



Long-Term Stewardship Inspection Checklist

Facility Name: **Former Elf Atochem North America**

Facility Address: 2375 State Road, Bensalem Township, PA 19020

Web Fact Sheet: <http://www.epa.gov/reg3wcmd/ca/pa/webpages/pad002290823.html>

Inspector: Andrew Clibanoff

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Email: clibanoff.andrew@epa.gov

Pre-Inspection Check List (Inspection Scheduled for April 2, 2014)

Current Site Status: Site is reported to be in same condition as it was at the time of the Final Decision. During a telephone conversation on 2/27/14 with Stephen McKenna, president of Mignatti Companies, Mr. McKenna stated that construction in Parcels B + C (not the former Parcel A site property) is scheduled to begin within the next 60 days. Parcels B + C will be developed in separate phases with no overlap with the construction slated for Parcel A. There may be some earth movement along the frontage areas of Parcel A but no construction on that property is scheduled as of yet.

Groundwater Usage in Site Vicinity: Groundwater usage in the site vicinity has remained unchanged since the Final Decision was issued for the Former Elf Atochem Facility. Other than a few monitoring wells over the past 5 years, the Bucks County Health Department (BCHD) (215-345-3318) has received no permit applications for new well construction in the vicinity (1.0 mile) of the former Elf Atochem facility. The BCHD requires permits prior to the construction of new wells or modifications of existing wells throughout Bucks County. The permitting requirements pertain to individual residential drinking water supply wells, monitoring wells, test wells, and geo-thermal wells for the protection of the health and welfare of the public.

Bensalem Township Public Water Connection Ordinance Status: As of 3/27/14, an internet search confirms that Chapter 192, Article II, Section 192-6 of the Bensalem Township Code of Ordinances remains in effect. This ordinance requires all existing and future buildings within 150 feet of public water facilities to connect to the public water supply.

Changes in Building Foundation Footprints: Since there has been no reported construction on Parcel A as of the date of the LTS Inspection (April 2, 2014), no vapor mitigation systems have been installed as of yet. Construction on Parcel A may begin in late 2014.

Post-Remediation Care Plan Status: The facility owner requested and EPA agreed to defer groundwater monitoring requirements until construction activities begin on Parcel A. Similarly, vapor point monitoring will not occur prior to completion of the redevelopment activities.

Inspection Participants

Name	Affiliation	Phone Number
Andrew Clibanoff	USEPA Office of PA Remediation	215-814-3391
Paul Gotthold	USEPA Office of PA Remediation	215-814-3410
Joel Hennessy	USEPA Office of Technical Support	215-814-3390
Jacque Morrison	USEPA Land and Chemicals Division Front Office	215-814-5664
Andrea Barbieri	USEPA Office of State Programs	215-814-3374
Elena Grillo	GIS, Inc. (EPA Contractor)	215-814-5379
Donald Rood	PADEP Norristown Office	484-250-5782
Walter Payne	PADEP Norristown Office	484-250-5792
Steve McKenna	Mignatti Companies	215-914-1908
Arnie Boyer	Mignatti Companies	215-947-2800
Jeff Walsh	Penn E & R	215-997-9000

Bensalem Township Meeting after Site Visit

At the conclusion of the site visit, all of the above inspection participants with the exception of Steve McKenna and Jeff Walsh, travelled to the Bensalem Township Offices at 2400 Byberry Road in Bensalem, PA. The following Township representatives met with the group:

Name	Affiliation	Phone Number
Matthew Takita	Bensalem Township Director of Building and Planning	215-633-3643
Robert Sponheimer	Battalion Chief, Bensalem Fire Rescue	215-633-3617

Background

Subsequent to the remediation of the Former Elf Atochem Facility (a.k.a. Bensalem Redevelopment, L.P. (BRLP), Parcel A or the Facility), two adjacent parcels of land to the south (Parcels B & C) were acquired. These parcels are not part of the Facility and are not subject to the Post-Remediation Care Plan or the use limitations defined in the Environmental Covenant for the Facility. The three parcels combined are planned to be redeveloped into a mixed residential/commercial development (Waterside).

Engineering Controls

All construction on Parcel A will be slab-on-grade and will include vapor mitigation control systems. The EPA-approved design incorporates both a collection/venting system and a vapor barrier. The collection system consists of a porous media (pea gravel) and piping that vents through the roof. The barrier is a geomembrane placed between the collection system and the floor slab to prevent upward migration of vapors. Once installed, visible inspection of the mitigation systems will not be feasible since they will primarily be beneath building foundations. Vents protruding from roof tops may be visible for inspection. Inspections will focus on

ensuring that building foundations are not altered in any way that could negatively impact the vapor mitigation control systems and that any new construction at the Facility has vapor mitigation controls in place.

Site Inspection Summary

EPA arrived at the Facility at 10:00 a.m. on April 2, 2014. Temperatures were in the mid-40°s with light rainfall. The Facility appeared largely in the same condition as it was at the time of the Final Decision in September 2008. All former Facility buildings have been removed and the Property is well vegetated. A silt fence in the central portion of the property running from east to west was in poor condition, but since the site is well vegetated, there no longer is a need for the fence. The gated entrance to the site along State Road has been nicely landscaped to promote the future Waterside Development. A road leads from the gate through the Facility to the location of a sales office trailer near the bulkhead in the northeast corner of the Property.

All of the inspection participants were present by 10:15 am and the inspection began shortly thereafter. Mr. Clibanoff stated that the inspection was part of EPA Region 3's Long-Term Stewardship Program in which facilities that have been through the RCRA Corrective Process that have remedies with engineering and/or institutional controls will be visited by the Agency approximately every five years to ensure that those controls remain intact and protective of human health and the environment. The engineering controls selected in the remedy for the Former Elf Atochem Facility, namely vapor barrier systems beneath the foundations of all new buildings on Parcel A do not exist yet because redevelopment in this parcel will not occur for a few more years, according to Mr. McKenna. The institutional control that restricts groundwater usage for any purpose at the site was confirmed to be in effect at the Facility.

Mr. Clibanoff stated that a second goal of the inspection would be to field test various portable geographic information system (GIS) devices that would allow EPA to verify locations of various site features using live Global Positioning System (GPS) data.

GIS devices used during inspection

1. DeLorme GPS
2. Trimble Juno (Windows Mobile)
3. iPhone
4. iPad with external Bluetooth GPS
5. Android Phone

All of the GIS devices with the exception of the iPad were able to identify the users' locations using GPS coordinates. While communication between the iPad and the external Bluetooth GPS device was established, the mapping software on the iPad was unable to pinpoint the user's location.

Each of the ten monitoring wells in the long-term groundwater monitoring program for the Facility were visited and their locations were confirmed with the remaining GIS devices. Damage due to frost upheaval was apparent at one of the well locations (MW-2S). Several of the

eighteen wells that are to be abandoned before site redevelopment and the future approximate location of one of the vapor points were also observed during the inspection. More information about the monitoring wells can be found in the Groundwater Monitoring Section on page 7 below and additional information about the Vapor Points can be found on page 8.

The inspection team walked along the southern boundary of the site that separates Parcel A from Parcels B and C. There is currently a silt fence along this boundary but when fully redeveloped, the Parcels will be indistinguishable from one another without the use of a geospatial device.

The inspection of the facility concluded at 11:30 am and the inspection team headed to its meeting with Bensalem Township officials.

Bensalem Township Meeting Summary

The inspection team met with Matthew Takita, Bensalem Township Director of Building and Planning and Robert Sponheimer, Battalion Chief at the Bensalem Township Office located at 2400 Byberry Road in Bensalem, PA at approximately 12:00 pm. The purpose of the meeting was to explain EPA's Long-Term Stewardship Program as it related to the Former Elf Atochem Facility to Mr. Takita. Mr. Takita was familiar with the Waterside redevelopment project and stated that it was part of a larger redevelopment effort that Bensalem is interested in seeing along the Delaware River portion of the Township. Mr. Clibanoff explained the requirements for vapor barriers beneath the foundations of all new construction in Parcel A of the Facility and that construction permit applications coming to Mr. Takita's office should include designs for those vapor barriers. Mr. Clibanoff stated that he would provide a copy of the approved Vapor Barrier Design Plans to the Township. Mr. Takita stated that he would set up a notification process for the affected parcel in Waterside and that both EPA and PADEP would be notified when an application for development or construction was received on a property that had an environmental covenant. Mr. Takita stated that the notification process would be set up for all properties in the Township, not just Waterside.

The meeting with Bensalem Township ended at approximately 12:30.

Institutional Controls

The Environmental Covenant requires annual third party inspections to ensure the ongoing use, integrity and effectiveness of the engineering and institutional and engineering controls used at the Facility. Many of the items required by the third party inspections should be verified during future EPA/PADEP inspections.

1. Are copies of the written annual inspection reports available? Copies of annual reports are required to be maintained by the property owner. Yes No
2. Were the inspections completed under the certification of a Professional Geologist (P.G.), Professional Engineer (P.E.) or equivalent? Yes No
3. Do the written inspection reports document the following?
 - a. Visual inspection of building foundations and visible portions of vapor barrier systems performed. Yes No
 NA
 - b. Issues identified during visual inspection of foundations/barriers:

Comments: *Jeff Walsh (Penn E & R) stated that he has been responsible for completing the annual inspections per the environmental covenant since the Post-Remediation Care Plan has been in effect. Annual inspection records were not reviewed during the inspection since redevelopment has not yet occurred in Parcel A where the use limitations are in effect. Steve McKenna stated that it may be three more years before construction begins in Parcel A.*
 - c. Were there building footprint changes from previous years? Yes No
 - i. If yes, are as-built plans demonstrating the existence of vapor mitigation controls available. Yes No
 - d. Was a file review of Bensalem Twp. municipal records conducted to determine whether construction permits were sought that would interfere with existing vapor barriers. Yes No
 - i. If yes, did any actual construction impact any of the vapor barriers utilized at the site? Yes No

- e. Confirmation that groundwater is not utilized on the property. Yes No
- i. Is Bensalem Township Ordinance (Chapter 192, Article II, Section 192-6) requiring connection to the public water supply confirmed to still be in effect? Yes No
- ii. Was the Bucks County Health Department contacted to verify that no new well construction permits were issued in the immediate vicinity of the site? Yes No
- f. Results of any soil gas/groundwater monitoring performed at the facility the previous year Yes No
 NA
- g. Records of any maintenance/repairs related to any of the activity and use limitations described in the Covenant. Yes No
 NA

Comments: Jeff Walsh (Penn E & R) verbally acknowledged that once per year since the Post-Remediation Care Plan has been in effect, he has verified the conditions in item (e) above. He specifically stated that the Bensalem Township Ordinance (Chapter 192, Article II, Section 192-6) remains in effect and that the Bucks County Health Department has not received permit applications for new groundwater wells in the vicinity of the site.

The rest of the items in question (3) do not need to be addressed until construction on Parcel A commences. No soil gas/groundwater monitoring has occurred since the Final Report for Site Remediation was submitted in September 2008. As stated in the Pre-Inspection Checklist above, EPA has agreed to delay the long-term monitoring program at the facility until construction commences in Parcel A. The Post-Remediation Care Plan contained in the Final Report calls for one round of Pre-Construction Soil Gas Sampling at the same six locations sampled as part of the Final Characterization activities. These samples have not been collected to date but must be collected prior to construction activities occurring in Parcel A.

Groundwater Monitoring

The long-term groundwater monitoring program includes 10 wells and will commence when redevelopment activities begin. Groundwater samples will be collected quarterly for the first year (4 events), biannually for the second year (two events) and annually thereafter until EPA, PADEP and BRLP agree that groundwater monitoring has demonstrated a stable or downward trend of concentrations in groundwater exists. Samples will be analyzed for PCE, TCE, vinyl chloride, beryllium, cadmium, lead, nickel and thallium only.

Monitoring Well	Well Observed	Sample Collected	Date Sample Last Collected	Next Required Sample Date	Comments
MW-2S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008	TBD	Casing and surrounding concrete had been disturbed, most likely naturally through frost upheaval. Integrity of casing/well will need to be assessed before this well is sampled in the future.
MW-2D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
MW-11D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
MW-12D	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
TW-6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
TW-7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
TW-10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		Temporary well has a plastic cap but no lock is present to protect well integrity.
TW-11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
MW-16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		
MW-17	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2008		

Comments: The field team visited the locations of all 10 monitoring wells. The locations of the wells matched fairly well with the locations identified on the various GPS devices used in the field during the inspection. Jeff Walsh (Penn E & R) stated that 18 monitoring wells on-site currently remain and will need to be abandoned prior to Parcel A development.

Soil Gas Monitoring

The long-term soil gas monitoring program includes 12 vapor points installed at locations within public areas of the site. Vapor point installation will occur immediately after site redevelopment is completed. Soil gas samples will be collected biannually for the first two years (4 events total) and annually thereafter, if necessary. All samples will be analyzed utilizing EPA Method TO-15. If two consecutive years of vapor monitoring demonstrate that none of the observed contaminants have soil gas concentrations above (including employment of the 75%-10x statistical rule) EPA's MSC_{sg}, no further soil vapor monitoring will be required.

Vapor Point	Vapor Point Observed	Sample Collected	Date Sample Last Collected	Next Required Sample Date	Comments
V-1	<input type="checkbox"/>	<input type="checkbox"/>	NA		Vapor points not to be installed until redevelopment is completed.
V-2	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-3	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-4	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-5	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-6	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-7	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-8	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-9	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-10	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-11	<input type="checkbox"/>	<input type="checkbox"/>	NA		
V-12	<input type="checkbox"/>	<input type="checkbox"/>	NA		

Comments: The field team used their various GPS devices to visit the future location of Vapor Point V-3 as depicted on Figure 5 of the September 2008 Final Report for Site Remediation. The final vapor point locations are subject to change based on the final redevelopment plans for Parcel A but they will be in the vicinity of the locations depicted in Figure 5.

Inspection Follow-up

During the inspection, Walter Payne provided a copy of an Amendment to the Environmental Covenant to a member of the EPA inspection team. An approximately 9,000 sq. ft. piece of land located in the southwest corner of Parcel A was transferred to Parcel B and the activity and use limitations were removed. In a telephone conversation on April 3, 2014, Steve McKenna indicated that the transfer of this piece of Parcel A was necessary for phasing of construction so the improvements will stay entirely within Parcel B. The bank required the covenant revision and the action had nothing to do with trying to evade the AULs imposed on the rest of Parcel A. No historic site activity is known to have occurred on the transferred portion of Parcel A and the transferred property is located more than 100 feet upgradient of the nearest contaminated groundwater plume. Therefore, the property-wide AULs were considered to be conservatively protective in this portion of the Facility and no exposures are suspected to occur at this location in the absence of AULs.

After the inspection, EPA inquired about the sales office trailer located on the northeast corner of Parcel A, and whether the trailer had adequate vapor mitigation controls in place. Jeff Walsh provided a copy of the January 17, 2014 Annual Inspection Report for the Facility which indicated that the trailer does not rest upon the ground surface and has an open crawl space underneath it. EPA concurs with the report's conclusion that the trailer does not have potential for an impact from vapor intrusion, and does not require a vapor barrier or similar engineering control. EPA informed Jeff Walsh and Steve McKenna that EPA/PADEP should be notified in the future before construction trailers or other temporary occupiable structures are brought to Parcel A and that careful consideration to their design and location should be given to make a determination as to whether vapor intrusion mitigation controls may be necessary.