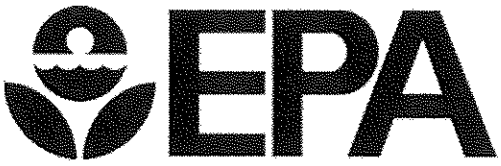


U.S. ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF BASIS

for

Proposed Subsurface Soils and Groundwater Remedy

at

Nexeo Solutions LLC
(Formerly Ashland Chemical Company)
Willow Springs, Illinois
EPA ID: ILD 980 700 538

June 2019

U.S. ENVIRONMENTAL PROTECTION AGENCY
STATEMENT OF BASIS

Nexeo Solutions LLC
(Formerly Ashland Chemical Company)
8500 South Willow Springs Road
Willow Springs, Illinois
EPA ID: ILD 980 700 538

INTRODUCTION

This Statement of Basis (SB) for the Nexeo Solutions LLC, Formerly Ashland Chemical Company, in Willow Springs, Illinois (the Facility) explains the U.S. Environmental Protection Agency's (EPA's), proposed remedy for the cleanup of hazardous contaminants as required under Section 3008(h) of the Resource Conservation and Recovery Act (RCRA). Ashland Chemical Company was an operating division of Ashland Oil Company, which became Ashland Inc. in the late 1990s and is now known as Ashland LLC (Ashland). These entities were the former owners of the Facility. Ashland retained the environmental responsibility in the transfer of ownership to Nexeo Solutions LLC on March 31, 2011 and will be responsible for implementing the selected remedy at the Facility. This also summarizes all the corrective measure alternatives analyzed by Ashland. EPA will select a final remedy for the Facility after the public comment period has ended and EPA has reviewed and considered the information provided by the public during this period.

This document summarizes detailed information from the *RCRA Facility Investigation Report*, the *Final Corrective Measures Proposal*, and other pertinent documents contained in the Administrative Record for the Facility. EPA encourages the public to review these documents to gain a more comprehensive understanding of the Facility as well as the RCRA investigation and cleanup activities that have already been conducted at the Facility.

EPA may modify the proposed remedy or select another remedy based on public comments or new information. Therefore, EPA encourages the public to review and comment on the alternatives. The public can be involved in this process by reviewing the documents contained in the administrative record file and by submitting comments to EPA during the public comment period set for July 15, to August 15, 2019. After the close of the public comment period, EPA will evaluate all written comments received from the public and will issue a notification of Final Decision and Response to Comments (FD/RC).

PROPOSED REMEDY

EPA is proposing that Ashland implement the following remedy at the Facility to address on-site subsurface soil and groundwater contamination:

- Establish institutional controls to prohibit the installation of groundwater supply wells at the Facility, to protect construction workers from exposure to contaminated subsurface soils and groundwater, and to limit current and future land uses to those consistent with industrial or commercial activities at the Facility;
- Continue pump and treatment of the glacial water-bearing zone groundwater on site;
- Implement monitored natural attenuation to assess the effectiveness of removing the source of the groundwater contamination and to monitor the long-term stability and natural attenuation of the contaminants in the groundwater; and
- Demonstrate financial assurance that Ashland will have adequate funds to complete the construction as well as operation and maintenance of the selected remedy.

FACILITY BACKGROUND

Location and History

On March 31, 2011, the Facility ownership and operation was transferred from Ashland to Nexeo Solutions LLC (Nexeo), while the environmental remediation obligations remained with Ashland. The Facility is located at 8500 South Willow Springs Road, Willow Springs, Illinois (Figure 1), 1,300 feet north of the Des Plaines River and the Chicago Sanitary and Ship Canal in Willow Springs, Cook County, Illinois. The Facility occupies approximately 13 acres and contains a truck loading and unloading area, a rail car transfer area, a warehouse, and several above-ground product storage tanks. The property is bordered to the northwest by a United Parcel Service distribution center, to the southwest by Valvoline, and to the south and east by the Burlington Northern Santa Fe (BNSF) railroad (Figure 2).

The Facility is used as a warehouse and container distribution center. Nexeo sells solvents, acids, caustics, and other chemicals to industrial customers. This is a distribution Facility only; no storage of hazardous waste greater than 90 days currently occurs. No chemicals are currently manufactured at the Facility.

The Facility was previously owned by the U.S. Department of Defense (DOD) and operated by the General Motors Corporation (GM) as a jet engine testing facility from 1953 to 1955. The site was abandoned for several years until Newton Iron and Steel purchased it in 1960. Big Ben Chemicals owned and operated the Facility from 1965 until the property was purchased by Ashland Chemical Company in 1971. Ashland Chemical Company was an operating division of Ashland Oil Company which became Ashland Inc. in the late 1990s, and then became Ashland LLC in 2016.

GM formerly operated 18 jet engine test cells for DOD in a building that is currently used as a warehouse at the Facility. The test cells were built in the early 1950s and used to test jet airplane engines. Except for one cell, each test cell has one abandoned 1,000-gallon steel underground storage tank (UST) associated with it. While above-ground piping has been removed, there is underground piping associated with each UST tank. The piping connected the test cells with above-ground storage tanks located on the south end of the Facility. Each cell has floor drains that are connected to one of two sumps located to the northeast and northwest of the cells.

In 1997 the Army Corps of Engineers sampled groundwater from monitoring wells installed in the test cells. This sampling detected polyaromatic hydrocarbons, BTEX (benzene, toluene, ethylene, and xylene), perchloroethylene, trichloroethylene, cis-l,2- dichloroethylene, vinyl chloride, 2,4-dimethylphenol, Alachlor, and Atrazine. Contamination at the Facility is primarily associated with transfer stations. There are various suspected sources of the contamination. Ashland once estimated that 0.25% of the throughput of the transfer stations was lost through spillage and leaks. Other groundwater impacts are suspected from releases of jet fuel from the underground piping and sumps into soil and subsequently into groundwater.

Groundwater has been impacted by Ashland's activities at the site as well as past DOD activities. In 1983, Ashland dug a series of deep and shallow test wells. The sampling results showed that the groundwater was contaminated with oil that they believed to be jet fuel. Groundwater monitoring has been ongoing since installation. The Final Corrective Measures Annual Report – 2016, dated March 31, 2017, by Ashland showed detections of ethylbenzene, chloroform, styrene, vinyl chloride, benzene, toluene, 1,1,1- trichloroethane, chlorobenzene, tetrachloroethene, trichloroethene, and vinyl chloride.

Site Geology and Hydrogeology

The regional structural geology is characterized by tectonic features of the Wisconsin Arch and the Kankakee Arch that generally bisect northern Illinois along a northwest-southeast trend axis. Flanking the arches on both sides are structural basins, the Illinois Basin to the southwest and the Michigan Basin to the northeast. The sedimentary rocks associated with the basin and arch system in northern Illinois date from late Ordovician to Silurian Eras.

The Facility is located on the eastern flank of the southward-plunging Wisconsin Arch. Glacial deposits comprised of clay; silt, sand, and gravel cover the bedrock surface in the Facility vicinity. The uppermost bedrock unit underlying Quaternary deposits at the Facility is Silurian age dolomite of the Niagaran and Alexandrian Series. The Silurian dolomite is underlain by Ordovician and Cambrian age shale, dolomite, and sandstone formations (Figure 3).

The Glacial Water-Bearing Zone (WBZ) is the shallowest WBZ and is contained within unconsolidated materials, including fill, till, outwash, and fluvial deposits. Zone A represents groundwater within the glacial deposits at depths ranging from 5-feet below ground surface (ft bgs) beneath the Facility to 65 ft bgs in the Des Plaines River Valley. Zone A is further divided into till and fluvial deposits for purposes of estimating hydraulic conductivities based on slug test

results. The till deposits primarily underlie the Facility, while the fluvial deposits primarily underlie the area near the Des Plaines River. Groundwater flow within the Glacial WBZ is primarily horizontal to the southeast under the Des Plaines River with a hydraulic gradient of 0.009 feet/feet (ft/ft. The hydraulic head can be used to determine a hydraulic gradient between two or more points. Local groundwater flow within the Glacial WBZ is affected by the BNSF Railroad Storm Water Pond and the operation of the Facility's own groundwater treatment system. The regional discharge point for Glacial WBZ groundwater is the CSS Canal.

The Dolomite WBZ is divided into three sub-units (Zone B, Zone C, and Zone D) for investigative and modeling purposes:

- Zone B represents groundwater within the upper Racine Formation at depths ranging from 15 to 65 ft bgs and includes the highly weathered bedrock directly underlying the overburden to the bottom of the vuggy zone.

- Zone C represents groundwater within the lower Racine and Sugar Run Formations at depths ranging from 65 to 120 ft bgs and includes locally-variable, interbedded zones of competent, cherty, and fractured/weathered bedrock.

- Zone D represents groundwater within the Joliet and Kankakee Formations at depths ranging from 120 to 225 ft bgs and includes more competent, primarily argillaceous and/or glauconitic dolomite.

Based on the borehole geophysical results, it appears that Zones B, C and D are partially separated by lower permeability dolomitic rocks. Flowing artesian conditions were observed at bedrock borings advanced to depths greater than 225 ft bgs (Zone D). Because of the presence of the confining layer and the strong upward hydraulic gradient observed between the two zones, groundwater from the flowing artesian zone is not anticipated to be impacted and therefore has not been investigated as part of site characterization activities.

Flow within the Dolomite WBZ is primarily horizontal through bedding planes and fracture features under the Des Plaines River with a hydraulic gradient of 0.009 ft/ft. The regional discharge point for Dolomite WBZ groundwater is the CSS Canal.

Ecological Setting

Except for a limited grassy area along the northern boundaries, much of the Facility is covered by buildings, asphalt, gravel, or concrete-paved parking lots and roadways adjacent to buildings. The ground surface, where not covered by roads, concrete pads, or buildings, has been disturbed and is of such poor quality that the vegetation growing on-site consists primarily of invasive and opportunistic herbaceous plants. In general, the limited on-site habitats have been heavily influenced by historical industrial land use.

Two natural areas were identified, and no threatened or endangered species were identified near the Facility. An official consultation request was submitted to the Illinois Department of Natural

Resources (IDNR) following the preliminary review. In its response letter dated July 20, 2009, IDNR concluded that adverse effects to resources are unlikely. In addition, U.S. Fish and Wildlife Service concurred with these findings in July 2009.

Potential risks to the ecological receptors that could result from exposures to Facility-related chemicals were not evaluated due to the lack of habitat areas or threatened/endangered species.

Regulatory History and Corrective Action Background

On November 12, 1980, a RCRA Part A application was submitted for the Ashland Facility for generation, storage and handling of hazardous waste. At that time, the Facility operated a container storage area [S01], three underground hazardous waste storage tanks [S02], and a pretreatment unit [T01]. These units were later referred to as solid waste management units (SWMU) SWMU-10, SWMU-7, SWMU-8, SWMU-9, and SWMU-3, respectively, in the 1990 RCRA Facility Assessment Report prepared by the Illinois Environmental Protection Agency (IEPA).

On March 16, 1987, a revised RCRA Part A application was submitted to expand the list of hazardous wastes stored and handled on-site and to remove the three underground storage tanks (SWMUs 7, 8, and 9) from the RCRA Part A Application, since the tanks were scheduled for closure. On November 7, 1988, a second revised RCRA Part A application was submitted with the RCRA Part B application to expand the list of hazardous wastes stored and handled on-site and to remove the pretreatment unit (SWMU-3), because the unit was removed from service. On June 4, 1998, IEPA issued a No Further Action letter for SWMU-3. Since the issuance of the RCRA Part A and Part B permits and subsequent modifications to these permits, the Facility has been subject to multiple RCRA site inspections, assessments, and investigations for almost 30 years.

The Illinois EPA issued a 4(q) Notice on September 4, 1987, the key requirements were to identify the nature and extent of impacts to groundwater, identify the threat to public health and the environment and to prevent or mitigate the release of contaminants of concern (COCs) from the Facility. Stipulations of the agreement included operation of the groundwater treatment system and initiated a groundwater monitoring program.

On August 16, 2007, the EPA, under the authority of RCRA Section 3008(h), signed an Administrative Order on Consent (AOC) with Ashland. The AOC contains specific requirements for completing a Current Conditions Report (CCR), a RCRA Facility Investigation (RFI), a RFI Report, and a Final Corrective Measure Proposal (FCMP).

INVESTIGATIONS AND RISK ASSESSMENT

On January 31, 1990, Illinois EPA completed a Visual Site Inspection (VSI). The purpose of the VSI was to identity Solid Waste Management Units (SWMUs) or other potential areas of concern at the Facility. The VSI identified 20 SWMUs. The results of the VSI were provided in the February 1990 RCRA Facility Assessment Report (IEPA, 1990).

- In 1989, the removal of the three-underground hazardous waste storage tanks was initiated. Tanks 1 and 3 were removed in December 1989, and Tank 2 was removed in May 1990. Post-excavation sampling was completed but residual soil impacts were left in place because the tanks were located between active site buildings or tanks farms which prevented full clean closure. The initial closure report was submitted to Illinois EPA in 1990. The approved Closure/Post Closure plan was dated July 16, 1992.

- 1994 Closure Documentation Report - This report, dated June 30, 1994, was prepared and submitted at the request of Illinois EPA. It addressed the conditions and modifications of the approved Closure Post Closure Plan and summarized final landfill concrete cap installation activities at the three UST locations.

- March 5, 1997 Site Characterization Report - The report focused on the construction of the UPS terminal (north) and the BNSF detention pond (south) in 1993, as well as the proposed upgrades to the distribution Facility (1997-1998) which included the decommissioning of the active plant and the reconstruction of the new distribution Facility on the undeveloped portions of the site.

- In 2001, five additional monitoring wells were installed to evaluate groundwater quality upgradient of the Facility.

- 2007 Current Conditions Report (CCR) - The CCR was submitted to EPA on July 9, 2007. This document was prepared based on a review of all available historical documents associated with previous investigation activities. The CCR summarized each SWMU, as well as identified 10 geographical areas needing further evaluations. In 2007 a Phase I Environmental Site Assessment (ESA) was also completed for the Facility. The Phase I ESA identified several Recognized Environmental Conditions (RECs) requiring additional evaluation.

- 2007-2009 RCRA Facility Investigation (RFI) - An RFI was conducted from October 2007 to December 2009. During this time, three phases of on-site soils investigation occurred and on-site/off-site groundwater investigations were completed to delineate groundwater impacts. A summary of the extensive data collection program completed for the RFI includes the following:

    1. 310 on-site soil borings, 455 analytical samples;

2. 22 RFI on-site monitoring wells; 27 off-site RFI site monitoring wells; and a total of 175 RFI groundwater samples;
3. 9,000 feet of surface geophysical survey;
4. Semi-annual sampling of RFI monitoring wells;
5. Downhole geophysical logging of two 200-foot deep bore holes;
6. Semi-annual synoptic water level surveys;
7. Establishment of staff gauges in nearby surface water bodies (BNSF Pond, Des Plaines River and Chicago Sanitary and Ship Canal);
8. Aerial survey/elevation survey of all sampling points;
9. Bathymetric survey of Des Plaines River/Chicago Ship and Sanitary Canal;
10. Long-term performance pump testing of two wells;
11. Slug testing of 20 monitoring wells; and
12. Long-term aquifer test (drawdown analyses)

- 2010 RCRA Facility Investigation Report - This RFI Report was submitted to EPA on January 28, 2010. Two sets of comments were received and responded to in May and June 2010, respectively. The EPA approved the RFI Report in a letter dated July 22, 2010.
- Final Corrective Measures Proposal (FCMP) - The FCMP Report was submitted to the EPA on September 24, 2010. Following a meeting with Ashland on October 7, 2010, the EPA commented on the report in an October 8, 2010 letter and a November 5, 2010 email. In response to EPA comments, Ashland provided the EPA with a Mass Flux/Mass Discharge Report dated November 4, 2010, a Supplemental Corrective Measures Evaluation dated November 24, 2010, a Comment Response Report dated December 20, 2010, and a Draft FCMP Contingency Plan dated January 12, 2011. Following meetings on January 18, 2011 and March 3, 2011, Ashland submitted two additional comment responses on March 2, 2011 and April 7, 2011. The EPA approved the FCMP Report on August 12, 2011. Based on conversations between Ashland and the EPA following this approval, the Final Corrective Measures Proposal was submitted on September 27, 2011.

Pursuant to the first Section 4(q) Notice in 1987 from the Illinois EPA, subsequent revisions (1988 and 1990), and the 1992 RCRA Closure Report and Post Closure Plan (Revision 3), the required corrective action is currently being performed by collecting and treating shallow groundwater (Zone A glacial water-bearing zone groundwater (WBZ)). Collection and treatment of contaminated groundwater has been ongoing since 1987.

As discussed in the RCRA Post Closure Groundwater Monitoring Report, Final Corrective Measures Annual Report – 2016, dated March 31, 2017, and the EPA-approved RFI and FCMP Report, the groundwater interceptor trench system has been successful in fulfilling the 4(q) program objectives stated above. Continued operation of the groundwater interceptor trench system is expected to continue to meet the corrective action program objectives into the future. A summary of how the system has met and will continue to meet the 4(q) objectives is provided in the EPA FCMP Report.

Sorbent booms were installed in three monitoring wells on October 12, 2009, to passively collect and facilitate the degradation of Light Non-Aqueous Phase Liquids (LNAPL) in the impacted areas. The booms contain a powder called Petroleum Remediation Product that consists of spheres of wax that bind to free-phase hydrocarbon. Nutrients within the spheres then facilitate microbial degradation of the hydrocarbon. The booms are inspected regularly and are replaced when the PRP becomes depleted. Since October 2009, the booms have recovered approximately 329 gallons of LNAPL, as reported in the March 31, 2018 Corrective Measures Annual Report.

The potential for intrinsic biodegradation of dissolved COCs in groundwater was assessed in October and November 2009 and was reported in Appendix F of the EPA-approved RFI Report. The study focused specifically on the parameters that related to biologically-driven degradation of chlorinated ethenes (CEs).

The information presented in the EPA-approved RFI Report and FCMP Report provides strong evidence that intrinsic biodegradation is a robust degradation mechanism in areas where dolomite bedrock groundwater has been impacted.

In addition, a Mass Flux/Mass Discharge evaluation was conducted of CEs in Dolomite WBZs Zones B and C along with calculation of site-specific degradation rates for CEs. This evaluation indicated that 99% of the CE mass is actively being degraded prior to reaching the Point of Compliance, which is the CSS Canal. In addition, it is calculated that 738 pounds of contaminants are currently being naturally degraded on a yearly basis. The findings of this evaluation are provided in the EPA FCMP Report.

SUMMARY OF FACILITY RISKS

Investigation Results

Tables 1, 2, and 3 below summarize the findings of the RFI and the human health risk assessment for the contaminated areas at the Facility. A more detailed breakdown of the findings and their implications can be found under the section entitled "Human Health Risks." EPA notes that all risk assumptions are based on the Facility's status as an active manufacturer with engineered and institutional controls in place and is expected to continue operating as such for the foreseeable future. If the Facility ceases operations and possibly demolishes the buildings and pavement, or if use of the property for other than commercial/industrial purposes is contemplated, the EPA will revisit all exposure scenarios and potential need for corrective measures.

Human Health Risks

After contaminant levels were identified in the RCRA Facility Investigation, a human health risk assessment was performed to determine whether health problems would likely occur if the contamination were not cleaned up. Spills and releases from underground tanks or other historic releases may have impacted surface and subsurface soils. No Tiered Approach to Corrective

Action Objectives (TACO) Tier 1 industrial soil remediation objectives (RO) exceedances were noted for any of the soil samples with the exception of Investigation Areas 3, 4, 5 and 6. If construction activities were to take place in the future, pathways to soil via inhalation, incidental ingestion and dermal exposures could potentially become complete. Potential risks to the hypothetical future construction workers are negligible because health and safety programs are in place that require proper personal protective equipment for any construction or environmental work.

Soil Direct Contact

The on-site soil data collected during the RFI were compared to the TACO Tier 1 (for Ingestion Route) and Tier 2 (for Inhalation Route) Soil Remediation Objective (SRO) for the Industrial/Commercial Workers and Construction Workers (Table 2). The results of this screening indicated that COCs were detected in subsurface soil at levels exceeding their respective SROs in the following areas:

Industrial/Commercial Workers: Investigation Areas 3, 4, 5 and 6.
Construction Workers: Investigation Areas 1, 2, 3, 4, 5, and SWMU 13.

In order to determine if the COCs detected in soil pose any adverse impacts to human health and the environment, the analytical data were further evaluated in a Facility-specific (Tier 3) risk evaluation. The results of the risk evaluation indicate that:

Industrial/Commercial Workers: At Investigation Areas 4, 5, and 6, estimated risks were within or below the target risk goals of a Cancer Risk (CR) of 10^{-4} to 10^{-6} or a hazard index (HI) of one (1) for carcinogenic and noncarcinogenic effects, respectively. Estimated risk for Area 3 exceeded the target CR of 10^{-4} to 10^{-6}, primarily attributable to tetrachloroethene (also known as perchloroethylene, PCE), benzo(a)pyrene, and trichloroethene (TCE) in soil above the glacial water-bearing zone. It is important to note there is no complete exposure pathway for Area 3 under the current or reasonably foreseeable future land use due to the lack of worker activities. The risks were calculated for the hypothetical future industrial/commercial workers.

Construction Workers: COCs were identified for Investigation Areas 1, 2, 3, 4, 5, and SWMU-13 following the Tier 2 evaluation. A Tier 3 Human Health Risk Assessment (HHRA) was completed, for informational purposes only, to evaluate potential risks for the hypothetical future construction/redevelopment worker. The results of this analysis indicate that, except for Area 3, estimated risks for the construction workers were within or below the target risk goals, *i.e.* a CR of 10^{-4} to 10^{-6} or an HI of one (1). Risk levels estimated for Investigation Area 3 were at the target risk levels, primarily attributable to concentrations of PCE detected in samples collected from one location.

Table 1
Human Health Risk Assessment

Nexeo Solutions LLC
(Formerly Ashland Chemical Company) Willow Springs, Illinois
EPA ID: ILD 980 700 538
Sample date April 5, 2017

Soil Sample Location COC	Average Concentration mg/kg	95% UCL	Statistic used for 95% UCL	Reasonable Maximum Exposure Industrial/Commercial Worker		Central Tendency Evaluation Industrial/Commercial Worker	
				Cancer Risk	Hazard Index	Cancer Risk	Hazard Index
AREA 3 (b)				40,000	0.2	900,000	(c)
Tetrachloroethene	837	3950	99% KM (Chebyshev) UCL				
Trichloroethene	862	3260	99% KM (Chebyshev) UCL				
Vinyl chloride	1.68	NA (a)	95% KM (BCA) UCL				
Benzo(a)anthracene	86.2	5.03	99% KM (Chebyshev) UCL				
Benzo[a]pyrene	1.06	7.22	99% KM (Chebyshev) UCL				
Benzo[b]fluoranthene	1.48	9.85	99% KM (Chebyshev) UCL				
Dibenz(a,h)anthracene	75.9	2.51	99% KM (Chebyshev) UCL				
Indeno[1,2,3-cd]pyrene	1.38	6.14	99% KM (Chebyshev) UCL				
Area 4 (d)				3,000,000	0.002	80,000,000	(c)
Tetrachloroethene	289	32.4	97.5% KM (Chebyshev) UCL				
Trichloroethene	214	207	97.5% KM (Chebyshev) UCL				
AREA 5				9,000,000	0.03	Not Evaluated (e)	
Tetrachloroethene	245	428	97.5% KM (Chebyshev) UCL				
AREA 6 (f)				5,000,000,000	0.0004	(c)	(c)
Tetrachloroethene	10.2	7.13	95% KM (t) UCL				

Benzo[a]anthracene	2.20	7.16	99% KM (Chebyshev) UCL				
Benzo[a]pyrene	1.98	3.82	95% KM (Chebyshev) UCL				
Benzo[b]fluoranthene	2.53	8.79	99% KM (Chebyshev) UCL				
Benzo(k)fluoranthene	1.52	1.51	95% KM (BCA) UCL				
Chrysene	1.96	7.09	95% KM (BCA) UCL				
Dibenz(a,h)anthracene	59.5	97.3	97.5% KM (Chebyshev) UCL				
Indeno[1,2,3-cd] pyrene	1.5	4.53	99% KM (Chebyshev) UCL				

Notes:
COC = Contaminant of Concern
mg/kg = milligrams per kilogram

UCL = Upper Confidence Limit
KM = Kaplan-Meier estimate

(a) The recommended UCL exceeded the maximum concentration. As an alternative, the Jackknife UCL was selected as the 95% UCL concentration because it is a better representation of the maximum and average concentrations.

(b) This area of the Facility is vacant land and no receptors are present. No complete exposure pathways under the current land use conditions exist. Potential risks posed by COCs were conservatively estimated for the hypothetical future receptors.

(c) Not required; risks for a Reasonable Maximum Exposure (RME) scenario were < 1E-06 for carcinogenic effects or <1 for noncarcinogenic effects.

(d) This area of the Facility consists of tank farms and no receptors are present. No complete exposure pathways under the current land use conditions exist. Potential risks posed by COCs were conservatively estimated for the hypothetical future receptors.

(e) Risks for a Central Tendency Exposure scenario was not estimated because risks for an RME scenario were estimated using exposure parameters

(f) The only exposure pathway that is potentially complete is the inhalation of COCs in air by warehouse workers. There are no complete ingestion or dermal pathways under the current land use conditions because this area is paved. Potential risks posed by COCs were conservatively estimated for the hypothetical future receptors.

Table 2 Proposed Soil Corrective Measures Performance Standards [a] [b]

Nexeo Solutions LLC
(Formerly Ashland Chemical Company)
Willow Springs, Illinois
EPA ID: ILD 980 700 538

Area 3	
Contaminant of Concern	**Soil Corrective Measures Performance Standards (mg/kg)**
Benzo(a)anthracene	5.03
Benzo(a)pyrene	7.22
Benzo(b)fluoranthene	9.85
Benzo(k)fluoranthene	6.37
Chrysene	7.19
Dibenzo(a,h)anthracene	2.51
Indeno(1,2,3-cd)pyrene	6.14
Tetrachloroethene	7.99
Trichloroethene	6.46
Vinyl chloride	5.30
Area 4	
Contaminant of Concern	**Soil Corrective Measures Performance Standards (mg/kg)**
1,2-Dichloroethane	5.35
Benzene	4.61
Ethylbenzene	1.11
Tetrachloroethene	1.46
Xylenes, Total	2.65
Toluene	2.89
Trichloroethene	1.39
Vinyl chloride	6.06
Area 5	
Contaminant of Concern	**Soil Corrective Measures Performance Standards (mg/kg)**
1,2-Dichloroethane	3.93
Ethylbenzene	9.23
Methylene Chloride	3.50
Tetrachloroethene	7.41
Trichloroethene	7.48
Vinyl chloride	1.98
Xylenes, Total	1.14

Area 6	
Contaminant of Concern	**Soil Corrective Measures Performance Standards (mg/kg)**
Benzo(a)anthracene	3.03

Benzo(a)pyrene	2.84
Benzo(b)fluoranthene	3.56
Benzo(k)fluoranthene	1.75
Chrysene	2.93
Dibenz(a,h)anthracene	1.13
Indeno(1,2,3-cd)pyrene	1.84
Vinyl chloride	1.30

mg/kg = milligrams per kilogram
Soil Corrective Measures Performance Standards were derived from Illinois Pollution Control Board Title 35, Part 742 Tiered Approach to Corrective Action Objectives (TACO) Tier 1, 2, and 3 evaluations provided in the U.S. EPA approved *RCRA Facility Investigation Report - Final Report* (URS: October 10, 2010).

[a] The exposure point concentrations (EPCs); *i.e.*, the 95% upper confidence limit of the arithmetic mean concentrations of COCs were adopted as the performance standards.

[b] Points of compliance for soil are at the surface and subsurface within the boundary of the Facility. Areas 3, 4, 5, and 6 are presented due to the presence of VOCs based on the current or conservatively assumed future industrial use scenarios.

Soil Migration to Groundwater

The on-site soil data collected during the RFI were compared to the TACO Tier 1 SROs for the soil component of the groundwater ingestion route to determine if chemicals detected in soil could potentially migrate to groundwater underlying the Facility. The results of this screening suggested that many volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were detected in soil at levels exceeding their Tier 1 SROs for the soil component of the groundwater ingestion route. The soil to groundwater migration pathway was deemed complete and the fate and transport of these COCs were further evaluated using groundwater monitoring data.

Groundwater

The results of a TACO Tier 2 evaluation conducted to estimate the migration potential for COCs indicate that COCs detected in the glacial and dolomite water-bearing zones groundwater discharging to the CSS Canal do not exceed IEPA Secondary Contact and Indigenous Aquatic Life Water Standards.

For informational purposes only, a preliminary screening evaluation was conducted to evaluate the potential for VOCs in the glacial water-bearing zone to volatilize from groundwater and migrate into indoor air space. The results of this evaluation suggested that the following areas

contained VOCs in groundwater at levels exceeding the screening criteria derived by the EPA (EPA, 2002) for evaluating the vapor intrusion pathway at residential properties. Areas currently with occupied buildings are Area 6, and 8.

Surface/Subsurface Soil

Review of analytical data with comparison to the risk assessment for soil indicates on-site soil impacts have been delineated and there are no off-site impacts. Results of this risk-based screening indicated that soil analytical data at all areas were below TACO Tier 1 ingestion and inhalation SROs for industrial/commercial workers except for Investigation Areas 3, 4, 5 and 6. COCs at these areas area are total xylenes, PAHs, vinyl chloride, trichloroethene, and tetrachloroethene.

Groundwater

Analytical data from on-site monitoring wells indicate several areas of elevated concentrations of VOCs in the vicinity of former tank farms, drumming areas, and wastewater treatment process areas. In general, the highest concentrations were detected in the bedrock groundwater-bearing zone at depths of 30 to 120 ft bgs (Zones B and C). Historical contaminants of concern on-site are: 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, benzene cyclohexane, chlorobenzene, cis-1,2-dichloroethene, ethylbenzene, toluene, trans-1,2-dichloroethene, xylenes, and vinyl chloride. The highest concentrations detected in on-site wells in June 2017 for several of these COC are shown in Table 3. Analytical data from off-site monitoring wells indicate that concentrations of VOCs are decreasing downgradient and consist primarily of low concentrations of daughter compounds resulting from degradation of chlorinated compounds. The following observations are based on analytical results from the 2010 RFI:

Glacial water-bearing zone (Zone A): VOC horizontal impacts delineated to Class I GRO values except for vinyl chloride in one off-site well (MW-120).

Dolomite water-bearing zone (Zone B): VOC horizontal impacts at 30-65 ft bgs delineated to Class I GRO values except for vinyl chloride in one off-site well (MW-131B).

Dolomite water-bearing zone (Zone C): VOC horizontal impacts at 80-120 ft bgs delineated to Class I GRO values except for vinyl chloride in one off-site well (MW-120C).

Dolomite water-bearing zone (Zone D): VOC horizontal impacts at 215-225 ft bgs delineated to Class I GRO values. Groundwater below this zone exhibits artesian flow.

Table 3
Proposed Groundwater Corrective Measures Performance Standards with Current Groundwater Data

Nexeo Solutions LLC
(Formerly Ashland Chemical Company)
Willow Springs, Illinois
EPA ID: ILD 980 700 538

Contaminants of Concern (COC)	Water Bearing Zones	Greatest Groundwater Results June 2017 (µg/L)	IL TACO GRO CLASS I (µg/L)	Groundwater EPA National Primary Drinking Water Standards (µg/L)
1,1,1-Trichloroethane	ZONE C	2 U	200	200
1,1-Dichloroethane	ZONE C	2 U	700	810
1,1-Dichloroethene	ZONE C	2 U	7	7
1,2,-Dichloroethane	ZONE C	2 U	70	70
1,2,-dichloropropane	ZONE C	2 U	5	5
1,4-Dichlorobenzene	ZONE C	2 U	75	0.1 parts per million (ppm)
benzene	ZONE B	0.30 J	5	5
carbon tetrachloride	ZONE C	2 U	5	5
chlorobenzene	ZONE C	2 U	100	100
chloroform	ZONE B & C	4 U	0.02	NA
cis-1,2-Dichloroethene	ZONE B & C	1,200	70	70
ethylbenzene	ZONE C	1 U	700	700
methylene chloride	ZONE C	10 U	5	5
styrene	ZONE C	2 U	100	100
tetrachloroethene	ZONE C	2 U	5	5
toluene	ZONE C	1 U	1,000	1,000
trans-1,2,-Dichloroethene	ZONE C	5.6	100	100
trichloroethene	ZONE C	0.87 J	5	5
vinyl chloride	ZONE B & C	190	2	2

Notes

µg/L = micrograms per liter
U = The analyte was analyzed for, but was not detected (undetected). Value shown is the sample reporting limit.
J = Result is less than the reporting limit but greater than or equal to the method detection limit. Concentration is estimated.
IL TACO GRO Class I = Illinois EPA Title 35 IAC Part 42 Tiered Approach to Corrective Action, Appendix B, Table E - Tier 1 Class I Groundwater Remediation Objectives.

Releases from the Facility, which have migrated by groundwater toward the Des Plaines River and discharge to Chicago Sanitary and Ship Canal, may result in exposures to people using the waterway for recreation. There could also be ecological impacts to the river. However, there are no unacceptable risks to human health or ecological receptors in either surface water body as concentrations in off-site point of compliance wells are stable and remain below Proposed Groundwater Corrective Action Performance Standards (Table 4) and Indigenous Aquatic Life Water Standards. There is groundwater contamination in the lower aquifer. However, groundwater is no longer a source of drinking water.

Groundwater is not used for any purpose at the Facility and there are no plans to use it for drinking water in the future. A memorandum of understanding (MOU) is in place between IEPA and the Village of Willow Springs, which prohibits groundwater use or extraction from both water-bearing zones (glacial and dolomite). Additionally, the Village of Willow Springs prohibits the installation or drilling of wells for the drawing of groundwater (Ord. 99-0-11, 3-11-1999). The Illinois EPA has designated the on-site groundwater as a Class I (Potable Resource) Groundwater. No local potable or industrial users of groundwater have been identified within a 1-mile radius of the Facility.

Proposed Groundwater Corrective Action Performance Standards

Nexeo Solutions LLC
(Formerly Ashland Chemical Company)
Willow Springs, Illinois
EPA ID: ILD 980 700 538

Zone / Well ID		Closest Downgradient Surface Water	Chemicals	Surface Water Quality Criteria (mg/L)		Dilution and Attenuation Factor (Unitless)	Groundwater Concentration Protective of Surface Water Quality (At the Bank of Surface Water) (mg/L)	Proposed Groundwater Corrective Action Performance Standards (for Off-Site Point of Compliance Wells) (mg/L)
			(a)	(b)		(c)	(d)	(e)
Zone A	MW-109	Des Plaines River	Methylene Chloride	0.0046	AWQC	302,654.87	1,392.21	4.60
	MW-110	Des Plaines River	Methylene Chloride	0.0046	AWQC	302,654.87	1,392.21	4.60
	MW-130	Chicago Sanitary and Ship Canal	None			2,314,285.71		
Zone B	MW-117B	Des Plaines River	None			309,902.91		
	MW-118B	Des Plaines River	Chloromethane	0.2400	Ecotox	309,902.91	74,376.70	240.00
	MW-130B	Chicago Sanitary and Ship Canal	1,1-Dichloroethane	0.0470	ESL	2,369,708.74	111,376.31	47.00
			1,2-Dichloroethene, Cis-	0.9700	ESL	2,369,708.74	2,298,617.48	970.00
			Vinyl Chloride	0.9300	ESL	2,369,708.74	2,203,829.13	930.00
	MW-131B	Chicago Sanitary and Ship Canal	Chloromethane	0.2400	Ecotox	8,6171.23	20,681.09	240.00

			1,1-Dichloroethane	0.0470	ESL	8,6171.23	4,050.05	47.00
			1,2-Dichloroethene, Cis-	0.9700	ESL	8,6171.23	83,586.09	970.00
			Vinyl Chloride	0.9300	ESL	8,6171.23	80,139.24	930.00
Zone C	MW-117C	Des Plaines River	1,1,1-Trichloroethane	0.0760	ESL	250,243.90	19,018.54	76.00
			1,1,2-Trichloro-1,2,2-trifluoroethane	1.2000	CAWC	250,243.90	300,292.68	1200.00
			Carbon tetrachloride	0.0002	AWQC	250,243.90	57.56	0.23
			Chloroform	0.0057	AWQC	250,243.90	1,426.39	5.70
			Chloromethane	0.2400	Ecotox	250,243.90	60,058.54	240.00
			cis-1,2-Dichloroethene	0.3300	AWQC	250,243.90	82,580.49	330.00
			Tetrachloroethene	0.0007	AWQC	250,243.90	172.67	0.69
			Trichloroethene	0.0025	AWQC	250,243.90	625.61	2.50
	MW-118C	Des Plaines River	Tetrachloroethene	0.0007	AWQC	10,260,000.00	7,079.40	0.69
	MW-130C	Chicago Sanitary and Ship Canal	1,2-Dichloroethene, Cis-	0.9700	ESL	78,454,285.71	76,100,657.14	970.00
			Vinyl Chloride	0.9300	ESL	78,454,285.71	72,962,485.71	930.00
	MW-131C	Chicago Sanitary and Ship Canal	None			78,454,285.71		

Notes:

AWQC = Ambient Water Quality Criteria

CAWC = California Water Criterion (for drinking water)

Ecotox = Ecotox Threshold Levels derived by EPA for fresh water.

ESL = Ecological Screening Levels derived by EPA Region 5 for surface water.

Groundwater Corrective Action Performance Standards were derived from Illinois Pollution Control Board Title 35, Part 742 Tiered Approach to Corrective Action Objectives (TACO) Tier 1 and 2 evaluations provided in the U.S. EPA approved RCRA Facility Investigation Report - Final Report (URS: October 10, 2010).

(a) Chemicals listed represent chemicals that were detected in wells during December 2007 and December 2009 as part of the RFI.

(b) Des Plaines River is designated as a General Use Water by the Illinois EPA. Criteria presented for wells discharging to the Des Plaines River are based on EPA's Ambient Water Quality Criteria (AWQC) for use of water for potable water and consumption of organisms from water. Criteria based on other sources were used if AWQCs are unavailable. The Chicago Sanitary and Ship Canal is designated as a Secondary Use Water and Water Quality Standards for Secondary Water are not available for chemicals detected in wells selected as point of compliance. Criteria presented are based on applicable sources as referenced.

(c) Dilution and attenuation factors were derived using the following site-specific parameters.

(d) Calculated by multiplying the Surface Water Criteria by the Dilution and Attenuation Factor.

(e) Calculated by multiplying the Surface Water Criteria by an ultra-conservative Dilution Factor (DAF) of 1,000.

Ecological Risks

Except for a limited grassy area along the northern boundaries, much of the Facility is covered by buildings, asphalt, gravel, or concrete-paved parking lots and roadways adjacent to buildings. Because of the industrial nature of the Facility and the surrounding properties, and the fact that most of the site is covered by buildings or hard surfaces, it is unlikely that this industrial property provides shelter or food sources to ecological receptors.

Two natural areas were identified, and no threatened or endangered species were identified near the Facility. EPA submitted an official consultation request to the Illinois Department of Natural Resource (IDNR). By letter dated July 20, 2009, IDNR concluded that adverse effects to resources surrounding the Facility are unlikely. United States Fish and Wildlife Service concurred with these findings.

Potential risks to the ecological receptors that could result from exposures to Facility-related chemicals were not evaluated due to the lack of habitat areas and threatened and endangered species.

SCOPE OF CORRECTIVE ACTION

EPA's short-term goals for this Facility are:

- All current human exposures to contamination at or from the Facility must be under control. That is, significant or unacceptable exposures do not exist for all media known or reasonably suspected to be contaminated with hazardous wastes or hazardous constituents above risk-based levels, for which there are complete pathways between contamination and human receptors.

- Migration of contaminated groundwater at or from the Facility must be stabilized. That is, the migration of all groundwater known or reasonably suspected to be contaminated with hazardous wastes or hazardous constituents above acceptable levels is stabilized to remain within any existing areas of contamination as defined by monitoring locations designated at the time of the demonstration. In addition, any discharge of groundwater to surface water is either insignificant or currently acceptable according to an appropriate interim assessment. Ashland must collect monitoring and measurement data in the future as necessary to verify that migration of any contaminated groundwater is stabilized.

EPA's short-term goals have already been achieved. On August 25, 2004, EPA determined that RCRA Corrective Action Environmental Indicator (EI) Resource Conservation and Recovery Information System (RCRIS) code (CA725) Current Human Exposures Under Control had been achieved. On June 6, 2005, RCRIS code (CA750) Migration of Contaminated Groundwater Under Control had been achieved.

EPA's long-term goals for the remedy being proposed are:

- Protecting human health and the environment;
- Attaining the applicable media cleanup standards;

- Controlling the sources of the releases to the extent practicable;
- Managing all remediation waste in compliance with the applicable standards; and
- Establishing and maintaining institutional controls.

Returning usable groundwaters to their maximum beneficial uses wherever practical is a factor leading to the goal of protecting human health and the environment. At this Facility, Ashland must monitor the groundwater contamination on and off-site to make sure that the contaminant levels do not increase or cause any harm to surface waters. Ashland may request EPA approval to discontinue the groundwater monitoring if and when the TACO Class I groundwater quality standards have been met.

Final corrective measures for the Ashland Facility must ensure that:

1. Soil and groundwater contamination will not endanger human health or the environment.

2. Institutional and engineered controls to protect human health and the environment will be recorded as restrictive covenants in the property deed and will be binding on all future owners of the Facility property.

3. Construction and maintenance workers who perform excavations in the restricted area are protected from unacceptable exposure to contamination via a Soil Management Plan which will be recorded and attached to the property deed.

4. Financial Assurance will demonstrate that funds are available for implementation of the selected remedy.

SUMMARY OF PROPOSED REMEDY COMPONENTS

Based on current the conditions at the Ashland Facility and the assumption that these conditions will remain unchanged for the foreseeable future, EPA has proposed the following remedy components for the Facility.

Groundwater Treatment System

Pursuant to the 1987 4(q) Notice from IEPA and the 1992 RCRA Closure Report and Post Closure Plan (Revision 3), corrective action is currently being performed by collecting and treating shallow groundwater (Zone A glacial water-bearing zone groundwater). Collection and treatment have been ongoing since 1987. In 2016, the groundwater treatment system treated 3,400,000 gallons of water, removing approximately 21 lbs of chloroethenes and 13 lbs of total VOCs. In comparison, over 500 lbs of total chloroethenes in the bedrock water-bearing zone are destroyed annually via natural mechanisms (EHS Support, 2013).

As discussed in the RCRA Post Closure Groundwater Monitoring Report, Annual Status Report dated March 31, 2017, and the EPA-approved RFI and FCMP Report, the groundwater interceptor trench system has been successful in fulfilling the 4(q) program objectives.

Continued operation of the groundwater interceptor trench system is expected to continue to meet the corrective action program objectives into the future. A summary of how the system has met and will continue to meet the 4(q) objectives is provided in the FCMP Report.

Sorbent Well Booms

Sorbent booms were installed in three monitoring wells on October 12, 2009, to passively collect and thus facilitate the degradation of Light Non-Aqueous Phase Liquids (LNAPL) in the impacted areas. The booms contain powdered Petroleum Remediation Product (PRP) that consists of spheres of wax that bind to free-phase hydrocarbon. Nutrients within the spheres then facilitate microbial degradation of the hydrocarbon. The booms are inspected regularly, and are replaced when the PRP becomes depleted. Since October 2016, the booms have removed approximately 329 gallons of LNAPL.

Intrinsic Biodegradation

The potential for intrinsic biodegradation of dissolved COCs in groundwater was assessed in October and November 2009 and was reported in Appendix F of the EPA-approved RFI Report. The study focused specifically on the parameters that related to biologically driven degradation of chlorinated ethenes (CEs).

The information presented in the EPA-approved RFI Report and FCMP Report provides strong evidence that intrinsic biodegradation is a robust degradation mechanism in areas where dolomite bedrock groundwater has been impacted.

A Mass Flux/Mass Discharge evaluation was conducted to evaluate concentration of CEs in Dolomite water bearing zones. Site specific degradation rates for CEs were calculated for Zones B and C. This evaluation indicated that 99% of the CE mass is actively being degraded prior to reaching the Point of Compliance, which is the CSS Canal. At the time of the FCMP 2010 submittal, approximately 738 pounds of contaminants are being naturally degraded on a yearly basis based on 2009 data. The findings of this evaluation are provided in the FCMP Report. The remedy will establish institutional controls for the land, soil, and groundwater portions of the Facility that are the subject of this Statement of Basis. The institutional controls must include an EPA-approved Environmental Covenant to:

- limit future land use to commercial and/or industrial purposes;
- prohibit any use of or exposure to the on-site groundwater;
- implement a health and safety plan that specifies worker personal protection equipment required and limits worker time;
- ensure that the soil and groundwater at the Facility are not disturbed in a manner that poses a risk to workers or interferes with the selected final remedy; and
- maintain existing groundwater monitoring wells until approved by EPA for abandonment.

Financial assurance to ensure adequate funds will be available to cover the costs of the construction, as well as the operation, maintenance, and monitoring of the proposed remedy. Under this alternative, Ashland must provide an EPA-approved financial assurance within 90 days after EPA selects the remedy and issues its *Final Decision and Response to Comments*, which must in an amount sufficient to cover the cost of the cleanup. Ashland may demonstrate the adequacy of its financial assurance by using mechanisms that comply with EPA regulations at 40 Code of Federal Regulation (CFR) 265 or 40 CFR 264, Subpart F. Those financial assurance mechanisms include financial trusts, surety bonds, letters of credit, insurance, or self-insurance as demonstrated by a financial test. Ashland may request that the amount of the financial assurance be reduced after successfully completing the construction, and annually during the operation and maintenance phase of the remedy.

CRITERIA FOR EVALUATION OF THE PROPOSED REMEDY

EPA evaluates proposed corrective measures using the following criteria:

1. Overall protection of human health and the environment
2. Attainment of media cleanup standards
3. Controlling the sources of releases
4. Compliance with waste management standards
5. Long-term reliability and effectiveness
6. Reduction of toxicity, mobility or volume of wastes
7. Short-term effectiveness
8. Implementability
9. Cost

EVALUATION OF THE SELECTED REMEDIES

The selected alternative remedies for the groundwater at the Ashland Facility are monitored natural attenuation and institutional controls. The selection of these remedies is based on the following reasons:

1. After the remedy is complete, the Facility will not pose acute or chronic risks to humans and other ecological receptors;
2. The Facility does not use the groundwater as a water source for any purpose. The Illinois EPA has designated the on-site groundwater as a Class I (Potable Resource) Groundwater. No local potable or industrial users of groundwater have been identified within a 1-mile radius of the Facility. A memorandum of understanding (MOU) is in place between IEPA and the Village of Willow Springs, which prohibits groundwater use or extraction from both water-bearing zones (glacial and dolomite). Additionally, the Village of Willow Springs prohibits the installation or drilling of wells for the drawing of groundwater (Ord. 99-0-11, 3-11-1999).
3. After the remedy is complete, the Des Plains River and CSS Canal would not be adversely impacted;
4. The alternatives do not require frequent or complex operation and maintenance; and
5. The alternatives prevent exposure to contaminated soils and groundwater by implementing institutional controls to require appropriate worker health and safety requirements, preventing any use of or exposure to the on-site groundwater, and placing a deed restriction on the property to restrict the future use of the property to commercial and industrial purposes.

The following discussion compares the performance of the proposed remedy against the technical, human health, environmental and institutional criteria.

Protection of Human Health and the Environment

The overall protection of human health is addressed most effectively at the Ashland Facility by the preferred alternative. The toxicity and volume of the contaminated soil will be reduced or eliminated. Institutional controls will prevent potential unacceptable exposure of workers to contaminated soil and groundwater. Appropriate worker safety and health requirements for the proper handling of hazardous materials during remedial activities also will be required.

Attainment of Media Cleanup Standards Set by EPA

Compliance with applicable groundwater protection standards will be addressed by monitoring the existing on-site and off-site wells to determine the efficacy of the remedial alternatives. Ashland will include a groundwater monitoring plan to assess the concentration of the COCs in the existing wells.

PUBLIC PARTICIPATION

EPA solicits input from the community on the cleanup methods proposed for each of the corrective measure alternatives. The public is invited to provide comments on this *Statement of Basis*. To encourage public participation in the selection process, EPA has set a public comment period from //????////??????/////????????////???. During the public comment period, EPA will accept written comments on the proposed action. During the 30-day comment period, the public may submit written comments, questions and requests for public meeting to the following address:

U.S. Environmental Protection Agency, Region 5
Remediation and Reuse Branch (LU-16J)
77 West Jackson Boulevard
Chicago, Illinois 60604
Attention: John Nordine
nordine.john@epa.gov
(312) 353-1243

The Administrative Record for the Ashland Facility is available at the following locations:

Justice Public Library
7641 Oak Grove Avenue
Justice, Illinois 60458
(708) 496-1790

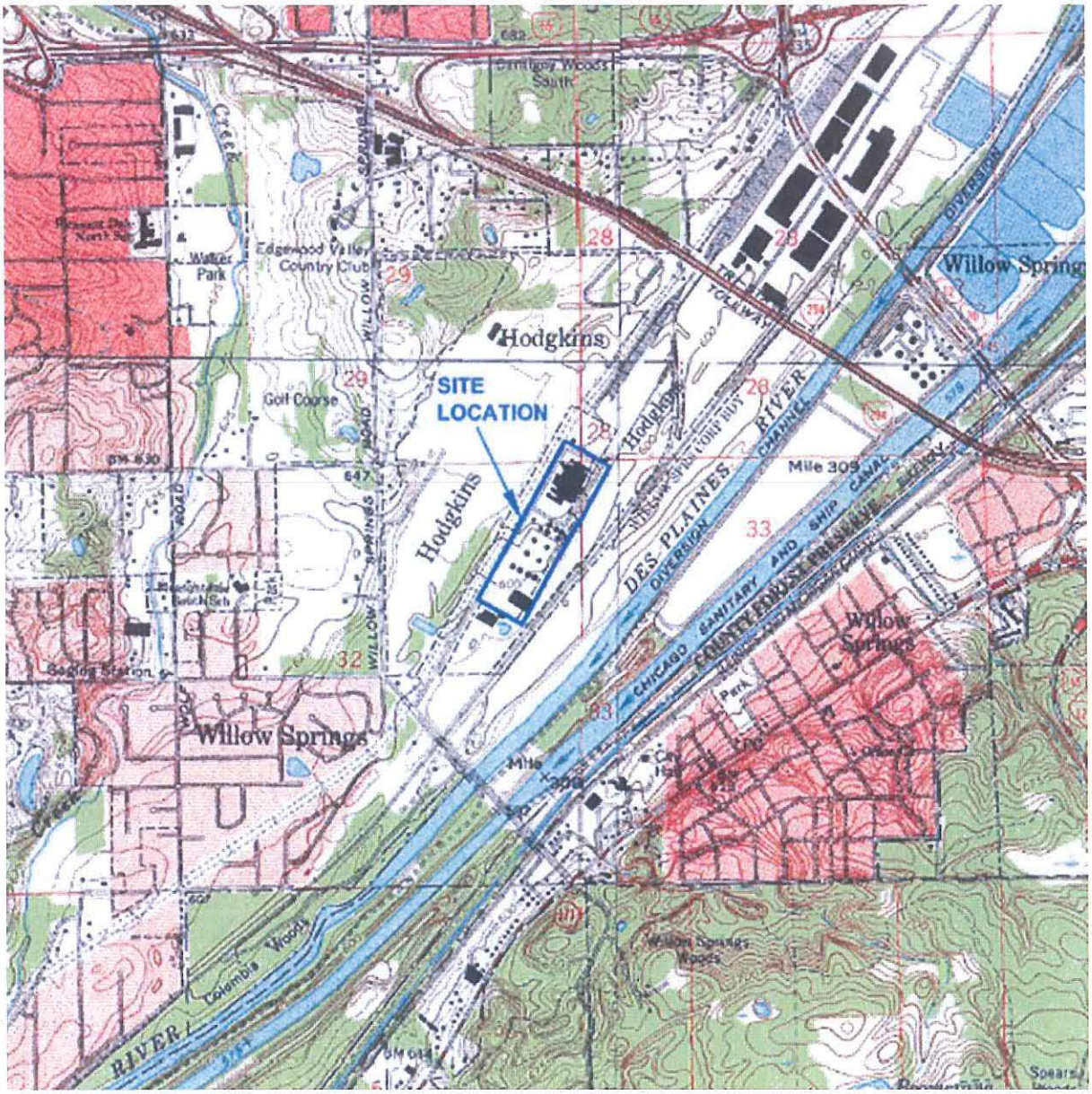
Village of Willow Springs
One Village Circle
Willow Springs, Illinois 60480
(708) 467-3700

U.S. EPA, Region 5 Records Center
77 West Jackson Boulevard, 7th Floor
Chicago, Illinois 60604
(312) 886-0902
Monday - Friday, 8:30 a.m. - 4:00 p.m. (Central Time)

After the closure of the public comment period, EPA will summarize the comments and provide a Response to Comments document. EPA will prepare the Final Decision and Response to Comments after the conclusion of the public comment period, which will be included in the administrative record. Based on comments received, EPA may make changes to the proposed corrective measures, which will be documented in the Final Decision and Response to Comments.

Index to the Administrative Record Nexeo Solutions LLC (Formerly Ashland Chemical Company) Willow Springs, Illinois EPA ID: ILD 980 700 538		
Document Number	**Date**	**Description: Author (if applicable) & Title**
01	1983	T.M. Gates, Hydrogeologic Investigation of the Willow Springs, Illinois Industrial Chemicals and Solvent Facility
02	February 14, 1986	T.M. Gates, Summary of Remedial Investigations Report
03	September 4, 1987	Illinois EPA, Notice Pursuant to Section 4(q) of the Environmental Protection Act
04	February, 1990	Illinois EPA, RCRA Facility Assessment
05	July 16, 1992	Ashland Chemical, Closure Report and Post-Closure Plan Rev.3
06	June 30, 1994	ESC, Closure Document Report Former Storage Tanks
07	March 5, 1997	Woodward-Clyde, Summary of Field Investigations and Proposed Modifications to Groundwater Monitoring Program
08	January 18, 1999	URS Greiner Woodward Clyde, 1999. *Draft Revised Site Characterization Report. Ashland Chemical Company Willow Springs DSO Facility. Willow Springs, Illinois*
09	July 2007	URS, Current Conditions Report, Ashland Inc., 8500 Willow Springs Rd, Willow Springs, Illinois 60480
10	August 16, 2007	U.S. EPA, RCRA Section 3008(h) Order on Consent – Ashland Facility in Willow Springs, IL. U.S. EPA ID No. ILD 980-700-538
11	June 19, 2009	Illinois Department of Natural Resources, EcoCAT Report
12	July 20, 2009	Illinois Department of Natural Resources, Re: Ashland Inc. Willow Springs Facility
13	September 24, 2010	URS Corporation, Final Corrective Measures Proposal (FCMP), Ashland Inc., Willow Springs, Illinois
14	October 1, 2010	URS, Final Report: RCRA Facility Investigation Report, Ashland Distribution Facility, 8500 South Willow Springs Rd, Willow Springs, Illinois
15	November 4, 2010	URS Corporation, Submittal of Intrinsic Degradation Estimate, Ashland Inc., Willow Springs, Illinois
16	March 27, 2018	EHS Support, Final Corrective Measures Annual Report – 2017, Ashland Inc., Willow Springs, Illinois

Figures



MAP REFERENCE:

PORTION OF U.S.G.S. QUADRANGLE MAP
7 ½ MINUTE SERIES (TOPOGRAPHIC)
HINSDALE, ILLINOIS 1993 and
SAG BRIDGE, ILLINOIS 1993 and
PALOS PARK, ILLINOIS 1993 and
BERWYN, ILLINOIS 1993 and

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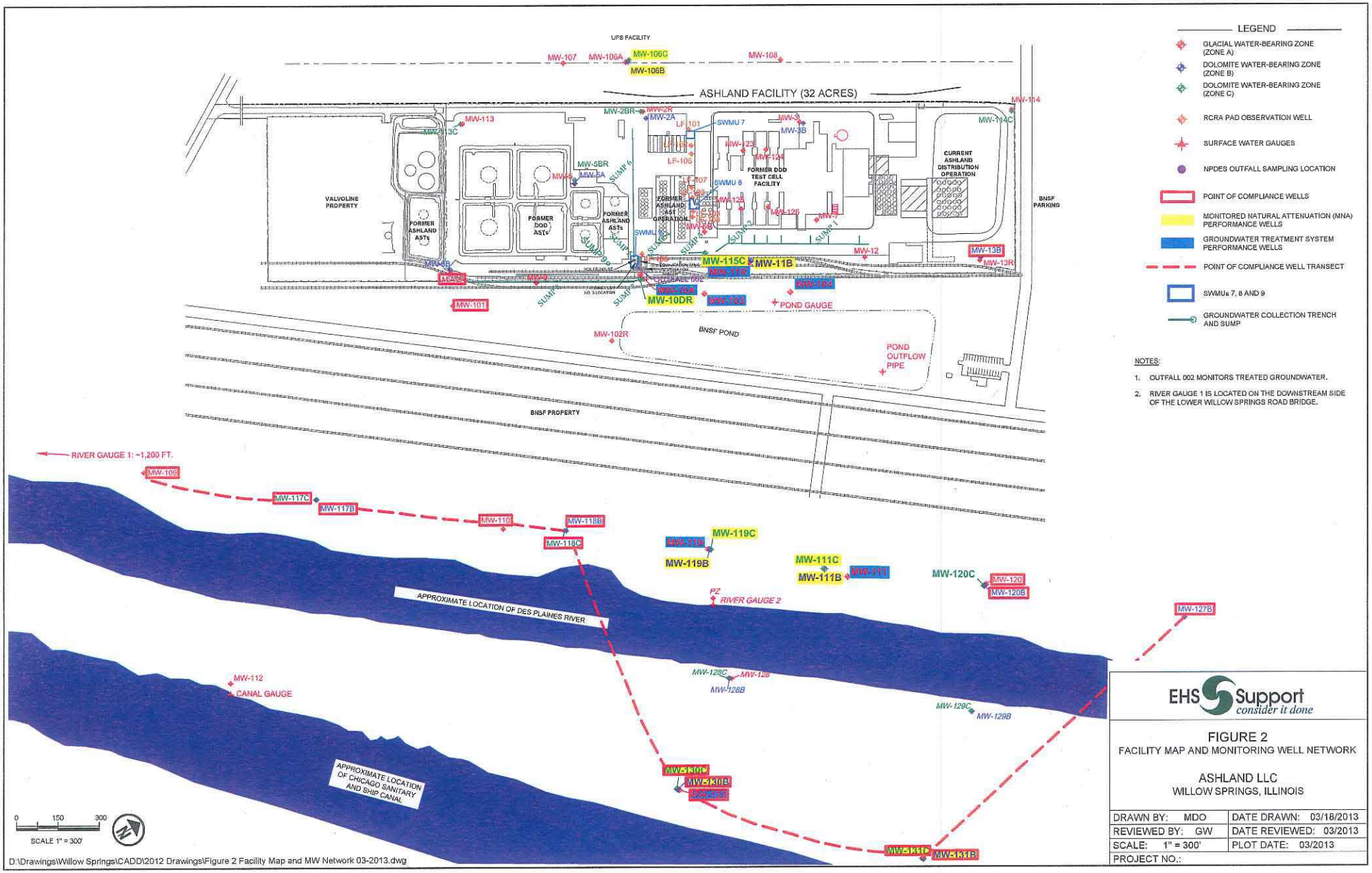
www.ehs-support.com

FIGURE 1

SITE LOCATION MAP

WILLOW SPRINGS, ILLINOIS


UPS FACILITY
ASHLAND FACILITY (32 ACRES)
VALVOLINE PROPERTY
FORMER ASHLAND ASTs
FORMER DOD ASTs
FORMER ASHLAND AST OPERATION
FORMER DOD TEST CELL FACILITY
CURRENT ASHLAND DISTRIBUTION OPERATION
BNSF PARKING
BNSF POND
POND OUTFLOW PIPE
POND GAUGE
BNSF PROPERTY
APPROXIMATE LOCATION OF DES PLAINES RIVER
APPROXIMATE LOCATION OF CHICAGO SANITARY AND SHIP CANAL
RIVER GAUGE 1: ~1,200 FT.
RIVER GAUGE 2
CANAL GAUGE
MW-101
MW-102
MW-102R
MW-103
MW-104
MW-105
MW-106A
MW-106B
MW-106C
MW-107
MW-108
MW-109
MW-110
MW-111B
MW-111C
MW-112
MW-113
MW-113C
MW-114
MW-114C
MW-115C
MW-117B
MW-117C
MW-118B
MW-118C
MW-119B
MW-119C
MW-120
MW-120B
MW-120C
MW-123
MW-124
MW-125
MW-126
MW-127B
MW-128B
MW-128C
MW-129B
MW-129C
MW-130B
MW-130C
MW-131B
MW-131C
MW-2A
MW-2BR
MW-2R
MW-3
MW-3B
MW-5A
MW-5BR
MW-7
MW-12
MW-13B
MW-13R
LF-101
LF-105
LF-107
SWMU 6
SWMU 7
SUMP 6
SUMP 7
SUMP 9
SUMP 99
SCALE 1" = 300'
0
150
300
N
LEGEND
GLACIAL WATER-BEARING ZONE (ZONE A)
DOLOMITE WATER-BEARING ZONE (ZONE B)
DOLOMITE WATER-BEARING ZONE (ZONE C)
RCRA PAD OBSERVATION WELL
SURFACE WATER GAUGES
NPDES OUTFALL SAMPLING LOCATION
POINT OF COMPLIANCE WELLS
MONITORED NATURAL ATTENUATION (MNA) PERFORMANCE WELLS
GROUNDWATER TREATMENT SYSTEM PERFORMANCE WELLS
POINT OF COMPLIANCE WELL TRANSECT
SWMUs 7, 8 AND 9
GROUNDWATER COLLECTION TRENCH AND SUMP
NOTES:
1. OUTFALL 002 MONITORS TREATED GROUNDWATER.
2. RIVER GAUGE 1 IS LOCATED ON THE DOWNSTREAM SIDE OF THE LOWER WILLOW SPRINGS ROAD BRIDGE.
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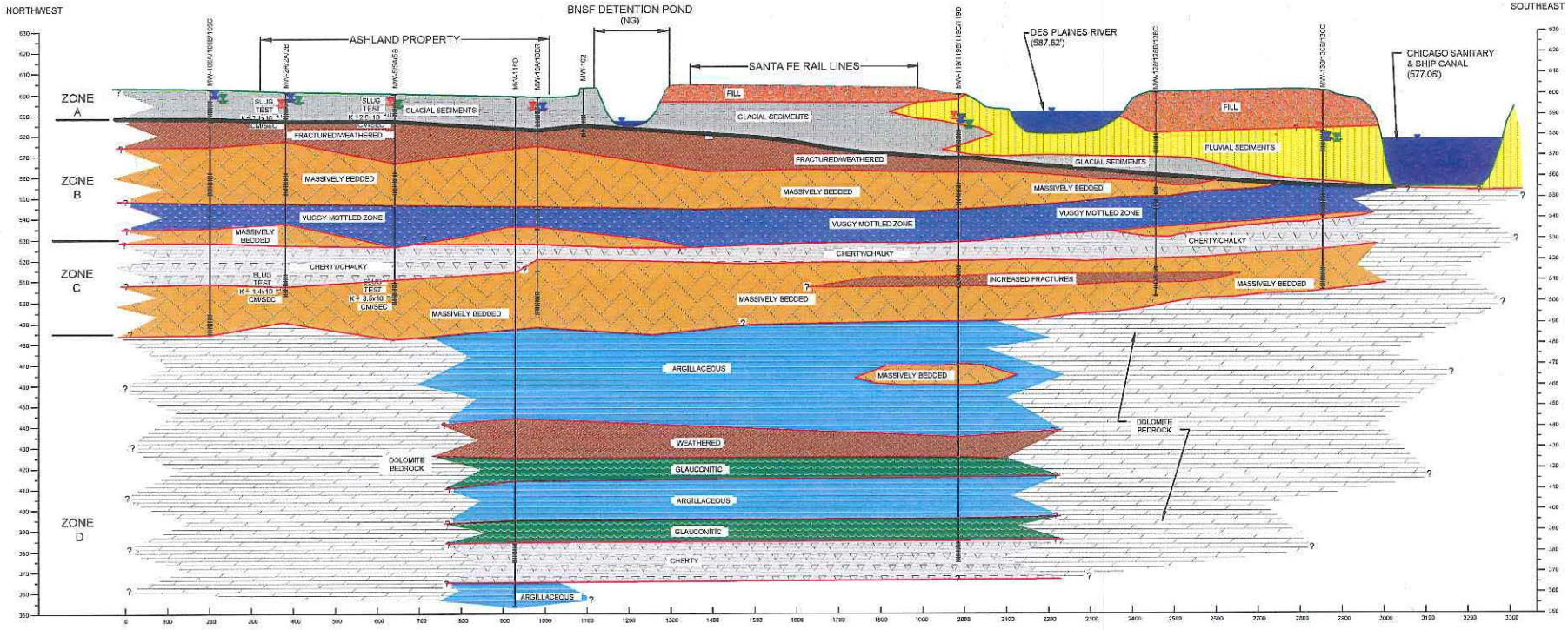
consider it done
FIGURE 2
FACILITY MAP AND MONITORING WELL NETWORK
ASHLAND LLC
WILLOW SPRINGS, ILLINOIS
DRAWN BY: MDO
DATE DRAWN: 03/18/2013
REVIEWED BY: GW
DATE REVIEWED: 03/2013
SCALE: 1" = 300'
PLOT DATE: 03/2013
PROJECT NO.:
D:\Drawings\Willow Springs\CADD\2012 Drawings\Figure 2 Facility Map and MW Network 03-2013.dwg



LEGEND

OVERBURDEN:

- GLACIAL SEDIMENTS (CLAY,SILT, GRAVELLY/SANDY SILT)
- FLUVIAL SEDIMENTS (SILTY SAND, GRAVELLY SAND)
- FILL (SILT, SAND, GRAVEL, CLAY)

DOLOMITE BEDROCK:

- DOLOMITE (UNDIFFERENTIATED)
- MASSIVELY BEDDED
- FRACTURED/WEATHERED
- VUGGY MOTTLED ZONE
- ARGILLACEOUS (THINNLY BEDDED)
- GLAUCONITIC
- CHERTY/CHALKY
- MW-13C WELL DESIGNATION

APPROXIMATE WATER LEVEL:

- OVERBURDEN WATER LEVEL
- INTERMEDIATE BEDROCK WATER LEVEL
- SHALLOW BEDROCK WATER LEVEL
- DEEP BEDROCK WATER LEVEL
- (NG) NOT GAUGED

CONTACT:

- BEDROCK/OVERBURDEN CONTACT
- GROUND SURFACE
- APPROXIMATE GEOCONTACT

NOTE:
1. Groundwater elevations displayed are from the June 21, 2016 gauging event.

EHS Support consider it done

REVISIONS				
Rev.	By:	Disc.:	Date:	
Rev.	By:	Disc.:	Date:	
Rev.	By:	Disc.:	Date:	
Rev.	By:	Disc.:	Date:	

ASHLAND LLC
WILLOW SPRINGS, ILLINOIS

FIGURE 3
HYDROGEOLOGIC CROSS SECTION

Drawn By:	MDO	Date Drawn:	08/2011
Reviewed By:	GW	Date Reviewed:	08/2011
Scale:	AS SHOWN	Plot Date:	08/2011
Project Number.:			