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Olin CHEMICALS
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January 6, 1995

Mr. Phillip Masters
Hazardous Waste Facilities Branch
United States Environmental Protection Agency
Region II
26 Federal Plaza, Room 1037
New York, New York 10278

Re: Quarterly Report
Olin Corporation
Niagara Falls, NY, Plantsite
RCRA Facility Investigation

Dear Mr. Masters:

Pursuant to paragraph V.A. and Task V. of Attachment A of the Administrative Order, the Quarterly Report for the Niagara Falls RCRA Facility Investigation (RFI) is herewith submitted.

Please call (615/336-4587) if you have any questions about this report or any of the work under the RFI.

Sincerely,

OLIN CORPORATION

Michael J. Bellotti

Michael J. Bellotti
Senior Associate Hydrogeologist

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Attachment

cc:

P. Counterman (NYSDEC)
W. G. McGlasson
K. R. McIntosh
J. P. Mitchell
G. C. Meyer
L. E. Murray
S. F. Radon (DEC Buffalo)
M. L. Fries
Joseph Clore (USEPA Region II)
Wm. Wertz (DEC Albany)
J. C Brown

Quarterly Report
Olin Corporation
Niagara Falls, New York
RCRA Facility Investigation

Report for: October through December, 1994

This Quarterly Report is submitted pursuant to paragraph V.A. and Task V. of Attachment A of the Administrative Order on Consent (RCRA-89-3013-0208) between the U. S. Environmental Protection Agency (EPA) and Olin Corporation. This report describes the progress, status, and plans for the RCRA Facility Investigation (RFI) being conducted under the Order at Olin Corporation's Niagara Falls, NY, plant.

RFI Status

The RFI report was submitted on time on August 5, 1994. The RFI incorporated all data development tasks agreed to between Olin and the Agencies.

A description and estimate of the percentage complete of the individual tasks under the RFI are presented in Attachment A. With the August 5, 1994 submittal, the RFI is complete.

Findings
The findings to date are:

- water bearing zones in the bedrock correspond to the zones established for the Du Pont plant site study (A, B, C, and CD zones);
- the Olin production wells (OPW), pumping at 600 gpm, create a zone of influence that extends approximately halfway (east-west) across Olin's Plant 2 in the B zone, and approximately to Gill Creek in the C and CD zones;
- well cluster 8 on Olin's Plant 1 appears to exhibit residual drawdown from downward movement of water into the C and CD zones;
- there is little significant groundwater in the overburden and contaminant migration is preferentially downward into bedrock;
- overburden is thin (5 to 10 feet thick typically) at most points throughout the site;
- a bedrock "high" is present in the area of the former "mercury pond" SWMU;
- gradients are relatively flat in the bedrock fracture zones when the production wells are not pumping (wells pump 600 gpm continuously);

Findings (continued):

- dense non-aqueous phase liquid (DNAPL) was found one time in well OBA-2C and OBA-5B and were not found in subsequent sampling. DNAPL was found in well OBA-10A and diminished upon removal. DNAPL at OBA-2C and OBA-5B consisted primarily of trichloroethene and tetrachloroethene, with other components present at lower concentrations; DNAPL at well OBA-10A consisted primarily of benzene and mono-, di-, and tri-chlorobenzenes with other components present at lower concentrations.
- elemental mercury was observed in a split-spoon soil sample taken at the 6 to 8 foot depth near SWMU LA-3.
- A zone (overburden) groundwater that moves laterally will discharge to Gill Creek to the east or sewer routings in other directions, although most migration is expected to be downward into rock;
- most overburden consists of fill; and
- B and C zone heads are lower than the elevation of the Gill Creek water surface.

Recommendations and conclusions from the Interim Report included:

- additional wells were necessary to fill data gaps in the hydraulic profile of the site. Data gaps were addressed in developing the final RFI report.
- manmade passageways do not represent a significant potential for enhancing offsite contaminant migration; and
- site soils are contaminated as the result of almost 100 years of plant operations and additional soil sampling will not refine the present knowledge about specific SWMUs.

Changes to RFI

Data Development Tasks

The Interim Report recommended additional monitoring wells at several locations. EPA commented on the Interim Report on November 4, 1992, recommending several locations in addition to those recommended in the Interim Report. On November 24, Olin responded to EPA's comments, agreeing in concept to EPA's additional locations, but proposing alternatives to collect data comparable to data that would be collected by EPA's recommendations. These alternatives included use of data from DuPont monitoring wells bordering Olin property. EPA requested additional information regarding the DuPont wells and data and Olin responded to this request on January 8 and 14. EPA and NYSDEC approved Olin's proposal in September, 1993.

Olin installed two additional wells during November 1992 using the design approved in the Work Plan. These wells, OBA-9A and OBA-10A, near Gill Creek at the southeastern corner of Olin's Plant 2, were sampled initially on November 16, 1992. Data were reported with the fourth sampling round data submitted March 10, 1993.

Olin and USEPA / NYSDEC agreed to a series of data development tasks to complete the RFI. This scope consisted of area-wide piezometric measurements coordinated with adjacent sites; sampling of selected DuPont wells for VOC's,

pesticides and mercury and supplementing existing soil boring/analysis data at Olin's Plant 1 and Plant 2. USEPA has agreed to Olin's request to use existing DuPont groundwater quality data, per data validation, and to sample selected DuPont wells. In completing data development tasks, Olin completed the piezometric measurements, DuPont well samplings, soil borings and additional well cluster installations. The agencies and Olin had agreed to the scope of additional data development tasks to resolve remaining technical issues.

The final data development phase consisted of additional well clusters at four locations, area-wide piezometric plot and inclusion of Solvent site data into the Olin site RFI. While some delays occurred in the Solvent site investigation, delaying Olin's access to some data, Olin and Agencies agreed that Olin would submit the RFI by August 5, 1994 (Olin has met this date of submittal) but that the RFI conclusions would not be finalized until the remaining Solvent data are incorporated.

Olin has completed the confirmatory sampling and analysis of newly drilled wells. Data will be validated and reported to the Agencies.

RFI Conclusions

In the final RFI report, Olin concludes that a plume of groundwater contaminants from the adjacent Solvent Chemical site has migrated westward onto Olin property east of Gill Creek. The westward migration of that plume has been aided by selective channeling along the bedding of the Buffalo Avenue sewer. Olin-generated plumes are better defined on the Olin site. Another offsite plume moving onto the Olin site from the south is also better identified. One remaining concern is the potential for selective migration of DNAPL and aqueous contaminants along the bedding of a former Solvent sewer line which crosses the Olin property east of Gill Creek. Olin has requested that NYSDEC expand their investigation of the Solvent site to include investigation of this possibility. In September, 1994, Malcolm-Pirnie, a NYSDEC contractor conducted a partial investigation of the impacts of this sewer line and bedding. While the NYSDEC contractor investigation did not identify soil contamination near the pipeline, Olin believes, because the pipeline bedding was not directly sampled, that the impact of the pipeline and bedding are not yet fully defined.

DNAPL

Olin had developed and implemented a protocol for monitoring DNAPL at selected wells where DNAPL was previously detected. The protocol was approved by the Agencies. The protocol calls for measurement of DNAPL thickness, withdrawal and volume documentation. Three bi-weekly measurements were done in third quarter, 1994. Results were reported in the RFI. No DNAPL was found in wells OBA2C or OBA5B during the first two measurement episodes. However, DNAPL was identified at well OBA10A (east of Gill Creek) for the first time. Approximately 1.25 gallons of DNAPL were removed. This well has been included in the DNAPL protocol. Olin believes that this DNAPL is migrating from the adjacent Solvent site as noted above. Olin has notified EPA and NYSDEC of the DNAPL occurrence.

CMS
Olin has submitted a preliminary Corrective Measures Study (CMS), per NYSDEC guidelines. The preliminary CMS evaluates a number of conceptual planning options for future site remediation, and recommends a remedial approach for appropriate environmental media. Olin has begun work on a final CMS. The final CMS will be submitted to the Agencies by March 31, 1995.

Problems During the Reporting Period
There were no problems during this reporting period.

Release Incidents
There were no reportable quantity releases during this quarter.

Actions to Rectify Problems
Groundwater pumping continues at the caustic tank area, with objective of containing any caustic spillage from the Feb. 21 spill incident. Olin's report on the caustic tank area, per workplan approved by USEPA, has been submitted to the Agencies.

Changes in Personnel
none

Projected Work for Next Reporting Period
Olin is preparing a final CMS and will submit the final CMS to the Agencies by March 31, 1995.

Attachment A

Quarterly Report
Olin Corporation
Niagara Falls, New York
RCRA Facility Investigation

Report for:
April through June 1994

Task	Date	% Comp.	Comments
Hydraulic testing wells	03/25/91	100	Pump test of OPW and continuous head measurements of selected
Well sampling (1st rnd.)	10/07/91	100	NAPL noted in OBA-2C
Analysis of 1st rnd. GW		100	
Soil sampling	10/18/91	100	Elemental Hg noted in LA-3 area
Analysis of soil samples		100	
Hydraulic head monitoring	10/07/91	100	
Identification of passageways	12/21/92	100	
Preparation of Interim Report	02/04/92	100	
Well sampling (2nd rnd.)	03/02/92	100	
Analysis of 2nd rnd. GW	03/13/92	100	
Well sampling (3rd rnd.)	06/26/92	100	
Analysis of 3rd rnd. GW	07/28/92	100	
Evaluation of passageways	11/09/92	100	
Well sampling (4th rnd.)	09/18/92	100	
Analysis of 4th rnd. GW	10/23/92	100	
Additional well installation	05/15/94	100	
Additional well sampling	05/27/94	100	
Evaluation of all data	08/05/94	100	
Submit draft RFI report	08/05/94	100	