KLEEN ENERGY SYSTEMS

Middletown, CT

Integrated Contingency Plan (ICP)

"One Plan" Including Emergency Response and Evaluation, Oil Spill Prevention Contingency and Countermeasures and Facility Response Plans

Prepared for:

Kleen Energy Systems, Inc.
1349 River Road
Middletown, CT 06457

June 2011

Revision 0

Prepared by:

Applied EHS Management Inc.

CORE PLAN/EMERGENCY RESPONSE ACTION PLAN (ERAP)

PETROLEUM OR CHEMICAL RELEASE

FIRE, EXPLOSION, BOMB THREAT / WORKPLACE VIOLENCE

SEVERE WEATHER, MEDICAL EMERGENCY

EVACUATION PLAN

RESPONSE CRITICAL ANNEXES
1, 2, 9, 10, 11

PLAN REVISION SUMMARY SHEET

Note: Controlled document distribution is maintained by the ***Compliance Coordinator***. Any other copy of this document must be marked as **"UNCONTROLLED – May Not be Current".**

	Responsible Party	**Location**
1	Operations Supervisor-Primary ERC	Operations Supervisor's Office & travel case copy
2	Compliance Coordinator – Alt. ERC	Compliance Coordinator's Office
3	Plant Manager	Plant Manager's Office
4	Maintenance Supervisor	Maintenance Supervisor's Office
5	Control Room Operator	Control Room
6	Aaron Godfrey – Clean Harbors (Primary Oil Spill Removal Organization (OSRO) Contractor)	Clean Harbors 761 Middle St, Bristol, CT, 06010 (860) 583-8917
7	Michael Barden – Moran Environmental Recovery (Secondary Oil Spill Removal Organization (OSRO) Contractor)	Moran Environmental Recovery 20 Commerce Road, Newtown, CT 06470 (203) 270-0095
8	EPA Regional Administrator	EPA Region 1 Offices

Annual Review/Authorization/Certification

I have reviewed the ICP and relevant portions of the National Contingency Plan and Area Contingency Plan have found the FRP provisions current and accurate or I have made the appropriate administrative changes to personnel, response organization contacts, phone numbers, etc.; distributed them; and arranged or conducted update training of all affected staff. I understand that within 60 days of facility changes that may materially affect the response to a worst case discharge, I must submit the revised portions of the response plan to the Regional Administrator.

Version/ Action	***Compliance Coordinator* Signature**	**Date**
2012 Validation:	_____	_____
2013 Validation:	_____	_____
2014 Validation:	_____	_____
2015 Validation:	_____	_____
2016 Validation:	_____	_____

ICP Change Log

Rev. #	***Compliance Coordinator* Signature**	**Date**	**Summary of Change**

MANAGEMENT CERTIFICATION/APPROVAL

Kleen Energy Systems, Inc. (Kleen Energy) is committed to preventing discharges of oil and hazardous materials to navigable waters and the environment, and to maintaining the highest standards for spill prevention control and countermeasures through the implementation and regular review and amendment to this Plan. Kleen Energy management has fully approved the Plan, has committed the necessary resources to implement the measures described herein and has identified the facility ***Operations Supervisor*** as the Designated Person Accountable for Oil Spill Prevention and hazardous/ toxic substance Spill Prevention and Control with the authority to commit the necessary resources to implement this Plan and the ***Compliance Coordinator*** is the designated alternate and person responsible for maintaining the plan. The Plant Manager, Operations Supervisor and Maintenance Supervisor are authorized to act as the Designated Person in the absence of the ***Operations Supervisor*** and ***Compliance Coordinator***. I have personally examined and am familiar with the information contained in this Plan and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for preparing the Plan, I believe that the information is true, accurate, and complete and that the plan contains all applicable information listed in the Connecticut Spill Prevention and Control Plan Checklist.

Authorized Facility Representative:

_____ _____
Signature Date

Name: Robert Haley

Title: Plant Manager

CERTIFICATION [40 CFR 112.3(d)]

The undersigned Registered Professional Engineer is familiar with the requirements of 112 of Title 40 of the Code of Federal Regulations (40 CFR 112) and has visited and examined the facility, or has supervised examination of the facility by appropriately qualified personnel. The undersigned attests that the Spill Prevention, Control, and Countermeasure (SPCC) Plan elements of this Plan have been prepared in accordance with good engineering practice, including consideration of applicable industry standards, the requirements of 40 CFR 112 and; that procedures for required inspections and testing have been established; and that this Plan is adequate for the facility. This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement the SPCC Plan elements in accordance with the requirements of 40 CFR 112.7. This Plan is valid only to the extent that the facility owner or operator maintains, and inspects equipment, containment, and other devices as prescribed in this Plan.

_____ _____
Signature Date

Name: Peter S. Puglionesi, P.E., DEE

Professional Engineer Reg. No.: PA PE075564

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Section Page

Regulatory Compliance and Cross Reference Matrices

The cross-reference tables provided in the following pages have been provided to identify the location in the ICP of all of the requirements specified in the regulations. The tables generally follow the format provided by the NRT in the One Plan guidance document.

(1) EPA's Oil Pollution Prevention - Spill Pollution, Control, and Countermeasures Plan (40 CFR 112)

		Spill Prevention Control and Countermeasure Plan Elements	**Found in Plan at:**
	Section	**Title**	**Section**
		Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan 112.3	
(d)		Professional Engineer Review and Certification	
	(1)	Certification Statement	ICP Signature Page ii
(e)		Maintenance of the Plan	
	(1)	Maintain a copy of the Plan at the facility	III.6.e
	(2)	Plan available for review to Regional Administrator during normal working hours	III.6.e
		General Requirements 112.7	
		Management Approval	ICP Signature Page ii
		Plan Prepared in Writing	I.1
		Cross-Reference of Requirements	Page v, Annex 8
		Additional facilities or procedures, methods, or equipment not yet fully operational	Annex 25
(a)			
	(1)	Conformance with Requirements in this part	Annex 17
	(2)	Comply with applicable requirements in this part	Annex 17
	(3)	Description of physical layout of the facility including facility diagram	III.1.a, III.1.b
	(i)	The type of oil in each container and its storage capacity;	III.1.b.3, Annex 9
	(ii)	Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.);	III.1.b.6, III.1.b.7, III.3.d.2, Annex 20
	(iii)	Discharge or drainage controls such as secondary containment around containers and other structures, equipment, and procedures for the control of a discharge;	III.3.c.2, III.3.d.2, Annex 18
	(iv)	Countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor);	II.2.g (Response Guidelines), III.1.d, III.3.c.2, III.3.d.2,
	(v)	Methods of disposal of recovered materials in accordance with applicable legal requirements; and	III.3.d.4
	(vi)	Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom you have an agreement for response, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in §112.1(b).	Section II (ERAP)
	(4)	Consideration for having submitted a Response Plan per 40 CFR 112.20	NA (FRP is in ICP)
	(5)	Consideration for having submitted a Response Plan per 40 CFR 112.20	NA (FRP is in ICP)
(b)		Direction Prediction, Flow Rate, Total Possible Quantity Discharged	III.1.d
(c)		Appropriate Containment/Diversionary Structures/Equipment to Prevent Discharge from Reaching Navigable Waters	III.3.d.2, Annex 9, Annex III.18
	(1)	Onshore Facilities	
	(i)	Dikes, berms, or retaining walls sufficiently impervious to contain oil;	III.3.d.2, Annex 9, Annex

		Spill Prevention Control and Countermeasure Plan Elements	Found in Plan at:
	Section	**Title**	**Section**
			18
	(ii)	Curbing;	NA
	(iii)	Culverting, gutters, or other drainage systems;	NA
	(iv)	Weirs, booms, or other barriers;	III.3.c.2
	(v)	Spill diversion ponds;	III.3.c.2
	(vi)	Retention ponds; or	NA
	(vii)	Sorbent materials.	Annex 10
(d)		Impracticability Demonstrated (unless Response Plan submitted)	NA
	(1)	Contingency Plan	NA (FRP in ICP)
	(2)	Commitment of Manpower, Equipment, etc.	NA (FRP in ICP)
		Inspections, tests, and records, 112.7 (e)	III.7.b
		Personnel Training and Spill Prevention Procedures, 112.7 (f)	Annex 5
(1)		Training on Operation and Maintenance of Equipment to Prevent Discharges of Oil and Applicable Regulations	Annex 5
(2)		Designated Person Accountable for Spill Prevention	I.5
(3)		Periodic Spill Prevention Briefings	Annex 21
		Security, 112.7 (g)	
(1)		Facility fully fenced	III.3.e.2
		Entrance gates locked and/or guarded	III.3.e.2
(2)		Master Flow and Drain Valves Secured in Closed Position when in a Non-Operating or Standby Status	III.3.e.2
(3)		Starter Controls on Pumps Locked in the Off Position or Located at a Site Accessible Only to Authorized Personnel When in Non-operating or Standby Status	III.3.e.2
(4)		Transfer Connection(s) of Pipelines Capped or Blank-Flanged when not in Service	III.3.e.2
(5)		Facility Lighting Adequate to Facilitate Discovery of Spills and to Deter Vandalism	III.3.e.2
		Facility Tank Car and Tank Truck Loading/Unloading Rack, Onshore, 112.7 (h)	III.3.e.2
(1)		Rack Drainage Flows to Catchment Basin or Treatment System	III.3.d.1, III.3.d.2, Annex 18
		Rack Drainage Flow into Quick Drainage System and Adequate Secondary Containment	III.3.d.1, III.3.d.2, Annex 18
(2)		Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.	III.1.b.6
(3)		Vehicle Inspection Prior to Transfer and Departure	III.1.b.6, Annex 20
		Evaluate aboveground container for risk of discharge or failure after repair, alteration, reconstruction, or a change in service that may result in brittle fracture or other catastrophe, and as necessary, take appropriate action, 112.7 (i)	III.7.c
		Conformance with the applicable requirements and other effective discharge prevention and containment procedures, 112.7 (j)	III.7.d
		Facility Drainage, Onshore, 112.8 (b)	
(1)		Drainage from Diked Storage Areas via Manually Operated Valves	III.1.b.2
(2)		Storm Water Inspected Prior to Discharge Into Open Water From Diked Storage Areas	III.1.b.2, Annex 22
(3)		Drainage From Undiked Areas Flows Away from Flood Areas	III.1.b.2, Figures 6-9
(4)		If Plant Drainage Not Engineered, Final Discharge of In-Plant Ditches Equipped with Diversion System to Return Spills to Facility	III.1.b.2, Figures 6 - 9
(5)		Natural Hydraulic Flow Used Where Drainage Waters Treated in More than One Treatment Unit	III.1.b.2, Figures 6 - 9

		Spill Prevention Control and Countermeasure Plan Elements	Found in Plan at:
	Section	**Title**	**Section**
		If Pump Transfer Needed, Two Lift Pumps Provided	NA
		Bulk Storage Tanks, Onshore, 112.8 (c)	
(1)		Compatibility of Material and Construction of Tanks to Oil Stored and Conditions of Storage	Annex 18
(2)		Adequate Secondary Containment	Annex 18
(3)		Drainage of Rainwater from Diked Areas	Annex 18
	(i)	Bypass Valve Sealed Closed	Annex 18
	(ii)	Run-off Rainwater Inspected for Water Quality Standards Compliance	Annex 18
	(iii)	Bypass Valve Opened and Resealed Properly Following Drainage	Annex 18
	(iv)	Records of Discharged Rainwater	Annex 18
(4)		Underground Tanks	Annex 18
(5)		Partially Buried Tanks	Annex 18
(6)		Aboveground Tanks	Annex 18
		Visual Inspections	Annex 18
(7)		Internal Heating Coils Utilized	Annex 18
(8)		Tanks Fail-safe Engineered	Annex 18
	(i)	Audible High Liquid Level Alarm	Annex 18
		Visual High Liquid Level Alarm	Annex 18
	(ii)	Automatic High Liquid Level Pump Cutoff	Annex 18
	(iii)	Communications between Gauger and Pumping Station	Annex 18
		Fast Response System of Determining Liquid Level in Tanks	Annex 18
	(iv)	Direct Vision Gauges	Annex 18
	(v)	Sensing Devices/Gauges Tested Regularly	Annex 18
(9)		Effluent Discharges to Navigable Waters Observed Frequently to Detect Oil Spills	Annex 18
(10)		Visible Oil Leaks Promptly Corrected	Annex 18
(11)		Mobile or Portable Oil Storage Tanks	Annex 18
		Facility Transfer Operations, Pumping and In-Plant Processes, Onshore, 112.8 (d)	
(1)		Buried Pipelines Corrosion Protected	III.7.d, Annex 17
(2)		Not-in-service Pipelines Capped with Origin Marked	NA
(3)		Pipe Supports Designed to Minimize Abrasion and Corrosion and Allow for Expansion and Contraction	III.7.d, Annex 17
(4)		Aboveground Valves and Pipelines Inspected Regularly	III.7.b.2, Annex 21
		Spill Containment System Provided	III.3.d.2
		Periodic Pressure Testing of Valves and Pipelines Conducted	III.7.b.2, Annex 21
(5)		Vehicle Traffic Warned of Aboveground and Underground Pipelines	Annex 20

(2) EPA Facility Response Plan (FRP) 40 CFR 112.20

			Facility Response Plan Elements	Found In Plan at:
	Section		Title	Section
2.0			**Response Plan Cover Sheet**	
	2.1		General Information	Signature Page, ii
	2.2		Applicability of Substantial Harm Criteria	Annex 19
	2.3		Certification	Annex 19
	1.1		**Emergency Response Action Plan**	
			Qualified Individual (QI) Information (1.2)	Section II (Core Plan)
			Emergency Notification Phone List (1.3.1)	Section II (Core Plan)
			Spill Response Notification Form (1.3.1)	Section II (Core Plan)
			Response Equipment List and Location (1.3.2)	Annex 10, Figures 4-5
			Response Equipment Testing/Deployment (1.3.3)	III.3.f.3, Annex 11
			Facility Response Personnel (1.3.4)	II.2.b
			Evacuation Plans (1.3.5)	II.2.h
			Immediate Actions (1.7.1)	II.2.g, II.2.h
			Diagrams (1.9)	III.1.a, Figures 1 - 9
	1.20		**Facility Information**	
		1.2.1	Facility Name, Address, City, County, etc.	I.4
		1.2.2	Latitude and Longitude	I.4
		1.2.3	Wellhead Protection Area	I.4
		1.2.4	Owner/Operator	I.4
		1.2.5	Qualified Individual (QI) Information	I.4
		1.2.6	Oil Storage Start-Up Date	I.4
		1.2.7	Facility Operations Description	I.4
			Standard Industrial Classification (SIC) Code	I.4
		1.2.8	Date and Type of Substantial Expansion	NA
	1.30		**Emergency Response Information**	
		1.3.1	Notification	
			Emergency Notification Phone List	Section II (Core Plan)
			Spill Response Notification Form	Section II (Core Plan)
		1.3.2	Response Equipment List	Annex 10, Figures 4-5
			Skimmers/Pumps	Annex 10, Figures 4-5
			Boom	Annex 10, Figures 4-5
			Chemicals Stored	Annex 10, Figures 4-5
			Sorbents	Annex 10, Figures 4-5
			Hand Tools	Annex 10, Figures 4-5
			Communication Equipment	Annex 10, Figures 4-5
			Fire Fighting and Personnel Protective Equipment	Annex 10, Figures 4-5
			Boats and Motors	Annex 10, Figures 4-5
			Others (e.g., Heavy Equipment, Cranes, etc.)	Annex 10, Figures 4-5
		1.3.3	Response Equipment Testing/Deployment	III.3.f.3, Annex 11
		1.3.4	Facility Response Personnel	II.2.b
			Emergency Response Personnel Information	II.2.b
			Emergency Response Contractor Information	II.2.b
			Facility Response Team Information	II.2.b
		1.3.5	Evacuation Plans	II.2.h
			Facility Evacuation Plan (1.3.5.1)	II.2.h
			Location of Stored Materials	III.1.a, Figures 4 - 5
			Hazard Imposed by Spilled Materials (MSDS)	III.1.b.3, Annex 23
			Spill Flow Direction	III.1.d, Figures 6 - 9
			Prevailing Wind Directions and Speed	II.2.h
			Water Currents, Tides or Wave Conditions	II.2.h, Annex 12
			Personnel and Equipment Arrival Routes	II.2.h
			Evacuation Routes	II.2.h
			Alternative Routes of Evacuation	II.2.h
			Transportation of Injured Personnel	III.3.c.7
			Location of Alarm/Notification Systems	II.2.h
			Roll Call Area	II.2.h
			Mitigation Command Center Location	III.3.b, II.2.h
			Location of Shelter at Facility	II.2.h
			Community Evacuation Plan Referenced (1.3.5.3)	III.2.b

			Facility Response Plan Elements	Found In Plan at:
	Section		Title	Section
		1.3.6	Qualified Individual's Duties	III.3.b
	1.40		**Hazard Evaluation**	
		1.4.1	Hazard Identification	III.1.b
			Tanks	III.1.b.5, Annex 9
			Surface Impoundments	III.1.b.5, Annex 9
			Labeled Schematic Drawing	III.1.a, Figure 4 – 5
			Description of Transfers and Volume of Material	III.1.b.6
			Description of Daily Operations	III.1.b.7
			Secondary Containment Volumes	III.1.b.8, Annex 24
			Normal Daily Throughput	III.1.b.9
		1.4.2	Vulnerability Analysis	III.1.e
		1.4.3	Analysis of the Potential for an Oil Spill	III.3.d.1
			Description of Likelihood of Release	III.3.d.1
		1.4.4	Facility Reportable Oil Spill History	III.4.b
		1.50	**Discharge Scenarios**	
		1.5.1	Small Discharges	
			Description of Small Discharge Scenario Addressing Facility Operations and Components (1.5.1.1)	III.3.d.1
			Description of Factors Affecting Response Efforts (1.5.1.2)	III.3.d.1
		1.5.1	Medium Discharges	
			Description of Medium Discharge Scenario Addressing Facility Operations and Components (1.5.1.1)	III.3.d.1
			Description of Factors Affecting Response Efforts (1.5.1.2)	III.3.d.1
		1.5.2	Worst-Case Discharge	
			Correct Worst Case Discharge Calculation	Annex 14
			Description of Worst Case Discharge Scenario	III.3.d.1
			Description of Factors Affecting Response Efforts (1.5.1.2)	III.3.d.1
		1.60	**Discharge Detection Systems**	
		1.6.1	Discharge Detection by Personnel	
			Description of Procedures and Personnel for Spill Detection	III.7.a
			Description of Facility Inspections	III.7.b
			Description of Initial Response Actions	II.2.g
			Emergency Response Information (Referenced)	Section II (Core Plan)
		1.6.2	Automated Discharge Detection	
			Description of Automatic Spill Detection Equipment	III.7.a
			Description of Alarm Verification Procedures and Subsequent Actions	III.7.a
	1.70		**Plan Implementation**	III.3.d.2
		1.7.1	Identification of Response Resources for Small, Medium, and Worst-Case Spills	III.3.c.2
			Description of Response Actions	Section II (Core Plan)
			- Emergency plans for spill response	II.2.g
			- Additional response training	II.2.g
			- Additional contracted help	II.2.g, III.3.c.2, Annex 13
			- Access to additional response equipment/experts	II.2.g, III.3.c.2, Annex 13
			- Ability to implement plan, including response training and drills	II.2.g, Annex 5
		1.7.2	Disposal Plans	
			Description of Procedures for Recovering, Reusing, Decontaminating or Disposing of Materials	III.3.d.4
			Materials Addressed in Disposal Plan	III.3.d.4
			Plan Prepared in Accordance with Federal, State, and Local Regulations	III.3.d.4
			Plan Addresses Permits Required to Transport or Dispose of Recovered Materials	III.3.d.4
		1.7.3	Containment and Drainage Planning	
			Description of Containing/Controlling a Spill through Drainage	III.3.c.2
			- Containment Volume	III.1.b.8
			- Drainage route from oil storage and transfer areas	III.3.c.2
			- Construction materials in drainage troughs	III.3.c.2
			- Type and number of valves and separators in drainage system	III.3.c.2
			- Sump Pump capacities	III.3.c.20
			- Containment capacities of weirs and booms and their locations	III.3.c.4, Annex 9
			- Other clean up materials	Annex 10, Figures 4-5
	1.80		**Self-Inspection, Training, and Meeting Logs**	

			Facility Response Plan Elements	Found In Plan at:
	Section		Title	Section
		1.8.1	Facility Self-Inspection	
			Tank Inspections	III.3.e.6
			Secondary Containment Inspections	III.3.e.6
			Response Equipment Inspections	Annex 11
			Response Equipment Log	Annex 11
		1.8.2	Facility Drills/Exercises	
			Description of Drill/Exercise Program Based on PREP Guidelines	Annex5, Annex 15
			- QI Notification Drill	Annex5, Annex 15
			- Spill management team tabletop exercise	Annex5, Annex 15
			- Equipment deployment exercise	Annex5, Annex 15
			- Unannounced exercise	Annex5, Annex 15
			- Area Exercise	Annex5, Annex 15
			Description of Evaluation Procedures for Drill Program	III.5.e
			Qualified Individual Notification Drill Log (1.8.1.2)	Annex5, Annex 15
			Spill Management Team Tabletop Drill Log (1.8.2.2)	Annex5, Annex 15
		1.8.3	Response Training	III.5.b
			Personnel Response Training Logs	Annex 16
			Discharge Prevention Meeting Logs	Annex 16
	1.9		**Diagrams**	
			Site Plan Diagram	III.1.a
			- Entire facility to scale	Figure 2
			- Facility above and below ground oil transfer piping	Figure 4 & 5
			- Above and below-ground tanks	Figure 4 & 5
			- Contents and capacity of bulk oil storage	Figure 4 & 5, Annex 9
			- Process Buildings	Figure 4 & 5
			- Transfer Areas	Figure 4 & 5
			- Location and capacity of secondary containment systems	Figure 4 & 5
			- Location of hazardous materials	Figure 4 & 5
			- Location of communications and emergency response equipment	Figure 4 & 5
			- Location of electrical equipment that might contain oil	Figure 4 & 5
			Site Drainage Plan Diagram	
			- Major sanitary and storm sewers, manholes, and drains	Figure 6-9
			- Weirs and shut-off valves	NA
			- Surface water receiving streams	Figure 1
			- Firefighting water resources	Figure 4 & 5
			- Other Utilities	Figure 4 & 5
			- Response personnel ingress and egress	Figure 3
			- Response equipment transportation routes	Figure 3
			- Direction of spill flow from discharge points	Figure 9
			Site Evacuation Plan Diagram (Evacuation Routes, Regrouping Areas)	
			- Evacuation routes	Figure 3
			- Location of regrouping areas	Figure 3
1.1			**Site Security**	III.3.e.2

(3) OSHA Emergency Action Plans (29 CFR 1910.38(a))

Facility Response Plan Elements	Found In Plan at:
Title	**Section**
1910.38 Emergency action plan	
(1) Scope and applicability	I.1
(2) Elements	
(i) Emergency escape procedures and emergency escape route assignments	II.2.h
(ii) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate	II.2.h
(iii) Procedures to account for all employees after emergency evacuation has been completed	II.2.h
(iv) Rescue and medical duties for those employees who are to perform them	II.2.h
(v) The preferred means of reporting fires and other emergencies	II.2.a, II.2.g, II.2.h
(vi) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan	II, III.6.a
(3) Alarm system	II.2.a
(4) Evacuation	II.2.h
(5) Training	III.5.e.1

(4) General Duty - Process Safety Management (29 CFR 1910.119)

The Kleen Energy facility is developing elements of a Process Safety Management program for compliance with the General Duty Clause of the Clean Air Act Amendments of 1990. There are no chemicals onsite that exceed regulated substance threshold quantities of this regulation. The cross references below are provided for general duty purposes only.

Facility Response Plan Elements	Found In Plan at:
Title	**Section**
1910.119 Process safety management of highly hazardous chemicals	
(n)Establish an emergency action plan in accordance with 1910.38, including requirements for small releases	II.2.g; II.2.h

(5) General Duty - Risk Management Programs (40 CFR 68)

The Kleen Energy facility is developing elements of a Risk Management Program for compliance with the General Duty Clause of the Clean Air Act Amendments of 1990. There are no chemicals onsite that exceed regulated substance threshold quantities of this regulation. The cross references below are provided for general duty purposes only.

Facility Response Plan Elements	Found In Plan at:
Title	**Section**
68.90(b) Stationary sources whose employees will not respond to accidental releases of regulated substances need not comply with §68.95 (Emergency Response Plan).	
(b)(1) stationary sources with any regulated toxic substance held in a process above the threshold quantity, the stationary source is included in the community emergency response plan	III.3.b
(b)(2) For stationary sources with only regulated flammable substances held in a process above the threshold quantity, the owner or operator has coordinated response actions with the local fire department; and	Not Applicable
(b)(3) Appropriate mechanisms are in place to notify emergency responders when there is a need for a response.	II; Annex 2
68.95(a) Emergency Response Program	Not Applicable

(6) RCRA Hazardous Waste Contingency Plan Elements (40 CFR 265)

The facility is a Conditionally Exempt Small Quantity Generator (CESQG) with little or no expected routine generation of hazardous waste. The cross references below are provided in case the generator status changes or for episodic generation events.

Facility Response Plan Elements		**Found In Plan at:**
Title		**Section**
Subpart C	Preparedness and Prevention	-
265.31	Maintenance and Operation of Facility	I.4
265.32	Required Equipment	-
(a)	Internal Communications or Alarm System	III 3.b.2
(b)	Device Capable of Summoning Emergency Assistance	III 3.b.2
(c)	Portable Fire Extinguishers, Fire Control Equipment, Spill Control Equipment, Decontamination Equipment	III 3.f.1, Annex 10
(d)	Water at Adequate Volume and Pressure	III 3.f.1, Annex 10
265.33	Testing and Maintenance of Equipment	III 3.e.6., Annex 11
265.34	Access to Communications or Alarm System	III 3.b.2.
(a)	Access to Internal Alarm or Emergency Communication Device During Hazardous Waste Handling	III 3.b.2.
(b)	Access to Device Capable of Summoning Emergency Assistance	III 3.b.2.
265.35	Required Aisle Space	III 3.d.2.
265.37	Arrangements With Local Authorities	-
(a)	Arrangements with:	-
(1)	Police, Fire and Emergency Response Teams	ERAP, III 3.b.
(2)	Primary Emergency Authority	ERAP, III 3.b.
(3)	State Emergency Response Teams, Emergency Response Contractors, Equipment Suppliers	ERAP, III 3.b.
(4)	Local Hospitals	ERAP, III 3.b.
(b)	Documentation of Refusal for Arrangements	NA
Subpart D	Contingency Plan and Emergency Procedures	-
265.51	Purpose and Implementation of Contingency Plan	-
(a)	Facility Contingency Plan Designed to Minimize Hazards to Human Health and Environment	I 1
(b)	Plan Must Be Instituted Whenever There Is Threat	III 3
265.52	Content of Contingency Plan	Page iv
(a)	Emergency Response Actions	Section II with Annexes 1 to 3 and 9 to 11
(b)	Incorporation into Existing SPCC Plan	I.1
(c)	Arrangements with Police, Fire and Emergency Response Teams	III 3.b.
(d)	Emergency Coordinator Information	Section II
(e)	Emergency Equipment List	Section II, Annex 10
(f)	Evacuation Plan	II.2.h
265.53	Copies of Contingency Plan	Page i
265.54	Amendment of Contingency Plan	III 6.a
265.55	Emergency Coordinator	Section II
265.56	Emergency Procedures	II.2.g
(a)	Whenever There Is Imminent or Actual Emergency, Emergency Coordinator Must Immediately:	Section II
(1)	Activate Facility Alarms or Communication Systems	Section II
(2)	Notify State or Local Response Agencies	Section II
(b)	Whenever There Is Release, Fire or Explosion, Emergency Coordinator Must Identify Character, Exact Source, Amount and Extent of Release Materials and	Section II, III.3.d.4
(c)	Assess Possible Hazards to Human Health or Environment	II 2.g.
Subpart I	Use and Management of Containers	-
265.171	Condition of Containers	III 3.d.2.
265.172	Compatibility of Waste with Container	III 3.d.2.
265.173	Management of Containers	III 3.d.2.
(a)	Containers Storing Hazardous Waste Must Be Closed	III 3.d.2.
(b)	Containers Storing Hazardous Waste Must Not Leak	III 3.d.2.
265.174	Inspections	III.7.b, Annex 21
265.177	Special Requirements for Incompatible Wastes	-
(a)	Incompatible Wastes Must Not Be Placed in Same Container	NA
(b)	Hazardous Wastes Must Not Be Placed in Unwashed Container that Previously Held Incompatible Wastes	NA
(c)	Incompatible Wastes Must Be Stored in Areas Separated by Secondary Containment	NA

I. PLAN INTRODUCTION ELEMENTS

I.1. Purpose and Scope of Plan Coverage

This Integrated Contingency Plan (ICP) was developed to help Kleen Energy Systems (KLES) Middletown, Connecticut facility operations and maintenance (O&M) staff and emergency response agencies prevent, prepare for and respond to emergencies in a safe, effective, and timely manner and to mitigate potential impacts to human health and the environment. NAES Corporation operates and maintains this facility for KLES under an O&M agreement.

This ICP integrates numerous state and federal release prevention, emergency evacuation, and emergency response plan requirements into a single plan following *The National Response Team's Integrated Contingency Plan Guidance (Fed. Register v 61, n 109, p. 28641; June 5, 1996)*. The National Response Team's rationale for the use of an ICP or "One Plan" includes: "*The use of a single emergency response plan per facility will eliminate confusion for facility first responders who often must decide which of their plans is applicable to a particular emergency. The "One Plan" is designed to yield a highly functional document for use in varied emergency situations while providing a mechanism for complying with multiple agency requirements. Use of a single integrated plan should also improve coordination between facility response personnel and local, state, and federal emergency response personnel.*" This ICP has been developed to meet KLES emergency response requirements for the following regulations:

- Spill Prevention, Containment and Countermeasure (SPCC) Plan required for >1,320 gallons of petroleum products (containers ≥55 gal.) – EPA, 40 CFR part 112.7;
- Facility Response Plan (FRP) for petroleum with potential for significant harm (e.g., >1,000,000 gal. fuel near a navigable waterway) – EPA, 40 CFR 112.20 & 21;
- Risk Management Programs Emergency Response requirements - Clean Air Act Amendments General Duty due to ~ 40,000 gallons of 19.0% Aqueous Ammonia (~60,000 lbs. as ammonia), EPA 40 CFR Part 68;
- Process Safety Management - General Duty (same as above), OSHA, 29 CFR 1910.119;
- Hazardous Waste Contingency Plan – although facility is not a Large Quantity Generator and does not require one, the ICP meets EPA 40 CFR 265; and
- Emergency Action Plan required for emergency reporting and evacuation planning – OSHA, 29 CFR 1910.38.

In addition, this ICP satisfies the Spill Prevention and Control Plan requirements for wastewater discharge permits in Connecticut.

This ICP does not integrate all OSHA "Hazwoper" (29 CFR 1910.120) requirements because the facility relies on local and county agencies and contractors for hazardous materials emergency response. As a result, the ICP uses the term ***Emergency Response Coordinator (ERC)*** to indicate the persons who will coordinate assessment and incipient response activities of potential emergency incidents by site personnel and determine if it is an emergency requiring outside Oil Spill Response Organization (OSRO) contractor or City of Middletown/ Middlesex County emergency response agency support. The Primary and Alternate ERCs are trained as an oil spill response ***Qualified Individual***, and all employees are trained on this ICP. The Control Room Operator serves as Acting ERC until the Primary or Alternate ERC reaches the facility. The ERC will transfer incident command to the outside response organization Incident Commander (IC) and continue to serve to coordinate facility and company support of the responders in an emergency. Facility personnel ICP training integrates Hazwoper awareness, Incident Command System awareness, and recognizing the limits of an employee's ability to respond in an immediately dangerous to life and health situation.

I.2. Table of Contents

Refer to the Table of Contents for this document (page iii). Contents generally include:

Tab II – Core Plan contains essential information for immediate response to an emergency incident and is organized as follows:

Critical Emergency Notification Phone Lists and Forms

1. Discovery
2. Initial Response
3. Incident Specific Response Guidelines
    a. Petroleum/Chemical Spill or Release
    b. Fire/Explosion/Severe Weather/Bomb Threat/Workplace Violence
    c. Medical Emergency
    d. Evacuation Plan
4. Sustained Actions

5. Termination and Follow-up

Response Critical Annexes:

Annex 1 - Facility and Locality Information

Annex 2 – Notification

Annex 3 – Response Management System

Annex 9 - Petroleum and Chemical Inventories

Annex 10 – Response Equipment Inventory

Annex 11 - Response Equipment Testing/Deployment

Tab III –Annexes contain supporting information for prevention, planning and response to an emergency incident, including:

- Hazardous Chemical Lists;
- Notification procedures;
- Inventory quantities and locations; and
- Emergency Response Resource Lists
- Planning Distance calculations for upstream/downstream receptors
- Other supporting SPCC & FRP documentation.

To meet the various compliance and emergency response planning needs, the ICP is written to be:

Comprehensive – Meets and is cross-referenced to multiple regulatory program requirements (as well as company policies and procedures) to facilitate agency review.

Functionally organized – The most emergency-critical needs in the "Core Plan" (Section II) are separated from the longer planning and compliance sections.

Usable for emergency response – "Core Plan" with the most critical emergency information can be separately bound along with Response Critical Annexes so personnel and emergency responder can easily find them (e.g., lists, guidelines, maps, inventories).

Integrated training and drills – Annex III describes training for facility personnel on the ICP, response procedures, maintenance, inspection and periodic emergency response drills.

Easily updated – Updates and revisions are facilitated by having a single plan for many regulatory programs as well as features such as a single emergency phone list.

I.3. Current Revision and Date

This facility is newly constructed and is scheduled for Commercial Operation in 2011. Refer to the "PLAN REVISION SUMMARY SHEET" for this document (page i).

I.4. General Facility Identification Information

The Kleen Energy Facility is located at 1349 River Road, Middletown, CT 06457 (Middlesex County). It is a 620 MW Combined cycle electric generating facility that is owned by Kleen Energy Systems, LLC, and will be operated by NAES Corporation. The site consists of 137 acres in an industrial part of the city. The site is bounded on the north by the River Road and on the west by residentially-zoned land which is now vacant. The eastern boundary is land owned by Connecticut Light & Power that contains a 345 kilovolt transmission line. The south boundary is Bow Lane. The facility employs approximately 25 employees, will be staffed 24-hour a day, 7 days a week and will generate electricity on an as needed basis per market demands and energy usage.

The plant utilizes natural gas to generate power using two combustion gas turbine generators and a steam turbine generator, but is capable of burning fuel oil (ultra-low sulfur diesel) when natural gas is unavailable or uneconomic. The plant handles, stores and uses petroleum products in the form of fuel oil, diesel fuel and lubricating (lube) oil. Oil filled transformers are utilized for the production and distribution of electricity. There is a 40,000 gallon tank of 19.0% aqueous ammonia used for the Selective Catalytic Reduction (SCR) of Nitrogen Oxides (NOx). There are also smaller quantities of a variety of water treatment chemicals used to condition boiler feed water and cooling tower water to support the power generation operations.

Kleen Energy Systems will initially operate a water well system on land owned by the City of Middletown between River Road and the Connecticut River. This includes a pumping system and electrical/control building with an emergency generator and diesel fuel storage. These diesel fuel tanks will remain in the Kleen Energy Facility ICP as long as Kleen Energy has responsibility for operations and spill prevention and response in this area.

Facility Information Form

112 App. F Reference	Item	Information
1.2.1	Facility Name:	**Kleen Energy Facility**
	Street Address:	**1349 River Road Middletown, CT 06457**
	County:	**Middlesex**
	Telephone:	**860-704-2500**
1.2.2	Latitude:	**41°33'22.99"N**
	Longitude:	**72°35'43.78"W**
1.2.3	Wellhead Protection Area:	**NA**
1.2.4	Owner:	**Kleen Energy Systems, LLC.**
	Street Address:	**1349 River Road Middletown, CT 06457**
	Mailing Address:	**P.O. Box 2696 Middletown, CT 06457**
	County:	**Middlesex**
	Telephone:	**860-704-2500**
	Operator:	**NAES Corporation**
1.2.5	Qualified Individual:	**Gordon Tuttle, Operations Supervisor**
	Work Address:	**1349 River Road, Middletown, CT 06457**
	Home Address:*	[redacted]
	Emergency Phone Number:*	[redacted]
	Qualified Individual:	**Jason Farren, Compliance Coordinator**
	Work Address:	**1349 River Road, Middletown, CT 06457**
	Home Address: *	[redacted]
	Emergency Phone Number: *	[redacted]
1.2.6	Date of Oil Start-up:	**2011**
1.2.7	Current Operations:	**The Kleen Energy Facility is an electricity generating facility.**

* Personal information is redacted, see final plan for this information.

112 App. F Reference	Item	Information
1.2.8	Date and Type of Substantial Expansion:	**This is a new facility with new oil storage tanks installed in 2009 and operation beginning in 2011.**
Other	Dun & Bradstreet Number:	**00-347-1322**
	NAICS Code:	**221112**
	Largest Aboveground Oil Storage Tank Capacity:	**4,061,400 gallons**
	Maximum Oil Storage Capacity:	**8,225,560 gallons**
	Worst-Case Oil Discharge Amount:	**4,061,400 gallons**
	Facility Distance to Navigable Water:	**Approximately 0.1 miles**

I.4.a. Facility Name

See Facility Information Form Above

I.4.b. Owner/Operator/Agent

See Facility Information Form Above

I.4.c. Physical Address of the Facility

See Facility Information Form Above

Directions:
From Middletown, CT, take CT-17 South 0.5 mi, continue onto CT-9 South for 0.4 mi, Take exit 12 for Silver St and go 0.2 mi, Turn left at Silver St, go 0.8 mi, Turn right at River Rd, go 0.8 mi, plant is on the right

I.4.d. Mailing Address of the Facility

1349 River Road,
Middletown, CT 06457

I.4.e. Other Identifying Information

See Facility Information Form Above

SIC Code: 4911 - Electric Services

I.4.f. Key Contacts for Plan Development and Maintenance

Jason Farren, Compliance Coordinator

Gordon Tuttle, Operations Supervisor

Robert Haley, Plant Manager

I.4.g. Phone Numbers for Key Contacts

Refer to Emergency Contact Phone List in Tab II.

I.4.h. Facility Phone Number

Main Phone: (860) 704-2500

I.4.i. Facility Fax Number

Main Fax: (860) 704-2525

I.5. Management Approval and Designated Person (40 CFR 112.7)

Kleen Energy management commitment in accordance with 40 CFR 112.7 is documented following the plan title page. The ***Operation Supervisor*** is the Designated Person Accountable for Oil Spill Prevention and hazardous/toxic substance Spill Prevention and Control at the facility and has the authority to commit the necessary resources to implement this Plan.

II. ERAP/CORE PLAN ELEMENTS

Section II of this ICP has been structured to include essential time critical information necessary for emergency notifications and to coordinate and support the earliest stages of emergency response. The ICP is designed to allow printing a separate portable field reference including this section (Section II) along with Annexes 1 to 3 and 9 to 11 to serve as the equivalent of the FRP Emergency Response Action Plan (ERAP).

The following pages include the most critical information to respond to an emergency incident:

- Qualified Individual Information;
- Emergency Notification Phone List;
- Spill Response Notification Form;
- Emergency Notification Documentation;
- Response Equipment List and Location;
- Response Equipment Testing and Deployment;
- Facility Emergency Team;
- Evacuation Plan; and
- Specific Emergency Response Guidelines (Immediate Actions);and
- Facility Diagrams.

Emergency Notification Phone List and Form

Employees will immediately notify the facility spill response ***Qualified Individuals*** who serve as ***Emergency Response Coordinator (ERC)*** in the event of an emergency. Additional numbers of staff and outside organizations agencies are notified at the direction of the ***ERC***. The Spill Response Notification Form is used to gather information needed by the ***ERC*** for notifications. Note: Do not delay spill notification if some information on the list is not yet available.

For information on updating the list and using the Spill Response Notification Form, refer to Section III.2, Annex 2 - Notification.

See Annex 10 for the Response Equipment Inventory (Section III.10).

Emergency Notification Phone List

Last Updated 03/25/11

Qualified Individual/Emergency Response Coordinator Information			
	Plant	**Home**	**Cell**
Gordon Tuttle, Operations Supervisor, Qualified Individual, Primary ERC	860-704-2512 1349 River Road Middletown, CT 06457	See cell	[redacted]
Jason Farren, Compliance Coordinator, Qualified Individual, Alternate ERC	860-704-2515 1349 River Road Middletown, CT 06457	See cell	[redacted]

Plant Response Support Contacts			
Senior Staff	**Plant**	**Home**	**Cell**
Gordon Holk, General Manager	860-704-2509	[redacted]	[redacted]
Robert Haley, Plant Manager	860-704-2511	[redacted]	[redacted]
Kevin Caldwell, Plant Engineer	860-704-2517	[redacted]	[redacted]
Drew Schneider, Maintenance Supervisor	860-704-2513	[redacted]	[redacted]
Plant Control Room (Acting ERC off shift)	860-704-2520	NA	NA

Oil Spill Removal Organization (OSRO Contractor)	
Clean Harbors	800-645-8265

Government Agencies and Other Affected Entities		
	Day	**After Hours**
NRG Facility (if oil reaches river, Note 1)	Shift Supervisor 860-346-9639	Shift Supervisor 860-346-9639
National Response Center	24 Hour Spill Reporting Hotline 1 (800) 424-8802	24 Hour Spill Reporting Hotline 1 (800) 424-8802
EPA Region I	(800) 424-8802	(800) 424-8802
CT Dept. of Env. Protection	860-424-3338	860-424-3338
Local Response Agencies (Fire, Hazmat, Ambulance, Police)	911 Middletown South Fire District 445 Randolph Rd., Middletown, CT 06457 Phone: 860-347-6661	911
Downstream Water Supply† (if oil reaches river, Note 2)	Pratt & Whitney – 24 hr. Emerg. 860-344-5111	Pratt & Whitney – 24 hr. Emerg. 860-344-5111
CT Dept. of Public Health	Incident Commander and Chief of Staff - Warren Wollschlager 860-509-7101	General Information, After Hours, Emergencies (860) 509-8000

Notes:

1. If petroleum reaches the river, immediately call NRG so they can protect their water intakes, and possibly block oil flow by booming across the point of entry or the river using on-site boat and boom.

† There are no known potable water wells downgradient between the facility and river. There are no known potable water river intakes. Known non-potable water intakes listed.

Other Contacts	
U.S. Coast Guard	Sector Long Island Command Center – 203-468-4444 120 Woodward Avenue, New Haven, CT 06512
Buckeye Pipeline	Report an emergency or suspected pipeline problem to: Buckeye Partners, L.P. - 1-800-331-4115
Algonquin Pipeline	Spectra Energy Emergency Number - 800-726-8383
Fire Marshall	South District - Steve Krol 860-347-6661 x102 deputychief@southfiredistrict.com
Local Emergency Planning Committee (LEPC)	William A. Austin Capitol Region Emergency Planning Committee Chairman/Fire Chief 860-561-8300
State Emergency Response Commission (SERC)	Through CT DEP 860-424-3338
State Police	State of Connecticut Department of Public Safety 1111 Country Club Rd. Middletown, CT 06457 860-685-8190 1-800-842-0200
FBI (Sabotage & Terrorism)	Boston, MA 617-742-5533
Weather Report	www.weather.com www.weatherunderground.com http://www.nws.noaa.gov/
Local Television/Radio Station for Evacuation Notification	WTNH Channel 8 ABC Affiliate 203-784-8888 – New Haven WPLR 99.1 FM 203-783-8331 http://www.wplr.com/ WYBC 94.3 FM 203-432-8145 WELI 960 AM 203-281-9600 http://www.weli.com/
Hospitals	860-358-6000 Middlesex Hospital 28 Crescent St Middletown, CT 06457-3650 www.midhosp.org

Spill Response Notification Form

Note: Complete this form to compile the information needed by spill response personnel and agencies. Last Updated 2/19/10

Reporter's Name (Last, First, M.I.):					
Position:					
Phone Numbers:	Day:		Evening:		
Company:	**Kleen Energy Systems, LLC. Operated by NAES Corporation**				
Organization Type:	**Kleen Energy Facility**				
Address:	**1349 River Road, Middletown, CT 06457**				
Were Materials Discharged? (Y/N)		Confidential? (Y/N)			
Meeting Federal Obligations to Report? (Y/N)		Date Called:			
Calling for Responsible Party? (Y/N)		Time Called:		AM / PM	

Incident Description

Source and/or Cause of Incident:							
Date of Incident:		Time of Incident:		AM / PM			
Incident Address/Location:							
Nearest City:	**Middletown**	State:	**CT**	County :	**Middlesex**	Zip :	**06547**
Distance from City:	**NA**	Units of Measure:	**NA**	Direction from City:	**NA**		
Section:	**NA**	Township:	**NA**	Range :	**NA**	Borough :	**NA**
Container Type:		Tank Oil Storage Capacity:		Units of Measure:			
Facility Oil Storage Capacity:	**8,221,720**		Units of Measure:	**Gallons**			
Facility Latitude:	**41°33'22.99"N**		Facility Longitude:	**72°35'43.78"W**			

Material

CHRIS Code	Discharged Quantity	Unit of Measure	Material Discharged in water	Quantity	Unit of Measure

CHRIS Codes Applicable to this facility: ODS-Oils: diesel; OTW-Oils, fuel: No. 2
http://www.chrismanual.com/Intro/table9.pdf

Spill Response Notification Form

Note: Complete this form to compile the information needed by spill response personnel and agencies. Last Updated 2/19/10

Response Action:	
Actions Taken to Correct, Control or Mitigate Incident:	

Impact			
Number of Injuries:		Number of Deaths:	
Were there Evacuations? (Y/N)		Number Evacuated:	
Was there any Damage? (Y/N)		Damage in Dollars (approximate):	
Medium Affected:		Description:	
More Information about Medium:			

Additional Information
Any information about the incident not recorded elsewhere in the report:

Caller Notifications					
911? (Y/N)		Spill Contr.? (Y/N)		State? (Y/N)	
EPA? (Y/N)		USCG? (Y/N)		LEPC? (Y/N)	
Other? (Y/N)		Describe:			

Emergency Notification Documentation

This form may be used to document communications with emergency contacts. Last Updated _2/19/10__

Name	Phone	Date/Time	Person Contacted	Notes/Comments (if any):
Qualified Individual	See Section Emergency Notification Phone List in Section II.	/		
OSRO (Oil Spill Removal Organization) - Clean Harbors	800-645-8265	/		
NRG Facility (Intakes and Onsite Boom for immediate deployment)	Shift Supervisor 860-346-9639	/		
National Response Center	24 Hour Spill Reporting Hotline 1 (800) 424-8802	/		
EPA Region I	(800) 424-8802	/		
CT Dept. of Environmental Protection	860-424-3338	/		
Local Response Agencies (Fire, Hazmat, Ambulance, Police)	911 Middletown South Fire District Edward Badamo – Fire Chief 445 Randolph Road, Middletown, CT 06457 Phone: 860-347-6661	/		

Emergency Notification Documentation

This form may be used to document communications with emergency contacts. Last Updated _2/19/10__

Name	Phone	Date/Time	Person Contacted	Notes/Comments (if any):
Downstream Water Supply‡	Pratt & Whitney – 24 hr. Emerg. 860-344-5111	____/____		
CT Dept. of Public Health	Incident Commander and Chief of Staff - Warren Wollschlager 860-509-7101	____/____		
U.S. Coast Guard	Sector Long Island Command Center 203-468-4444 120 Woodward Avenue, New Haven, CT 06512	____/____		
Buckeye Pipeline	Report an emergency or suspected pipeline problem to: Buckeye Partners, L.P. - 1-800-331-4115	____/____		
Algonquin Pipeline	Spectra Energy Emergency Number - 1-800-331-4115	____/____		
Fire Marshall:	Steve Krol Middletown South Fire District 860-347-6661 x102	____/____		
Local Emergency Planning Committee (LEPC):	William A. Austin Capitol Region Emergency Planning Committee Chairman/Fire Chief 860-561-8300	____/____		

‡ There are no known potable water wells downgradient between the facility and river. There are no known potable water river intakes. Known non-potable water intakes listed.

Emergency Notification Documentation

This form may be used to document communications with emergency contacts. Last Updated _2/19/10__

Name	Phone	Date/Time	Person Contacted	Notes/Comments (if any):
State Emergency Response Commission (SERC):	Through CT DEP 860-424-3338	/		
State Police:	State of Connecticut Department of Public Safety 1111 Country Club Rd. Middletown, CT 06457 860-685-8190 1-800-842-0200	/		
FBI	Report suspected sabotage or terrorism Boston, MA 617-742-5533	/		
Weather Report:	www.weather.com www.weatherunderground.com http://www.nws.noaa.gov/	/		
Local Television/Radio Station for Evacuation Notification:	WTNH Channel 8 ABC Affiliate 203-784-8888 WPLR 99.1 FM 203-783-8331 http://www.wplr.com/ WYBC 94.3 FM 203-432-8145 WELI 960 AM 203-281-9600 http://www.weli.com/	/		
Hospitals:	860-358-6000 Middlesex Hospital 28 Crescent St Middletown, CT 06457-3650 www.midhosp.org	/		

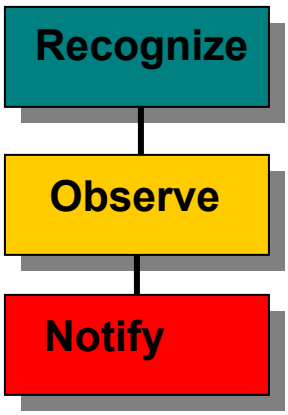
Emergency Action Levels

The ***ERC*** will classify incidents to help guide staff on what notification actions are needed based on the type and seriousness of the incident, whether off-site responders are needed and whether there may be off-site effects or concerns. Minor deviations during normal operation need not be classified. If severity/conditions change, the ERC will reassess and reclassify the incident and adjust notifications if appropriate. Emergency levels are defined as follows:

Classification	Description	Examples	Who Notified
NOTIFICATION OF UNUSUAL EVENT	Non-emergency conditions that may be apparent to the community where notification can allay potential concerns.	Noise generating major events, major construction activities.	Community and local officials, after consultation with KLES/NAES management
SITE ALERT	Effects likely limited to local plant safety, env. or security threat that, if promptly addressed, will NOT likely risk staff life threat, major env. damage, or major equipment damage.	Localized fire can be extinguished with portable extinguishers, small spills contained on impervious surfaces that can be cleaned up by properly trained site personnel.	Staff.
LOCALIZED EMERGENCY	Safety/env./security event with threat to site personnel, on-site environmental impacts or major damage to site equipment either currently or likely without off-site emergency response. No likely off-site effects.	Larger fires requiring offsite FD response; larger releases not contained in dikes / impervious surfaces that require outside support (e.g. OSRO or FD Hazmat) but do not have imminent offsite impacts.	Off-site emergency responders or OSRO and (when reportable releases) to agencies.
PLANT-WIDE EMERGENCY	Safety/env./security event with probable life threat to site personnel, catastrophic damage to site equipment, or potential off-site effects on the public or the environment.	Major fire / explosion (e.g., fuel tank fires or natural gas explosions, worst case fuel spill, major chemical release (e.g. aqueous ammonia spills w/vapor leaving site) that require coordinated response and community notification.	Off-site emergency responders or OSRO, (when reportable releases) to agencies and Community and local officials notifications.

II.1. Discovery

Prompt recognition and appropriate action upon ***discovery*** can help mitigate the effects of any spill, release, or emergency incident. The discovery process summarized here is reinforced in ICP and other training (e.g., operator training, hazard communication training).



The discovery stage is broken down into three steps. First, ***recognize*** a potential problem based on facility-specific knowledge and hazard recognition training. Next, from a safe vantage point, attempt to ***observe*** the source, location, material type, nature and extent, and possible or known impacts, including possible injuries. If a significant or reportable incident is occurring, or conditions appear abnormal and potentially dangerous, immediately ***notify*** the Control Room and the Emergency Response Coordinator (ERC) and provide key information they need to assess the situation and decide on a tactical, first-response action.

Recognize a problem or potential hazard based on the uses, properties and behavior of equipment and chemicals (e.g., visible appearance, sound, odor, vibration, temperature, automated sensor reading, alarm). Signs of common hazards or emergencies and initial precautions include:

- **Flammable Gas Release without Ignition** (e.g., hydrogen) – Can be evident by visible damage to equipment, sound, condensation or frost on surfaces. High hazard of ignition and explosion, so immediately clear the area to a safe distance.
- **Fire** – Can be evident by visible flame, smoke, heat, and/or charring of surfaces. If a flammable gas or vapor is the cause, or if there is a risk of the fire being extinguished while there is a continuing gas release, there may be a high hazard of explosion or rapid spread of the fire. Immediately clear the area to a safe distance, unless the fire is incipient and controllable and one is trained in firefighting.
- **Gasoline or Other Highly Ignitable Fluid Release** – Can be evident by visible liquid, damage to equipment, and characteristic smell of gasoline vapors. Dense vapors stay near the ground and can easily be explosively ignited. Clear the area if the release is large, uncontrolled, and/or there is a potential ignition source.
- **Non-Flammable Gas Release** – Can be evident by visible damage to equipment, sound, condensation or frost on surfaces. Risk of asphyxiation due to oxygen

displacement. Clear the area if release appears large and uncontrolled, especially if in a building or confined space.

- **Toxic Gas or Vapor Release** (e.g., ammonia, acids or caustics) – Can be evident due to equipment damage, visible vapor cloud, odor, or acute pain in breathing, the eyes, and the skin. Clear the area to a safe distance.
- **Injury / Illness** (including confined space) – Observe signs of common injuries and illnesses (e.g., from training on First Aid, Hazcom, etc.). If a person is down or injured, check if the cause remains and there is risk to others. **Do not enter a confined space** to help – this is a job only for trained rescuers. Without proper precautions, equipment and training, a rescuer may become the next victim.
- **Life Endangering Equipment Failure** (e.g., high pressure steam; mechanical failure) – High pressure steam may be detectable as a high pitched sound but can be invisible. Stand clear of any failed equipment to observe the situation.
- **Oil or Other Organic Liquids Spill or Release** – Visible as clear to dark colored fluids, some that flow freely and others that are viscous, can have a noticeable odor. Can be hazardous, but less severe acute risks are usually associated with these materials. Observe from a closer, but safe range.

Observe

Quickly, and ***only from a safe place***, observe the situation, making note of the following:

- **Location** of the problem and its source;
- **Identity** of the known or likely material involved if it is a release;
- **Extent** of the problem (Incidental or Uncontrolled);
- **Fire or explosion risk**;
- **Injuries** to personnel and their severity; and
- **Risks** to personnel or responders (e.g., damaged equipment, mechanical hazards, gases or vapors).

Notify

FIRST, Immediately notify personnel in the area who may be in danger or who may be trained to assist. Attempt to do this without slowing notification of the ***Control Room Operator***, who becomes the acting ***Emergency Response Coordinator (ERC)*** until the Primary or Alternate ***ERC*** arrives. **IF A SITUATION THAT IS IMMEDIATELY DANGEROUS TO LIFE AND/OR HEALTH IS OBSERVED, DEPLOY THE EVACUATION ALARM IMMEDIATELY.**

SECOND*, *immediately notify the ***Control Room Operator*** via radio or plant phone, providing the following information:

- **Your name;**
- **Your observations** of the situation (**Location, Identity, Extent, Fire/Explosion, Injuries, Risks**).

Upon notification of the incident by the Incident Discoverer, the ***Control Room Operator*** will assume the role and responsibilities of the ***ERC*** until the Primary or Alternate ***ERC*** is notified, arrives and takes Incident Command. The ***ERC*** will draw upon knowledge of plant operations, specific training courses (i.e., operator training, hazardous materials training), and this manual to respond to a particular emergency.

THIRD*, *prepare to act as the first responder if properly trained, if instructed to do so by the ***ERC*** and if response will not endanger life or health.

FOURTH*,** if not properly trained to respond or it is an immediately dangerous to life and health situation; ***prepare to remain at the scene at a safe distance to meet emergency responders to direct them to the emergency, but ***only if instructed*** to do so by the ***ERC***.

II.2. Initial Response

Responses guidelines developed for those initially discovering and assessing each specific type of incident covered in the plan are located at the end of this section of the ICP. Incidents are color coded as follows to ease identification in an emergency situation:

Incident Type	Tab
Petroleum or Chemical Release	**Yellow Tab**
Fire, Explosion, Bomb Threat or Workplace Violence	**Red Tab**
Severe Weather, Medical Emergency	**Blue Tab**
Evacuation Plan	**Green Tab**

The individual emergency response guidelines provide step-by-step guidance on how to respond to the incident.

II.2.a. Procedures for Internal and External Notifications

Procedures for internal and external notifications are outlined in Section II.1, Discovery, and detailed in each incident-specific emergency response guideline. Generally:

- The ***Control Room Operator*** is the first to be notified by the discoverer.
- The ***Control Room Operator*** notifies the ***ERC*** and assumes the role of the acting ***ERC*** until the Primary or Alternate ***ERC*** arrives.
- The ***ERC*** determines whether to evacuate, request emergency response support and/or notify other agencies (as needed). The ***ERC*** coordinates all staff mitigation and emergency response support actions.
- The ***ERC*** will transfer incident command to the outside response organization Incident Commander and continue to serve to coordinate facility and company support of the responders in an emergency.

Detailed descriptions of the duties and responsibilities of the ***ERC*** are given in **Annex 3**.

The Emergency Notification Phone List provides contact information for all persons qualified to act as ***ERC***, including their names, addresses, and office and emergency phone numbers. It also includes all emergency response and government agency contacts that may have to be notified, depending upon circumstances of the incident.

Internal evacuation notifications for plant personnel will be through the plant alarm system and plant radios. The alarm consists of a loud, distinctive audio alarm played through the plant gai-tronics (PA) system. The alarm system may sound automatically in response to a fire or may be manually engaged using pull stations. In either case, sounding of the alarm requires evacuation of the facility or portions of the facility (if the PA announcement includes instructions on partial evacuation, evacuation routes and assembly areas based on the specific incident). Evacuation procedures are given in the Evacuation Plan (**GREEN TAB**).

II.2.b. Establishment of a Response Management System

The response management system for Kleen Energy is provided in the following organization chart (Response Management System). The system specifies emergency responsibilities at the facility. The list is updated when information changes. All facility O&M personnel are trained in the ***ERC***/Qualified Individual notification procedures and to take incipient mitigation measures if they can safely do so without endangering themselves (e.g., closing valves, shutting equipment, applying sorbent/blocking measures for small and incipient spills, fire extinguisher for small incipient fires).

A detailed description of responsibilities and duties is provided in Annex 3, Section III.3.b of this ICP. This involves the development of an incident/emergency response organization and action plan to address small and large spill/release incidents and non-spill emergencies at this facility. Implementation of the Response Management System/Incident Command System (ICS) is initiated in Step 1 of each incident-specific response guideline.

Emergency response for fire, explosion, highly hazardous material releases or medical emergencies will be conducted by outside response agencies. Environmental cleanup of significant spills will be conducted by the OSRO contractor, with input from outside response agencies as appropriate. Agreements with the OSRO contractor are included as **Annex 13** so that the availability of resources can be verified.

The ***ERC*** will coordinate response to the incident unless it is a medical or hazardous substance emergency or environmental cleanup requiring outside response organizations. In that case, the ***ERC*** transfers incident command to the outside

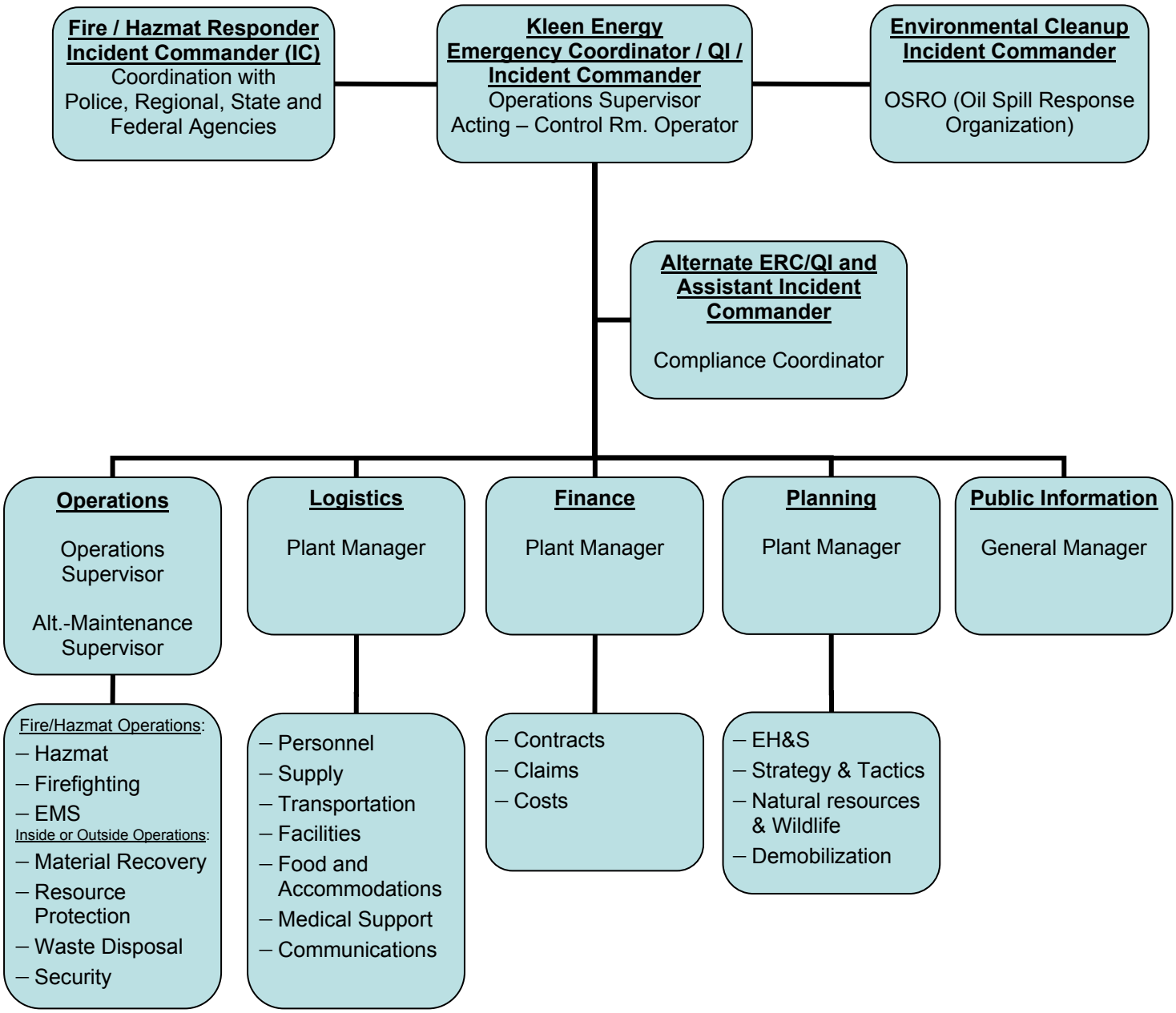
response organization Incident Commander (IC), the outside ***IC*** will plan the response with the ***ERC*** serving to coordinate facility and company support of the response.

The primary objectives of the Kleen Energy response management system are to:

- Rapidly and effectively mitigate the source and effects of the emergency.
- Anticipate and arrange for offsite resources to assist Kleen Energy, as needed.
- Provide Kleen Energy with timely information for use in decision making.
- Provide for effective communication and/or coordination between Kleen Energy and regulatory agencies, response contractors, local officials and the community.

The following diagram depicts the response management system organization including Kleen Energy and offsite response organizations.

Response Management System



Response Personnel

The following table shows facility and OSRO contractor personnel available to respond to a discharge of oil or other hazardous substances. The list is updated as information changes. Agreements with emergency response contractors are included as **Annex 13** so the availability of resources can be verified.

Last Updated **6/20/11**

Facility Emergency Response Coordination/Support Personnel

Name	Emergency Phone	Response Time	Responsibility During Response Action	Response Training Type/Date*
Gordon Tuttle, Operations Supervisor, Qualified Individual	[redacted]	35 Minutes	Emergency Response Coordinator; Contractor Coordinator	SPCC - ICP / MAY 2011; QI/Sep. 13-17, 2010
Jason Farren, Compliance Coordinator, Qualified Individual	[redacted]	45 Minutes	Alternate Emergency Response Coordinator; Contractor Coordinator.	SPCC - ICP / MAY 2011; QI/Mar. 1-3, 2011
Kevin Caldwell, Plant Engineer	[redacted]	30 Minutes	Operations and Technical Support	SPCC - ICP / MAY 2011; QI/Nov. 16-20, 2009
Gordon Holk, General Manager	[redacted]	25 Minutes	Operations and Technical Support; Public Information	SPCC and FRP/JAN 11, 2010
Robert Haley, Plant Manager	[redacted]	90 Minutes	Operations and Technical Support	SPCC - ICP / MAY 2011
Drew Schneider, Maintenance Supervisor	[redacted]	35 Minutes	Operations and Technical Support	SPCC - ICP / MAY 2011

* Initial training dates. See training records for most current training dates.

Oil Spill Removal Organization (OSRO Contractor)

Name	Phone (24 hr.)	Response Time	Contract Responsibility
Clean Harbors (Primary)	800-645-8265	1.5 Hours	Full Spill Response to significant petroleum spills associated with KLES operation.
Moran Environmental (Secondary)	888-233-5338	1.5 Hours	Full Spill Response to significant petroleum spills associated with KLES operation.

Facility Emergency Team

All facility O&M personnel are trained in ICP notification and to take incipient/small spill mitigation measures if they can safely do so without endangering themselves. Emergency response will be coordinated by the Qualified Individuals and other key personnel listed above that can marshal off-site response and facility support resources. Emergency response for cleanup of significant releases constituting an emergency and all environmental cleanup activities will be conducted by the outside OSRO Contractor, with input from outside response agencies as appropriate.

II.2.c. Procedures for Preliminary Assessment of the Situation

Hazard assessment will include determination of the incident source, determination of release/spill magnitude, identification of specific hazards associated with the incident (both health and safety hazards and fire/explosion hazards), and assessment of hazards to human health or the environment beyond the immediate incident surroundings.

Detailed hazard assessment for each incident type identified for the facility is described in the incident-specific response guidelines. Information to guide hazard assessment is obtained from Material Safety Data Sheets (MSDSs), the *North American Emergency Response Guidebook* (1996), *the NIOSH Pocket Guide to Chemical Hazards* (1997), and the *Book of Lists for Regulated Hazardous Substances* (1997).

II.2.d. Procedures for Establishment of Objectives and Priorities

Objectives will be determined by the ***ERC*** or ***IC*** upon notification of an incident. The general objective for all response activities is:

> **"To complete emergency response activities as quickly and as safely as possible to ensure the safety of the public and plant personnel while minimizing damage to the environment and property."**

The ***ERC*** or ***IC*** will define more specific objectives based on the specific incident and observed conditions. Regardless of the type or magnitude of the incident, the general priorities will be:

1. Protect the Public and Plant Personnel;
2. Protect the Environment; and
3. Protect Plant Property.

More detailed prioritization of actions will occur based on the specific incident.

II.2.d.1. Immediate Goals/Tactical Planning

First Responder actions will focus on immediate protection of personnel and the public. These actions include attending to injured personnel, evacuation, barricading of surrounding areas (as necessary), and mitigation of the problem, if possible (e.g. abate the source, cleanup of spilled materials, fire extinguisher use on incipient fire).

The ***ERC*** or ***IC*** will further plan a response to the incident as described in the incident-specific response guidelines.

II.2.d.2. Mitigating Actions

Mitigating actions necessary to control, contain, and recover during a specific incident are described in each incident-specific response guideline. Personnel discovering an incident may have the first opportunity for mitigating actions and they may take these actions **if it is safe to do so**. This may include shutting a valve at a tank if the area is not directly affected by the release and the valve can be approached without endangering their life or health. However if the situation is beyond their abilities or it is not safe to do so, mitigating actions will be completed by outside responders with proper equipment and training.

II.2.d.3. Identification of Resources Required for Response

The ***ERC*** or ***IC*** will identify resources required for each response during development of the action plan. See the "Emergency Notification Phone List" at the beginning of this section for the listing of available resources (personnel and outside resources)

and **Annex 10** for a list of available materials, quantities, capabilities and locations for emergency response equipment and supplies. The locations of emergency response equipment are shown on **Figures 4 & 5** in **Annex 1**.

II.2.e. Procedures for Implementation of Tactical Plan

Because facility employees are not trained hazardous materials emergency responders or fire fighters, the tactical action plan will be determined by the ***IC*** based on incident-specific information. Implementation is based on training and established procedures, internal and external communications, and utilizing the response management system described above.

II.2.f. Procedures for Mobilization of Resources

The ***ERC*** or ***IC*** will mobilize the resources necessary for execution of the tactical plans as they are developed based on each incident-specific response guideline or at the scene by the ***IC***. Plant personnel may be directed to assist in mobilization using the "Emergency Notification Phone List" and other resources lists. Key off-site resources (Middletown South Fire District, OSRO contractor, and other critical resources) have been notified, consulted or contracted in advance regarding the potential need for their services.

II.2.g. Incident-Specific Emergency Response Guidelines

Incident specific emergency response guidelines are presented on the following pages.

PETROLEUM OR CHEMICAL RELEASE

DISCOVERY, NOTIFICATION, PRELIMINARY ASSESSMENT

Event	Responsibility	Action
Upon **detecting** a spill or release	All Employees	1. **NOTIFY** the **Control Room Operator** using plant two-way radios or Gai-tronics (PA) system or by dialing the cell phone listed in the EMERGENCY NOTIFICATION PHONE LIST on page II-2 and provide the location and nature of the release. This notification must be done regardless of the size of the discharge. 2. If possible <u>without endangering yourself</u>, **STOP** the product flow by securing pumps, closing valves, etc. – DO NOT WALK INTO OR TOUCH ANY SPILLED MATERIAL. – DO NOT ENTER ANY SPACE OR PERFORM ANY ACTIONS THAT MAY CONTAIN IDLH ATMOSPHERES UNLESS IT CAN BE SAFELY ASSESSED AND IS FOUND TO BE NON-IDLH. 3. **SHUTOFF** ignition sources (e.g. motors, electrical circuits, open flames, etc.) around flammable gas or flammable/combustible liquid releases, if safe to do so. 4. **INITIATE** containment activities to stop the flow and spread of the release, if safe to do so. If outside secondary containment, as applicable: – Use absorbent material to prevent spread / absorb spill – Place drain-blocker mat over nearby/downhill storm drains – Place absorbent boom/material across drainage flow paths (e.g., in catch basin) – Place 25'x10" deep booms at downstream end of storm basins 5. **ATTEND** to injured personnel; if safe to do so (see First Aid in MSDS). 6. **EVACUATE** surrounding area, as necessary, and remain upwind. 7. **BARRICADE** area from safe distance and deny entry, as necessary.
Upon **receiving notification** of a spill or release	Emergency Response Coordinator (***ERC***) (Qualified Individual)	8. Carefully approach location and **ASSESS** if immediate EVACUATION and/or offsite EMERGENCY RESPONSE assistance is needed (SEE MATERIAL-SPECIFIC RESPONSE GUIDES). NOTE: The SPILL RESPONSE NOTIFICATION FORM can be used to gather and document the status of the incident. 9. If necessary, **ACTIVATE** Emergency Response Action Plan and make notifications of additional response resources needed (e.g., outside spill contractor). REFER to the MATERIAL-SPECIFIC RESPONSE GUIDANCE following this page.
FULLY CONTAINED Release (Impervious containment, no significant vapor threat)	***ERC*** or Designee	10. **NOTIFY**: ❑ Oil Spill Removal Organization (OSRO Contractor) - Clean Harbors (800-645-8265) (<1.5 hour response) NOTE: Spills to on-site treatment or impervious containment may not be reportable. ❑ The National Response Center (1-800-424-8802) immediately if RQ is reached. ❑ Connecticut Dept. of Environmental Protection (CT DEP) 860-424-3338

PETROLEUM OR CHEMICAL RELEASE

Event	Responsibility	Action
Spill or Release to **WATER**	***ERC*** or Designee	11. **NOTIFY**: ❑ Oil Spill Removal Organization (OSRO Contractor) - Clean Harbors (800-645-8265) (1.5 hour response) ❑ NRG Facility (Intakes and Onsite Boom for immediate deployment) Shift Supervisor 860-346-9639 ❑ The National Response Center (1-800-424-8802) immediately if RQ. ❑ Connecticut Dept. of Environmental Protection (CT DEP) 860-424-3338 ❑ United States Environmental Protection Agency (215-814-9016) ❑ Pratt & Whitney– 24 hr. Emergency 860-344-5111 NOTE: Spills to on-site treatment or impervious containment may not be reportable.
Spill or Release to **SOIL**	***ERC*** or Designee	12. **NOTIFY**: ❑ If Outside Response is Required: OSRO Contractor - Clean Harbors (800-645-8265) (1 hour personnel, 1.5 hour equipment response) ❑ The National Response Center (1-800-424-8802) immediately if RQ. ❑ Connecticut Dept. of Environmental Protection (CT DEP) 860-424-3338
Hazmat Emergency Due to Potential Vapor Exposure or Ignition	***ERC*** or Designee	13. **NOTIFY**: ❑ 911 if Hazmat needed (e.g., ammonia vapor) or Fire Department needed for potential fire/explosion hazard ❑ Connecticut Dept. of Environmental Protection (CT DEP) 860-424-3338
Spill or Release necessitating **EVACUATION**	***ERC*** or Designee	14. Uses the plant GAI-Tronics system to announce, "**The facility is being evacuated in response to an oil spill, please evacuate in a calm and orderly fashion to the …**" Announcement must be repeated 3 times slowly and clearly. Safest evacuation site will be determined by ***ERC*** based on details of the spill (i.e., type of materials involved, location of incident, etc.).
If instructed to **EVACUATE**	All Plant Employees	15. **EVACUATE** facility according to Evacuation Plan and ERC instructions.
After evacuating the facility		16. **ASSEMBLE** in area(s) noted by ERC.
After evacuating to proper assembly point	Shift Supervisors	17. Determine employee **HEAD COUNT**.
		18. **REPORT** results to ERC or designee.
After receiving head count	***ERC*** or Designee	19. If an employee(s) is missing, attempt to locate employee at evacuation locations. Otherwise, work with outside emergency responders to initiate a rescue.

PETROLEUM OR CHEMICAL RELEASE

QUICK-GUIDE FOR DISCOVERY/INITIAL RESPONSE

Storage Area/Equipment/Contents	Max. Volume/ Federal RQ *	Hazard Summary	Initial Response Guide
Natural Gas / Flam. Liquids			
Natural Gas Conditioning/ Gas Compressor/ Gas Feed Systems	< 425 gal RQ: Sheen on Navigable Waterway*	Fire / Explosion Hazard LEL 1.1%	Prohibit open flames, sparks, or ignition sources from area. Use Combustible Gas Indicator to assess if potential IDLH. If <10% of LEL, >19.5% Oxygen, may approach to mitigate. Otherwise, shut upstream source, allow natural ventilation, if possible, and withdraw to a safe distance.
Comb. Liq. (ULSD/No. 2 F.O.)			
Fuel Oil Storage Tanks (2); Diesel Fuel Tanks (many Emer. Gen.)	4,061,400 gal (2) & several 150-4000 gal RQ: Sheen on Navigable Waterway*	Fire Hazard: FP: 125°F LEL 0.6% PEL 100 ppm	Prohibit open flames, sparks, or ignition sources. If mist (atomization) or vapor (>125°F source), use CGI to assess if potential IDLH. If <10% of LEL, may approach to mitigate; respirator may be required if >1% of LEL. Absorb or pump. Collect small spills in drums, cover, label, and store properly.
Lube Oil / Transformer Oil			
Lube Oil & Hydraulic Oil Reservoirs, Transformers, Drums	100 to 23,834 RQ: Sheen on Navigable Waterway*	Fire Hazard: FP: >200°F LEL 0.9% PEL 5 mg/m^3	Prohibit open flames, sparks, or ignition sources. If mist (atomization) or vapor (very high temp, source), use CGI to assess if potential IDLH. If <10% of LEL, may approach to mitigate; respirator may be required if >1% of LEL. Absorb or pump. Due to viscosity, oils and combustible sludges may require high suction pumps. Collect small spills in drums, cover, label, and store properly.
Aqueous Ammonia			
Aqueous Ammonia Storage Tank (19.0% Ammonium Hydroxide)	40,000 gal RQ: 100 lbs.* vapor; 1000 lbs.* liquid (US)	Toxic / Volatile: PEL 50 ppm IDLH 300 ppm	Use area & hand-held detectors to assess if >PEL or IDLH. May approach to mitigate if < PEL (or with APR if trained/qualified & safely below IDLH). Vapor may displace oxygen, be a fire/explosion hazard in a confined area and pose a hazard to life. Allow area ventilation to clear gas. Use exhaust blower, large fans, or smoke ejectors as needed. Refer to MSDS for medical aid.
IWTP			
Calcium Hypochlorite Solution Tank (1.6%, made from C2180T Tablets, 68% CaOCl) – IWTP	30 gal RQ 10 lbs.*	Oxidizer Fire Initiator (tablets and moisture)	Avoid mixing with acids (evolves large quantities of chlorine gas with 1 ppm PEL; 10 ppm IDLH). Recover dry with appropriate skin protection if possible. Containerize liquid spills in corrosion resistant containers.
Circulating Water Chem. Tmt.			
Corrosion/Scale Inhibitor Stg Tk (CL-4435; <7% 1−Hydroxy ethylidene −1,1−di phosphonic acid, tetrapotassium salt)	1,500 gal RQ – None*	Non-Haz	Avoid eye contact. Recover and containerize liquid spills.
Sodium Hypochlorite Storage Tank (12-14%)	4,600 gal RQ 10 lbs.*	Oxidizer Volatile (Cl_2): PEL 1 ppm IDLH 10 ppm	Spill in confined area risks exceeding 1 ppm PEL; 10 ppm IDLH for Cl_2. Avoid mixing with acids (evolves large quantities of chlorine gas). Recover with appropriate skin protection. Containerize liquid spills in corrosion resistant containers.

* Thresholds are for federal reporting. All releases must be reported to Connecticut DEP, regardless of size.

PETROLEUM OR CHEMICAL RELEASE

Storage Area/Equipment/Contents	Max. Volume/ Federal RQ *	Hazard Summary	Initial Response Guide
Sodium Bromide Storage Tank (40%)	2,000 gal RQ – None*	Contact Hazard Only	Avoid skin contact. Recover with appropriate skin protection.
Sulfuric Acid Storage Tank (93%)	6,000 gal RQ 1000 lbs.*	Acid Corrosive PEL0.25 ppm	Avoid mixing with bases (evolves heat and toxic gases). Avoid contact with skin/eyes. Small quantities may be sprinkled with neutralizing agent. Notify ERC for larger spills.
Water Treatment Building			
Sodium Hypochlorite Tote (12-14%)	4,600 gal RQ 10 lbs.*	Oxidizer Volatile (Cl_2): PEL 1 ppm IDLH 10 ppm	Spill in confined area risks exceeding 1 ppm PEL; 10 ppm IDLH for Cl_2. Avoid mixing with acids (evolves large quantities of chlorine gas). Recover with appropriate skin protection. Containerize liquid spills in corrosion resistant containers.
Sulfuric Acid Tote (93%)	300 gal RQ 1000 lbs.*	Acid Corrosive PEL0.25 ppm	Avoid mixing with bases (evolves heat and toxic gases). Avoid contact with skin/eyes. Small quantities may be sprinkled with neutralizing agent. Notify ERC for larger spills.
Sodium Bisulfite Tote (BL124, Chlorine scavenger, <40%)	300 gal RQ 5000 lbs.*	Corrosive Reducing Agent PEL: 5 mg/m³	Avoid mixing with acids/oxidizers (generates heat, sulfur dioxide gas). Avoid vapors in confined areas. Avoid skin contact. Recover with appropriate skin protection. Containerize spills in corrosion resistant containers.
Anti-Scalant Tote (RL9004, <7% 1−Hydroxy ethylidene −1,1−diphosphonic acid)	300 gal RQ – None*	Contact Hazard Only	Avoid skin contact. Recover with appropriate skin protection.
Oxygen Scavenger Tote, Carbohydrazide (BL1260, <10%)	300 gal RQ- None*	Contact Hazard Only	Avoid skin contact. Recover with appropriate skin protection.
Amine Tote (B152, <30% ammonium hydroxide, <10% ethanolamine)	300 gal RQ: 100 lbs.* vapor; 1000 lbs.* liquid	Toxic/Volatile: PEL 50 ppm IDLH 300 ppm (Ammonia)	See aqueous ammonia above but note lower ethanolamine PEL of 6 mg/m^3
Sodium Phosphate Tote (BL1794, <5%)	300 gal RQ 5000 lbs.*	Contact Hazard Only	Avoid skin contact. Recover with appropriate skin protection.
Auxiliary Boiler Oxygen Scavenger Tote (BL1258, <60% Potassium Sulfite ; <30% Sodium Sulfite-)	80 gal RQ 5000 lbs.*	Corrosive Reducing Agent PEL: 5 mg/m³ (Na2SO3)	Avoid mixing with acids/oxidizers (generates heat, sulfur dioxide gas). Avoid vapors in confined areas. Avoid skin contact. Recover with appropriate skin protection. Containerize spills in corrosion resistant containers.
Auxiliary Boiler Phosphate Tote (BL8703, Potassium Hydroxide and various - see MSDS)	80 gal RQ 1000 lbs.* (KOH)	Corrosive Caustic	Avoid mixing with acids/oxidizers (generates heat). Avoid skin contact. Recover with appropriate skin protection. Containerize spills in corrosion resistant containers.
Miscellaneous			
Compressed Gases (Various)	Cylinders	See MSDS	Allow area ventilation to clear gas. Use exhaust blower, large fans, or smoke ejectors as needed. Prohibit open flame/sparks/ignition source for flam. gas. Use caution - many gases will displace oxygen and pose a hazard to life. Refer to MSDS.

* Thresholds are for federal reporting. <u>All releases must be reported to Connecticut DEP</u>, regardless of size.

FIRE

Event	Responsibility	Action
Detecting a fire or explosion	All Employees	1. If trained in portable extinguisher use, **RESPOND** to a small / incipient fire by using portable fire extinguisher to extinguish. BE CAUTIOUS of BLEVE RISK from leaking, hot, confined or adjacent flammable or combustible gases or liquids. If not trained, unable to respond, it is a larger fire, or if assistance is needed proceed immediately to Step 2 below.
		2. **NOTIFY** Control Room Operator using plant two-way radios or Gai-tronics (PA) system or by dialing cell phone listed in EMERGENCY NOTIFICATION PHONE LIST on page II-2 and provide location and nature of the fire (notify regardless of the fire size or if extinguished).
Receiving Notification of a fire or explosion	Emergency Response Coordinator (***ERC***)	3. Carefully approach location and **ASSESS** if a controllable incipient fire or if immediate SHUTDOWN, EVACUATION and/or offsite EMERGENCY RESPONSE is needed.
Fire Beyond Incipient Stage or explosion	Emergency Response Coordinator (***ERC***)	**IF NECESSARY**: 4. Order **SHUTDOWN** of affected plant area or entire plant, including all Natural Gas and Fuel Oil main shutoff valves. 5. **ACTIVATE** Emergency Response Action Plan. 6. **EVACUATE** local area by Gai-tronics announcement if the source is known to be limited or entire plant by pulling lever on any fire alarm station and sounding the emergency evacuation alarm. 7. **NOTIFY** 911 for Fire Department assistance.
	Middletown South Fire District	8. **RESPOND** to location communicated by site personnel posted at the gate to control and extinguish the fire.
Evacuation announcement or alarm	Evacuation Aides	9. **ASSISTS** with evacuation of any employees requiring assistance.
	All Plant Employees	10. Immediately **EVACUATE** facility/building via closest & safest exit. See Evacuation Plan (**GREEN TAB**)
		11. **ASSEMBLE** for a head count in primary emergency assembly area or alternate assembly point determined by ***ERC***. See Evacuation Plan (**GREEN TAB**)
After **Assembly**	Maintenance Superv. (or Plant Eng.) and Contractor Supervisors	12. **HEAD COUNT** vs. employees on duty & Visitor/Contractors log. 13. **TRY TO LOCATE** missing at other assembly areas by phone, etc. 14. **REPORT** those believed missing to ***ERC*** or designee.
After **Head Count**	***ERC***	15. Immediately **REPORT MISSING** to outside emergency responders to alert them to the need to initiate a rescue.
No employee shall be disciplined if it is in their best judgment that a facility evacuation and/or outside services are needed to protect the safety of all KLES employees and the facility.		

EXPLOSION

Event	Responsibility	Action
Major Explosion	All Employees	1. ANY EMPLOYEE aware of a MAJOR EXPLOSION is authorized to immediately initiate Emergency **SHUTDOWN** and **EVACUATION** and **NOTIFY 911** if delays in notifying the ERC may endanger life and health.
Local Small Flash or Limited "Pop"	All Employees	ONLY attempt the following mitigation if you are certain it is a local small flash fire or limited "pop" with little or no potential to endanger yourself: 2. **NOTIFY** the **Control Room Operator** using plant two-way radios or Gai-tronics (PA) system or by dialing the cell phone listed in the EMERGENCY NOTIFICATION PHONE LIST on page II-2 and provide the location and nature of the event regardless of size. 3. If possible without endangering yourself, **STOP** flammable gas or liquid flow by securing pumps, closing valves, etc. away from the source. • DO NOT ENTER ANY SPACE OR PERFORM ANY ACTIONS THAT MAY CONTAIN LEL OR OXYGEN DEFICIENT ATMOSPHERES UNLESS IT CAN BE SAFELY ASSESSED WITH A CGI AND FOUND TO BE NON-IDLH. 4. **SHUTOFF** ignition sources (e.g. motors, electrical circuits, open flames, etc.) around flammable gas or flammable/combustible liquid releases, if safe to do so. 5. **AVOID** containment actions that can enclose materials in a pipe or vessel and lead to overpressure failure and BLEVE due to heating. 6. **ATTEND** to injured personnel, if safe to do so. 7. **EVACUATE** surrounding area, as necessary. 8. **BARRICADE** area from safe distance and deny entry, as necessary.
Receiving Notification	Emergency Response Coordinator (***ERC***)	9. **ASSESS** from report & observe via video or at a distance & determine if a limited small flash or local pop warranting above action or if immediate SHUTDOWN, EVACUATION and/or offsite EMERGENCY RESPONSE is needed. If insufficient information, err on the side of caution.
Explosion Actions	Emergency Response Coordinator (***ERC***)	**IF NECESSARY:** 10. Order **SHUTDOWN** of affected plant area or entire plant, including all Natural Gas and Fuel Oil main shutoff valves. 11. **ACTIVATE** Emergency Response Action Plan. 12. **EVACUATE** local area by Gai-tronics announcement if the source is known to be limited or entire plant by pulling lever on any fire alarm station and sounding the emergency evacuation alarm. 13. **NOTIFY** 911 for Fire Department assistance.
	Middletown South Fire District	14. **RESPOND** based on debrief of specific event as communicated by 911 call and/or site personnel posted at the gate.
Evacuation announcement or alarm	Evacuation Aide	15. **ASSIST** with evacuation of any employees requiring assistance.
	All Plant Employees	16. Immediately **EVACUATE** facility/building via closest & safest exit. See Evacuation Plan (**GREEN TAB**)

		17. **ASSEMBLE** for a head count in primary emergency assembly area or alternate assembly point determined by ***ERC***. See Evacuation Plan (**GREEN TAB**)
After **Assembly**	Maintenance Superv. (or Plant Eng.) and Contractor Supervisors	18. **HEAD COUNT** vs. employees on duty & Visitor/Contractors log. 19. **TRY TO LOCATE** missing at other assembly areas by phone, etc. 20. **REPORT** those believed missing to ***ERC*** or designee.
After **Head Count**	***ERC***	21. Immediately **REPORT MISSING** to outside emergency responders to alert them to the need to initiate a rescue.
No employee shall be disciplined if it is in their best judgment that a facility evacuation and/or outside services are needed to protect the safety of all KLES employees and the facility.		

BOMB THREAT OR WORKPLACE VIOLENCE

Due to the unpredictability of a workplace violence incident, evacuation procedures will be unique and incident specific and must be developed on a case by case basis by the ERC and plant management. The main goal is to protect employees by summoning the proper authorities using 911 and evacuating all or select employees to a safe location.

Event	Responsibility	Action
Immediately upon receiving a **Telephone Threat**	All Employees	1. If possible, **DISCRETELY ALERT** a co-worker to get assistance while you remain on the phone. Co-worker may quietly or in a separate room notify the ERC or 911. If others remain silent, a speaker phone may be used to convey the discussion via cell phone (after a quiet introductory explanation) to 911. 2. **CALMLY CONVERSE** with the caller, endeavoring to collect as much information as the caller will provide as to the time and place and type of event using the **BOMB THREAT CHECKLIST** (see next page).
Immediately upon Observing On-Site **Workplace Violence** OR **Threat** by a person on-site OR **Armed Individual**	All Employees	3. If actual injury or immanent threat of injury, any employee may **CALL 911 IMMEDIATELY** and/or **ALERT STAFF** to evacuate if necessary to protect life and health and it is safe to do so. Be discrete if being heard by the perpetrator will risk violence. 4. If discretely, **CALL Control Room Operator** by regular phone or the cell phone listed in the EMERGENCY NOTIFICATION PHONE LIST on page II-2. Otherwise use plant two-way radios or Gai-tronics (PA) system, if necessary. **NOTIFY** them of the observed or received threat.
Immediately **Upon Receiving Notification** of workplace violence or threat	Control Room Operator	5. **CALL 911** for all actual incidents, threatened violence or a weapon. Report incident specifics (i.e. bomb threat over the phone, individual with a weapon, etc.) and facility location.
	Emergency Response Coordinator (***ERC***)	6. **EVALUATE** the situation and risk to employee safety and decide whether to either evacuate the entire facility or select parts of the facility or shelter-in-place until Police arrive. 7. **DECIDE** if the nature of the threat allows public notification or if this may endanger employees. 8. **NOTIFY** employees to EVACUATE either PRIVATELY (radio, phone, or word of mouth if necessary) or PUBLICLY through the Gai-tronics (PA) system or the emergency evacuation alarm.
Discrete Evacuation	All Employees	9. **EVACUATE** through the closest, safest possible exit and assemble for head count as conditions permit / if instructed.
Evacuation announcement or alarm	Evacuation Aide	10. **ASSIST** with evacuation of any employees requiring assistance.
	All Employees	11. Immediately **EVACUATE** facility/building via closest & safest exit. 12. **ASSEMBLE** for a head count in primary emergency assembly area or alternate assembly point determined by ***ERC***. See Evacuation Plan (**GREEN TAB**)
After **Assembly**	Maint. Superv. (or Plant Eng.) / Contractor Supv.	13. **HEAD COUNT** vs. employees on duty & Visitor/Contractors log. 14. **TRY TO LOCATE** missing at other assembly areas by phone, etc. 15. **REPORT** those believed missing to ***ERC*** or designee.
After **Head Count**	***ERC***	16. Immediately **REPORT MISSING** to outside emergency responders.

BOMB THREAT OR WORKPLACE VIOLENCE

BOMB THREAT TELEPHONE CHECKLIST / REPORT

Listen for or Ask:	**Exact Wording of the Threat**
1. When **is** the bomb going to explode?	
2. Where is it right now?	
3. What does it look like?	
4. What kind of bomb is it?	
5. What will cause it to explode?	
6. Did YOU place the bomb?	
7. Why?	
8. What is your address?	
9. What is your name?	

Date:		Time of Call:		Length of Call:	
Number at which call is received:					

Caller's Voice (check as appropriate)			
Male	❑	Slow	❑
Female	❑	Rapid	❑
Unknown	❑	Soft	❑
Normal	❑	Loud	❑
Estimate age		Nasal	❑
Disguised	❑	Slurred	❑
Distinct	❑	Stutter	❑
Accent	❑	Lisp	❑
Calm Angry	❑	Raspy Ragged	❑
Excited Laughter	❑	Cracking Familiar	❑
Crying	❑		❑

Background Sounds	
None	❑
Voices	❑
PA System	❑
Music	❑
Street Noises	❑
Office Machines	❑
Factory Machines	❑
Motors	❑
Other:	

Knowledge of Power Plants?	
None	❑
Some	❑
Extensive	❑
If voice is familiar, who did it sound like?	

Threat Language	
Well Spoken	❑
Message read	❑
Message taped	❑
Foul	❑
Irrational	❑
Incoherent	❑

Additional comments:	
Signed:	Printed name:

SEVERE WEATHER

Event	Responsibility	Action
Upon notification of a **Severe Weather Watch or Warning**	Emergency Response Coordinator (ERC)	1. **COORDINATE** with Plant Manager to determine if facility shutdown is required. 2. If required, **INITIATE SHUTDOWN** by contacting ***Control Room Operator.***
		3. **EVACUATE** facility, if warranted based on the type and severity of anticipated disaster event.
		4. If unable to evacuate, determine a safe place within facility and **NOTIFY ALL EMPLOYEES RELOCATE TO A SAFE LOCATION** inside the facility. NOTE: • An evacuation or relocation notice must be given over the Gai-tronics (PA) system. • For Severe Weather - Move away from perimeter and exterior offices and all exterior glass
Upon notification of **Evacuation or Relocation Orders**	All Employees	5. Comply with announcement and either **EVACUATE OR RELOCATE** as soon as possible. See Evacuation Plan (**GREEN TAB**)

MEDICAL EMERGENCY

Event	Responsibility	Action
Medical Emergency Occurs	All Employees	1. **NOTIFY** the ***Control Room Operator*** using plant two-way radios or Gai-tronics (PA) system or by dialing the cell phone listed in the EMERGENCY NOTIFICATION PHONE LIST on page II-2 and provide the location and nature of the medical emergency. 2. ANY EMPLOYEE aware of a medical emergency clearly requiring immediate outside medical attention is authorized to immediately **NOTIFY 911** if delays in notifying the ERC may endanger life and health.
After Notification	Emergency Response Coordinator (**ERC**)	3. **SUMMON** First Aid Responders by using Gai-tronics (PA) system or plant two-way radios. 4. **CALL 911** if outside medical attention is required and notification was not made by Discoverer.
After Being Summoned	First Aid Responders	5. **RESPOND** to location immediately and assists as able and when willing.
Notification of a medical emergency	Middletown South Fire District EMT & Ambulance	6. **RESPOND** to location immediately as communicated by site personnel posted at the gate and assists as required. 7. Calls for additional transport or support, if necessary.

II.2.h. Evacuation Plan

The ***ERC*** will initially decide whether to shelter-in-place in the Turbine Building or evacuate (later input may be received by the outside response agency Incident Commander). Evacuation routes and assembly areas have been mapped out to apply to all potential emergency scenarios. During an emergency event requiring site evacuation all personnel shall proceed calmly along the evacuation routes to the specified Assembly area (***Figure 3***). The evacuation alarms consist of a voice message played through the plant GAI-Tronics (PA) system followed by an announcement of which Assembly area to gather at. Evacuation will also be announced on the plant two-way radio system whenever personnel may be in the field away from buildings (i.e., day shift). Personnel may perform emergency shutdown of their equipment if they are outside the immediate hazard area, can do so quickly (within 1–2 minutes), and are not placing themselves in danger by doing so.

Proceed to the assembly area located as follows. Refer to ***Figure 3*** for Primary and Alternate evacuation routes.

Primary Assembly Area (Power Block Evacuation) – NE of Power Plant Entrance, at Security Office.

Alt. Assembly Area 2 (Power Block Evacuation) – gate NW corner of Power Block, next to Switchyard Building.

Alt. Assembly Area 3 (Site-Wide Evacuation) – River Road at Power Plant Access Road.

Access to Announced Assembly Area is Blocked - proceed to an **alternate assembly area** or any other safe location (e.g., if blocked by fumes or spilled material, travel cross-wind then upwind of source).

Do Not Re-Enter - Evacuated personal shall not re-enter the site or leave the assembly area without approval of management or incident command.

Employee, visitor, and contractor head count is conducted at the assembly areas as described below.

Employee Accountability

The Maintenance Supervisor (or Plant Engineer in his absence) will retrieve the Visitor/Contractor Log from the lobby or security station (during a plant outage, this will be retrieved by the temporary security guard). Once the assembly area is reached, the senior supervisor present from each office/department shall take a head count. The Maintenance Supervisor (or Plant Engineer in his absence) shall take a head count of all visitors and contractors (during a major outage, contractor supervisors shall take a head count of their personnel and report to KLES). This will be accomplished visually, as well as verbally, to confirm the whereabouts of all personnel, contractors, and guests. All personnel shall be positively accounted for or they will be considered to be remaining inside the facility.

Upon arrival of emergency personnel, the individual who performed the head count shall report the following information:

- Name and location of persons still inside the facility (or unaccounted for), and the reason for their remaining (i.e. injuries, trapped, monitoring critical processes, etc.), if known.
- Incident events and facility conditions observed on your way out of the building, (e.g. visible flames, smoke, odors, spills, structural collapse, sounds, etc.)

Alert the emergency responders to any conditions left upon evacuation from your work area or any other observed areas that might endanger them or other personnel.

II.3. Sustained Actions

Longer term emergency responses generally transition into diverse mitigation strategies and recovery operations. These may require extended support functions such as lighting, heating, additional supplies, catering of food, rotation of staffing. Additionally the Emergency Response Guidelines identify the general procedures and/or actions to be taken for a particular emergency. However, the outside response organization Incident Commander is responsible for developing an emergency-specific response plan appropriate to the nature and complexity of the emergency.

Once the emergency response actions are underway, further assessment by the outside response organization Incident Commander or his/her designee is required to ensure that the course of action selected is the best possible. An on-going assessment should be performed to ensure that:

- The initial assessment of the emergency was accurate.
- The emergency response procedure is working effectively.
- Hazards to personnel, the public and the environment are being controlled.

Questions to be answered by the on-going assessment address four key areas:

The Public and Plant Personnel

- Is a material being released or potentially being released in quantities likely to affect the public or plant personnel?
- How soon might they be at risk?
- Should they be evacuated or sheltered?
- What areas of the plant or community are at risk (direction and distance)?

The Environment

- Is material being released or potentially released in exceedance of reportable quantities?
- Can the release be contained, diverted or reduced to minimize possible environmental impact?

Plant Property

- Is the emergency likely to spread to other areas (and, if so, how soon)?
- Will the hazard affect plant utilities or systems needed for safe operation?
- How soon can processes be shut down, and how must this be coordinated?

Emergency Response Actions

- Is there anything now known about the current status of the emergency that conflicts with the magnitude or nature of a previous assessment?
- Are the current actions effectively mitigating the hazard?
- Is there any additional course of action, or any additional resource, which would significantly improve the effectiveness of the action plan?

The on-going assessment is a critical tool to evaluate the current status of the response, and to keep the response actions focused on the best approaches to mitigate the emergency.

II.4. Termination and Follow-Up Actions

The outside response organization Incident Commander is responsible for determining when the emergency is over based on information received from response personnel. The facility ERC should provide technical advice on the stability of process equipment and storage areas and potential hidden hazards. In a small incident where outside organizations were not required, the facility may want to consult with off-site response agencies and/or emergency response contractor(s) before terminating the incident.

Termination should consider at a minimum:

- Is the situation stable and under control?
- Is there likely to be any release of materials or other hazard to plant personnel, public or the environment?
- Are the spill materials properly stored in accordance with the compatibility of the original material?
- Is there any need for the continued presence of off-site response contractors?
- Is there any need for continued involvement of the on-site emergency response support organization?

Emergency Documentation

Once an incident is declared over by the outside response organization Incident Commander, an Emergency Response Incident Report shall be completed by the ***ERC*** or his/her designee. The report will be based on the outside response organization after-action report, which will be obtained from the IC by the ***ERC***, and any pertinent information gathered from facility personnel regarding the initiating events and initial stages of the response. Each form will be numbered and will become an official facility report for the incident. A copy of the form shall be filed in the ***KLES Central File System***. Any of the documentation necessary to support the information contained on the form shall be included or its location referenced.

Follow-up Critiques

A follow-up critique will be conducted of every incident involving activation of the ICP in a meeting of the Facility Emergency Team to review the actions taken and decisions made, assess their effectiveness and identify lessons learned and corrective actions. The following describes the type of information which should be collected to determine lessons learned:

- Interview those individuals who initially detected the release to determine probable cause.
- Reconstruct the activities that took place during initial deployment of equipment.
- Were there any activities which occurred that should be corrected?
- Describe whether internal and/or external notifications took place without any problems. Did individuals know their responsibilities?
- Did the communication system function as it is supposed to?
- Were proper notifications made?
- Did the plan help determine who had to be called?
- Were the numbers listed accurate?
- Did the incident command system function appropriately?
- Were there discrepancies on who had responsibility for what function?
- Did staff demonstrate ability to assemble and respond to the incident?
- Were there any decisions made by the IC that affected how future response actions were implemented or resulted in difficulties for response actions?

- Were there enough personnel to carry out the actions necessary to support the operations, including food, sheltering and transportation?
- Was the ICP functional? Does any information need to be changed?

III.ANNEXES

III.1. Annex 1 - Facility and Locality Information (Part of ERAP)

III.1.a. Facility Maps and Drawings

As required by 40 CFR 112.7(a)(3), **Section III.1.a** contains diagrams showing the following:

- The layout of the fuel oil tank storage areas, chemical storage tank areas, loading/unloading areas, and secondary containment.
- The layout of the main power block area of the plant, including the locations of tanks, transformers, 55-gallon drum and oil container storage areas, loading/unloading areas, and spill response kits.
- The facility drainage features,

All outdoor storage and loading areas have secondary containment. All connecting piping is either within the containment areas or buildings or runs underground from the fuel oil storage tanks to the Turbine Building in double-wall piping with leak detection. The facility figures also show the main path of storm water or spill drainage adjacent to outdoor storage areas. The following facility maps have been included:

Figure 1 - Site Location Map

Figure 2 - Facility Plot Plan

Figure 3 - Site Evacuation Map (Exit Routes/Assembly Areas)

Figure 4 - Overall Site Plan Petroleum Storage Locations

Figure 5 – Power Block Site Plan Petroleum Storage Locations

Figure 6 - Fuel Oil Tank Drainage Plan

Figure 7 - Power Block Drainage Plan North

Figure 8 - Power Block Drainage Plan South

Figure 9 - Site Post Development Drainage Plan

Figure 10 - Map from Glastonbury to Long Island Sound

Figure 11 – Map of Receptors near KLES Facility

Figure 12 – Hartford Area Contingency Plan Sensitive Environments

Figure 13 – New Haven Area Contingency Plan Sensitive Environments

III.1.b. Facility Description/Layout

III.1.b.1. Facility Overview

The Kleen Energy Facility is located at 1349 River Road, Middletown, CT 06457 (Middlesex County). It is a 620 MW Combined cycle electric generating facility that is owned by Kleen Energy Systems, LLC, and will be operated by NAES Corporation. The site consists of 137 acres in an industrial part of the city. The site is bounded on the north by the River Road and on the west by residentially-zoned land which is now vacant. The eastern boundary is land owned by Connecticut Light & Power that contains a 345 kilovolt transmission line. The south boundary is Bow Lane. The facility employs approximately 25 employees, will be staffed 24-hour a day, 7 days a week and will generate electricity on an as needed basis per market demands and energy usage.

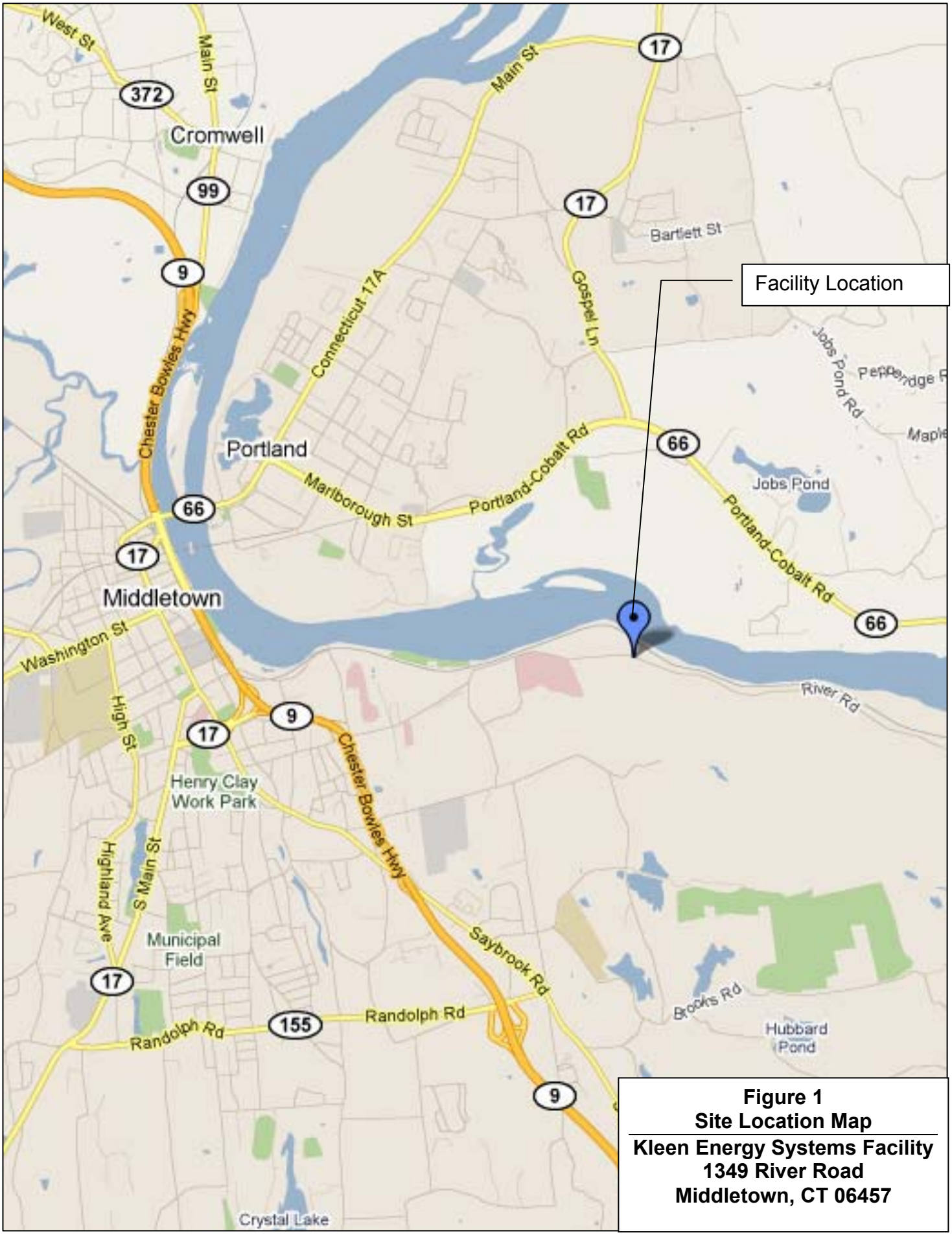
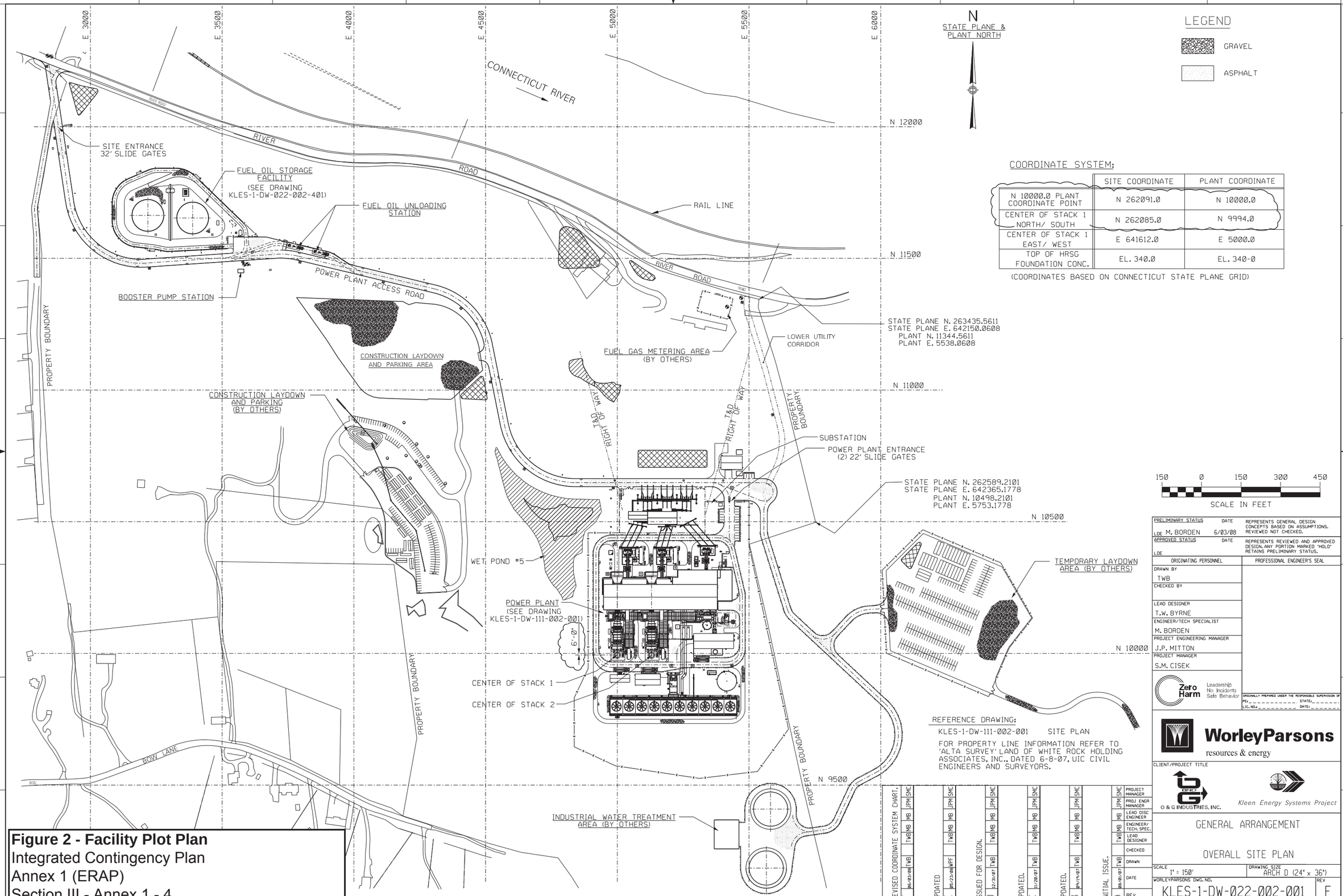


Figure 1
Site Location Map

Kleen Energy Systems Facility
1349 River Road
Middletown, CT 06457



COORDINATE SYSTEM:

	SITE COORDINATE	PLANT COORDINATE
N 10000.0 PLANT COORDINATE POINT	N 262091.0	N 10000.0
CENTER OF STACK 1 NORTH/ SOUTH	N 262085.0	N 9994.0
CENTER OF STACK 1 EAST/ WEST	E 641612.0	E 5000.0
TOP OF HRSG FOUNDATION CONC.	EL. 340.0	EL. 340-0

(COORDINATES BASED ON CONNECTICUT STATE PLANE GRID)

REFERENCE DRAWING:
KLES-1-DW-111-002-001 SITE PLAN

FOR PROPERTY LINE INFORMATION REFER TO 'ALTA SURVEY' LAND OF WHITE ROCK HOLDING ASSOCIATES, INC., DATED 6-8-07, UIC CIVIL ENGINEERS AND SURVEYORS.

Figure 2 - Facility Plot Plan
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 4

REVISED COORDINATE SYSTEM CHART.													
F	06/02/08	TWB	MB	JPM	SMC	PROJECT MANAGER
													PROJ ENGR MANAGER
													LEAD DISC ENGINEER
													ENGINEER/ TECH. SPEC.
													LEAD DESIGNER
													CHECKED
													DRAWN
													DATE
													REV
UPDATED													
E	05/23/08	WPF	TWB	MB	JPM	SMC							
ISSUED FOR DESIGN.													
D	12/21/07	TWB	TWB	MB	JPM	SMC							
UPDATED.													
C	11/28/07	TWB	TWB	MB	JPM	SMC							
UPDATED.													
B	09/19/07	TWB	TWB	MB	JPM	SMC							
INITIAL ISSUE.													
A	08/01/07	TWB	TWB	MB	JPM	SMC							

PRELIMINARY STATUS	DATE	REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE M. BORDEN	6/03/08	
APPROVED STATUS	DATE	REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED 'HOLD' RETAINS PRELIMINARY STATUS.
LDE		

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: TWB	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: PE: STATE: LIC. NO.: DATE:
CHECKED BY:	
LEAD DESIGNER: T.W. BYRNE	
ENGINEER/TECH SPECIALIST: M. BORDEN	
PROJECT ENGINEERING MANAGER: J.P. MITTON	
PROJECT MANAGER: S.M. CISEK	

Zero Harm — Leadership No Incidents Safe Behavior

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

O & G INDUSTRIES, INC. — Kleen Energy Systems Project

GENERAL ARRANGEMENT

OVERALL SITE PLAN

SCALE 1" = 150' | DRAWING SIZE ARCH D (24" x 36")

WORLEYPARSONS DWG. NO. KLES-1-DW-022-002-001 | REV F

DWG-FILE: kles-1-dw-022-002-001.dgn
DWG-DATE: 03-Jun-08 09:18

Alternate Assembly Area 3
[Site-wide Evacuation

Primary Evacuation Route
and Assembly Area

Alternate Assembly Area 2

N
STATE PLANE &
PLANT NORTH

LEGEND
GRAVEL
ASPHALT

COORDINATE SYSTEM:

	SITE COORDINATE	PLANT COORDINATE
N 10000.0 PLANT COORDINATE POINT	N 262091.0	N 10000.0
CENTER OF STACK 1 NORTH/ SOUTH	N 262085.0	N 9994.0
CENTER OF STACK 1 EAST/ WEST	E 641612.0	E 5000.0
TOP OF HRSG FOUNDATION CONC.	EL. 340.0	EL. 340-0

(COORDINATES BASED ON CONNECTICUT STATE PLANE GRID)

E 3000 E 3500 E 4000 E 4500 E 5000 E 5500 E 6000
N 12000 N 11500 N 11000 N 10500 N 10000 N 9500

SITE ENTRANCE
32' SLIDE GATES
FUEL OIL STORAGE FACILITY
(SEE DRAWING
KLES-1-DW-022-002-401)
FUEL OIL UNLOADING STATION
BOOSTER PUMP STATION
POWER PLANT ACCESS ROAD
RAIL LINE
RIVER ROAD
PROPERTY BOUNDARY
CONSTRUCTION LAYDOWN AND PARKING AREA
CONSTRUCTION LAYDOWN AND PARKING (BY OTHERS)
FUEL GAS METERING AREA (BY OTHERS)
LOWER UTILITY CORRIDOR
STATE PLANE N. 263435.5611
STATE PLANE E. 642150.0608
PLANT N. 11344.5611
PLANT E. 5538.0608
SUBSTATION
POWER PLANT ENTRANCE
(2) 22' SLIDE GATES
STATE PLANE N. 262589.2101
STATE PLANE E. 642365.1778
PLANT N. 10498.2101
PLANT E. 5753.1778
WET POND #5
POWER PLANT
(SEE DRAWING
KLES-1-DW-111-002-001)
CENTER OF STACK 1
CENTER OF STACK 2
TEMPORARY LAYDOWN AREA (BY OTHERS)
INDUSTRIAL WATER TREATMENT AREA (BY OTHERS)
BOW LANE

REFERENCE DRAWING:
KLES-1-DW-111-002-001 SITE PLAN
FOR PROPERTY LINE INFORMATION REFER TO 'ALTA SURVEY' LAND OF WHITE ROCK HOLDING ASSOCIATES, INC., DATED 6-8-07, UIC CIVIL ENGINEERS AND SURVEYORS.

150 0 150 300 450
SCALE IN FEET

REVISED COORDINATE SYSTEM CHART.	UPDATED	ISSUED FOR DESIGN.	UPDATED.	UPDATED.	INITIAL ISSUE.	
F	E	D	C	B	A	REV
06/02/08	05/23/08	12/21/07	11/28/07	09/19/07	08/01/07	DATE
TWB	WPF	TWB	TWB	TWB	TWB	DRAWN
MB	MB	MB	MB	MB	MB	CHECKED
TWB	TWB	TWB	TWB	TWB	TWB	LEAD DESIGNER
MB	MB	MB	MB	MB	MB	ENGINEER/ TECH. SPEC.
JPM	JPM	JPM	JPM	JPM	JPM	PROJ ENGR MANAGER
SMC	SMC	SMC	SMC	SMC	SMC	PROJECT MANAGER

PRELIMINARY STATUS	DATE: REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
LDE M. BORDEN	6/03/08
APPROVED STATUS	DATE: REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED 'HOLD' RETAINS PRELIMINARY STATUS.
LDE	

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: TWB	
CHECKED BY:	
LEAD DESIGNER: T.W. BYRNE	
ENGINEER/TECH SPECIALIST: M. BORDEN	
PROJECT ENGINEERING MANAGER: J.P. MITTON	
PROJECT MANAGER: S.M. CISEK	

Zero Harm Leadership No Incidents Safe Behavior

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: _____ STATE: _____
LIC. NO.: _____ DATE: _____

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE
O & G INDUSTRIES, INC.
Kleen Energy Systems Project

GENERAL ARRANGEMENT

OVERALL SITE PLAN

SCALE 1" = 150'
DRAWING SIZE ARCH D (24" x 36")
WORLEYPARSONS DWG. NO. KLES-1-DW-022-002-001
REV F

DWG-FILE: kles-1-dw-022-002-001.dgn
DWG-DATE: 03-Jun-08 09:18

Figure 3 - Site Evacuation Map (Exit Routes/Assembly Areas)
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 5

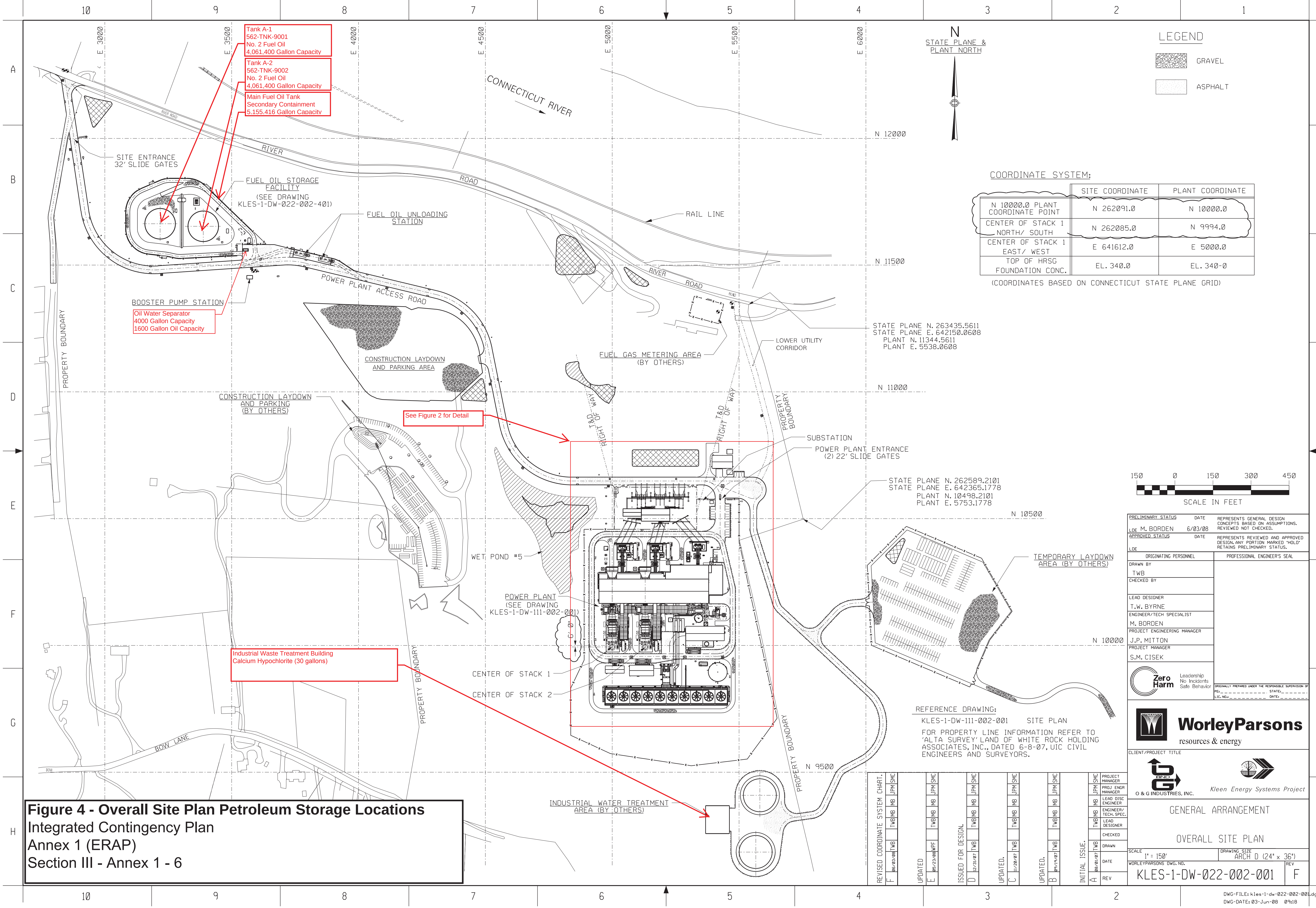
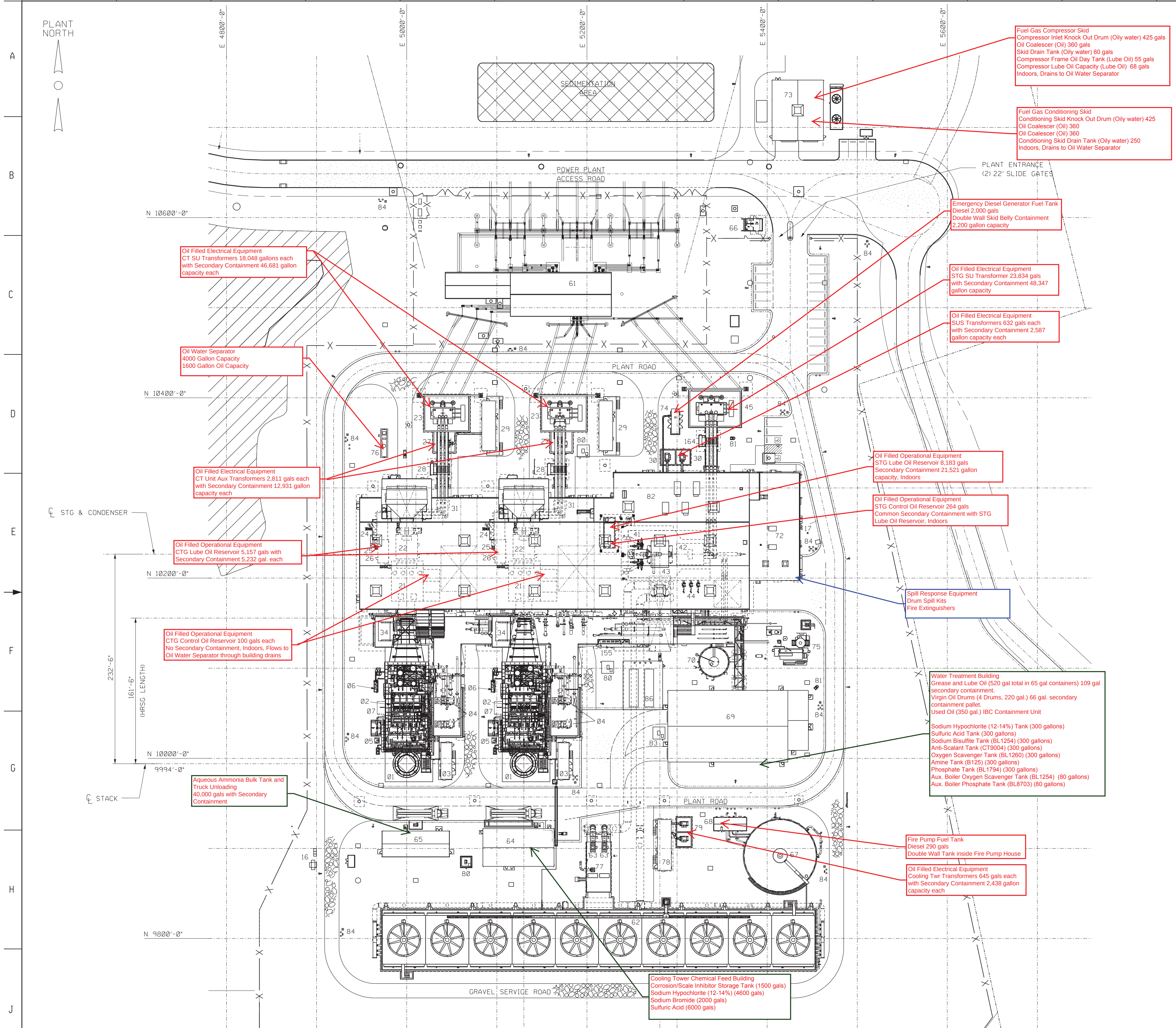


Figure 4 - Overall Site Plan Petroleum Storage Locations
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 6



01- STACK
02- HRSG
03- CEMS/ HRSG POWER DISTRIBUTION CENTER
04- FEEDWATER PUMPS WITH ENCLOSURE
05- HRSG AMMONIA INJECTION SKID
06- HRSG DUCT BURNER SKID
07- HRSG SCR DROP ZONE
16- CONSTRUCTION POWER TRANSFORMER
17- POTABLE WATER WELL
21- SIEMENS COMBUSTION TURBINE
22- SIEMENS COMBUSTION TURBINE GENERATORS (44G-1U AND 44G-2U)
23- CT GENERATOR STEP-UP TRANSFORMERS (44G-1X AND 44G-2X)
24- CT ELECTRICAL PACKAGE
25- CT MECHANICAL PACKAGE
26- CT LUBE OIL COOLER
27- CT UNIT AUX TRANSFORMERS (44G-1S AND 44G-2S)
28- CT GENERATOR CIRCUIT BREAKERS (44G-1U-2 AND 44G-2U-2)
29- MV POWER DISTRIBUTION CENTER
30- CTG SUS TRANSFORMER
31- CTG VT AND SURGE CUBICLE
34- ROTOR AIR COOLER
41- STEAM TURBINE
42- STEAM TURBINE GENERATOR (44G-3U)
43- CONDENSER
44- CONDENSATE PUMPS
45- ST GENERATOR STEP-UP TRANSFORMER (44G-3X)
61- SWITCHYARD
62- COOLING TOWER
63- CIRCULATING WATER PUMPS
64- COOLING TOWER CHEMICAL FEED BUILDING
65- AQUEOUS AMMONIA STORAGE TANK W/ BLDG (40,000 GALLONS)
66- SECURITY BUILDING
67- RAW/ FIRE WATER STORAGE TANK (1,600,000 GALLONS)
68- FIRE WATER PUMP HOUSE
69- WATER TREATMENT BUILDING
70- DEMINERALIZED WATER STORAGE TANK (215,000 GALLONS)
72- ADMINISTRATION AND MAINTENANCE BUILDING
73- FUEL GAS COMPRESSOR BUILDING
74- EMERGENCY DIESEL GENERATOR BUILDING
75- AUXILIARY BOILER
76- OIL WATER SEPARATOR
77- AUXILIARY COOLING WATER PUMP
78- COOLING TOWER PDC
79- COOLING TOWER PDC SUS TRANSFORMER
80- WASTE WATER SUMP WITH PUMPS
81- SANITARY SEWER LIFT STATION
82- ELECTRICAL AND CONTROL BUILDING
83- WTB CHEMICAL SUMP WITH PUMPS
84- FIRE HYDRANT
86- DEMIN TRAILER PARKING
155- SAMPLE PANEL WITH ENCLOSURE
164- ST GENERATOR CIRCUIT BREAKER (44G-1U-3)

REFERENCE DRAWINGS:

KLES-1-DW-022-002-001	OVERALL SITE PLAN
KLES-1-DW-111-002-101	HRSG AREA
KLES-1-DW-111-002-102	COMBUSTION TURBINE AREA
KLES-1-DW-111-002-103	COMBUSTION TURBINE TRANSFORMER AREA
KLES-1-DW-111-002-104	HRSG & CTG AREA - ELEVATION A-A
KLES-1-DW-111-002-201	STG AREA - GROUND FLOOR
KLES-1-DW-111-002-202	STG AREA - MEZZANINE FLOOR
KLES-1-DW-111-002-203	STG AREA - OPERATING FLOOR
KLES-1-DW-111-002-204	STG AREA - ELEVATION B-B
KLES-1-DW-111-002-301	WATER TREATMENT BUILDING
KLES-1-DW-111-002-303	AMMONIA STORAGE TANK ENCLOSURE
KLES-1-DW-111-002-304	COOLING TOWER CHEM FEED BUILDING

REV	DESCRIPTION					
G	UPDATED.	TWB		MB	MB	JPM/SMC
F	UPDATED. ADDED CONVEX NUMBERING.	TWB	TWB	MB	MB	JPM/SMC
E	UPDATED.	TWB	TWB	MB	MB	JPM/SMC
D	ISSUED FOR DESIGN.	TWB	TWB	MB	MB	JPM/SMC
C	UPDATED.	TWB	TWB	MB	MB	JPM/SMC
B	UPDATED.	TWB	TWB	MB	MB	JPM/SMC
A	INITIAL ISSUE.	TWB	TWB	MB	MB	JPM/SMC

PRELIMINARY STATUS — M. BORDEN 1/9/09 — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.

APPROVED STATUS — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL — PROFESSIONAL ENGINEER'S SEAL

DRAWN BY: TWB
CHECKED BY:
LEAD DESIGNER: T.W. BYRNE
ENGINEER/TECH SPECIALIST: M. BORDEN
PROJECT ENGINEERING MANAGER: J.P. MITTON
PROJECT MANAGER: S.M. CISEK

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CLIENT/PROJECT TITLE: O & G INDUSTRIES, INC. — Kleen Energy Systems Project

GENERAL ARRANGEMENT
SITE PLAN

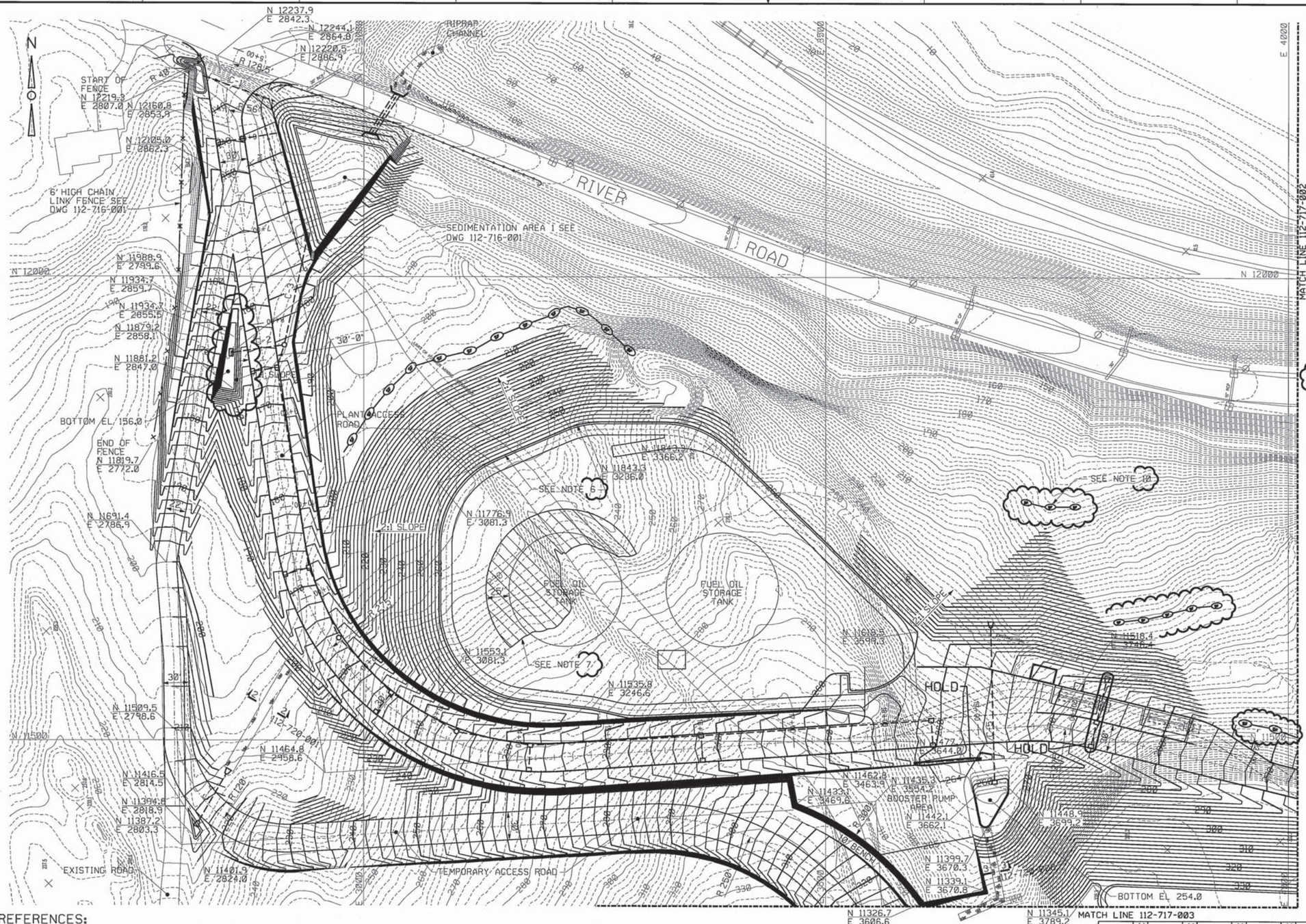
SCALE: 1" = 40'
DRAWING SIZE: ANSI E (34" x 44")
WORLEYPARSONS DWG. NO.: KLES-1-DW-111-002-001
REV: G

50 0 50 100 150 200 250
GRAPHIC SCALE IN FEET
1" = 40'

130'-0" ℄ STACK, CTG — 151'-0" ℄ UNIT 2 STACK, HRSG, & CTG — ℄ L.P. TURBINE AND CONDENSER

VHL: 29-DEC-2008 08:15:48

Figure 5 - Power Block Plan Petroleum Storage Locations
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 7



NOTES:

1. GRID SHOWN IS BASED ON WORLEYPARSONS PLANT NORTH COORDINATE SYSTEM. SEE GENERAL ARRANGEMENT DRAWING KLES-1-DW-022-002-001 FOR COORDINATE SCHEDULE.
2. BACKGROUND CONTOURS ARE FROM DRAWING BASE.DWG PROVIDED BY O&G ON JUNE 5, 2007.
3. REFER TO STORMWATER POLLUTION CONTROL PLAN DURING CONSTRUCTION.
4. ROADWAY GRADES SHOWN ARE FINAL GRADES SUBTRACT PAVEMENT THICKNESS FOR SUBGRADE ELEVATION.
5. CONTACT CT CALL BEFORE YOU DIG 1-800-922-4455 PRIOR TO EXCAVATION. LOCATE UTILITIES PRIOR TO CONSTRUCTION USING MINIMALLY INTRUSIVE EXCAVATION METHODS, PER ASCE 38-02.
6. FOR ROUGH GRADING - FILL UP TO ELEVATION 250 +/-. FINISH GRADING FOR FUEL OIL AREA LATER.
7. FILL IN THIS AREA SHALL COMPLY WITH THE DETAIL FOR FOUNDATIONS ON FILL AS SHOWN ON 112-720-003.
8. THE ROCK SLOPES SHOWN ARE APPROXIMATE. ACTUAL SLOPE TO BE DETERMINED BASED ON COMPETENT ROCK ELEVATION. SEE CUT SECTION IN ROCK DETAIL 112-720-003.
9. CHAIN LINK FENCE ALONG WESTERN PROPERTY BOUNDARY SHALL BE 6 FOOT HIGH WITH NO BARBED WIRE.
10. ADD CHECK DAMS IN DRAINAGE WAY PER STORM WATER POLLUTION CONTROL PLAN

LEGEND:

- 140 — EXISTING GRADE CONTOURS
- 180 — FINAL GRADE CONTOURS
- × 221.8 — EXISTING GRADE SPOT ELEVATION
- GUIDERAIL
- SILT FENCE
- —×— CHAIN LINK FENCE

REFERENCES:

112-716-001	SEDIMENTATION AREA 1 GRADING PLAN	112-720-003	EARTHWORK SECTIONS & DETAILS
112-717-002	GRADING & DRAINAGE PLAN SHEET 2 OF 5	112-720-008	DRAINAGE DETAILS
112-717-003	GRADING & DRAINAGE PLAN SHEET 3 OF 5		
112-717-006	ACCESS ROAD STORM DRAINAGE PLAN SHEET 1 OF 2		
112-720-001	DRAINAGE DETAILS		

Figure 6 - Fuel Oil Tank Drainage Plan
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 8

REV	DATE	DESCRIPTION	DRAWN	PROJECT MANAGER	PRDJ ENGR MANAGER	LEAD DISC ENGINEER	ENGINEER/ TECH. SPEC.	LEAD DESIGNER	CHECKED
3	30/Dec/07	REVISED GRADING FOR FUEL OIL UNLOADING AREA AT C-9, REVISED SILT FENCE AND REFERENCES	MRK	JPM	SNC	WTA	JGM	RES	JGM
2	31/Oct/07	RELEASED HOLD ON BOOSTER PUMP AREA AND ADDED REFERENCE 112-720-008	JGM	JPM	SNC	WTA	JGM	ALM	JGM
1	26/Sep/07	ADDED FENCE AT PROPERTY LINE AND NOTE 11	JGM	JPM	SNC	WTA	JGM	WTA	JGM
0	30/Aug/07	ISSUE FOR CONSTRUCTION	JGM	JPM	SNC	WTA	JGM	WTA	JGM

PRELIMINARY STATUS LDE	DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
APPROVED STATUS LDE W.T. ANUNDSON	DATE 10/08/07 — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.
ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: MRK	
CHECKED BY: A.L. MERKEL	
LEAD DESIGNER: J.G. MECK	
ENGINEER/TECH SPECIALIST: W.T. ANUNDSON	
PROJECT ENGINEERING MANAGER: J.P. MITTON	
PROJECT MANAGER: S.M. CISEK	STATE OF CONNECTICUT — WILLIAM T. ANUNDSON — No. 25973 — LICENSED PROFESSIONAL ENGINEER

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ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: PE: _____ STATE: _____ LIC. NO.: _____ DATE: _____

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CLIENT/PROJECT TITLE

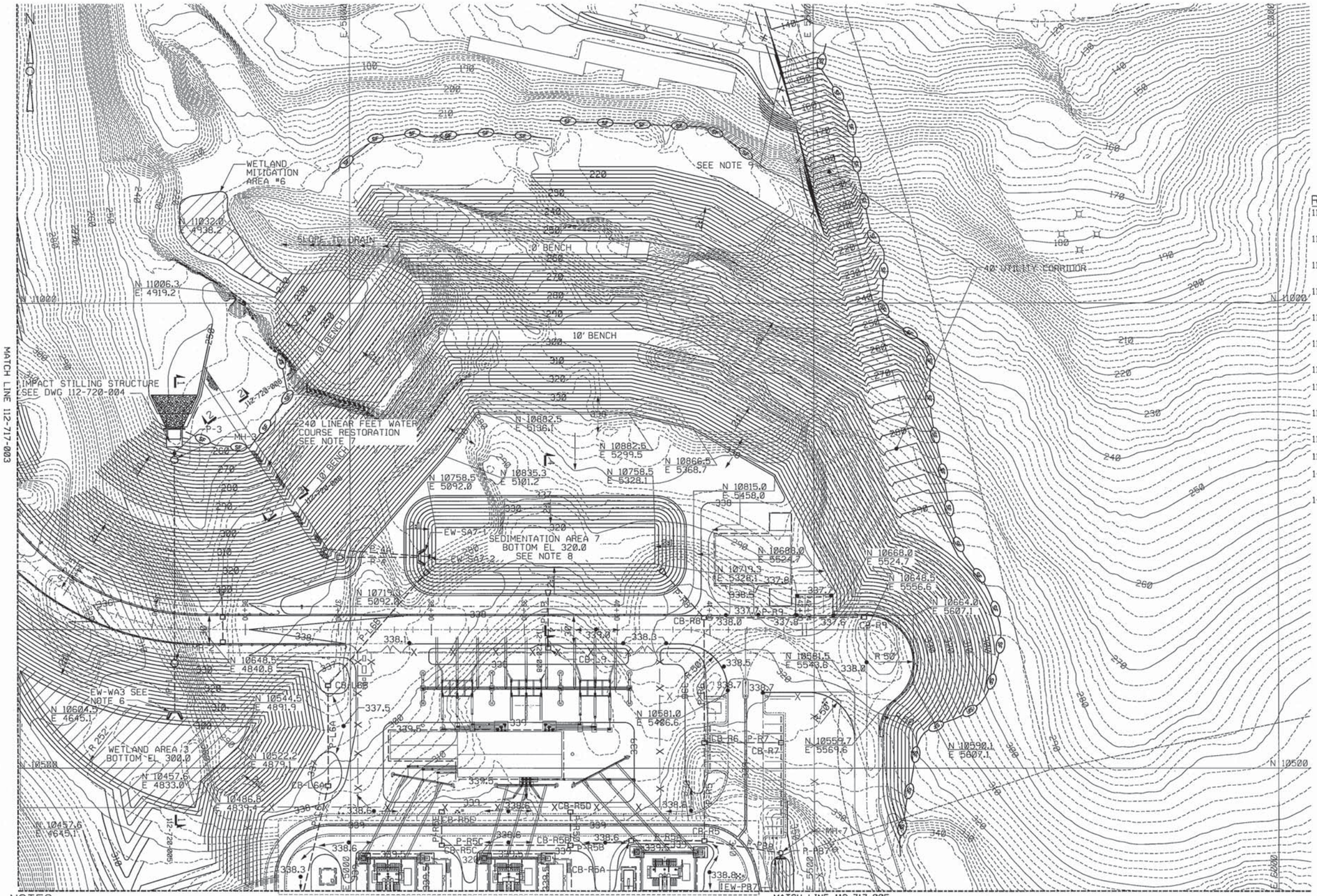
O & G INDUSTRIES, INC. — Kleen Energy Systems Project

GRADING & DRAINAGE PLAN SHEET 1 OF 5

SCALE: 1" = 50'-0" — DRAWING SIZE: ARCH D (24" x 36")

WORLEYPARSONS DWG. NO.: KLES-0-DW-112-717-001 — REV: 3

DWG-FILE: KLES-0-DW-112-717-001.dgn
DWG-DATE: 18-Jan-08 08:04



LEGEND:

- EXISTING GRADE CONTOURS
- FINAL GRADE CONTOURS
- EXISTING GRADE SPOT ELEVATION
- FINAL GRADE SPOT ELEVATION
- GUIDERAIL
- SILT FENCE
- NEW MANHOLE
- FLARED END SECTION
- PROPERTY LINE
- NEW PIPE

REFERENCES:

111-716-002	POWER BLOCK ROUGH GRADING AND ROCK EXCAVATION PLAN
111-716-004	TEMPORARY STORMWATER PIPING SEDIMENTATION AREA 7
112-717-003	GRADING & DRAINAGE PLAN SHEET 3 OF 5
112-717-005	GRADING AND DRAINAGE PLAN SHEET 5 OF 5
112-717-007	ACCESS ROAD STORM DRAINAGE PLAN SHEET 2 OF 2
112-717-010	GRADING & DRAINAGE PLAN RIVER ROAD NEAR STILLING BASIN
112-720-003	EARTHWORK SECTIONS & DETAILS
112-720-004	CONSTRUCTION DETAILS IMPACT STILLING STRUCTURE
112-720-005	WETLAND 3 CONSTRUCTION DETAILS
112-720-007	FENCE DETAILS
112-720-008	DRAINAGE DETAILS
1-112-720-003	PIPE AND CATCH BASIN SCHEDULE- MAIN PLANT AREA
1-112-720-004	CONSTRUCTION DETAILS- MAIN PLANT AREA

SCALE IN FEET: 50 0 50 100

NOTES:

1. GRID SHOWN IS BASED ON WORLEYPARSONS PLANT NORTH COORDINATE SYSTEM. SEE GENERAL ARRANGEMENT DRAWING KLES-1-DW-022-002-001 FOR COORDINATE SCHEDULE.
2. BACKGROUND CONTOURS ARE FROM DRAWING BASE.DWG PROVIDED BY O&G ON JUNE 5, 2007.
4. ROADWAY GRADES SHOWN ARE FINAL GRADES SUBTRACT PAVEMENT THICKNESS FOR SUBGRADE ELEVATION.
5. THE ROCK SLOPES SHOWN ARE APPROXIMATE. ACTUAL SLOPE TO BE DETERMINED BASED ON COMPETENT ROCK ELEVATION. SEE CUT SECTION IN ROCK DETAIL 112-720-003.
6. END WALL EW-WA3 IS PRECAST CTDOT TYPE 506 STANDARD WING TYPE END WALL WITH TRASH SCREEN. FOR TRASH SCREEN DETAILS SEE DWG 112-720-005.
7. DURING WATER COURSE CONSTRUCTION RETAIN A WETLAND SPECIALIST OR HYDROLOGIST TO ADVISE THE PLACEMENT OF STONE AND BOULDERS TO FACILITATE THE CONSTRUCTION OF THE WATER COURSE CHANNEL IN ACCORDANCE WITH THE WETLAND MITIGATION PLAN.
8. USE RELATIVELY IMPERMEABLE SILTY OR CLAYEY SOILS AS A LINER OF SEDIMENTATION AREA 7 UP TO ELEVATION 333 FEET (POND BOTTOM AND SIDE SLOPES). MINIMUM THICKNESS OF RELATIVELY IMPERMEABLE SOILS SHALL BE 18 INCHES. THESE SOILS SHALL BE PLACED AND COMPACTED TO A FIRM CONDITION AND SHALL HAVE AT LEAST 20 PERCENT PASSING THE NO. 200 SIEVE. PLACE 6 INCHES TOPSOIL ATOP RELATIVELY IMPERMEABLE SOILS TO PROMOTE VEGETATION.
9. MAKE 1H:6V ROCK CUT SLOPE WHERE CONDITIONS ALLOW.

3	JDM	RES	JDM	WTA	JPM	SMC	ADDED POWER BLOCK GRADING FOR REVIEW AND PLACED ON HOLD
2	JDM	LJB	RES	JDM	WTA	JPM	SMC	REVISED GRADING FOR UTILITY COORIDOR AND NOTES 6-9 ADDED NOTES 9,10 AND 11. ADDED WATER COURSE RESTORATION AND RELEASED HOLD
1	JDM	ER	JDM	ALM	WTA	JPM	SMC	RELEASED HOLD ON POWERBLOCK GRADING ISSUE FOR CONSTRUCTION
0	JDM	MRK	ALM	JDM	WTA	JPM	SMC	REV / DATE / DRAWN / CHECKED / LEAD DESIGNER / ENGINEER/ TECH. SPEC. / LEAD DISC ENGINEER / PROJ ENGR MANAGER / PROJECT MANAGER

PRELIMINARY STATUS — LDE — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
APPROVED STATUS — LDE W.T. ANUNDSON 10/30/07 — DATE — REPRESENTS REVIEWED AND APPROVED RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY: MRK	STATE OF CONNECTICUT — WILLIAM T. ANUNDSON — No. 21293 — REGISTERED PROFESSIONAL ENGINEER
CHECKED BY: A.L. MERKEL	
LEAD DESIGNER: J.G. MECK	
ENGINEER/TECH SPECIALIST: W.T. ANUNDSON	
PROJECT ENGINEERING MANAGER: J.P. MITTON	
PROJECT MANAGER: S.M. CISEK	

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ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF — YES — LIC. NO. — STATE — DATE

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

O & G INDUSTRIES, INC. — Kleen Energy Systems Project

GRADING & DRAINAGE PLAN SHEET 4 OF 5

SCALE: 1" = 50'-0" — DRAWING SIZE: ARCH D (24" x 36")

WORLEYPARSONS DWG. NO.: KLES-0-DW-112-717-004 — REV: 3

...\KLES-0-DW-112-717-004.dgn 8/5/2008 9:57:51 AM

Figure 7 - Power Block Drainage Plan North
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 9

MATCH LINE 112-717-004

EXISTING GRADE REMOVED FOR CLARITY IN POWERBLOCK AREA

NOTES:

1. GRID SHOWN IS BASED ON WORLEYPARSONS PLANT NORTH COORDINATE SYSTEM, SEE GENERAL ARRANGEMENT DRAWING KLES-1-DW-002-001 FOR COORDINATE SCHEDULE.
2. BACKGROUND CONTOURS ARE FROM DRAWING BASE.DWG PROVIDED BY O&G ON JUNE 5, 2007.
3. REFER TO STORMWATER POLLUTION CONTROL PLAN DURING CONSTRUCTION.
4. GRADES SHOWN ARE FINAL GRADES. SUBTRACT PAVEMENT SURFACING THICKNESS FOR SUBGRADE ELEVATION.
5. THE ROCK SLOPES SHOWN ARE APPROXIMATE. ACTUAL SLOPE TO BE DETERMINED BASED ON COMPETENT ROCK ELEVATION. SEE CUT SECTION IN ROCK DETAIL ON DWG 112-720-003.

LEGEND:

- EXISTING GRADE CONTOURS
- FINAL GRADE CONTOURS
- EXISTING GRADE SPOT ELEVATION
- FENCE
- FINAL GRADE SPOT ELEVATION
- NEW CATCH BASIN
- NEW MANHOLE
- FLARED END SECTION
- NEW PIPE
- SURFACE FLOW ARROW

SCALE IN FEET: 50 0 50 100

REFERENCES:

112-717-004	GRADING & DRAINAGE PLAN SHEET 4 OF 5	1-111-716-002	POWER BLOCK ROUGH GRADING AND ROCK ELEVATION PLAN
112-720-003	EARTHWORK SECTIONS AND DETAILS	1-112-720-003	PIPE AND CATCH BASIN SCHEDULE- MAIN PLANT
		1-112-720-004	CONSTRUCTION DETAILS- MAIN PLANT AREA

Figure 8 - Power Block Drainage Plan South
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 10

PRELIMINARY STATUS	DATE	REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS REVIEWED NOT CHECKED			
LDE					
APPROVED STATUS	DATE	REPRESENTS REVIEWED AND APPROVED DESIGN ANY PORTION MARKED HOLD RETAINS PRELIMINARY STATUS			
LDE W.T ANUNDSON	08/05/08				
ORIGINATING PERSONNEL		PROFESSIONAL ENGINEER'S SEAL			
DRAWN BY: JGM					
CHECKED BY: R.E. STOUDT					
LEAD DESIGNER: J.G. MECK					
ENGINEER/TECH SPECIALIST: W T ANUNDSON					
PROJECT ENGINEERING MANAGER: J.P. MITTON					
PROJECT MANAGER: S M CISEK					

STATE OF CONNECTICUT — WADE T. ANUNDSON — No 25973 — LICENSED PROFESSIONAL ENGINEER — 10-15-08

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ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF: PE: _____ STATE: _____ LIC NO.: _____ DATE: _____

WorleyParsons resources & energy

CLIENT/PROJECT TITLE

O & G INDUSTRIES, INC

Kleen Energy Systems Project

GRADING & DRAINAGE PLAN SHEET 5 OF 5

SCALE	DRAWING SIZE
1" = 50'-0"	ARCH D (24" x 36")

WORLEYPARSONS DWG NO: KLES-0-DW-112-717-005 REV: 1

REV	DATE	DRAWN	CHECKED	LEAD DESIGNER	ENGINEER/ TECH SPEC	LEAD DISC ENGINEER	PROJ ENGR MANAGER	PROJECT MANAGER
0	10/15/08	JGM	RES	JGM	WTA	WTA	JPM	SMC
1	12/15/08	JGM	RES	JGM	WTA	WTA	JPM	SMC

REVISED GRADING FOR ROLL-UP DOORS

ISSUE FOR CONSTRUCTION

\KLES-0-DW-112-717-005.dgn 12/15/2008 10:31:48 AM

STORM WATER MANAGEMENT DESIGN
PERMIT DRAWINGS
NOT FOR CONSTRUCTION

INFORMATION ONLY

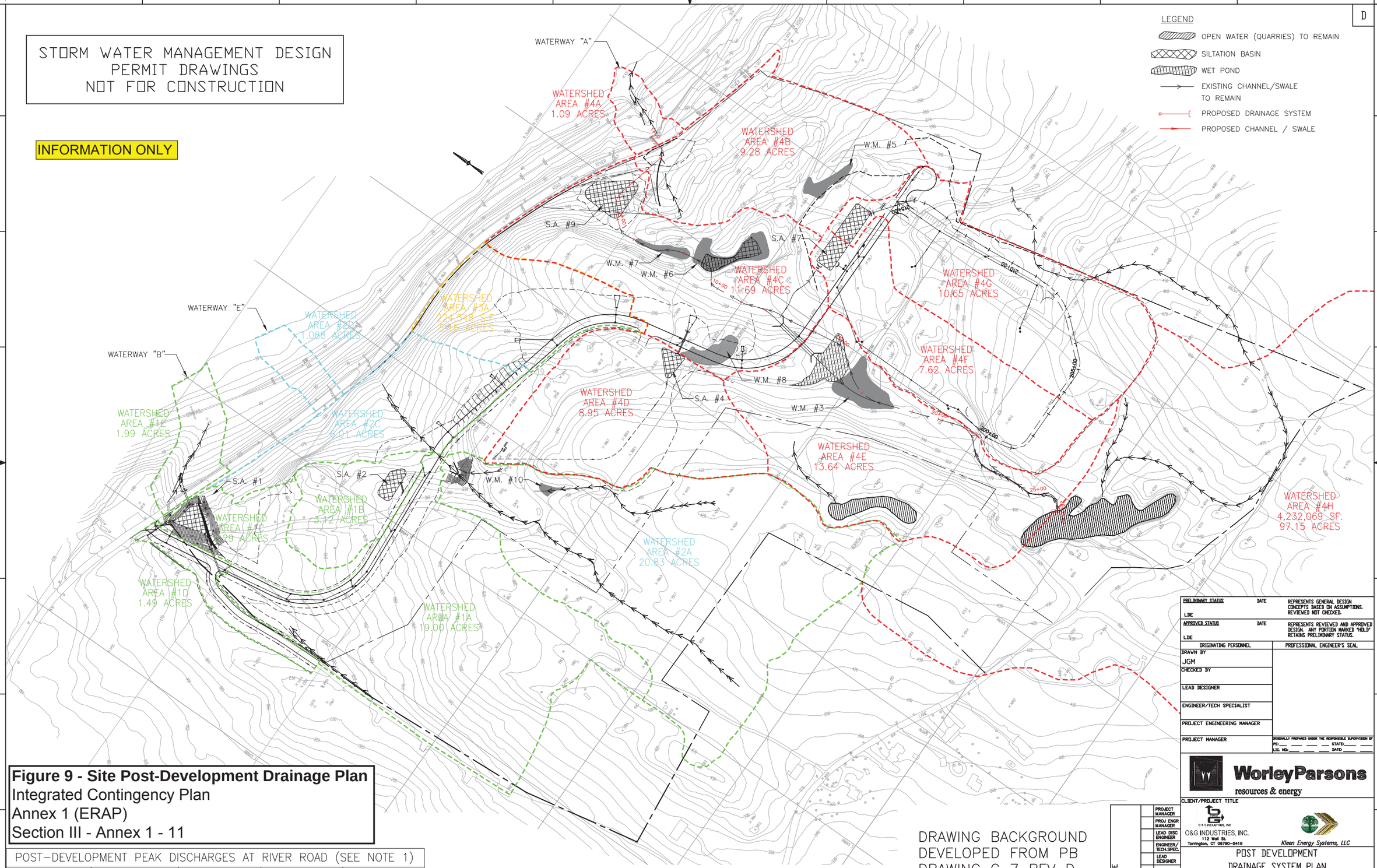

Figure 9 - Site Post-Development Drainage Plan
Integrated Contingency Plan
Annex 1 (ERAP)
Section III - Annex 1 - 11

POST–DEVELOPMENT PEAK DISCHARGES AT RIVER ROAD (SEE NOTE 1)

WATERSHED AREA	#1 (26.90 Acres)	#2 (26.84 Acres)	#3 (5.15 Acres)	#4 (158.98 Acres)
2 YR. STORM	20 c.f.s.	26 c.f.s.	6 c.f.s.	43 c.f.s.
10 YR. STORM	50 c.f.s.	58 c.f.s.	13 c.f.s.	114 c.f.s.
25 YR. STORM	60 c.f.s.	70 c.f.s.	15 c.f.s.	143 c.f.s.
100 YR. STORM	109 c.f.s.	101 c.f.s.	22 c.f.s.	222 c.f.s.

NOTES

1. WATERSHED AREA AND STORM WATER FLOWS (c.f.s) DO NOT INCLUDE WATERSHED AREAS (1E, 2D, 4A) BELOW RIVER ROAD.

150 75 0 150 300
SCALE IN FEET

DRAWING BACKGROUND DEVELOPED FROM PB DRAWING C 7 REV D DATED 10/28/05

PRELIMINARY STATUS / DATE	REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED. L.D.E.
APPROVED STATUS / DATE	REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS. L.D.E.
ORIGINATING PERSONNEL	PROFESSIONAL ENGINEER'S SEAL
DRAWN BY	JGM
CHECKED BY	
LEAD DESIGNER	
ENGINEER/TECH SPECIALIST	
PROJECT ENGINEERING MANAGER	
PROJECT MANAGER	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: ___ STATE: ___ LIC. NO.: ___ DATED ___

WorleyParsons
resources & energy

CLIENT/PROJECT TITLE
O&G INDUSTRIES, INC.
112 Wall St.
Torrington, CT 06790-5416
Kleen Energy Systems, LLC

POST DEVELOPMENT
DRAINAGE SYSTEM PLAN

SCALE

WORLEYPARSONS DWG. NO. KLES-2-SK-024-717-008 REV A

PRELIMINARY ISSUE

PROJECT MANAGER	
PROJ ENGR MANAGER	
LEAD DISC ENGINEER	
ENGINEER/ TECH.SPEC.	
LEAD DESIGNER	
CHECKED	
DRAWN	JGM
DATE	11/21/05
REV	A

FAC | PIPING | I & C | ELECT | MECH | CIVIL | STRUC

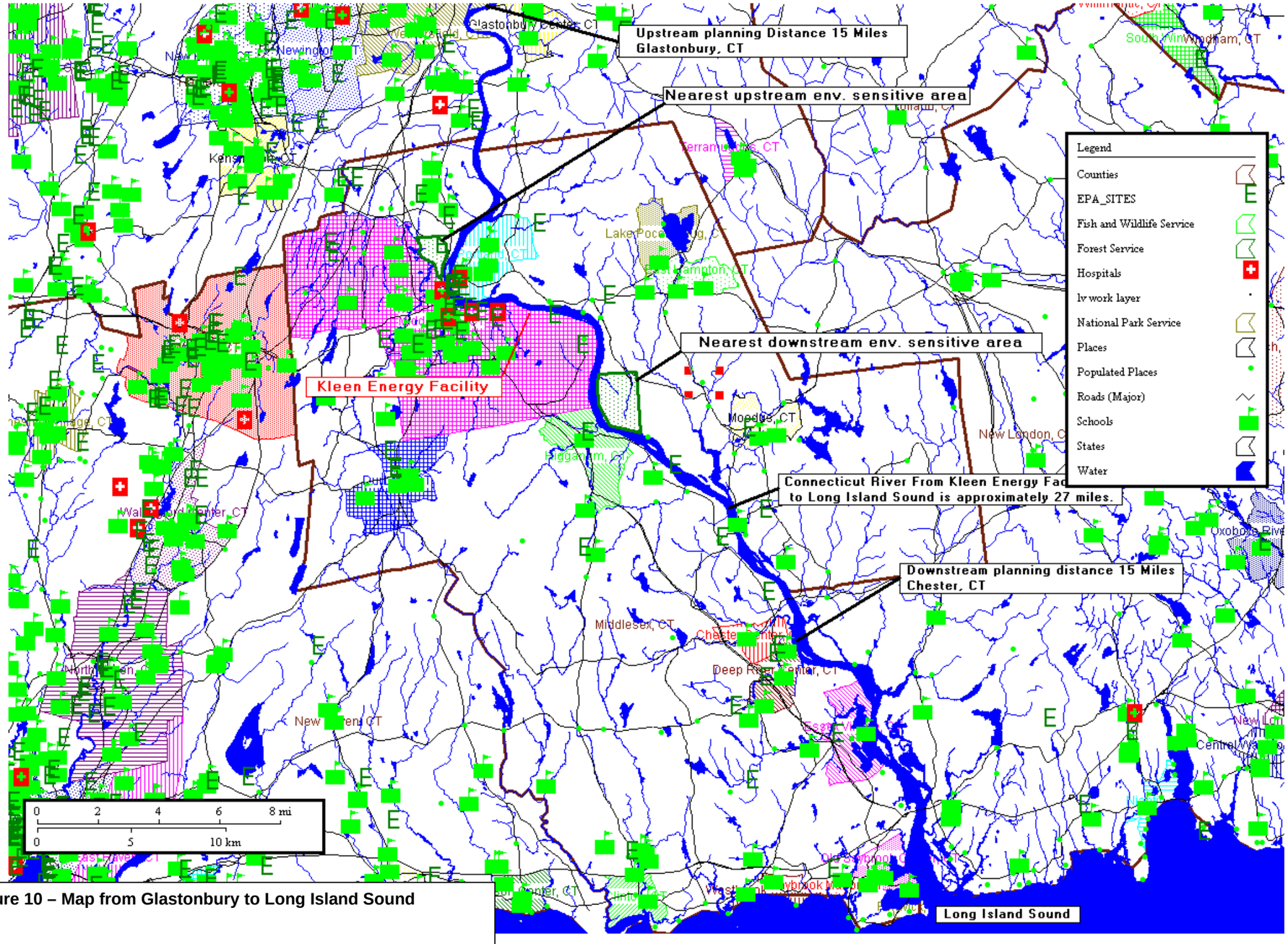

Figure 10 – Map from Glastonbury to Long Island Sound

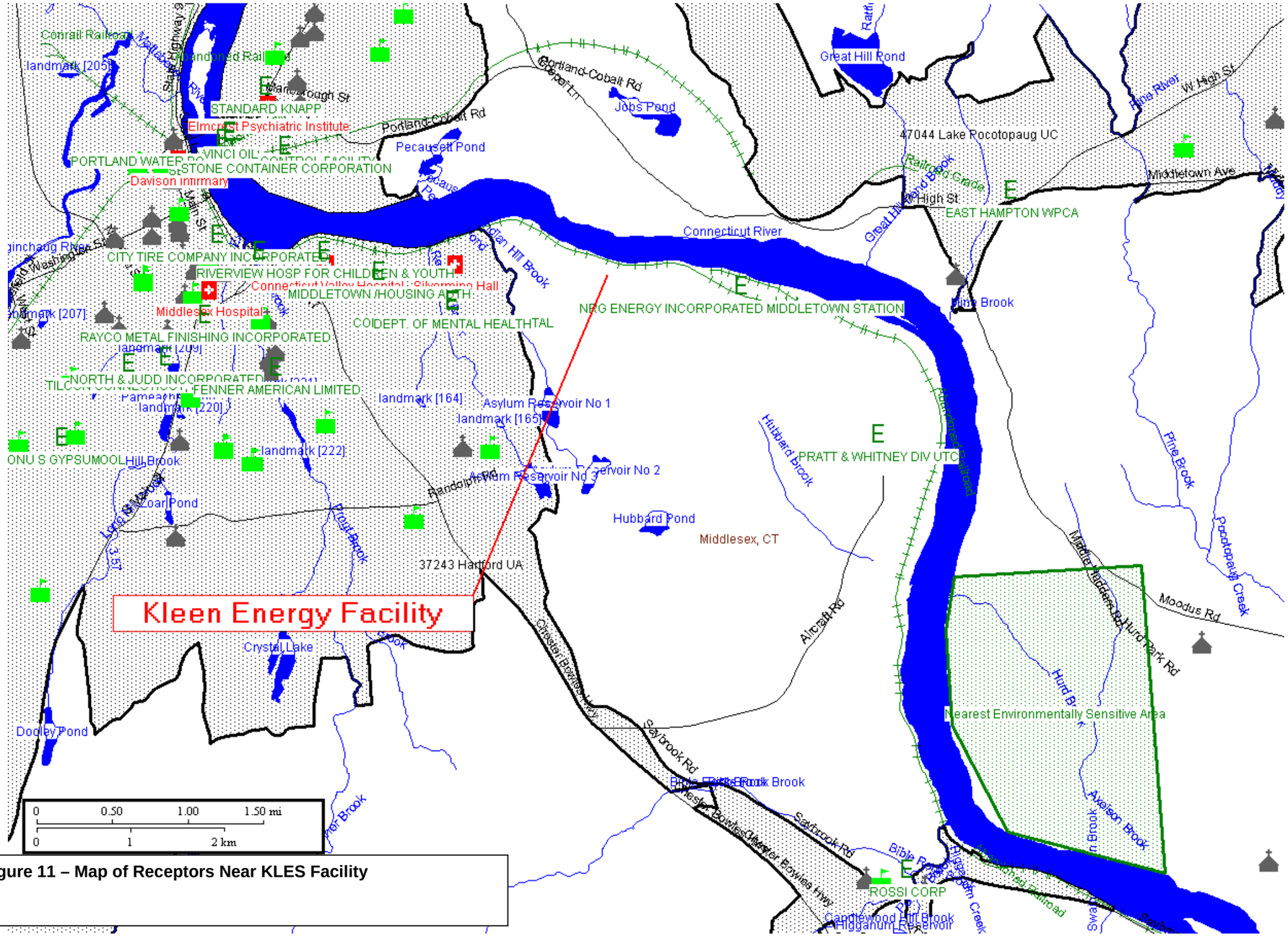

Figure 11 – Map of Receptors Near KLES Facility

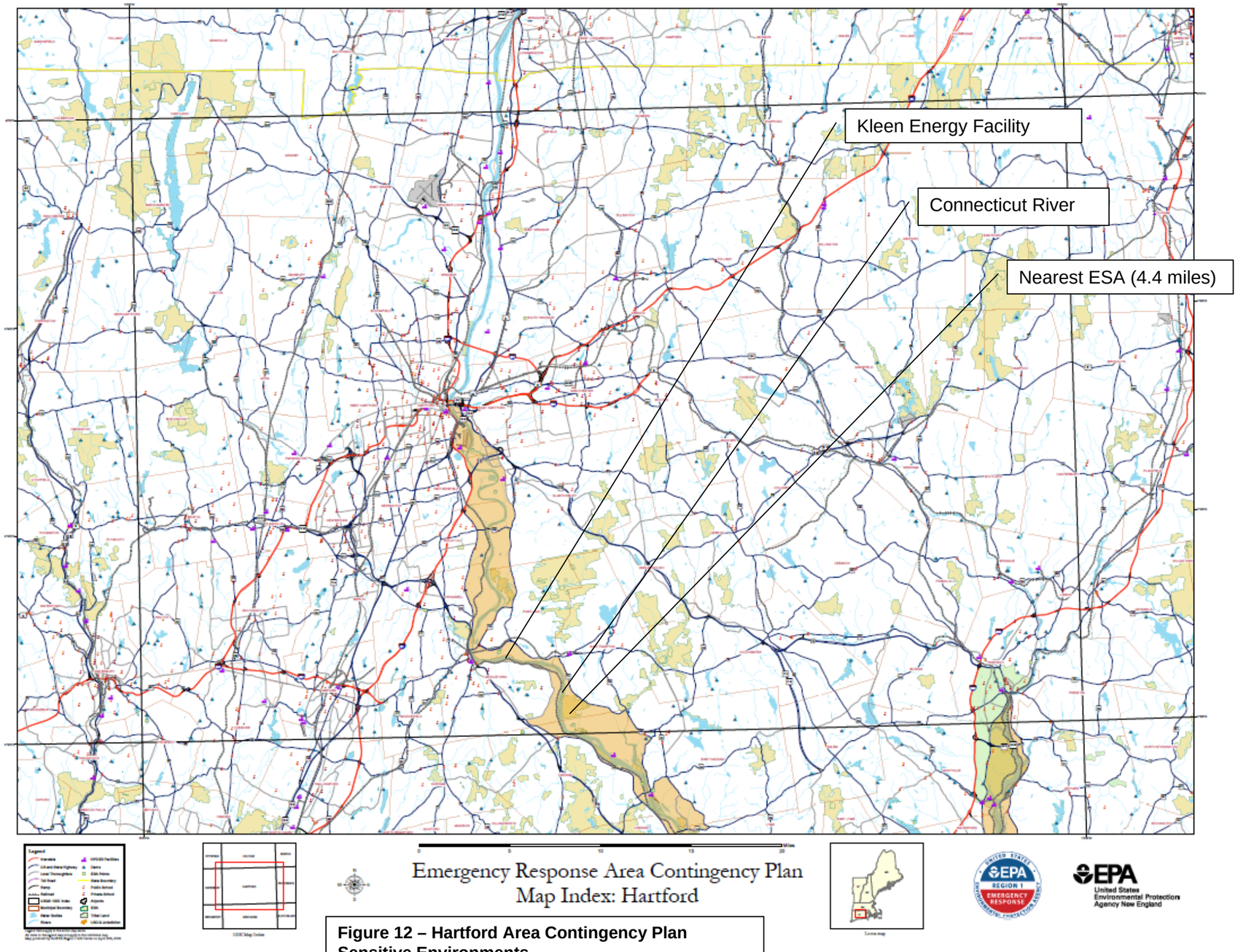

Figure 12 – Hartford Area Contingency Plan Sensitive Environments

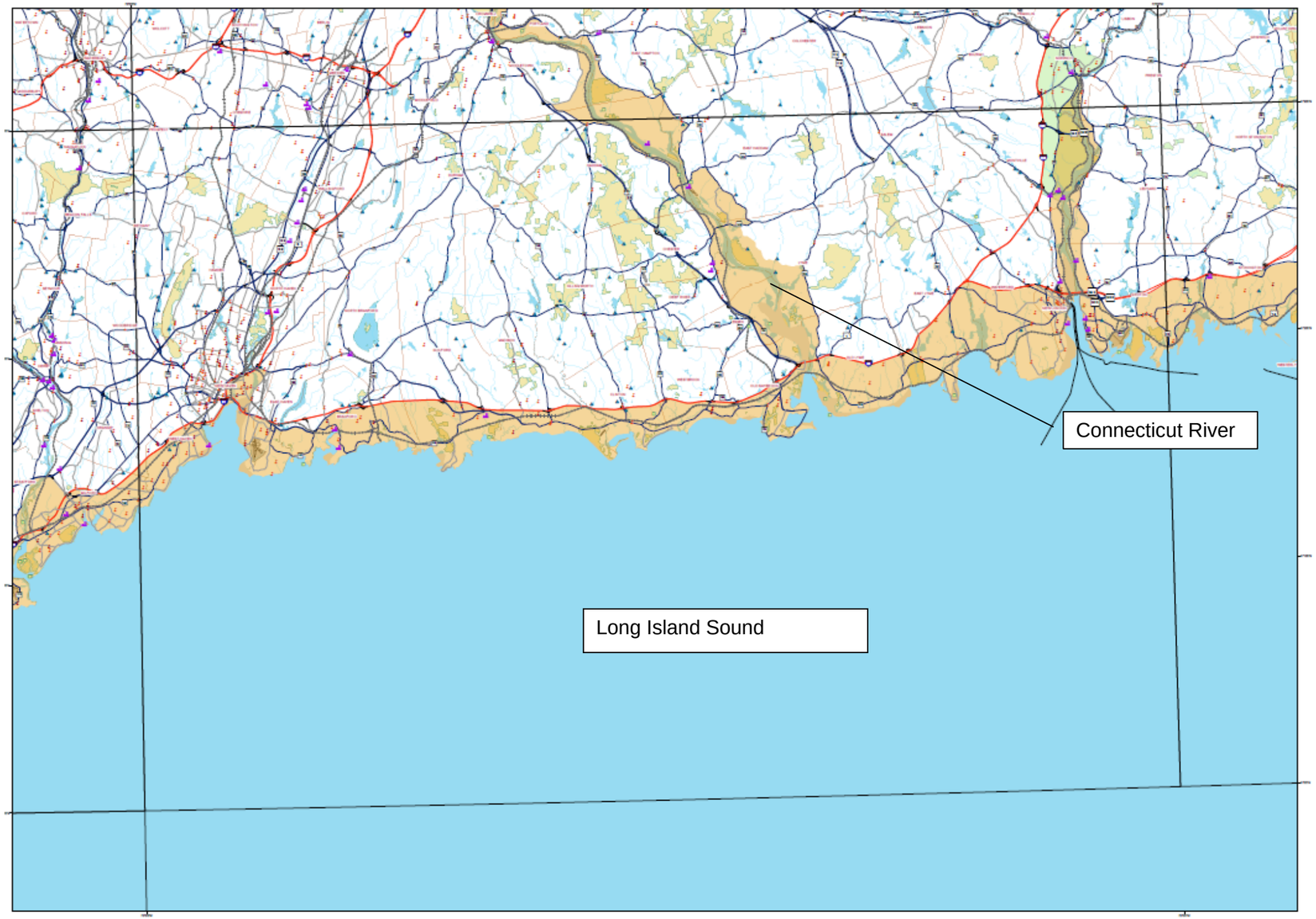

Figure 13 – New Haven Area Contingency Plan Sensitive Environments

The plant utilizes natural gas to generate power using two combustion gas turbine generators and a steam turbine generator, but is capable of burning fuel oil (ultra-low sulfur diesel) when natural gas is unavailable or uneconomic. The plant handles, stores and uses petroleum products in the form of fuel oil, diesel fuel and lubricating (lube) oil. Oil filled transformers are utilized for the production and distribution of electricity. There is a 40,000 gallon tank of 19.0% aqueous ammonia used for the Selective Catalytic Reduction (SCR) of Nitrogen Oxides (NOx). There are also smaller quantities of a variety of water treatment chemicals used to condition boiler feed water and cooling tower water to support the power generation operations.

Kleen Energy Systems will initially operate a water well system on land owned by the City of Middletown between River Road and the Connecticut River. This includes a pumping system and electrical/control building with an emergency generator and diesel fuel storage that will initially be operated by Kleen Energy Systems. These diesel fuel tanks will remain in the Kleen Energy Facility ICP as long as Kleen Energy has responsibility for operations and spill prevention and response in this area.

This facility is subject to the SPCC requirements (40 CFR Part 112) because the facility exceeds the 1320 gallon above ground petroleum product threshold (40 CFR 112.1) and it can reasonably be expected, due to the proximity to navigable waters (through indirect drainage), that a discharge may enter waters of the United States. This facility is subject to the SPC requirements because it applied for a Sewer Permit for discharge to a POTW (RCSA Section 22a-430-3(p)). Figure 1 shows the site location.

The Kleen Energy Facility is an onshore non-transportation related facility as set forth in 40 CFR 112.2. A non-transportation related facility is subject to FRP regulations if, because of its location, it could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters of the United States or adjoining shorelines.

The Kleen Energy Facility has determined that it could reasonably be expected to cause substantial harm by discharging oil to the environment. The facility has two

aboveground No. 2 fuel oil (ultra-low sulfur diesel) storage tanks, each with a capacity in excess of 4 million gallons that are located uphill and approximately 600 linear feet from the Connecticut River. Since the facility is located at a distance such that a discharge from the facility may potentially cause injury to fish, wildlife and sensitive environments, it meets the substantial harm criteria. This is a conservative assumption in lieu of calculating the planning distance in accordance with Attachment C-III to Appendix C of the regulations.

Distance to Navigable Waters and Adjoining Shorelines and Flow Paths

The facility is located in an existing special industrial zone along River Road. The large fuel oil storage tanks are located adjacent to a steep hillside. Drainage generally flows in the direction of the Connecticut River which is approximately 0.1 miles north of the site on the other side of River Road.

Should a spill escape containment in the bulk storage tank area, it would flow over land toward River Road, and sedimentation Area 1 (at River Road and Power Plant Access Road) and most likely discharge via the sedimentation basin through the stormwater discharge route to the river.

Should a spill escape containment in the main "power block" operating areas of the plant, it would flow to area catch basins in the plant roadways to sedimentation Area 7 north of the power block, and from there via the various natural and manmade storm flow paths (including additional sedimentation areas) to the river.

Plant Structures

The facility is comprised of five main areas which are important to this ICP:

Main Power Generation

- Steam turbine and CT building enclosures - house the power generation equipment and provide sound attenuation
- Gas metering area - receiving point for pipeline natural gas flow
- HRSGs - boilers that create steam from the CT exhaust and also house the air pollution control equipment

- Evaporative Cooling Tower - provides condenser cooling of the steam turbine exhaust
- Electrical/battery room building - houses electrical control systems and emergency backup power
- CEMS buildings - houses exhaust gas analyzers to continuously monitor air emissions

Tanks and Water Treatment Systems

- Water treatment building - houses control systems for water purification system
- Demineralized water system and chemical feed areas - water treatment systems necessary to produce highly purified feedwater for the HRSGs; antiscalant and biocide storage and injection for the cooling tower
- Water storage tanks - storage for filtered water and demineralized water
- Aqueous Ammonia unloading and storage area - tank and unloading area for aqueous ammonia used for NOx reduction.
- Oil storage

Wastewater Systems

- Secondary containment sumps (indoors) - contains liquids within material storage areas
- Building and area sumps - collects wash water for treatment
- Neutralization tank - adjusts pH to within acceptable range
- Oil/water separator - removes oil from wastewater prior to discharge
- Connection to River Road force main - for sanitary and contaminated wastewater discharge
- Discharge of clean cooling tower and boiler blowdown wastewater

Electrical Switchyard

- Transformers - steps up voltage from turbine generators to 345 kV
- Switchyard electrical control house - controls switchyard equipment that controls flow of electricity from and to the facility

Staff Facilities

- Warehouse/maintenance building - spare parts storage and machine shop
- Administration/control room building - staff offices and plant control systems

III.1.b.2. Facility Drainage Features

The Waste Water System at the facility is divided into three subsystems designed to prevent oil and hazardous/toxic substances releases to the POTW, and minimize wastewater flows by maximizing water reuse as follows:

- Waste water that may contain oily residues (floor drains, equipment drains and oil-filled operational equipment containment area flows) is treated in an Oil/Water Separator and then pumped into the sewer which discharges to the POTW.
- Wash water from each of the combustion turbine water wash drains flows to a combustion turbine water wash drain tank. Waste water in the drain tanks will be characterized, pumped out by a tank truck and treated at an appropriate licensed off-site treatment facility.
- All water from the water treatment systems (e.g., drainage from chemical truck unloading areas, chemical feed area trenches, tank overflows, equipment and containment drains) that may contain traces of water treatment chemicals is pumped from the respective area sumps to the cooling tower basin for reuse.

Catch basins and grading of the site are designed to direct stormwater flow to one of several sedimentation areas located on the facility. Catch basins in the “power block” operating areas of the plant (i.e., the plant roadways surrounding the Turbine Building and oil-filled transformer containment areas) are directed to a sedimentation basin north of the power block.

The catch basins located inside the fuel oil storage tank secondary containment berm are drained in a controlled fashion, after visual inspection for evidence of oil leaks or spills, through an Oil/Water Separator. Catch basin discharge valves are normally closed and there is also a high-high oil level detector on the separator that is interlocked to shut an automatic valve in the event there is unexpected high oil load. Water is discharged to the storm main which flows along the access road to the sedimentation basin at the northwest corner of the site (adjacent to both River Road and the site access road). When required by the permit, stormwater discharge will be sampled by site personnel.

III.1.b.3. Material and Waste Inventory and Storage Description

Facility oil storage tank and container capacities, contents, and total volumes stored in 55 gallon or larger containers are presented in **Annex 9**. A total of approximately 8.2 million gallons of oil storage capacity currently exists, all above ground.

The Oil/Water Separator used to treat facility drains which may contain oil prior to wastewater discharge to the Publicly Owned Treatment Works (POTW) is a wastewater treatment unit. While its contents are not subject to SPCC requirements (40 CFR 112.1(d)(6)), it has been included in inventory tables for information purposes because this, and the separator used to process stormwater from the large fuel oil tanks prior to discharge, are used to meet certain secondary containment and discharge prevention requirements under 40 CFR part 112.

A list of oils stored or processed in tanks or containers of 55-gallons or larger is included in **Annex 9** of this plan. The inventory of all commercial chemical products used at this facility is included in **Annex 9** of this plan.

The ***Administrative Assistant*** maintains the MSDSs for the materials identified in **Annex 9** at the facility. One complete set will be located in the Control Room and one complete set will be located in the Administrative Assistant's office. The MSDSs meet the requirements of the Hazard Communication standard (29 CFR 1910.1200(g)).

III.1.b.4. Aqueous Ammonia

Aqueous ammonia (19.0%) is used as a reagent for NOx (Nitrogen Oxides) emissions control in the SCR units. Aqueous ammonia is delivered to the facility by truck at a frequency necessary to maintain a minimum inventory for operation. The loading station for the aqueous ammonia tank drains into the Aqueous Ammonia building. Underground aqueous ammonia piping is double wall type with interstitial leak detection.

The transfer of aqueous ammonia from delivery trucks will occur in accordance with the tank truck unloading procedure included in the facility's Chemical Handling Procedures.

In the unlikely event of a significant release from the tank, the spilled liquid would be retained within the containment area below the ammonia storage building. All unloading operations will be performed under the direct supervision of plant personnel.

III.1.b.5. Tank and Surface Impoundments

The Kleen Energy Facility has two (2) 4,061,400 gallon capacity aboveground oil tanks containing No. 2 fuel oil (Tank A-1 and Tank A-2). It has two (2) additional aboveground diesel fuel tanks used for emergency generators (Tanks A-3 and A-4 are 2,000 and 4,000 gallon capacity, respectively). Both oils are classified as "persistent" by 40 CFR 112f.

TANKS

Tank No.	Substance Stored	Tank Type/ Year	Maximum Capacity	Failure/ Cause
A-1 (562-TNK-9001)	No. 2 Fuel Oil	Welded Steel/2009	4,061,400 gals	None
A-2 (562-TNK-9002)	No. 2 Fuel Oil	Welded Steel/2009	4,061,400 gals	None
A-3 (1-629-DG-9001)	Diesel Fuel	Welded Steel/2009	2,000 gals	None
A-4 (572-TK-9004)	Diesel Fuel	Welded Steel/2009	4,000 gals	None

These tanks are included since they are outdoors, with the greatest potential of having a spill that leaves the site. Liquid filled transformers are not included because they are sealed units located within concrete secondary containment structures. All

other fuel and lube oil tanks and operational equipment are not included in the hazard identification due to their location indoors with safeguards that are sufficient to minimize the potential for release to the environment (secondary containment, oil/water separator, etc.). Prevention features for these containers are detailed **Annex 3**.

Tank A-3 is associated with the power block diesel generator. It has an integrated double wall secondary containment structure that is capable of holding 110% of the entire contents of the tank in the event of a primary tank failure. Tank A-4 is associated with the Fire Water Pump House. It has a concrete secondary containment tank that is capable of holding 110% of the entire contents of the tank in the event of a primary tank failure.

Surface Impoundment SI-1 is the secondary containment structure for Tanks A-1 and A-2. This structure is a concrete wall supported by an earthen berm and is designed to contain the complete contents of one of the fuel oil storage tanks plus 10% plus an additional 6".

SURFACE IMPOUNDMENTS

SI No.	Substance Stored	Quantity Stored	Surface Area/ Year	Maximum Capacity	Failure/ Cause
SI-1	No. 2 Fuel Oil	NA/ Secondary Containment	111,196 ft2 / 2009	Maximum Fill + 10%+6" (5,155,416 gals)*	None

* Minimum target was 110% plus 6 inches, but minimum top of wall elevation is higher, giving 110% plus 2.4 feet.

A diagram showing the layout of all oil tanks in the facility is provided in **Figures 4 and 5**.

III.1.b.6. Fuel Oil Truck Unloading

No. 2 fuel oil is a backup to the primary power plant energy source, natural gas. No. 2 fuel oil is normally delivered to the facility through a DOT (Department of Transportation) regulated pipeline; however, the fuel oil storage tanks can also be filled by tank trucks as a backup supply source. The No. 2 fuel oil truck unloading station is located on a concrete pad southeast of the fuel oil storage tanks. Potential

discharges of oil occurring during a truck unloading operation will be diverted along the pad, which is pitched to the northwest, and into a drainage trench located at the west end of the pad. The drain empties into the truck spill containment basin which holds 240 ft3 (about 1800 gallons) before it drains via gravity into the fuel oil storage tank secondary containment structure. This secondary containment structure is more than adequate to contain the contents of multiple, simultaneous 7,000 gallon delivery trucks. Up to two (2) trucks may unload oil simultaneously. However, the likelihood that more than one (1) truck would have a spill at the same time is very low. As required (40 CFR 112.7(h)(2)), notice signs have been posted for delivery personnel reminding them to remain with their vehicles and to check to ensure all valves are closed and hoses are disconnected before moving their trucks away from the unloading area. Fuel oil tanks are not to be filled without first checking the reserves prior to commencing the filling operation and unloading operation shall continue only when attended by delivery personnel. The ***Operations Supervisor*** or his/her designee supervises initial oil deliveries for all new suppliers, and periodically observes deliveries for existing, approved suppliers. Fuel Oil unloading pump operations are not to continue unless attended constantly by delivery personnel. Security cameras are also used to monitor unloading operations. The volume of No. 2 fuel oil involved in transfer operations from delivery truck to Tank A-1 or A-2 is approximately 7,000 gal, which is the volume of the largest truck expected to deliver No. 2 fuel oil to the site.

Tank A-3 is associated with the power block diesel generator. It has an integral, metal secondary containment structure designed to hold the volume of diesel fuel in the event of a catastrophic tank failure. The tank is used for an emergency power generator, so it is infrequently filled from a delivery truck. The filling operation is monitored in its entirety by an operator. The maximum volume of fuel oil involved in transfer operations from the delivery truck to Tank A-3 is 2,000 gallons, which is the maximum capacity of Tank A-3.

Tank A-4 is associated with the Fire Water Pump House. It has an integral, metal secondary containment structure designed to hold the volume of diesel fuel in the event of a catastrophic tank failure. The tank is used for an emergency power

generator, so it is infrequently filled from a delivery truck. The filling operation is monitored in its entirety by an operator. The maximum volume of fuel oil involved in transfer operations from the delivery truck to Tank A-4 is 4,000 gallons, which is the maximum capacity of Tank A-4.

III.1.b.7. Day-To-Day Operations

All piping transporting No. 2 fuel oil at this facility outside of a containment structure is constructed below ground and is double wall with leak detection. Carrier piping is carbon steel and containment piping is FRP (Fiberglass Reinforced Plastic). Above ground pipes are generally located indoors or in containment areas which are outside of traffic areas or in pipe racks located well above the highest anticipated truck or construction vehicle in areas where traffic is experienced. Visual inspections are performed on the aboveground piping 2 times per day (once per shift) during plant equipment checks. The inspection program is described in detail in Annex 7.

Diesel fuel from tanks A-3 and A-4 is used for fueling the emergency diesel generators which only run during power outages and testing. The fill ports and dispensers are located at the tank and are designed such that small spills associated with filling of the tanks will be contained.

III.1.b.8. Secondary Containment Volume

Surface impoundment SI-1 provides secondary containment for Tanks A-1 and A-2. According to 40 CFR, Section 112.7 (c) a secondary means of containment shall be provided for the entire content of the largest single tank plus sufficient freeboard to allow for precipitation. EPA defines sufficient freeboard as 10% of the capacity of the largest tank which equates to a required secondary containment volume of 4,467,036 gallons. Based upon the dimensions of SI-1, the volume of secondary containment provided by SI-1 is largest single tank plus 10% plus 6" or approximately 5,155,416 gallons which is more than required. In the event of a discharge from either Tank A-1 or A-2, the secondary containment areas of SI-1 will contain the spill.

Tank A-3 has a built-in, steel secondary containment tank and Tank A-4 has a steel reinforced concrete secondary containment tank both of which are capable of holding 110% of the entire tank contents.

III.1.b.9. Daily Throughput

The normal daily throughput of No. 2 fuel oil is zero gallons. Circulation of No. 2 fuel oil is usually limited to days when the natural gas supply has been interrupted or when routine fuel oil process equipment testing is being conducted to maintain system reliability. The normal daily throughput of diesel fuel is also approximately zero gallons. Use of diesel fuel only occurs during power outage or testing of the EDG units.

III.1.c. Distance to Navigable Waters and Adjoining Shorelines and Flow Paths

The facility is located in an existing special industrial zone along River Road. The large fuel oil storage tanks are located adjacent to a steep hillside. Drainage generally flows in the direction of the Connecticut River which is approximately 0.1 miles north of the site on the other side of River Road.

Should a spill escape containment in the bulk storage tank area, it would flow over land toward River Road, and sedimentation Area 1 (at River Road and Power Plant Access Road) and most likely discharge via the sedimentation basin through the stormwater discharge route to the river.

Should a spill escape containment in the main “power block” operating areas of the plant, it would flow to area catch basins in the plant roadways to sedimentation Area 7 north of the power block, and from there via the various natural and manmade storm flow paths (including additional sedimentation areas) to the river.

III.1.d. Potential Discharge Volumes and Direction of Flow (40 CFR 112.7(b))

Table 1 presents expected volume, discharge rate, general direction of flow in the event of equipment failure or other errors, and means of secondary containment and/or spill

mitigation for scenarios that could result in release outside the buildings at different parts of the facility where oil is stored, used, and handled.

Potential chemical spills that might occur during unloading or normal operations would be expected to occur within concrete unloading or process secondary containment areas as described in **Annex 17**.

Table 1 - Potential Discharge Volumes and Direction of Flow

Potential Spill Event	Maximum Volume Released, Gallons	Potential Spill Rate	Direction of Flow	Secondary Containment
Bulk Storage Oil Containers 1&2 (Tanks 562-TNK-9001 & 9002 4,060,000 gallon each fuel oil AST)				
Complete failure of largest full tank	4,060,000	Instantaneous	North, Downhill toward Connecticut River	Concrete Wall & Earth Base
Tank overfill	1 to several hundred	Unloading pump rated at 350 gpm**	North, Downhill toward Connecticut River	Concrete Wall & Earth Base
Pipe failure. Piping outside containment is underground.	Several hundred to Several thousand	Transfer pumps rated at 640 gpm††	North, Downhill toward Connecticut River	Concrete Wall & Earth Base or Double Wall Pipe w/Leak Detection
Leaking pipe or valve packing. Piping outside containment is underground.	1 to several hundred	Transfer pumps rated at 640 gpm‡‡	North, Downhill toward Connecticut River	Concrete Wall & Earth Base or Double Wall Pipe w/Leak Detection
Fuel Oil Truck Unloading Area for Containers 1&2				
Tank truck/hose leak or failure.	1 to 7,000	Gradual to Instantaneous§§	North, Downhill toward Connecticut River	Concrete Pad/ Sump, then Bulk Tank Containment
Tank overfill	See Bulk Storage above			
Leaking pipe or pipe failure.	See Bulk Storage above			
Fire Water Pump Fuel Tank (Container 4, 290 gallon Diesel AST)				
Complete failure of largest full tank	290	Instantaneous	Fire Pump Building, storm inlet/basin/ Conn. River	Double wall steel tank.

** UNI-2008-185-D-C-02-RA(0)
†† KLES-1-DW-562-302-001-R0; KLES-1-DV-420202-08-285-B0-S003-R0
‡‡ KLES-1-DW-562-302-001-R0; 2008-185-D-C-1301; 2008-185-D-PID-0002
§§ KLES-1-DW-022-002-401-RB, KLES-1-DW-156-411-001 and 002-R0

Potential Spill Event	Maximum Volume Released, Gallons	Potential Spill Rate	Direction of Flow	Secondary Containment
Tank overfill	0 to 10	Gradual	Fire Pump Building, storm inlet/basin/ Conn. River	Fire Pump Building
Leaking pipe or pipe failure	0 to 10	Gradual to instantaneous	Fire Pump Building, storm inlet/basin/ Conn. River	Fire Pump Building
Plant Emergency Diesel Generator Fuel Tank (Container 5, 2000 gallon Diesel AST)				
Complete failure of largest full tank	2000	Instantaneous	Storm inlet/basin/ Conn. River	Double wall steel tank.
Tank overfill	0 to 10	Gradual	Storm inlet/basin/ Conn. River	Generator enclosure.
Leaking pipe or pipe failure	0 to 10	Gradual to instantaneous	Storm inlet/basin/ Conn. River	Generator enclosure.
Turbine Building, Oil Filled Operational Equipment (Oil Containers 6-11, including Lube Oil Reservoirs)				
Complete failure of largest full tank (STG Lube Oil)	8183	Instantaneous	Storm inlet/basin/ Connecticut River	Concrete containment and Oil/Water Separator
Tank overfill	0 to 55	Gradual	Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Leaking pipe or pipe failure	0 to 8183	Gradual	Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Oil Filled Electrical Operational Equipment (Oil Containers 13-21, Transformers)				
Complete failure of largest transformer (STG Step Up Transformer)	23,834	Instantaneous	Storm inlet/basin/ Connecticut River	Concrete Containment
Partial failure	1 to 23,834	Gradual to instantaneous	Storm inlet/basin/ Connecticut River	Concrete Containment
Fuel Gas Compressor Skid, Oil Filled Operational Equipment (Oil Containers 22-26)				
Complete failure of largest full container (Comp. Inlet KO Drum)	425	Instantaneous	Fuel Gas Compressor Bldg./Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Tank overfill	0 to 55	Gradual	Fuel Gas Compressor Bldg./Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator

Potential Spill Event	Maximum Volume Released, Gallons	Potential Spill Rate	Direction of Flow	Secondary Containment
Leaking pipe or pipe failure	0 to 425	Gradual	Fuel Gas Compressor Bldg./Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Fuel Gas Conditioning Skid, Oil Filled Operational Equipment (Oil Containers 27-30)				
Complete failure of largest full container (Comp. Inlet KO Drum)	425	Instantaneous	Fuel Gas Compressor Bldg./Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Tank overfill	0 to 55	Gradual	Fuel Gas Compressor Bldg./Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Leaking pipe or pipe failure	0 to 425	Gradual	Fuel Gas Compressor Bldg./Storm inlet/basin/ Connecticut River	Building containment and Oil/Water Separator
Drum/Container Storage – Water Treatment Building (31, est. up to 1090 gallons)				
Complete failure of largest full container (Intermediate Bulk Container)	350	Gradual to instantaneous	Storm inlet/basin/ Connecticut River	Containment Pallet, Bldg. Containment and Oil/Water Separator
IWTP Emergency Diesel Generator Fuel (Container 32, 2600 gallon Diesel AST)				
Complete failure of largest full tank	2600	Instantaneous	Storm inlet/basin/ Conn. River	Double wall steel tank.
Tank overfill	0 to 10	Gradual	Storm inlet/basin/ Conn. River	Generator enclosure.
Leaking pipe or pipe failure	0 to 10	Gradual to instantaneous	Storm inlet/basin/ Conn. River	Generator enclosure.
Ranney Wells Emergency Diesel Generator Fuel (Container 33 - 4000 gallon and 34 – 150 gallon Diesel ASTs, City Property)				
Complete failure of largest full tank	4000	Instantaneous	Storm inlet/basin/ Conn. River	Double wall tank, concrete outer.
Tank overfill	0 to 10	Gradual	Storm inlet/basin/ Conn. River	Gravel yard and sorbents.
Leaking pipe or pipe failure. Piping outside building is underground.	0 to 10	Gradual to instantaneous	Storm inlet/basin/ Conn. River	Building or Double Wall Pipe w/Leak Detection.

III.1.e. Receptors

In accordance with 40 CFR 112, Appendix F, Section 1.4.2, facility owners must use Attachment C-III to Appendix C to determine appropriate distances from the facility to fish and wildlife and other sensitive environments. Attachment C-III states that for tidally influenced areas such as the Connecticut River "… the planning distance is 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide." The river is tidally influenced for approximately 35 miles upstream of the facility and the Long Island Sound is approximately 27 miles downstream. Therefore, the planning distances both upstream and downstream are 15 miles in each direction. Supporting information and calculations are presented in **Annex 12**.

However, the practical planning distance based on calculated river velocity, the nearest environmentally sensitive areas, and the nearest river access which allows time for resource mobilization and fully booming the river is 2.9 miles downstream and 3.8 miles upstream.

Figures 10 through **13** show the receptors within 15 miles of the plant both upstream and downstream. The information on the figures was obtained through the US Census Bureau's Landview software[***].

Several human health, property, and environmental receptors are potentially vulnerable to a worst-case discharge of oil from the facility. **Figures 10** through **13** show the receptors in the area of the plant and downstream.

A brief discussion of these follow:

1. Water Intakes

There are no surface water intakes for drinking water within the range of impact of a potential spill from the facility; however there are the following shallow wells near the river that warrant notification in the event of a major spill:

[***] US Census Bureau, Landview 6, V1-T00-LV06-22-US1

Approx. Dist.	Est. Time	Facility
2.9 mi. downstream	2.5 hrs.	Pratt & Whitney

In addition, there are the following listed industrial/cooling water surface water intakes that warrant notification in the event of a spill:

Approx. Dist.	Est. Time	Facility
2.9 mi. downstream	2.5 hrs.	Pratt & Whitney

2. Schools

There are no known schools within the planning distance that would be impacted by the worst-case discharge because they are not located on navigable waters and are beyond the distance of any potential spill migration on land.

3. Medical Facilities

There are no known medical facilities within the planning distance that would be impacted by the worst-case discharge because they are not located on navigable waters and are beyond the distance of any potential spill migration on land.

4. Residential Areas

There are several residences along the Connecticut River. It is expected that a worst-case discharge to the river would result in contamination of its shoreline and therefore, lakefront residential properties.

5. Businesses

There are businesses located on the Connecticut River within the planning distance. A worst-case oil spill to the river would result in contamination of their shorelines. The Pratt and Whitney facility is located downstream at approximately 3.0 miles. That facility has a river intake for cooling water of 30 MGD and would be shut down by river contamination at that location.

6. Wetlands and other sensitive environments

Wetlands and Sensitive Environments could potentially be impacted by the worst-case discharge. There are extensive wetlands adjacent to the river (i.e., banks, bogs, marshes, swamps, meadows, flats, or other low lands) and the location of these wetlands within the planning distance is generally within the Emergency Response Area Contingency Map areas marked as "USCG Jurisdiction" shown on **Figure 12** and **13**. The nearest Environmentally Sensitive Area (ESA) is along the east shore of the river approximately 4.4 miles downstream from the KLES facility as shown on **Figure 12**.

7. Fish and Wildlife

The Connecticut River flows into the Long Island Sound which is approximately 27 miles downstream of the KLES facility. The planning distance downstream during ebb tide is 15 miles which is near Chester, Connecticut. The planning distance upstream during flood tide is 15 miles which is near Glastonbury, Connecticut. This section of river supports a variety of fish, marine life and waterfowl species. Should a release of oil reach the Connecticut River, the fish, marine life, and waterfowl would likely be the most adversely affected entities.

8. Lakes and streams

As described above, the Connecticut River is within the planning distance.

9. Endangered flora and fauna

There are no known endangered flora and fauna within the planning distance that would be impacted by the worst-case discharge.

10. Recreational areas

The Connecticut River has several recreational areas adjoining it. If a discharge of oil were to reach the lake, the recreational areas would likely be adversely affected.

11. Transportation routes

A worst-case discharge of oil could potentially reach the Connecticut River. This water body is used as a transportation route and thus a discharge of oil could affect transportation.

12. Utilities

The NRG facility is located within the practical planning distance that would be impacted by the worst-case discharge. The decommissioned Connecticut Yankee Nuclear Power Plant is located further downstream but outside the practical planning distance.

13. Other areas of economic importance

There are no known areas of economic importance within the planning distance that would be impacted by the worst-case discharge other than those described above.

III.2. Annex 2 – Notification

The EMERGENCY NOTIFICATION PHONE LIST identifies the names and phone numbers of the organizations and personnel that need to be notified immediately in the event of an emergency. These numbers must are verified each time the plan is updated and is accessible to all facility employees to ensure that, in case of a discharge, any employee on site could immediately notify the appropriate parties.

The Spill Response Notification Form is a checklist of information that shall be provided to the National Response Center (NRC) and should be used to inform other response personnel, the Oil Spill Removal Organization's (OSRO, spill contractor) and other response agencies. All information on this checklist should be known at the time of notification, or be in the process of being collected. This notification form is based on a similar form used by the NRC. Note: Do not delay spill notification if some information on the list is not yet available.

The ERC or designee will use the Spill Response Notification Form for any spill outside an impervious (i.e., concrete) secondary containment area or which poses a threat to human health or the environment to collect spill information and make external notifications to the appropriate authorities and prominently posted at locations throughout the facility. Spills inside impervious containment, which do not pose a threat to human health or the environment and which are promptly cleaned up, are not reportable under current Connecticut regulations, although DEP emergency staff advises reporting all releases.

Various Federal, State and local regulations require the notification of specified agencies of spills/releases of petroleum product, hazardous materials, hazardous substances and hazardous wastes and other emergencies. This section of the ICP describes the reporting requirements established by Federal, State, local authorities, and NAES policy following a spill of oil or a hazardous material and other emergencies at the KLES facility. It provides information about the reporting responsibility at KLES, the criteria and deadlines for notification, the appropriate agencies to be notified and the format for notification following an incident.

III.2.a. Internal Notifications

The ***Emergency Response Coordinator*** (***ERC***) is responsible for ensuring that the necessary notification(s) are made to the appropriate agencies during or after a spill or release or other emergency at the KLES facility. Phone numbers that may be useful during notification, such as contact information for plant personnel and local agencies, are included in page 3 of **Section II** of this ICP. These numbers must are verified each time the plan is updated and accessible to all facility employees to ensure that, in case of an emergency, any employee on site could immediately notify the appropriate parties.

Forms for use in documenting the emergency and supplying relevant information to the regulatory agencies are provided in **Section II**. Notification of a release should be made without delay, and should not be held up pending collection of additional information, if appropriate. This is particularly true in cases of immediate notification requirements and/or those with a 2-hour notification deadline, as required by the National Response Center (NRC), U.S. Coast Guard, and the EPA. The Capital Region Emergency Planning Committee (LEPC), Connecticut Department of Environmental Protection and/or OSHA also need to be promptly notified following certain releases/events. In addition, internal NAES reporting is required for significant events that occur at the facility. Missing information should be supplied during follow-up calls to the agencies.

In addition, the NAES internal procedures *AMP-108 - Incident Investigation & Reporting* and *SMP-14 – Accident & Injury Reporting* ensure that NAES and KLES are notified of all incidents as soon as possible. These procedures provide a systematic method for investigating and reporting an incident at a NAES site and identifying corrective actions steps to prevent a reoccurrence. The ***Compliance Coordinator*** or ***designee*** will notify the customer and the NAES Regional or Project Manager and NAES ESS.

III.2.b. Community Notifications

In the unlikely event of the need for a community evacuation or notification, the Middlesex County Emergency Response Plan, would be used. The need for employment of the County plan would be made by the County LEPC following the required external notifications described in this ICP. The County of Middlesex Emergency Management Program Committee maintains the county plan.

III.2.c. Federal and State Agency Notifications

III.2.c.1. Federal Notification - Releases of Oils

The Federal Clean Water Act (40 CFR 110-112) requires that any visible oil sheen resulting from a petroleum release to surface waters of the United States or release that violates applicable water quality standards (40 CFR 110.3) be immediately reported (as soon as knowledge is obtained) to the National Response Center (NRC). Section II, contains a notification form (Spill Response Notification Form) that may be completed and used when notifying the NRC of any petroleum spill pursuant to the OPA-90 regulations. All information in the form, however, does not have to be known/filled in before this NRC reporting is made. A lack of complete information is not a reason to delay the necessary NRC reporting. As summarized in the petroleum & chemical spill response guidelines, releases to a surface water body also must be reported to the U.S. Coast Guard. Further, because KLES is permitted under a general permit for stormwater discharges to the Connecticut River, exceedances of permit conditions also must be reported in accordance with the permit. Local and State agencies, as described below also may require notification of the release. In accordance with 40 CFR 112.4 (a), if Kleen Energy has (1) discharged more than 1,000 gallons of oil in a single discharge or (2) discharged more than 42 gallons in each of two discharges within any 12-month period that may be harmful to public health, welfare or the environment, they must submit to the EPA, within 60 days, the information specified in 40 CFR 112.4 (a) plus additional information if requested by the EPA. This information must also be forwarded to the DEP.

III.2.c.2. Federal Notification - Releases of Hazardous Substances

Releases of a hazardous substance (as defined in 40 CFR 302.4) exceeding CERCLA Reportable Quantities (listed in the Emergency Response Guidelines) must be immediately reported to the National Response Center (NRC) as soon as knowledge of the release is obtained. These “immediate” release reports to regulatory agencies should not delay time-critical emergency actions, such as signaling evacuation or summoning emergency response organizations. Releases of hazardous substances exceeding CERCLA reportable quantities, or extremely

hazardous substances (EHS; as defined under federal EPCRA regulations 40 CFR 355) should also be reported immediately to the Capital Region Emergency Planning Committee (LEPC) if any area outside the facility is to be affected. The State Emergency Response Commission (SERC) should be verbally notified if any areas of the state are likely to be affected. In addition to the above, certain continuous releases of hazardous substances and/or air emission releases (from unpermitted minor sources and concentrations above permitted emissions limits due to accidents and malfunctions and/or during start-up and shut-down) may also be reportable under CERCLA and the Emergency Planning and Community Right to Know Act (EPCRA) as defined in 40 CFR 355.

III.2.c.3. Federal Notification - Health and Safety

The Occupational Safety and Health Administration (OSHA – 29 CFR 1904.8) requires that the fatality of one or more people or the hospitalization of three or more employees, is to be verbally reported to OSHA within 8 hours after knowledge of this information. Additionally, if the incident, whether or not it is immediately reportable, results in the death of an employee or the hospitalization of three or more employees within 30 days of the incident, the fatality/multiple hospitalization is to be reported within 8 hours of learning of it.

III.2.c.4. State Notifications - Releases of Oil or Hazardous Materials

In Connecticut, any size spill of oil or petroleum product, any chemical, or waste, must be reported to the CT-DEP. The party causing the spill or pollution and the property owner are responsible for:

- Immediately reporting the spill to the CT-DEP's Oil and Chemical Spill Response Division at (860) 424-3338, and beginning the appropriate containment and cleanup efforts, which must be performed by a licensed contractor [CGS §22a-454]. The telephone number is staffed 24-hours/seven days a week.
- Complete a written "Report of Petroleum or Chemical Product Discharge, Spillage, Seepage, Filtration" and mailing it to CT-DEP within 24 hours, if requested.

The ***ERC*** or designee will use the Spill Response Notification Form for any spill outside an impervious (i.e., concrete) secondary containment area or which poses a threat to human health or the environment to collect spill information and make external notifications to the appropriate authorities and prominently posted at locations throughout the facility. Spills inside impervious containment, which do not pose a threat to human health or the environment and which are promptly cleaned up, are not reportable under current Connecticut regulations, although CTDEP emergency staff advises reporting all releases.

III.3. Annex 3 – Response Management System

III.3.a. General

This annex describes the five functional areas in a typical ICS, and the various roles within them.

- Command
- Operations
- Planning
- Logistics
- Finance

The specific roles and responsibilities for the KLES Facility Response Personnel, which is based on the ICS structure, are described in Section II.2.b of the ICP. The Qualified Individual(s) identified in Section II of this plan have been designated as accountable for spill prevention and will act as ***ERC (Emergency Response Coordinator)***.

III.3.b. Command

The plant ***ERC*** will initially act as the onsite Incident Commander (IC). The ***ERC*** will determine whether the ERAP should be activated, direct incipient incident mitigation measures, determine when off-site resources are needed, keep senior management abreast of any major or sensitive situation and coordinate verbal and written incident reporting. At least one of the individuals trained to function as the Qualified Individual and primary or secondary ***ERC*** (identified in the Emergency Notification Phone List in **Section II** of this ICP) will be available at all times. Other individuals identified on the Emergency Notification Phone List will fill in rolls as specified in the organization chart in Section II.2.b.

When an emergency expands or increases in complexity, the ***ERCs*** command role will be passed along the line of authority (e.g. to outside response agencies Incident Commander). After transition of IC responsibilities to the outside response organization,

the facility ***ERC*** will continue to coordinate with the IC, provide critical facility information and marshal on-site support efforts in support of the emergency response personnel.

The facility maintains a standing contract with a certified Oil Spill Response Organization (OSRO) to respond to large spills/releases. Facility staff are trained, equipped, and permitted to clean up certain localized spills when they are available to do so. Facility personnel are also trained and equipped to conduct defensive measures to protect personnel, the environment, and property from the effects of a spill/release.

The **CONTROL ROOM** serves as the major link between the person discovering the incident, the ***ERC***, and off-site resources. The **CONTROL ROOM** mans the 24-hour on-site emergency number, makes the initial internal notifications and summons emergency assistance from outside resources, when clearly immediately necessary or otherwise at the direction of the ***ERC***.

Personnel are assigned specific positions within the ICS based on their expertise and training. Individual positions may, or may not, be staffed at the discretion of the ***ERC***. The ***ERC*** always retains ultimate authority and responsibility when he or she delegates tasks to the rest of the ICS organization.

Incident Command Center/Emergency Operations Center

The Incident Command Center (ICC) will be in the Turbine Building training room next to the control room so long as it is safe to drive the Power Plant Access Road. Once the OSRO or other outside agencies mobilizes to the site, and sooner if it is unsafe to drive the Power Plant Access Road, a temporary ICC may be set up at River Road and the Plant Access Road. If a more distant location is needed, the facility will coordinate with the Fire Department for use of public land near the Ranney Wells or some other safe location for marshalling and directing emergency response resources.

Emergency Response Organization Roles and Responsibilities

The key emergency response roles and responsibilities of the members of the ICS are described below. The individuals assigned to each of the ICS roles are listed in the Section II.2.b.

During an emergency response, facility personnel, regardless of whether they are members of the ICS, must follow the direction of the ***ERC/IC***. Each employee may become involved in an emergency in many different ways, from recognition to clean up, with their particular roles dependent upon the situations and their level of training. The basic emergency response roles and responsibilities of employees are briefly described below:

Individuals who handle hazardous substances and are trained to contain/control/ clean up an incidental spill/release can do so if it is limited in quantity and poses no emergency or significant threat to the safety and health of employees in the immediate vicinity. Incidental releases that do not endanger life and health are not considered an emergency response. Incidental spills/releases are those not considered to be significant and should be cleaned up by local operations and should not activate the emergency response system.

Any employee must be able to recognize a situation that requires additional assistance. In this case, the employee's responsibility is to activate the appropriate alarm or call the CONTROL ROOM, provide as much information as possible, and remain at a safe location until the emergency responders arrives.

CONTROL ROOM: This role is performed by the ***Control Room Operator*** who staffs the CONTROL ROOM at all times. The CONTROL ROOM receives all emergency calls, gathers emergency information, and notifies the ***ERC*** of the incident. The ***Control Room Operator*** serves as the communications focal point between the notifier, ***ERC***, off-site resources, and other ICS members. The ***Control Room Operator*** at the direction of the ***ERC*** is responsible for logging all communications during each incident.

Incident Commander (IC): The person filling the role of ***IC*** may change during the course of an emergency situation as more senior (in terms of ICS authority) personnel arrive on the scene. In the absence of the primary or secondary ***ERC***, the ***Control Room Operator*** will be acting ***ERC*** and serve as the ***IC*** upon initial notification of an incident until the primary or secondary ***ERC*** arrives on-scene. The ***ERC*** does not respond to the immediate scene of the incident in order to be able to

direct the response. If the emergency requires the assistance of the Middletown South Fire District, the Senior Officer on scene from the Fire Department will take over as the ***IC***.

The ***IC*** will be responsible for coordinating and controlling all communications as well as the emergency response operations with the assistance of the ***ERC*** and other personnel participating in the response. The Incident Commander is responsible for determining if additional resources to expand the response are needed to effectively respond if the incident and may notify the ***ERC*** to request assistance from off-site. The ***IC*** will also determine when an emergency is terminated (after consulting with response personnel and the ***ERC***), coordinating/preparing written after action reports, and conducting debriefings.

Emergency Response Coordinator (ERC)/Qualified Individual (QI): The ***Qualified Individual (QI)*** has full authority, including for contracting, to implement oil removal actions. Since a ***QI*** may not be on-site at the time of an incident, the Emergency Response Coordinator is a designation used for the person on-site best able to assess and coordinate emergency response decisions and activities. On off-shifts, the ***Control Room Operator*** will serve as the ***ERC*** until the primary or secondary ERC/QI is mobilized to the site. ***QIs*** for this facility are identified in Section II (Core Plan) Emergency Notification Phone List. The duties of the ***ERC*** with respect to oil discharges, include, but are not limited to:

- Identify the character, exact source, amount, and extent of the release, as well as the other items needed for determining if emergency response and/or notification are needed.
- Activate internal alarms and hazard communication systems to notify all personnel.
- Notify the ***Primary*** or ***Alternate ERC***, depending on who is on-call.
- Notify all response personnel and the OSRO contractor, as needed. If there is a fire or other hazard to human health, call 911 to obtain community emergency responder support.

- When directed by the ***QI***, notify and provide necessary information to the appropriate federal, state, and local authorities with designated response roles, including the National Response Center, State Emergency Response Commission, and Capital Region Emergency Planning Committee.
- Assess the interaction of the spilled substance with water, soil and/or other substances stored at the facility and notify response personnel at the scene of that assessment.
- Assess the possible hazards to human health and the environment considering both the direct and indirect effects of the release (e.g., toxic, irritating, or asphyxiating gases, hazardous materials in surface water runoff, fire, chemical agents used to control fire and explosion).
- Assess and implement prompt non-emergency actions to mitigate, contain and remove the substance released.
- Coordinate rescue and response actions as previously arranged with all response personnel.
- Use authority to immediately access company funding to initiate cleanup activities.
- Direct cleanup activities until properly relieved of this responsibility.

The Primary and Alternate ERC (Emergency Response Coordinator) is the individual designated by the plant who has the authority and responsibility for directing an expanded emergency response. The Primary and Alternate ***ERC*** are Qualified Individuals and are responsible for all required communication with responders, regulatory agencies and NAES/KLES management regarding emergency response activities and preparing follow-up written reports in accordance with this ICP and regulatory requirements. The ***ERC*** has the authority to draw upon and direct any NAES personnel and NAES resources to respond to the emergency. The ***ERC*** is also NAES' point of contact with appropriate federal and local agencies in the event of a spill response action. The ***ERC/QI*** has been trained to implement this ICP for an oil spill response, and the ***QI*** has been given the authority to meet the legal and regulatory requirements of the Oil Pollution Act of 1990 (OPA-90).

The Federal On-Scene Coordinator (OSC) is a federal employee pre-designated by the regional or district head of the lead oil spill response agency that can direct spill response efforts and coordinate other related emergency efforts at the scene of a discharge or release. This ICP considers the OSC to be KLES' liaison with the Area or Regional Contingency Plans in the event of a major spill/release event for which the OSC requests control from the KLES ERC/QI.

In this role, the OSC can coordinate, direct and review the work of other agencies, responsible parties, contractors' agencies, and contractors to assure compliance with the National Contingency Plan (NCP), decision document, consent decree, administrative order, and lead agency-approved plans applicable to the response. However, while a response is under the control of the facility ***ERC/QI***, the facility will maintain responsibility for coordinating with relevant agencies. This responsibility includes:

- creating information distribution lists;
- scheduling government briefings;
- establishing required files and reports;
- coordinating the flow of information into and out of the incident;
- following up on support requests from government agencies; and,
- being available to respond to agency concerns before they become public issues.
- Assess and monitor the extent of the emergency situation, including character, exact source, amount and interaction with water or other substances stored at the facility, possible hazards to human health and the environment created by the incident, and potential for leaks, pressure build-up, gas generation and ruptures.
- Alert plant personnel, formulate and direct protective actions.
- Mobilize, implement and manage the Emergency Response Organization as needed to anticipate and proactively accomplish the response.
- Activate the on-site Emergency Operations Center (EOC) if required.

- Assess priorities.
- Determine strategic goals and tactical objectives.
- Direct the implementation of appropriate response procedures, including the proper treatment, storage and disposal of any wastes generated.
- Anticipate response needs and authorize the ordering, deploying and demobilization of response resources (contractors and equipment).
- Serve as the ultimate safety authority, approve the safety plan, and ensure the maximum achievable level of responder safety.
- Coordinate actions with Local, State, and Federal Agencies and contracted responders.
- Coordinate protective actions for the public, as appropriate.
- Authorize information releases to the media and participate in scheduled press conferences.

Local Emergency Response Organizations In addition to the procedures described above, the Compliance Coordinator is in regular contact with local and other emergency agencies and organizations to coordinate emergency planning. In the event that a release occurs or an emergency response involves hazardous materials, it is expected that the City of Middletown emergency agencies will respond in accordance with their mission and training (e.g. Fire Department response to a facility fire and Police Department acting to facilitate evacuation). In addition, Middlesex Hospital is the local hospital identified to receive injured employees or response personnel as a result of any emergency, including hazardous material or waste release or response. Copies of this plan have been distributed to the following local organizations listed on the plan distribution page:

- Oil Spill Response Organization (OSRO) Contractor
- US EPA Region I, Regional Administrator

Other agencies may be provided a copy if they determine that they need it to respond as described. If any agency or organization listed above refuses to respond in an emergency, that refusal will be documented by the facility.

In the event that the facility becomes a Hazardous Waste Large Quantity Generator, the plan would also be distributed to the following organizations:

- Middletown South Fire District
- Middletown Police Department
- Middlesex Hospital

Facility and hazardous substance emergency information is also communicated through the Connecticut Tier II Chemical Inventory Reporting system to the following agencies:

- State Emergency Planning Commission (CT DEP)
- Middletown Capital Region Emergency Planning Committee
- Middletown South Fire District

In the event that the content of these submittals changes significantly, modified portions will be provided to the appropriate agencies.

III.3.b.1. Facility Incident Commander and Qualified Individual

The facility Incident Commander is the ***ERC*/*Qualified Individual*** (Primary and Alternate) identified in the Emergency Notification Phone List located in the beginning of **Section II** of this ICP. The responsibilities and duties of these individuals are described above in Section III.3.b.

All response personnel identified as Qualified Individuals have received at least Qualified Individual training. Those personnel also have previous power plant experience and training.

III.3.b.2. Information

Information is communicated at the KLES facility using a telephone network, two-way radio communications systems, and automated alarm systems for normal operations on the site as well as for emergency response. This is augmented by the Gai-tronics PA/emergency notification system.

Telephone System:

During an emergency, the site phone system would function as a primary means of individual communications and the Gai-tronics system is the primary means of mass communication. The central communications point in an emergency is the CONTROL ROOM.

Radio Communications: The Control Room Desk is equipped for radio communications. KLES uses eight primary radio channels for normal plant operations. One base station on the console allows for two-way communications on 7 channels, and one channel Direct, in case the on-site signal repeater fails.

Control Room Operators carry hand radios at all times to communicate with the field operators and other plant personnel in their respective organizations. The following radio frequencies are in use at the facility:

Radio Frequencies in Use at KLES				
Loc.	Ant.	Frequencies	Emission Designator	Sta. Cls.
1	1	000464.83750000	7K60FXD 7K60FXE	FB2
2	1	000464.83750000	7K60FXD 7K60FXE	MO
2	1	000469.83750000	7K60FXD 7K60FXE	MO
3	1	000469.83750000	7K60FXD 7K60FXE	FX1
4	1	000456.83750000	7K60FXD 7K60FXE	MO

Alarm Systems: The facility central fire alarm system consists of a Main Fire Alarm Control Panel (MFCP) to supervise all automatic and manual fixed fire suppression and detection systems and provide common fire and trouble signal from Local Fire Alarm Panel (LFAP).

Alarm signals are initiated in response to activation of water flow or pressure switches from local fire protection systems. Trouble signals are initiated in response to activation of tamper switches, faulty devices, or break in supervisory circuits.

Visual alarms are provided throughout the plant area, and at the fire alarm panel in the control room.

Audible alarm horns are provided through the GAI-Tronics (PA) system in the plant area and at the fire alarm panel. Audible alarms are compatible with the environment in which they are located, to ensure the signal is clearly audible above ambient noise levels

III.3.b.3. Safety

The ***ERC*** has control over safety during an Emergency Incident. The following Environmental Health and Safety activities will be completed or delegated by the ***ERC*** during an emergency:

- Patrol the area at a safe distance to identify additional safety and environmental hazards.
- Assist in keeping people away from the evacuated area until the "all clear" signal is given by the Incident Commander.

III.3.b.4. Liaison –Staff Mobilization

The ***ERC*** will coordinate mobilization between internal resources and external response teams, if necessary. Coordination with local authorities will be completed or delegated by the ***ERC***.

III.3.c. Operations

The chief of the operations function is the ***Operations Supervisor*** or the alternate is the ***Maintenance Supervisor***. The ***ERC*** may assign these responsibilities to another staff member if necessary. Specific responsibilities include:

- Assisting the in defining strategic response goals and tactical operations objectives.
- Developing detailed mission assignments, and scheduling duty lists and operational assignments to accomplish the strategic response goals and tactical operations objectives.
- Identifying additional resources required and recommending to the ***ERC*** excess resources which can be released.
- Evaluating and reporting to the ***ERC*** on a continuing basis the effectiveness of response activities.

The ***ERC*** can designate outside resources to assist with certain activities described above for a specific response action.

III.3.c.1. Operational response objectives

Operational response objectives are defined in Section II.2.d. of this ICP. Incident-Specific Emergency Response Guidelines including operational activities are provided in the Response Guidelines in **Section II.2.g** of this ICP.

III.3.c.2. Discharge or Release Control

Refer to the Emergency Response Guideline for Petroleum or Chemical Release in **Section II.2.g** for immediate actions to be taken in the event of a spill.

1. Containment and cleanup activities for a small or medium discharge as described herein in an impervious containment area could be performed by trained facility personnel if it they can perform it without endangering themselves (e.g., no significant flammable vapors, can be pump transferred, small amounts of absorbent can be deployed to remove the spill, etc.). The release associated

with this discharge scenario should otherwise be effectively be removed by the OSRO spill cleanup contractor.

2. The largest portion of any discharge will likely be cleaned up and removed manually. If the discharge has been confined to a paved area, the discharged material should be removed by bucketing or pumping the oil into 55-gallon drums. After the bulk of the liquid has been removed, spreading absorbent material can be used as both a safety feature to reduce slipping and to absorb surface oils.

3. If a small discharge reached plant storm water inlets, catch basins or sedimentation basins, plant personnel will either deploy an absorbent-type of boom across the path of flow or a 25 ft. long boom at the downstream end of the sedimentation basin. Absorbent booms will be manually removed when saturated with oil and replaced with new booms until all of the oil has been absorbed. The OSRO will remove oil from behind booms placed at the basins.

4. If a small discharge escaped the sedimentation basins, plant personnel will deploy absorbent-type boom across the storm water drainage ways between the basins and the river, if feasible.

For a small discharge that escapes containment and flows through the storm water system, facility personnel are capable of deploying drain mats, absorbent booms and two 25 ft. lengths of boom at the downstream end of the sedimentation basin within one (1) hour of discovery. The facility has also contracted to provide 1,000 linear feet of containment boom to be deployed should the spill penetrate both the secondary containment and the storm water sedimentation basin and reach the river; however, deployment of this additional equipment within one (1) hour of discovery of the spill is not a certainty due to mobilization time. There are several factors that suggest this approach is acceptable including:

- The facility will store stormwater mats to cover storm drains and absorbent materials sufficient to locally contain up to twice the anticipated spill volume or 200 gallons (Scenario 2) for rapid deployment by employees.

- The facility will store two 25 foot lengths of boom on-site for rapid deployment to the on-site sedimentation basins by site personnel in the event that a spill escapes both secondary containment and response measures local to the spill.
- The potential for a small discharge to reach navigable waters is very small given the secondary containment on storage and unloading and the ability of plant personnel to deploy containment in the storm water collection system, sedimentation basins and downstream storm water drainage ways within 1 hour to contain small spills and prevent them from reaching the river.
- The facility does not have direct access to the river and the OSRO's ability to mobilize the booms directly to the river for response is better than that of the limited facility staff.
- NRG, an FRP facility with on-site response capability, will be immediately notified of uncontained flow and its response measures to protect their water intakes may assist in containing small spills reaching the shore (see worst-case discharge discussion below).
- If oil should reach the river, it could travel past the first possible river launch site (NRG dock) in a little less than 1 hour and will not reach the second launch site down river for more than 2 hours. This is ample time for the OSRO to deploy upstream of the feasible launch site before the oil reaches it.

For a medium discharge, the facility has contracted to provide recovery devices with an effective recovery capacity of 50% of the planning volume (36,000 gallons) or 18,000 gallons per day within twelve (12) hours of discovery of the discharge. It has contracted for temporary storage within the same time of twice the effective daily recovery (18,000 gallons) or 36,000 gallons. Additionally, sufficient booms are available through contract to span the river upstream of environmentally sensitive areas and thus additional booms to protect shoreline areas are not necessary. Booming of the sedimentation areas by facility personnel is expected to be sufficient to maintain any small and medium discharges on site given the surface areas of the sedimentation basins and the 10" draft height of the booms.

Worst-case discharge on-scene effective oil recovery and storage capacities are based on the calculations in **Annex 14** completed for this facility (in accordance with 40 CFR 112 Appendix E, Attachment E-1). Using a 20 percent efficiency factor (40 CFR 112 Appendix E, 6.2.1), the rated recovery provided will be five times the effective recovery requirements. The OSRO will provide:

Within (Hours)	Effective Recovery Capacity (gal/day)	Rated Recovery Capacity (gal/day)	Temp. Storage Capacity (gal)
12	121,842	609,210	243,684
36	162,456	812,280	324,912
60	243,684	1,218,420	487,368

In the event that booming the onsite sedimentation basins did not prevent the spill from reaching the river, a worst case discharge would require booming the river. The NRG facility located approximately 1 mile downstream of the Kleen Energy Facility is also an FRP facility and receives barge shipments of oil. This facility has 2000' of boom onsite, a response boat, river access and trained personnel for deployment of this boom. Upon notification of a spill to the river, NRG personnel would at a minimum have to take defensive action to deploy their boom to protect their fresh water intakes. Given the calculated river velocity of 1.7 ft./second, a spill could travel on water up to approximately 1.1 miles in 1 hour. A recent government originated exercise confirmed their ability to deploy boom within an hour and adding the over land migration time to for a spill to reach the river (approximately 1/3 mile from the storage tanks) there is likely to be sufficient time for NRG to deploy its boom to prevent the spill from affecting the NRG facility.

The facility's OSRO contractor will initially respond to the first available river entry point beyond the extent of oil movement. Depending on the tide and river velocity, this could be the NRG dock mentioned above, the Pratt and Whitney dock (the next downstream entry approximately 2.9 miles downstream on Aircraft Road in Middletown) or a variety of public access points. While not obligated to provide

access, the facility would request access in advance of their arrival and both NRG and Pratt and Whitney have used the facility's OSRO as a one of their OSRO contractors, so they are familiar with these facilities and their access/safety protocols. If necessary, the OSRO contractor could enter the river at public access points and travel on river to intercept the spill, deploying booms to stop the spread of the spill and begin recovery activities.

The calculations for a worst case discharge are based on the maximum tank capacity of 4,061,400 gallons. The expected maximum volume of No. 2 fuel oil is only in the event of a natural gas interruption and thus the normal maximum volume to be maintained in Tanks A-1 and A-2 is less than maximum capacity and a practical worst-case tank failure would not result in release from the secondary containment.

Practice drills and response training needed to effectively carry out these procedures are described in detail later in this section. Information on additional emergency response resources, contractors and equipment, are provided **Annex 10** and **Annex 13**.

III.3.c.3. Assessment/Monitoring

The Emergency Response Coordinator/Qualified Individual is responsible for assessing and monitoring for the materials involved in the emergency incident. KLES maintains the following equipment in order to complete monitoring to assess potential impact to the health and safety of workers and the public:

- Multi-gas meters (Carbon Monoxide, Oxygen, Lower Explosive Limit, Hydrogen Sulfide, and Ammonia)

All monitoring equipment is maintained in accordance with manufacturer's recommendations.

III.3.c.4. Containment

A proper plan to contain and control a spill through drainage may limit the threat of harm to human health and the environment. Tank A-1 and A-2 are constructed

outdoors within a secondary containment structure that requires periodic drainage. The catch basins in the fuel oil storage area, pump pad and metering pad all drain to a 4000 gallon oil water separator with a 1600 gallon oil capacity designed for flow of 400 gpm. Water which accumulates in the fuel oil tanks is periodically drained to a dedicated oily water tank and then shipped for off-site treatment and disposal.

The plant grading and drainage is designed for all stormwater flow to drain to sedimentation basins. These basins are designed to hold and settle stormwater and recharge the groundwater during low storm flow conditions. They can also be used as a means to contain oil spills from the facility, should they escape the engineered secondary containment systems. Figure 6 shows the grading and drainage in the vicinity of the fuel oil tanks.

Refer also to section III.3.c.2 of this ICP for more on containing small, medium and worst case discharges.

III.3.c.5. Recovery

Without planning for minimizing wastes, the rush to cleanup quickly has sometimes resulted in unnecessarily large volumes of material that requires disposal. Cleanup techniques that minimize the amount of material for disposal will be used, where possible. Where feasible, wastes will be directly loaded onto tank trucks or dump trucks for transportation and disposal. When necessary, a designated area near the cleanup site will be identified and established to stockpiling cleanup materials prior to disposal. The material should be stockpiled in a safe manner that will minimize the potential for contaminating surrounding soils, ground water or storm water runoff (e.g., tanks, roll-offs, plastic lined areas, etc.).

The proper disposal of materials generated by cleanup activities is an important consideration for the facility. Potential materials that may need to be disposed of include:

- Recovered product
- Contaminated soil
- Contaminated water

- Contaminated equipment and materials, including drums, tank parts, valves and shovels
- Personal protective equipment
- Decontamination solutions
- Adsorbents
- Spent chemicals

The facility will contract transportation and disposal of spill response waste. Materials generated from a small discharge may be disposed of by the facility. Materials generated from medium or worst-case discharges will be disposed of by the emergency response contractor.

III.3.c.6. Decontamination

In most instances, KLES personnel will respond defensively to hazardous material releases and avoid direct contact. Nevertheless, employees or equipment may come in contact with hazardous materials and this would require that they be decontaminated. The IC or ERC/QI will determine if individuals require more than the basic decontamination described below based on the hazardous materials exposure at the facility and, if so, they will provide alternate instructions.

Personnel Decontamination

Decontaminate anyone who gets spilled hazardous material on their skin or clothing immediately to help protect the health and safety of personnel involved and prevent the spread of the hazardous material. Based on the types of materials handled and stored at the facility, most personnel decontamination can be completed using the following basic decontamination procedures.

Preparation:

1. Check your own hands and feet (both should be protected upon arrival at the scene or all contact should be avoided) for any signs of contamination.

2. Observe each other. Do a complete visual check of other personnel for signs of contamination. If a substance is noted, do not touch, but rather, wait until decontamination procedures can be employed.

3. Set up plastic sheeting for the brush off method or basins for the hose off method.

4. For disposable protective gear (or contaminated clothing or if you are unsure that any piece of reusable protective clothing or equipment has been completely decontaminated), carefully remove articles by peeling back so the gear ends up inside out and place in receptacles or leave behind to be properly collected. Employee safety comes first, equipment and clothes can be replaced.

5. While decontaminating, avoid direct contact with the contaminated item.

Brush Off Method – Do not come in direct contact with the contaminated item. Use brooms, sponge mops, dust mops, and other such utensils to brush off the material or apply cleaning agents and collect it on plastic sheeting. Brushing off the material, from a contaminated person or piece of equipment could be sufficient for solids, wet mopping may be sufficient for some liquids.

Hose Off Method – Set up a hose line and an area that is diked or has basins set up to prevent runoff and divert the material to a safer area for later treatment and disposal. Direct the individual into the area and, if assisting, minimize direct contact by keeping the maximum practical distance and wearing appropriate protective gear.

"Hose off" the contaminated individual liberally with water to flush the hazardous material from protective clothing and equipment. A support line or garden hose with high pressure, low volume will remove a large percentage of gross contaminants. By lowering water pressure, the chances of overspray or splashing will be minimized.

The ***IC*** or ***ERC/QI*** will determine if equipment requires decontamination upon termination of the emergency incident and response activities and whether it may be salvaged or disposed as described in Section III.3.d.4.

III.3.c.7. Non-Responder Medical Needs

Emergency medical service (for responders and non-responders) is generally provided by the Middletown South Fire District. If necessary, injured personnel will be transferred to a local hospital (see Emergency Notification Phone List). Middlesex Hospital in Middletown serves as the primary hospital for the facility. If necessary, ambulance service will be requested during the initial 911. The local hospitals are modern facilities, equipped and staffed to handle emergency trauma. The hospitals are large enough to handle several injured personnel at a time. If the injured personnel were or might have been exposed to hazardous chemicals, the First Responders will ensure that the hospital is notified in advance of transport of contaminated injured individuals, and that the appropriate MSDS, or other such information, is made available to the hospital emergency room personnel.

III.3.c.8. Salvage Plans

This ICP has been developed to meet the emergency response requirements for the regulatory programs described in Section I.1. There are no requirements for this ICP to include information on Salvage Plans based on the regulatory programs that are applicable to the facility.

III.3.d. Planning

The ***Plant Manager*** is in charge of the planning function. The ***ERC*** may assign to the ***Plant Manager*** the responsibility for implementing and managing planning section activities to proactively accomplish the response. Specific responsibilities include:

- Anticipating the need for status information about incident response and proactively gathering and disseminating information required.
- Evaluating alternative strategies and tactical operations on a continual basis and making recommendations to the ***ERC***.
- Recommending changes to the organization to best support the implementation of the action plan.

The planning section is responsible for the following job functions, which the ***Plant Manager*** may delegate to planning staff as follows:

Health and Safety

Natural Resources and Wildlife

Demobilization Planner

III.3.d.1. Hazard Assessment

In accordance with 40 CFR 112.7, it is reasonably possible that a spill event could occur at the facility. This section presents potential spill sources, potential spill scenarios, and potential causes of spills at the Station. In addition, this section addresses the U.S. Environmental Protection Agency (EPA) defined small, medium, and worst case discharges (40 CFR 112.21(h)(5) and Appendix G). Included in **Annex 9** of this ICP are tables of potential spill sources at the facility, spill scenarios, and general flow directions (refer to Section III 1.c. for details regarding spill flow direction and containment). The defined and/or calculated EPA discharges are also summarized in the above referenced table (calculations are presented in **Annex 14**, EPA Worst Case Discharge Planning Volume). In addition, the Applicability of Substantial Harm and associated certification has been included in **Annex 19**.

Analysis of the Potential for an Oil Spill

At this facility, the worst-case discharge, the primary subject of this ICP, would involve a catastrophic failure of one of the 4,061,400 gallon capacity tanks containing No. 2 fuel oil. The tanks were installed and tested in 2009 and are located within a secondary containment structure consisting of a concrete wall supported by an earthen berm, designed to contain a release caused by a catastrophic tank failure with a minimum design capacity of 5,155,416 gallons based on providing a minimum capacity of 110% of the tank plus a freeboard of 6 inches. The top of the wall was made significantly higher than the minimum criterion and is at least 2.4 feet above the 110% level and 3 feet above the 100% level. The required worst case scenario assumes that the inventory of one tank is not contained in the dike, conceivably due

to the potential for a catastrophic instantaneous tank failure causing splash or a failure of the containment. Factors that minimize the potential for this occurring include:

- These tanks are not the primary fuel source for the facility but rather backup in the event of natural gas unavailability. For this reason the tanks will not normally be completely filled but will have an administratively controlled inventory less than full capacity as a precaution against natural gas supply interruption.
- The tank will be inspected and tested in accordance with the provisions of this ICP which includes the FRP and the Spill, Prevention, Control and Countermeasure plan for the facility.
- The conservative secondary containment wall sizing means that the height of the wall is 2.4 feet above the level in the dike at 110% of tank capacity and approximately 3 feet above the level in the dike at 100% of tank capacity. This 3 foot buffer provides added protection against splash.

As a result of administrative controls, design features and inspection practices, the probability of a catastrophic failure of the tank is low. In the unlikely event of release of the entire tank contents, if the oil is retained within the structure and subsequently removed, in accordance with its design, there would be limited risk of endangerment to human health or the environment. Even if there were a catastrophic failure were instantaneous resulting in a wave, the potential for significant splash will be reduced by the large surface area (which allows a spill to spread out) and the additional 3-foot height of the wall above the 100% capacity spill level.

If the tank were to catastrophically fail while full to capacity instantaneously in a manner that results in splash outside of the secondary containment structure (or if the containment itself failed), No. 2 fuel oil would escape the secondary containment. Any oil spilled would likely travel downhill toward River Road and, depending on the amount of splash, might be contained in Sedimentation Area 1 (adjacent to River Road and the Power Plant Access Road. The distance from the storage tank location to the river is approximately 650 feet with significant foliage, soil and rocks along a tortuous flow path toward the river.

Based on the fact that these are newly installed tanks and the other factors described herein, it is considered extremely unlikely that a worst-case discharge

involving a catastrophic failure of the tank and overtopping the secondary containment could occur.

Discharge Scenarios

A multi-level planning approach has been chosen because the response actions to a spill are dependent on the magnitude of the spill. Planning for lesser discharges is necessary because the nature of the response may be qualitatively different depending on the quantity of the discharge.

Action, in a swift and responsible manner, is the surest way to minimize damage in the event of a discharge. A procedure as simple as shutting off a pump, plugging a hole with a rag or closing a valve could mean the difference between a major and a very minor discharge. However, extreme care in judgment should be used when responding to a discharge incident. For instance no attempt should be made to plug a hole in a vessel when the vessel shows signs of being in danger of collapse. Also, the discharged substance should first be identified to determine the proper protective clothing and safety equipment necessary for a safe response.

Small and Medium Discharges

Small and medium oil discharge scenarios are evaluated in this section. The scenarios account for all operations that take place at the facility, including but not limited to:

1. Unloading of surface transportation
2. Facility maintenance
3. Facility piping
4. Pumping stations and sumps
5. Oil storage tanks
6. Age and condition of the facility

The scenarios were also developed in consideration of other factors that affect the response efforts required by the facility. These include, but are not limited to:

1. Size of the spill
2. Proximity to down-gradient wells, waterways, and drinking water intakes
3. Proximity to fish and wildlife and sensitive environments
4. Likelihood that the discharge will travel off-site (i.e. topography, drainage, etc.)

5. Location of the material spilled (i.e. concrete pad, soil, etc.)
6. Material discharged
7. Weather or aquatic conditions (i.e. river flow)
8. Available remediation equipment
9. Probability of a chain reaction of failures
10. Direction of spill pathway

Based on these factors, four scenarios were considered. These include

1. Truck failure while filling Tank A-1 and A-2 with No. 2 fuel oil (Scenario 1),
2. An oil spill in the plant yard without secondary containment (Scenario 2),
3. A failure of the No. 2 fuel oil transfer pump(s) (Scenario 3), and
4. Failure of the No. 2 fuel oil transfer pipeline (Scenario 4).

1. Scenario 1

The tanks are normally filled through a DOT regulated oil pipeline that terminates at the tanks inside the secondary containment structure. If the backup tank truck supply method must be used to re-supply the 4,061,400 gallon No. 2 fuel oil tanks, deliveries will be made with a maximum tank truck capacity of approximately 7,000 gallons. The supplier will drive to the truck unloading area and, with site operations or maintenance personnel in attendance, will unload following site fuel oil truck unloading procedures. The fuel oil truck unloading station is located on a concrete pad just outside the fuel oil tank containment area. Potential discharges of oil occurring during a truck unloading operation will be diverted along the pad, which is sloped to the north and west, into a 2' wide trench that flows into a concrete sump of approximately 1800 gallons. The sump is equipped with an overflow pipe and a 6" diameter main drain pipe that leads to the fuel oil storage tank containment structure. The drain pipe is equipped with a manual valve at the sump that must be opened prior to unloading and a tide-flex check valve inside the containment structure. The check valve prevents oil from flowing up the drain line in the event of a spill to containment from one of the fuel oil tanks. The fuel oil tank containment structure is more than adequate to contain the volume of any delivery truck. On certain occasions, up to two (2) trucks may unload oil simultaneously. However, the likelihood that more than one (1) truck would have a spill at the same time is very low. Facility operating procedures require that the unloading process take place while attended by KLES personnel.

Following this procedure, any release during the tank filling process would immediately be identified by the attending driver and KLES personnel. If, for some reason, the unloading process were unattended, a release would ultimately be contained by the truck unloading area and the fuel oil tank containment. The discharge would then be discovered within a 12-hour shift by plant personnel, prior to the discharge traveling off-site.

This scenario qualifies as a small discharge (<2,100 gallons) if the attending personnel are available to immediately respond to the spill. An estimated 100 gallons may be spilled. Should the KLES or delivery person not be available, the scenario could be a medium discharge (between 2,100 gallons and 36,000 gallons) with up to 7,000 gallons spilled. Normally, even a 7,000 gallon spill would be fully contained in the sump and storage tank dikes. For the spill to escape containment, the driver and facility staff would have to fail to execute both the procedure of opening the overflow valve to the tank containment and the procedure of continuously attending the unloading. If these procedures are violated, it is conceivable that a spill could flow off of the containment pad (e.g., valve to tank containment not opened and driver not attending, driver fails to notify site staff of completion and pulls-away before unloading complete). Oil would flow downhill and be deposited on the soil as it flowed; however, a large release could reach Sedimentation Area 1 (see the drainage plan found in Annex III, Section III.1). Plant personnel could deploy absorbent material downhill of the unloading pad, including adjacent to the roadway (across the vehicle opening to the main containment) and across the roadway. They could also apply mats to storm inlets or place booms in front of the outlet pipes of the storm water sedimentation basin (Sedimentation Area 9) to prevent the spill from leaving the site boundary. Given the boom height (10" draft) and surface area of the sedimentation basin this entire discharge is expected to be contained onsite.

2. Scenario 2

Vehicles containing oil and fuel travel through the plant yard during the course of normal operations at the facility. Occasionally, the emergency diesel generator or fire water pump tanks will have to be refilled by tank truck delivery. These are generally smaller deliveries, but may be up to the capacity of the tank (i.e., up to 2000 gallons). Such a spill would be in an area without secondary containment and begin to flow to a storm inlet and through the storm sewer along to the main plant sedimentation area (Sedimentation Area 7). Assuming the most unfavorable weather conditions, the spill or leak (e.g., through a leaking shutoff valve) could occur during a rain event. The spill could be stopped by applying a storm drain mat from a spill kit or detained and recovered at the sedimentation area 7 located north of the power block. Plant personnel could deploy a boom across the outlet pipes of the sedimentation basin to prevent the spill from leaving the site boundary. Given the boom height (10" draft) and surface area of the sedimentation basin this entire discharge is expected to be contained onsite. With heavy rainfall or if the spill is not promptly contained and cleaned up it could be discharged from the sedimentation basin and continue to flow with stormwater downhill toward River Road and the Connecticut River. However if the spill was not

addressed in time to detain it in Sedimentation Area 7, there is another sedimentation basin (Sedimentation Area 9) downstream where the spill could be contained by booming the outlet.

This scenario qualifies as a small discharge (<2,100 gallons) since the driver would be constantly attending the normally small delivery and would be available immediately to respond to the spill. An estimated 100 gallons may be spilled.

3. Scenario 3

Pumps that transfer No. 2 fuel oil from the storage tank to its point of use in the facility are located inside the fuel oil tank secondary containment structure. Should a pump fail and discharge oil, the discharged oil would be inside the secondary containment structure. The pump skid and catch basins in the secondary containment structure flow to an oil water separator which has High Oil Level alarm that annunciates in the control room and a High-High Oil Level switch that closes the inlet valve to the oil water separator in the event that procedures were not followed and the manual discharge valve was left open. Once the oil water separator is isolated by the high-high oil level interlock, the discharge would continue to flow into the secondary containment structure where it could be cleaned up and removed.

For this scenario, it is assumed that the forwarding pump (640 gpm maximum sustained flow rate) has a severe leak for 30 minutes before the failure is detected. This would qualify as a medium discharge (between 2,100 gallons and 36,000 gallons) with up to 19,200 gallons spilled, but all of it would be contained to secondary containment (unless there was a simultaneous failure of the interlock and failure to follow procedure and keep the manual valve closed).

4. Scenario 4

Underground piping is used to convey No. 2 fuel oil from the storage tank to its point of use in the Turbine Building. The underground piping is double wall piping with continuous leak detection. If a leak developed in the piping the leak detection system would provide indication of a leak so that operators could stop the flow of oil before a discharge could occur. The system can also provide information on the approximate location of the leak.

For this scenario, it is assumed that the piping fails for 30 minutes before the failure is detected and operators respond to the alarm by turning off the pumps (this is a conservative estimate based on the presence of the

piping leak detection system and a continuously staffed control room). This would qualify as a medium discharge (between 2,100 gallons and 36,000 gallons) with up to 19,200 gallons spilled but all of it would be contained in the secondary containment.

Response to each of these scenarios is described in **Section III.3.c.2** and **II.2.g**.

Worst-Case Discharge

At this facility, the worst-case discharge would involve the catastrophic failure of Tank A-1 or A-2 while it is full to capacity and splash over the top of its secondary containment structure or complete failure of the containment. This tank has a capacity of 4,061,400 gallons of No. 2 fuel oil. Thus, the facility has assumed that this volume is the worst-case discharge. As discussed earlier, a practical worst-case tank failure would not result in release from the secondary containment.

Response to each of these scenarios is described in **Section III.3.c.2** and **II.2.g**.

III.3.d.2. Protection

Fuel oil transfer operations represent the most probable scenario for large scale oil releases at this site. Fuel oil delivery suppliers are required by facility management to stay within reach of cutoff valves at all times during oil transfer. Additionally, as added protection, facility personnel with appropriate oil spill prevention and notification training are in attendance when deliveries are made so response can begin immediately should an incident occur. This is done by monitoring the unloading process in person and from the control room through security cameras.

KLES has identified objectives, goals, and priorities to protect the public, Kleen Energy and NAES personnel, the environment, and the facility property in Section III.3.c, Operations. In addition, procedures have been developed, including **Section II.2.g**, to describe protection activities that will be completed during an emergency response.

In addition to the procedures described above, physical structures, such as containment and drainage systems as described below, have been constructed and designed to protect people, the environment, and the facility from potential exposure to hazardous materials.

Containment and Diversionary Structures

Methods of secondary containment at this facility include a combination of structures (e.g., dike, berm, and built-in double-wall secondary containment), drainage systems (e.g., Oil/Water Separator), and land-based spill response (e.g., drain covers, sorbents) to prevent oil from reaching navigable waters and adjoining shorelines:

- For bulk storage and small diesel tanks (refer to **Annex 18**):
  - **Dike** – A concrete wall with an earthen base enclosure is provided around fixed aboveground fuel storage tanks (containers 1 and 2, 562-TNK-9001 and 562-TNK-9002, as described in **Annex 18** designed to contain 110% of the tank capacity. See **Annex 24**.
  - **Double-Wall Tank Construction** – Double wall aboveground storage tanks are used for Fire Water Fuel Oil Tank (Container 4, double wall steel), Emergency Diesel Generator (Container 5, double wall steel) and Ranney Wells Emergency Diesel Generator (Container 32, double wall with concrete outer wall), all designed to contain 110% of the tank capacity.
  - **Oil/Water Separator (Bulk Storage Tank Area).** The stormwater is only drained from the bulk storage area to the stormwater system after inspection of the retained water for spills. It drains through an Oil/Water Separator to further safeguard against oil from being discharged. The Oil/Water Separator has a total capacity of 4,000 gallons, an oil capacity of 1,600 gallons and a design flow rate of 400 gallons per minute. The Oil/Water Separator is inspected monthly as part of the scheduled inspection to check the level of water within the separator and measure the depth of bottom sludge and floating oils. Floating oil is removed by a licensed waste disposal firm when it reaches the high oil level alarm point. An inlet shutoff valve automatic closes in the event of a high-high oil level condition (1,600 gallons).

- For chemical storage tanks and totes:
  - **Dikes/Sumps** – All chemical tanks and totes are located within buildings in containment areas constructed with concrete base and walls designed to contain at least 110% of the tank capacity (see **Annex 9**).
- Oil filled equipment:
  - **Oil Filled Transformer Concrete Containment Dikes** - The electric transformers (oil filled electrical equipment) contained within the plant's switch yard are located in concrete secondary containment structures, which contain any oil that may be released. These areas will be visually inspected before being pumped out to drain to area storm inlets and downstream stormwater catch basins to prevent any oil release.
  - **Operational Equipment Turbine Building Containment** – Many areas with equipment containing significant amounts of oils are diked or curbed to locally contain oil spills. These catchment areas are not exposed to precipitation. Larger operational equipment (i.e., Lube Oil Reservoirs) have secondary containment as well as low oil level alarms that will alert operators to a potential leak and higher pressure supply piping encased in lower pressure return piping. All building drains in areas subject to potential oil discharge from equipment are routed to the Oil/Water Separator which separates and detains any oil. Best Management Practices are used to minimize the amount of solids and oil that flow into the Oil/Water Separator. Facility personnel are instructed to avoid spills and address small spills using sorbents to minimize runoff of oil into the Oil/Water Separator.
  - **Oil/water Separator (Turbine Building).** This Oil/Water Separator is designed to separate and retain oil from turbine building drains. The Oil/Water Separator has a total capacity of 4,000 gallons, an oil capacity of 1,600 gallons and a design flow rate of 400 gallons per minute. The water is pumped out using level controlled submersible pumps. Floating oil is removed by a licensed waste disposal firm when it reaches the high oil level alarm point. The high-high oil level switch activates an alarm and automatically shuts down the wastewater sump (inlet) pumps in the event of a high-high oil level condition (1,600 gallons). Operators must respond to

contain and contact response contractors to collect the oil in the event of a large discharge before re-activating the water discharge. The Oil/Water Separator is inspected monthly as part of the scheduled inspection to check the level of water within the separator and measure the depth of bottom sludge and floating oils.

- **Fuel Gas Compressor and Conditioning Skids** – These skids include oil filled operational equipment that continuously removes traces of condensed oil and water in small process vessels (425 gallon or less). Levels in these vessels are monitored and periodically drained to "Skid Drain" tanks to allow for removal by a licensed waste disposal firm. The skids are located in the Fuel Gas Compressor Building and all building drains are routed to the Turbine Building Oil/Water Separator which separates and detains any oil which may be discharged from the equipment.

- Non-Bulk Storage Areas
  - **Drum/Container Storage and Oil Dispensing Areas**. Up to 4 drums and 8 65-gallon dispensing containers of fresh oil and an Intermediate Bulk Container (IBC) of used oil will be stored inside the Water Treatment Building and are not exposed to precipitation. Oil dispensing will primarily be conducted in the dispensing rack with integral secondary containment. The IBC will be placed on an IBC secondary containment unit. Should hazardous waste be generated, drums will be staged on containment pallets, closed when not being filled, separated from any incompatible wastes, properly labeled, positioned so the labels can be inspected and inspected to ensure that drums remain in good condition and are promptly disposed. If more than 1 pallet is stored, sufficient aisle space will be maintained to inspect each drum and label. Each spill containment unit has a secondary containment capacity greater than the volume of any single container.

- In transfer areas and other parts of the facility where discharge could occur:
  - **Fuel oil truck spill containment concrete pad / sump** - The fuel oil truck unloading station is located on a concrete pad near the fuel oil storage tanks. Potential discharges of oil occurring during truck unloading will be diverted along the pad, which is sloped to the north and west toward, a 2 foot wide

trench that flows into a concrete sump of approximately 1,800 gallons. The sump is equipped with an overflow pipe and a 6" diameter drain pipe that directs any additional volume to the fuel oil tank containment structure. The drain pipe is equipped with a manual valve at the sump and a tide-flex check valve inside the containment structure. Standard operating procedures and training direct operators to open the manual valve prior to unloading so spills exceeding 1,800 gallons will be collected in the fuel oil tank containment. The check valve prevents oil from flowing up the drain line in the event of a spill to containment from one of the fuel oil storage tanks. The fuel oil tank containment structure is more than adequate to contain the volume of any delivery truck.

- **Chemical truck spill containment** - The loading station for the aqueous ammonia tank drains into the Aqueous Ammonia building tank containment area. The loading station for the Sodium Hypochlorite, Sodium Bromide, Sulfuric Acid and Corrosion/Scale Inhibitor Tanks (adjacent to the Circulating Water Chemical Treatment building) drains to the Cooling Tower Chemical Feed Area Trench for containment, where spills can be recovered and rainwater can be routed for reuse in the cooling tower.
- **Piping.** All fuel oil piping from the bulk tanks to the Turbine Building is either within secondary containment dikes, the building which drains to an Oil/Water Separator, or double-walled underground piping with continuous leak detection. Most chemical piping is contained within the buildings. Underground aqueous ammonia piping is double wall type with interstitial leak detection.
- **Drip pans.** Drip pans will be used after completion of filling before breaking a connection at the fill ports for all ASTs to contain small leaks from the piping/hose connections.
- **Spill kits and sorbent material.** Spill cleanup kits that include absorbent material, drain mats, and other portable barriers are located at the Turbine Building (near the oil dispensing area under the steam pedestal), Water Treatment Building, fuel oil tanks (in the Power Distribution Center), Ranney Wells Electrical Building, and Cooling Tower Chemical Feed Building.

Additional routine cleanup supplies (e.g., sorbent pads and clay absorbent) will be located in the maintenance shop area. The spill kits are located within close proximity of the oil product storage and handling areas for rapid deployment should a spill occur. Additional sorbent material and other portable barriers are stored in the Administration/Maintenance Building material storage area to allow for quick deployment in the event of a discharge. The response equipment inventory for the facility is listed in **Annex 10** of this Plan. The inventory is checked monthly to ensure that used material is replenished.

- **Drainage system.** There is a small likelihood that releases could occur in general drainage areas outside of the contained/treated areas described above. This could be due to filling of smaller ASTs described above, transportation on-site, or unexpected activities on-site. Surface drainage is engineered to flow via storm inlets to stormwater detention and sedimentation basins before being discharged from the site. These basins represent another opportunity for on-site mitigation and recovery during spill response efforts, should a spill be discharged outside of engineered containment structures or areas that drain to the Oil/Water Separator.

Kleen Energy has resources for emergency response, including facility personnel and contractors, as well as dedicated emergency equipment. The response management plan has been designed to bring planning, personnel, and equipment together to accomplish emergency response. Specific procedures to accomplish proactive protection for spill prevention are provided in **Section II.2.g.**

Practicability of Secondary Containment (40 CFR 112.7(d))

Kleen Energy Systems' management has determined that secondary containment is practicable at this facility.

III.3.d.3. Coordination with Natural Resource Trustees

The ICP is consistent with the National Oil and Hazardous Substance Pollution Contingency Plan and applicable Area Contingency Plans. Regional emergency

response plans are also required to integrate facilities with large hazardous substance inventories.

III.3.d.4. Waste Management

Wastes resulting from a minor discharge response will be containerized in impervious drums, bags, or buckets. The ***Compliance Coordinator*** will characterize the waste for proper disposal and ensure that it is removed from the facility by a licensed waste hauler in a timely manner and taken to a permitted recycling or treatment, storage and disposal facility.

Wastes resulting from a major discharge response will be removed and disposed of by the spill response contractor.

III.3.e. Logistics

The chief of the logistics function is the ***Plant Manager***. The ***ERC*** may assign to the Logistics Chief responsibility for implementing and managing logistics section activities to proactively accomplish the response. Specific responsibilities include:

- Ensuring the prompt delivery of resources to support response operations.
- Anticipating, coordinating, and proactively managing requests for additional resources and logistics support.
- Managing, documenting, and supporting the need for response resources, equipment, personnel and services.
- Developing logistics alternatives to support Planning and Operations.

The logistics section is responsible for the following functions as described in the following sub-sections, which the Logistics Chief may delegate to a logistics staff:

III.3.e.1. Medical Needs of Responders

Generally, emergency medical service (for responders and non-responders) will be provided by the Middletown South Fire District. If necessary, injured personnel will be transferred to a local hospital (see Emergency Notification Phone List in Section II

of the ICP), with the Middlesex Hospital in Middletown serving as the primary hospital for the facility. If necessary, ambulance service will be requested during contact with the Middletown South Fire District. The local hospitals are modern facilities, equipped and staffed to handle emergency trauma.

III.3.e.2. Site Security

All sensitive areas of the facility are surrounded by chain link fencing. The entire power block portion of the facility and the fuel oil storage tank area is surrounded by a 7' chain link fence topped with barbed wire. All gates are kept chained and locked with the exception of the main front gate near the security building, which is kept closed except during authorized entry. Peripheral buildings containing oil or hazardous/toxic substances (i.e., the IWTP and Fuel Gas Compressor buildings) are kept locked at all times when they are unattended.

Plant personnel and visitors gain admission through the main gate by use of a two-way communication station. A closed circuit video camera monitors the front gate. Anyone requesting entrance must first hail the administrative office (business hours) or the control room (at other times) to request access. Additional cameras are stationed throughout the facility to allow visual monitoring of the entire facility from the control room. Plant operations personnel are present in the control room 24 hours per day.

Tank drain valves that will permit direct outward flow of the tank contents are locked in the closed position, and are either capped or plugged. Per 40 CFR Section 112.7 (e)(9)(iii), fuel oil transfer pumps are controlled by operations and maintenance personnel in the Turbine Building control room.

Manual valves on truck unloading hoses are closed when not in service. All unloading hoses are capped when not in service. Flashing red lights operate whenever the fuel oil truck unloading pumps are in service. The truck unloading station and lights are visible and can be viewed by remote cameras from the control room.

The facility is well-lighted and conforms to 40 CFR Section 112.7 (g). Each operator has been issued a flashlight for areas that may become poorly lit for any reason. Flood lights are mounted in the fuel oil tank area to illuminate the tanks and immediate surrounding area.

The Emergency Diesel Generator (EDG) Tank and Diesel Day Tank located at the Ranney Wells Electrical Building are on City property. It also conforms to 40 CFR Section 112.7 (g), although access is through a locked gate on the fence around the tank and through a locked building door.

III.3.e.3. Communications

Detailed information related to the phone systems, radio communications, and alarm systems is provided in Section III.3.b.2, Information. Those systems will be used as appropriate during emergency response activities.

Process control systems monitor critical parameters such as pressure, temperature, and chemical levels and alarm when out of acceptable operating ranges to alert operators that the system is not be operating correctly and these may be early signs of an emergency. There are also specific early release warnings (e.g., detectors in the aqueous ammonia storage area) provided via these process control systems.

III.3.e.4. Transportation

Call 911 for an ambulance. Boats are owned and operated by emergency response contractor.

III.3.e.5. Personnel Support

Personnel that may be asked to respond in the case of an emergency at the KLES facility are summarized in this ICP. The ***ERC*** can use this information to call out the necessary resources required to address the particular emergency. Additional support for items such as meals, lodging, restrooms, equipment ,etc. will be contracted with prior to their need as much as can be anticipated.

III.3.e.6. Equipment Maintenance and Support

In house maintenance will address as much equipment maintenance and support as feasible and other maintenance activities will be contracted out. The majority of equipment and processes have detailed maintenance and inspection procedures which will be followed and, where required, documented. Emergency Response Equipment maintenance is overseen by the ***Maintenance Manager*** and, for OSRO equipment, by the OSRO Contractor. An inventory of Emergency Response Equipment is included in **Annex 10**.

Facility Self-Inspection

1. Tank Inspection

   Facility operators perform regular visual inspection of tanks, transfer lines, and pumps as an important part of the facility's daily procedures. Routine visual inspection for free-flowing product, drip marks and puddles of product, discolored and corroded surfaces and structural damage provides a reliable means of monitoring the integrity of aboveground oil storage tanks. At this facility, twice daily visual inspections are made, consisting of a complete walk-through of the areas having oil storage to visually inspect the oil tanks, foundations and piping during their scheduled equipment checks. In addition, formal documented inspections are performed as documented in Annexes 18 and 21.

2. Response Equipment Inspection

   Plant personnel, designated by management perform monthly inspections on response equipment. The checklist for monthly inspections in the **Annex 21** includes checking emergency response equipment at each storage location for accessibility, condition and inventory against the inventory of equipment (e.g., absorbent booms, absorbent material,) given in **Section III.3.f.1** and **Annex 10**. Deployment or other testing is documented on the form in **Annex 11**.

3. Secondary Containment Inspection

Secondary containment inspections include the presence of free-flowing product, drip marks and puddles of product, levels of precipitation, status of the drain valves, debris, erosion, discolored vegetation and surfaces, cracks, drip bucket condition, and waste oil drum levels. The inspections are conducted concurrently with the tank inspections described above (i.e., twice daily visual inspections and documented monthly and annual inspections).

III.3.f. Finance/Procurement/Administration

The chief of the finance function is the ***Plant Manager***. The ***ERC*** may assign to the Finance Chief responsibility for implementing and managing finance section activities to proactively accomplish the response. Specific responsibilities include:

- Providing, managing, coordinating, documenting and accounting for access to funding for the response.
- Coordinating and ensuring proper completion of response accounting documentation.
- Providing financial support for contracting services, purchases and payments.
- Identifying and obtaining additional financial services, resources or logistics support needed.

III.3.f.1. Resource List

Response Equipment List

The Facility Response Equipment List, in **Annex 10** is provided to show a listing of available onsite response equipment and its location. This list is reviewed and updated as information changes. Please note this list contains the spill response equipment maintained on site. Additional spill response and emergency equipment is available from vendors and our contracted spill response contractor.

The operational status of all equipment is maintained "Ready" at all times. Inspections, tests and drills for this equipment is discussed in the "Spill Response and Emergency Equipment Testing/Deployment", **Section III.3.e.6** and **Annex 11**.

III.3.f.2. Personnel Management

A list of response personnel capabilities, response time, and qualifications has been provided in the beginning pages of **Section II** of this ICP. Responsibilities for response personnel are described in **Section III Annex 3.b**, Emergency Response Organization Roles and Responsibilities.

III.3.f.3. Response Equipment Testing and Deployment

Annex 10 of this ICP includes lists of available materials, quantities and locations for emergency response. Kleen Energy will respond to on-site releases with available response equipment, if feasible. If necessary, additional response equipment is available through OSRO contractors as listed in **Annex 13**. On-site response equipment, including speedi-dry, spill pads, absorbent booms, etc., will be inspected as described in **Annex 11**. The on-site equipment is primarily for one time use. As such, it will not be specifically tested or deployed. Response equipment to be provided by Clean Harbors (e.g. skimmers, sea booms, boats) are maintained and tested by those contractors.

Response Equipment Testing / Deployment

The Response Equipment Testing and Deployment Drill Log, **Annex 11**, is provided to show dates the response equipment is tested and deployed. The log in each controlled copy of the ICP will be updated as tests and drills are conducted.

Response equipment deployment exercises will be conducted at least semi-annually to ensure that response equipment is operational and the personnel who operate the equipment in a spill response are capable of deploying and operating it. Only a representative sample of each type of response equipment is deployed and operated, while the remainder of the equipment is inspected and properly maintained. Testing of response equipment is conducted during deployment.

Facilities relying on an outside organization for some of its response equipment needs must ensure that the oil spill removal organization that is identified in the response plan to provide this response equipment certifies that the deployment exercises have been met. The Kleen Energy Facility will rely on Clean Harbors as its Oil Spill Removal Organization (OSRO contractor). Both the emergency response contract agreement with the OSRO and the certification and deployment certificate for their equipment will be included in **Annex 13**. It is our intent to contract with a second OSRO contractor.

III.3.f.4. Support Equipment

Support equipment will be provided by the OSRO contractor. A list of support equipment that will be available is provided in **Annex 13**.

III.3.f.5. Contracting

All contracting activities will be coordinated by the ***General Manager*** & ***Plant Manager***. Companies that have been contracted to function as the oil spill response organization (OSRO) are identified in the beginning pages of **Section II** of this ICP. Copies of those contracts have been included in **Annex 13**. Waste Disposal activities will be contracted as needed.

III.3.f.6. Claims Procedures

This ICP has been developed to meet the emergency response requirements for the regulatory programs described in Section I.1 of this ICP. There are no requirements for this ICP to include information on Claims Procedures based on the regulatory programs that are applicable to Kleen Energy.

III.3.f.7. Cost Documentation

This ICP has been developed to meet the emergency response requirements for the regulatory programs described in **Section I.1** of this ICP. There are no requirements for this ICP to include information on Cost Documentation based on the regulatory programs that are applicable to Kleen Energy.

III.4. Annex 4 – Incident Documentation

III.4.a. Post-Accident Investigation

All environmental release incidents must be investigated. In addition, incidents should be investigated where a "near miss" occurred that could have resulted in a catastrophic release involving aqueous ammonia. The magnitude of the investigation will vary according to the severity or potential severity of the incident.

The ***Plant Manager*** has overall responsibility for accident/incident investigations. The ***Compliance Coordinator*** or designee will assign responsibility for conducting the incident investigation. It is recommended that more than one person be involved in the investigation, including management and/or EHS personnel when practical. In instances where contractors are involved with processes or operations that result in incidents or "near misses", those individuals will be included on the incident investigation team.

The investigation should be conducted as soon as practical after the incident following the activities required to control the hazard. In all cases the investigation must be initiated within 24 hours of the incident and will follow the NAES administrative procedure **AMP-108 - Incident Investigation & Reporting**.

III.4.b. Incident History

This is a new facility. There have not been any significant spills or leaks of hazardous materials, oils, or chemicals at this facility during operation. A natural gas explosion occurred during construction, but the response was conducted under the EPC contractor's emergency plan and this incident has been extensively documented elsewhere. Future updates of the plan will describe any spills triggering reporting to federal or state agencies including spills causing a sheen on surface waters or spills of five gallons or more of toxic or hazardous substances (RCSA Section 22a-430-4 Appendices B and D and 40 CFR Part 116.4), oil, and process wastewaters.

III.5. Annex 5 – Training/Exercise Drills

This section documents the training and exercise/drill requirements of the various regulatory requirements incorporated into this ICP and the facility's program to meet these requirements, including:

- Facility Drills / Exercises,
- Oil Spill Response Training;
- Emergency Action Plan Training
- Risk Management Programs General Duty Training
- Training and Drill Records and Evaluation.

To the extent possible, a single training will be used to address the multiple regulatory requirements described in the following sections.

III.5.a. Facility Drills / Exercises - OPA-90 (Federal, EPA)

The Drill and Exercise Program for the Kleen Energy Facility has been designed based on the National Preparedness for Response Exercise Program (PREP) to satisfy the requirements of 40 CFR 112.21(c) (per Part 112 Appendix F, Section 1.8.2.

The PREP was developed as a guideline both for industry FRP exercises and for coordinated, multi-agency exercises to evaluate government Area Contingency plans. This exercise program meets the Oil Pollution Act's mandate for exercises and represents guidelines for ensuring overall preparedness within the response community.

The Kleen Energy Drill and Exercise Program contains the following components:

1. Internal Exercises - These exercises are held wholly within the boundaries of the Kleen Energy Facility. These exercises consist of the Qualified Individual notification drills, spill management team tabletop exercises, equipment deployment exercises, and unannounced exercises.

a. Qualified Individual Drills

Drills should be conducted on a quarterly basis for the qualified individuals to review the procedures for notification. During these drills, participants should become more familiar with the notification process and implement improvements as are deemed necessary.

b. Emergency Procedures Exercise

Exercise the emergency procedures for the Kleen Energy Facility to mitigate or prevent any discharge or substantial threat of an oil discharge resulting from the facility's operational activities. A description of the emergency procedures activated, a description of the pertinent core components, and a write-up of the lessons learned will be documented in this exercise. Emergency procedure exercises are conducted annually or, if necessary to ensure each of the core components listed in Annex 15 is exercised at least once every three years, more frequently.

c. Spill Response Team Tabletop Drills

An annual spill response team tabletop drill should be held to review aspects of the ICP in a more comprehensive manner considering particular discharge scenarios. The scenarios should include potential discharge scenarios that have surfaced due to changes at the facility such as changing equipment, oil storage practices, etc.

d. Equipment Deployment Drills

Equipment deployment drills of facility-owned response equipment should be conducted semi-annually at a minimum. These drills will exercise various components of the ICP. A drill that exercises the entire plan should be conducted at a minimum of every three (3) years. Unannounced drills may be used to satisfy this requirement.

2. External Exercises - External exercises are those that extend beyond the internal focus of facility and involve other members of the response community. These exercises involve the Kleen Energy Facility personnel and other members of the response community. These exercises are designed to evaluate the ICP and the Kleen Energy Facility's ability to coordinate with the response community. Government-initiated and industry-initiated Area Exercises are included in this category. Credit for an Area or Facility-specific Exercise will be given to the facility for an actual response to a discharge in the area if the plan was utilized for response to the discharge and the objectives of the Exercise were met and were properly evaluated, documented, and self-certified. **Annex 15** contains a complete description of the Kleen Energy Drill and Exercise Program and provides additional detail on the scope, objectives, participants, and initiating authority for each exercise. In addition, forms are provided for documenting and critiquing, where necessary, each exercise. The external exercises which Kleen Energy Facility may be asked to conduct are described below

   a. Area Notifications

   Exercise and evaluate communications between the On-scene Coordinator and key elements of the unified command. In this exercise, the appropriate emergency response personnel and contractors will be notified and the method (e.g., telephone) and response time will be documented. A description of the notification procedure and a description of the core objectives will be documented in this exercise

   b. Area Spill Management Team Tabletop Exercise

   Exercise the area spill management team's organization, communication, and decision-making abilities in an external spill response. In this exercise, there will not be a demonstration of operational response. A description of the response scenario (e.g., maximum most-probable discharge), a description of several objectives (e.g., knowledge of the ICP, knowledge of the communication system), and a description of the

core objectives will be documented in this exercise.

c. Equipment Deployment Area Exercise

The facility will deploy and operate the response equipment identified in the ICP. All of the equipment or the equipment necessary to effectively mitigate the average most probable discharge scenario will be deployed annually. All of the qualified facility personnel (including the Spill Response Contractor) will be included in this scenario. A description of the deployment equipment, exercise goals, condition of the equipment, lessons learned, and a description of the core objectives will be documented in this exercise.

d. Area Exercise

Area exercises will encompass the Area Response System. All the exercises will involve equipment deployment to respond to the spill scenario. The Kleen Energy Facility will plan to participate in an Area Contingency Plan and or any selected industry response plan. The facility will demonstrate that the exercise can be conducted under a unified command with the appropriate participants. The exercise will include the area and the facility spill management team. Kleen Energy Facility will document that the response can be conducted in a timely manner; conducted with an adequate amount of maintained equipment; and is properly managed.

III.5.b. Oil Spill Response Training

Facility personnel that work with, on or near the oil storage facilities must be instructed by management in the operation and maintenance of oil pollution prevention equipment and pollution control laws and regulations. The training program described below provides for this instruction.

1. Prevention Training

Initial and annual discharge prevention (SPCC) training is to be provided by management for facility personnel to ensure adequate understanding of the ICP. This training should highlight any past discharge events or failures and recently developed precautionary measures. **Annex 16** (or equivalent) will be used to document the training and the training record should include handouts, slides, etc.

Each employee, current or new, who will inspect, inventory, report, or assist in cleanup as described in this ICP, is required to review this ICP until the employee satisfies facility management that the employee understands the operating procedures outlined herein.

The employee is to be provided with on-the-job training to ensure that the employee understands facility operations and inspection methods. The employee will be required to know the capacities of oil storage tanks and their products, have knowledge of the mathematics involved in gauging and computing the quantity of material in each tank, and be fully aware of all safety and operating procedures.

Each employee will be specifically instructed as to the location and operation of all piping and valves and where discharge control materials are stored. They are to be advised by a qualified individual as to the location of both the record copy of this ICP and the location in which emergency response telephone numbers are posted. Employee training should be completed prior to the employee becoming potentially involved with oil handling systems. Training may include written exercises to verify the employee's understanding.

2. Response Training

Experienced, well-trained people are essential for successful oil discharge response. All plant O&M employees may be called upon to respond to take actions to mitigate the source of incipient spills, to clean

up small spills and assist response contractors with coordinating response to larger spills. Kleen employees will not be trained as *emergency* responders, so they will be trained and authorized to conduct only those actions that can be taken without endangering themselves in a non-emergency situation. Actions will be limited to mitigating the source of releases, small spill cleanup and logistical support of the OSRO and outside response agencies in the event of an emergency.

The objective of the Kleen response support team is to clean up an oil discharge efficiently and quickly with a minimal adverse effect on the environment and without endangering site staff. The purpose of the training program is to prepare the response support team to meet this objective. The training program may be divided into periodic meetings that can be devoted to classroom exercises, field training and response drills.

Spill Notification/Mitigation: The specific goals of the training program for all O&M personnel are to teach the response support members to:

- Understand the rolls/responsibilities/authority of the Qualified Individual (QI), Spill Management and Support Team, and outside responders;
- Communication system used for internal notifications;
- Understand and use internal notification procedures to contact the QI and alert that there is an emergency;
- Hazard recognition, signs of when it is not safe for site personnel to perform mitigation and cleanup actions and limits of your authority (e.g., wait for QI to assess for fire, high temperature/potential for spill ignition, physical hazards of liquid pools, etc.);
- Use oil discharge cleanup equipment safely in non-emergency situations;

- Providing other logistical and operations support to the emergency response trained OSRO contractor as directed by the QI; and

- Awareness of the Incident Command System (ISC) used by the OSRO and outside response agencies.

Each plant employee should be familiar with the internal notification aspects of the ICP. This includes how to use the notification system for reporting discharges and the call-up procedure for notifying the Qualified Individual. Each employee should have access to the emergency response action plan (ERAP) which is **Section II** of this ICP.

Spill Management and Support Team: More extensive training is required for the Qualified Individuals and senior management staff who will be providing logistical support in an emergency. Training objectives include:

- All Spill Notification/Mitigation objectives;

- Product/MSDS information, special handling procedures, hazards (e.g., flammability, flash point, etc.);

- How to assess the hazards and determine when it is not safe for site personnel to perform mitigation and cleanup actions (primarily by separate QI training);

- Facility personnel roles, responsibilities, and procedures/equipment for shutdown, spill prevention and mitigation;

- Internal team organizational structure for:

    1. Incident command (QI)
    2. Public information
    3. Safety
    4. Government liaison

5. Spill mitigation and response support

6. Planning

7. Logistical support to the OSRO and outside agencies

8. Finance

- Internal procedures to follow in the event of:

1. Tank overfill

2. Tank rupture

3. Piping or pipeline rupture

4. Piping or pipeline leak

5. Explosion or fire

6. Equipment failure

7. Failure of secondary containment system

- Communication system used for external notifications;
- Understand when the emergency response trained OSRO contractor must be called and the information they will need;
- Capabilities of the OSRO contractor for the small, medium and worst-case discharges;
- Knowledge of the EPA Region and their role;
- Understand and use agency notification procedures and the information they will need;
- Understand and be able to work within the Incident Command System (ISC) used by the OSRO and outside response agencies;
- Provide logistical support to the OSRO and outside response agencies;

- Understand follow-up agency report requirements;
- Critically review the ICP following a spill and upgrade it, as necessary.

Certain aspects of the training program can be covered efficiently in group training classes and the balance will be covered during exercises. Training sessions should be held annually at a minimum.

The practical field work required to contain and clean up an oil discharge may be broken into a series of elements. Each element may be practiced separately before a full-scale exercise is attempted. A full-scale exercise can be a chaotic experience if it is not well planned and organized.

Classroom instruction can include the following:

1. Discussion of new ideas, equipment problems, and results of field exercises;
2. Video materials on new equipment and its use, oil discharge cleanup operations, and drills;
3. Instruction on cleanup techniques;
4. Status reports on equipment and inventory of supplies;
5. Reviews of the ICP, responsibilities of individual members and characteristics of various deployment sites.

III.5.c. Emergency Action/Response Plan (Federal, OSHA)

For a facility that does not have an on-site hazmat emergency response team, OSHA emergency action and emergency response regulations require that employees be trained in emergency evacuation and "Hazwoper" awareness. Hazwoper awareness training focuses on hazard recognition and how to determine during an incident if it is safe to mitigate in its incipient stages without endangering themselves or if they should

evacuate, notify and wait for trained emergency responders. First responder awareness level training will include the following, geared to the specific substances used on-site:

[A] Review and demonstration of competency performing applicable skills of 29 CFR 1910.120(q).

[B] Hands-on experience with the U.S. DOT's Emergency Response Guidebook (ERG) and familiarization with OSHA standard 29 CFR 1910.1201.

[C] Analyzing an incident to determine both the hazardous substances present and the basic hazard and response information for each hazardous substance present (e.g., warning properties, fire/explosion/exposure thresholds, safe assessment techniques and the limits of employees' authorized actions based on their training).

[D] Procedures for implementing the ICP, SOPs, and the current edition of DOT's ERG including emergency notification procedures and follow-up communications.

[E] Hazards (e.g., fire, explosion, confined space, electrical, powered equipment, motor vehicle, and walking-working surface, etc.).

[F] Knowledge of competencies for covered in NFPA Standard No. 472, Professional Competence of Responders to Hazardous Materials Incidents.

This ICP will be reviewed with each employee:

1. When the plan is developed or the employee is assigned initially to a job;
2. When the employee's responsibilities under the plan change; and
3. When the plan is changed.

KLES will document that each covered employee has attended and successfully completed the training required, or shall document the employee's competency at least annually.

III.5.d. EPA Risk Management Program (RMP) General Duty

The following general RMP training will be provided to employees required to operate/work on the aqueous ammonia system as well as emergency responders:

- HazCom Chemical Specific Hazards (Detailed review of the MSDS);
  - PPE
  - Air Monitoring
  - First Aid
  - Physical Properties
- ICP - Aqueous Ammonia Incident Specific Emergency Response Guidelines
- Plant Aqueous Ammonia (NH3) process specific training;
- Ammonia (NH3) Operating Procedures (operators only); and
- Ammonia (NH3) Offloading procedure and Chemical Handling Procedure.

III.5.e. Training and Drill Records and Evaluation

III.5.e.1. Employee Training Program (40 CFR 112.7(f))

The Plant Manager has overall responsibility to ensure that plant personnel are trained and qualified in the operation and maintenance of all facility equipment. Operation and maintenance training includes training every employee responsible for overseeing product delivery and unloading in the safety and health hazards of the materials and the procedure for unloading shipments before working independently.

Management has designated the ***Compliance Coordinator*** to be accountable for oil and hazardous/toxic substances spill prevention in accordance with 40 CFR Section 112.7(f). The ***Compliance Coordinator*** will coordinate and document specific employee training in the operation and maintenance of oil and hazardous/toxic substances pollution prevention equipment, discharge procedure protocols, applicable pollution control laws, rules and regulations and the content of this ICP. Training is performed annually (scheduled for approximately 11 to 13 months after the previous training) and new employees are trained during new employee orientation and before they assume responsibility for independently operating equipment that contains oil.

Each employee will be instructed in spill prevention and countermeasures procedures and information, including:

- Tanks are not to be filled without first checking reserves prior to commencing the filling operation.
- Unloading pump operations are not to continue unless attended constantly by delivery personnel.
- Fuel oil truck spill containment sump valves are to remain locked in the open position during the unloading of all fuel oil trucks.
- Warning signs are strategically placed to remind delivery personnel to remain with their vehicles and disconnect all unloading lines before departing the unloading area.
- The discharge prevention procedures presented in the ICP.
- Known discharge events or failures, malfunctioning components, and recently implemented precautionary measures and best practices.
- Location of ICP, instructions and phone numbers for the reporting and control of spills in the plant.
- Associated ICP training covering spill mitigation/response resources available, procedures that may be used to stop a release and contain it (so long as the employees do not endanger themselves) and Qualified Individual notification.

Training and drill records will include training materials, list of attendees, date, instructor name and means to confirm trainee understanding). Records will be maintained by the ***Compliance Coordinator*** for a minimum of three (3) years (ICP exercise records may be kept longer due to the many different types of exercises and drills required). Records may be placed in a retrievable archive location after one (1) year. The training log form in **Annex 16** will be used to document this training.

III.6. Annex 6 – Response Critique and Plan Review and Modification Process

III.6.a. Review and Update Procedures

The ***Compliance Coordinator*** will review the plan and organization on an annual basis to ensure that the ICP is maintained current per regulatory requirements and is effective in preparing for an emergency. In this task, the following items will be considered:

- Telephone numbers and contact lists.
- Changes in facility operations and equipment.
- Changes in facility organization or key personnel.
- Evaluations of drills.
- Federal, State and local regulatory changes.
- Changes in the facility emergency response plan.

The ***Compliance Coordinator*** will identify areas requiring revision and coordinate implementing these changes. Whenever a section is revised, the updated revision number and effective date of that revision will be indicated in that section of the plan on the bottom of the page. The revision, affected pages, date of revision and a brief summary also will be indicated on the *Plan Revision Summary Sheet,* **page i**, to facilitate audit of the plan status. Updated copies of the plan will be distributed to all those indicated on the *Plan Revision Summary Sheet*.

III.6.b. Program Review/Update Requirements

Each of the regulatory programs that are addressed by this ICP have review/update requirements, as described below.

OPA-90, 40 CFR 112.20(d)(1)

Per OPA-90, KLES must revise and resubmit the FRP elements of the plan to EPA for approval within 60 days of each facility change that materially may affect the potential for a worst case discharge, including:

- A change in the facility's configuration that materially alters the information included in the response plan;
- A change in the type of oil handled, stored or transferred that materially alters the required response resources;
- A change in the capability of the oil spill removal organization that provides equipment and personnel to respond to spills;
- A material change in the facility's spill prevention and response equipment or emergency response procedures; and/or
- Any other changes that materially affect the implementation of the response plan.

There are many potential sources for revisions to the OPA-90 components of this ICP, some of which are identified below:

- Training sessions that will generate ideas on how to improve areas, such as communication.
- Mock drills that may identify problems such as equipment dispatch and deployment difficulties, communications, efficiency, and effectiveness of plan components which require written clarification.
- Information (such as vendor input) obtained regarding state of the art spill response equipment.
- Changes to current regulations that ultimately affect the OPA-90 components of this document.

The ICP annual review will begin one year from the date of approval by the EPA Administrator. The response plan elements also will be updated after spill events, as

necessary. Any amendments will be documented on the *Plan Revision Summary Sheet* found on page i and submitted to the agency.

SPCC

This Plan provides guidance on key actions that Kleen Energy must perform to comply with the SPCC rule:

- Monthly and annual site inspections - see **Section III.7.b** and the weekly inspection checklist (**Annex 21**).
- Preventive maintenance of equipment, secondary containment systems, and discharge prevention systems to keep them in proper operating condition.
- Annual employee training - see **Section III.5.e** and the training log (**Annex 16**).
- Submit this Plan to the EPA Region 1 Regional Administrator (RA) and Connecticut Department of Environmental Protection (CT-DEP) Emergency Response Unit, along with other information detailed in **Section II** of this Plan if either of the following occurs:
  - >1,000 gallons of oil released into or upon the navigable waters of the U.S. or adjoining shorelines (i.e., Connecticut River) in a single spill event; or
  - >42 gallons of oil released into or upon the navigable waters in each of 2 spill events in any 12-month period.
- Review and re-certify this Plan annually, update the Plan to reflect "administrative changes" (e.g., personnel, response organization contacts, phone numbers, etc.), and document these changes in the Plan review log (contained in the front matter of this Plan). Administrative changes do not have to be certified by a Professional Engineer (PE). Changes must be implemented as soon as possible, but no later than six months from the date of the amendment.
- Review this Plan at least once every five (5) years (as noted on the Plan cover page) and amend it (if needed) within six months of review to include more effective prevention and control technology, if such technology will significantly reduce the likelihood of a spill event and has been proven effective in the field at

the time of the review. Amendments, other than administrative changes discussed above, must be recertified by a PE.

- Amend this Plan as soon as possible but no later than six (6) months after a change in types of tanks/containers or portable containment systems, facility design, construction, operation, or maintenance that materially affects the facility's spill potential (e.g., piping modifications affecting potential for release; altering secondary containment structures, drains, or stormwater flow patterns; or changes of materials used, and modification of operating/inspection/ maintenance procedures.). The revised Plan must be recertified by a PE.

The ***Compliance Coordinator*** is responsible for initiating and coordinating all required reviews and revisions to the Plan, whether scheduled or in response to changes. In the absence of the ***Compliance Coordinator***, the ***Operations Supervisor*** will assume this responsibility or designate another employee to assume these responsibilities.

Scheduled annual reviews and Plan amendments are recorded in the Plan Review Log following the title page. This log must be completed even if no amendment is made to the Plan as a result of the review. Any technical review/revision requiring a PE certification will be documented as a reissue of the plan with new certification page and change log with a new five year review schedule.

EPA – RMP General Duty and Other Non-Oil Hazards

The balance of the ICP addressing non-oil spill issues will be annually reviewed concurrently with the oil spill components and modified in the event that there is a change to process chemicals, technology, equipment, and procedures.

III.6.c. Revision Pursuant to Training or Emergency Response

Revisions to this ICP may also be made following either a training session or an actual response if deficiencies or necessary revisions are identified and will be submitted to relevant agencies according to the submission procedures described below.

Response and drill critiques are discussed in **Section III.5.a**.

III.6.d. Revision Submission Procedures

One copy of the revised elements of this ICP will be submitted for review to the regulatory agencies included in the plan distribution. The entire OPA-90 component will be resubmitted to EPA at the next 5 year renewal interval required in the federal regulations, or when a significant change occurs at the facility that requires a partial submission of revised information. Copies of the most recent ICP submitted to regulatory agencies will be maintained by the ***Compliance Coordinator***.

III.6.e. Plan Distribution

A distribution list is included in the *Plan Revision Summary Sheet* on **page i**. In accordance with 40 CFR 112.3(e), a complete copy of this Plan will be maintained at the facility in the Administration and Maintenance Building offices of the ***Compliance Coordinator*** and the ***Operations Supervisor*** and will be available to EPA as well as state and local authorities for review during normal business hours (8:00 AM to 5:00 PM, 5 days per week). A copy will also be available to Control Room Operators in the Control Room at all times the facility is operating.

III.7. Annex 7 – Prevention

III.7.a. Discharge Detection Systems

The procedures and equipment used to detect oil discharges are discussed below.

III.7.a.1. Discharge Detection by Personnel

Operating personnel perform visual inspections of the fuel oil storage tanks and dike interiors at least once per shift (twice daily). Should a discharge be detected during the daily rounds, emergency response will be initiated as described in the ERAP.

Periodic integrity tests are performed on the tanks as described in section III.7.b.4 below.

III.7.a.2. Automated Discharge Detection

In addition to twice daily visual inspections of the fuel oil storage tanks, the tanks are provided with devices to prevent or detect discharges. The following devices are used at this facility:

Level transmitters

Level transmitters indicate the oil level in Tanks A-1 and A-2. The information is transmitted level indication locally, in the control room and at the unloading station to allow facility personnel to know the oil level in the tank at all times. These transmitters provide input to the high level switch on each tank that closes the fill valves from the truck unloading area to prevent overfilling of the tanks.

High/low level indicators

As high or low oil levels occur in Tanks A-1 and A-2, the indicator activates an annunciator in the control room, immediately allowing personnel in the control room to respond to the condition.

Leak Detection Sump Alarm

Any leaks occurring on the bottom of the tank flow through leak detection channels to a leak detection sump below the center of each tank. This leak detection sump is equipped with a level switch and alarm that annunciates in the control room, immediately allowing personnel in the control room to respond to the condition.

Double Wall Oil Piping Leak Detection

Any leaks occurring in the fuel oil transfer piping from Tank A-1 or A-2 to/from the plant are contained in double wall piping. A leak detection system in the interstitial space provides an alarm and indication of the location of the leak to control room operators allowing personnel in the control room to respond to the condition.

Oil Water Separator Level Alarms

Catch basins and pump skids in the storage tank secondary containment area flow into an oil water separator. This oil water separator is equipped with high oil level alarm and a high-high oil level switch that interlocks to close an automatic shutoff valve at the inlet to the separator. The separator alarms will annunciate in the control room, immediately allowing personnel in the control room to respond to the condition.

Automated discharge detection devices are serviced or replaced as recommended by their respective manufacturers, but in no case less than once every five (5) years.

III.7.b. Inspection and Monitoring Program (Inspection, Tests and Records)

As required by the SPCC rule, Kleen Energy performs inspections, tests, and evaluations of oil storage areas and engineering containment features. **Table 2** summarizes the various types of inspections and tests performed at the facility. The inspections and tests are described later in this section.

Table 2 - Inspection and Testing Program

Facility Component	Action	Frequency/Circumstances
General facility visual inspection	Visually inspect tanks and piping for damage, leaks, stains/discoloration, excessive water, oil equipment/drains secured.	Daily Monthly/annual formal, logged.
Aboveground fuel oil bulk tanks	Monitor bottom leak channel sump for leaks. Test container integrity. Combine visual inspection with another testing technique (non-destructive shell testing). Inspect outside of container for signs of deterioration and discharges.	Continuous. Following a deterioration finding during regular visual inspection (monthly, annual scheduled inspections), whenever material repairs are made and per API 653 as scheduled in **Annex 18**.
Fuel oil bulk tank supports and foundation	Inspect container's supports and foundations.	Following a deterioration finding during regular visual inspection (monthly, annual scheduled inspections), whenever material repairs are made and per API 653 as scheduled in **Annex 18**.
Shop fabricated double wall tanks	Monitor interstitial space for leaks. Visual inspection of outside of container for signs of deterioration and discharges, leak testing or other inspection by STI qualified firm.	Continuous. Following a deterioration finding during monthly/annual scheduled inspections, whenever material repairs are made.
Oil-filled operational equipment	Visual inspection of outside of container for signs of deterioration and discharges.	Following a deterioration finding during regular visual inspection (monthly, annual scheduled inspections), whenever material repairs are made.
Liquid level sensing devices (overfill)	Test/calibrate for proper operation.	Per equipment manufacturer's recommendations
Diked areas	Inspect for signs of deterioration, discharges, or accumulation of oil inside diked areas. Visually inspect content for presence of oil.	Daily, Monthly formal Prior to draining
Lowermost drain / all outlets of tank truck	Visually inspect.	Prior to unloading
Effluent treatment facilities	Detect possible system upsets that could cause a discharge.	Daily, monthly
All aboveground valves, piping, and appurtenances	Assess general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.	Monthly
Buried piping	Monitor interstitial space for leaks Inspect for deterioration. Integrity and leak testing.	Continuous Whenever a section is exposed for any reason. At the time of installation, modification, construction, relocation, or replacement.

III.7.b.1. Daily Inspection

A Kleen Energy employee performs a complete walk-through of the facility each day, at least two times per day (once per shift) of all petroleum and chemical storage and process areas. This daily visual inspection involves: (1) looking for tank/piping damage or leakage, stained or discolored soils, or excessive accumulation of water in diked and bermed areas; (2) observing the effluent from the Oil/Water Separator; and (3) verifying that the containment drain valves are securely closed.

III.7.b.2. Monthly Inspection

The checklist provided in **Annex 21** is used for formally documented monthly inspections by Kleen Energy personnel. The monthly inspections cover the following key elements:

- Observing the exterior of aboveground storage tanks, pipes, and other equipment for signs of deterioration, leaks, corrosion, and thinning.
- Observing the exterior of portable containers for signs of deterioration or leaks.
- Observing tank foundations and supports for signs of instability or excessive settlement.
- Observing the tank fill and discharge pipes for signs of poor connection that could cause a discharge, and tank vent for signs of obstructions and improper operation.
- Verifying the proper functioning of overfill prevention systems.
- Checking the inventory of discharge response equipment and restocking as needed.
- Observing the effluent and measuring the quantity of accumulated oil within the Oil/Water Separator.

All problems regarding tanks, piping, containment, or response equipment must immediately be reported to the ***Compliance Coordinator***. Visible oil or chemical

leaks from tank walls, piping, or other components must be repaired as soon as possible to prevent a larger spill or a discharge to land, surface waters or adjoining shorelines. Pooled oil or hazardous/toxic substances is removed immediately upon discovery.

Written monthly inspection records are signed by trained operations or maintenance personnel and maintained with this ICP for a period of five years (because FRP guidance requires response equipment inspections to be maintained for 5 years).

III.7.b.3. Annual Inspection

Facility personnel perform a more thorough inspection of facility equipment on an annual basis. This annual inspection complements the monthly inspection described above and is performed in the same month each year using the checklist provided in **Annex 21** of this Plan.

The annual inspection is preferably performed after a large storm event in order to verify the imperviousness and/or proper functioning of drainage control systems such as the dikes, unloading station rollover berms, control valves, and the Oil/Water Separator.

Written annual inspection records are signed by trained operations or maintenance personnel and maintained with this Plan for a period of five years.

III.7.b.4. Periodic Integrity Testing

In addition to the above monthly and annual inspections by facility personnel, the bulk fuel oil storage tanks (Tanks 562-TNK-9001 and 562-TNK-9002) will be periodically evaluated by an outside certified tank inspector following API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction* (2009 or latest Edition). See Section **Annex 18** for specific evaluation frequencies.

III.7.c. Brittle Fracture Evaluation (40 CFR 112.7(i))

The only field-constructed petroleum tanks at the facility are the bulk fuel oil tanks (562-TNK-9001 and 562-TNK-9002). All other tanks were shop-built. These tanks were

newly constructed in 2009. In the event that either bulk tank undergoes a repair, alteration, reconstruction, or change in service that might affect the risk of a discharge or failure, the container will be evaluated for risk of discharge or failure and corrective action will be taken as necessary.

III.7.d. Conformance with State and Local Requirements (40 CFR 112.7(j))

All bulk storage tanks at this facility are registered with the local authorities and have current certificates of registration and special use permits required by the local fire code.

All facility underground features (Oil/Water Separators and underground fuel piping) generally meet the design requirements of the Connecticut UST regulations (Sec. 22a-449 (d)-100 to 113); however, they are not UST regulated. The underground portion of the fuel oil system comprises far less than the <10% of total volume UST regulatory threshold. The Oil/Water Separators are treatment units regulated under the facility wastewater and stormwater permits. Design features include double-walled separator and piping, corrosion resistant outer surface in contact with soil and continuously monitored leak detection.

Storm water runoff (including the bulk fuel oil tank Oil/Water Separator effluent) is discharged to storm culverts at River Road and then flows to the Connecticut River (currently under a General Stormwater – Construction permit and in future, under a General Stormwater – Industrial permit). Effluent from the Oil/Water Separator treating the turbine building drains will be discharged to the Middletown publicly owned treatment works (POTW) under a DEP Pretreatment Permit (permit SP0002423, currently issued in draft).

III.8. Annex 8 - Regulatory Compliance and Cross Reference Matrices

The cross-reference tables have been provided to identify the location in the ICP of all of the requirements specified in the regulations. The tables generally follow the format provided by the NRT in the One Plan guidance document and are found starting on page vi just after the table of contents.

III.9. Annex 9 - Petroleum and Chemical Inventories (Part of ERAP)

Facility Quantities of Oil Products in Drum Quantity or Larger

SPCC ID No. [Equipment No.]	Storage Area/Equipment	Contents	Containment	Maximum Volume (Gal)
	Fuel Oil Storage Tank Area			
1 [562-TNK-9001]	Fuel Oil Storage Tank TP-F01	Fuel Oil	Dike	4,061,400
2 [562-TNK-9002]	Fuel Oil Storage Tank TP-F02	Fuel Oil	Dike	4,061,400
3 [1-526-SEP-9060]	Oily Water Separator[1]	Fuel Oil	NA (tmt. Unit)	1,600
	Fire Water Pump House			
4 [572-TK-9004]	Fire Pump Fuel Oil Tank	Diesel	Double wall	290
	Emergency Diesel Generator Building			
5 [1-629-DG-9001]	Emergency Diesel Generator Tank	Diesel	Double wall	2,000
	Turbine Building Equipment[2]			
6 [10MAV10BB001]	Steam Turbine Generator Lube Oil Reservoir	Lube Oil	Concrete	8,183
7 [11MAV10BB001]	CTG1 Lube Oil Reservoir	Lube Oil	Metal Dike	5,157
8 [12MAV10BB001]	CTG2 Lube Oil Reservoir	Lube Oil	Metal Dike	5,157
9 [10MAX01BB001]	Steam Turbine Hydraulic (control) Oil[2]	Hydraulic Oil	Building/OWS	264
10 [11MBX10BB001]	CTG 1 Hydraulic (control) Oil	Hydraulic Oil	Building/OWS	100
11 [12MBX10BB001]	CTG 2 Hydraulic (control) Oil[2]	Hydraulic Oil	Building/OWS	100
	Oily Water Separator – Power Block			
12 [526-SEP-9050]	Oil/Water Separator (OWS)[1]	All Oils	NA (tmt. Unit)	1600
	Oil Filled Transformers[2]			
13 [1-602-XF-0001]	STG Step Up Transformer	Transformer Oil	Dike	23,834
14 [1-602-XF-1001]	CTG 1 Step Up Transformer	Transformer Oil	Dike	18,048
15 [1-602-XF-2001]	CTG 2 Step Up Transformer	Transformer Oil	Dike	18,048
16 [1-625-XF-9001]	Unit Aux XFMR 1	Transformer Oil	Dike	2,811
17 [1-625-XF-9002]	Unit Aux XFMR 2	Transformer Oil	Dike	2,811
18 [1-631-XF-9001]	SUS Transformer 1	Transformer Oil	Dike	632
19 [1-631-XF-9002]	SUS Transformer 2	Transformer Oil	Dike	632
20 [1-631-XF-9003A]	Cooling TWR XFMR A Transformer	Transformer Oil	Dike	645
21 [1-631-XF-9003B]	Cooling TWR XFMR B Transformer	Transformer Oil	Dike	645
	Fuel Gas Compressor Skid[2]			
22 [561-TNK-5002]	Compressor Inlet Knock Out Drum	Oily water	Building/OWS	425
23 [561-FLT-5004]	Oil Coalescer	Oil	Building/OWS	360
24 [561-TNK-5006]	Skid Drain Tank	Oily water	Building/OWS	60
25 [TNK-5003-1]	Compressor Frame Oil Day Tank	Lube Oil	Building/OWS	55
26 [561-CMP-5003]	Compressor Lube Oil Capacity	Lube Oil	Building/OWS	68
	Fuel Gas Conditioning Skid[2]			
27 [561-TNK-5008]	Conditioning Skid Knock Out Drum	Oily water	Building/OWS	425
28 [561-FLT-5009A]	Oil Coalescer	Oil	Building/OWS	360
29 [561-FLT-5009B]	Oil Coalescer	Oil	Building/OWS	360
30 [561-TNK-5010]	Conditioning Skid Drain Tank	Oily water	Building/OWS	250

SPCC ID No. [Equipment No.]	Storage Area/Equipment	Contents	Containment	Maximum Volume (Gal)
	Drum/Container Storage – Water Treatment Bldg.			
31a [NA]	Grease and Lube Oil Rack (8 65-gallon containers)	Grease and Lube Oils	Steel Containment	520
31b [NA]	Virgin Oil Drums (4)	Oil	Spill Pallet	220
31c [NA]	Used Oil Intermediate Bulk Container (IBC)	Used Oil	Poly IBC Containment	350
	IWTP			
32 [NA]	Emergency Diesel Generator Tank	Diesel	Double wall	2,600
	Ranney Wells Electrical Building	**(City Property)**		
33 [NA]	Emergency Diesel Generator Tank	Diesel	Double wall	4,000
34 [NA]	Diesel Generator Day Tank	Diesel	Double wall	150
	Total Facility Storage Capacity			**8,225,560**

[1] "Wastewater treatment" unit included for completeness due to prevention role, capacity is for oil only.
[2] Qualified oil-filled operational equipment per 40 CFR 112.7(k).

Facility Quantities of Chemicals and Other Liquids in Larger than Drum Quantity

Equipment No.	Storage Area/Equipment/Contents	Containment	Containment Volume (Gal)	Maximum Volume (Gal)
	IWTP			
NA	Calcium Hypochlorite Solution Tank (1.6%)	Concrete sump, building	400	30
	Aqueous Ammonia			
541-TNK-9001	Aqueous Ammonia Storage Tank (19.0%)	Concrete dike, building	>44,000	40,000
	Circulating Water Chemical Treatment			
463-TNK-9001	Corrosion/Scale Inhibitor Storage Tank (CL-4435; <7% 1−Hydroxyethylidene −1,1−di phosphonic acid, tetrapotassium salt)	Concrete sump, building	>11,000	1,500
463-TNK-9002	Sodium Hypochlorite Storage Tank (12-14%)	Concrete sump, building	>11,000	4,600
463-TNK-9004	Sodium Bromide Storage Tank (40%)	Concrete sump, building	>11,000	2,000
463-TNK-9003	Sulfuric Acid Storage Tank (93%)	Concrete sump, building	>6,600	6,000
	Water Treatment Building			
NA	Sodium Hypochlorite Tote (12-14%)	Concrete sump, building	360	300
NA	Sulfuric Acid Tote (93%)	Concrete sump, building	360	300
NA	Sodium Bisulfite Tote (BL124, Chlorine scavenger, <40%)	Concrete sump, building	360	300
NA	Anti-Scalant Tote (RL9004, <7% 1−Hydroxy ethylidene−1,1−diphosphonic acid)	Concrete sump, building	360	300
NA	Oxygen Scavenger Tote, Carbohydrazide (BL1260, <10%)	Concrete sump, building	570	300
NA	Amine Tote (B152, <30% ammonium hydroxide, <10% ethanolamine)	Concrete sump, building	570	300
NA	Sodium Phosphate Tote (BL1794, <5%)	Concrete sump, building	1100	300
NA	Auxiliary Boiler Oxygen Scavenger Tote (BL1258, <60% Potassium Sulfite ; <30% Sodium Sulfite-)	Building, concrete floor	1100	80
NA	Auxiliary Boiler Phosphate Tote (BL8703, various - see MSDS)	Building, concrete floor	1100	80

Note: Other chemicals which may be used in drums or smaller containers, when necessary (e.g., CL-2873 cooling water treatment agent, CL-240 defoamer), will be dispensed within an existing oil/chemical containment area or placed on a secondary containment pallet for dispensing.

III.10. Annex 10 – Response Equipment Inventory (Part of ERAP)

The Facility Response Equipment List, below is provided to show a listing of available onsite response equipment and its location. This list is reviewed and updated as information changes. Please note this list contains the spill response equipment maintained on site. Additional spill response and emergency equipment is available from vendors and our contracted spill response contractor.

Response Equipment List

ITEM	LOCATION	COMMENTS
Oil-Only 95-gal. Wheeled Salvage Drum Spill Kit, Absorbing Capacity up to 80 gal.	Turbine Building - under steam pedestal	Contents will vary; see response equipment inspected monthly for inventory
For Practice: Oil-Only 95-gal. Wheeled Salvage Drum Spill Kit, Absorbing Capacity up to 80 gal.	Administration/Maintenance Building Maintenance Shop (equipment staging area)	Contents will vary; see response equipment inspected monthly for inventory
Four (4) - 40 gal. Universal Spill Kits for oils or chemicals	• Cooling Tower Chemical Feed Building • Water Treatment Building • Ranney Wells Electrical Building • Fuel Oil Unloading Station (Power Distribution Center)	Contents will vary; see response equipment inspected monthly for inventory
Solid Absorbent	Warehouse	1 pallet
25' Economax Boom	Industrial Waste Treatment Plant	25' boom and galvanized chain to boom off sedimentation basin overflows in the event a spill reaches the plant storm drains.
Catch Basin Covers	Industrial Waste Treatment Plant	Four (4) Drive-Over rubber/urethane drain covers 54"L x 30"W x 0.5" H
Fire Extinguishers	Throughout the facility	Mostly Dry Chemical, some CO2
Fire Hose Stations	Between the combustion turbines 10' east of Column B4 NW Stairwell outside Turbine Building Battery Room NW Stairwell Administration Building	
Fire Hydrants	These hydrants are located nearest the exterior fuel oil storage locations addressed in this ICP; other hydrants are located around the perimeter of the power block. 1- 75 ft. S. of Fuel Tank #1 at containment berm. 1- 100 ft. N. of Fuel Tank #1 at containment berm. 1- 75-100 ft. N. of Fuel Tank #2 at containment berm. 1- 50 ft. S.E. of Fuel Tank #2 at containment berm. 1- 50-75 ft. E of ST Step Up Transformer (closest hydrant to the Emergency Diesel Generator Fuel Tank) 1-230 ft. X of Ranney Well Tanks (near River Road)	
First-Aid-Kits	Control Room Administrative offices	Kits are inspected and inventoried monthly.

ITEM	LOCATION	COMMENTS
Eye Wash Stations / Emergency Showers	Ammonia Injection Skid No.1 Ammonia Injection Skid No.2 Power Generation Building Battery Room ground floor Power Generation Building Back Up Battery Room ground floor Chemical feed area Water Treating Building Chemical feed area Water Treating Building Water lab Water Treating Building Sodium hypochlorite tank area cooling tower chemical feed building Sulfuric acid tank area cooling tower chemical feed building Aqueous ammonia storage tank area Aqueous Ammonia Unloading Area Cooling Tower Chemical Feed Building Unloading Area Shop Area no. 123, Administration Building	
Hand Held Two-Way Radios	All plant staff have access to a two-way radio	

The operational status of all equipment is maintained "Ready" at all times. Inspections, tests and drills for this equipment is discussed in "Equipment Maintenance and Support", Section III.3.e.6.

III.11. Annex 11 - Response Equipment Testing/Deployment (Part of ERAP)

Write "Deploy" or "Test" or "Inspect" or "Deploy & Test" and date the column under the appropriate equipment type indicating the date that the test or deployment was conducted.

	Equipment Type			
	Oil-Only 95-gal. Wheeled Salvage Drum Spill Kit, Absorbing Capacity up to 80 gal.	**40 gal. Universal Spill Kits for oils or chemicals**	**Solid Absorbent**	**25' Economax Boom**
Frequency Notes	S	S	S	S
Example:	*Deployed 09/15/2009*	*Inspected 09/15/2009*	*Inspected 09/15/2009*	*Deployed/Tested 09/15/2009*

Frequencies – (5) Years, (T)riennially; (B)i-Annually; (A)nnual; (S)emi-Annually; (Q)uarterly; (M)onthly, (W)eekly

Facilities relying on an outside organization for some of its response equipment needs must ensure that the oil spill removal organization that is identified in the response plan to provide this response equipment certifies that the deployment exercises have been met. The Kleen Energy Facility will rely on Clean Harbors as its Oil Spill Removal Organization (OSRO contractor). Both the emergency response contract agreement with the OSRO and the certification and deployment certificate for their equipment will be included in Appendix 1. It is our intent to contract with a second OSRO contractor.

III.12. Annex 12 - Planning Distance Calculation

PLANNING DISTANCE CALCULATION FOR
OIL TRANSPORT ON MOVING WATER
WORST CASE TANK CAPACITY

Downstream Flow
Planning distance calculations are based on the requirements of 40 CFR 112, Attachment C-III.

(1) Solve for v by evaluating n, r, and s for the Chezy-Manning equation:

$v = 1.5/n \times r^{2/3} \times s^{1/2}$; where

v = the velocity of the river of concern (in ft./sec);

n = Manning's Roughness Coefficient from Table 1 of 40 CFR 112, Attachment C-III;

r = the hydraulic radius; the hydraulic radius can be approximated for parabolic channels by multiplying the average mid-channel depth of the river (in feet) by 0.667; and

s = the average slope of the river (unitless) obtained from U.S. Geological Survey topographic maps.

n = 0.035 was selected based on the value in Table 1 of Attachment C-III for a "regular section" of a "major streams (top width > 100 feet)". Connecticut River in the vicinity of Kleen Energy does not have extensive boulders or brush.

.

The slope value "s" was determined using available river data. USGS Topographic maps did not provide normal pool elevation for the Connecticut River in the vicinity of the plant or detailed contour lines below 10 feet above mean sea level (msl). The slope was determined by using National Oceanic and Atmospheric Administration (NOAA) river gauge data from the nearest upstream gauge at Middletown, CT (location A) and the nearest downstream gauge at Old Lyme, CT (location B). The most recent data available was the 2006 annual report for each station. The maximum and minimum gauge data for January 2006 at each station was averaged to determine the average river level at each station. The distance between these two stations is 24 miles. These

levels were used to calculate the slope.

A = 5.8 feet, B= 1.0 feet, and C=24 miles.

Solving:

$s = [(5.8 \text{ ft.} - 1.0 \text{ ft.})/24 \text{ miles}] \times [1 \text{ mile}/5280 \text{ feet}] = 3.8 \times 10^{-5}$

The average mid-channel depth is found by averaging the mid-channel depth for each mile along the length of the river between the facility and the public drinking water intake or the fish or wildlife or sensitive environment (or 20 miles downstream if applicable). This value is multiplied by 0.667 to obtain the hydraulic radius. The mid-channel depth was found by averaging the channel depths using NOAA navigation charts for 20 miles downriver from the KLES facility to Brockway Island along the Connecticut River.

Solving:

$r = 0.667 \times 24 \text{ feet} = 16.3 \text{ feet}$

Solve for v using:

$v = 1.5/n \times r^{2/3} \times s^{1/2}$:

$v = [1.5/0.035] \times (16.3)^{2/3} \times (3.8 \times 10^{-5})^{1/2}$

$v = 1.7$ feet/second

(2) Find t from Table 3 of 40 CFR 112 Attachment C. The Connecticut River's resource response time is 27 hours for substantial harm determination.

(3) Solve for planning distance, d:

$d = v \times t \times c$; where

d - the distance downstream from a facility within which fish and wildlife and sensitive environments could be injured or a public drinking water intake would be shut down in the event of an oil discharge (in miles);

v - the velocity of the river/navigable water of concern (in ft./sec) as determined by Chezy- Manning's equation (see below and Tables 1 and 2 of Attachment C to 40 CFR 112);

t - the time interval specified in Table 3 based upon the type of water body and location (in hours), However Attachment C-III, section 1.6 states that "*Table 3 of this attachment contains specified time intervals for estimating the arrival of response resources at the scene of a discharge. … The specified time intervals in Table 3 of Appendix C are to be used only to aid in the identification of whether a facility could cause substantial harm to the environment. Once it is determined*

that a plan must be developed for the facility, the owner or operator shall reference Appendix E to this part to determine appropriate resource levels and response times…"; and

c - constant conversion factor 0.68 secω mile/hr.ω ft. (3600 sec/hr. ÷ 5280 ft./mile).

d = v×t×c
d = (1.7 ft./sec)×(27 hours)×(0.68 secω mile/hr.ω ft.)
d = 31 miles

This distance is only to determine whether or not the facility causes substantial harm (40 CFR 112, Attachment C-III, Section 1.6). Once it was determined that a plan had to be developed for the facility, Appendix E to 40 CFR 112 was used to determine appropriate resource levels and response times.

Facility personnel are capable of deploying absorbents and boom in on-site storm water basins within 1 hour for a small discharge. The spill response contractor is capable of responding with the required medium and large resources within 1.5 hours (personnel can be mobilized within earlier, but full equipment mobilization and deployment requires up to 1.5 hours). The NRG facility located approximately 1 mile downstream of the Kleen Energy Facility is also an FRP facility and receives barge shipments of oil. This facility has 2000' of boom onsite, a response boat, river access and trained personnel for deployment of this boom. Upon notification of a spill to the river, NRG personnel would at a minimum have to take defensive action to deploy a portion of their boom to protect their fresh water intakes. Given the calculated river velocity of 1.7 ft./second, a spill could travel on water up to approximately 1.1 miles in 1 hour and approximately 1.7 miles in 1.5 hours. A recent government originated exercise confirmed their ability to deploy boom within an hour and adding the over land migration time to for a spill to reach the river (approximately 1/3 mile from the storage tanks) there is likely to be sufficient time for NRG to deploy its boom to prevent the spill from affecting the NRG facility.

The nearest downstream distance past the NRG facility at which equipment can be readily transported to the river and deployed is at the Pratt and Whitney facility located approximately 2.9 miles downriver. The Pratt and Whitney facility has an access road and a boat ramp providing river access. The Pratt and Whitney facility has water intakes for cooling water at this location and will need to protect them to maintain facility operations. The nearest environmentally sensitive area is located approximately 4.4 miles downriver and approximately 1.5 miles downstream of the Pratt and Whitney Facility.

The facility's OSRO contractor will initially respond to the first available river entry point beyond the extent of oil movement. Depending on the tide and river velocity, this could be the NRG dock mentioned above, the Pratt and Whitney dock (the next downstream entry approximately 2.9 miles downstream on Aircraft Road in Middletown) or a variety of public access points. While not obligated to provide access, the facility would request access in advance of their arrival and both NRG and Pratt and Whitney have used the facility's OSRO as a one of their OSRO contractors, so they are familiar with these facilities and their access/safety protocols. If necessary, the OSRO contractor could enter the river at public access points and travel on river to intercept the spill, deploying booms to stop the spread of the spill and begin recovery activities.

A spill will take approximately 2.5 hours to reach the Pratt and Whitney facility boat ramp and intakes. The OSRO will be able to mobilize to that location in 1.5 hours and should be able to locate the leading edge of the spill and deploy boom across the entire river well upstream of the Pratt and Whitney intakes and dock. This will prevent further downstream migration and prevent the spill from reaching environmentally sensitive areas. Therefore, 2.9 miles downstream is the appropriate practical planning distance for this facility.

Since the facility has the opportunity to intercept spills on-site in the sedimentation basins with a small boom (25 feet) and there is no practical access point to the river at a distance equal to a 1 hour mobilization time, there is no advantage to the facility maintaining an on-site inventory of 1000 feet of boom. The OSRO has sufficient boom that can be mobilized to the Pratt and Whitney dock within 1.5 hours to boom the entire river.

Upstream Flow

The Connecticut River is tidally influenced up to Windsor Locks, Connecticut.[j] The distance upriver from the Kleen Energy facility to Windsor Locks is approximately 35 miles. Appendix C to 40 CFR 112 states "*For persistent oils discharged into tidal waters, the planning distance is 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide.*" The planning distance downstream as calculated above is 31 miles which is greater than the 15 miles required for ebb tide. The tidal influence during flood tide (~35 miles) is greater than the required 15 miles, so 15 miles was used to evaluate impacts upstream during flood tide and downstream during ebb tide.

The nearest upstream distance past at which equipment can be readily transported to the river and deployed is approximately 1.1 miles upriver at the Yankee Boat Yard and

[j] *Connecticut River Estuary And Tidal River Wetlands Complex*. (1994). Retrieved March 30, 2011 from http://library.fws.gov/pubs5/ramsar/web_link/locate.htm.

Marina located on the opposite shore from the Kleen Energy facility. Beyond this point, the next launch site is approximately 3.8 miles upriver from the Kleen Energy facility at the Connecticut River State Wildlife Area. This facility is public access and is adjacent to Highway 9 which runs along the river and has a wide boat ramp providing river access for multiple boats.

At peak flood tide, assuming the same upstream river velocity as calculated for downstream flow (1.7 ft./sec) as a worst case, a spill during flood tide will take approximately 1 hour to reach the Yankee Boat Yard and Marina and 3.5 hours to reach the public access boat ramp. Actual flow rates are likely to be much lower for upstream flow and spill travel time to the Yankee Boat Yard will likely be longer than the 1.5 hour OSRO mobilization time. For a flood tide spill reaching the river, the facility will coordinate with the boat yard to confirm the spill has not reached that location and direct the OSRO accordingly. If it is necessary to do to the public access boat ramp further upstream, the OSRO will be able to mobilize to that location in 1.5 hours, locate the leading edge of the spill as it moves upstream, likely before it reaches the Arrigoni Bridge. This will prevent further upstream migration and prevent the spill from reaching environmentally sensitive areas. Therefore, 3.8 miles upstream is the appropriate practical planning distance for this facility.

III.13. Annex 13 – Emergency Response Contractor Agreements

Clean Harbors 2011 OPA-90 Agreement (9 Pages)

Clean Harbors 2011 Standard Emergency Response Agreement (5 Pages)

Moran Environmental OSRO/OPA-90 Agreement (1 Page)

CleanHarbors
ENVIRONMENTAL SERVICES®
42 Longwater Drive
Norwell, MA 02061-9149
781-792-5000

January 27, 2011

Mr. Jason Farren
Kleen Energy
1349 River Road
Middletown, CT 06457

Dear Mr. Farren:

This letter is being sent to you in connection with the Preparedness for Response Exercise Program (PREP) requirements of Response Plan Holders under OPA-90 for the OPA-90 period of January 1, 2011 to December 31, 2011. Clean Harbors Environmental Services, Inc. is an active oil spill response company that exercises its spill response equipment on a daily basis, during its normal business activities (see enclosed Equipment Deployment examples).

In addition to this exercising of equipment, Clean Harbors has a program of regular Preventative Maintenance. Furthermore, Clean Harbors has regular on-going training programs for its spill personnel. This training includes, but is not limited to, OSHA 40 hour Hazwoper, 8-Hour OSHA Refresher, Confined Space Entry, Competent Person, PR/First Aid and Marine Operations. Should you desire more detail or wish to review our Preventative Maintenance and Training records, please call us at 781-792-5000.

Finally, we are available, at quoted rates, to participate in drills using our equipment, at your facility. Thank you for listing us on your OPA-90 Response Plan and we look forward to continuing to serve you in this capacity.

Sincerely,
John Rodier
OPA-90 ER Preparedness Coordinator

Environmental Services, Inc.

761 Middle St
Bristol CT 06010
860.583.8917
860.585 1740 (facsimile)

Internal Exercise documentation Form
Equipment Deployment Exercise

1. Date performed: **6/25/2010**

2. Exercise or actual response: **Excercise**
   If an exercise , announced or unannounced: announced

3. Deployment Locations: **DEP Dock in Old Lyme, CT**

4. Time Started: **7:00am**
   Time Completed: **3:00pm**

5. Equipment Deployed was:
   Oil Spill removal organization owned if so which OSRO **(Clean Harbors) CHES Bristol CT**

6. List types and amount of all equipment (e.g. boom & skimmers)deployed and number of support personnel employed**: 1000 feet 18" containment boom, 1 20ft work boat with trailer, 2 pickup trucks, 1 boom trailer, 20 bales each of Absorbent boom and pads . 3000 gallon vacuum truck. 1 12 foot John boat with 5hp engine. personnel includes 1 supervisor, 2 foremen, 5 field technicians and 1 Driver.**

7. Describe goals of the equipment deployment and list any area contingency plan strategies tested . Attach a sketch of equipment deployment & booming strategies) **The deployment of 1000 feet of 18"containment boom for the purposes of simulating the corraling of released six oil in the river. Also lined the contaimnet boom with abosrbent boom to soak up the oil.**

8. For deployment of facility owned equipment was the amount of equipment deployed at least the amount necessary to respond to your facility's average most probable spill? **N/A**

9. For deployment of OSRO-owned equipment was a representative sample (at least 1000' of each boom type and at least one of each skimmer type) deployed Yes
   Was the equipment deployed in its intended operating environment? **YES**

10. Are all facility personnel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved in a comprehensive maintenance program? **YES**

    If so describe the program: : **40-hour OSHA, 8-hour refresher, CPR, First-aid, boating safety and monthly P/M**

    Date of last equipment inspection: **1/15/2010**

11. Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill? **YES**

12. Was all deployed equipment operational. If not, why not? **YES**

13. Identify which of the 15 core components of our response plan were exercised during this particular exercise?

1.NOTIFICATIONS CT DEP on site

2. STAFF MOBILIZATION Mobilization from Bristol CT completed within 2 hours.

3. RESPONSE PLAN PROTOCOL All CHES procedures for boom deployment, operation of motorized vessel and working on or near a body of water were followed.

5.ASSESSMENT The main objectives were, to set up the containmwent boom so as to simulate the containment of released oil from migrating any further and the removal of oil from the pipeline, and tanks to prevent any more oil from being released to the river..

6.RECOVERY N/A.
7.PROTECTION Long Island Sound

8. DISPOSAL N/A

9.COMMUNICATIONS Two way radios were utilized on site and cellular phones used for communications with remote site, offices, etc…

10.TRANSPORTATION N/A

11.PERSONNEL SUPPORT. Consisted of a supervisor, one Foremen experienced and certified in the operation of a vessel, three laborers, and one Class A driver

12.EQUIPMENT MAINTENANCE AND SUPPORT. Service to boats and inspection of boom was accomplished upon completion of task Tankers, and straight vacuum trucks are tested annually and serviced every 60 days

13. PROCUREMENT N/A

14.DOCUMENTATION All paperwork generated are kept at the Bristol CT office.

15. Attach a description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

Fernando Centeno Sr.
Certifying Signature

Retain this form and other documentation related to this exercise on file for a minimum of 3 years (USCG/RSPA/MMS) or for a minimum of 5 years (for EPA)

Environmental Services, Inc.

761 Middle St
Bristol CT 06010
860.583.8917
860.585 1740 (facsimile)

Internal Exercise documentation Form
Equipment Deployment Exercise

1. Date performed: **10/28/10**

2. Exercise or actual response: **Actual**
   If an exercise , announced or unannounced: announced

3. Deployment Locations: **DEP Dock in Old Lyme, CT**

4. Time Started: **8:00am**
   Time Completed: **16:00pm**

5. Equipment Deployed was:
   Oil Spill removal organization owned if so which OSRO **(Clean Harbors) CHES Bristol CT**

6. List types and amount of all equipment (e.g. boom & skimmers)deployed and number of support personnel employed**: 1200 feet 18" containment boom, 1 20ft work boat with trailer, 2 pickup trucks, 1 boom trailer, supervisor, 1 foreman, 2 field technicians**

7. Describe goals of the equipment deployment and list any area contingency plan strategies tested . Attach a sketch of equipment deployment & booming strategies) **The deployment of 1000 feet of 18"containment boom around submarine for the purposes of containing any accidental fuel release during the ship to shore transfer of fue, should this occur.**

8. For deployment of facility owned equipment was the amount of equipment deployed at least the amount necessary to respond to your facility's average most probable spill? **N/A**

9. For deployment of OSRO-owned equipment was a representative sample (at least 1000' of each boom type and at least one of each skimmer type) deployed Yes
   Was the equipment deployed in its intended operating environment? **YES**

10. Are all facility personnel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved in a comprehensive maintenance program? **YES**

    If so describe the program: : **40-hour OSHA, 8-hour refresher, CPR, First-aid, boating safety and monthly inspections**

    Date of last equipment inspection: **10/21/2010**

11. Was the equipment deployed by personnel responsible for its deployment in the event

of an actual spill? **YES**

12. Was all deployed equipment operational. If not, why not? **YES**

13. Identify which of the 15 core components of our response plan were exercised during this particular exercise?

1.NOTIFICATIONS General Dynamics(customer)

2. STAFF MOBILIZATION Mobilization from Bristol CT completed within 2 hours.

3. RESPONSE PLAN PROTOCOL All CHES procedures for boom deployment, operation of motorized vessel and working on or near a body of water were followed.

5.ASSESSMENT The main objectives were, to set up the containment boom for the containment of released oil should this occur during fuel transfer.

6.RECOVERY N/A.
7.PROTECTION Thames Rive and Long Island Sound

8. DISPOSAL N/A

9.COMMUNICATIONS Intrinsically Safe Two way radios were utilized on site and cellular phones used for communications with remote site, offices, etc…

10.TRANSPORTATION N/A

11.PERSONNEL SUPPORT. Consisted of a supervisor, one Foremen experienced and certified in the operation of a vessel, and two laborers.

12.EQUIPMENT MAINTENANCE AND SUPPORT. Service to boats and inspection of boom was accomplished upon completion of task

13. PROCUREMENT N/A

14.DOCUMENTATION All paperwork generated are kept at the Bristol CT office.

15. Attach a description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

Fernando Centeno Sr.
Certifying Signature

Retain this form and other documentation related to this exercise on file for a minimum of 3 years (USCG/RSPA/MMS) or for a minimum of 5 years (for EPA)

Milford Service Center
279 Woodmont RD
Milford, Conn 06460 203-878-1740 Fax 203-878-1799

Internal Exercise documentation Form
Equipment Deployment Exercise

1. Date performed: **2/11/2010**

2. Exercise or actual response: **Actual**

   If an exercise , announced or unannounced: **Unannounced**

3. Deployment Locations: **Milford Power**

4. Time Started: **0130**

   Time Completed: **1600**

5. Equipment Deployed was: **Soft Boom**
   Facility Owned
   Oil Spill removal organization owned if so which OSRO (Clean Harbors)
   Both **Milford Service Center**

6. List types and amount of all equipment (e.g. boom & skimmers) deployed and number of support personnel employed: **Boom, Vac Trucks, Excavator, Air mover, Roll off Truck, 8 Man Crew.**

7. Describe goals of the equipment deployment and list any area contingency plan strategies Tested. Attach a sketch of equipment deployment & booming stragagies)
   Deployment of boom to stop the product from running to the water way. Excavated soil and rock and load into roll off cans. Vac up any standing liquid

8. For deployment of facility owned equipment was the amount of equipment deployed at least the amount necessary to respond to your facility's average most probable spill? **Yes**

9. For deployment of OSRO-owned equipment was a representative sample (at least 1000' of each boom type and at least one of each skimmer type) deployed **CH Equipment**

   Was the equipment deployed in its intended operating environment? **Yes**

10. Are all facility personel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved
In a comprehensive maintenance program? **Yes**
If so describe the program: **40-hour OSHA, 8-hour refresher, CPR, First-aid, boating safety and monthly P/M**

Date of last equipment inspection: **2/8/2010**

11. was the equipment deployed by personnel responsible for its deployment in the event Of an actual spill?
Actual

12. Was all deployed equipment operational? If not, why not? **Yes**

13. Identify which of the 15 core components of our response plan were exercised during this Particular exercise? **Notification CT DEP, Response Plan Protocol, Discharge Control, Protection Communication, Personnel Support, Equipment Maintenance.**

14. Attach a description of lesson(s) learned and person(s) responsible for follow up of Corrective measures. **Good Communication, Quick Response Time, These are the Keys to a controlled spill**

Certifying Signature **Joseph Heron**

Retain this form and other documentation related to this exercise on file for a minimum of 3 years (USCG/RSPA/MMS) or for a minimum of 5 years (for EPA)

Milford Service Center
279 Woodmont RD
Milford, Conn 06460 203-878-1740 Fax 203-878-1799

Internal Exercise documentation Form
Equipment Deployment Exercise

1. Date performed: **9/11/2010**

2. Exercise or actual response: **Actual**

   If an exercise , announced or unannounced: **Unannounced**

3. Deployment Locations: **Milford Power**

4. Time Started: **0900**

   Time Completed: **1600**

5. Equipment Deployed was: **Hard Boom**
   Facility Owned
   Oil Spill removal organization owned if so which OSRO (Clean Harbors)
   Both **Milford Service Center**

6. List types and amount of all equipment (e.g. boom & skimmers) deployed and number of support personnel employed: **Boom, Vac Trucks, Excavator, Air mover, Roll off Truck, 6 Man Crew.**

7. Describe goals of the equipment deployment and list any area contingency plan strategies Tested. Attach a sketch of equipment deployment & booming stragagies)
   Deployment of boom to stop the product from running to the water way. Excavated soil and rock and load into roll off cans. Vac up any standing liquid

8. For deployment of facility owned equipment was the amount of equipment deployed at least the amount necessary to respond to your facility's average most probable spill? **Yes**

9. For deployment of OSRO-owned equipment was a representative sample (at least 1000' of each boom type and at least one of each skimmer type) deployed **CH Equipment**

   Was the equipment deployed in its intended operating environment? **Yes**

10. Are all facility personel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved
In a comprehensive maintenance program? **Yes**
If so describe the program: **40-hour OSHA, 8-hour refresher, CPR, First-aid, boating safety and monthly P/M**

Date of last equipment inspection: **2/8/2010**

11. was the equipment deployed by personnel responsible for its deployment in the event Of an actual spill?
Actual

12. Was all deployed equipment operational? If not, why not? **Yes**

13. Identify which of the 15 core components of our response plan were exercised during this Particular exercise? **Notification CT DEP, Response Plan Protocol, Discharge Control, Protection Communication, Personnel Support, Equipment Maintenance.**

14. Attach a description of lesson(s) learned and person(s) responsible for follow up of Corrective measures. **Good Communication, Quick Response Time, These are the Keys to a controlled spill**

Certifying Signature **Joseph Heron**

Retain this form and other documentation related to this exercise on file for a minimum of 3 years (USCG/RSPA/MMS) or for a minimum of 5 years (for EPA)

Emergency Response Services
1.800.OIL.TANK
42 Longwater Drive
Norwell MA 02061-9149
(781) 792-5000

January 27, 2011

Mr. Jason Farren
Kleen Energy
1349 River Road
Middletown, CT 06457

Dear Mr. Farren:

Please let this letter serve as evidence that the STANDBY EMERGENCY RESPONSE AGREEMENT (SERA), executed on January 3, 2011 by Clean Harbors Environmental Services (CHES), with corporate offices in Norwell, Massachusetts and Kleen Energy is an "evergreen" agreement and, as such, remains in force on this date, and will remain in force for all of 2011.

The purpose and intent of the SERA was, and continues to be, to provide Kleen Energy with emergency oil spill response resources and response capabilities, as required under the Oil Pollution Act of 1990, according to the terms and conditions of the March 2, 2010 agreement and in accordance with the USCG OSRO Ratings on file with the USCG for Clean Harbors.

CHESI holds all necessary permits to perform this type of emergency response, and has regular training programs in place for all of its responders, including, but not limited to, 40 hour OSHA "Hazwoper" training and annual 8 hour refresher.

Any questions on this matter should be directed to this writer at (781) 792-5000.

Sincerely,
John Rodier
OPA 90/SERA Admin

CleanHarbors
ENVIRONMENTAL SERVICES

STANDBY EMERGENCY RESPONSE AGREEMENT

This Agreement is made this 3rd day of January 2011, by and between Clean Harbors Environmental Services, Inc., and affiliates, a Massachusetts corporation, with offices located at 42 Longwater Drive, P.O. Box 9149, Norwell, MA 02061-9149, ("Contractor") and Kleen Energy Systems, a Limited Liability corporation, with its principal place of business at 1349 River Road, Middletown CT ("Customer").

WHEREAS, Contractor is engaged in the business of providing Emergency Response Services ("Services") to respond to discharges of oil or other hazardous substances; and

WHEREAS, Customer desires to engage Contractor to provide such Services; and

WHEREAS, Customer and Contractor desire to establish the terms and conditions pursuant to which such Services will be provided.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties, intending to be legally bound, agree as follows:

ARTICLE 1. Purpose

1.1 This Agreement establishes the terms and conditions pursuant to which Contractor may furnish Customer with certain Services in connection with response to discharges of oil or other hazardous substances.

1.2 This Agreement shall not obligate Customer to purchase Services from Contractor, nor shall it obligate Contractor to provide Services, but shall govern all orders for Services issued by Customer and which are accepted by Contractor. Contractor will use best efforts to respond to requests by Customer for Services.

ARTICLE 2. Scope of Services

2.1 The Services contemplated in connection with the response to discharges of oil or other hazardous substances may include, but not be limited to, the following:

- Containment, recovery, repackaging and removal of materials;
- Site evaluation, decontamination and restoration;
- Transportation, storage, treatment or disposal of wastes;

Agreement nor shall it constitute a waiver of Contractor's right to request that evidence of sufficient funds be provided by Customer at a later date.

4.5 Customer shall communicate to Contractor all special hazards or risks known to or learned by the Customer during the term hereof which are related to the performance of Services pursuant to this Agreement.

ARTICLE 5. Compensation

5.1 Customer agrees to pay Contractor for Services in accordance with Contractor's Rate Schedule for emergency response work ("Rates") in effect at the time Services are rendered. Customer hereby assigns to Contractor all rights to any insurance payments that Customer may be entitled to receive to pay for the Services provided under this Agreement and hereby authorizes its insurance company or agent to pay Contractor directly. Customer's obligation to pay amounts due pursuant to this Agreement shall not be conditioned upon or limited by the types, amounts or availability of insurance coverage.

5.2 Contractor will present its first invoice to Customer as soon as possible following commencement of Services provided hereunder, and may issue subsequent invoices every five (5) days thereafter. Customer agrees to pay the full amount of each invoice amount within ~~five (5)~~ business days of the date of receipt of said invoice by Customer's Representative. ~~thirty~~ thirty (30) okSM

5.3 Customer agrees that interest shall accrue and ~~will be~~ paid to Contractor on any unpaid balance of any invoice after ~~five (5)~~ business days of receipt of invoice by Customer at the rate of one and one half percent (1.5%) per month or the maximum amount allowed by law.

5.4 In the event that legal or other action is required to collect unpaid balances of invoices due Contractor, Customer agrees to pay all costs of collection, litigation or settlement incurred by Contractor, including reasonable attorneys fees. "Legal or other action" as used above shall include bankruptcy and insolvency proceedings.

5.5 In the event that work is suspended or terminated for any reason prior to the completion of the Services, Customer agrees to pay for labor, equipment, materials, disposal and other costs incurred by Contractor at the Rates and for reasonable demobilization costs.

5.6 Customer agrees to pay Contractor in accordance with the Rates for any litigation support or testimony provided by Contractor in connection with, or arising out of, the work performed by Contractor hereunder.

ARTICLE 6. Changes in Work

authority, or Customer's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Customer, its employees or agents.

8.2 Customer shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees and agents from and against any and all costs, liabilities, claims, demands and causes of action including, without limitation, any bodily injury to or death of any person or destruction of or damage to property which Contractor may suffer, incur, or pay out, to the extent such are caused by the negligence or willful misconduct of Customer, its employees or agents or the failure of Customer to comply with any laws, regulations or other lawful authority or the failure of Customer to comply with its duties or obligations under this Agreement; except to the extent such liabilities, claims, demands and causes of action result from Contractor's failure to comply with any laws, regulations or lawful authority, or Contractor's failure to comply with its obligations under this Agreement or result from the negligence or willful misconduct of Contractor, its employees or agents.

8.3 Notwithstanding the foregoing, Customer shall indemnify, defend and hold harmless Contractor, its parent and affiliated companies and their respective directors, officers, employees, agents and subcontractors from and against any and all costs, liabilities, claims, demands and causes of action for pollution damages; contamination or adverse effects on the environment; destruction of, damage to, or loss of, whether actual or alleged, any property or natural resources, including the cost of assessing the damage; injury to or economic losses resulting from destruction of real or personal property; damages for loss of subsistence use of natural resources; damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction or loss of real property, personal property or natural resources; damages for net costs of providing increased or additional public services; removal costs; and any other costs assessable under the Oil Pollution Act of 1990, the Comprehensive Environmental Response, Compensation and Liability Act or other local, state or Federal law or lawful authority applicable to discharges or releases of oil or hazardous substances which Contractor, individually or collectively, may suffer, incur, or pay out in connection with, or arising out of, the release of oil or hazardous substances by Customer; provided, however, that the foregoing indemnity shall not apply to any claims, liabilities or causes of action caused by the transportation or disposal of waste materials by Contractor.

ARTICLE 9. Excuse of Performance

The performance of this Agreement, except for the payment of money for Services already rendered, may be suspended by either party in the event performance of this Agreement is prevented by a cause or causes beyond the reasonable control of such

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12.3 Severability - If any section, subsection, sentence or clause of this Agreement shall be deemed to be illegal, invalid or unenforceable for any reason, such illegality, invalidity or unenforceability shall not affect the legality, validity or enforceability of this Agreement or other sections of this Agreement.

12.4 Entire Agreement - This Agreement and any Exhibits to this Agreement represent the entire understanding and agreement between Customer and Contractor and supersedes any and all prior agreements, whether written or oral, that may exist between the parties regarding same. Modifications to this Agreement shall be in writing and shall be signed by the Customer and Contractor. Additional, conflicting or different terms on any Purchase Order or other preprinted document issued by Customer shall be void and are hereby expressly rejected by Contractor.

12.5 Survival - The provisions contained in Articles 3, 4, 5, 8 and 12 shall survive and remain in effect following the termination of this Agreement.

12.6 Applicable Law - This Agreement shall be interpreted and enforced according to the Laws of the Commonwealth of Massachusetts and the parties agree to submit to the jurisdiction of the courts of the Commonwealth of Massachusetts for any disputes arising under this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

CUSTOMER

Kleen Energy Systems

Signature: _____

By: Robert Haley
PRINT NAME

Title: Plant Manager

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.

Signature: _____

By: Scott Metzger
PRINT NAME

Title: Senior Vice President SW

Moran Environmental Recovery

OSRO/OPA-90 AGREEMENT

This Agreement is made this 4th day of May, 2011, by and between Moran Environmental Recovery (MER) whose corporate office is located at 261 Levy Road, Atlantic Beach, FL 32233, and Kleen Energy (Customer) whose office is located at 349 River Road, Middletown, CT 06457. MER hereby agrees to be named as Customer's Spill Response contractor pursuant to the Oil Pollution Act of 1990, in the Jacksonville, FL, Savannah, GA, Charleston, SC, Hampton Roads, VA, Delaware Bay, Long Island, NY New York, NY, Southern New England, Boston, MA and Northern New England USCG Captain of the Port (COTP) Zones. The following conditions will apply: 1349

1. Customer may at any time during the term of this Agreement request MER to deploy all or part of the equipment and manpower listed in it's Response Resource Inventory for the purpose of oil and hazardous material spill response activities. Upon receipt of any such request, MER shall use its best available resources and good faith efforts subject to availability, to deploy such equipment and personnel within MER's service area. Schedule I identifies MER Response Coordinators and the necessary emergency contact phone numbers.

2. A verbal deployment request by Customer shall be followed-up in writing and include the following information:
   a. The name of the official entity or authorized agent executing this Agreement.
   b. The name and call sign of the relevant vessel or the location of the relevant facility.
   c. The name of the Qualified Individual and the Federal on Scene Commander.
   d. The location of the spill.
   e. Estimated quantity and type of oil discharged.
   f. Estimated time of incident.
   g. Weather conditions of the scene.
   h. Condition of vessel or facility.
   i. Amount of equipment and number of personnel requested.

3. Services will be provided on a time and material basis as set forth on the attached MER rate sheet dated January 1, 2011, and incorporated as Schedule II to this Agreement. The Schedule II rate sheet may be amended by MER annually upon 90-calendar day advanced written notice to Customer.

4. MER shall invoice weekly for work performed. Invoices are payable upon receipt. Invoices unpaid for than ten (10) days shall bear interest at the rate of 1.5% per month.

5. MER shall maintain in effect during the term of this Agreement insurance in respect to its equipment and personnel. A copy of the existing insurance certificate is attached as Schedule III.

6. Anything herein contained to the contrary notwithstanding, MER shall not be required to comply with any request to deploy equipment and/or personnel in the even of a "Force Majeure" occurrence or where, in good faith judgment of MER, circumstances exist that present an unreasonable risk to life or property.

7. MER's OSRO Classification Summary can be found on the OSRO Matrix on the USCG National Strike Force Coordination Center's website. This summary contains MER's classifications by operating area and selected COTP zones as referenced in the opening paragraph above.

8. MER shall have no obligation to perform services under this Agreement in any state, county, parish or territory which does not extend immunity to first responders to oil spill emergencies.

9. This Agreement shall be construed in all respects in accordance with the laws of the State of Florida.

10. Customer agrees to notify MER on a timely basis of any spill requiring Response Services. MER agrees that it will diligently respond to such notification with personnel and equipment deemed necessary.

11. If, for any reason, MER is unable to respond with adequate resources on a timely basis, MER will promptly notify Customer and will assist Customer to the best of its ability to obtain alternate resources.

12. This Agreement shall be in effect for a term of one year from date of execution or until cancelled by either party with 30 days written notice. It is understood and agreed that this Agreement may be amended by mutual consent only as evidenced by any such amendment being set forth in writing and executed by both parties.

13. An annual fee of $550 is payable by Customer to MER for the administration and maintenance of this Agreement. The annual fee invoice is hereby attached and payable upon receipt and execution of this Agreement. Annual renewal contracts and consecutive term invoices will be provided 30 calendar days in advance of each contract renewal date. Failure of customer to pay the initial or subsequent renewal administration fees will result in contract termination.

We appreciate the opportunity to be of service.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

CUSTOMER: Kleen Energy

Name: Robert Haley

Signature: [signature]

Title: Plant Manager

MORAN ENVIRONMENTAL RECOVERY, LLC

Name: John C. Silva

Signature: [signature]

Title: VP Preparedness & BR

III.14. Annex 14 – Worst Case Discharge Planning Volumes

40 CFR 112 Attachment E - Calculation to Plan Volume of Response Resources for Worst Case Discharge - Petroleum Oils

Part I Background				
	Worst Case Discharge	A	4,061,400	gallons
	Oil Group	B	1	non-persistent
	Operating Area	C	Rivers/Canals	
	Pct of Oil (Table 2 Lookup for Group 1 Oils)			
	Natural Dissipation	D1	0.8	
	Recovered Floating	D2	0.1	
	Oil Onshore	D3	0.1	
	On Water Oil Recovery	E1(D2xA)	406,140	gallons
	Shoreline Recovery	E2(D3xA)	406,140	gallons
	Emulsification Factor (Table 3 Lookup for Group 2 Oils)	F	1	
	On Water Recover Resource Mobilization Factor (Table 4 Lookup for Rivers/Canals)			
		G1	0.3	
		G2	0.4	
		G3	0.6	
Part II On Water Oil Recovery Capacity				
	On Water Oil Recovery Capacity	Tier 1 (E1xFxG1)	121,842	gallons/day
	The total on-water oil recovery capacity in barrels per day that must be identified or contracted to arrive on-scene within the applicable time for each response tier. Response time is 12, 36 and 60 hours for Tiers 1, 2 and 3, respectively.	Tier 2 (E1xFxG2)	162,456	gallons/day
		Tier 3 (E1xFxG3)	243,684	gallons/day
Part III Shoreline Cleanup Volume				
	Shoreline Cleanup Volume	(E2xF)	406,140	gallons
	On water response capacity by Operating Area	Tier 1 J1	78.75	gallons/day
	Table 5 Lookup for Rivers and Canals (Amount needed to be contracted for)	Tier 2 J2	157.5	gallons/day
		Tier 3 J3	315	gallons/day
	On water amount needed to be identified but not contracted for in advance.	Part II Tier 1-J1	121,763	gallons/day
		Part II Tier 2-J2	162,299	gallons/day
		Part II Tier 3-J3	243,369	gallons/day

III.15. Annex 15 - Drills and Exercises

Facility Drill and Exercise Program

The following Facility Drills and Exercises for the Kleen Energy Facility have been designed in accordance with 40 CFR Part 112.20, Section 1.8.2. They are based on the National Preparedness for Response Exercise Program (PREP) and thus satisfy the facility's requirements for a drill/exercise program for petroleum spills. The Kleen Energy Facility plans to follow the PREP guidelines, where applicable.

The PREP was developed as a coordinated, multi-agency effort with the responsibility to exercise and evaluate government Area Contingency plans and industry spill response plans. This exercise program meets the Oil Pollution Act's mandate for exercises and represents guidelines for ensuring overall preparedness within the response community.

Triennial Exercise Documentation

For each quarter in which an exercise was completed, mark that with an "X" then mark each core component tested during an exercise. After 3 years, each Core Plan Component must have been checked off as having been exercised in at least 1 type of exercise.

	2010 Quarters				2011 Quarters				2012 Quarters			
	1	2	3	4	5	6	7	8	9	10	11	12
INTERNAL EXERCISES												
QI Notification	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Emergency Procedures (Field)			☐				☐				☐	
SMT Tabletop			☐				☐				☐	
Equipment Deployment-KLES Equipment	☐		☐		☐		☐		☐		☐	

Core Plan Components Involved in the Exercise
(1) Notifications
(2) Staff mobilization
(3) Operate w/in the response mgmt. system in the plan
(4) Discharge control
(5) Assessment of discharge
(6) Containment of discharge
(7) Recovery of spilled material
(8) Protection of sensitive areas
(9) Disposal of recovered material and contaminated debris
(10) Communications
(11) Transportation
(12) Personnel support
(13) Equipment maintenance and support
(14) Procurement
(15) Documentation

Triennial Exercise Documentation

For each quarter in which an exercise was completed, mark that with an "X" then mark each core component tested during an exercise. After 3 years, each Core Plan Component must have been checked off as having been exercised in at least 1 type of exercise.

	2010 Quarters				2011 Quarters				2012 Quarters				Core Plan Components Involved in the Exercise														
	1	2	3	4	5	6	7	8	9	10	11	12	(1) Notifications	(2) Staff mobilization	(3) Operate w/in the response mgmt. system in the plan	(4) Discharge control	(5) Assessment of discharge	(6) Containment of discharge	(7) Recovery of spilled material	(8) Protection of sensitive areas	(9) Disposal of recovered material and contaminated debris	(10) Communications	(11) Transportation	(12) Personnel support	(13) Equipment maintenance and support	(14) Procurement	(15) Documentation
OSRO Equip. Deployment Certification[11]	☐				☐				☐																		
EXTERNAL EXERCISES INITIATED BY OTHERS																											
Gov't Initiated Unannounced-If Selected																											
Area Notification Exercise																											
Area SMT Tabletop																											

[11] This is not an exercise but a reminder to obtain a new annual certification of deployment exercises from the response contractor for their response equipment.

Triennial Exercise Documentation

For each quarter in which an exercise was completed, mark that with an "X" then mark each core component tested during an exercise. After 3 years, each Core Plan Component must have been checked off as having been exercised in at least 1 type of exercise.

	2010 Quarters				2011 Quarters				2012 Quarters			
	1	2	3	4	5	6	7	8	9	10	11	12
Area Equipment Deployment Area Exercise												

Core Plan Components Involved in the Exercise	
(1) Notifications	
(2) Staff mobilization	
(3) Operate w/in the response mgmt. system in the plan	
(4) Discharge control	
(5) Assessment of discharge	
(6) Containment of discharge	
(7) Recovery of spilled material	
(8) Protection of sensitive areas	
(9) Disposal of recovered material and contaminated debris	
(10) Communications	
(11) Transportation	
(12) Personnel support	
(13) Equipment maintenance and support	
(14) Procurement	
(15) Documentation	

Response Plan Core Components

During each triennial cycle, all core FRP components of this ICP must be exercised at least once. The purpose of this requirement is to ensure that all plan components function adequately for response of an oil spill. The following core FRP objectives were taken from the PREP Guidelines dated August 1994. The facility has determined which of the original 15 core objectives are applicable to the operation.

A). Notification: Test the notification procedures identified in the ICP.

B). Staff Mobilization: Demonstrate the ability to assemble the spill response organization identified in the ICP.

C). Ability to Operate Within the Response Management System Described in the Plan:

1. Unified Command: Demonstrate the ability of the spill response organization to work with a unified command.

    (a) Federal Representation: Demonstrate the ability to consolidate the concerns and interests of the other members of the unified command into a unified strategic plan with tactical operations.

    (b) State Representation: Demonstrate the ability to function within the unified command structure.

    (c) Local Representation: Demonstrate the ability to function within the unified command structure.

    (d) Responsible Party Representation: Demonstrate the ability to function within the unified command structure.

2. Response Management System

    (a) Operations: Demonstrate the ability to coordinate or direct operations related to the implementation of action plans contained in the ICP.

(b) Planning: Demonstrate the ability to consolidate the various concerns of the members of the unified command into joint planning recommendations and specific long-range strategic plans. Demonstrate the ability to develop short-range tactical plans for the operations division.

(c) Logistics: Demonstrate the ability to provide the necessary support of both the short-term and long-term action plans.

(d) Finance: Demonstrate the ability to document the daily expenditures of the organization and provide cost estimates for continuing operations.

(e) Public Affairs: Demonstrate the ability to form a joint information center and provide the necessary interface between the command and the media.

(f) Safety Affairs: Demonstrate the ability to monitor all field operations and ensure compliance with the pertinent safety standards.

(g) Legal Affairs: Demonstrate the ability to provide the unified command with suitable legal advice and assistance.

D) Discharge Control: Demonstrate the ability of the spill response team or organization to control and stop the discharge at the source.

E) Assessment: Demonstrate the ability of the spill response team or organization to provide an initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations.

F) Containment: Demonstrate the ability of the spill response team or organization to contain the discharge at the source or in various locations for recovery operations.

G) Recovery: Demonstrate the ability of the spill response team or organization to recover the discharged product.

1. On-land Recovery: Demonstrate the ability to assemble and deploy land based recovery resources identified in the ICP.

2. On-water Recovery: Demonstrate the ability to assemble and deploy the on-water recovery resources identified in the ICP.

H) Protection: Demonstrate the ability of the spill response organization to protect the environmentally and economically sensitive areas identified in the ICP.

1. Protective Booming: Demonstrate the ability to assemble and deploy sufficient resources to implement the protection strategies contained in the ICP.

2. Dispersant Use: Demonstrate the ability to quickly evaluate the applicability of dispersant use on the larger water bodies and implement protective strategies contained in the ICP.

3. On-site Burning: Demonstrate the ability to quickly evaluate the applicability of on-site burning for this incident and implement any pre-approved plan or develop a plan for use.

4. Water Intake Protection: Demonstrate the ability to quickly implement the proper protection procedures or develop a plan for use.

5. Wildlife Recovery and Rehabilitation: If applicable, demonstrate the ability to quickly identify these resources at risk and implement the proper protection procedures or develop a plan for use.

6. Population Protection: Demonstrate the ability to quickly identify any health hazards associated with the discharged oil and the populations at risk and implement the proper protection procedures from the ICP.

7. Bioremediation: If applicable, demonstrate the ability to quickly evaluate the applicability of bioremediation use for this incident and implement a plan for use.

I) Disposal: Demonstrate the ability of the spill response team to dispose of the received material and contaminated debris.

J) Communication: Demonstrate the ability to establish an effective communication system for the spill response team.

1. Internal Communication: Demonstrate the ability to establish an intra-organization communications system. This encompasses communications both within the administrative elements and the field elements.

2. External Communication: Demonstrate the ability to establish communications both within the administrative elements and the field units.

K) Transportation: Demonstrate the ability to provide effective multi-mode transportation both of the execution of the discharge and support functions.

1. Land Transportation: Demonstrate the ability to provide effective land transportation for all elements of the response.

2. Water Transportation: Demonstrate the ability to provide effective water transportation for all elements of the response.

3. Air Transportation: Demonstrate the ability to provide the necessary support for all personnel associated with this response.

L) Personnel Support: Demonstrate the ability to provide the necessary support of all personnel associated with the response.

1. Management: Demonstrate the ability to provide administrative management of all personnel involved in the response. This requirement includes the ability to move personnel into and out of the response organization with established procedures.

2. Lodging: If applicable, demonstrate the ability to provide overnight accommodations on a continuing basis for a sustained response.

3. Food: Demonstrate the ability to provide suitable feeding arrangements for personnel involved with the management of the response.

4. Operational and Administrative Space: Demonstrate the ability to provide suitable operational and administrative spaces for personnel involved with the management of the response.

5. Emergency Procedures: Demonstrate the ability to provide emergency services for personnel involved in the response.

M) Equipment Maintenance and Support: Demonstrate the ability to maintain and support all equipment associated with the response.

1. Response Equipment: Demonstrate the ability to provide effective maintenance and support for all response equipment.

2. Support Equipment: Demonstrate the ability to provide effective maintenance and support for all equipment that supports the response. This requirement includes communication equipment, transportation equipment, and administrative equipment.

N) Procurement: Demonstrate the ability to establish an effective procurement system.

1. Personnel: Demonstrate the ability to procure sufficient personnel to mount and sustain an organized response. This requirement includes insuring that all personnel have qualifications and training required for their position within the response team.

2. Response Equipment: Demonstrate the ability to procure sufficient response equipment to mount and sustain an organized response.

3. Support Equipment: Demonstrate the ability of the spill response team to document all operational and support aspects of the spill response and provide detailed records of decisions and actions taken.

O) Documentation: Demonstrate the ability of the spill response team to document all operational and support aspects of the response and provide records of decisions and actions taken.

Based on these objectives and guidelines, the facility's Drill and Exercise Program contains the following components:

- Internal Exercises - These exercises are held wholly within the boundaries of Kleen Energy Facility. The internal exercises associated with the Kleen Energy Facility will include qualified individual notification drills, spill management team exercises, equipment deployment exercises, and unannounced exercises.

- External Exercises - These exercises will involve the Kleen Energy Facility personnel and other members of the response community. These exercises are designed to evaluate the ICP and the Kleen Energy Facility's ability to coordinate with the response community External exercises are those that extend beyond the internal focus of facility and involve other members of the response community. Government-initiated and industry-initiated Area Exercises are included in this category.

A complete description of the types of internal and external exercises which Kleen Energy Facility may be asked to conduct are described on the following pages. For each exercise, a description of the scope, objectives, participants and initiating authority is provided. A form to document each exercise is also provided.

QUALIFIED INDIVIDUAL NOTIFICATION INTERNAL EXERCISE

Applicability: Entire Kleen Energy Facility

Exercise Frequency: Quarterly

Initiating Authority: Kleen Energy Facility

Participating Elements: Facility personnel and Qualified Individual

Scope: Exercise communications between the Kleen Energy Facility personnel and the Qualified Individual. In this exercise, the Qualified Individual will be notified and the method (e.g., telephone) and response time will be documented. A description of the notification procedure and a description of the core objectives will be documented in this exercise. In most cases, only several of the core objectives will be initiated in this exercise (e.g., notification, internal communication).

Objectives: Contact will be made with the qualified individual

Certification: Facility self-certification

Verification: Verification will be conducted by the USEPA Regional Office

Records:

Retention: 5 years

Documentation: See the following Notification Exercise Form

Location: KLES Central File System

Evaluation: Self-evaluation by the Site Manager

Credit: The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

INTERNAL EXERCISE DOCUMENTATION FORMS

NOTIFICATION EXERCISE

1. Date performed: _____

2. Exercise or actual response? _____

3. Facility initiating exercise: _____

3. Name of person notified: _____

4. Is this person identified in your response plan as qualified individual or designee? __
_____

5. Time initiated: _____

Time in which qualified individual or designee responded: _____

4. Method used to contact:
_____ Telephone
_____ Pager
_____ Radio
_____ Other _____

5. Description of notification procedure:
_____
_____
_____
_____

6. Identify which of the 15 core components of your response plan were exercised during this
Particular exercise:_____
_____
_____
_____

_____
Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

EMERGENCY PROCEDURES
INTERNAL EXERCISE

(NOTE: This exercise is listed as "quarterly" and "optional" under the PREP guidelines but is recommended to satisfy the minimum 1 unannounced exercise annually. Since it is listed as optional, the frequency has been adjusted to "annually", which is sufficient for the Kleen Energy Facility)

Applicability:	Entire Kleen Energy Facility
Exercise Frequency:	Annually
Initiating Authority:	Kleen Energy Facility
Participating Elements:	Qualified facility personnel and all Spill Response Support Team members
Scope:	Exercise the emergency procedures for the Kleen Energy Facility to mitigate or prevent any discharge or substantial threat of an oil discharge resulting from the facility's operational activities. A description of the emergency procedures activated, a description of the pertinent core objectives, and a write-up of the lessons learned will be documented in this exercise. This exercise will be of greater scope than the proceeding Notification exercise.
Objectives:	Kleen Energy Facility will conduct an exercise of the facility's emergency procedures to ensure personnel knowledge of the actions taken to mitigate the effects of a spill. This exercise may be a walk-through of the emergency procedures. For example, the exercise may involve a simulation of a response to a spill. Kleen Energy Facility will ensure that the spill mitigation measures for all contingencies at the facility are addressed at some time (e.g., fire, tank rupture during a flood) by changing the scenario each year. Kleen Energy Facility will conduct this exercise unannounced at least once a year.
Certification:	Kleen Energy Facility self-certification
Verification:	Verification will be conducted by the USEPA Regional Office
Records:	
Retention:	5 years
Documentation:	See the following Emergency Procedure Form
Location:	Facility Administration Office
Evaluation:	Self-evaluation by the Qualified Individual or Site Manager
Credit:	The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

INTERNAL EXERCISE DOCUMENTATION FORMS

EMERGENCY PROCEDURE EXERCISE

1. Date performed: _____

2. Exercise or actual response? _____
   If an exercise, announced or unannounced? _____

3. Location: _____

4. Facility name: _____

5. Time started: _____ Time completed: _____

6. Sections of Facility emergency procedures exercised (i.e., response to collision, response to oil spill on deck, response to vessel fire, etc.)? _____
   _____
   _____
   _____

7. Description of exercise: _____
   _____
   _____
   _____
   _____
   _____

8. Identify which of the 15 core components of your response plan were exercised during this particular exercise: _____
   _____
   _____
   _____
   _____
   _____
   _____

9. Attach a description of the lesson(s) learned and person(s) responsible for follow up of corrective measures.

_____
Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

SPILL MANAGEMENT TEAM
TABLETOP INTERNAL EXERCISE

Applicability: Entire Kleen Energy Facility Spill Management Team

Exercise Frequency: Annually

Initiating Authority: Kleen Energy Facility

Participating Elements: Spill Management Team (may also invite OSRO for improved site awareness)

Scope: Exercise the spill management team's organization, communication, and decision-making abilities in internal exercise. In this exercise, there will not be a demonstration of operational response. A description of the response scenario (e.g., maximum most probable discharge), a description of several objectives (e.g., knowledge of the ICP, knowledge of the communication system), and a description of the core objectives will be documented in this exercise. In some cases, Kleen Energy Facility may use this exercise in preparation for a functional exercise.

Objectives: Kleen Energy Facility will exercise the Spill Management Team in:

- Individual and combined knowledge of the ICP;
- Proper Notification;
- Knowledge of the communication system;
- Ability to access the Emergency Response Contractor;
- Coordination of internal qualified facility personnel;
- A review of the transition from the internal team to a local, regional, state or federal team;
- The ability to effectively coordinate spill response activity with the National Response System (NRS) infrastructure. If the NRS does not participate in the exercise, the spill management team will demonstrate knowledge of the response coordination with the NRS; and,
- Ability to access information concerning the location of vulnerable and sensitive resources in the planning area.

NOTE: Kleen Energy Facility will conduct one tabletop exercise in the triennial cycle that involves a worst case discharge.

Certification: Kleen Energy Facility self-certification

Verification: Verification will be conducted by the USEPA Regional Office

Records:

Retention: 5 years

Documentation: See the following Tabletop Exercise Form

Location: Facility Administration Office

Evaluation: Self-evaluation by the Qualified Individual or Site Manager

Credit: The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

INTERNAL EXERCISE DOCUMENTATION FORMS

SPILL MANAGEMENT TEAM TABLETOP EXERCISE

1. Date performed: _____

2. Exercise or actual response? _____

   If an exercise, announced or unannounced? _____

3. Location of tabletop: _____

4. Time started: _____ Time completed: _____

5. Response plan scenario used (check one):

   _____ Average most probable discharge
   _____ Maximum most probable discharge
   _____ Worst case discharge

   Size of (simulated) spill _____ bbls/gals

6. Describe how the following objectives were exercised:

   a. Spill management team's knowledge of oil-spill response plan: _____

   b. Proper notifications: _____

   c. Communications system: _____

d. Spill management team's ability to access contracted oil spill removal organizations: _____

e. Spill management team's ability to coordinate spill response with On-Scene Coordinator, state and applicable agencies: _____

f. Spill management team's ability to access sensitive site and resource information in the Area Contingency Plan: _____

7. Identify which of the 15 core components of your response plan were exercised during this particular exercise: _____

8. Attach description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

_____
Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

EQUIPMENT DEPLOYMENT
INTERNAL EXERCISE

Applicability:	Entire Kleen Energy Facility
Exercise Frequency:	Semi-Annually
Initiating Authority:	Kleen Energy Facility
Participating Elements:	Qualified facility personnel [see Certification for OSRO]
Scope:	The facility will deploy and operate the response equipment identified in the ICP. The equipment to be deployed will be the minimum required to effectively mitigate the discharge scenario. All of the facility personnel will be included in this scenario. An equipment maintenance program ensures that all the deployed equipment is periodically inspected and maintained in good order. A description of the deployment equipment, exercise goals, condition of the equipment, lessons learned, and a description of the core objectives will be documented in this exercise.
Objectives:	Kleen Energy Facility will demonstrate the ability of the personnel to deploy and operate response equipment in an effective and efficient manner. This equipment will be in good working order.
Certification:	Kleen Energy Facility self-certification [Note: the OSRO contractor must provide documentation that they completed their requirements for maintenance and equipment deployment exercises for contractor owned response equipment].
Verification:	Verification will be conducted by the USEPA Regional Office
Records:	
Retention:	5 years
Documentation:	See the following Equipment Deployment Exercise Form
Location:	Facility Administration Office
Evaluation:	Self-evaluation by the Qualified Individual or Site Manager
Credit:	The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented

INTERNAL EXERCISE DOCUMENTATION FORMS

EQUIPMENT DEPLOYMENT EXERCISE

1. Date performed: _____

2. Exercise or actual response? _____
   If an exercise, announced or unannounced? _____

3. Deployment location(s): _____
   _____
   _____
   _____
   _____

4. Time started: _____ Time completed: _____

5. Equipment deployed was:

   _____ Facility-owned

   _____ Oil spill removal organization-owned if so, which OSRO ?

   _____ Both

6. List type and amount of all equipment (e.g., boom and skimmers) deployed and number of support personnel employed: _____
   _____
   _____
   _____
   _____

7. Describe goals of the equipment deployment and list any Area Contingency Plan strategies tested. (Attach a sketch of equipment deployments and booming strategies): _____
   _____
   _____
   _____
   _____

8. For deployment of facility-owned equipment, was the amount of equipment deployed <u>at least</u> the amount necessary to respond to your facility's average most probable spill? _____
   _____

INTERNAL EXERCISE DOCUMENTATION FORMS

EQUIPMENT DEPLOYMENT EXERCISE

9. Was the equipment deployed in its intended operating environment? _____

10. For deployment of OSRO-owned equipment, was a representative sample (at least 1000 feet of each boom type and at least one of each skimmer type) deployed? ____

11. Are all facility personnel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved in a comprehensive maintenance program? _____

    If so, describe the program: _____

    Date of last equipment inspection: _____

12. Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill? _____

13. Was all deployed equipment operational? If not, why not? _____

14. Identify which of the 15 core components of your response plan were exercised during this particular exercise: _____

15. Attach a description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

_____
Certifying Signature

Retain this form and other documentation related to this exercise on file for a minimum of 5 years (for EPA).

GOVERNMENT INITIATED UNANNOUNCED INTERNAL EXERCISE

Applicability: Any EPA–regulated facility FRP holders

Frequency: Annually, if selected. If selected, Kleen Energy Facility will not have to participate in another government initiated exercise for a 36-month period.

Initiating Authority: USEPA

Participating Elements: Kleen Energy Facility - Qualified facility personnel and the emergency response contractor.

Scope: Unannounced exercises are limited to a maximum of four exercises per area per year. Exercises are limited to four in duration and typically involve a response to an average most probable discharge scenario. All the exercises will involve equipment deployment to respond to the spill scenario

Objectives: The Kleen Energy Facility will conduct the proper notifications to respond to the unannounced scenario of the average most probable discharge. The facility will demonstrate that the response can be conducted in a timely manner; conducted with an adequate amount of maintained equipment; and is properly managed.

Certification: USEPA Regional Office

Verification: Verification will be conducted by the USEPA Regional Office

Records:

Retention: **5 years**

Documentation: See the following Equipment Deployment Exercise Form

Location: Facility Administration Office

Evaluation: Conducted by visiting agency

Credit: The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

AREA NOTIFICATION
EXTERNAL EXERCISE

Applicability: Entire Kleen Energy Facility area of influence

Exercise Frequency: Quarterly

Initiating Authority: Unified Command On-Scene Coordinator

Participating Elements: Key elements of the unified command consisting of the qualified Kleen Energy facility personnel, local governments (i.e., various County agencies), state agencies (i.e., CT DEP), and federal agencies (e.g., USEPA, National Weather Service).

Scope: Exercise and evaluate communications between the Kleen Energy Qualified Individual and key elements of the unified command. In this exercise, the appropriate emergency response personnel and contractors will be notified and the method (e.g., telephone) and response time will be documented. A description of the notification procedure and a description of the core objectives will be documented in this exercise.

Objectives: Kleen Energy Facility will ensure that all the key elements of the unified command know whom to call in the event of a spill. Kleen Energy Facility will ensure that contact by telephone, radio, pager, fax and confirmation is made between the Kleen Energy Qualified Individual and the unified command key elements. Contact will be made with all required individual and agencies.

Certification: Kleen Energy Facility self-certification

Verification: Verification will be conducted by the USEPA Regional Office

Records:

- **Retention:** 5 years
- **Documentation:** See the following Area Notification Exercise Form
- **Location:** Records of the Kleen Energy Qualified Individual

Evaluation: By the Area Committee

Credit: The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

EXTERNAL EXERCISE DOCUMENTATION FORMS

NOTIFICATION EXERCISE

1. Date performed: _____

2. Exercise or actual response ? _____

3. Facility initiating exercise: _____

4. Name or person notified: _____
   Is this person identified in your response plan as qualified individual or designee? _____

5. Time initiated: _____
   Time in which qualified individual or designee responded: _____

6. Method used to contact:
   _____ Telephone
   _____ Pager
   _____ Radio
   _____ Other

7. Description of notification procedure:
   _____
   _____
   _____
   _____

8. Identify which of the 15 core components of your response plan were exercised during this Particular exercise: _____
   _____
   _____
   _____

_____
Certifying Signature

Retain this form for a minimum of 5 years (for EPA).

AREA SPILL MANAGEMENT TEAM
TABLETOP EXERCISE

Applicability: Area Spill Management Team

Exercise Frequency: Annually

Initiating Authority: USEPA Regional Office

Participating Elements: Spill Management Team for the Area – facility, local, state and federal

Scope: Exercise the spill management team's organization, communication, and decision-making abilities in an external spill response. In this exercise, there will not be a demonstration of operational response. A description of the response scenario (e.g., maximum most-probable discharge), a description of several objectives (e.g., knowledge of the ICP, knowledge of the communication system), and a description of the core objectives will be documented in this exercise. In several cases, Kleen Energy Facility will use this exercise in preparation of a functional exercise.

Objectives: Kleen Energy Facility will exercise with the Area Spill Management Team in the following objectives:

- Individual and combined knowledge of the ICP;
- Proper Notification;
- Knowledge of the communication system;
- Ability to access the Emergency Response Contractor;
- Coordination of organization or agency personnel with responsibility for spill response;
- Demonstrate the ability to effectively coordinate spill response activity with the National Response System (NRS) infrastructure. If the NRS does not participate in the exercise, the spill management team will demonstrate knowledge of the response coordination with the NRS.
- Ability to access information concerning the location of vulnerable and sensitive resources in the planning area; and,
- To the extent possible, Kleen Energy Facility will exercise a unified command

NOTE: Kleen Energy Facility will conduct one tabletop exercise in the triennial cycle that involves a worst case discharge.

Certification: Kleen Energy Facility self-certification

Verification: Verification will be conducted by the USEPA Regional Office

Records:

Retention: 5 years

Documentation: See the following Tabletop Exercise Form

Location: Records of the Kleen Energy Qualified Individual

Evaluation: Self-evaluation by the Response Team's Primary Commander or Area Committee

Credit: The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

EXTERNAL EXERCISE DOCUMENTATION FORMS

SPILL MANAGEMENT TEAM TABLETOP EXERCISE

1. Date performed: _____

2. Exercise or actual response ? _____

   If an exercise, announced or unannounced? _____

3. Location of tabletop: _____

4. Time started: _____ Time completed: _____

5. Response plan scenario used (check one):
   _____ Average most probable discharge
   _____ Maximum most probable discharge
   _____ Worst case discharge

   Size of (simulated) spill _____ bbls/gals

6. Describe how the following objectives were exercised:

   a. Spill management team's knowledge of oil-spill response plan: _____
   _____
   _____
   _____
   _____

   b. Proper notifications: _____
   _____
   _____
   _____
   _____

   c. Communications system: _____
   _____
   _____
   _____
   _____

d. Spill management team's ability to access contracted oil spill removal organizations: _____

e. Spill management team's ability to coordinate spill response with On-Scene Coordinator, state and applicable agencies: _____

f. Spill management team's ability to access sensitive site and resource information in the Area Contingency Plan: _____

7. Identify which of the 15 core components of your response plan were exercised during this particular exercise: _____

8. Attach description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

_____
Certifying Signature

EQUIPMENT DEPLOYMENT
AREA EXERCISE

Applicability:	Area Committee
Frequency:	Annually
Initiating Authority:	Response Community On-Scene Coordinator
Participating Elements:	Response Community
Scope:	The facility will deploy and operate the response equipment identified in the ICP. All of the equipment or the equipment necessary to effectively mitigate the average most probable discharge scenario will be deployed annually. All of the qualified facility personnel (including the Spill Response Contractor) will be included in this scenario. All the response personnel will be included in a comprehensive training program. An equipment maintenance program will ensure that all the deployed equipment is periodically inspected and maintained in good order. Kleen Energy Facility will ensure that inspection and maintenance by (Spill Response Contractor) is documented. (Spill Response Contractor) will provide Kleen Energy Facility with inspection and maintenance information. A description of the deployment equipment, exercise goals, condition of the equipment, lessons learned, and a description of the core objectives will be documented in this exercise.
Objectives:	Kleen Energy Facility will demonstrate the ability of the personnel to deploy and operate response equipment in an effective and efficient manner. This equipment will be in good working order.
Certification:	Kleen Energy Facility self-certification. Kleen Energy Facility will ensure that (Spill Response Contractor) provides adequate documentation that the requirements of this exercise have been met (i.e., equipment maintenance program and service records).
Verification:	Verification will be conducted by the USEPA Regional Office

Records:

Retention: 5 years

Documentation: See the following Area Equipment Deployment Exercise Form

Location: Records of the Kleen Energy Qualified Individual

Evaluation: Self-evaluation by the Response Team's Primary Commander or Site Manager

Credit: The facility will take credit for this exercise, as long as all objectives are met, the exercise is evaluated, and documentation is produced. Credit will also be given for an actual spill response when these objectives are met, evaluated, and documented.

EXTERNAL EXERCISE DOCUMENTATION FORMS

EQUIPMENT DEPLOYMENT EXERCISE

1. Date performed: _____

2. Exercise or actual response ? _____
   If an exercise, announced or unannounced? _____

3. Deployment location(s): _____
   _____
   _____
   _____
   _____
   _____
   _____

4. Time started: _____ Time completed: _____

5. Equipment deployed was:
   _____ Facility-owned
   _____ Oil spill removal organization-owned if so, which OSRO? _____
   _____ Both

6. List type and amount of all equipment (e.g., boom and skimmers) deployed and number of support personnel employed: _____
   _____
   _____
   _____
   _____

7. Describe goals of the equipment deployment and list any Area Contingency Plan strategies tested. (Attach a sketch of equipment deployments and booming strategies): _____
   _____
   _____
   _____
   _____
   _____

8. For deployment of facility-owned equipment, was the amount of equipment deployed <u>at least</u> the amount necessary to respond to your facility's average most probable spill? _____
   _____

EXTERNAL EXERCISE DOCUMENTATION FORMS

EQUIPMENT DEPLOYMENT EXERCISE

9. Was the equipment deployed in its intended operating environment? _____

10. For deployment of OSRO-owned equipment, was a representative sample (at least 1000 feet of each boom type and at least one of each skimmer type) deployed? ____

11. Are all facility personnel that are responsible for response operations involved in a comprehensive training program, and all pollution response equipment involved in a comprehensive maintenance program? _____

    If so, describe the program: _____

    Date of last equipment inspection: _____

12. Was the equipment deployed by personnel responsible for its deployment in the event of an actual spill? _____

13. Was all deployed equipment operational? If not, why not? _____

14. Identify which of the 15 core components of your response plan were exercised during this particular exercise: _____

15. Attach a description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

_____
Certifying Signature

Retain this form and other documentation related to this exercise on file for a minimum of 5 years (for EPA).

AREA EXERCISE

Applicability: Area response community

Frequency: Triennially.

Initiating Authority: USEPA

Participating Elements: Spill Management Team for the Area – facility, local state and federal

Scope: Area exercises will encompass the Area Response System. Area exercises are limited to a maximum of four exercises per area per year. Exercises are limited to eight-to twelve hours in duration. All the exercises will involve equipment deployment to respond to the spill scenario

Objectives: The Kleen Energy Facility will plan to participate in an Area Contingency Plan and or any selected industry response plan. The facility will demonstrate that the exercise can be conducted under a unified command with the appropriate participants. The exercise will include the area and the facility spill management team. Kleen Energy Facility will document that the response can be conducted in a timely manner; conducted with an adequate amount of maintained equipment; and is properly managed.

Format: There are a total of 20 Area Exercises held per year (6 government led and 14 industry led). The exercise scenario is developed by the exercise design team. The exercise should be conducted in the command post that would be utilized during an actual discharge. The exercise may be in real time or limited compressed time and may start at any point during the incident.

Certification: The On-scene Coordinator will certify the completion of the Area Exercise. In certifying this exercise, the coordinator will consider the following criteria:

- The area exercise was conducted;
- The area exercise met the objectives outlined above;
- The area response community was exercised for spill response preparedness.

Verification: Verification will be done by the National Scheduling Coordinating Committee

Records:

Retention: 5 years

Location: Records of the On-scene coordinator

Evaluation: Joint evaluation team comprised of the federal, state, local, and industry

Credit: Scheduling of the area exercise will be done by the National Scheduling Coordinating Committee, utilizing input from the On-scene coordinator, Area Committee, regional Response Team and industry. An annual PREP scheduling workshop will be held to provide a national public forum for government and industry input on the scheduling process.

III.16. Annex 16 - Training Forms

Kleen Energy Systems

Integrated Contingency Plan Training Log

Training Topic :					
Description:					
Location:					
Instructor:				Date:	
	Employee Name:	**Empl. No.**	**Date**	**Employee Signature**	**Time in Hours**
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

III.17. Annex 17 - SPCC Compliance with Applicable Requirements

Petroleum Requirements (40 CFR 112.7(a)(2))

All oil storage tanks have secondary containment meeting the requirements. Oil-filled operational equipment within the Turbine Building and the Fuel Gas Compressor Building is located in areas that drain through an oily water building drain system designed to collect potential oily residues. This includes floor drains, equipment drains and containment areas for equipment using oil. It then flows to an Oil/Water Separator located near the Turbine Building designed to separate and contain oil that may be discharged from any oil-filled operational equipment or piping in areas which do not have secondary containment. Treated waste water is pumped from the Oil/Water Separator effluent chamber into the permitted discharge line to the Town of Middletown sewer system. A composite sampler monitors the discharge stream to provide information required by the plant's discharge permit.

All currently identified oil-filled operational equipment is qualified under 112.7(k)(1). The waste water system Oil/Water Separator provides "*Alternative Requirements to General Secondary Containment*" in conjunction with facility visual inspection and monitoring of oil-filled equipment failures and the Facility Response Plan. It also provides environmental protection equivalent to the requirements under 112.8(b)(3) to use ponds, lagoons, or catch basins to retain oil at the facility in the event of an uncontrolled discharge from oil-filled operational equipment and piping inside the building that do not have secondary containment. As described in Section III.3.d.2 of this Plan, the operational and emergency oil storage capacity of the Oil/Water Separator, coupled with alarm/interlock shutoff of the unit and building containment features, is sufficient to handle the quantity of oil expected to be discharged from operations in un-diked areas.

Non-destructive integrity evaluation will be performed on the large fuel oil bulk storage tanks. These bulk storage tanks will be visually inspected regularly and evaluated following

a schedule in accordance with the American Petroleum Institute (API) Standard API 653 tank inspection standard as described in Annex 18.

All buried fuel oil piping from the bulk tanks to the Turbine Building is double-wall pipe with continuously monitored interstitial leak detection and a corrosion resistant Fiberglass Reinforced Plastic (FRP) outer pipe. The piping will be leak tested at the time of installation to confirm piping integrity. Double wall pipe with leak detection provides performance equivalent to or better than the cathodic protection specified in 40 CFR 112.8(d)(1) (as noted by EPA in the preamble to the SPCC rule at 67 FR 47123) and meets the requirements of 40 CFR 280 or state program under 40 CFR 281.

Oil-filled operational equipment, shop fabricated double wall tanks and 55-gallon storage drums do not require non-destructive integrity evaluation. In accordance with accepted industry practice, monthly visual inspection provides an effective means of verifying shop-built container integrity where corrosion poses a minimal risk of failure and all sides are visible or have primary container leak detection (as noted by EPA in the preamble to the SPCC rule at 67 FR 47120). Corrosion poses minimal risk of failure for drums which are single-use and remain on site for a relatively short period of time (less than one year) and for double wall tanks which are shop fabricated with double wall construction.

Of the five double-wall storage tanks, only the Emergency Diesel Generator Tank and the Rainey Wells Diesel Generator Day Tank are not elevated above the ground; however, Section 7.3.4 of the SPCC Guidance for Regional Inspectors (Scenario 4) states that visual inspection, placing the container onto a barrier between the container and the ground and ensuring immediate leak detection is considered by EPA to provide equivalent environmental protection. These tanks have a barrier consisting of the steel secondary containment tank, continuous interstitial leak detection that will alarm in the event of a leak and are located on an impervious concrete pad; therefore, it is considered environmentally equivalent and does not require non-destructive integrity testing.

The container storage area and shop fabricated double wall storage tanks will have daily walkthrough inspections and formal monthly visual inspections. Any leakage from the

primary double-wall tanks would be detected through monitoring of the interstitial space performed continuously or on a monthly basis. Any leakage from the secondary shell would be detected visually during scheduled visual inspections by facility personnel. Storage drums are elevated on spill pallets and any leak would be readily detected by facility personnel before they can cause a discharge to navigable waters or adjoining shorelines.

The scope of inspections and procedures is covered in the training provided to employees involved in handling oil at the facility. The routine inspections focus specifically on detecting any change in conditions or signs of product leakage from the tank, piping system, and appurtenances.

In accordance with inspection procedures outlined in this Plan, if signs of deterioration of the tank are observed by facility personnel, the tank is to be inspected by a tank inspector certified by the American Petroleum Institute (API) or Steel Tank Institute (STI) to assess its suitability for continued service, according to applicable standards (e.g., API Standard 653 for bulk tanks or STI Standard SP-001).

The physical configuration of the double-wall storage tanks, combined with monthly and annual inspections, ensures that any small leak that could develop in the tank shell will be detected before it can become significant, escape secondary containment, and reach the environment. This approach provides environmental protection equivalent to the non-destructive shell evaluation component of integrity testing required under §112.8(c)(6) since it provides an appropriate and effective means of assessing the condition of the tank and its suitability for continued service.

Chemical Spill Prevention and Control Design

All chemical storage tanks and containers of more than 55 gallons are located indoors (see inventory in **Annex 9**). All tanks and totes have secondary containment volumes exceeding 110 percent of the capacity of the tank or tote. All chemical tanks are equipped with high level alarms to prevent overfilling.

Most chemical piping is contained within the buildings. Underground aqueous ammonia piping is double wall type with interstitial leak detection. Water reaching drains in the Circulating Water Chemical Treatment, Water Treatment and Aqueous Ammonia buildings is recycled in the cooling tower and IWTP building wastewater discharges into the permitted discharge line to the Town of Middletown sewer system. A composite sampler monitors the discharge stream to provide information required by the plant's discharge permit.

The loading station for the aqueous ammonia tank drains into the Aqueous Ammonia building. The loading station for the Sodium Hypochlorite, Sodium Bromide, Sulfuric Acid and Corrosion/Scale Inhibitor Tanks (adjacent to the Circulating Water Chemical Treatment building) drains to the Cooling Tower Chemical Feed Area Trench for containment, where spills can be recovered and rainwater can be routed for reuse in the cooling tower. All chemical unloading operations are continuously monitored by the driver, with oversight by plant O&M personnel, in accordance with the unloading procedures.

Other chemicals which may be used in drums or smaller containers, when necessary, will be dispensed within an existing oil/chemical containment area or placed on a secondary containment pallet for dispensing.

All chemical tank, tote and container storage and feed areas will have daily walkthrough inspections. Any leakage from the tanks, totes or piping would be detected during visual inspections and corrective action promptly taken to remove the material from secondary containment.

III.18. Annex 18 - Bulk Storage Containers (40 CFR 112.8(c))

The following table summarizes the construction, volume, and content of petroleum bulk storage containers at the Kleen Energy Systems Facility.

List of Oil Bulk Storage Containers

Tank	Tag	Location	Type (Construction Standard)	Capacity (gallons)	Contents	Discharge Prevention & Containment
#1	562-TNK-9001	Fuel Oil Storage Area. Fuel Oil Tank.	AST vertical (API 650)	4,061,400	Fuel Oil	Concrete dike wall & Earth Base. Oil/Water Separator
#2	562-TNK-9001	Fuel Oil Storage Area. Fuel Oil Tank.	AST vertical (API 650)	4,061,400	Fuel Oil	Concrete dike wall & Earth Base. Oil/Water Separator
#4	572-TK-9004	Fire Pump House. Diesel Fire Pump Fuel Tank	AST horizontal (UL142)	290	Diesel	Located inside Fire Pump House. Double-wall tank.
#5	1DG-629-9001	EDG Building. Plant EDG Fuel Tank.	Skid Belly AST dual wall, tank (UL142)	2000	Diesel	Double-wall tank with interstitial monitoring system.
#32	NA	IWTP Building. EDG Fuel Tank.	Skid Belly AST dual wall, tank (UL142)	2600	Diesel	Double-wall tank with interstitial monitoring system.
#33	NA	Ranney Wells. EDG Fuel Tank.	Horizontal AST (UL142/ULC S601)	4000	Diesel	Double wall with concrete outer wall and interstitial monitoring system.
#34	NA	Ranney Wells EDG Diesel Day Tank	Vertical AST (UL142)	150	Diesel	Double-wall tank with interstitial monitoring system.

a. Construction (40 CFR 112.8 (c)(1))

All oil product tanks used at this facility are constructed of steel, in accordance with industry specifications as described above. The design and construction of all petroleum bulk

storage containers are compatible with the characteristics of the product they contain, and with temperature and pressure conditions.

All fuel oil piping from the bulk tanks to the Turbine Building is either within secondary containment dikes, the building which drains to an Oil/Water Separator, or double-walled underground piping with continuous leak detection. Carrier piping is carbon steel and containment piping is fiberglass reinforced plastic designed, installed and supported to minimize corrosion and stress.

b. Secondary Containment (40 CFR 112.8(c)(2))

Fuel Oil Storage Tanks - A concrete wall with an earthen base enclosure is provided around the fixed aboveground fuel storage tanks (containers 1 and 2, 562-TNK-9001 and 562-TNK-9002) designed to contain a minimum of 110% of the tank capacity plus 6-inches which would allow for precipitation (note that but minimum top of wall elevation is higher, giving 110% plus 2.4 feet).[I] See Annex 24 for calculation of containment capacity. The base of the containment structure is built of layers of sand; Bentomat CL (a geosynthetic clay liner that creates an impermeable barrier); soil aggregate; Tensar BX-1100 (soil stabilization fabric) and crushed stone. The concrete wall and composite base provides an impermeable barrier to contain oil in the event of a spill. The surface of the containment structure, the inside and outside of the walls, and the interface of the floor and walls, are visually inspected during the monthly facility inspection to detect any cracks, signs of heaving or settlement, or other structural damage that could affect the ability of the dike to contain oil. Any damage is promptly corrected to prevent migration of oil into the ground, or out of the dike.

Diesel Fuel Tanks - Double wall aboveground storage tanks are used for the Fire Water Pump Fuel Oil Tank (Container 4, double wall steel), Emergency Diesel Generator (Container 5, double wall steel), IWTP Diesel Generator (Containter 32, double wall steel) and Ranney Wells Emergency Diesel Generator (Container 33, double wall with concrete outer wall), all designed to contain 110% of the tank capacity. Since the secondary

[I] 2008-185-D-C-02

containment for these tanks is not open to precipitation, this volume is sufficient to fully contain the product in the event of a leak from the primary container. The fire water pump fuel oil tank and Ranney Wells emergency diesel generator are inspected on a monthly basis to detect any leak of product from the primary container. The interstitial space between the primary and secondary containers on the emergency diesel generator is equipped with continuous leak detection/alarm.

c. Drainage of Diked Areas (40 CFR 112.8(c)(3))

The catch basins in the bulk fuel oil storage tank containment structure drain to an Oil/Water Separator. The stormwater is only drained from the bulk storage area to the stormwater system after inspection of the retained water for spills. Draining through the Oil/Water Separator further safeguards against oil being discharged. The Oil/Water Separator has a total capacity of 4,000 gallons, an oil capacity of 1,600 gallons and a design flow rate of 400 gallons per minute. The Oil/Water Separator is inspected monthly as part of the scheduled inspection to check the level of water within the separator and measure the depth of bottom sludge and floating oils. Floating oil is removed by a licensed waste disposal firm when it reaches the high oil level alarm point. An outlet shutoff valve automatically closes in the event of a high-high oil level condition (1,600 gallons).

Containment drainage events are recorded on the form included in **Annex 22** of this Plan; records are maintained at the facility for at least three years.

All other petroleum product (e.g., transformers and other oil-filled operational equipment) and hazardous/toxic substance (e.g., aqueous ammonia tank, Water Treatment Building) containment areas will be inspected for evidence of spills and then transferred to reuse as cooling tower makeup water, where possible, or to area storm drains.

d. Corrosion Protection (40 CFR 112.8(c)(4))

This section is not applicable since there are no buried metallic storage tanks at this facility.

e. Partially Buried and Bunkered Storage Tanks (40 CFR 112.8(c)(5))

This section is not applicable since there are no partially buried or bunkered storage tanks at this facility.

f. Inspections and Tests (40 CFR 112.8(c)(6))

Visual inspections of ASTs by facility personnel are performed according to the procedure described in this Plan. Leaks from tank seams, gaskets, rivets, and bolts are promptly corrected. Records of inspections and tests are signed by the inspector and kept at the facility for at least five years (because FRP guidance requires response equipment inspections to be maintained for 5 years).

The scope and schedule of certified inspections and tests performed on the facility's ASTs are specified in API Standard 653 and STI Standard SP-001. The external inspection includes ultrasonic testing of the shell, as specified in the standard, or if recommended by the certified tank inspector to assess the integrity of the tank for continued oil storage.

Records of certified tank inspections are kept at the facility for at least five years. Shell test comparison records are retained for the life of the tanks.

The following table summarizes inspections and tests performed on bulk storage containers ("EE" indicates that an environmentally equivalent measure is implemented in place of the inspection/test, as discussed in Section 3.1 of this Plan). Inspection frequencies for the smaller tanks are based on STI Standard SP001 tank categories. Tank #4 is an SP001 Category 2 tank (containment but no continuous leak detection) and Tanks #5, #32, #33, and #34 are Category 1 tanks (containment with continuous leak detection).

Scope and Frequency of Bulk Storage Containers Inspections and Tests

Inspection/Test Tank ID→	#1	#2	#4	#5	#32	#33	#34
Visual inspection by facility personnel (per Appendix B checklist)	M A	M A	M A	M A	M A	M A	M A
Integrity Testing			EE	EE	EE	EE	EE
In-service external inspection by certified inspector (per API Standard 653)	5 yr.	5 yr.					
Out-of-Service internal inspection by certified inspector (per API Standard 653)	10 yr.*	10 yr.*					
External inspection by certified inspector (per STI Standard SP-001)			NR	NR	NR	NR	NR
Leak test by owner or owner's designee (per STI Standard SP-001)			NR	NR	NR	NR	NR

Legend: M-Monthly; A-Annual
EE: Integrity testing and inspection not required given use of environmentally equivalent measure (refer to Section 3.1 of this Plan).
* This may be extended to 20 years once corrosion rate has been established.
NR: Not required for this category and size tank per SP001.

g. Heating Coils (40 CFR 112.8(c)(7))

There are no tanks with heating coils.

h. Overfill Prevention Systems (40 CFR 112.8(c)(8))

The fuel oil storage tanks are equipped with a direct-reading level gauge and with high level alarms set at 96 percent of the rated capacity, high-high level alarms at 98 percent of total capacity and secondary containment is provided in the event of overfills, as described in this Plan.

The diesel tanks for the plant, IWTP and Ranney Wells Emergency Diesel Generators have spill containment areas around each fill port (or around the entire generator enclosure) to catch over flow from the fill port. The Fire Pump Fuel Tank is located inside the fire pump house which will contain a small overflow from the fill port. All petroleum and hazardous/toxic substances tanks are equipped with level gauges and high level alarms.

Storage drums of raw materials are not refilled. Used oil drums and all drum dispensing operations will be staged on secondary containment pallets which will also serve as overfill protection.

Facility personnel are present throughout the filling operations to monitor the product level in the tanks.

i. Effluent Treatment Facilities (40 CFR 112.8(c)(9))

The catch basins in the bulk fuel storage tank containment structure drain through an Oil/Water Separator as described in Section c. The stormwater is only drained from the bulk storage area to the stormwater system after inspection of the retained water for spills. The facility's storm water effluent discharged into the Connecticut River is observed and records maintained in accordance with the facility stormwater discharge permit. If oil or hazardous/toxic substances are present, the contents are held for collection and offsite disposal.

Effluent from the Oil/Water Separator treating the building drains in the power block area is routinely monitored in accordance with its DEP pretreatment permit (permit SP0002423, currently issued in draft).

j. Visible Discharges (40 CFR 112.8(c)(10))

Visible discharges from any container or appurtenance – including seams, gaskets, piping, pumps, valves, rivets, and bolts – will be quickly corrected upon discovery.

Oil or hazardous/toxic substances will be promptly removed from the diked area and disposed of according to the waste disposal method described in Section III.3.d.4 of this Plan.

k. Mobile and Portable Containers (40 CFR 112.8(c)(11))

Up to 20 drums of fresh oil and used oil may be stored inside the Administration and Maintenance Building or Turbine Building and are not exposed to precipitation. Smaller quantities of water treatment chemicals in drums may be ordered from time to time and similarly secured indoors. All oil or chemical dispensing or used oil drum filling is conducted

on spill containment pallets or horizontal dispensing rack systems with integral spill containment. Each spill pallet or dispensing rack has a capacity greater than the volume of any single 55-gallon drum. The floor of the Turbine Building, Administration and Maintenance Building and all other ancillary buildings containing oil or hazardous/toxic substances is concrete with CMU or preformed concrete walls that would restrict the flow of oil outside the building. Floor drains in areas that may contain oil flow into the Oil/Water Separator, which is capable of containing any oil discharged from a 55-gallon drum. All other building drains are contained for inspection and reuse (i.e., as cooling tower feed water) or, if necessary, proper disposal. Any small spills will be quickly contained and cleaned up using sorbent pads and appropriate cleaning products.

I. Transfer Operations, Pumping, and In-Plant Processes (40 CFR 112.8(d))

Transfer operations at this facility include:

- The transfer of oil from the fuel oil storage tanks (562-TNK-9001 and 562-TNK-9002) to the combustion turbines. All fuel oil piping from the bulk tanks to the Turbine Building is either within secondary containment dikes, the building which drains to an Oil/Water Separator, or double-walled underground piping with continuous leak detection.
- The transfer of oil into the fuel oil storage tanks (562-TNK-9001 and 562-TNK-9002) is primarily by transportation pipeline but, as a backup, it may be transferred from tanker trucks at the unloading area. The fuel oil truck unloading station is located on a concrete pad near the fuel oil storage tanks. Potential discharges of oil occurring during a truck unloading operation will be diverted along the pad, which is sloped to the north and west toward, a 2-foot wide trench that flows into a concrete sump of approximately 240 ft^3 (about 1,800 gallons). The sump is equipped with an overflow pipe and a 6-inch diameter drain pipe that directs any additional volume to the fuel oil tank containment structure. The drain pipe is equipped with a manual valve at the sump and a tide-flex check valve inside the containment structure. Standard operating procedures and training direct operators to open the manual valve prior to unloading so spills exceeding 1,800 gallons will be collected in the fuel oil tank containment. The check valve prevents oil from flowing up the drain line in the event

of a spill to containment from one of the fuel oil storage tanks. The fuel oil tank containment structure is more than adequate to contain the volume of any delivery truck.

- The transfer of aqueous ammonia and bulk chemicals at the Aqueous Ammonia and Circulating Water Chemical Treatment buildings are similarly contained in contained areas or in double wall underground piping with continuous leak detection.

None of these transfer operations are considered to present a significant spill threat.

III.19. Annex 19 - Substantial Harm Determination

Facility Name: Kleen Energy Systems Kleen Energy Facility
Address: 1349 River Road, Middletown, CT 06457

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons? Yes ☐ No ☑

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?
Yes ☐ No ☑

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in 40 CFR 112 Appendix C, Attachment C-III or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
Yes☑ No ☐

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in 40 CFR 112 Appendix C, Attachment C-III or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?
Yes ☐ No ☑

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
Yes ☐ No ☑

Certification
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Signature	Date
Robert Haley	**Plant Manager**
Name (type or print)	Title

III.20. Annex 20 - Fuel & Chemical Tank Truck Transfer Procedures

Tank Truck Loading/Unloading Requirements (40 CFR 112.7(h))

The potential for discharges during tank truck loading and unloading operations is of particular concern at this facility. Kleen Energy management is committed to ensuring the safe transfer of material to and from storage tanks. The following measures are implemented to prevent oil and hazardous/toxic substance discharges during tank truck loading and unloading operations.

a. Secondary Containment (40 CFR 112.7(h)(1))

The facility has an unloading area where product is unloaded from large capacity tanker trucks to the facility bulk fuel oil storage tanks. The fuel oil truck unloading station is located on a concrete pad near the fuel oil storage tanks. Potential discharges of oil occurring during a truck unloading operation will be diverted along the pad, which is sloped to the north and west toward, a 2 foot wide trench that flows into a concrete sump of approximately 240 ft^3 (about 1,800 gallons). The sump is equipped with an overflow pipe and a 6-inch diameter main drain pipe that directs any additional volume to the fuel oil tank containment structure. The drain pipe is equipped with a manual valve at the sump and a tide-flex check valve inside the containment structure. Standard operating procedures and training direct operators to open the manual valve prior to unloading so spills exceeding 1,800 gallons will be collected in the fuel oil tank containment. The check valve prevents oil from flowing up the drain line in the event of a spill to containment from one of the fuel oil storage tanks. The fuel oil tank containment structure is more than adequate to contain the volume of any delivery truck. The fuel oil tank containment structure is manually drained through the dedicated 400 gpm Oil/Water Separator with the capacity to hold 1,600 gallons of oil.

The tank truck unloading stations for Aqueous Ammonia and Circulating Water Chemical Treatment buildings are similarly concrete contained and drain to recovery points (the aqueous ammonia dike and the Cooling Tower Chemical Feed Area Trench,

respectively). There, spills can be recovered and rainwater can be routed for reuse in the cooling tower.

b. Loading/Unloading Procedures (40 CFR 112.7(h)(2) and (3))

Fuel and chemical deliveries are scheduled for the site only after communication is made with the supplier. Deliveries are scheduled based on the amount of available volume in the storage tanks. All suppliers must meet the minimum requirements and regulations for tank truck loading/unloading established by the U.S. Department of Transportation. Kleen Energy ensures that the vendor understands the site layout, knows the protocol for entering the facility and unloading product, and has the necessary equipment to respond to a discharge from the vehicle or fuel delivery hose.

The ***Operations Supervisor*** or his/her designee supervises initial oil deliveries for all new suppliers, and periodically observes deliveries for existing, approved suppliers. Site operations or maintenance staff must attend the unloading operation to ensure that the delivery personnel properly follow all set-up, filling and disconnection procedures. Fuel or chemical unloading pump operations are not to continue unless attended constantly by delivery personnel.

All loading and unloading of tank vehicles takes place only in the designated loading/unloading areas. Fuel and chemical tank truck transfer procedures integrate the procedures checklist below, or equivalent.

Fuel and Chemical Tank Truck Transfer Procedures

Stage		Tasks
Prior to loading/ unloading	☐	Verify shipping papers list correct material and truck is lined up to proper tank.
	☐	Visually check all hoses for leaks and wet spots.
	☐	Verify that sufficient volume (ullage) is available in the storage tank or truck.
	☐	Verify that all drainage valves of the tank secondary containment structure are locked in the closed position and unloading area valves are set to contain spills.
	☐	Verify the driver secures the tank vehicle with wheel chocks.
	☐	Verify the driver sets the vehicle's parking brakes.
	☐	Verify proper alignment of valves and proper functioning of the pumping system.
	☐	If filling a tank truck (e.g., used oil), inspect the lowermost drain and all outlets.
	☐	Establish adequate bonding/grounding prior to connecting to the fuel transfer point.
	☐	Turn off all cell phones.
During loading/ unloading	☐	Driver must stay with the vehicle at all times during loading/unloading activities.
	☐	Periodically inspect all systems, hoses and connections.
	☐	When loading, keep internal and external valves on the receiving tank open along with the pressure relief valves.
	☐	Driver shuts off vehicle engine before connecting unless used to operate a pump.
	☐	Maintain communication with the Control Room and pumping / receiving stations.
	☐	Monitor the liquid level in the receiving tank to prevent overflow.
	☐	Monitor flow meters to determine rate of flow.
	☐	When topping off a tank, reduce flow rate to prevent overflow.
After loading/ unloading	☐	Make sure the transfer operation is completed and product is air blown through hose (e.g., PD pump operates 15-30 seconds until meter air bypass opens).
	☐	Close all tank and loading valves before disconnecting.
	☐	Verify driver securely closes all vehicle internal, external, and dome cover valves before disconnecting.
	☐	Verify driver secures all hatches.
	☐	Disconnect grounding/bonding wires.
	☐	Verify driver drains the hoses to a drip pan to remove the remaining oil before moving them away from the connection.
	☐	Verify driver caps the end of the hose and other connecting devices before moving them to prevent uncontrolled leakage.
	☐	Verify driver removes wheel chocks.
	☐	Inspect the lowermost drain and all outlets on tank truck prior to departure. If necessary, driver must tighten, adjust, or replace caps, valves, or other equipment to prevent oil leaking while in transit.

III.21. Annex 21 – SPCC Inspection Checklists

Provide further description and comments, if necessary, on a separate sheet of paper and attach to this sheet.
*Any item that receives "Yes" as an answer must be described and addressed immediately.

SPCC ID No.:	1	2	4	5	32	33	34	
Tank No.:	562-TNK-9001	562-TNK-9002	572-TK-9004	1-629-DG-9001	IWTP EDG	Ranney EDG	Ranney EDG Day Tank	Comments
Capacity (Gal):	4 Mil.	4 Mil.	290	2,000	2,600	4,000	150	
	Y*/N	Y*/N	Y*/N	Y*/N	Y*/N	Y*/N	Y*/N	
Tanks								
Tank surfaces show signs of leakage (e.g. drip marks, discoloration, puddles, localized dead vegetation)								
Tanks are damaged, rusted or deteriorated (e.g. cracks, corrosion)								
Seams are damaged								
Tank supports are deteriorated or buckled								
Tank foundations eroded or settled (cracks, discoloration, puddles, gaps between tank and foundation, damage from vegetation roots)								
Level gauges or alarms are inoperative								
Vents are obstructed								
Double Walled Tanks								
Water/product in interstice of double-walled tank								
Containment drainage valve is open or is not locked								
Containment walls or floors are cracked or rusted								
Leak Detection is Malfunctioning								
Secondary Containment								
Secondary containment is damaged or stained								
Containment drainage valve is open or is not locked								
Containment walls or floors are cracked or are separating								
Containment is not retaining water (following large rainfall)								
Additional Remarks:								

Tank Contents / No.:	Tank						Comments
	Calcium Hypo.	Aq. Amm. 541-TNK-9001	Corr. Inhib. 463-TNK-9001	Sod. Hypo. 463-TNK-9002	Sod. Brom. 463-TNK-9003	Sulf. Acid 463-TNK-9001	
Capacity (Gal):	30	40,000	1,500	4,600	2,000	6,000	
	Y*/N	**Y***/N	**Y***/N	**Y***/N	**Y***/N	**Y*/N**	
Tanks							
Tank surfaces show signs of leakage (e.g. drip marks, discoloration, puddles, localized dead vegetation)							
Tanks are damaged, rusted or deteriorated (e.g. cracks, corrosion)							
Seams are damaged							
Tank supports are deteriorated or buckled							
Tank foundations eroded or settled (cracks, discoloration, puddles, gaps between tank and foundation, damage from vegetation roots)							
Level gauges or alarms are inoperative							
Vents are obstructed							
Double Walled Tanks							
Water/product in interstice of double-walled tank							
Containment drainage valve is open or is not locked							
Containment walls or floors are cracked or rusted							
Leak Detection is Malfunctioning							
Secondary Containment							
Secondary containment is damaged or stained							
Containment drainage valve is open or is not locked							
Containment walls or floors are cracked or are separating							
Containment is not retaining water (following large rainfall)							
Additional Remarks:							

	Y*/N	Description & Comments
Piping		
Valve seals, gaskets, or other appurtenances are leaking (e.g. droplets of stored material, discoloration, corrosion)		
Pipelines or supports are damaged or deteriorated (e.g., bowed piping between supports)		
Joints, valves and other appurtenances are leaking (e.g. evidence of seepage, localized dead vegetation)		
Buried piping is exposed or has signs of leakage		
Out-of-service pipes are not capped		
Warning signs are missing or damaged		
Loading/Unloading and Transfer Equipment		
Unloading connections are damaged or deteriorated		
Connections are not capped or blank-flanged		
Concrete Pad is damaged or stained		
Sump drainage valve is open or is not locked		
Trench/Sump have accumulated oil or are leaking		
Oil / Chemical / Used Oil / Waste Containers		
Containers damaged, deteriorated or leaking		
Oil/chemical dispensing area containment not in place or full		
Oil/Water Separator 526-OWS-9963		
Oil/water separator > high level alarm		
Oil/water separator effluent has a sheen		
Oil/Water Separator 526-SEP-9050		
Oil/water separator > high level alarm		
Oil/water separator effluent has a sheen		
Security		
Fencing, gates, or lighting is non-functional		
Pumps and valves are unlocked and not in use		
Response Equipment		
Response equipment is not in the designated location.		
Response equipment inventory is not complete		
Additional Remarks:		

CERTIFICATION: My inspection of the areas above indicates that the facility is operating in compliance with the SPC/SPCC Plan (except as specifically noted above).

SIGNATURE: _____ DATE: _____

Annual reminders:

Hold SPCC Briefing for all oil-handling personnel (and update briefing log in the Plan);

Check contact information for key employees and response/cleanup contractors and update them in the Plan as needed.

III.22. Annex 22 – Record of Containment Dike Drainage

This record must be completed when rainwater from any containment area is drained. Oil and other visible contaminants must be removed prior to discharge to the storm water system.

Date	Start Time	End Time	Plant Area/ Containment Area	Presence of Oil or Other Contaminants or Sheen or Valve Leaking?	Corrective Action (e.g. disposal company, OWS, drain to stormwater, etc.)	Approx. Discharge (gal.)	Signature

Conversion: 1 cubic foot of water = 7.5 gallons

1. Inspect the tank and associated piping for signs of leaks or discharges.
2. Check the exposed ground surface for signs of leaks or discharges.
3. If all of the above inspections appear satisfactory, the water can be drained to stormwater, if not, it must be pumped out and hauled, drummed, or conveyed to the oil/water separator.

III.23. Annex 23 – Key Material Safety Data Sheets

U. S. OIL & REFINING CO.

M A T E R I A L S A F E T Y D A T A S H E E T

ULTRA LOW SULFUR DIESEL, CLEAR MSDS No. 301100

Issued 5/28/03

U. S. OIL & REFINING CO.
3001 Marshall Ave.
Tacoma, WA 98421

EMERGENCY ASSISTANCE:
COMPANY: (253) 383-1651
CHEMTREC: (800) 424-9300

IMPORTANT: Read this MSDS before handling or disposing of this product. Pass this information on to employees, customers and product users.

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1. GENERAL

Product Name: ULTRA LOW SULFUR DIESEL, CLEAR
Other Names: ULSD, DIESEL

Chemical Family: HYDROCARBON
Generic Name: PETROLEUM DISTILLATE FUEL
DOT Shipping Name: FUEL OIL, 3, NA/UN1993, III

NFPA Hazard Rating: HEALTH: 0
FIRE: 2
REACTIVITY: 0
SPECIAL:

---

2. PRODUCT COMPONENTS

Component	CAS Number	Percent
HYDROCARBONS WITH A BOILING POINT RANGE OF 176°C TO 365°C	68476-34-6	100 (AP)

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3. OCCUPATIONAL EXPOSURE LIMITS

Substance	Value	Time/Type	Date	Source
STODDARD SOLVENT	100 PPM	8 Hr PEL	1989	OSHA
(SEE SECTION 11)	200 PPM	15 Min STEL	1980	ACGIH

---

4. HEALTH INFORMATION

Summary: LIQUID, MIST OR VAPORS CAN CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. INGESTION OF LIQUID AND ASPIRATION INTO THE LUNGS CAN RESULT IN CHEMICAL PNEUMONIA.

Routes of Exposure	Signs and Symptoms
Inhalation	VAPORS OR MISTS FROM THIS MATERIAL CAN IRRITATE THE NOSE, THROAT, AND LUNGS, AND CAN CAUSE SIGNS AND SYMPTOMS OF CENTRAL NERVOUS SYSTEM DEPRESSION, DEPENDING ON THE CONCENTRATION AND DURATION OF EXPOSURE.
Eye Contact	EYE IRRITATION MAY RESULT FROM CONTACT WITH LIQUID, MISTS, AND/OR VAPORS.
Skin Contact	SKIN IRRITATION LEADING TO DERMATITIS MAY OCCUR UPON PROLONGED OR REPEATED CONTACT.
Ingestion	THIS MATERIAL CAN IRRITATE THE MOUTH, THROAT, STOMACH, AND CAUSE NAUSEA, VOMITING, DIARRHEA AND RESTLESSNESS. ASPIRATION INTO THE LUNGS WILL CAUSE CHEMICAL PNEUMONIA.

Supplemental Information:

THIS PRODUCT CONTAINS PETROLEUM DISTILLATES SIMILAR TO THOSE SHOWN TO PRODUCE SKIN TUMORS ON LABORATORY ANIMALS. AVOID PROLONGED OR REPEATED SKIN CONTACT.

CAUTION IS RECOMMENDED FOR PRE-EXISTING CENTRAL NERVOUS SYSTEM DISEASES. PERSONNEL WITH PR-EXISTING CENTRAL NERVOUS SYSTEM DISEASE, SKIN DISORDERS, OR CHRONIC RESPIRATORY DISEASES SHOULD AVOID EXPOSURE TO THIS PRODUCT.

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5. FIRE AND EXPLOSION

Flash Point (Method): AP 52°C (D-93)

Autoignition Temperature (Method): AP 257°C (E-659)

Flammable Limits (% Vol. in air) at Normal Atmospheric Temperature and Pressure LOWER: AP 0.6
UPPER: AP 7.5

Unusual Fire and Explosion Hazards:

MODERATELY COMBUSTIBLE! WHEN HEATED ABOVE FLASH POINT THIS MATERIAL WILL RELEASE FLAMMABLE VAPORS WHICH IF EXPOSED TO AN IGNITION SOURCE CAN BURN IN THE OPEN OR BE EXPLOSIVE IN CONFINED SPACES. MISTS OR SPRAYS MAY BE FLAMMABLE AT TEMPERATURES BELOW THE NORMAL FLASH POINT.

Extinguishing Media:

DRY CHEMICAL, FOAM, CARBON DIOXIDE, HALON. WATER FOG OR WATER SPRAY ARE OF VALUE FOR COOLING, BUT MAY NOT ACHIEVE EXTINGUISHMENT.

Special Firefighting Procedures:

FOR FIRES INVOLVING THIS MATERIAL, DO NOT ENTER ANY ENCLOSED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT, INCLUDING SELF-CONTAINED BREATHING APPARATUS. COOL TANKS AND CONTAINERS EXPOSED TO FIRE WITH WATER.

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6. EMPLOYEE PROTECTION

Respiratory: THIS MATERIAL IS NOT EXPECTED TO PRESENT A RESPIRATORY HAZARD BECAUSE OF ITS LOW VAPOR PRESSURE. BUT, IF EXCESSIVE MIST OR VAPORS RESULT FROM CONDITIONS OF USE, WEAR PROPER NIOSH/MSHA-APPROVED RESPIRATORY EQUIPMENT.

Ventilation: USE ADEQUATE VENTILATION TO KEEP VAPOR CONCENTRATIONS OF THIS MATERIAL BELOW THE OCCUPATIONAL EXPOSURE LIMITS.

Eye: EYE PROTECTION (CHEMICAL-TYPE GOGGLES AND/OR FACE SHIELD) SHOULD BE WORN WHENEVER THERE IS A LIKELIHOOD OF SPLASHING OR SPRAYING LIQUID. CONTACT LENSES SHOULD NOT BE WORN. EYE WASH WATER SHOULD BE PROVIDED.

Skin: AVOID PROLONGED OR REPEATED SKIN CONTACT. IF CONDITIONS OR FREQUENCY OF USE PRESENT DANGER OF EXPOSURE, CLEAN AND IMPERVIOUS PROTECTIVE CLOTHING SUCH AS GLOVES, APRON, BOOTS, AND FACIAL PROTECTION SHOULD BE WORN.

Other: USE GOOD PERSONAL HYGIENE PRACTICES. IN CASE OF SKIN CONTACT, WASH WITH MILD SOAP AND WATER OR A WATERLESS HAND CLEANER. IMMEDIATELY REMOVE SOILED CLOTHING AND WASH THOROUGHLY BEFORE REUSE. DISCARD CONTAMINATED SHOES.

---

7. EMERGENCY AND FIRST AID

Inhalation: IMMEDIATELY REMOVE FROM CONTAMINATED AREA TO FRESH AIR. FOR RESPIRATORY DISTRESS, GIVE OXYGEN OR ADMINISTER CPR (CARDIOPULMONARY RESUSCITATION), IF NECESSARY. OBTAIN PROMPT MEDICAL ATTENTION.

Eye Contact: FLUSH WITH CLEAN LOW-PRESSURE WATER FOR AT LEAST 15 MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDICAL ATTENTION.

Skin Contact: IMMEDIATELY REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREA THOROUGHLY WITH SOAP AND WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. WASH CLOTHING THOROUGHLY BEFORE REUSE, BUT DISCARD CONTAMINATED LEATHER GOODS.

Ingestion: DO NOT INDUCE VOMITING, SINCE ASPIRATION INTO THE LUNGS WILL CAUSE CHEMICAL PNEUMONIA. MUST OBTAIN MEDICAL ATTENTION PROMPTLY.

---

8. SPILL AND DISPOSAL

Actions if Material is Spilled or Leaked:

NOTIFICATION PROCEDURES: REPORT SPILLS RELEASE AS REQUIRED TO APPROPRIATE AUTHORITIES. U.S. COAST GUARD AND EPA REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS/RELEASES THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL/RELEASE TO COAST GUARD NATIONAL RESPONSE CENTER TOLL FREE NUMBER (800) 424-8802. IN CASE OF ACCIDENT OR ROAD SPILL NOTIFY CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: LAND SPILL: ELIMINATE SOURCES OF IGNITION. SHUT OFF SOURCE TAKING NORMAL SAFETY PRECAUTIONS. TAKE MEASURES TO MINIMIZE THE EFFECT ON GROUND WATER. RECOVER BY PUMPING USING EXPLOSION-PROOF EQUIPMENT OR CONTAIN SPILLED LIQUID WITH SAND OR OTHER SUITABLE ABSORBENT AND REMOVE MECHANICALLY INTO CONTAINERS. IF NECESSARY, DISPOSE OF ABSORBED RESIDUES AS DIRECTED IN THE WASTE DISPOSAL METHODS DISCUSSION.

WATER SPILL: ELIMINATE SOURCES OF IGNITION AND WARN OTHER SHIPS IN THE VICINITY TO STAY CLEAR. NOTIFY PORT AND OTHER RELEVANT AUTHORITIES. CONFINE WITH BOOMS IF SKIMMING EQUIPMENT IS AVAILABLE TO RECOVER THE SPILL. OTHERWISE DISPERSE IN UNCONFINED WATERS, IF PERMITTED BY LOCAL AUTHORITIES AND ENVIRONMENTAL AGENCIES. IF PERMITTED BY REGULATORY AUTHORITIES THE USE OF SUITABLE DISPERSANTS SHOULD BE CONSIDERED WHERE RECOMMENDED IN LOCAL OIL SPILL PROCEDURES.

ENVIRONMENTAL PRECAUTIONS: PREVENT MATERIAL FROM ENTERING SEWERS, WATER SOURCES OR LOW LYING AREAS; ADVISE THE RELEVANT AUTHORITIES IF IT HAS, OR IF IT CONTAMINATES SOIL/VEGETATION.

PERSONAL PRECAUTIONS: USE PROPER PROTECTIVE EQUIPMENT.

Waste Disposal Methods:

USE MATERIAL FOR ITS INTENDED PURPOSE OR RECYCLE IF POSSIBLE. THIS MATERIAL, IF IT MUST BE DISCARDED, MAY MEET THE CRITERIA OF A HAZARDOUS WASTE AS DEFINED BY USEPA UNDER RCRA (40CFR261) OR OTHER STATE AND LOCAL REGULATIONS. MEASUREMENT OF CERTAIN PHYSICAL PROPERTIES AND ANALYSIS FOR REGULATED COMPONENTS MAY BE NECESSARY TO MAKE A CORRECT DETERMINATION. IF THIS MATERIAL IS CLASSIFIED AS A HAZARDOUS WASTE, FEDERAL LAW REQUIRES DISPOSAL AT A LICENSED HAZARDOUS WASTE DISPOSAL FACILITY.

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9. PHYSICAL AND CHEMICAL DATA

Specific Gravity (H_2O = 1 @ 39.2°F): 0.84 - .88

Viscosity Units, Temp. (Method): AP 3 CST AT 40° C (D-445)

Volatile Characteristics: NA

Stability: STABLE

Other Physical and Chemical Properties: SULFUR CONTENT LT 0.003 WT%(30 PPMW)
AROMATICS CONTENT LT 25 VOL%,
OLEFINS CONTENT LT 5 VOL%.

Appearance and Odor: WATER WHITE TO LIGHT AMBER OR GREEN COLORED LIQUID; KEROSENE ODOR.

Conditions to Avoid: HEAT, SPARKS, AND OPEN FLAME

Materials to Avoid: REACTS WITH STRONG ACIDS AND STRONG OXIDIZING MATERIALS

Hazardous Decomposition Products: BURNING OR EXCESSIVE HEATING MAY PRODUCE CARBON MONOXIDE AND OTHER HARMFUL GASES AND VAPORS INCLUDING OXIDES AND/OR OTHER COMPOUNDS OF SULFUR.

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10. SARA TITLE III

Extremely Hazardous Substances for Emergency Response and Planning:

Component	CAS Number	Percent	TPQ(lbs)	RQ(lbs)
NONE				

Toxic Chemicals for Emission Reporting

Component	CAS Number	Percent (Typical)
NONE		

EPA Hazard Classification:
Acute Health Hazard: X
Chronic Health Hazard: X
Fire Hazard: X
Pressure Hazard:
Reactive Hazard:
Not Applicable:

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11. ADDITIONAL PRECAUTIONS

Handling & Storage:
SPECIAL SLOW LOAD PROCEDURES FOR "SWITCH LOADING" MUST BE FOLLOWED TO AVOID THE STATIC IGNITION HAZARD THAT CAN EXIST WHEN THIS MATERIAL IS LOADED INTO TANKS PREVIOUSLY CONTAINING GASOLINE OR OTHER LOW FLASH POINT PRODUCT. (SEE API PUBLICATION 2003). KEEP CONTAINERS CLOSED AND AWAY FROM HEAT AND IGNITION SOURCES. ALL ELECTRICAL EQUIPMENT IN AREAS WHERE PRODUCT IS STORED/HANDLED SHOULD BE INSTALLED IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, N.F.P.A. DO NOT USE THIS PRODUCT AS A CLEANING AGENT. EMPTY CONTAINERS RETAIN SOME LIQUID AND VAPOR RESIDUES, AND HAZARD PRECAUTIONS MUST BE OBSERVED WHEN HANDLING EMPTY CONTAINERS.

General Comments:
MATERIALS SIMILAR TO SOME COMPONENTS IN THIS PRODUCT WERE FOUND TO BE MUTAGENIC IN "IN VITRO" TESTS. THE EXACT RELATIONSHIP BETWEEN THESE RESULTS AND POSSIBLE HUMAN EFFECTS IS NOT KNOWN.

"PETROLEUM DISTILLATE"--16 CFR 1500.14(B)(3). USE SPECIAL FEDERAL LABELING IF INTENDED, OR PACKAGED, FOR USE IN THE HOUSEHOLD OR BY CHILDREN.

SPECIFIC EXPOSURE STANDARDS FOR THIS MATERIAL HAVE NOT BEEN AGREED UPON; THEREFORE, ACGIH TLV GUIDELINES (SEE SECTION 3) ARE SUGGESTED FOR INTERIM USE UNTIL SPECIFIC STANDARDS ARE ADOPTED.

SOME OF THE INFORMATION PRESENT AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE MIXTURE ITSELF.

-----**NOTE**-------Qualifications

EQ = Equal	**AP** = Approximately	**N/AV** = Not Available
LT = Less Than	**UK** = Unknown	**N/AP** = Not Applicable
GT = Greater than	**TR** = Trace	**N/DA** = No Data Available

Disclaimer of Liability

The information in this MSDS was obtained for sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS ACCURACY OR CORRECTNESS.**

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT**

MATERIAL SAFETY DATA SHEET
AMMONIUM HYDROXIDE

TI

DISTRIBUTORS:

TANNER INDUSTRIES, INC.

DIVISIONS:

NATIONAL AMMONIA	NORTHEASTERN AMMONIA
HAMLER INDUSTRIES	BOWER AMMONIA & CHEMICAL

735 Davisville Road, Third Floor, Southampton, PA 18966; 215-322-1238

CORPORATE EMERGENCY TELEPHONE NUMBER: 800-643-6226; CHEMTREC (CMA) 800-424-9300

DESCRIPTION

CHEMICAL NAME: Ammonium Hydroxide Solution (Baume 20.75°) **CAS REGISTRY NO**: 1336-21-6
SYNONYMS: Aqua Ammonia
CHEMICAL FAMILY: Ammonia **FORMULA**: $NH_4OH + H_2O$ **MOL. WT**: 35.05 (NH_4OH)
COMPOSITION: 19% Solution; 19% Ammonia, Anhydrous-CAS # 7664-41-7; 81% Water - CAS# 7732-18-5

STATEMENT OF HEALTH HAZARD

HAZARD DESCRIPTION:
Ammonia is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. May cause severe burns to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure.

Not recognized by OSHA as a carcinogen.
Not listed in the National Toxicology Program annual report.
Not listed as a carcinogen by the International Agency for Research on Cancer.

EXPOSURE LIMITS FOR AMMONIA: Vapor

OSHA	50 ppm,	35 mg/m3 PEL	8 hour TWA
NIOSH	35 ppm,	27 mg/m3 STEL	15 minutes
	25 ppm,	18 mg/m3 PEL	10 hour TWA
	300 ppm,	IDLH	
ACGIH	25 ppm,	18 mg/m3 TLV	8 hour TWA
	35 ppm,	27 mg/m3 STEL	15 minutes

TOXICITY: LD 50 (Oral/Rat) 350 mg/kg

EMERGENCY TREATMENT

EFFECTS OF OVEREXPOSURE:
Eye: lacrimation, edema or blindness may occur.
Skin: irritation, corrosive burns, blister formation may result. Contact with liquid will freeze the tissue and produce a caustic burn.
Inhalation: acute exposure may result in severe irritation of the respiratory tract, bronchospasm, edema or respiratory arrest.
Ingestion: Symptoms similar to Inhalation. Lung irritation and pulmonary edema may occur.
Extreme exposure may result in death from spasm, inflammation or edema.

EMERGENCY AID:
Eye: flush with copious amounts of water for 15 minutes. Eyelids should be held apart and away from eyeball for thorough rinsing.
Skin: flush with copious amounts of water for 15 minutes while removing contaminated clothing and shoes. Exercise caution when removing contaminated clothing as it may be frozen to the skin. Do not rub or apply ointment on affected area.
Inhalation: remove to fresh air. Administer oxygen or artificial respiration if necessary.
Ingestion: if conscious, give large amounts of water to drink. May drink orange juice, citrus juice or diluted vinegar to counteract ammonia.
DO NOT INDUCE VOMITING! SEEK IMMEDIATE MEDICAL HELP FOR ALL EXPOSURES!

NOTE TO PHYSICIAN: Respiratory injury may appear as a delayed phenomenon. Pulmonary edema may follow chemical bronchitis. Supportive treatment with necessary ventilation actions, including oxygen, may warrant consideration.

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MATERIAL SAFETY DATA SHEET

PHYSICAL DATA

BOILING PT: NH3, vapors released upon warming	APPROXIMATE FREEZING PT: -66°F
VAPOR DENSITY (AIR=1): less than 1	VAPOR PRESSURE: 9.1 psia @ 60°F
SPECIFIC GRAVITY: 0.9302 AT 60°F	SOLUBILTY IN WATER: Complete
PERCENT VOLATILE: 100% AT 212°F	EVAPORATION RATE (Water=1): Similar
APPEARANCE AND ODOR: Colorless liquid and pungent odor	SURFACE TENSION: 62 Dynes/cm

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	None
AUTOIGNITION TEMP:	Not applicable
FLAMMABLE LIMITS IN AIR:	for evolved ammonia: LEL 16% UEL 25%
EXTINGUISHING MEDIA:	Non-combustible

SPECIAL FIRE-FIGHTING PROCEDURES:
Must wear protective clothing and a positive pressure SCBA. Stop source if possible. Cool fire exposed containers with water spray. Stay upwind and use water spray to knock down vapor and dilute.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
When heated, product will give off ammonia gas, which is a strong irritant to the eye, skin and respiratory tract.
Outdoors, ammonia is not generally a fire hazard.
Indoors, in confined areas, ammonia may be a fire hazard, especially if oil and other combustible materials are present.
If relief valves are inoperative, heat exposed storage containers may become explosion hazards.
Combustion of released ammonia may form nitrogen oxides.

CHEMICAL REACTIVITY

STABILITY:
Stable at room temperature. Ammonium Hydroxide will react exothermically with acids. Ammonia vapors are released when heated.

CONDITIONS TO AVOID:
Avoid Ammonium Hydroxide contact with chemicals such as mercury, chlorine, iodine, bromine, silver oxide or hypochlories; they can form explosive compounds.
Avoid Ammonium Hydroxide contact with chlorine, which forms a chloramine gas, that is a primary skin irritant and sensitizer.
Ammonium Hydroxide has a corrosive reaction with galvanized surfaces, copper, brass, bronze, aluminum alloys, mercury, gold and silver.

HAZARDOUS DECOMPOSITION PRODUCTS:
Ammonium Hydroxide decomposition to hydrogen and nitrogen gases above 450°C (842°F)

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN:
Wear respiratory protection and protective clothing; see PROTECTIVE EQUIPMENT. Stop source if possible. Stay upwind and use water spray to absorb the evolved gas. Dilute with large amount of water. Contain spill from entering drains, sewers, water systems by utilizing methods, such as diking.

WASTE DISPOSAL:
Listed as hazardous substance under CWA (40 CFR 1164.40 CFR 117.3 Reportable Quantity Category C. 1000#/454kg)
Comply with all regulations. Suitably diluted product may be disposed of on agricultural land as fertilizer. Keep spill from entering streams or lakes.

MATERIAL SAFETY DATA SHEET
SPECIAL PROTECTION AND PROCEDURES

RESPIRATORY PROTECTION:
MSHA/NIOSH approved respiratory protection that consists of a full face gas mask and canisters effective for ammonia that enable use for entry and escape in emergencies. Refer to 29 CFR 1910.134 and ANSI: Z88.2 for requirements and selection. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm.

VENTILATION:
Local exhaust sufficient to keep ammonia gas to 25ppm or less.

PROTECTIVE EQUIPMENT:
Splash-proof, chemical safety goggles, rubber gloves and boots should be worn to prevent contact. Face shield can be worn over the goggles as additional protection. Respiratory protection and cotton work clothes are recommended. Refer to 29 CFR 1910.132 to1910.36 for requirements. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm.

SPECIAL PRECAUTIONS

STORAGE AND HANDLING:
Keep product in strong glass or plastic, tightly closed containers. Store in cool (26.7°C/80°F) and well-ventilated area.

WORK-PLACE PROTECTIVE EQUIPMENT:
Protective equipment should be stored near, but outside of ammonium hydroxide area. Water for first-aid, such as an eyewash station and safety shower, is to be kept available in the immediate vicinity. See 29 CFR 1910.141 for workplace requirements.

DISPOSAL:
Ammonium Hydroxide is listed as a hazardous substance under FWPCA. See WASTE DISPOSAL. Classified as RCRA Hazardous waste due to corrosivity with designation D002 if disposed of in original form.

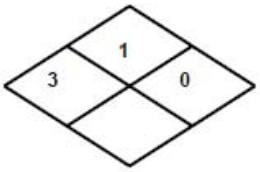
LABELING AND SHIPPING

HAZARD CLASS: 8 [Corrosive Material]

PROPER SHIPPING DESCRIPTION: Ammonia Solutions, 8, UN2672, PG III, RQ

PLACARD: Corrosive **IDENTIFICATION NO**: UN 2672

National Fire Protection Assoc. Hazardous Rating:



Hazardous Materials Identification System Labels:

AMMONIUM HYDROXIDE	
HEALTH	3
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	H

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MATERIAL SAFETY DATA SHEET

OTHER REGULATORY REQUIREMENTS

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Section 103, any environmental release of this chemical equal to or over the reportable quantity of 1000 lbs. must be reported promptly to the National Response Center, Washington, D.C. (1-800-424-8802).

Any consumer product containing 5% or more ammonia requires a POISON label under FHSA (16 CFR 1500. 129(1)).

The material is subject to the reporting requirements of Section 313, Section 304 and Section 312, Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. As of June 30, 1995, this material is reportable with the following qualifications: 10% of total aqueous ammonia is reportable as Ammonia (7664-41-4) under this listing.

EPA hazard Categories - Immediate: Yes; Delayed: No; Fire: No; Sudden Release: No; Reactive: No
Regulated Air Act – 40 CFR 112(r) at concentrations greater than 20% and amounts greater than 20,000 lbs.

The information, data, and recommendations in this material safety data sheet relate only to the specific material designated herein and do not relate to use in combination with any other material or in any process. The information, data, and recommendations set forth herein are believed by us to be accurate. We make no warranties, either expressed or implied, with respect thereto and assume no liability in connection with any use of such information, data, and recommendations.

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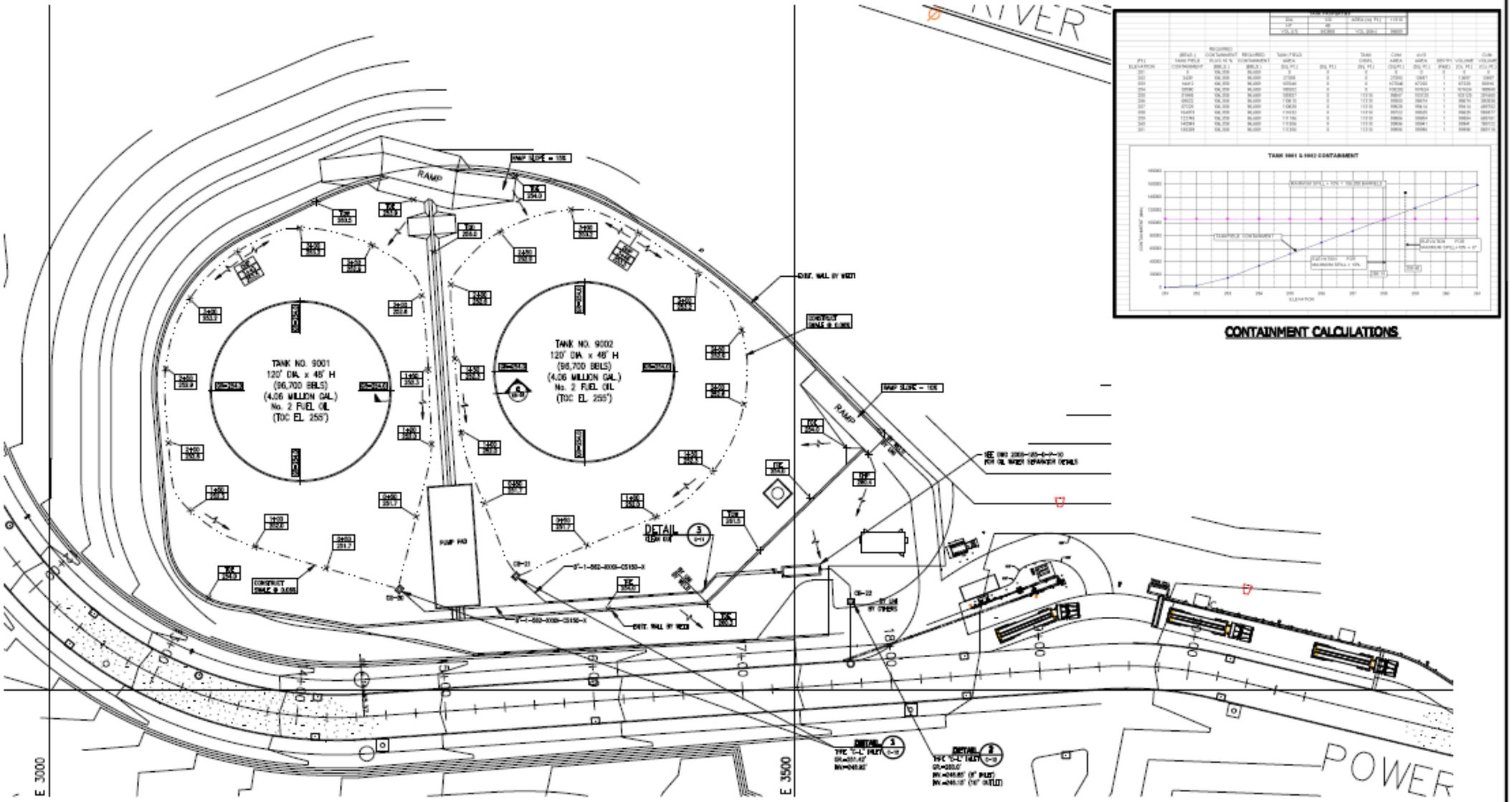
III.24. Annex 24 - Calculation of Secondary Containment Capacity



CONTAINMENT CALCULATIONS

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR MUST VERIFY EXISTING TOPOGRAPHY TO DETERMINE EARTHWORK QUANTITIES.
2. ALL MATERIALS AND METHODS OF WORK SHALL BE IN CONFORMANCE WITH CTDOT STANDARD SPECIFICATIONS FOR STORMWATER DRAINAGE AS AMENDED TO THIS DATE.
3. CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND UTILITY LOCATIONS PRIOR TO INITIATING WORK. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF O&G INDUSTRIES IMMEDIATELY.
4. DIKES AND SUBGRADEFILL AREAS SHALL BE INSTALLED IN 8" LIFTS AND COMPACTED TO 95% MAXIMUM PROCTOR DENSITY.
5. CONTRACTOR SHALL INSTALL GEOGRID, LINER, GEOTEXTILE AND APPURTENANCES IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
6. ALL PROPOSED ELEVATIONS AND CONTOURS ARE TO FINISH GRADE.
7. ALL SURFACE GRADING SHALL BE PERFORMED IN SUCH MANNER AS TO ELIMINATE ANY STANDING WATER.

DRAWING NOTES:

1. BACKGROUND DRAWING FILE "O&G COPY GRADING AND FUEL BERMLDWG" PROVIDED BY O&G INDUSTRIES.

LEGEND

+0.00	EXISTING ELEVATION
+0.00	PROPOSED ELEVATION
DHP	DRAINAGE HIGH POINT
GR	GRADE ELEVATION
TOD	TOP OF DIKE
TOW	TOP OF WALL
TOE	TOE OF WALL
PDC	POWER DISTRIBUTION CENTER
→	DRAINAGE FLOW DIRECTION

REFERENCE DRAWINGS

2008-185-D-C-01	CONTAINMENT WALL LAYOUT PLAN
2008-185-D-C-03	FUEL STORAGE TANKS FOUNDATION LOCATION PLAN
2008-185-D-C-10	TANK RING WALL FOUNDATION PLAN, SECTIONS & DETAILS
2008-185-D-C-11	GRADING AND DRAINAGE SECTIONS & DETAILS
2008-185-D-C-12	CATCH BASINS SECTIONS & DETAILS
2008-185-D-P-10	OIL WATER SEPARATOR PLAN & SECTIONS

INFORMATION ONLY
2008-TANKCHECKSMALL.DUP.DP

UNI ENGINEERING INCORPORATED
158 STOCKTON STREET
HIGHTSTOWN, NJ 08520

EDWARD J. SAPP
PROFESSIONAL ENGINEER
CONNECTICUT LIC. NO. 17584

ISSUED FOR APPROVAL

O&G INDUSTRIES, INC.
1240 HIGHT ROAD
MERIDEN, CONNECTICUT 06447

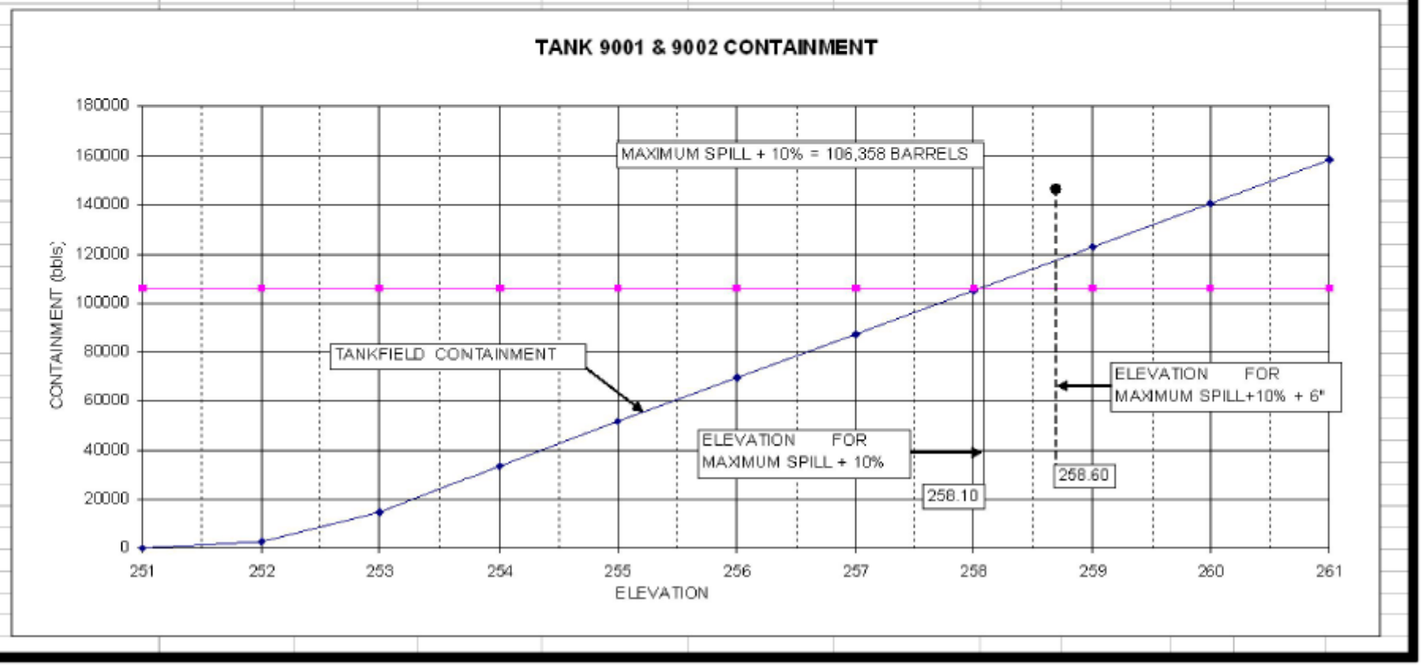
KLEEN ENERGY SYSTEMS, L.L.C.
MIDDLETOWN, CT

FUEL STORAGE TANKS
GRADING AND DRAINGAGE
PLAN

1"=50'-0" | 1/27/09 | 2008-185-D-C-02 | A

TANK PROPERTIES			
DIA	120	AREA (sq. Ft.)	11310
HT	48		
VOL (cf)	542868	VOL (bbls)	96689

(Ft.) ELEVATION	(BBLS.) TANK FIELD CONTAINMENT	REQUIRED CONTAINMENT PLUS 10 % (BBLS.)	REQUIRED CONTAINMENT (BBLS.)	TANK FIELD AREA (Sq. Ft.)	(Sq. Ft.)	TANK DISPL (Sq. Ft.)	CUM AREA (Sq.Ft.)	AVG AREA (Sq. Ft.)	DEPTH (Feet)	VOLUME (Cu. Ft.)	CUM. VOLUME (Cu. Ft.)
251	0	106,358	96,689	0	0	0	0	0	0	0	0
252	2439	106,358	96,689	27393	0	0	27393	13697	1	13697	13697
253	14412	106,358	96,689	107046	0	0	107046	67220	1	67220	80916
254	33580	106,358	96,689	108202	0	0	108202	107624	1	107624	188540
255	51948	106,358	96,689	109357	0	11310	98047	103125	1	103125	291665
256	69522	106,358	96,689	110610	0	11310	99300	98674	1	98674	390338
257	87229	106,358	96,689	110838	0	11310	99528	99414	1	99414	489752
258	104973	106,358	96,689	111032	0	11310	99722	99625	1	99625	589377
259	122748	106,358	96,689	111196	0	11310	99886	99804	1	99804	689181
260	140549	106,358	96,689	111306	0	11310	99996	99941	1	99941	789122
261	158359	106,358	96,689	111306	0	11310	99996	99996	1	99996	889118



CONTAINMENT CALCULATIONS

Primary Fuel Oil Storage Tank - Secondary Containment Calculations from UNI Dwg. No. 2008 – 185-DC-02 Rev. A

III.25. Annex 25 - Facilities, Procedures, Methods, or Equipment Not Yet Fully Operational

Kleen Energy management has committed to implement the following spill prevention and countermeasure recommendations resulting from the preparation of this plan:

Table 1 - Plan for Implementation of Elements Not Currently in Place

Action Item	Target Date	Completion
Completion of construction, calibration, testing, startup and verification of integrity and proper operation of all design features and safeguards described in the plan and design documents (including leak testing fuel oil tanks and underground piping, verifying continuous leak detection)	Before first fire on oil	
Design, install and verify functionality of high-high oil level interlock to shut Oil/ Water Separator discharge pumps.	Before first fire on oil	
Procure and place specified spill containment and recovery equipment and supplies as described in the plan.	Before first fire on oil	
Complete construction of fencing/walls around fuel oil tanks, Ranney Well Electrical Building Tank and plant and posting of warning signs at the fuel oil unloading area.	Before first fire on oil	
Add required inspection, testing, plan review and other recurring obligations of the plan to the PM system	Before first inspection	

The ***Compliance Coordinator*** will track these actions to confirm that they have been implemented.