UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 W. JACKSON BOULEVARD
CHICAGO, IL 60604

FOCUSED SITE ASSESSMENT INSPECTION REPORT

MEMORANDUM TO FILE

INSTALLATION NAME:	Polychem Services, Inc., LLC
U.S. EPA ID No.:	ILD 980 578 876
LOCATION ADDRESS:	374 E. Joe Orr Road Chicago Heights, IL 60411
NAICS CODES:	325211 (Plastics, Material and Resin Manufacturing); 424690 (Other Chemical and Allied Products Merchant Wholesalers)
DATE OF INSPECTION:	December 26, 2012
EPA INSPECTOR:	Michael Valentino

PREPARED BY: Michael Valentino 1-15-13

Michael Valentino, Environmental Engineer — Date

REVIEWED BY: Robert Alan Snyder 1/15/13

Lorna M. Jereza, Chief
Compliance Section 1
RCRA Branch — Date

Purpose of Inspection:

The purpose of the inspection was to observe site conditions and evaluate whether conditions have worsened since February 2012, when EPA Office of Superfund and its contractor, WESTON, Inc. provided oversight to an emergency removal action (ER) conducted by Polychem Services, Inc. ("Polychem") and its contractors. The February 2012 ER included over-packing 60 leaking and/or damaged drums and placing a berm (fabric absorbent socks) along the northwestern corner of the site.

Site History:

July 2007	Illinois Environmental Protection Agency (IEPA) first inspects Facility (then Heartland Polymers, Inc.).
August 2007	IEPA addresses violations of RCRA in Violation Notice Letter to Heartland Polymers, Inc.
December 2007	IEPA rejects Heartland Polymer, Inc.'s Compliance Commitment Agreement.
May 2008	IEPA inspects the facility, now operated by Polychem Services, Inc. IEPA finds more than 500 drums and totes outside at the Facility and approximately 500 drums of usable solvent inside the Facility.
December 2008	IEPA refers the case to EPA Region 5 for enforcement.
November 2009	EPA first inspects the Facility. Situated along the western, northern and eastern sides of the Site were nearly 500 containers consisting of 55-gallon steel drums, totes and poly bags. Aisle space in many locations was not sufficient to allow for ease of human movement or for emergency equipment to be easily moved in and out, such as over-pack drums. At the time of the inspection, the drums had been on-site for more than 180 days.
July 2010	IEPA inspects the Facility, and observes liquids running off-site to a manhole in the street, leaking poly bags, open containers and evidence of historical spillage onto the Facility's blacktop.
August 2010	EPA inspects the Facility, and observes approximately 550 to 600 55-gallon steel drums staged on the blacktop throughout the facility, many of which were unlabeled, found to have illegible labels or were inaccessible or non-discernable. At least 110 drums had hazardous waste labels that were either dated May 12, 2009, or left undated. There were also more than 200 totes on site on the

	day of the inspection, the vast majority of which were believed to contain spent scrubber solution.
October 2010	EPA issues a Request for Information under RCRA Section 3007 to Polychem Services, Inc. and Heartland Polymers, Inc.
March 2011	EPA National Enforcement Investigations Center investigates the Facility and conducts sampling of containers.
December 2011	Land and Chemicals Division (LCD) referred the Site to the Superfund Division (SFD) for investigation and potential removal action.
January 2012	EPA (SFD and LCD) inspect the Facility, and observed at least 130 drums of hazardous waste on the west side of the Site. EPA observed frozen liquids on the ground near these drums.
January 2012	EPA SFD conducted a Site Assessment under the Comprehensive Environmental Response, Compensation and Liability Act. The Site Assessment discovered 671 containers on-site, of which 59 were leaking and 46 were open.
February 2012	Polychem contractors performed an emergency response under EPA supervision, and over-packed 60 leaking drums and containers, secured lids on 17 other drums, secured eight open totes and stopped offsite releases of hazardous substances or pollutants in the northwest region of the Site by placing absorbent booms along the western fence line and near the area where drums were observed to be leaking in the northwest region of the Site.
March 2012	EPA issues a Request for Information under RCRA Section 3007 to Polychem Services, Inc., Heartland Polymers, Inc., and JAS Environmental, Inc.
September 2012	EPA issues a RCRA 7003 Unilateral Administrative Order to Polychem Services, Inc., Polychem Holdings, Inc., Heartland Polymers, Inc., and Heartland Polymers Realty, Inc.

Participants:

Tom Wiggins, Business Manager, Chemtech Services, Inc. (ph: 630-429-3640; email: twiggins@chemtechservicesinc.com) and Mark Knight, Principal, Arrow Consulting Group, LLC (ph: 219-808-8686; email: mjknight@arrow-cg.com) represented Polychem. Michael Valentino, RCRA Inspector, Land and Chemicals Division, and Ramon Mendoza, On-Scene Coordinator, Superfund Division, represented EPA Region 5. The

Chicago Heights Fire Department (CHFD) was represented by Fire Chief James Angell and Assistant Fire Chief Steve Kozlowski.

Site Description:

Polychem operates a medium-sized chemical conversion facility occupying a single building housed under approximately 25,000 square feet of roof and resting on approximately four acres of property in an industrial area of Chicago Heights, Illinois. The site is located approximately one and one-half miles east of I-394 (Bishop Ford Freeway) and one mile north of Route 30 (Lincoln Highway), and is set back to the south of Joe Orr Road.

Polychem recovers dimethyl ethyl amine (DMEA), dimethyl isopropyl amine (DMIPA) and triethylamine (TEA) from spent scrubber solutions from foundries under a tolling agreement managed by Chemtech Services, Inc. DMEA, TEA and DMIPA are used in foundry operations to cure phenolic urethane cold box binders (PUCB). The amine, which accelerates curing of the sand in the cold box, is vaporized in the PUCB sand cores and subsequently captured in a scrubber which utilizes an aqueous solution of a strong acid, typically H_2SO_4.

Spent amine scrubber solution containing DMEA, TEA and DMIPA are received in 250-gallon poly totes and processed first by introducing a strong acid in a continuous stirred tank reactor (CSTR). From the CSTR the DMEA vapors are distilled and condensed and then sent to a distillate receiving tank where they are subsequently packaged into 110-gallon steel vessels (Manchester tanks) and sold to Chemtech under a Multiple Release Purchase Order on a converted per-pound basis. TEA and DMIPA are sent to a holding vessel for an additional drying step prior to being packaged and sold to Chemtech. The process generates sodium sulfate salts and wastewater, both of which are nonhazardous.

Polychem presently employs six people. Hours of operation are 6:00 am to 4:00 pm, Monday through Friday.

Arrival and Pre-Meeting:

I arrived at the site at approximately 8:50 am CST on December 26, 2012. I waited in the parking lot to the south of the building as I awaited the arrival of OSC Mendoza and CHFD representatives. Fire Chief Angell and Asst. Fire Chief Kozlowski arrived within three minutes, followed shortly after by OSC Mendoza. We spoke briefly among ourselves before proceeding indoors where we were met by Messrs. Wiggins and Knight. Mr. Wiggins led us to a conference room on the 2nd floor.

We began the meeting at 9:10 am. Mr. Wiggins provided a brief overview of recent efforts to consolidate waste streams and to segregate Polychem waste inventory from Heartland Polymers, Inc. waste inventory.

Mr. Wiggins said amine recovery operations had since started again. He said that in calendar year 2012, he shipped off-site approximately 1.5 million pounds of nonhazardous wastewater. In the amine recovery process, sodium sulfate precipitates out at 87°F. The sodium sulfate consists of approximately 50% salt cake and 50% water. The water is skimmed off the top and out-hauled to Liquid Environmental Solutions.

Mr. Wiggins said that Polychem previously made solvent-based paints and that xylene was used to clean out reactors. Most of the hazardous waste streams on-site are solvents and resins with a low flash (< 140°F). Resins are off-spec materials left from prior site operations.

Materials on-site include resins (these are all legacy materials, according to Mr. Wiggins), nonhazardous materials from the recovery of amines (brine salts and wastewater) and scrubber solutions. Scrubber solutions received in totes from foundries are assigned a tracking number upon receipt for each tote. Each tote is then assigned a batch number for processing on-site. Spent sodium sulfate salt from the process (a nonhazardous by-product of the amine recovery process) is also assigned a batch number for each tote. This allows for the internal tracking of each tote and its associated time to be processed upon arrival at the site.

Mr. Wiggins, upon questioning, said that the materials presently in the stacker crane room are the responsibility of Polychem. He further stated that there are at most 40-50 drums in the stacker crane room, and he expects most will not be characterized as hazardous waste. If any of the materials in this room are deemed to be off-spec, Polychem agrees to include them in the Work Plan and to manage as hazardous waste if so characterized.

Mr. Wiggins said Polychem performed inventory of the contents of all indoor tanks. He provided an inventory, dated November 20, 2012, which included indoor tanks, outdoor tanks (tank farm along western edge of the site) and containers (totes, drums and pails) outdoors (segregated into distinct areas for Heartland materials and Polychem materials, the latter of which were moved into seven storage areas in the southeast, east, northeast and north-central portions of the site). (Attachment No. 1)

Mr. Wiggins and Mr. Knight presented a summary of four disposal options Polychem will include in the Work Plan to be submitted as required by the 7003 Unilateral Administrative Order. These options include: (i) bulk loads to a cement kiln (Essroc Italimenti in Logansport, Indiana); (ii) fuel blending and use as fuel; (iii) beneficial re-use downstream in lieu of commercial chemical product by Lonestar Truck Company to clean out tanker trucks; and (iv) beneficial re-use downstream in lieu of commercial chemical product by a paint company to clean out its reactor vessels and tanks.[1]

[1] The beneficial re-use options must be weighed by EPA in light of the ongoing speculative accumulation and storage of hazardous waste for greater than 90 days (since at least May 12, 2009 to December 26, 2012).

Polychem proposes to blend solvents in it reactor vessel and pipe to one of five 6000 gallon tanks. It will blend in 6000-gallon increments. It expects a 10% reduction in amine production due to needing the reactor vessels, but the reactor vessels allow pressure relief venting and are the safest place to blend the solvents according to Mr. Wiggins.[2] Polychem anticipates needing three months to completely remove all bulked solvents.

Polychem has taken a blend from approximately 50 totes and 30-40 drums.[3] Polychem has done compatibility testing and run analyses for VOCs, SVOCs, total metals, flash point and pH on this composite. (Attachment No. 2) The composite consists of approximately 46% total xylene, by weight, and has a flash point of 84°F. Mr. Wiggins referred to the solvent blending/off-site disposal program as Polychem's "CT-23 Program."

Mr. Wiggins said that once approval to proceed is given, Polychem can process 30,000 gallons in three to four week cycles. Solvents would be blended using the reactor vessels under a nitrogen blanket and would be transferred to one of five 6000-gallon tanks, from which the solvents would be off-loaded to a tanker truck.

Mr. Wiggins said the one factor which could delay matters is getting the analyses completed. He expects all solvents and resins under the CT-23 Program can be removed off-site within two to three months.

Mr. Wiggins also said that cold weather is also part of the hold-up, as some materials are more viscous than others. He said the pour point of the solvent blend was -90°F.[4]

Chief Angell asked if there are any inherent dangers in Polychem's proposed solvent blending operations. Mr. Wiggins replied with five points: (i) none of the materials that will be included in the CT-23 Program are reactive; (ii) the blend will be a low flash[5] mixture because it will consist of low flash components, and therefore Polychem will maintain a nitrogen blanket on all blend tanks and reactors. Mr. Wiggins said that Polychem is considering removing its now mothballed solvent still and on its footprint erecting a nitrogen tank. All blending of solvents to occur will take place under a nitrogen blanket because of the low flash characteristic and fire potential of the solvents to be blended. If Polychem does not install the nitrogen tank it will use nitrogen canisters (at is presently employs in its amine recovery reactors to provide a nitrogen blanket in the head space of those reactors). Polychem is speaking with both U.S. Gas and Air Products along these lines; (iii) all fans are equipped to exhaust solvent vapor leaks to roof vents;

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[2] At the time of the site visit, Polychem was only processing in Reactors nos. 1 and 2. Reactor no. 1 is a 4800 gallon vessel which operates at 60 psi. Reactor no. 2 is an 1800 gallon vessel which also operates at 60 psi. Reactor no. 3 is a 400 gallon vessel which operates at 100 psi.

[3] The composite sample was taken on November 15, 2012.

[4] The solvent blend, as stated above, is about 46% total xylene by weight. The pour point for xylene is 0°F, which is significantly higher than that measured for the solvent blend.

[5] Flash point below 140°F, therefore mixture will be a characteristic hazardous waste (D001).

(iv) all tanks and reactors will be grounded to reduce possibility of sparking; and (v) chemical fire extinguishers are placed throughout the plant.[6]

At this point that Chief Angell said that the fire department would use foam to fight a fire at the site, and that CHFD does have foam.

Mr. Wiggins said that one safety concern of Polychem was to move flammables closer to the center of the facility and further from the property line. On the east end of the site, Polychem has placed totes containing sodium sulfate salts and moved its solvent drums west of the salt totes. However, the Heartland materials, much of which consists of spent flammable solvents, remains within 50 feet of the west fence line, just north of the raw material outdoor tank farm.

Mr. Wiggins said that Polychem recovers about 200,000 pounds of amines annually, and is looking to increase production to 250,000-350,000 pounds per year.

Site Walk-Through and Observations:

We began the facility walk-through at approximately 10:15 am CST. Each of the participants identified above took part in the site walk-through.

During the course of the walk-through, I took thirty-seven (37) photographs on a Nikon Coolpix P4 digital camera, with 8.1 megapixel resolution.[7] These photographs are contained in the attached photo log. They are true and representative of the conditions I observed at the installation on the date of the CEI. All photographs were taken between 10:27 am and 11:04 am CST. Descriptions of the photographs are provided directly below each in the attached Photo Log. (Attachment No. 3)

The site walk-through consisted of walking the perimeter of the site, beginning in the southeast corner and working counter clockwise around the site outdoors. We also went inside the production and processing building to tour the reactor vessels and the control room serving these, as well as the first floor where processed amines are metered through pumps into totes and canisters.

The attached photo log describes visual observations during the walk-through and the author refers the reader to this and the site summary findings below.

At the completion of the site walk-through we returned to the conference room at 11:10 am. The summary of findings incorporates key points raised during the close-out meeting.

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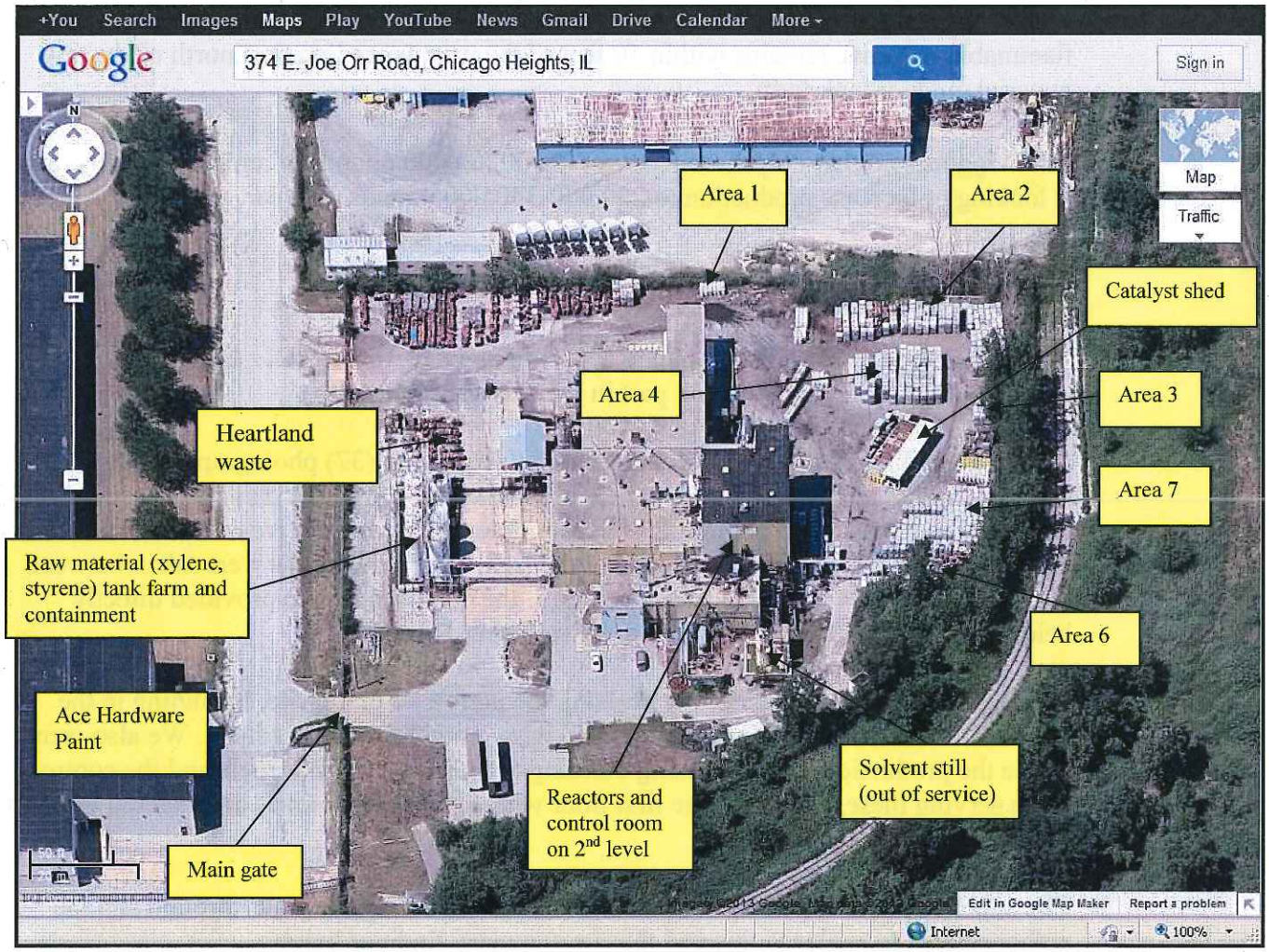
[6] During the site walk-through, CHFD confirmed that the type ABC fire extinguishers placed within the plant were compatible with the chemicals stored at the site.

[7] OSC Mendoza also took photographs during the walk-through. After reviewing the attached photo log, Mr. Mendoza acknowledged that his photos and those of this report's author were similar enough in content to only attach one photo log to this site summary report.

Site Aerial Photo:

The following aerial photo does not reflect site conditions at the time of the December 26, 2012 site visit, but rather it is included here to provide reference points for the attached photographs and photo summary table.



Summary of Findings:

- Heartland waste and Polychem waste have been segregated. Heartland wastes are on the west side of the site, north of the raw material tank farm, and apart from Polychem waste and amine scrubber solutions.
- Drums formerly in the northwest corner of the site have been moved to either the east side (Polychem ownership) or joined with drums on the west side (Heartland ownership, according to Polychem).

- Amine sulfate salts (process residues from amine recovery) are lined up along the eastern fence line, serving as a buffer to Polychem's flammable drums which are now more centrally located on the east side of the site.
- Polychem has an internal tracking system that identifies each incoming tote of spent amine scrubber solution, and each tote is assigned a batch number (processed in one of two active reactors). By-products of water and sodium sulfate (salt) are separated: water is sent offsite as nonhazardous (about 1.5 million pounds in 2012), and sodium sulfate totes are tracked according to their incoming batch number.
- Amine recovery process is up and running. This is most evident by the reduced number of totes containing spent amine solutions in the north, northeast and east areas of the site.
- Current waste inventory includes outdoor and indoor tank volumes/contents. These materials, according to Mr. Wiggins, are the responsibility of Polychem.
- The stacker crane room contains almost exclusively product materials, and only about 40-50 drums in all. According to Mr. Wiggins, these belong to Polychem. In the event some of these drums turn out to be off-spec materials requiring disposal, Polychem will include then in the hazardous waste inventory to be managed as hazardous waste.
- Polychem will do in-field bucket tests (for compatibility) for all solvent blends.
- All tanks and reactors involved in solvent blending will be grounded and will take place under a nitrogen blanket to eliminate fire risk.
- The amine reactor vessels, where solvent blending will occur, are located on the 2nd floor of the process building, and the room is equipped with blow out walls to reduce the amount of damage in the event of an explosion.
- Polychem will propose four disposal options in the Work Plan. These include off-site disposal as hazardous waste as well as beneficial re-use in lieu of commercial chemical product.
- OSC Mendoza will draft an off-site contingency/response plan. He will send this to Craig Melodia (EPA ORC) who would then forward it to Polychem and Heartland through their attorneys. OSC Mendoza will share with this with the CHFD to ensure proper response for the community.
- Polychem has submitted its EPCRA Tier II form to CHFD, and agreed to send a copy to OSC Mendoza.
- We did not observe any leaking or damaged containers and totes during the site walk-through.
- CHFD gave recommendations to Mr. Wiggins regarding the number, type, location and accessibility of fire extinguishers. Type ABC would be appropriate for fighting chemical fires at Polychem. In some locations, current fire extinguishers need to be made more visible and/or elevated. CHFD said that more fire extinguishers are needed and must be placed within 50 feet of one another.
- No hazardous waste releases were observed off-site (beyond the fence line) during the course of the inspection.
- CHFD and Polychem confirmed that foam should be used by the Fire Department if they respond to a fire at the facility.

- Drums over-packed from the February 2012 CERCLA emergency response were still on-site and had not been shipped off-site for disposal.

Following our meeting with Messrs. Wiggins and Knight, I met briefly outside with Chief Angell, Asst. Chief Kozlowski and OSC Mendoza. We discussed the improvements made by Polychem since EPA's last site visit (February 2012) and recognized the ongoing fire threats posed by the facility.

We concurred that additional time should be given to Polychem to submit the Work Plan and accompanying documents required by the 7003 Unilateral Administrative Order, which were past due at the time of the December 26, 2012 site visit.

I left the site at approximately 11:35 am.

Attachments:

1. Inventory Areas (11/20/12)
2. Composite Solvent Blend Analysis (ALS Group USA, reported 12/3/12)
3. Photo Log – December 26, 2012

ATTACHMENT NO. 1

Area 3

16 totes FP < 140

Area 7 4, 5,

12 totes NaSO4 brine cake
NaSO4 water

200 drums CT-23

Area 6

MgSO4
rinse water
39 totes

Area 2

212 totes
CT-23

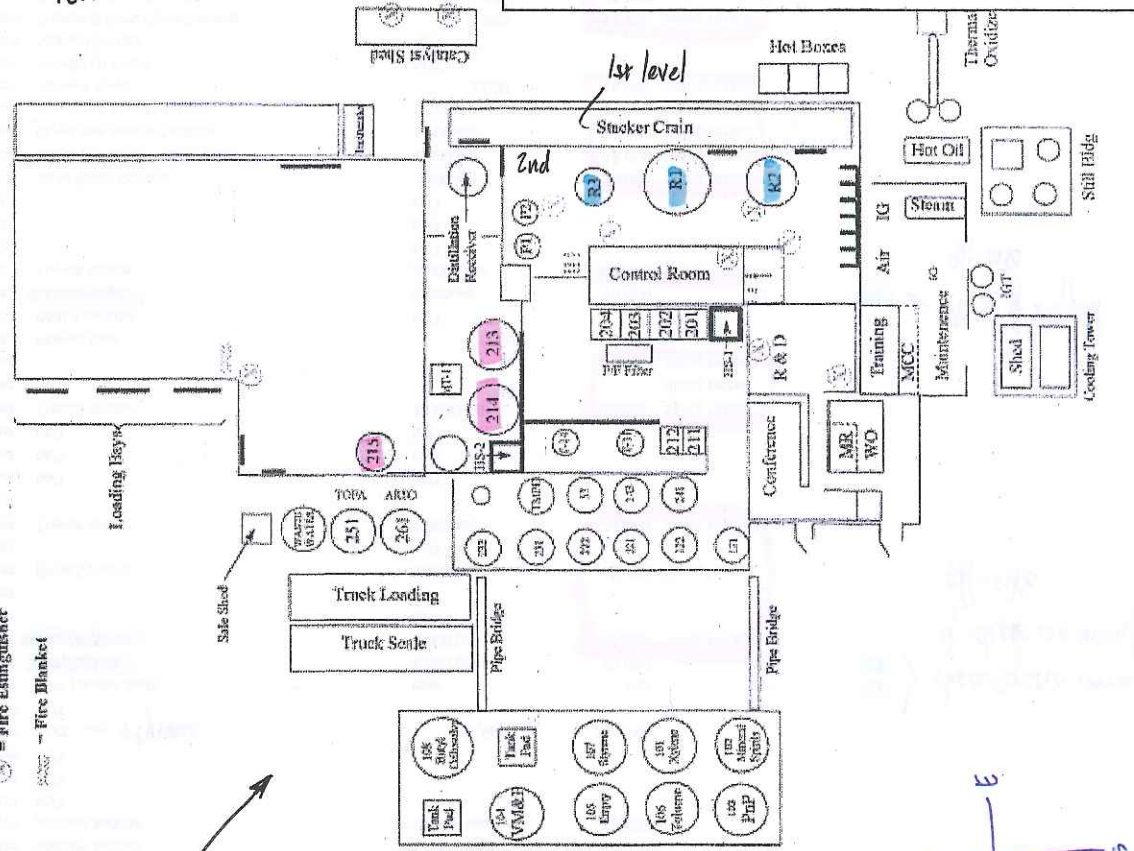
Area 4

402 drums
CT-23
123 totes sulfates DMEA
DMIPA
TEA

Area 5 3,4

Area 1

12 super sacs - nonhaz
110 gal Manchester tanks



= Birm

= Fire Extinguisher

= Fire Blanket

Inventory Areas:

Polychem Site

11/20/2012

Heartland Polymers

POLYCHEM INVENTORY

CONTAINER	Volume/ # Totes	MOC	CONTAINER VOLUME (GAL)	CONTAINER LOCATION	PRODUCT DESCRIPTION	APPROXIMATE QUANTITY		Flash Point	Toxicity	pH	notes
						No. of Cont	Volume (Gallon	Weight (lbs)				
TANK 101			25,000	Outdoor Tank Farm	Xylene		20,040	156,312	87			
TANK 102			25,000	Outdoor Tank Farm	Sodium Sulfate		1,000 - heal	10,000				
TANK 103			25,000	Outdoor Tank Farm	Sodium Sulfate		1,000 - heal	10,000				
TANK 104			21,000	Outdoor Tank Farm	M/T							
TANK 105			21,000	Outdoor Tank Farm	M/T							
TANK 106			25,000	Outdoor Tank Farm	M/T							
TANK 107		SS	20,000	Outdoor Tank Farm	AMS — styrene		32,600	254,280				
TANK 108			13,150	Outdoor Tank Farm	M/T							
TANK 121-A			9,000	Indoor-South West	50% Caustic Soda		heal	300		haz	13	} characteristic corrosivity D002 if these are manifested & shipped off-site
TANK 121-B			9,000	Indoor-South West	dirty caustic		2,000 (est)	20,000		haz	13	
TANK 122-A			6,000	Indoor-South West	Trench Water		3,000 (est)	27,000	Being tested			
TANK 122-B			6,000	Indoor-South West			M/T					
TANK 122-C			6,000	Indoor-South West			M/T					
TANK 221-A			6,000	Indoor-South West	Rinse Solvent		3,000 (est)	23,000	Being Tested			
TANK 221-B			12,000	Indoor-South West			M/T					
TANK 222-A			9,000	Indoor-South West	Trench Water		7,000 est	28,000	Being tested			
TANK 222-B			9,000	Indoor-South West								
TANK 231-A			6,000	Indoor-South West	M/T		M/T					
TANK 231-B			6,000	Indoor-South West	M/T		M/T					
TANK 231-C			6,000	Indoor-South West	M/T		M/T					
TANK 232-A			6,000	Indoor-North West	Trench Water		10,000 est	80,000	Being tested			
TANK 232-B			6,000	Indoor-North West					Being tested			
TANK 232-C			6,000	Indoor-North West					Being tested			
TANK 141		SS	10,000	Indoor-South East	Phenol heal		500	5,000				
TANK 142		SS	10,000	Indoor-South East	DMEA Sulfate		M/T					
TANK 143		SS	10,000	Indoor-South East	Caustic Soda		4,000 est	40,000		hi	13	— D002 if shipped off-site
TANK 241-A			6,000	Indoor-South East	Trench Water		10,000 est	80,000	Being tested			
TANK 241-B			6,000	Indoor-South East			M/T					
TANK 241-C			6,000	Indoor-South East			M/T					
Scrubber Tank			??	Indoor North East			M/T					
TANK 201			6,000	Indoor-Mid Section	Dirty Rinse Solvent		2,000 est	16,000	being tested			
TANK 202			6,000	Indoor-Mid Section	Clean Up water - Some VOM		6,000 est	48,000	being tested			
TANK 203			6,000	Indoor-Mid Section	Clay-Lime Neville Settling		1,000 est	10,000	being tested			
TANK 204			6,000	Indoor-Mid Section	Clay-Lime Neville Settling		1,000 est	10,000	being tested			
TANK 213 (MIX)			6,000	Indoor-Mid Section	Solvent Rinse		3,000	24,000	being tested			
TANK 214 (MIX)			6,000	Indoor-Mid Section	Neville LH Resin		M/T					
TANK 215 (MIX)		SS	6,500	Indoor-Mid Section	Sodium Sulfate		M/T					
TANK 211	1500		6,000	Indoor-Mid Section	Trench & Dirty Rinse Solvent		1,500	11,850	being tested			
TANK 212	1500		6,000	Indoor-Mid Section	Trench & Dirty Rinse Solvent		1,500	11,850	being tested			
TANK 311	Sample	SS	4,000	Outdoor Tank Farm	Sodium Sulfate		heal	1,000				
TANK 411	3500		10,000	Indoor	Sodium Sulfate		6,000	60,000				
MT-11			2,800		M/T		M/T					
MT-14		SS	2,800		M/T		M/T					
TANK 251		SS	16,500	Outdoor Tank Farm	TEA Sulfate		1,000	8,000				
TANK 261		SS	15,000	Outdoor Tank Farm	M/T		M/T					

Exterior Lots
Heartland Polymer

Drums	55 gallon	Heartland Area	Resin and Solvent Mixtures	less than 140 F — Haz Mat
Drums	56 gallon	Heartland Area	Resin and Solvent Mixtures	greater than 140F — Non Haz Mat

→ will need accurate drum count in the WP

Area 1

NO. OF CONTAINERS | GAL | POUNDS

4-5

Tote	Empty		Poly in Ca	250 gallon	Area 1	For Reuse - Customer Scrubber Solution:	Variable	Heals			
Manchester Tanks	Empty		Carbon St	110 gallon	Area 1	For Tertiary Amine packaging	Variable	Heals			
Super Sacks		12	Wooden	200 gallon	Area 1	Gelled Ink Resin	12		24,000		7 Non Haz resin
Area 2											
Totes		9,250	Poly in Ca	250 gallon	Area 2	Resin and Solvent Mixtures	37	9,250	83,250	Less than 14 Haz	7 CT-23
Totes			Poly in Ca	250 gallon	Area 2	Resin and Solvent Mixtures	175	43,750	393,750	Less than 14 Haz	7 CT-23
Area 3											
Tote			Poly in Ca	250 gallon	Area 3	Oily Water	1	250	1,875	Non Haz	7
			Drums	55 gallon	Area 3	Oily Water	8	440	3,300	Non Haz	7
				250 gallon	Area 3	Empty Totes	25			Non Haz	Heals
		1,000	Poly in Ca	250 gallon	Area 3	Mg/Na Sulfate Rinse Water	4	1,000	9,000	below 140 Haz	4 strip DMEA first
		3,000	Poly in Ca	250 gallon	Area 3	Na Sulfate Water - Check Amines	12	3,000	27,000	below 140 Haz	4 strip DMEA first
		3,000	Poly in Ca	250 gallon	Area 3	Na Sulfate Water - High pH	12	3,000	27,000		12 Neutralize first
Pallets			Pallets	48 X 48	Area 5	New Pallets	100				Pallets for Drum shipments
Area 4											
55 gal Drum		20,185	Drum	55 gallon	Area 4	Solvent/Resin mixtures	367	20,185	151,388		CT-23 Program
5 gal Pail		175	Pail	5 gallon	Area 4	Solvent/Resin mixtures	35	175	1,313		CT-23 Program
			Poly in Ca	250 gallon	Area 4	DMIPA Sulfate	88	22,000	220,000	Non Haz	4
			Poly in Ca	250 gallon	Area 4	TEA Sulfate	20	5,000	50,000	Non Haz	4
			Poly in Ca	250 gallon	Area 4	DMEA Sulfate	5	1,250	12,500	Non Haz	4
			Poly in Ca	250 gallon	Area 5	Resin	10	2,500	19,500		
Compartment "A" - chilled to 50 F											
5 gal F Pail		19	5 gal F Pai	5 gal	Area 4	Organic Peroxide - Luperox	19	95	760		
5 gal F Pail		10	5 gal F Pai	5 gal	Area 4	Organic Peroxide - Triginox	10	50	400		
5 gal F Pail		3	5 gal F Pai	5 gal	Area 4	Boron Florine Ether catalyst	3	70	700		
1 gal jug		1	1 gal jug	1 gal	Area 4	Organic Peroxide - Luperox 26	1	1	8		
1 gal pail		1	1 gal pail	1 gal	Area 4	Silane	1	1	10		
1 lb bag		32	1 lb bag	1 lb	Area 4	Luperox A98	32		32		
55 gal drum		1	55 gal dru	55 gal	Area 4	Hydrogen Peroxide (35%)	1	55	440		
55 gal drum		1	55 gal dru	55 gal	Area 4	Styrene	1	55	440		
55 gal drum		1	55 gal dru	55 gal	Area 4	Luperox D1	1	55	440		
55 gal drum		1	55 gal dru	55 gal	Area 4	Styrene/ Xylene Monomer Mix	1	55	440		
Compartment "B"											
55 gal drum		4	55 gal dru	55 gal	Area 4	Linseed Fatty Acid (Whitford)	4	220	1,700		
55 gal drum		1	55 gal dru	55 gal	Area 4	R&D Linseed Oil	1	55	400		
55 gal drum		1	55 gal dru	55 gal	Area 4	Linseed Oil - Cargil	1	55	400		
50 gal plastic drum		4	50 gal dru	50 gal	Area 4	Phosporic Acid (85%)	4	200	2,000		
50 gal plastic drum		2	50 gal dru	50 gal	Area 4	Hydrocholoric Acid (20%)	2	110	1,100		
Compartment "C"											
55 gal drum		1	55 gal dru	55 gal	Area 4	Bisomer HEMA Std	1	55	450		
55 gal drum		1	55 gal dru	55 gal	Area 4	DiAcetone Alcohol	1	55	400		
55 gal drum		5	55 gal dru	55 gal	Area 4	Glycol Ether PNP	5	275	2,150		
55 gal drum		4	55 gal dru	55 gal	Area 4	Methyl Isobutyl Ketone	4	220	1,650		
55 gal drum		2	55 gal dru	55 gal	Area 4	Glycerine	2	110	800		
55 gal drum		5	55 gal dru	55 gal	Area 4	DiEthylene Glycol	5	275	2,000		
55 gal drum		8	55 gal dru	55 gal	Area 4	Butyl Acrylate	8	440	3,300		
55 gal drum		1	55 gal dru	55 gal	Area 4	Methyl Methacrylate	1	55	410		
55 gal drum		1	55 gal dru	55 gal	Area 4	DiEthanol	1	55	400		
55 gal drum		1	55 gal dru	55 gal	Area 4	IBMA	1	55	410		
55 gal drum		1	55 gal dru	55 gal	Area 4	EthanolAmine	1	55	420		

CATALYST SHED

123 totes

jug	1	1 gal jug	1 gal	Area 4	Amonia	1	1	5		
Area 5										
Tote		Poly in Ca	250 gallon	Area 5	Na Sulfate Brine cakes	87	3,828	38,280	Non Haz	4
Super Sack	1	Super Sac	Ton	Area 5	Purified Isophtalic Anhydride	1		2,000		
50 Lb Bags	2 pallets	Bags	50 lbs	Area 5	Pentaerythaltol	80		4,000		
50 Lb Bags	1 pallet	Bags	50 lbs	Area 5	Ophthelic Acid	40		2,000		
50 Lb Bags	12	Bags	50 lbs	Area 5	Mg Silicate	12		600		
Drum	8	Drum	55 gal	Area 5	AMS	12	660	5,000		
Drum	10	Drum	55 gal	Area 5	Mineral Spirits	10	550	4,200		
Drum	1	Drum	55 gal	Area 5	Seed oil & Alkid	1	55	400		
Drum	2	Drum	55 gal	Area 5	Toluene Solvent Rinse	2	110	820		
Drum	2	Drum	55 gal	Area 5	Soy Bean Oil	2	110	820		
50 Lb Bags	2 pallets	Bags	50 lbs	Area 5	Carbon Beads	80		4,000		
Area 6										
Tote		Poly in Ca	250 gallon	Area 6	Mg Sulfate Clean up - Rinse Water	39	9,750	87,750	Haz	4
Area 7										
Tote	22	Poly in Ca	250 gallon	Area 7	Na Sulfate Brine Cake	22	2,750	27,500	Non Haz	4
	50	Poly in Ca	250 gallon	Area 7	Na Sulfate Water	50	12,500	125,000	Non Haz	4
55 gal Drums	200	Drums	55 gallon	Area 7	Resin/solvent mixture	200	10,000	78,000	Haz	CT-23 Program
Dock #3 - Area 8										
250 gal rounds		Plastic To	250 gallons	Dock #3	MT round totes	14				
		Plastic To	330 gallons	Dock #3	MT HD plastic totes	7				

how determined
4 pH > 2

72

includes 78 overpack drums

FP < 140
0001

ATTACHMENT NO. 2

ALS Group USA, Corp

Date: *03-Dec-12*

Client: Arrow Consulting Group, LLC
Project: Polychem Services, Inc.
Work Order: 1211537
Sample ID: Composited Solvent
Lab ID: 1211537-01
Collection Date: 11/15/12
Matrix: SOLVENT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7471**		Prep Date: **11/20/12**	Analyst: **LR**
Mercury	ND		0.040	mg/Kg	1	11/21/12 01:43 PM
METALS BY ICP-MS			**SW6020A**		Prep Date: **11/26/12**	Analyst: **CES**
Arsenic	ND		0.28	mg/Kg	1	11/27/12 08:01 PM
Barium	ND		0.28	mg/Kg	1	11/27/12 08:01 PM
Cadmium	ND		0.11	mg/Kg	1	11/27/12 08:01 PM
Chromium	**3.1**		**0.28**	**mg/Kg**	1	11/27/12 08:01 PM
Lead	ND		0.28	mg/Kg	1	11/27/12 08:01 PM
Selenium	ND		0.28	mg/Kg	1	11/27/12 08:01 PM
Silver	ND		0.28	mg/Kg	1	11/27/12 08:01 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep Date: **11/27/12**	Analyst: **HL**
1,1`-Biphenyl	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,4,5-Trichlorophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,4,6-Trichlorophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,4-Dichlorophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,4-Dimethylphenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,4-Dinitrophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,4-Dinitrotoluene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2,6-Dinitrotoluene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2-Chloronaphthalene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2-Chlorophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2-Methylnaphthalene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2-Methylphenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2-Nitroaniline	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
2-Nitrophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
3,3'-Dichlorobenzidine	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
3-Nitroaniline	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4,6-Dinitro-2-methylphenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Bromophenyl phenyl ether	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Chloro-3-methylphenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Chloroaniline	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Chlorophenyl phenyl ether	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Methylphenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Nitroaniline	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
4-Nitrophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Acenaphthene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Acenaphthylene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Acetophenone	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Anthracene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *03-Dec-12*

Client: Arrow Consulting Group, LLC
Project: Polychem Services, Inc.
Work Order: 1211537
Sample ID: Composited Solvent
Lab ID: 1211537-01
Collection Date: 11/15/12
Matrix: SOLVENT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Atrazine	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Benzaldehyde	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Benzo(a)anthracene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Benzo(a)pyrene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Benzo(b)fluoranthene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Benzo(g,h,i)perylene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Benzo(k)fluoranthene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Bis(2-chloroethoxy)methane	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Bis(2-chloroethyl)ether	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Bis(2-chloroisopropyl)ether	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Bis(2-ethylhexyl)phthalate	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Butyl benzyl phthalate	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Caprolactam	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Carbazole	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Chrysene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Dibenzo(a,h)anthracene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Dibenzofuran	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Diethyl phthalate	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Dimethyl phthalate	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Di-n-butyl phthalate	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Di-n-octyl phthalate	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Fluoranthene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Fluorene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Hexachlorobenzene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Hexachlorobutadiene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Hexachlorocyclopentadiene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Hexachloroethane	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Indeno(1,2,3-cd)pyrene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Isophorone	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Naphthalene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Nitrobenzene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
N-Nitrosodi-n-propylamine	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
N-Nitrosodiphenylamine	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Pentachlorophenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Phenanthrene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Phenol	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Pyrene	ND		4,600	mg/Kg	100	11/27/12 01:23 PM
Surr: 2,4,6-Tribromophenol	*0*		*35-125*	*%REC*	100	11/27/12 01:23 PM
Surr: 2-Fluorobiphenyl	*0*		*45-105*	*%REC*	100	11/27/12 01:23 PM
Surr: 2-Fluorophenol	*0*		*35-105*	*%REC*	100	11/27/12 01:23 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *03-Dec-12*

Client: Arrow Consulting Group, LLC
Project: Polychem Services, Inc.
Sample ID: Composited Solvent
Collection Date: 11/15/12

Work Order: 1211537
Lab ID: 1211537-01
Matrix: SOLVENT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Terphenyl-d14	*0*		*30-125*	*%REC*	100	11/27/12 01:23 PM
Surr: Nitrobenzene-d5	*0*		*35-100*	*%REC*	100	11/27/12 01:23 PM
Surr: Phenol-d6	*0*		*40-100*	*%REC*	100	11/27/12 01:23 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260**			Analyst: **BG**
1,1,1-Trichloroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,1,2,2-Tetrachloroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,1,2-Trichloroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,1,2-Trichlorotrifluoroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,1-Dichloroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,1-Dichloroethene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,2,4-Trichlorobenzene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,2-Dibromo-3-chloropropane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,2-Dibromoethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,2-Dichlorobenzene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,2-Dichloroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,2-Dichloropropane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,3-Dichlorobenzene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
1,4-Dichlorobenzene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
2-Butanone	ND		5,000	mg/Kg	1E+06	11/20/12 10:41 PM
2-Hexanone	ND		5,000	mg/Kg	1E+06	11/20/12 10:41 PM
4-Methyl-2-pentanone	ND		5,000	mg/Kg	1E+06	11/20/12 10:41 PM
Acetone	ND		25,000	mg/Kg	1E+06	11/20/12 10:41 PM
Benzene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Bromodichloromethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Bromoform	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Bromomethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Carbon disulfide	ND		5,000	mg/Kg	1E+06	11/20/12 10:41 PM
Carbon tetrachloride	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Chlorobenzene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Chloroethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Chloroform	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Chloromethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
cis-1,2-Dichloroethene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
cis-1,3-Dichloropropene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Cyclohexane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Dibromochloromethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Dichlorodifluoromethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Ethylbenzene	**99,000**		**5,000**	**mg/Kg**	5E+06	11/21/12 09:42 PM
Isopropylbenzene	**6,100**		**1,000**	**mg/Kg**	1E+06	11/20/12 10:41 PM
Methyl acetate	ND		10,000	mg/Kg	1E+06	11/20/12 10:41 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *03-Dec-12*

Client: Arrow Consulting Group, LLC
Project: Polychem Services, Inc.
Work Order: 1211537
Sample ID: Composited Solvent
Lab ID: 1211537-01
Collection Date: 11/15/12
Matrix: SOLVENT

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Methyl tert-butyl ether	ND		5,000	mg/Kg	1E+06	11/20/12 10:41 PM
Methylcyclohexane	ND		10,000	mg/Kg	1E+06	11/20/12 10:41 PM
Methylene chloride	ND		5,000	mg/Kg	1E+06	11/20/12 10:41 PM
Styrene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Tetrachloroethene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Toluene	**59,000**		**1,000**	**mg/Kg**	1E+06	11/20/12 10:41 PM
trans-1,2-Dichloroethene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
trans-1,3-Dichloropropene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Trichloroethene	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Trichlorofluoromethane	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Vinyl chloride	ND		1,000	mg/Kg	1E+06	11/20/12 10:41 PM
Xylenes, Total	**460,000**		**15,000**	**mg/Kg**	5E+06	11/21/12 09:42 PM
Surr: 1,2-Dichloroethane-d4	*103*		*70-130*	*%REC*	1E+06	11/20/12 10:41 PM
Surr: 1,2-Dichloroethane-d4	*103*		*70-130*	*%REC*	5E+06	11/21/12 09:42 PM
Surr: 4-Bromofluorobenzene	*97.2*		*70-130*	*%REC*	5E+06	11/21/12 09:42 PM
Surr: 4-Bromofluorobenzene	*104*		*70-130*	*%REC*	1E+06	11/20/12 10:41 PM
Surr: Dibromofluoromethane	*96.2*		*70-130*	*%REC*	5E+06	11/21/12 09:42 PM
Surr: Dibromofluoromethane	*98.6*		*70-130*	*%REC*	1E+06	11/20/12 10:41 PM
Surr: Toluene-d8	*106*		*70-130*	*%REC*	1E+06	11/20/12 10:41 PM
Surr: Toluene-d8	*98.3*		*70-130*	*%REC*	5E+06	11/21/12 09:42 PM
FLASHPOINT, P-M CLOSED-CUP			**D93**			Analyst: **MB**
Flashpoint, P-M Closed-cup	**84.0**			**°F**	1	11/26/12 10:30 AM
PH			**SW9045D**			Analyst: **JB**
pH	**5.25**			**s.u.**	1	11/16/12 08:50 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ATTACHMENT NO. 3

PHOTO LOG –DECEMBER 26, 2012 EPA AND CHFD SITE VISIT
POLYCHEM SERVICES, INC. – CHICAGO HEIGHTS, IL

PHOTO NO.	DATE	TIME	PHOTOGRAPHER	ORIENTATION	DESCRIPTION
1	12/26/12	10:27 am	M. Valentino	NE	Outside southeast corner of production building. Solvent still and its secondary containment system. Still is no longer in use. Polychem is considering removing these structures and erecting a nitrogen tank on this footprint.
2	12/26/12	10:28 am	M. Valentino	N	Outside southeast corner of production building. Hot oil boiler.
3	12/26/12	10:28 am	M. Valentino	NW	Area 5. Outside production building's southeast side. Red drums contain heat transfer oil. These drums will be recycled and returned to vendor. Totes in background contain sodium sulfate (salt) cake. This salt cake is nonhazardous and will be disposed of at a solid waste landfill.
4	12/26/12	10:29 am	M. Valentino	E	Areas 5 and 7. Totes in foreground and background contain nonhazardous sodium sulfate salt cake. Red-topped drums in center of photo are over-pack drums containing spent flammable materials. All of the drums in the photo belong to Polychem. These are segregated from Heartland's waste (drums shown in Photos 27-28). 200 drums located in Area 7 are part of Polychem's CT-23 Program.
5	12/26/12	10:29 am	M. Valentino	SE	Area 7 solvent drums (CT-23 Program) and totes containing sodium sulfate brine cake or sodium sulfate water (nonhazardous). This location includes 78 over-pack drums (60 from February 2012; 18 from December 2012).
6	12/26/12	10:30 am	M. Valentino	E	Area 7. Sodium sulfate brine cake totes.
7	12/26/12	10:32 am	M. Valentino	NW	Area 4. Catalyst shed. Containers varying from one-gallon jugs and pails to 55-gallon drums. Three compartments, A, B and C store organic peroxide, hydrogen peroxide, linseed oil, phosphoric acid, hydrochloric acid and mixed solvents.
8	12/26/12	10:33 am	M. Valentino	E	Area 3. Totes containing sodium sulfate waters with flash point < 140°F; awaiting analysis for amine levels. These totes should have hazardous waste labels because of the low flash contents.
9	12/26/12	10:34 am	M. Valentino	E	Area 3. Totes of sodium sulfate water with high pH. DOT placard UN2796 is Hazard Class 8 corrosive material.
10	12/26/12	10:34 am	M. Valentino	NW	Area 4 drums (L. of photo) for CT-23 Program; Area 2 totes (R. of photo) for CT-23 Program.
11	12/26/12	10:34 am	M. Valentino	W	Area 4 solvent drums (CT-23 Program). Amine product (DMEA, DMIPA, TEA) tankers in rear of photo.
12	12/26/12	10:35 am	M. Valentino	NW	Area 2 totes (resin and solvent mixtures) for CT-23 Program.
13	12/26/12	10:35 am	M. Valentino	N	Area 2 totes (resin and solvent mixtures) for CT-23 Program.

14	12/26/12	10:35 am	M. Valentino	NNW	Area 2 totes (resin and solvent mixtures) for CT-23 Program.
15	12/26/12	10:35 am	M. Valentino	NNW	Area 2 totes (resin and solvent mixtures) for CT-23 Program.
16	12/26/12	10:36 am	M. Valentino	NW	Area 2 totes (resin and solvent mixtures) for CT-23 Program.
17	12/26/12	10:39 am	M. Valentino	SSW	Area 4. Blue drums in foreground contain sodium sulfate salts from tank clean-out. Totes behind drums contain DMEA, DMIPA and TEA sulfates.
18	12/26/12	10:41 am	M. Valentino	N	Area 1. Empty 110-gallon Manchester tanks. These will be filled with recovered TEA from the amine recovery process.
19	12/26/12	10:41 am	M. Valentino	NW	Area 1. Wooden totes to far L. of photo contain gelled ink resin (nonhazardous); totes in center of photo contain scrubber solution (incoming) from customers; 110-gallon Manchester tanks to center-right of photo are empty and will be filled with recovered DMEA from the amine recovery process.
20	12/26/12	10:41 am	M. Valentino	SE	Area 4 DMEA, DMIPA and TEA sulfate totes, L. of photo; Area 6 magnesium sulfate clean-up rinse water totes, center-background of photo; amine product tankers to R. of photo.
21	12/26/12	10:42 am	M. Valentino	S	Tankers of amine (DMEA, DMIPA, TEA) product from amine recovery process.
22	12/26/12	10:44 am	M. Valentino	SW	East dock. Empty 250-gallon poly totes.
23	12/26/12	10:44 am	M. Valentino	S	North end of building. Dock #3. Totes marked with red and blue dots contain water pumped from product tank secondary containment area (nonhazardous). Circular 250-gallon totes in background are empty.
24	12/26/12	10:44 am	M. Valentino	SW	North end of building. Dock #3. Totes marked with red and blue dots, and center totes at ground level without red and blue dots, contain water pumped from raw material tank farm secondary containment area (nonhazardous). Circular 250-gallon and 330-gallon totes in background are empty.
25	12/26/12	10:44 am	M. Valentino	NNW	Area 1. Fabric super sacks in wooden frames contain gelled ink resin (nonhazardous).
26	12/26/12	10:45 am	M. Valentino	NW	Far northwestern corner of facility. Drums stored here previously have been relocated on-site (to Areas 4 and 7 or to the west-central part of the facility where Heartland drums are stored).
27	12/26/12	10:45 am	M. Valentino	SW	West-central area, north of raw material tank farm. Heartland drums.
28	12/26/12	10:45 am	M. Valentino	SW	West-central area, north of raw material tank farm. Heartland drums. Close-up of Photo 27.
29	12/26/12	10:46 am	M. Valentino	SSW	Raw material tanks on west end of facility. Secondary containment had a small amount of standing liquid on the day of the December 26, 2012 inspection.
30	12/26/12	10:47 am	M. Valentino	SW	Raw material tanks on west end of facility. Tank 107 (styrene).
31	12/26/12	10:47 am	M. Valentino	SW	Raw material tanks on west end of facility. Tank 101 (xylene).

32	12/26/12	10:50 am	M. Valentino	E	1st level, east end of building. Amine packaging area. 110-gallon Manchester tank at fill station where recovered amines are metered into tanks atop load cells. This tank is being filled with recovered TEA.
33	12/26/12	10:52 am	M. Valentino	S	SE corner of building, 1st level. Tote containing spent scrubber solution, to be pumped up to reactor room on 2nd level.
34	12/26/12	10:52 am	M. Valentino	E	1st level, south-central warehouse area. Bottom of tank no. T-213, a mix tank with a capacity of 6000 gallons.
35	12/26/12	10:53 am	M. Valentino	NE	1st level, south-central warehouse area. To the north of Photo 35. Tank no. T-215, a mix tank with a capacity of 6000 gallons.
36	12/26/12	11:04 am	M. Valentino	E	Reactor room, SE corner of process building, 2nd level. Top of Reactor No. 1.
37	12/26/12	11:04 am	M. Valentino	NE	Reactor room, SE corner of process building, 2nd level. Top of Reactor No. 3.

PHOTO 1

PHOTO 2

PHOTO 3

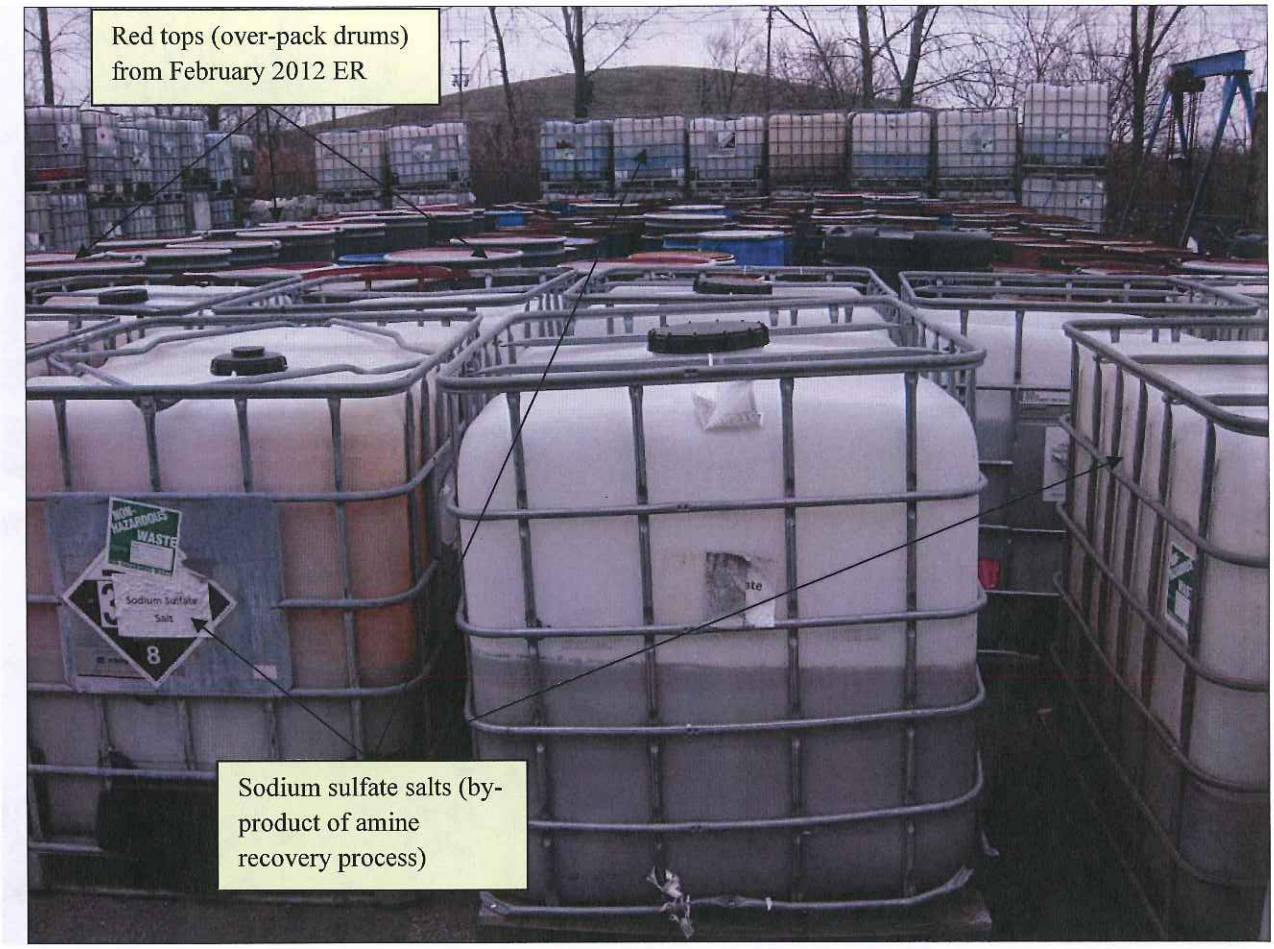

Red tops (over-pack drums) from February 2012 ER
NON-HAZARDOUS WASTE
Sodium Sulfate Salt
8
Sodium sulfate salts (by-product of amine recovery process)

PHOTO 4

PHOTO 5

PHOTO 6

PHOTO 7

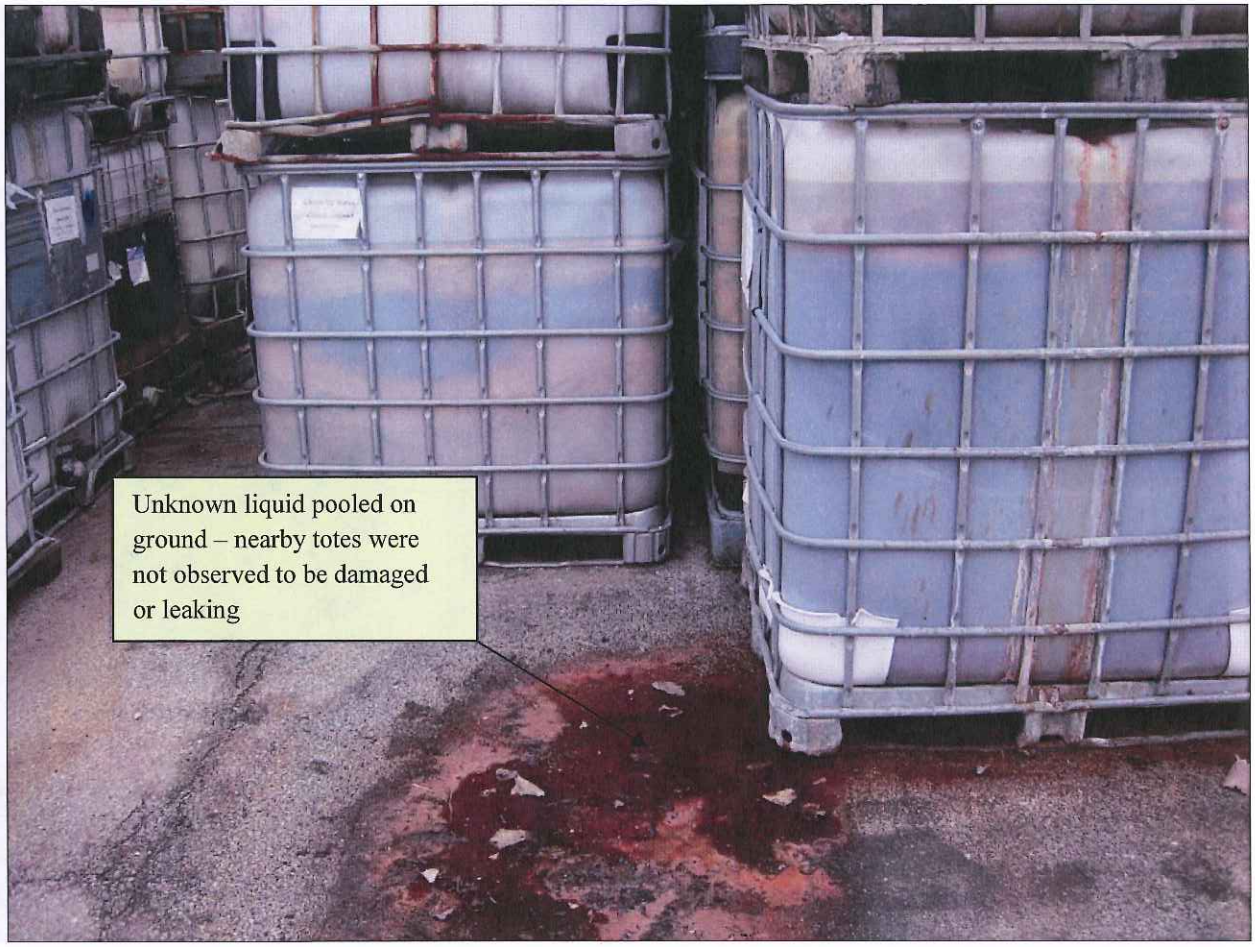

Unknown liquid pooled on ground – nearby totes were not observed to be damaged or leaking

PHOTO 8

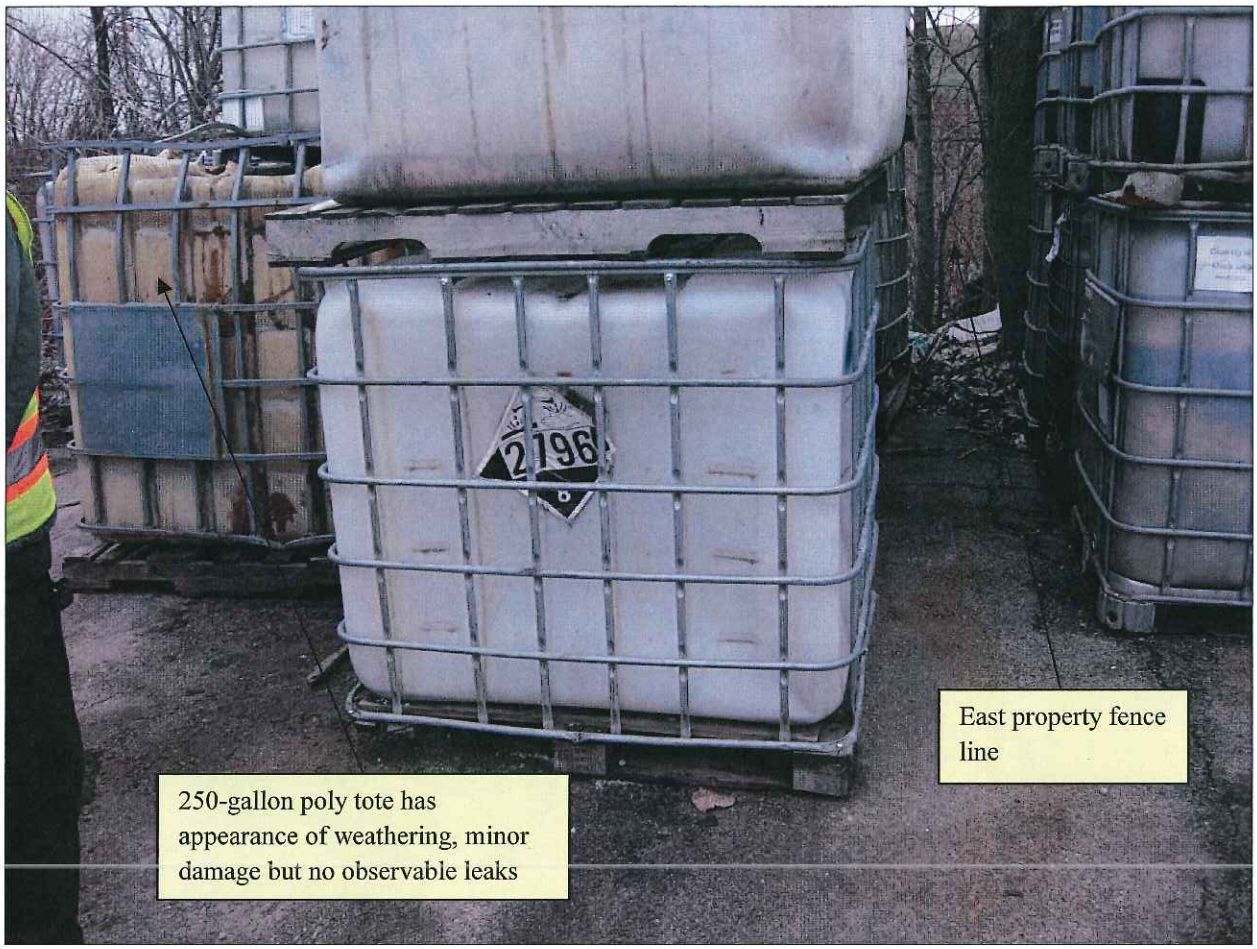

2796
East property fence line
250-gallon poly tote has appearance of weathering, minor damage but no observable leaks

PHOTO 9

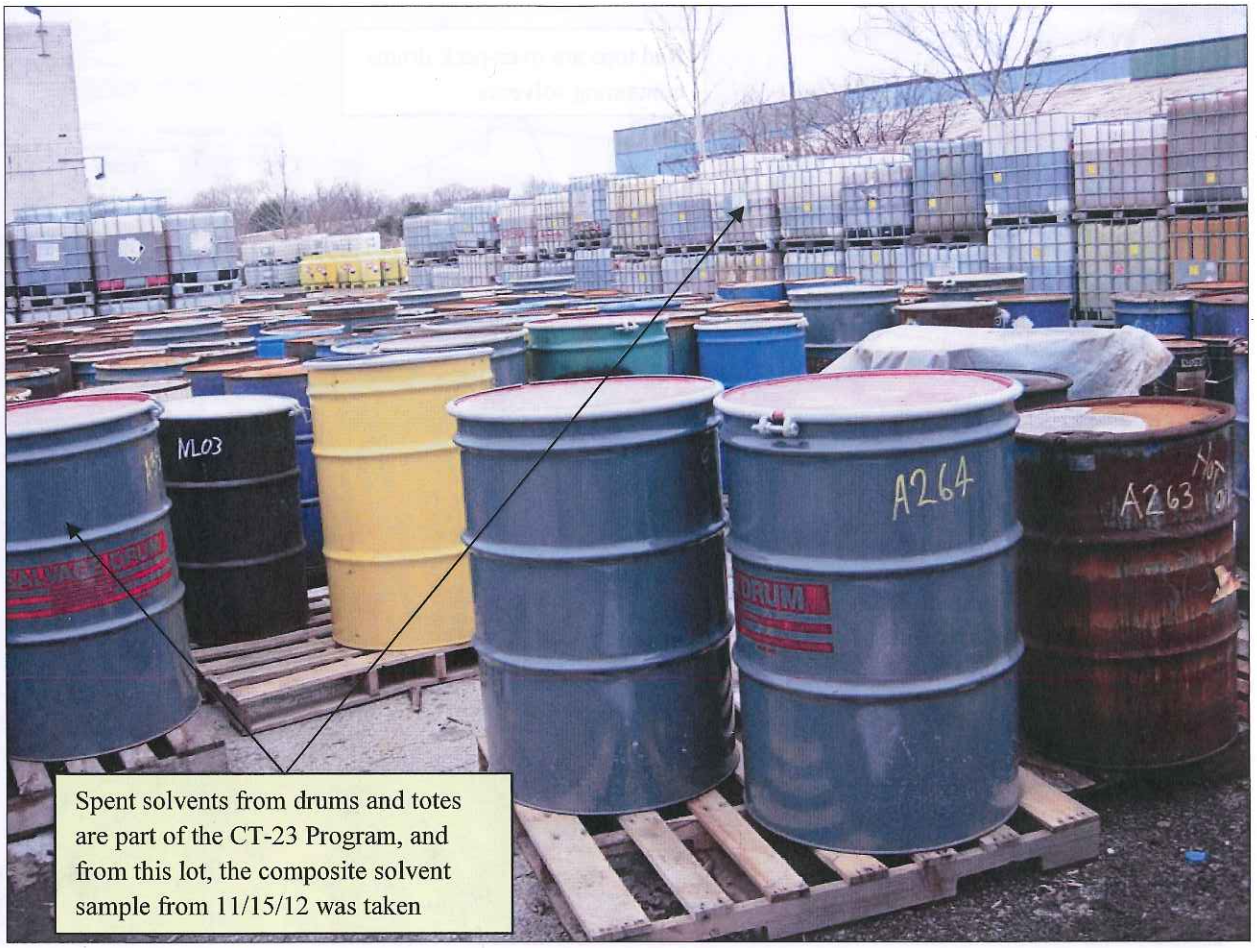

NL03
A264
A263
DRUM
Spent solvents from drums and totes are part of the CT-23 Program, and from this lot, the composite solvent sample from 11/15/12 was taken

PHOTO 10

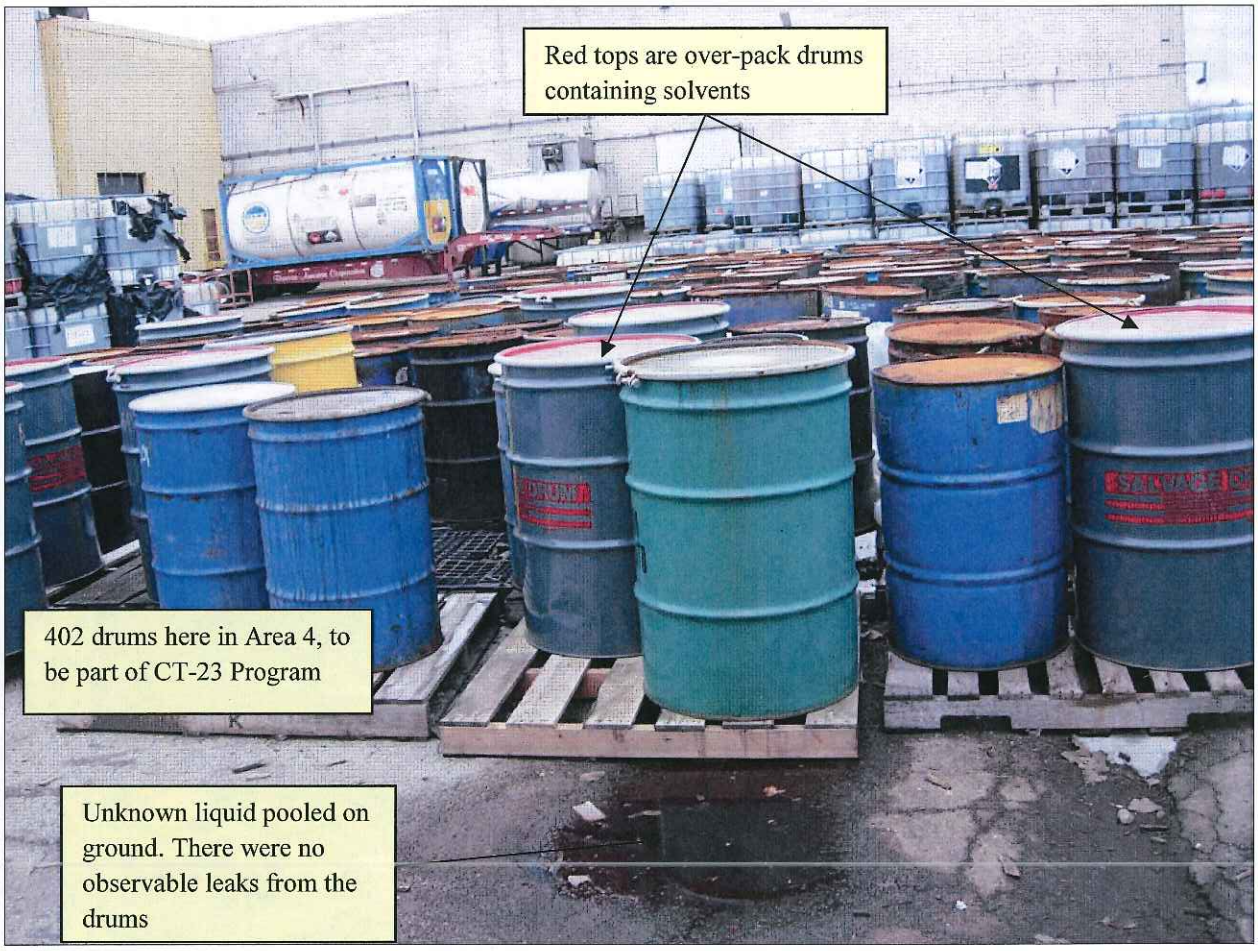

Red tops are over-pack drums containing solvents
402 drums here in Area 4, to be part of CT-23 Program
Unknown liquid pooled on ground. There were no observable leaks from the drums

PHOTO 11

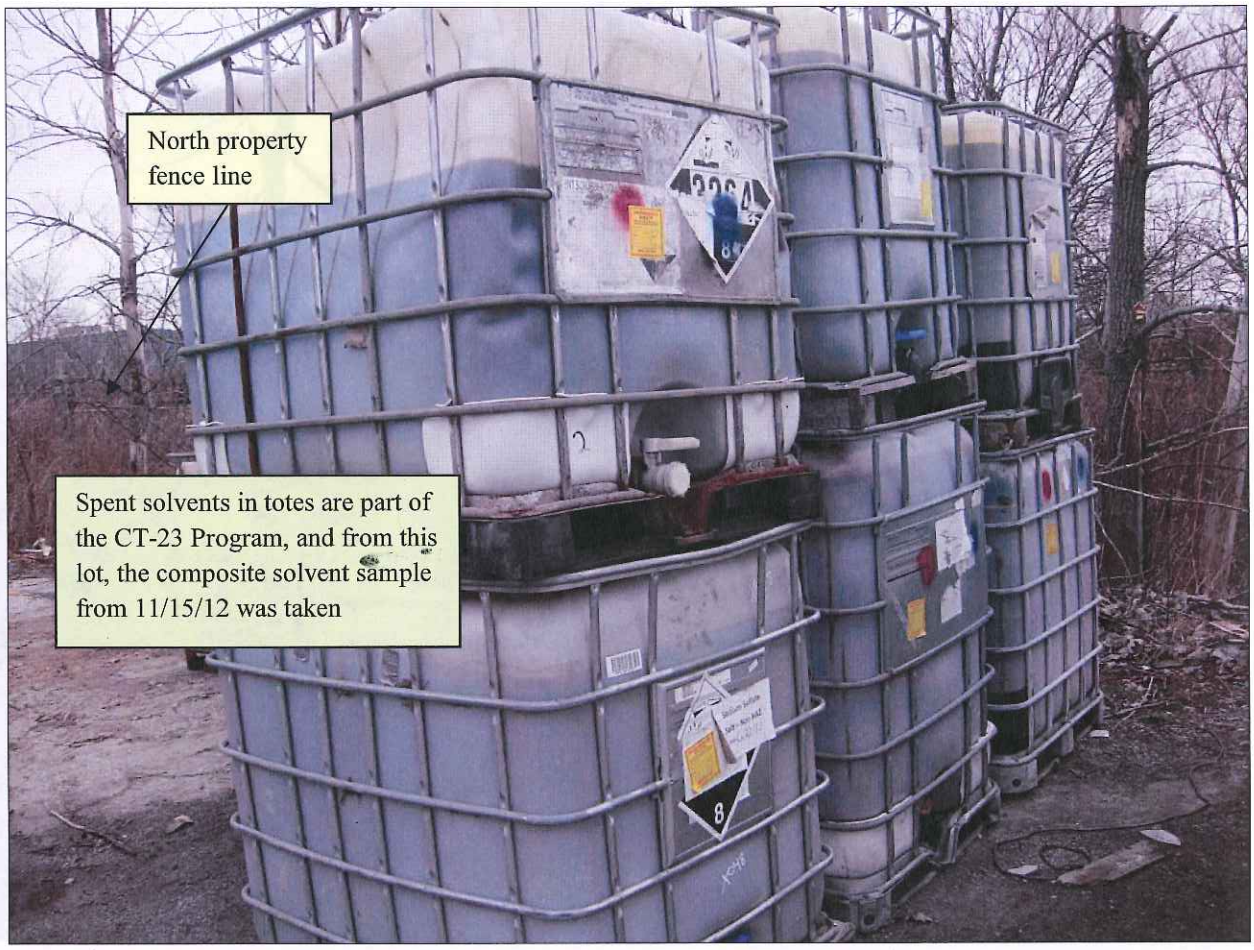

North property fence line
Spent solvents in totes are part of the CT-23 Program, and from this lot, the composite solvent sample from 11/15/12 was taken

PHOTO 12

PHOTO 13

PHOTO 14


Spent solvents in totes are part of the CT-23 Program, and from this lot, the composite solvent sample from 11/15/12

PHOTO 15

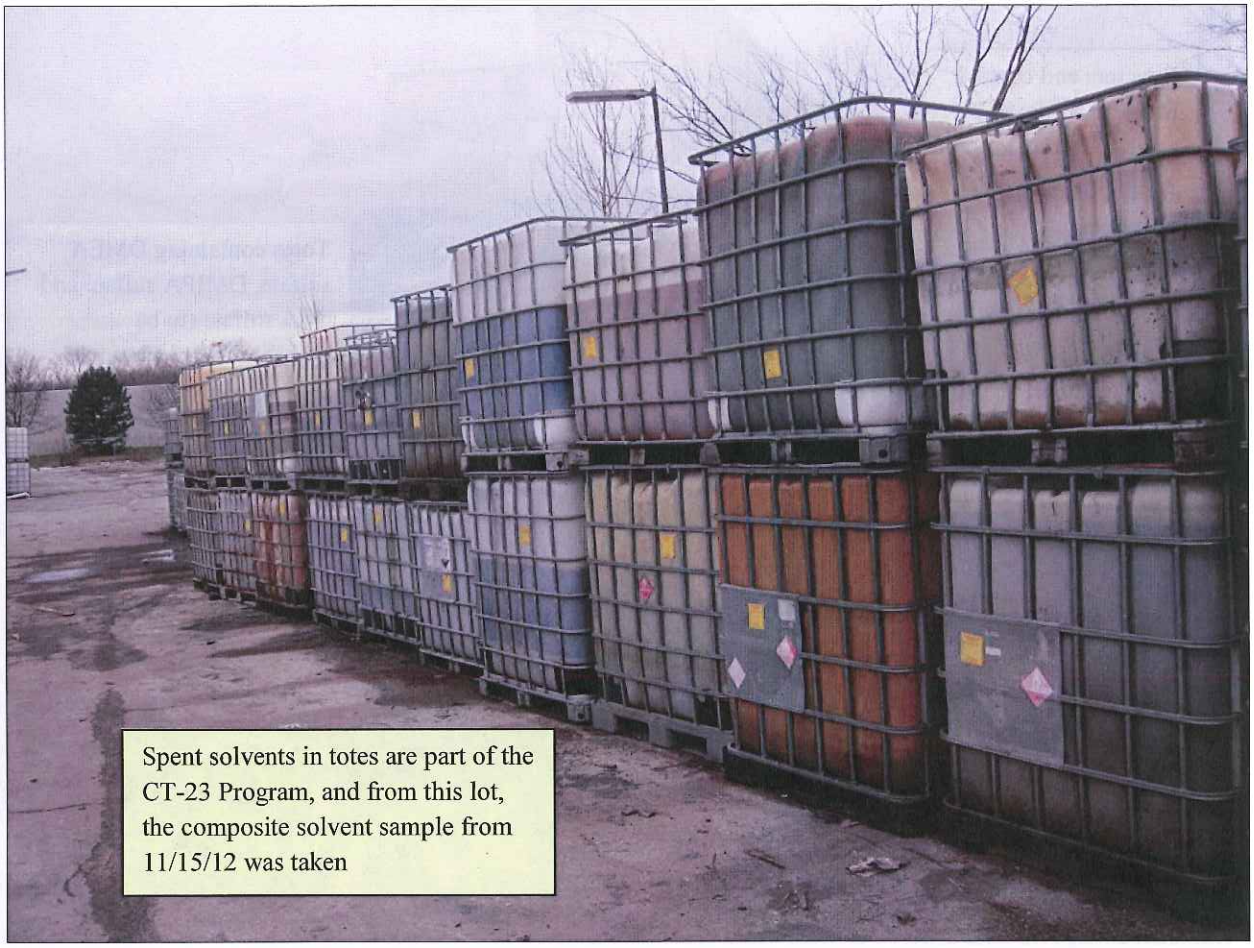

Spent solvents in totes are part of the CT-23 Program, and from this lot, the composite solvent sample from 11/15/12 was taken

PHOTO 16

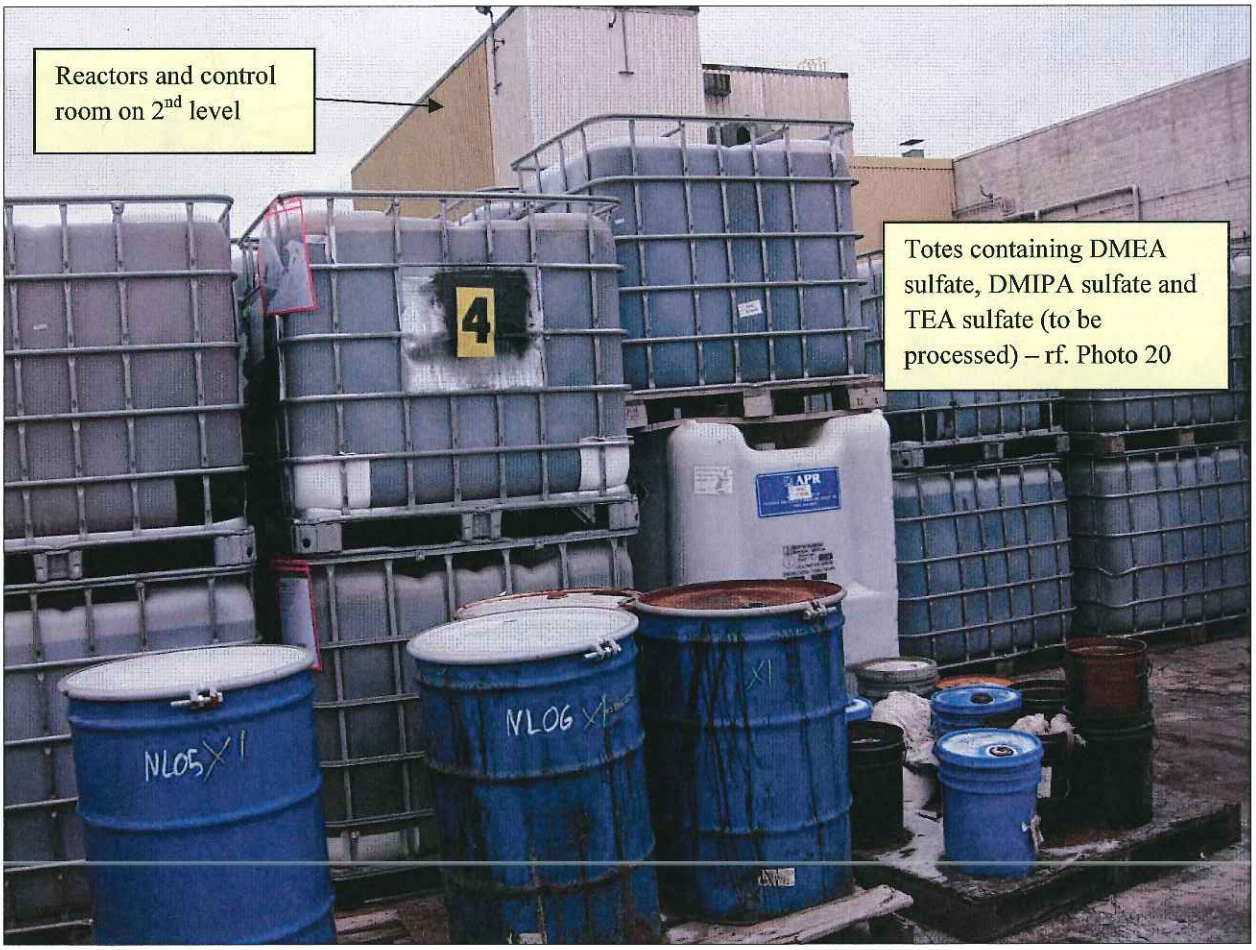

Reactors and control room on 2nd level
Totes containing DMEA sulfate, DMIPA sulfate and TEA sulfate (to be processed) – rf. Photo 20
4
NL05X1
NL06X1
X1

PHOTO 17

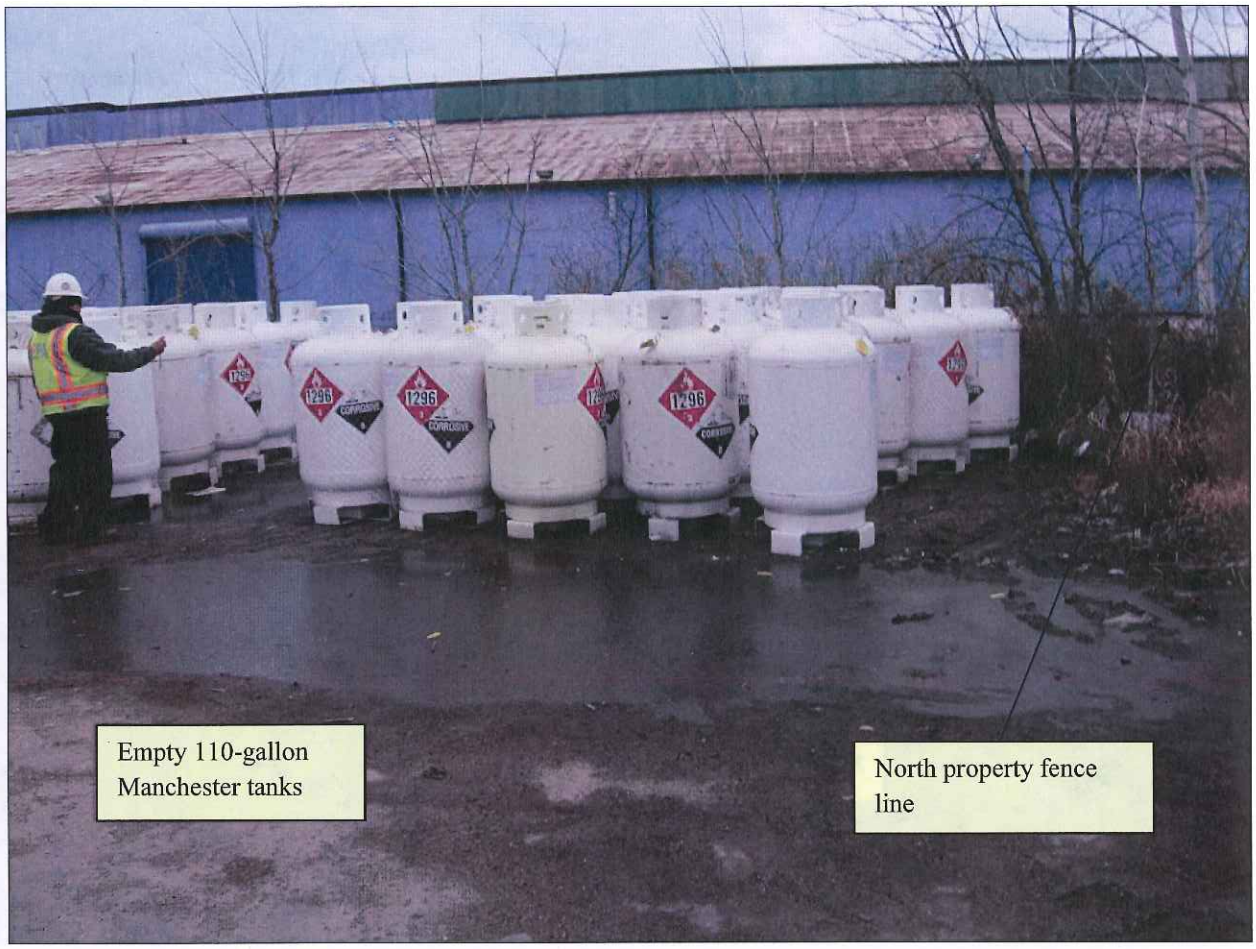

Empty 110-gallon Manchester tanks
North property fence line

PHOTO 18


Super sacks of gelled ink resin
Incoming customer scrubber solution
Empty 110-gallon Manchester tanks

PHOTO 19

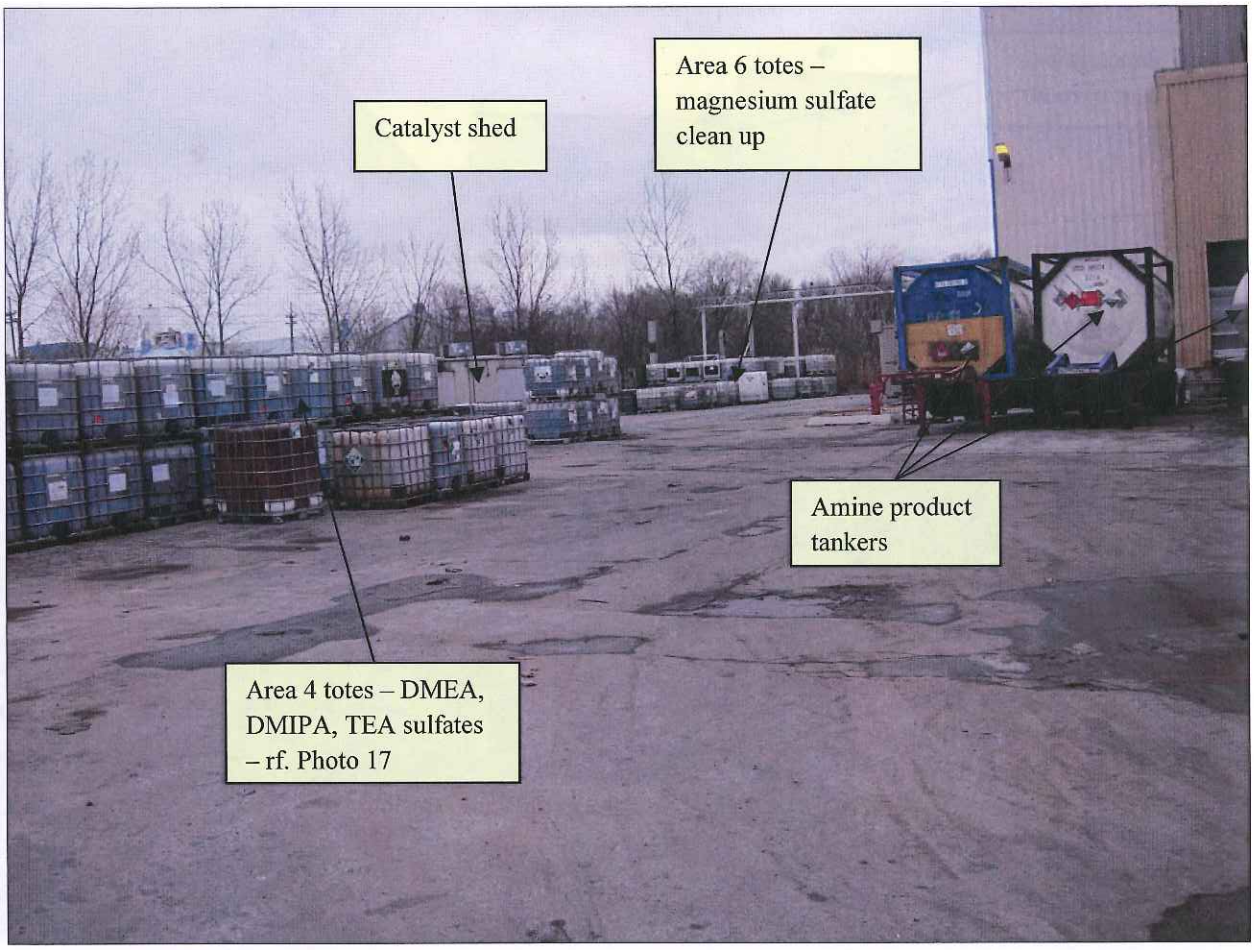

Catalyst shed
Area 6 totes – magnesium sulfate clean up
Amine product tankers
Area 4 totes – DMEA, DMIPA, TEA sulfates – rf. Photo 17

PHOTO 20

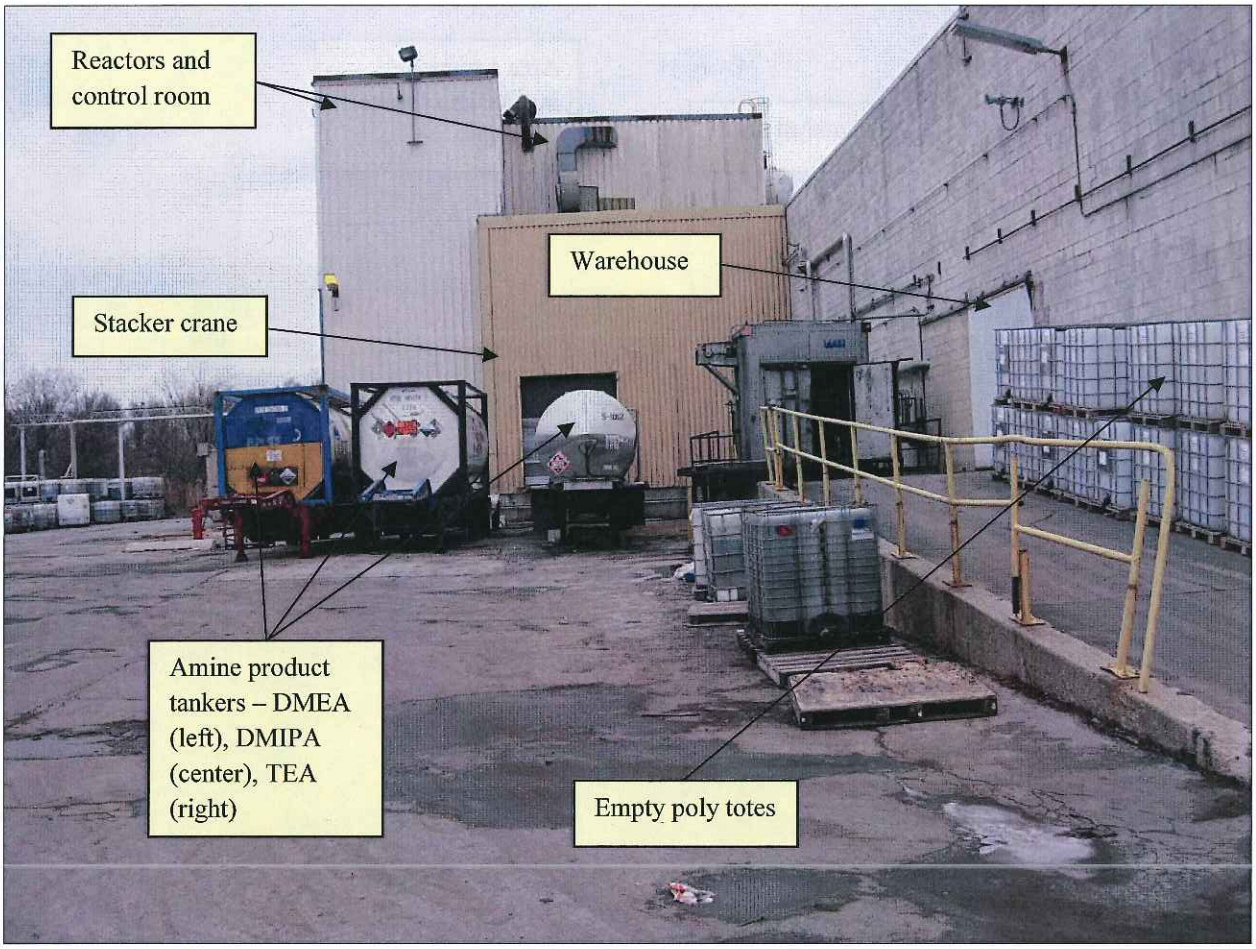

Reactors and control room
Warehouse
Stacker crane
Amine product tankers – DMEA (left), DMIPA (center), TEA (right)
Empty poly totes

PHOTO 21

PHOTO 22

PHOTO 23

PHOTO 24

Wooden crates and metal cages with fabric super sacks inside, contain gelled ink resin (nonhazardous), 12 in all

PHOTO 25

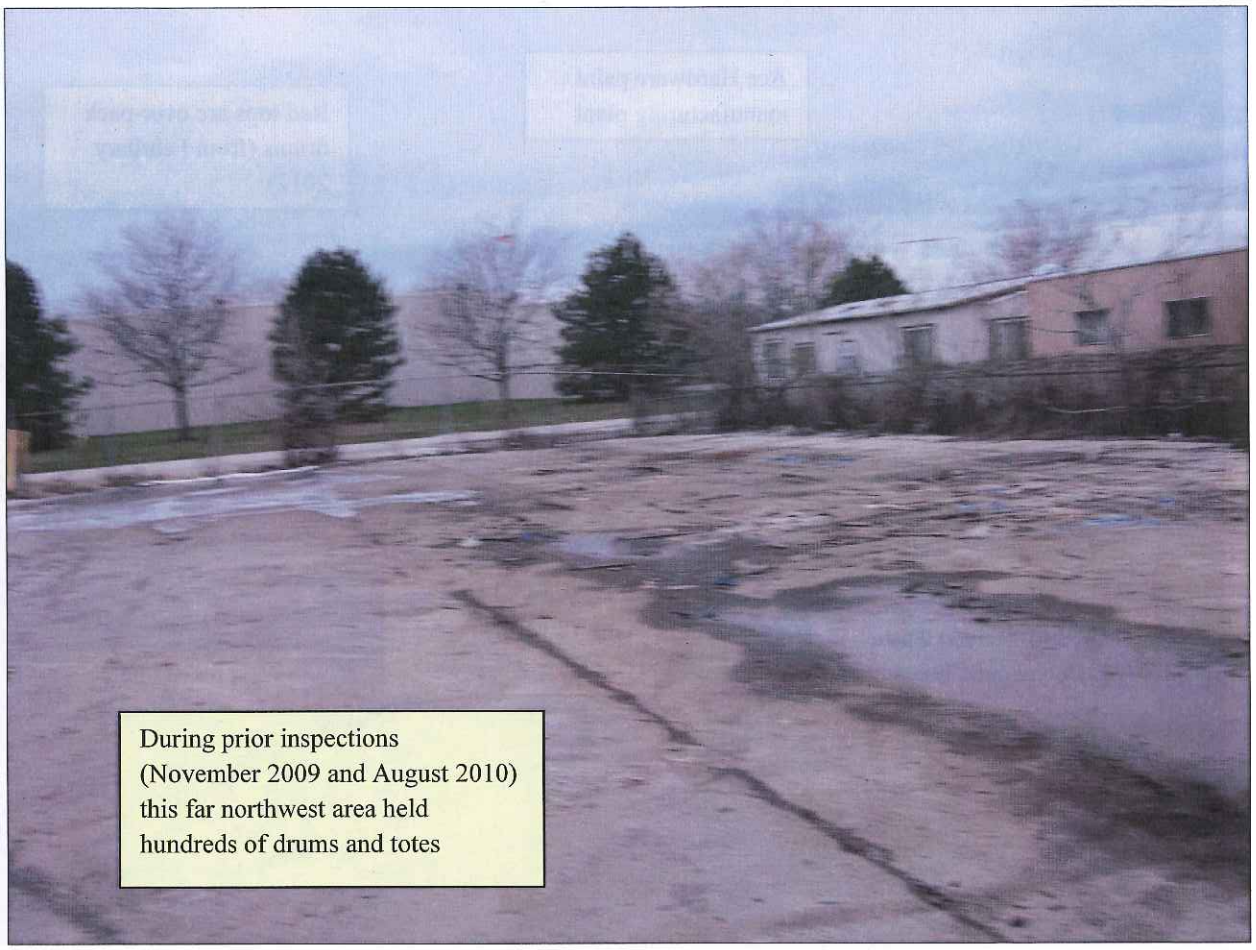

During prior inspections
(November 2009 and August 2010)
this far northwest area held
hundreds of drums and totes

PHOTO 26

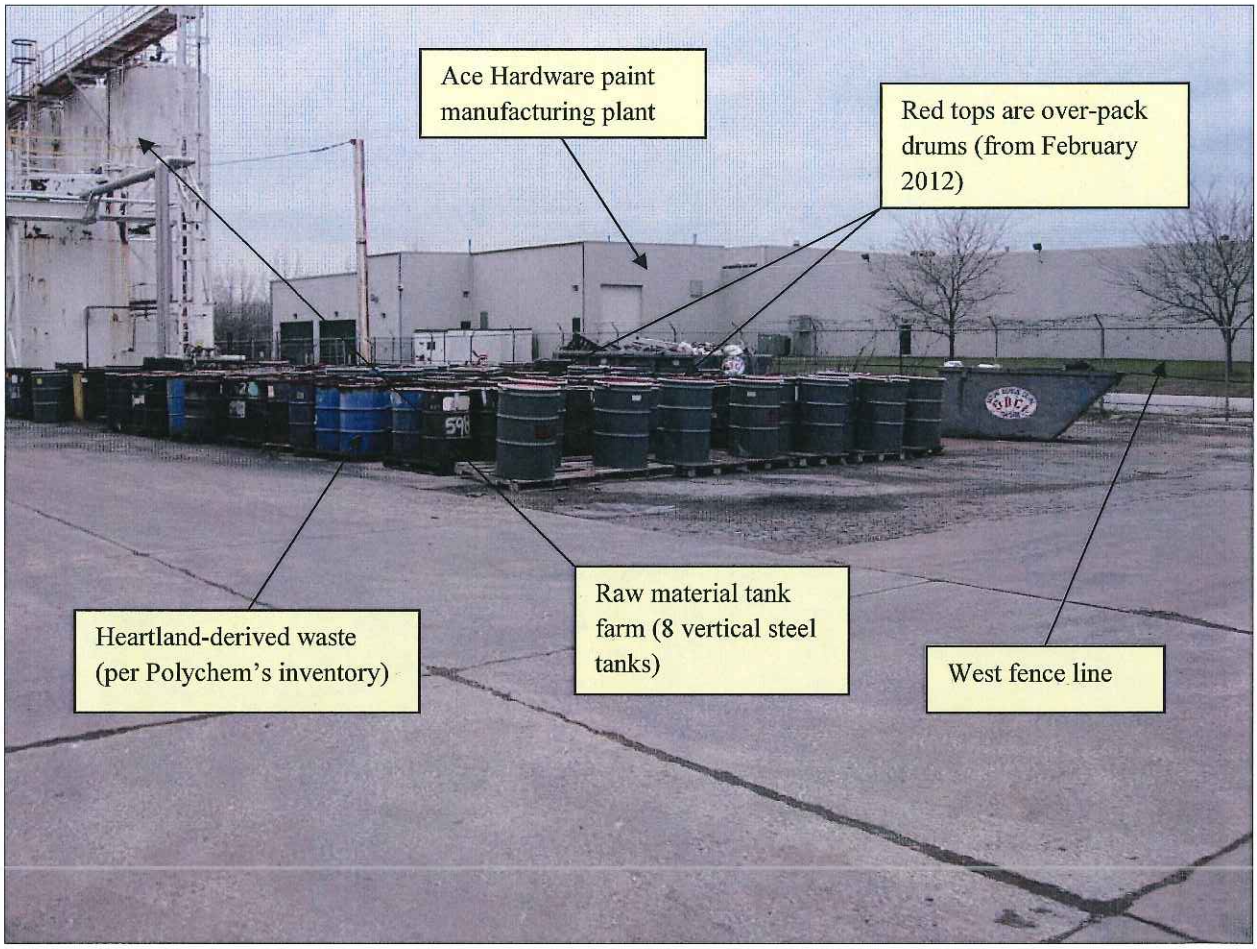

Ace Hardware paint manufacturing plant
Red tops are over-pack drums (from February 2012)
Heartland-derived waste (per Polychem's inventory)
Raw material tank farm (8 vertical steel tanks)
West fence line

PHOTO 27


Ace Hardware paint manufacturing plant
Heartland-derived waste (per Polychem's inventory)

PHOTO 28

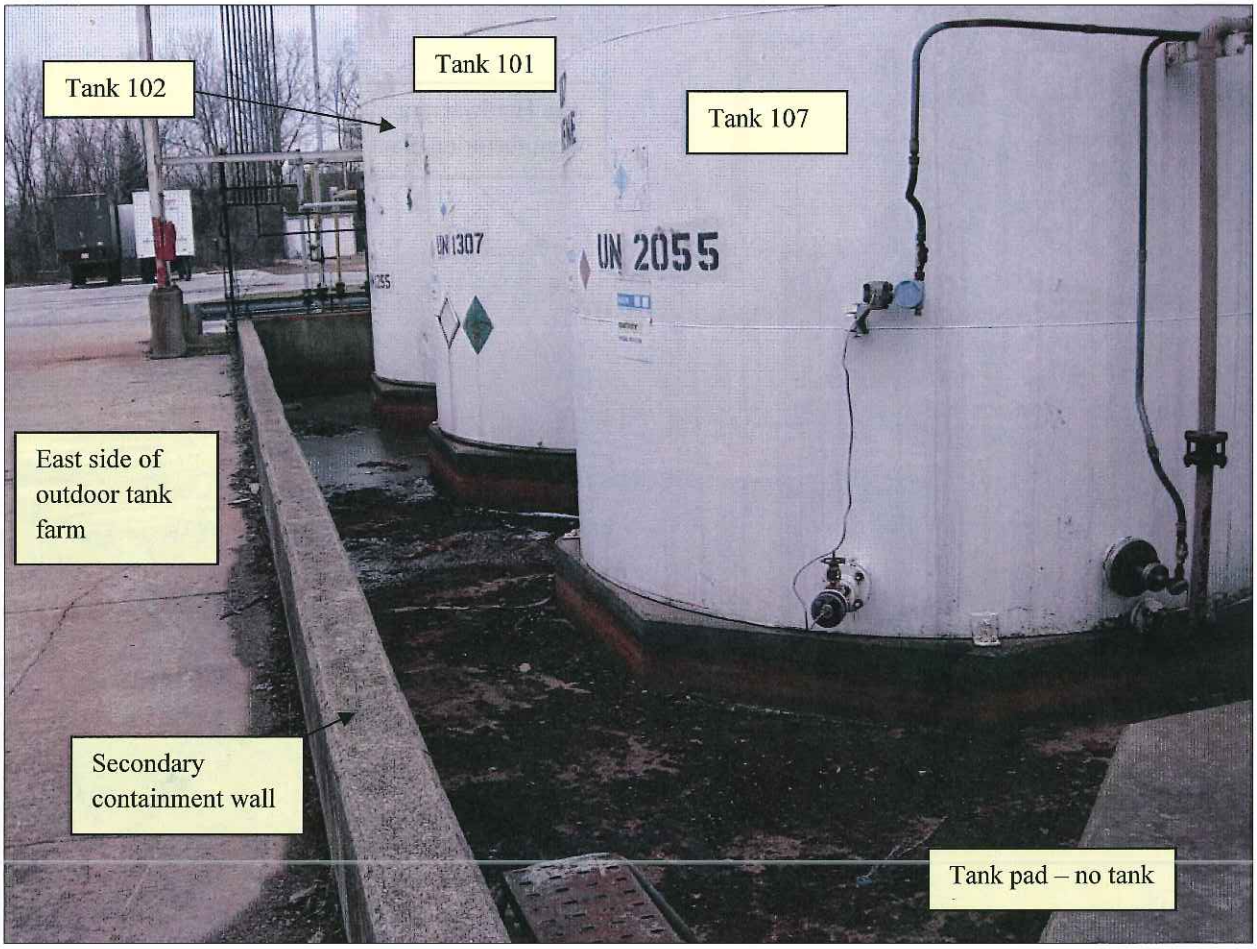

Tank 102
Tank 101
Tank 107
UN 2055
East side of outdoor tank farm
Secondary containment wall
Tank pad – no tank

PHOTO 29


TK107
STYRENE
UN 2055
HEALTH
REACTIVITY
PERSONAL PROTECTION
HEALTH

PHOTO 30

PHOTO 31

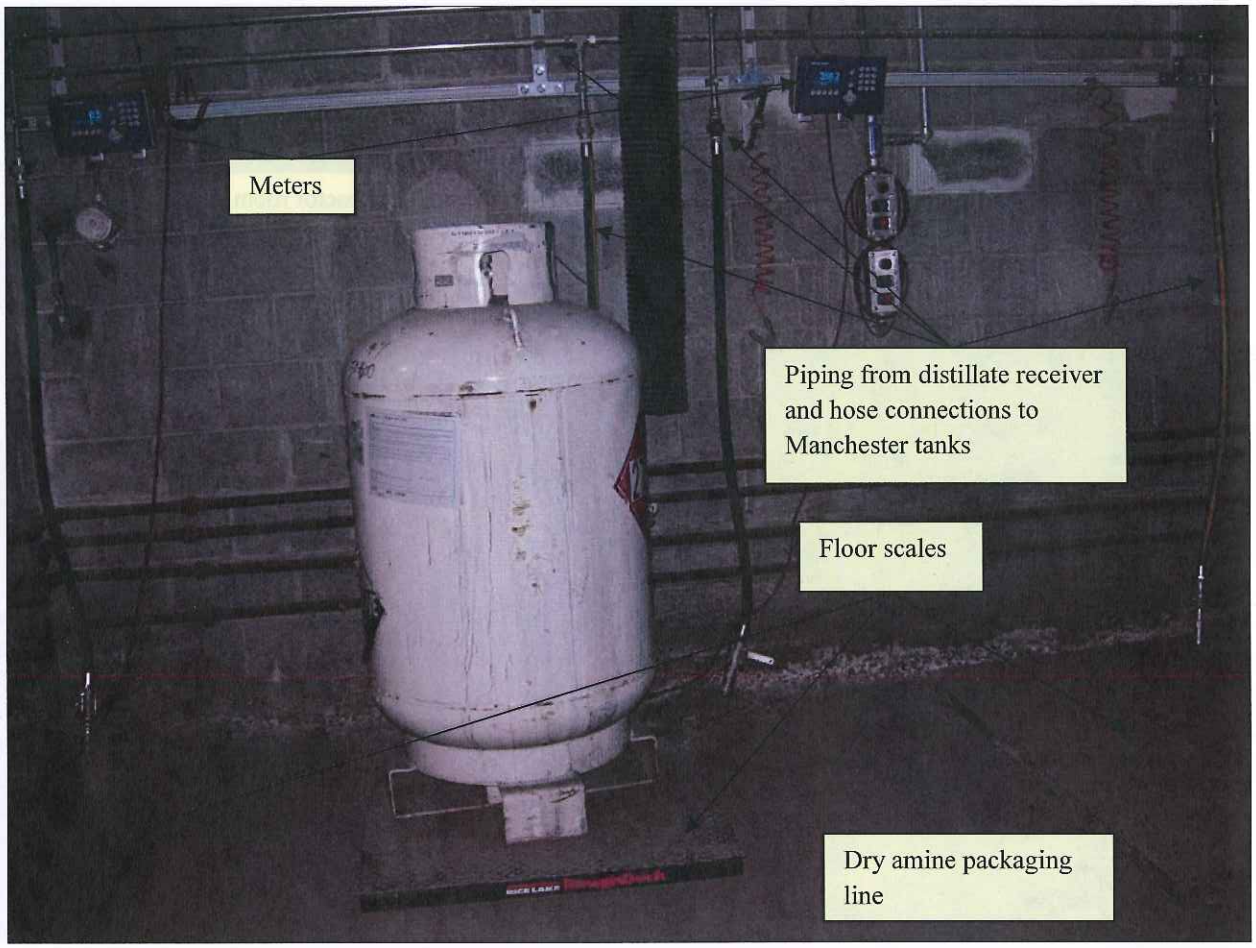

Meters
Piping from distillate receiver and hose connections to Manchester tanks
Floor scales
Dry amine packaging line

PHOTO 32

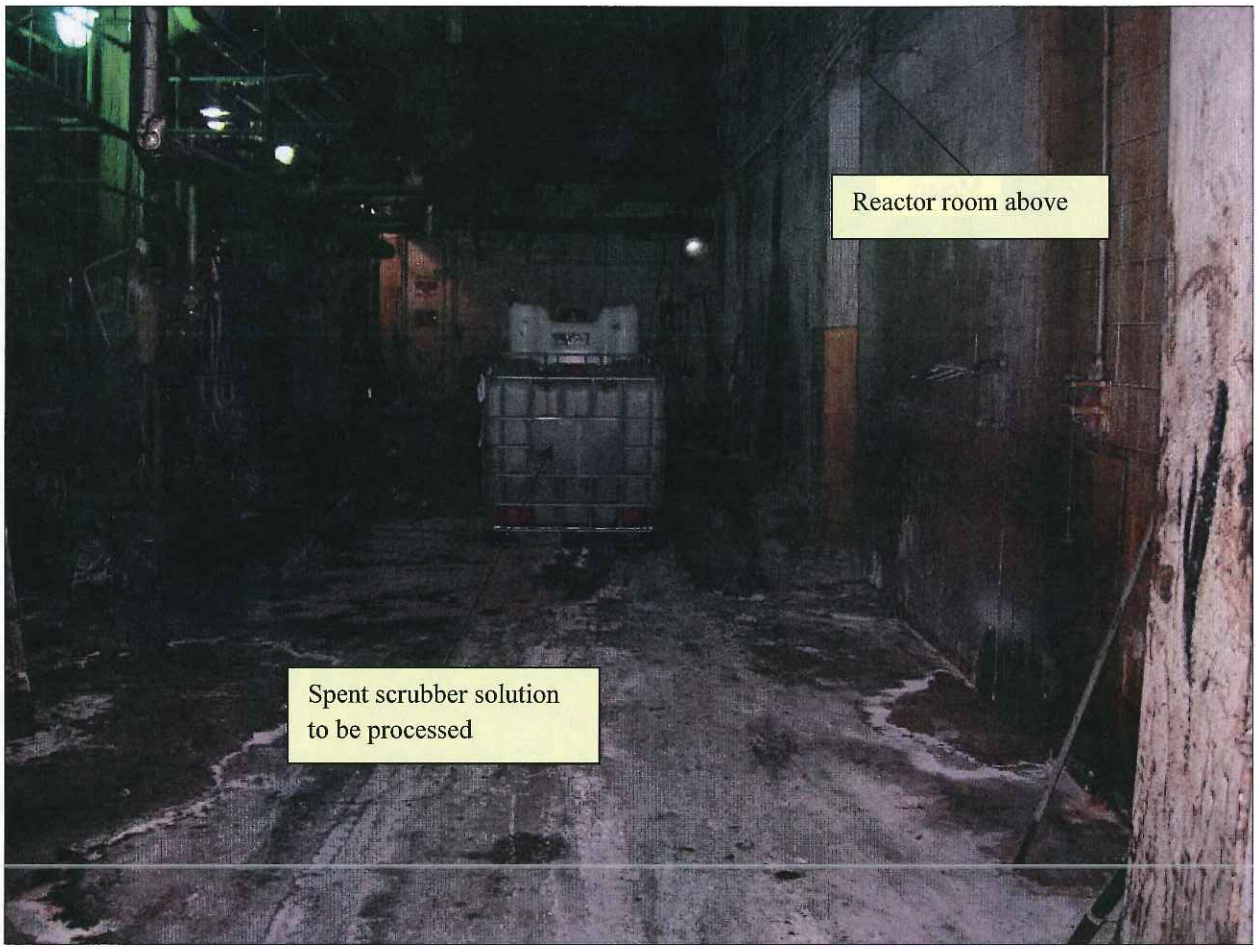

Reactor room above
Spent scrubber solution
to be processed

PHOTO 33

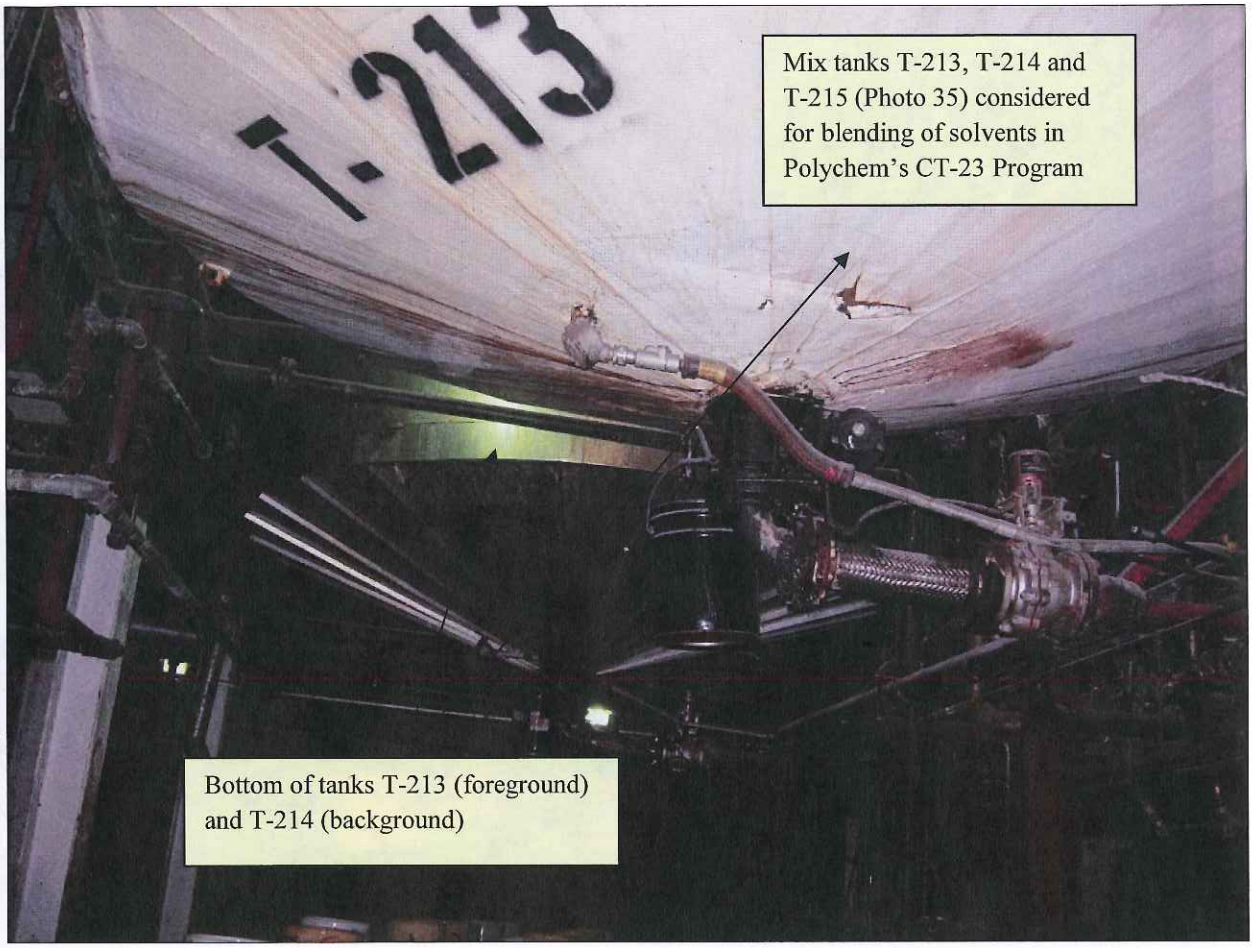

T-213
Mix tanks T-213, T-214 and T-215 (Photo 35) considered for blending of solvents in Polychem's CT-23 Program
Bottom of tanks T-213 (foreground) and T-214 (background)

PHOTO 34

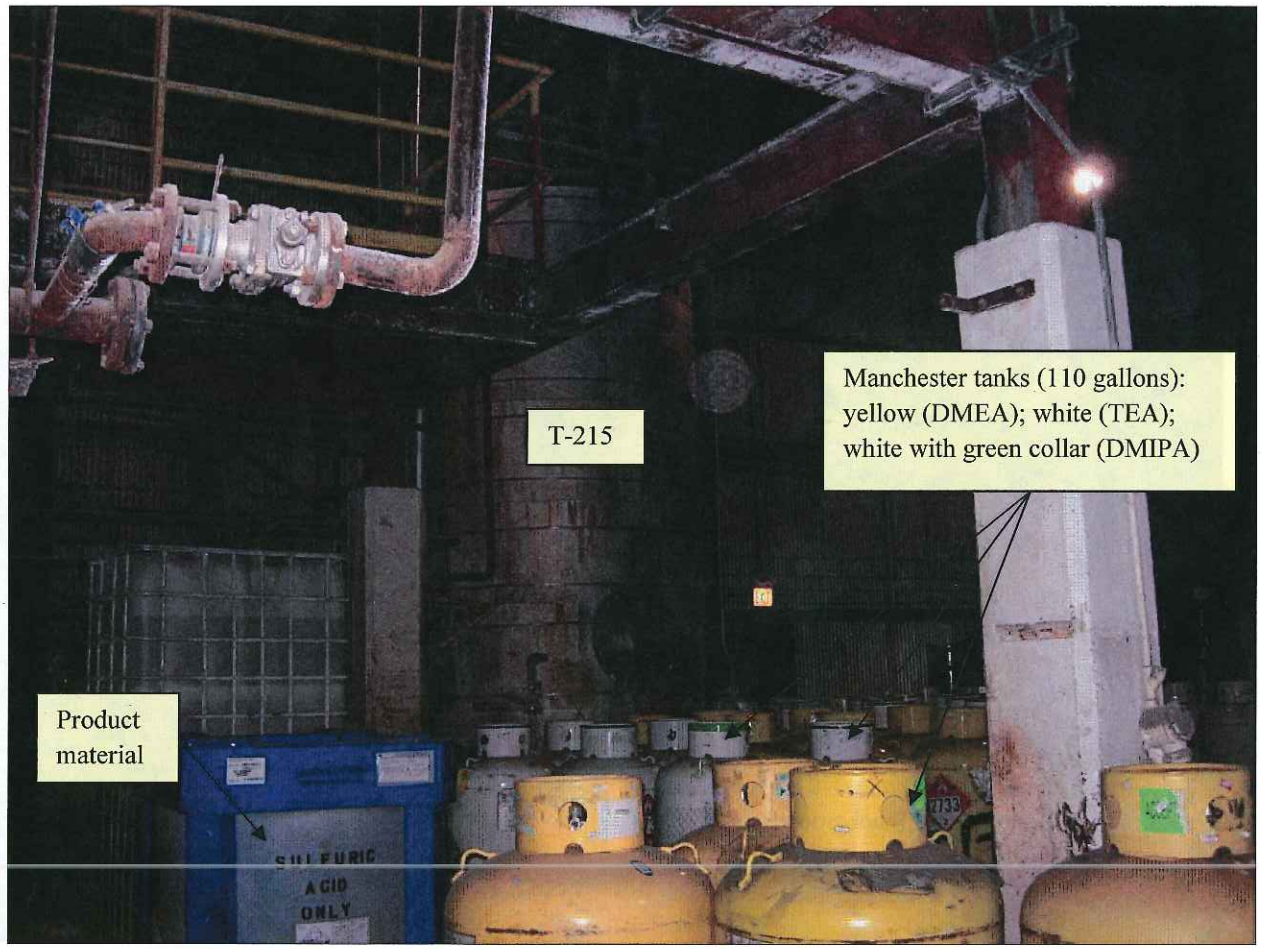

T-215
Manchester tanks (110 gallons): yellow (DMEA); white (TEA); white with green collar (DMIPA)
Product material
SULFURIC
ACID
ONLY

PHOTO 35

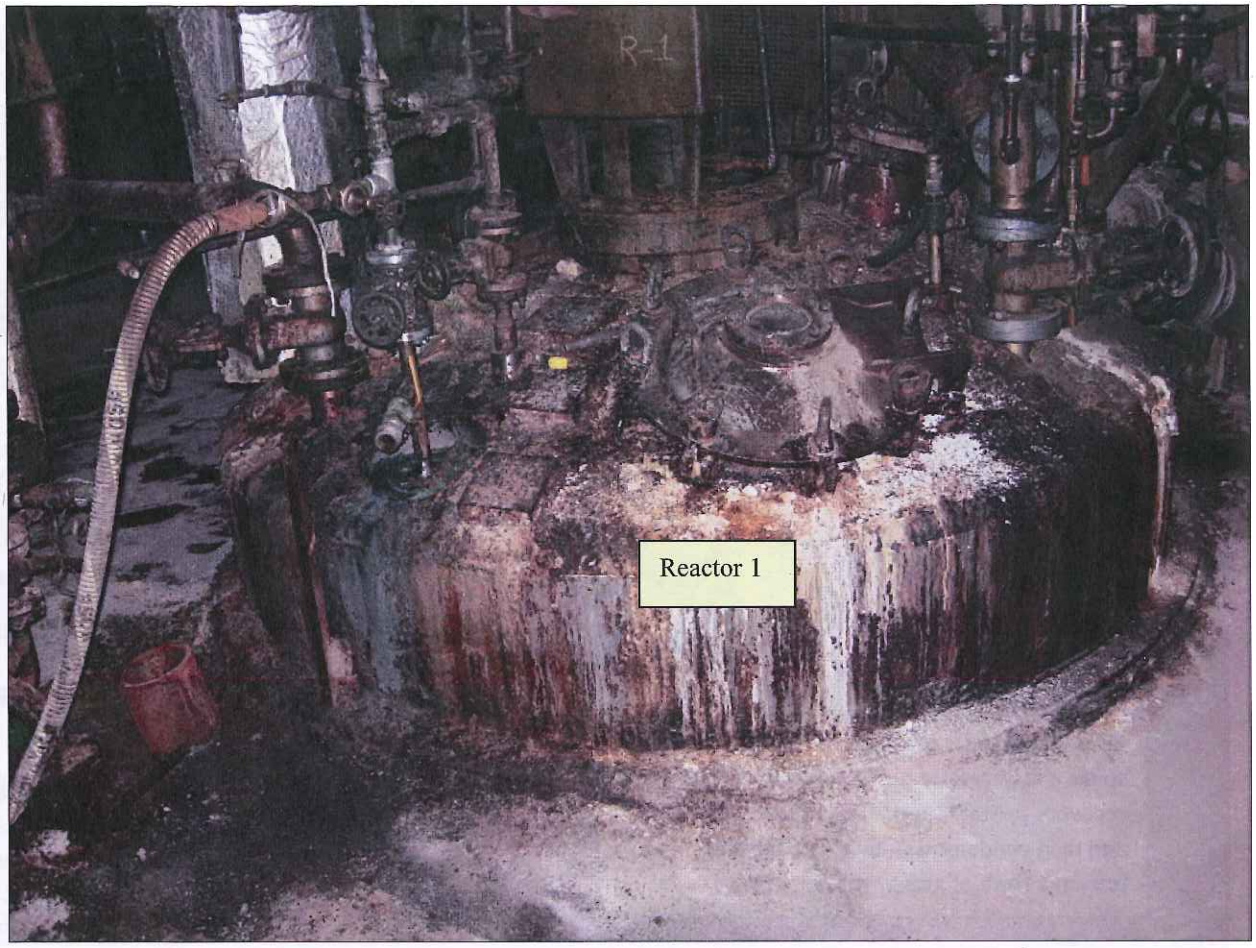


PHOTO 36

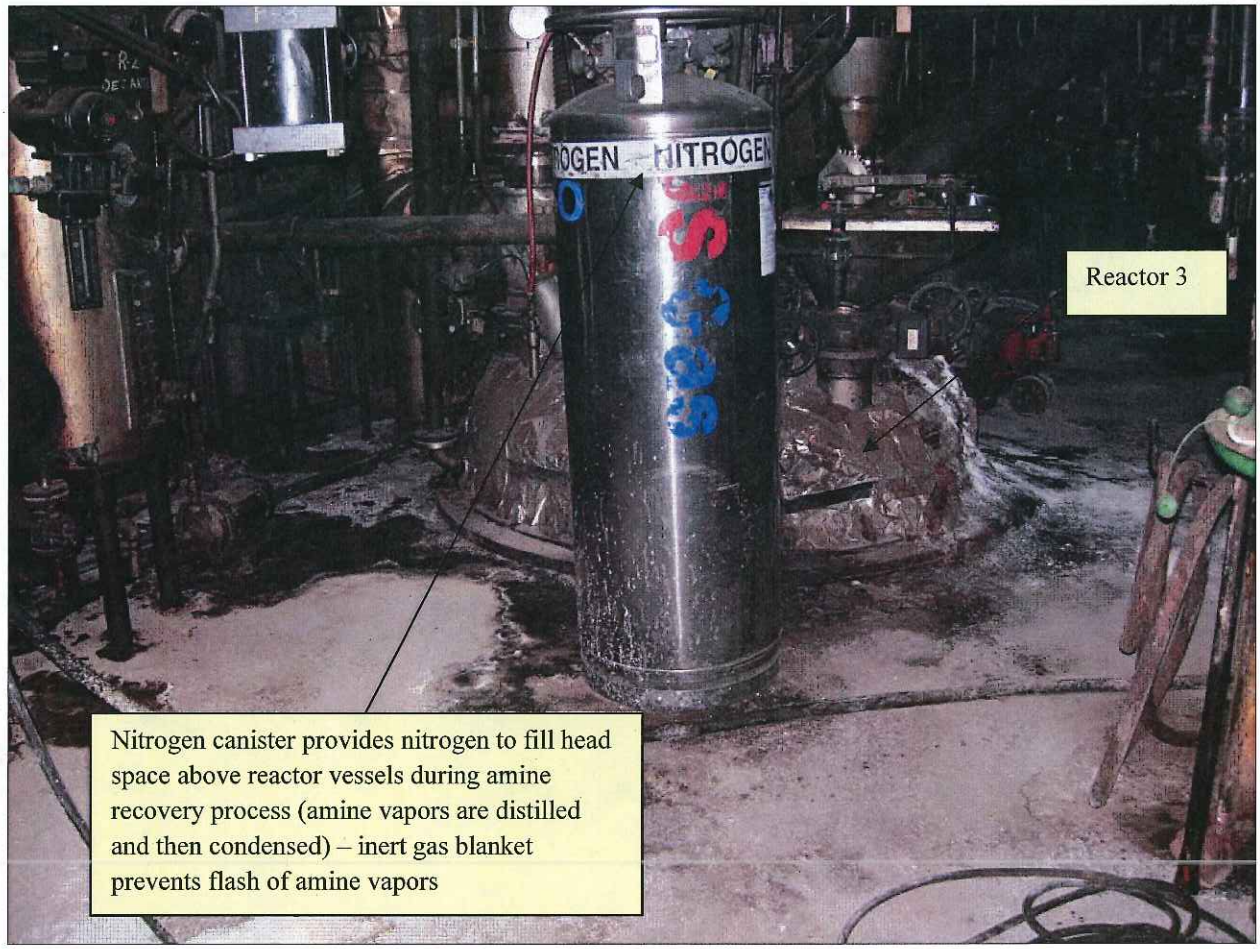

Reactor 3
Nitrogen canister provides nitrogen to fill head space above reactor vessels during amine recovery process (amine vapors are distilled and then condensed) – inert gas blanket prevents flash of amine vapors

PHOTO 37