Work Plan

Removal of RCRA Hazardous Waste Liquids at the LCP Bridge Street Site Solvay, New York

NYS Department of Environmental Conservation
Site Code 7-34-049

Allied Signal

December 1998

O'BRIEN & GERE ENGINEERS, INC.

1163.110

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NYS Department of Environmental Conservation
Site Code 7-34-049

AlliedSignal Inc.

O'Brien & Gere Engineers, Inc.
5000 Brittonfield Pkwy
P.O. Box 4873
Syracuse, NY 13221

James R. Heckathorne

December 1998

1. Introduction

This work plan has been developed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) on behalf of AlliedSignal, Inc (AlliedSignal) for removal and disposal of liquids classified as Resource Conservation and Recovery Act (RCRA) hazardous wastes from vessels at the Linden Chemicals and Plastics (LCP) Bridge Street site in Solvay, New York. This work plan has been prepared in accordance with a draft administrative stipulation which will be executed between AlliedSignal and the New York State Department of Environmental Conservation (NYSDEC).

1.1. Background

The purpose of this plan is to describe those work activities that are to take place to remove liquids classified as RCRA hazardous waste from vessels located at the LCP Bridge Street facility in the Village of Solvay, New York. The vessels are to be emptied of liquids as part on-going efforts being conducted by AlliedSignal to decommission the facility, and are being performed under stipulation with NYSDEC. OP-TECH Environmental Services, Inc. (OP-TECH), under contract to AlliedSignal, will empty the tanks and transport the liquids to a receiving facility permitted to accept them. Solids which have settled to the bottom of several of the tanks will be removed from the tanks at a later date. Prior to their removal, a description of methods and work tasks will be issued as a separate work plan or appended to this plan.

The work described herein will be implemented, weather permitting, as soon as NYSDEC has reviewed and approved the plan. Prior to OP-TECH's mobilization, NYSDEC will be informed of the pending work and schedule for its execution.

1.2. Administrative stipulation

AlliedSignal and NYSDEC have entered into an administrative stipulation which requires the removal and disposal of RCRA hazardous liquids and sludges from vessels at the LCP Bridge Street site. This work plan addresses the removal and disposal of RCRA hazardous liquids. A subsequent work plan will be submitted to NYSDEC 45 days from the execution of the stipulation, and will address removal and disposal of RCRA hazardous sludges.

2. Vessel liquids to be addressed by this action

The vessels to be addressed by this action include those vessels associated with the mercury treatment system at the LCP Bridge Street site, which contain materials categorized as a RCRA listed hazardous wastes, and vessels containing liquids categorized as characteristic RCRA hazardous wastes. The vessels to be addressed by this action are summarized on Table 1, and vessel locations are shown on Figure 1. A photo log of vessels to be addressed is presented as Attachment 1. The complete site vessel inventory is presented in Table 2, for reference purposes. The estimated volume of liquid that needs to be removed and disposed as part of this action, as summarized in Table 1, is approximately 19,000 gallons.

Samples have been collected from each of the vessels to be addressed, and analytical data for these samples are summarized in Table 1. Analytical data indicate that concentrations of mercury at or above the TCLP limit of 0.2 mg/L for the RCRA toxicity characteristic (D009) are present in each vessel. Liquids in vessels #6 and 25 also exhibit the RCRA corrosivity characteristic (D002; pH less than 2 or greater than 12.5). In addition, liquids in vessels used in the treatment of mercury cell process wastewater (vessels #1, 2, 5, 20, 21, and 22) are categorized as a K106 waste.

3. Vessel liquids removal/disposal approach

3.1. Logistics

K106, D002, and D009 liquids will be removed using OP-TECH's 3000 gallon stainless steel vacuum truck and transferred into storage tankers appropriate for the disposal facilities receiving the liquids.

OP-TECH will commence operations with the removal of K106 liquids. Two 5,000 gallon tankers will be spotted on-site, and the liquid removal will be approached as follows:

Indoor vessel on third floor (#5)

First, the valve on vessel #5 will be inspected to verify that it is in the closed position. A vacuum hose will be attached to the drain line flange located near the first floor. The valve on vessel #5 will be opened and the liquid will be suctioned from the vessel and off-loaded into the on-site tankers. If the flange is plugged with sludge, another flange closer to vessel #5 will be broken until suction is achieved.

Three indoor vessels on the second floor (#20, 21, 22)

Liquid will be suctioned from the top of each tank and off-loaded into the on-site tankers.

Two outside vessels (#1, 2)

Liquid will be suctioned from openings cut on the side of each vessel, above the liquid level, and off-loaded into the on-site tankers.

After the removal of the K106 liquids in vessels #1, 2, 5, 20, 21, 22, two additional tankers will be spotted on site for D009 and D002 liquids. If the D009 and D002 liquids require additional storage capacity, the 3000 gallon vacuum truck will be used as a third tanker. D009 and D002 liquids will be suctioned through open top manways or through a hole cut in the side of the vessel above the liquid level. Liquids will be off-loaded into the on-site tankers.

3.2. Liquids disposition

After liquids are removed from the vessels into the tankers, they will be transported to a treatment, storage, and disposal facility (TSDF) that is permitted to treat and discharge wastes of this nature. Prior to transport, liquids will be further characterized, if required by the TSDF for disposal purposes. Liquids will be manifested and transported in accordance with applicable federal, state, and local regulations.

3.3. Health and safety

As part of this work plan, a health and safety plan and spill contingency plan for removal of the liquids have been prepared. The health and safety plan describes potential hazards to workers, personal protective equipment, and worker monitoring. The health and safety plan also discusses the elements necessary to implement entry into confined spaces during execution of the work. The spill continency plan, presented at the end of the health and safety plan, discusses the manner in which unplanned releases into the environment will be minimized and the methods to address a release should it occur. The health and safety plan has been stamped by a Certified Industrial Hygienist designating compliance with applicable Occupational Safety and Health Administration (OSHA) requirements. The HASP is included as Attachment 2 to this work plan.

3.4. Site access and security

Site access is controlled by fencing. During the activities described above, site security will be maintained by AlliedSignal.

Table 1
Summary of Vessels and Sampling Results
Vessel Liquids Removal/Disposal Work Plan
LCP Bridge Street
Solvay, New York

Vessel Key	Vessel	Location	Liquid Quantity (gallons)	RCRA Status	Liquid Sample Data pH (std. units)	Hg (mg/L)	Pb (mg/L)	Sulfides (mg/L)
1	South Filter Feed Tank	outside	500	K106, D009	6.7	2		1.1
2	North Filter Feed Tank	outside	500	K106, D009	6.9	250		3100
5	West Settler	inside/3rd floor	8000	K106, D009	9.2	30		28
6	Horizontal Surge Tank	outside	1000	D009, D002	13.1	20		
19	South HCL Storage	outside	1000	D009	1.3	14		
20	Secondary Neutralizer	inside/2nd floor	300	K106, D009	8.7	4		
21	Primary Neutralizer	inside/2nd floor	300	K106, D009	8.7	3		
22	Sulfide Addition	inside/2nd floor	300	K106, D009	8.8	3		<0.2
25	NAOH Holding Tank	outside	5000	D009, D002	13.3	0.34	0.3	
26	North HCL Storage	outside	500	D009	<1.0	0.28		
28	East Surge Tank	outside	2000	D009	8.8	0.16		

Source: Gradient Corporation - Table 4.5-18

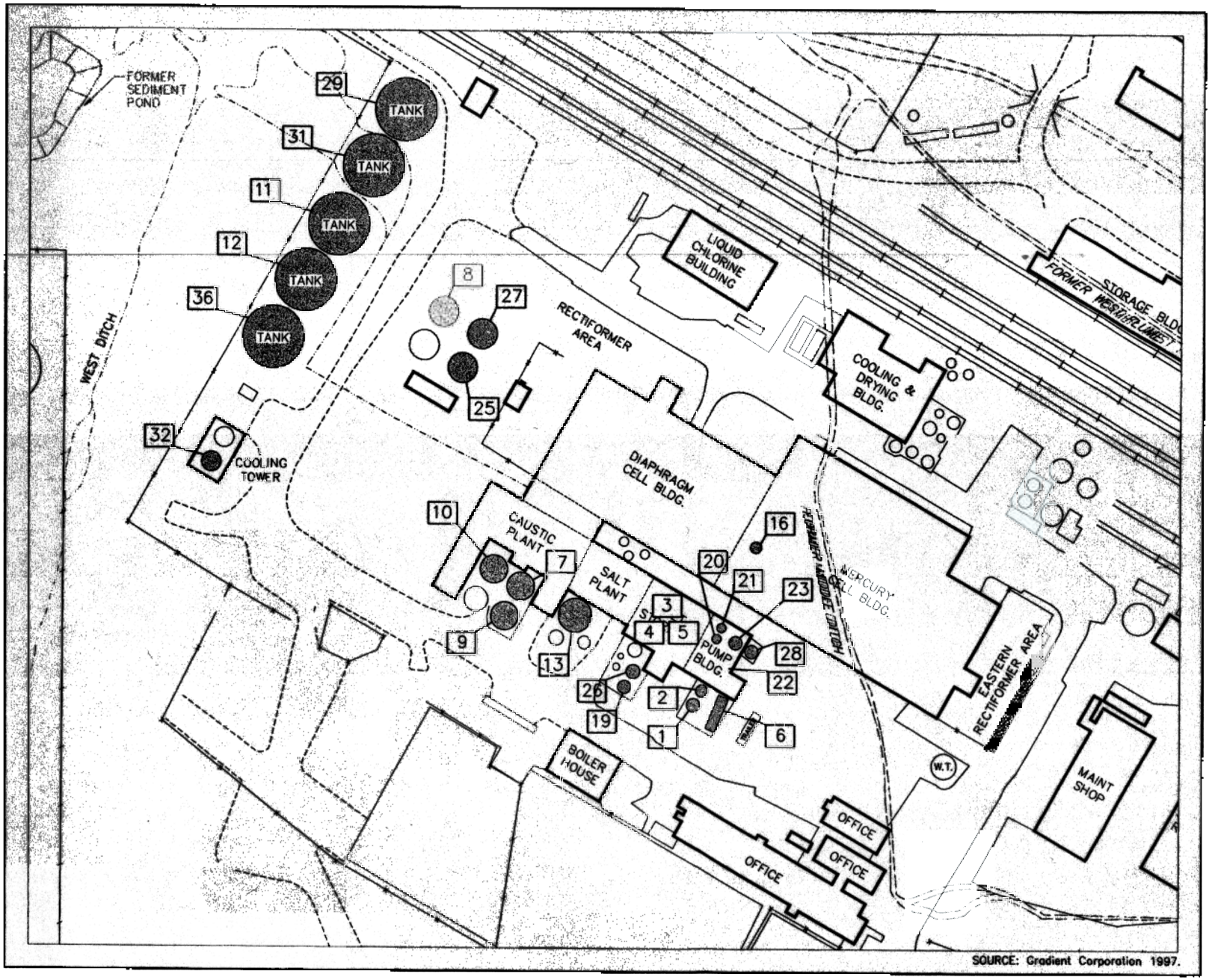
Table 2
Summary of Vessel Inventory and Sampling Results
LCP Bridge Street RI/FS
Solvay, New York

Vessel Key[1]	Vessel	Matrix	% Solids	Quantity Wet = Gallons	Quantity Dry = Tons	pH Std units	Hg Dry = mg/Kg Wet = mg/L	Pb Dry = mg/Kg Wet = mg/L	Sulfides Dry = mg/Kg Wet = mg/L	Chlorides Dry = mg/Kg Wet = mg/L	Barium Wet = mg/L	Chromium Wet = mg/L
1	S. Filter Feed Tank	Solid	20.9		8	6.8	59,000		58			
2	N. Filter Feed Tank	Solid	22.9		10	6.5	54,000		12			
3	East Settler	Solid	58.8		1	7.6	46,000		< 5.0			
4	Center Settler	Solid	40.1		4	9.2	18,000		< 5.0			
5	West Settler	Solid	66		1	10.1	12,000		< 5.0			
6	Horizontal Surge Tank	Solid	41.6		24	12.7	5,300					
7	NE Saturator	Solid	60		24	9.7	2,000			180,000		
8	Stray Liquor	Solid	65.6		32	11.3	27					
9	SE Saturator	Solid	99.1		64	10.3	6.3			670,000		
10	NW Saturator	Solid	99		95	9.6	4.2	< 0.5		690,000		
11	N. Weak Liquor	Solid	79.2		103	12.6	1.4	< 0.6		450,000		
12	S. Weak Liquor	Solid	79		103	11.2	1.2	11		370,000		
13	Pure Brine (Black)	Solid	87.7		116	11.1	0.3			580,000		
2	N. Filter Feed Tank	Water		500		6.9	250		3,100			
4	Center Settler	Water		0 *(2)*		8.7	190		180			
16	Pure Water ML	Water		1000 *(2)*		9.1	31					
5	West Settler	Water		8,000		9.2	30		28			
6	Horizontal Surge Tank	Water		1,000		13.1	20					
19	S. HCL Storage	Water		1,000		1.3	14					
20	Secondary Neutralizer	Water		300		8.7	4					
21	Primary Neutralizer	Water		300		8.7	3					
22	Sulfide Addition	Water		300		8.8	3		< 0.2			
23	W. Surge Tank	Water		1500 *(3)*		9.2	2.2					
1	S. Filter Feed Tank	Water		500		6.7	2		1			
25	NAOH Holding Tank	Water		5,000		13.3	0.34	0.3		77,000		
26	N. HCL Storage	Water		500		< 1.0	0.28					
27	Tank 10A Imp. Cond.	Water		500 *(2)*			0.23	< 0.2				
28	E. Surge Tank	Water		2,000		8.8	0.16					
29	N. Raw Brine (200,000 gal	Water		200,000		12.3	0.04			120,000		
30	D. C. Pit	Water		20,000		9.8	0.038	< 0.05				
31	S. Raw Brine (300,000 gal	Water		300,000		9.6	0.02			73,000		
32	Cooling Tower Pit	Water		60,000		9	0.009					
11	N. Weak Liquor	Water		500			0.006	< 0.5				< 0.1
36	Pure Brine (Black)	Water		20,000		11.5	0.0028			70,000		
	Water Intake	Water		0			0.0021					
36	Pure Brine (500,000 gal)	Water		250,000			0.002					<0.01
12	S. Weak Liquor	Water		500		10.5	< 0.0002	< 0.5		190,000		
	Totals			870,400	585							

Note: 1. *See Figure 4.5-11 for Vessel Inventory Map*
2 *Vessel was confirmed to contain no liquids on 12/4/98*
3. *Vessel #23 was confirmed empty 12/9/98*

Source: *Gradient Corporation*

FIGURE 1



TANKS

FENCE

1 KEY FOR VESSEL INVENTORY

LCP
PRIDE STREET
YORK

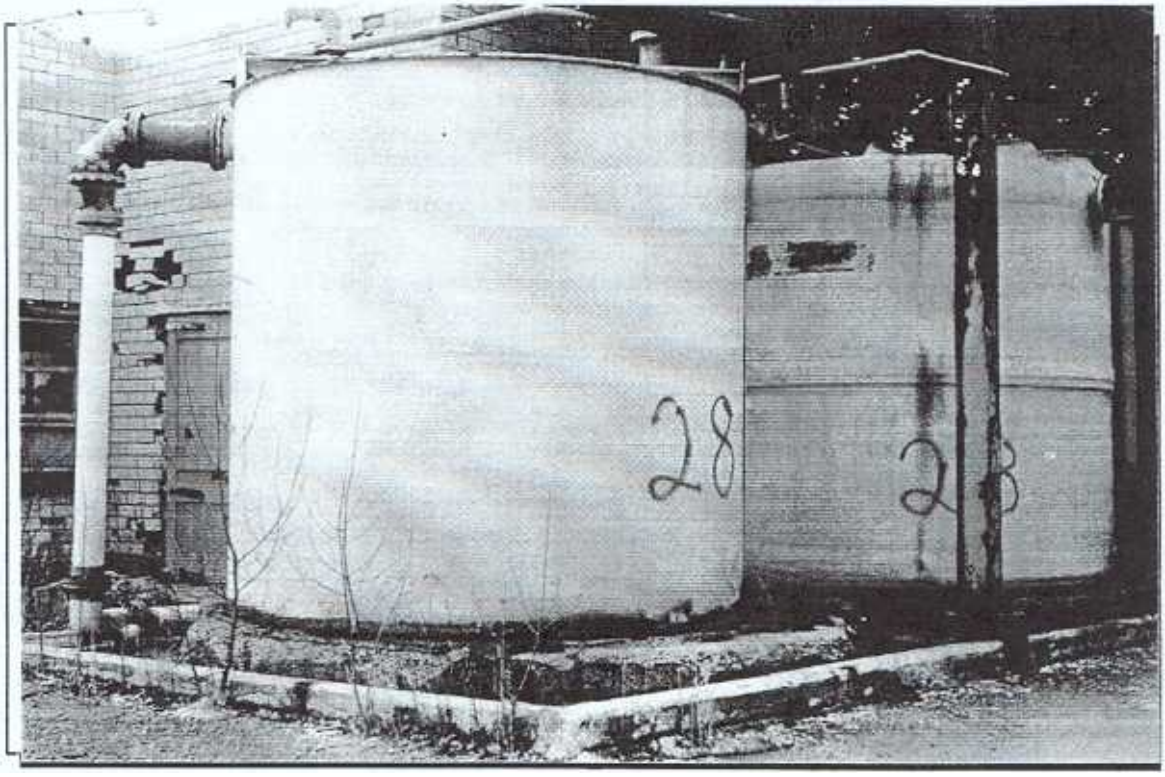
VESSEL INVENTORY I

80 0 80
" = 80'

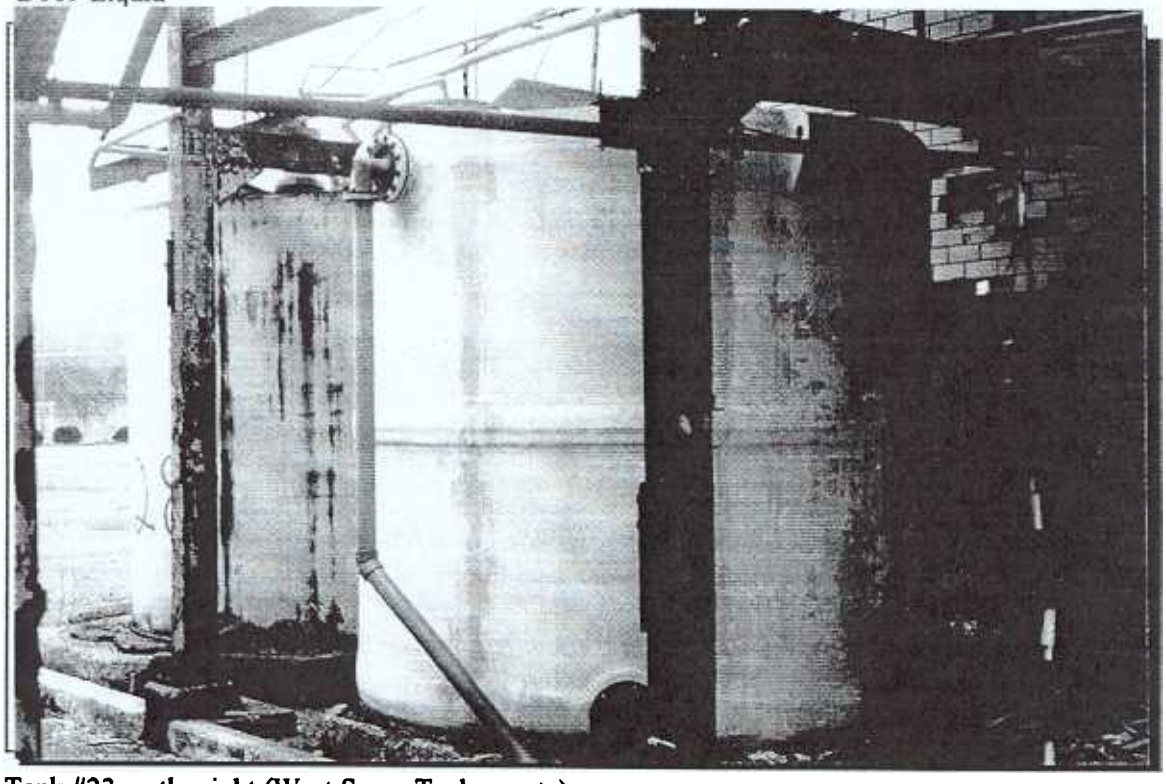
Dec. 1998

XXXXXXXXXX

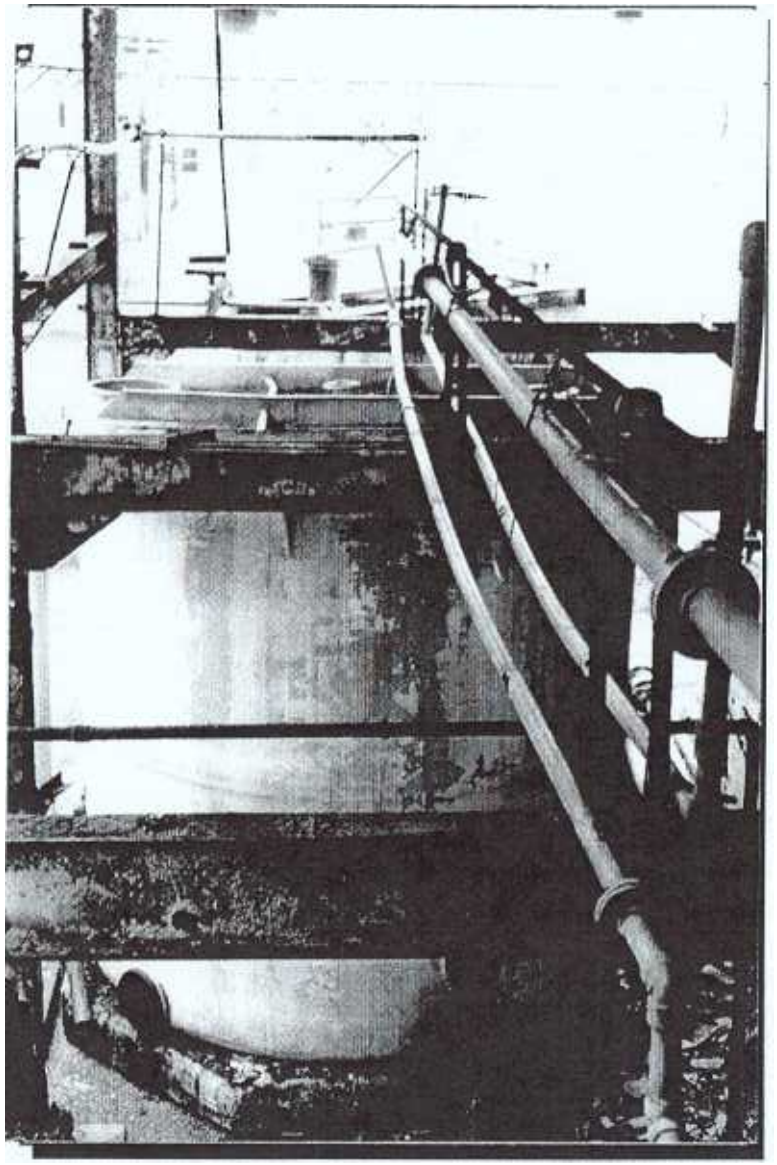
O'BRIEN & GERE ENGINEERS, INC.



Tanks #28 and #23, the East and West Surge Tanks
D009 Liquid



Tank #23 on the right (West Surge Tank, empty)
Tank #28 on the left (East Surge Tank, 5' of liquid D009)



Looking East from the Salt Plant at the Tops of Tanks #23 (foreground) and #28 (background)
D009 liquid, Tank #28 (Tank #23 is empty)

Tank #28, East Surge Tank, Looking west
D009 liquid, about 5'

Health & Safety Plan

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AlliedSignal Inc.

Prepared by
OP-TECH Environmental Services, Inc
6352 Deere Road
P.O. Box 2153
Syracuse, NY 13220-2153

Kenneth Waldby, CSP

Reviewed by
O'Brien & Gere Engineers, Inc.
5000 Brittonfield Pkwy
P.O. Box 4873
Syracuse, NY 13221

David J. Wilson, CIH

December 1998

HEALTH & SAFETY PLAN

SECTION 1 GENERAL INFORMATION & ACKNOWLEDGEMENTS

CLIENT NAME: **O'BRIEN & GERE ENGINEERS - ALLIEDSIGNAL**

PROJECT NAME: **VACUUM TANK MATERIAL AND RELATED CLEANING**

PROJECT MANAGER: **CHRIS MYERS** JOB NUMBER:

PROJECT LEADER: **CHRIS MYERS** REVISION:

HEALTH & SAFETY OFFICER: **KEN WALDBY**

PREPARED BY: **KENNETH WALDBY, CSP** DATE: **11/24/98**

SHORT FORM APPROVED BY: DATE:

Corporate Health & Safety _____

Project Manager: _____

Project Leader: _____

SECTION 2: PROJECT INFORMATION

(1) WILL POTENTIAL HAZARDS TO PROJECT PERSONNEL EXIST (YES OR NO)

Physical: __YES_____(If yes, see Section 3)
Chemical: __YES_____(If yes, see Section 4)
Confined space entry: __YES_____(If yes, see Section 6)
Work zone control required: __YES_____(If yes, see Section 7)

(2) LOCATION INFORMATION

Client Name: **ALLIEDSIGNAL, INC**
Address: **P.O. BOX 6**
SOLVAY, NY 13206

Client Contact: **AL LABUZ** Phone: **315-487-4078**

OBG Contact: **JEFF BANIKOWSKI** Phone: **315-437-6100**

(3) WORK CLASSIFICATION: (check all that apply)

__ Hazardous (RCRA) __ Hazardous (CERCLA) _X_ Other
__ Construction __ T/LUST __ Active
__ Sanitary landfill __ Manufacturing __ Inactive

(4) PURPOSE OF FIELD VISIT(S): **OP-TECH PERSONNEL WILL VACUUM MATERIAL FROM DESIGNATED TANKS AND TRANSFER IT TO OTHER CONTAINERS FOR DISPOSAL.**

(5) TASKS: **OP-TECH PERSONNEL WILL VACUUM MATERIAL USING A VAC TRUCK. MATERIAL WILL BE STAGED ON LCP PROPERTY AT A LOCATION SELECTED BY THE OWNER FOR DISPOSAL. AFTER THE TANKS ARE DRAINED THEY WILL BE CUT AND CLEANED OF SEDIMENTS AT A LATER TIME**

(6) OP-TECH ORGANIZATION

Personnel	Responsibilities
***CHRISTINE MYERS**	**PROJECT MANAGER**

NOTE: Identify project field leader/supervisor with an asterisk (*)

NOTE: This safety plan has been prepared for use by **OP-TECH Environmental Services, Inc.** employees. OP-TECH claims no responsibility for its use by others. The plan is written for the specific conditions, purposes, dates and personnel specified and must be amended if these conditions change.

Subcontractors whose work will be performed, or who otherwise could be exposed to health and safety hazards, will be advised of known hazards through distribution of information obtained by OP-TECH from others, and this Safety Plan. They shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations. All subcontractors are responsible for: (1) providing their own personal protective equipment; (2) training their employees in accordance with applicable Federal, State and local laws; (3) providing medical surveillance and obtaining medical approvals for their employees; (4) insuring their employees are advised of and meet the minimum requirements of this Safety Plan and any other additional measures required by their work activities; and (5) designating their own safety officer.

SECTION 3: PHYSICAL HAZARDS INFORMATION

(1) IDENTIFY POTENTIAL PHYSICAL HAZARDS TO WORKERS

X Confined space	X Steep/uneven terrain	X Falling hazards
X Heavy equipment	X Heat stress	__ Drum handling
__ Trenching hazards	X Extreme cold	X Noise
__ Explosive	__ Flammable	__ Combustible
__ Electrical Hazards	X Acid/Base	__ Caught in-between

Describe other unsafe environments **BENDING, LIFTING, SLIPPING, TRIPPING AND FALLING HAZARDS; VACUUM TRUCK HAZARDS**

(2) IS LOCKOUT/TAGOUT NECESSARY? Yes__ No X If yes, see attachment on Lockout/tagout.

(3) PROTECTIVE EQUIPMENT REQUIRED? Yes X No__ If yes, complete Section 9

(4) EXCAVATION PERMIT REQUIRED? Yes No X If yes, see attachment

(5) SAFETY EQUIPMENT REQUIRED

_ Harnesses	__ Non-sparking tools	X Lights
X Explosimeter	X Eye wash	__ Lockout/tagout kit
__ Blower	__ Shower	__ Safety cones
__ Lifeline	__ Barrier tape	X Communications - (verbal)
X Ladder	__ Fire extinguisher	__ Other Communications
X First aid kit	__ Emergency air horn	X Extra batteries

Describe other: **HEARING PROTECTION, STEEL TOE BOOTS, SAFETY GLASSES/GOGGLES, HARD HATS**

(6) See Section 10 for additional safe work practices.

SECTION 4: CHEMICAL HAZARDS INFORMATION

(1) IDENTIFY CONTAMINANTS

Known or suspected hazardous/toxic materials (attach tabulated data if available)

Media	Substances Involved	Characteristics
	WATER CONTAMINATED WITH MERCURY AND SODIUM HYDROXIDE	**CC, TO**
	WATER IN PRIMARY AND SECONDARY TANKS POSSIBLY CONTAMINATED WITH HCL	**CC, TO, TA**

Media types GW (ground water), SW (surface water), WW (waste water), AI (air), SL (soil), SD (sediment), LE (leachate), WA (waste), OT (other), WL (waste, liquid), WS (waste, solid), WD (waste, sludge), WG (waste, gas)

Characteristics CA (corrosive, acid), CC (corrosive, caustic), IG (ignitable), RA (radioactive, VO (volatile), TO (toxic), RE (reactive), UN (unknown), OT (other, describe), CO (combustible)

(2) DESCRIBE POTENTIAL HAZARDS FOR EACH MEDIA TYPE

ERYTHEMA (SKIN IRRITATION THAT WILL CAUSE REDDENING)
AVOID SKIN AND EYE CONTACT WITH MATERIAL, AVOID INHALATION OF MATERIAL

(3) **OP-TECH SPILL CONTINGENCY IS LOCATED IN THE BACK OF THIS HASP.**

(4) OVERALL PROJECT HAZARD LEVEL:

__ Serious X Moderate __ Low Unknown

(5) MONITORING REQUIRED? Yes X No_

If yes, identify monitoring equipment below:

__ Hnu meter (lamp 10.2 Ev)
X Explosimeter (LEL)
__ Organic vapor analyzer (OVA)
__ Geiger counter
__ Respirable dust monitor
X Other

Describe other: **HG VAPOR ANALYZER**

NOTE: IN THE EVENT OF CONFINED SPACE ENTRY, OXYGEN/CARBON MONOXIDE/HYDROGEN SULFIDE DETECTORS WILL BE USED AS PART OF THE EXPLOSIMETER.

Monitoring equipment is to be calibrated according to manufacturer instructions. Record measured levels in logbook.

Describe method of surveillance (e.g., continuous, periodic, etc.) Indicate action levels and PPE required (total vapors, oxygen, LEL, radiation, other). Confined Space monitoring will be conducted before entry and periodically after entry. The standards to be used are as follows:

OXYGEN =	**GREATER THAN 19.5 %**
LOWER EXPLOSIVE LIMIT (LEL) =	**LESS THAN 10 %**
CARBON MONOXIDE =	**LESS THAN 35 PPM**
HYDROGEN SULFIDE =	**LESS THAN 10 PPM**
HG VAPOR =	**0.10 MG/C^3 (SKIN) NIOSH**

(6) BLOODWORK NECESSARY?; BEFORE AND AFTER WORK? Yes_ No X, IF YES, AT WHAT FREQUENCY?

OP-TECH PERSONNEL FOLLOW A COMPANY MEDICAL MONITORING SURVEILLANCE PROGRAM AND ARE TRAINED IN ACCORDANCE WITH 29 CFR 1910.120, (HazWOper) REGULATIONS FOR HAZARDOUS WASTE WORK.

(7) PROTECTIVE CLOTHING REQUIRED? Yes X No_
If yes, complete protective equipment form (Section 9).

(8) RESPIRATORS REQUIRED? Yes X No_
If yes, complete Section 9 and respirator log (Attachment 2).

SECTION 5: HAZARD COMMUNICATION PROGRAM

For each chemical introduced to the work area by OP-TECH Environmental Services, Inc. (e.g. decontamination liquids), Material Safety Data Sheets (MSDSs) are attached to this form for review by all field personnel. These chemicals include the following:

NONE

SECTION 6: CONFINED SPACE ENTRY

(1) WILL CONFINED SPACE ENTRY TAKE PLACE? **YES, IF NECESSARY.**

If yes, complete the Confined Space Entry Permit (attached), prior to entering each confined space, each work shift. The Confined Space Permit must be posted outside the confined space. Follow the Confined Space guidelines of OP-TECH's Health & Safety Manual (Attached).

SECTION 7: AREA SECURITY AND CONTROL

THE SITE IS SUROUNDED BY A CHAIN-LINK FENCE. PERSONNEL MUST SIGN-IN BEFORE ENTERING THE SITE. ONLY AUTHORIZED WORKERS ARE TO BE IN THE WORK AREA DURING OPERATIONS. THE WORK AREA IS TO BE SECURED DURING WORK AND AFTER WORK. VEHICLES NOT LEAVING THE WORK AREA WILL BE SECURED AFTER HOURS.

PERSONNEL ARE TO BE AWARE OF THEIR SURROUNDINGS AT ALL TIMES.

7a: DECONTAMINATION: PERSONNEL WILL DECONTAMINATE PRIOR TO LEAVING THE WORK AREA OR EATING/DRINKING. PERSONAL PROTECTIVE EQUIPMENT WILL BE DISPOSED OF AFTER THE WORKDAY. IF NECESSARY, EQUIPMENT WILL BE DECONTAMINATED BEFORE LEAVING WORK AREA.

AT A MINIMUM, A BOOT AND GLOVE WASH WILL BE PROVIDED FOR PERSONNEL. TYVEK SUITS WILL BE DISPOSED OF DAILY.

DECONTAMINATION WILL AT MINIMUM, CONSIST OF:

1. **A BOOT AND GLOVE WASH/RINSE**
2. **PROTECTIVE SUIT REMOVAL**
3. **RESPIRATOR (IF NECESSARY) REMOVAL**
4. **FIELD WASH (WASH FACE AND HANDS)**

SECTION 8: EMERGENCY INFORMATION

TO BE POSTED IN TRAILER/OFFICE OR IN FIELD VEHICLE:

(1) EMERGENCY ESCAPE ROUTES (attach map) **TO BE DISCUSSED BY THE SUPERVISOR/FOREMAN.**

NOTE: When work area is evacuated due to an emergency, personnel shall not re-enter until:

a. The conditions resulting in the emergency have been corrected.

b. The hazards have been reassessed.

c. The Safety Plan has been reviewed.

d. Personnel have been briefed on any changes in the Safety Plan.

(2) LOCAL RESOURCES **CALL 911 IN THE EVENT OF AN EMERGENCY**

(3) CORPORATE RESOURCES:

CHRISTINE MYERS **Beeper # 419-0317**		**(315) 463-1643**	**work**
KEN WALDBY, CSP **Beeper # 249-1198**	**(Corporate H&S Officer)**	**(315) 463-1643**	**work**

(4) DIRECTIONS TO NEAREST HOSPITAL: **TAKE ROUTE 690 EAST TO ROUTE 81 SOUTH TO ADAMS STREET EXIT. GO THROUGH THE LIGHTS *STAY IN THE CENTER LANE*, AT THE END OF THE STREET, TURN LEFT AND GO TO UPSTATE MEDICAL CENTER, ON YOUR RIGHT.**

SEE FIGURE 1 FOR HOSPITAL ROUTE MAP.

(5) WHOM TO NOTIFY IN CASE OF ACCIDENT: **CHRISTINE MYERS AND/OR KEN WALDBY**

(6) DESIGNATED SAFETY OFFICER DIRECTLY RESPONSIBLE TO THE MANAGER FOR SAFETY RECOMMENDATIONS IS: **THE SENIOR OP-TECH PERSONNEL AND/OR KEN WALDBY.**

SECTION 9: PROTECTIVE EQUIPMENT LIST

Task	Respirators & Cartridge	Clothing	Gloves	Boots	Other
VACUUMING	**D or ½FC-A**	**P**	**N/T**	**S**	**H/G/F**

PLACE DUCT TAPE OVER ALL OPENINGS

Resp.	Cartridge	Clothing	Gloves	Boots	Other
B=SCBA	O=Organic vapor	T=Tyvek	B=Butyl	F=Fireman	F=Face Shield
FFC=Resp.	G=Organic vapor & acid gas	P=PE Tyvek	L=Latex	L=Latex	G=Goggles
½FC=Resp.	M= Mercury vapor	B=Barricade	P=PVC	P=PVC	
PC=PAPR	H=HEPA (HEPA)	S=Saranex	N=Neoprene	N=Neoprene	L=Glasses
E=Escape	P=Particulate	C=Coverall	T=Nitrile	S=Safety	H=Hardhat
D=No Respirator					
	C=Combination organic vapor & HEPA Filter		V=Viton		
			W=Work		
	A = Acid gas				

*Action levels for upgrade/downgrade

SECTION 10: SAFE WORK PRACTICES

THE FOLLOWING WORK PRACTICES MUST BE FOLLOWED BY WORK PERSONNEL

1. Smoking, eating or drinking are forbidden.Ignition of flammable liquids within or through improvised heating devices (e.g., barrels) is forbidden.
2. Contact with samples, excavated materials, or other contaminated materials must be minimized.
3. Use of contact lenses is prohibited.
4. Do not kneel on the ground when collecting samples.
5. Fall Protection is to be employed for potential falls over six feet.
6. All electrical equipment must be plugged into ground fault interrupter (GFI) protected outlets. The following is a list of electrical equipment for this job:
   NONE

SECTION 11: EMPLOYEE ACKNOWLEDGEMENTS:

I acknowledge that I have reviewed the information in this Safety Plan. I understand the hazards as described and agree to comply with the contents of this Plan.

EMPLOYEE (print)	SIGNATURE	DATE

THIS SAFETY PLAN WILL BE PART OF THE JOB FILE AT THE COMPLETION OF THE PROJECT.

THE CORPORATE HEALTH & SAFETY PLAN WILL ACCOMPANY THIS SAFETY PLAN DURING THIS PROJECT.

LOCATION: _____ *JOB #*

SUPERVISORS/FOREMAN INSPECTION CHECKLIST

*SIGNATURE OF PERSON PERFORMING INSPECTION:*_____

Date and time: _____

VERIFY:

Buddy system is being used

PPE is being used and appropriately donned

OP-TECH personnel know the hazards of the project

OP-TECH personnel know where the Safety Plan is located

Decontamination is being performed

Fire extinguishers/first aid kit available

CHECK:

Chemical exposures to personnel (respirators used?)

Hazardous areas (marked off)

Mechanical hazards

Control measures in place (ventilation, water sprays, etc.) _____

Confined spaces (if any) - USE THE PERMIT FOR EACH ONE!

Excavation Permit/Hot Permit in use?

Lockout/tagout in place (if needed)

Heat/Cold stress - potential

Is water or other fluid available on the project? yes no

Is monitoring/sampling taking place? yes no

Are readings acceptable? yes no

Housekeeping procedures

Are drums properly labeled and stored? (if any) yes no

Check here if comments are made on the back

Confined Spaces

A. Introduction

OSHA has a standard, 29 CFR 1910.146, for permit-required confined spaces. The standard includes provisions for testing and entering confined spaces. The employee who enters a confined space may be subject to multiple hazards. The purpose of this section is to outline procedures to reduce these hazards.

B. Definitions

"Permit-required confined space" means a confined space (see definition below) that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere (see definition below).
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or by a floor which slopes downward and tapers to a smaller cross-section, or
4. Contains any other recognized serious safety or health hazard.

"Confined Space" means a space that:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry): and
3. Is not designed for continuous employee occupancy.

"Hazardous Atmosphere" means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);

2. Airborne combustible dust at a concentration that meets or exceeds its LFL (Note: this concentration may be approximated as a condition in which dust obscures vision at a distance of 5 feet (1.52 meters) or less);
3. Atmospheric oxygen concentration below 19.5% or above 23.5%;
4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in 29 CFR 1910 Subparts G or Z and which could result in employee exposure in excess of its dose or permissible exposure limit (Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment or ability to self-rescue, injury, or acute illness due to its health effects is not covered).
5 Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Program, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

"Non-permit confined space" means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

C. Confined Space Entry Program

1. Coordination with Host Employer (Owner)

The Supervisor/Foreman in charge of entry will:

a. Obtain any available information regarding permit space hazards and entry operations from the host employer (Owner);
b. Coordinate entry operations with the host employer (Owner), when both host employer personnel and OP-TECH personnel will be working near permit spaces;
c. Inform the host employer (Owner) of the permit space program that OP-TECH personnel will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.
d. Follow the Host Employers (Owners) confined space entry program whenever possible.

2 Determine classification of Confined Space

Should OP-TECH employees need to enter a confined space that has not been classified, then the following procedures will be used:

a. Determine whether the space meets the definition of a confined space as defined in Part B of this Section.
b. If the space meets the definition of a confined space, then determine whether it meets the definition of a permit-required confined space. If the confined space does not meet the definition of a permit-required confined space, employees may enter the space after the appropriate safety pre-cautions have been taken.
c. If the confined space requires a permit, refer to Part 3 of this section for the procedures to be followed under these conditions.

3. Preparations for Permit-Required Confined Spaces

The Supervisor/Foreman in charge of entry is responsible for:

a. Implementing the measures necessary to prevent unauthorized entry.
b. Identifying and evaluating the hazards before employees enter the permit space.
c. Specifying acceptable entry conditions on the "Safety, Work, Flame, Tank Entry, & Gas Test Permit" (An example is attached. Four-copy pressure sensitive forms are available from the Syracuse office).

d. Isolating the permit space and following lock-out/tag-out procedures as necessary.
e. Purging, inerting, flushing or ventilating the permit space as necessary to eliminate or control atmospheric hazards.
f. Providing signs and pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.
g. Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
h. Confirming that the necessary equipment is available and that employees are trained to use it as outlined on the permit.
i. Performing testing as described in Section 6.
j. Verifying that at least one attendant is stationed outside the permit space into which entry is authorized for the duration of the entry.
k. Verifying that the emergency rescue team has been notified (see Section 10).
Coordinating entry operations when employees of more than one employer are simultaneously as authorized attendants in a permit space, so that the employees of one employer do not endanger the employees of any other employers.
m. Prior to entry, signing the permit to authorize entry.
n. Posting the completed permit at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.
o. When a ladder is required to enter the confined space, the ladder must be tied securely and must not be removed while anyone is in the confined space.
p. Adequate lighting of an approved safety type must be provided.
q. All necessary safety equipment to be used by the person entering the confined space as well as for the safety watch will be checked.
r. Emergency procedures will be reviewed.
s. Smoking is prohibited inside of and within twenty feet of the confined space.
t. Spark proof hand tools and explosion proof equipment will be used.
u. If welding is to be performed in the confined space that previously or now contain combustibles, all residues, including dry scale or sediment must be removed. If it is not possible to remove all combustible materials, they must be covered with a non-combustible blanket.
v. At least one 20 lb. ABC multi-purpose fire extinguisher must be available for instant use in a confined space containing flammable gases or vapors.
w. Each person involved shall be trained on the hazards, as outlined in Section 4, how to recognize the hazards, and how to protect themselves from the hazards. Additionally, the attendants will be training on the use of rescue equipment and other duties outlined Section 8.

4. Training

Each employee who is required to enter a permit-required confined space will be trained in the safe performance of duties.

a. Training will be provided to each affected employee:
(1) before an employee is assigned duties which require entry into permit-required confined spaces,
(2) whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained, or

(3) whenever there is reason to believe either that there are deviations from the permit-required confined space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.

b. The training will be documented by the employees name, the signatures or initials of the trainers, and the dates of training. This documentation will be filed in the employees safety file and is available for inspection.

5 Procedures during entry

a. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.

b. The Foreman/Supervisor in charge of entry will terminate and cancel the entry permit when:

(1) Entry operations covered by the entry permit have been completed; or
(2) A condition that is not allowed under the entry permit arises in or near the permit space.

6. Procedures for Atmospheric Testing

a. Before an employee enters that space, the internal atmosphere will be tested, with a calibrated direct-reading instrument to determine if acceptable entry conditions exist, for the following conditions in the order given:
(1) Oxygen content
(2) Flammable gases and vapors
(3) Potential toxic air contaminants (carbon monoxide (CO), hydrogen sulfide (H_2S) and mercury vapor)

b. If isolation of the space is infeasible because the space is large or is part of a continuous system, such as a sewer, pre-entry testing will be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions will be continuously monitored in the areas where authorized entrants are working.

c. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of 4 feet in the direction of travel and to each side. If a sampling probe is use, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

7. Authorized Entrants

The Foreman/Supervisor in charge of entry is responsible for confirming that all authorized entrants:

a. Know the hazards they face during entry, including information on the mode, signs or symptoms, and consequences of exposure;
b. Properly use equipment as required by this section;
c. Communicate with the attendant as necessary to enable the attendant to monitor

entrants status and to enable the attendant to alert entrants of the need to evacuate the space;

d. Alert the attendant whenever:
   (1) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
   (2) The entrant detects a prohibited condition;

e. Exit from the permit space as quickly as possible whenever:
   (1) An order to evacuate is given by the attendant or the entry supervisor;
   (2) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation
   (3) The entrant recognizes a prohibited condition, or
   (4) An evacuation alarm is activated.

8. Attendants

The Foreman/Supervisor is charge of entry is responsible for confirming that attendants:

a. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure;

b. Is aware of possible behavioral effects of hazard exposure in authorized entrants;

c. Initial entry will be accomplished with an attendant stationed outside for the purpose of immediate assistance.

d. Will never enter into the permit space for the purpose of an attempt to rescue the entrants.

e. Will use any rescue equipment provided for their use and perform other rescue and emergency duties, without entering the permit space.

f. Will be responsible for continuously maintaining an accurate count of all authorized entrants in the space.

g. Communication between attendants and entrants will be maintained continuously during entry.

h. Attendants will order authorized entrants to evacuate a space immediately when:
   (1) The attendant observes a prohibited condition.
   (2) The attendant detects behavioral effects hazard exposure.
   (3) The attendant detects a situation outside the space which could endanger entrants.
   (4) The attendant detects an uncontrolled situation within the permit space.
   (5) The attendant is monitoring entry in more than one permit space and must focus attention on the rescue of entrants from one of those spaces.
   (6) The attendant must leave the work station.
   (7) If the attendant cannot effectively and safely perform all the duties required under this section.

   Attendants will summon rescue and other emergency services as soon as the attendant determines that the authorized entrants may need assistance to escape from the confined space hazards.

   Attendants will warn unauthorized persons away from the space, request that unauthorized persons exit immediately if they have entered the space, and inform authorized entrants if unauthorized persons have entered the space.

k. Attendants will perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

9. Supervisor/Foreman

Employees of OP-TECH authorizing or in charge of entry will:

a. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure;
b. Determine that the entry permit is properly filled out.
c. Determine that the entrants and attendants are properly trained.
d Determine that necessary procedures, practices and equipment for safe entry are in place, including verifying rescue services are available and that the means of summoning them are operable.
e. Remove unauthorized individuals who enter or attempt to enter the permit space during entry operations.
f. Periodically monitor to determine that confined space operations remain consistent with the terms of the entry permit and that acceptable entry conditions are present.
g. Cancel authorization and terminate entry whenever entry conditions are not present.
h Take the necessary measures for concluding an entry operation, such as closing off a permit space and canceling the permit, once the authorized work has been completed.
i. The supervisor/foreman in charge of authorizing the confined space entry may also be an entrant or an attendant.

10. Rescue and Emergency Services

a. Arrangements must be made prior to entry under which a rescue team will respond to a request for rescue activities. The outside rescue team will be informed of the hazards they may confront when called to the rescue. .
b. To facilitate non-entry rescue, retrieval systems or methods will be used whenever an authorized entrant enters a permit-required confined space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems will meet the following requirements:
   (1) Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrants back near shoulder level, or above the entrant's head. Wristlets may be used in lieu of the chest or full body harness if it can be demonstrated that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
   (2) The other end of the retrieval line will be attached to a mechanical device such as a wench or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device will be available to retrieve personnel from vertical type permit-required confined spaces more than 5 feet deep.
c. If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information will be made available to the medical facility treating the exposed entrant.

D. Records

Permits will be filed with other pertinent project health and safety information and filed in the job file.

E. Evaluation of Program

The Permit-Required Confined Space Entry Program will be reviewed once per year, using the canceled permits and revise the program as necessary to confirm that employees participating in entry operations are protected from permit space hazards.

ANY PROBLEMS WITH THE PERMIT OR ENTRY DURING THE JOB ARE TO BE DISCUSSED WITH THE HEALTH & SAFETY SPECIALIST FOR CORRECTION IN THE FUTURE.

F. Exception to Permit Requirements

If the only hazard posed by the confined space is an actual or potential hazardous atmosphere and it can be demonstrated that continuous forced air ventilation alone is sufficient to maintain that confined space for safe entry, then a permit is not required under the regulations. However, it is OP-TECH's policy to require a permit for entries that meet the definition of a "permit-required confined space" (see Section B). If a project requires regular entry into a confined space that does not require a permit under the regulations, the Operations Manager must be contacted and the permit waiver will be considered on a project by project basis. Special procedures to be followed under these conditions will be coordinated by the Operations Manager.

SPILL CONTINGENCY PLAN

FOR

OP-TECH OPERATIONS

OP-TECH ENVIRONMENTAL SERVICES, INC.

1998

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1.0 INTRODUCTION

This Spill Contingency Plan is designed to minimize hazards to human health or to the environment from unplanned releases of hazardous substances or wastes to the air, soil, or surface water during work activities or emergency response. The provisions of this plan will be carried out immediately whenever there is a release of hazardous substances or wastes, which could threaten human health or the environment. The drum containment area and hazardous waste tanker storage areas are subject to this contingency plan.

2.0 NOTIFICATION

Should a spill or release occur during work activities, **ALLIEDSIGNAL** will be contacted along with an OP-TECH representative at the home office.

The OP-TECH supervisor or foreman will be in charge of OP-TECH personnel and will direct operation of the clean up. The supervisor or foreman will inform **ALLIEDSIGNAL** of the action OP-TECH is taking to mitigate the situation. **ALLIEDSIGNAL** may exercise the right to protect the environment or property using their own resources or with OP-TECH assistance.

If necessary, **ALLIEDSIGNAL** will make the determination to contact the State DEC or other appropriate agencies. If **ALLIEDSIGNAL** does not make the contact, advise OP-TECH Project Manager.

3.0 EMERGENCY PREPAREDNESS

OP-TECH personnel are trained in Hazardous Waste Operations and emergency response in addition to the typical clean up operations the normal work dictates. Supervisors will verify that maintaining the following preparedness and prevention program minimizes spills and similar incidents. For example, during removal operations, plastic sheeting or other materials will be used as a precautionary preparedness measure.

Proper work practices will be adhered to during the tasking. These work practices will be in addition to proper personal protective equipment (PPE) and materials that will be used. Spill equipment will be on hand in case of a release and will be strategically located and capable of providing secondary containment provision quickly and easily around a spill. Designated storage areas for materials/waste will be labeled.

The company does not permit smoking or initiating a source of ignition where flammable materials may be stored or used. Fire extinguishers with an ABC rating will be available during work activities.

Communications during work activities will be verbal command when personnel are in close proximity of each other. Additionally the use of a buddy system will be utilized during sampling and cleaning activities. If in the event those workers are not in close proximity of each other, air horns or car horns will be used to notify OP-TECH workers if an emergency exists.

4.0 CLEAN-UP ACTIVITIES

The following procedures will be used to mitigate an unplanned release:

a. The individual in-charge will contact the OP-TECH home office and the ALLIEDSIGNAL point of contact, Al Labuz at 487-4078 regarding the situation.
b. Based on the spill size, the individual in-charge will contact on-site personnel and determine the equipment that is available to control the product spread to and around the area.
c. If the product is in danger of flowing into a drain(s), the drain(s) will be covered with pads/pillows or plastic as soon as possible. If the product is in danger of flowing into surface water, pads and pillows will be used to stop or slow the flow. Booms will be placed around the pads to exclude the product from the drain. If necessary, dams or dikes will be constructed.
d. Sand, Fullers Earth or similar product ("Speedy-Dry"), will be used to absorb or slow the product flow.
e. If additional assistance is needed, the Massena Branch Office will be contacted for supplies and manpower.
After the product is controlled and/or cleaned up, disposal procedures will commence in accordance with ALLIEDSIGNAL's procedures and/or Federal, State or Local regulations.
g. If the product is in a large area where it is not feasible to use pads or pillows and fullers earth initially, a vacuum truck or similar device may be used to recover the product. After the majority of the product is removed, reference procedures a through f of this section to complete the task.
h. All PPE and material used in the release will disposed of in accordance with procedure e of this plan.
Personnel will decontaminate themselves and emergency equipment before leaving the site.
j. An incident report will be written by the site Supervisor/Foreman as to the sequence of events that lead to the release.
k. The report will be given to the OP-TECH Branch Manager and a copy will be given to OP-Tech Health & Safety.

AGENCIES

APPENDIX 1

Local Authorities	**911**
ALLIEDSIGNAL - Al Labuz	487-4078 or Cell 427-4855
OP-TECH Environmental Services, Inc.	SBO - 463-1643 MBO - 764-1917
OP-TECH Health & Safety (Beeper)	Ken - 249-1198
New York State Spill Hotline	1-800-457-7362
EPA Hotline	1-800-621-8431
National Response Center	1-800-424-8802
CHEMTREC	1-800-434-9300

FIGURES

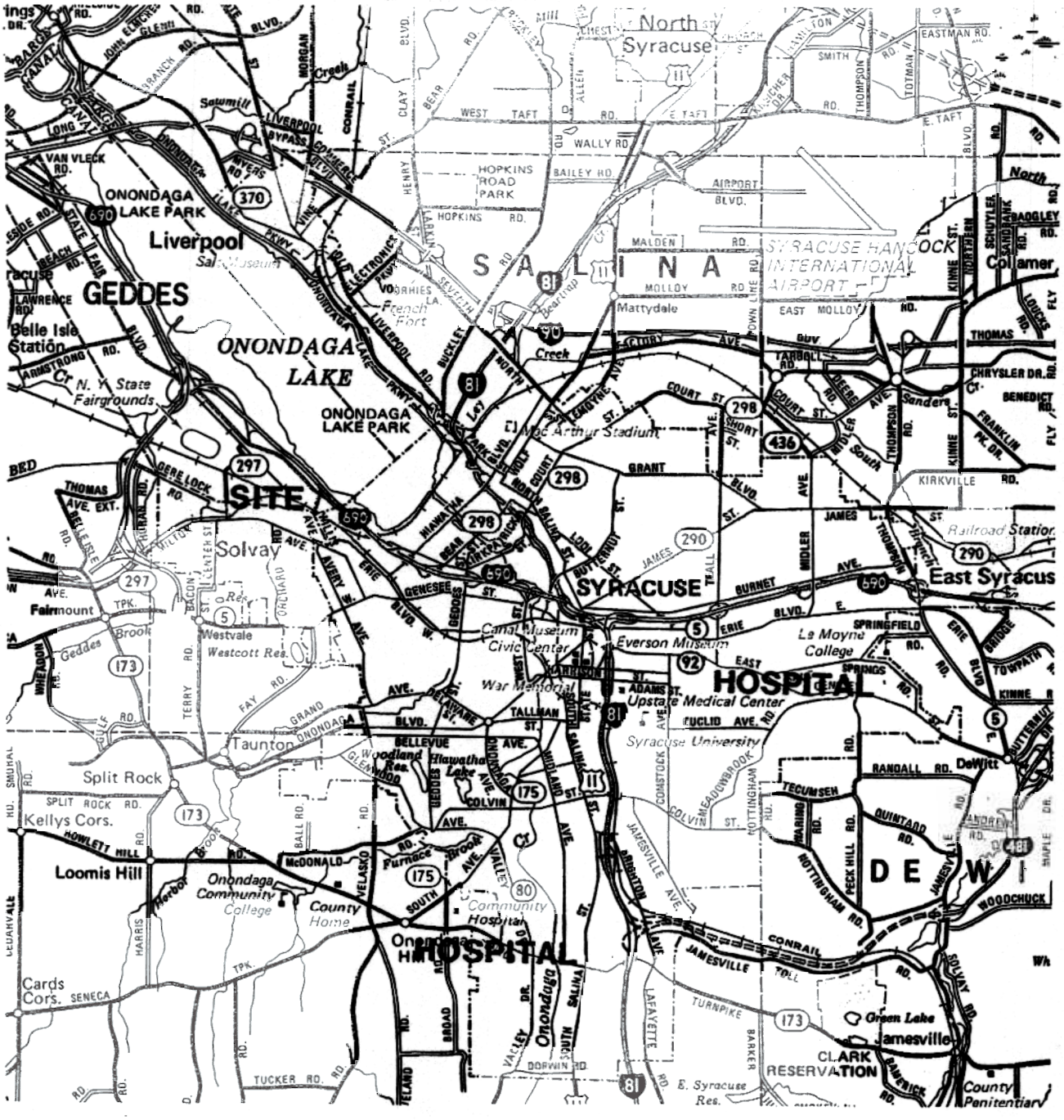

FIGURE 1-1 GENERAL SITE/HOSPITAL LOCATION MAP

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O'BRIEN & GERE ENGINEERS, INC