name:	EPA I.D. Number
NORLITE CORPORATION	NYD080469935

HAZARDOUS WASTE GENERATION SUMMARY

Status Update for HWRP Calendar Year 1995

Table 1

Waste Stream I.D. Number	Name of Waste	Source of Generation	Disposal Method	Quantity of Waste Generated (tons)					Indices (lbs waste generated/lbs waste produced)					
				1990	1991	1992	1993	1994	Theo	1990	1991	1992	1993	1994
001	Filtered Solids	Filtered Solids from Truck Unloading	Incineration or Reuse	15	16	28	63.6*	79.4	0**	0.0020	0.0050	0.0024	0.0023	0.0037
002	Tank Solids	Solids From Tank Cleaning	Incineration or Reuse	10	0***	19	N/A*	144.2	0**	0.0010	0***	0.0016	N/A	0.0068
003	Incidental Materials	Incidental Materials Assoc./LGF Program	Incineration	5	2	34.4	71.8	106.5	0.002	0.0003	0.0002	0.0029	0.0030	0.0050
005	Scrubber Blowdown	Trunnion Cooling Water and Blowdown from APC System Wet Caustic Scrubbers	Discharge to surface water pursuant to SPDES Permit			83600	90000	48100	N/A			7.0700	3.7900	2.2800

Notes:

* Actual Quantity resulting from plant operations. During 1993 Norlite did not segregate filter solids from tank sludge, therefore, no individual data for each waste stream is available. Index reported for waste stream ID 1, then, is actually a combination of waste stream ID 1 and 2

** Theoretically, if incoming "LGF" contained no solids, there would be no filtered solids from the tanker offloading operation.

*** No tank cleaned in 1991

ATTACHMENT K

SECTION K CERTIFICATION

Certification (1 page)

Norlite

CERTIFICATION

I certify under penalty of law that I have personally examined and an familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Date: 10/24/03 Signature: William C Morris

William C Morris
Vice President of
Environmental Affairs
NORLITE CORPORATION

ATTACHMENT L

SECTION L STANDARD OPERATING PROCEDURES

List of Standard Operating Procedures (2 pages)

Section L
Standard Operating Procedures

A. Following Standard Operating Procedures (SOPs) are included in the Part 373 permit by reference:

No.	Last Rev. Date	Title
2-001	8/1/1997	Preparation for and Performance of Routine Scrubber Maintenance - Draining and Cleaning Scrubber Internals
4-004	12/1/1996	Sample Collection of Loads Received
4-005	12/1/1996	Compatibility of Incoming LGF Loads and Tank Transfer
4-007	12/1/1996	Sample Collection of LGF From Storage Tanks
4-009	3/15/2000	Processes Control Procedure for Incineration of Waste Blends Containing High Concentration of Total Halogens, High British Thermal Units (BTU), and Metals
4-010	3/15/2000	Waste Approval Procedure
4-011	8/1/1997	Containerized (Drummed) Waste Management Plan
4-012	1/23/06	Determination of Density and Specific Gravity
4-013	6/9/05	Determination of BTU Content of LGF
4-014	5/25/05	Determination of Total Halogens in LGF by Titration
4-016	4/21/05	Determination of Metals Content of LGF
4-017	6/22/05	Extraction and Clean-Up of Liquid Waste to Determine Levels of Polychlorinated Biphenyls
4-018	6/21/05	Analysis to Determine Content of Polychlorinated Biphenyls
4-023	5/31/05	Mercury Analysis by Cold Vapor Atomic Absorption
4-031	12/04/03	Microwave Digestion of Raw Shale for ICP Analysis

4-032	7/6/05	Preparation of Shale for Chlorine Analysis by Ion Chromatography
4-045	3/25/05	Mercury Digestion of LGF, Oil, Solid and Sludge
4-047	5/3/05	Mars Microwave Digestion for ICP Analysis
4-048	5/31/05	Automatic Flash Point Analysis
4-049	6/23/05	Bottom Sediments
5-011	11/2004	Configuration and Maintenance Control Procedure Kiln Control and Continuous Emissions Monitoring Systems
6-001	12/1/1996	Transfer Station Scenarios Practiced at Norlite
6-004	12/1/1996	LGF Building Sump Clean-Out
6-005	12/1/1997	Blending SLGF into LLGF in the Drum Storage/Processing Building
6-006	3/2000	Tanker Unloading Operation

B. Permittee shall submit the changes to SOPs prior to implementing the same in the draft form for the Department review and approval. If the Department fails to respond within 30 days of its receipt, it will automatically become effective.

ATTACHMENT M

SECTION M DRAWINGS

List of Drawings (3 pages)

Section M
Drawings

The list of drawings provided in following pages are included in the Part 373 permit. Copies of the drawings could be viewed by contacting:

New York State Department of Environmental Conservation (NYSDEC)
Division of Solid & Hazardous Waste Materials
Bureau of Hazardous Waste Management
625 Broadway
Albany, NY, 12233-7251
(518) 402-8609

or

Regional Solid & Hazardous Materials Engineer
New York State Department of Environmental Conservation
Region 4 Office
1130 North Westcott Road
Schenectady, NY 12306
(518) 357-2045

or by consulting repository located at:

City of Cohoes Library

DRAWING INDEX

SECTION M - NORLITE DRAWINGS REFERENCED IN APPLICATION

DRAWING NUMBER	DRAWING DESCRIPTION
NY003-3731	Facility Site Plan
NY003-3319	Plot Plan & Section - LGF Tanker/Roll-off Area
NY003-3008	General Arrangement, Foundation Plan and Sections - Drum Processing Building
NY003-5010	Piping and Instrumentation Diagram for Dispersion/Mixer Tank (SP-100)
NY003-5011	Tank Drawing - Dispersion/Mixer Tank (SP-100)
NY003-7006	Fuel System Structures - Typical Details and Sections
NY003-2475-1	Material Transfer Facility
NY003-2475-2	Pier & Footing Details for Material Transfer Facility
NY003-2475-3	Design Specifications For Material Transfer Facility
NY003-1311	Piping and Instrumentation Diagram for Unloading Areas and Kiln Oil Storage
NY003-5317	Piping and Instrumentation Diagram for Truck Fugitive Emissions System
NY003-2301	General Arrangement - LGF Building
NY003-1312	Piping and Instrumentation Diagram for LGF Storage and Transfer
NY003-92023-1	LGF Storage Tanks - 200B, 200C 132" O.D. Holding Tank - Roben Mfg. Co., Inc.
NY003-92023-2	LGF Storage Tanks - 100A, 100B, 100C 132" O.D. Holding Tank - Roben Mfg. Co., Inc.
NY003-4312	Tank Vessel 200A
NY003-5432	Plan View - LGF Tanks 335-300, 400, 500, 600
NY003-1317	Piping and Instrumentation Drawing - LGF Tank System
NY003-5430	LGF Tanks - Secondary Containment Design Details
NY003-5431	LGF Tanks - Pump Containment Slab and Structural Details
NY003-5433	LGF Tank Drawings - Tanks 300, 400 and 500
NY003-5434	LGF Tank Drawing - Tank 600
NY003-6301	Section and Details - LGF Tunnel

DRAWING INDEX

SECTION M - NORLITE DRAWINGS REFERENCED IN APPLICATION

DRAWING NUMBER	DRAWING DESCRIPTION
NY003-3018	Elevation - Pipe Rack and Tunnel from LGF Building to Kiln
NY003-2306	General Arrangement Equalization Building
NY003-1314	Piping and Instrumentation Diagram for Equalization Tanks 101A and 101B
NY003-1315	Piping and Instrumentaion Diagram for Equalization Tanks 102A and 102B
NY003-92024-1	LGF Equalization Tanks - 101A and 101B 60" O.D. Equalization Tank - Roben Mfg. Co., Inc.
NY003-92024-2	LGF Equalization Tanks - 102A and 102B 60" O.D. Equalization Tank - Roben Mfg. Co., Inc.
NY003-5006	Kiln #1 Waste Feed Cut-Offs
NY003-5001	Kiln #2 Waste Feed Cut-Offs
NY003-1903	Piping and Instrumentation Diagram for the Kiln Burners

ATTACHMENT N

Section N
Best Management Practice Plan

The Best Management Practice Plan, January 1996 could be viewed by contacting:

Regional Air Pollution Control Engineer
New York State Department of Environmental Conservation
Region 4 Office
1130 North Westcott Road
Schenectady, NY 12306
(518) 357-2045

or by consulting repository located at:

City of Cohoes Library

ATTACHMENT O

Section O
Fugitive Dust Control Plan

The Fugitive Dust Control Plan dated 1995 and Sci-Tech Inc's evaluation report dated December 14, 2001 of the 1995 plan could be viewed by contacting:

Regional Air Pollution Control Engineer
New York State Department of Environmental Conservation
Region 4 Office
1130 North Westcott Road
Schenectady, NY 12306
(518) 357-2045

or by consulting repository located at:

City of Cohoes Library

ATTACHMENT P

Section P
Noise Control Plan

The Noise Impact Analysis Technical Report AA-1790 (dated 9/24/90) could be viewed by contacting:

Regional Solid & Hazardous Materials Engineer
New York State Department of Environmental Conservation
Region 4 Office
1130 North Westcott Road
Schenectady, NY 12306
(518) 357-2045

or by consulting repository located at:

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