APPENDIX E

SLURRY PIPELINE WETLAND DELINEATION MEMO

To:	Mr. Paul Blue - Parsons	*cc:*	Mr. Alfred J. Labuz –Honeywell
From:	Mr. Steve Mooney - O'Brien & Gere		John P. McAuliffe, P.E. – Honeywell
Re:	Slurry Pipeline Route Wetland Delineation, Onondaga Lake, Geddes and Camillus, New York – Report		Mr. Tom Drachenberg – Parsons Mr. Chris Calkins – O'Brien & Gere
File:	1163/43776		
Date:	December 16, 2009		

This technical memorandum was prepared to document the wetland identification and delineation activities performed by O'Brien & Gere and Parsons on behalf of Honeywell, Inc. along the proposed slurry pipeline route in the Towns of Geddes and Camillus, New York (**Figure 1**). The work was performed in association with the Onondaga Lake Bottom Subsite Project and in accordance with the Slurry Pipeline Route Wetland Delineation work plan dated September 24, 2009 and approved by the New York State Department of Environmental Conservation (NYSDEC) on October 5, 2009. Field oversight was provided by Mr. Rich Henry, a representative of the U.S. Fish and Wildlife Service (USFWS) on behalf of the U.S. Environmental Protection Agency (USEPA). Presented below are the methods and findings of the efforts performed in completion of the delineation activities.

PROJECT BACKGROUND

As part of the Onondaga Lake Bottom Subsite Project, dredged sediments from Onondaga Lake will be pumped (as a slurry mixture) through a pipeline to a sediment containment area (SCA) at Settling Basin (SB) 13 for dewatering. The route of the slurry pipeline will generally parallel the western shore of the lake and Ninemile Creek (NMC) in a southwest direction to the SCA. As depicted on **Figure 1**, existing road and utility right-of-way and settling basin access roads will be followed to the extent practical. The length of this pipeline route is approximately 21,000 feet (ft) (3.97 miles) (POA 2009).

As part of this project, a wetland identification and delineation was performed to evaluate potential crossings of wetlands by the proposed pipeline construction. The wetland delineation was performed along the proposed pipeline route between the Interbed Area located between SBs 9/10 and 11 and the SCA located at SB 13, as generally represented by points A and C (survey area) on **Figure 1**. Portions of the pipeline route east of the survey area have been previously delineated, as further discussed herein.

WETLAND IDENTIFICATION AND DELINEATION

Methodology

The wetland identification and boundary delineation for this project was performed in accordance with methods utilized at other Honeywell sites associated with Onondaga Lake and described in the revised *Onondaga Lake Wetland and Floodplain Assessment Report* submitted to the NYSDEC in June 2009 (O'Brien & Gere and Parsons 2009). O'Brien & Gere biologists performed the wetland delineation along the pipeline route in accordance with the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE 1987). Based on the preliminary review of available NYSDEC wetland mapping, NYSDEC jurisdictional wetlands are not mapped along the survey area. However, NYSDEC delineation methods were also factored into the field work for this project.

The USACE and USEPA jointly define wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions [33 CFR 328.3(b), 40 CFR 230.3(t)]. Criteria used to identify a wetland, as defined therein, consist of the following:

- the soils present have been classified as hydric or possess reducing soil characteristics
- the prevalent vegetation is hydrophytic
- the area is either permanently or periodically at mean water depths less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season.

To make a positive wetland determination, a minimum of one wetland indicator from each criterion (soil, vegetation and hydrology) must be identified. The Routine Determination Method outlined in USACE (1987) was selected for the identification and delineation of wetlands along the survey area. Routine determinations involve simple, rapidly applied methods that result in sufficient qualitative data for identifying wetland and non-wetland areas. The Routine Determination Method consists of a combination of off-site data review and on-site inspection.

Off-site activities included an evaluation of available information regarding environmental conditions at the survey area. On-site activities consisted of collecting the field data required to identify and delineate wetland boundaries. Field data were gathered at sample plots chosen in potential wetland areas, as well as in corresponding adjacent upland areas.

Off-Site Investigation
The off-site investigation procedure consisted of the review of the following documents:

- *Soil Survey of Onondaga County, New York* as prepared by the United States Department of Agriculture (USDA) Soil Conservation Service (USDA-SCS 1977) (soil survey) and the NRCS Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx) (USDA-NRCS 2009a).
- New York State Freshwater Wetland (NYSFW) maps, as presented on the NYSDEC Environmental Resource Mapper (http://www.dec.ny.gov/imsmaps/ERM/viewer.htm) (NYSDEC 2009).
- USFWS National Wetland Inventory (NWI) maps as presented on the NWI Wetland Mapper (http://www.fws.gov/wetlands/Data/Mapper.html) (USFWS 2009).

Soil Mapping
Information presented in the soil survey, the *New York Hydric Soils List* (USDA-NRCS 2009b), *New York Hydric Soils and Soils with Potential Hydric Inclusions* (USDA-NRCS 1995), and the USDA Web Soil Survey was used to evaluate the existing soil series present and the potential presence of hydric soils within the survey area. The soil series mapped along the survey area include:

- Cut and fill land (CFL)
- Made land, chemical waste (Ma)
- Fluvaquents (FL)
- Wayland silt loam (Wn)
- Palmyra gravelly loam (PgA)
- Collamer silt loam 0 to 2 percent slopes (ChA).

Cut and fill land soil, the most common soil of the survey area, is mapped on the central and eastern portions of the survey area. Fluvaquents soil is mapped in the Interbed Area at the eastern end of the survey area. Wayland silt loam, Palmyra gravelly loam, and Collamer silt loam soils are mapped on the western portion of the survey area. A soils map of the survey area is presented as **Figure 2** and soil descriptions obtained from the Web Soil Survey (USDA-NRCS 2009a) are provided as **Attachment 1**. Wayland silt loam and Fluvaquents are the only

soils considered hydric within the survey area and the mapped non-hydric soils are listed as not having potential hydric inclusions.

New York State Freshwater Wetlands
The NYSFW maps were developed by the NYSDEC pursuant to Article 24 of the NYS Environmental Conservation Law. These maps present the approximate boundaries of freshwater wetlands regulated by the NYSDEC. In most instances, the state-mapped boundaries are based on aerial photographs and soil survey interpretation and, therefore, require site-specific field verification.

Based on the mapping reviewed, no NYSFW are mapped along the survey area. However, NYSFW SYW-18 is mapped southeast of the eastern portion of the survey area. Wetland SYW-18, as mapped by the NYSDEC, consists of 35.8 acres and is hydrologically associated with NMC, a tributary of Onondaga Lake. The NYSDEC classifies SYW-18 as a Class II wetland. **Figure 3** presents the mapped location of SYW-18 in relation to the survey area.

National Wetland Inventory Wetland Habitats
The USFWS, through its NWI Project, has produced a series of topical maps to show wetlands and deep water habitats. Although these maps are helpful in the preliminary identification of wetlands, they do not represent federally regulated wetlands. The locations of NWI habitats in the vicinity of the survey area were accessed using the USFWS NWI Wetland Mapper (USFWS 2009). According to the NWI mapping, no NWI habitats are located along the survey area. The nearest NWI habitat is a palustrine, scrub-shrub, broad-leaved deciduous/emergent, common reed (*Phragmites australis)* dominant, seasonally flooded/saturated (PSS1/EM5E) habitat present just west of the western end of the survey area. A map indicating the location of NWI wetland habitats in relation to the survey area is presented as **Figure 3**.

Associated Water Bodies
A significant portion of the pipeline route is proposed along the northern bank of NMC. Also, a part of the pipeline is proposed to be submerged/floating within a portion of NMC and will eventually cross the creek as it extends to SB 13. The subject reach of NMC is classified by the NYSDEC as a Class "C" water body with "C" Standards. According to 6 NYCRR Part 701.8, these waters shall be suitable for fish propagation and survival and primary and secondary contact recreation, although other factors may limit the use for these purposes (NYCRR 2008).

The creek reach along the survey area is a wide, fairly slow-moving and generally straight channel with an average depth of approximately 18 to 42 inches. The reach contains a silt and gravel substrate with sparse areas of aquatic vegetation and defined banks rising approximately 3 to 5 feet above the water level.

Previously Delineated Wetlands
Portions of the pipeline route east of the survey area have been previously delineated by Terrestrial Environmental Specialists (TES) in October 2008 as part of the Geddes Brook/Ninemile Creek Feasibility Study. The delineation results are presented in the draft *Wetland/Floodplain Assessment Ninemile Creek and Lower Reach of Geddes Brook* (TES 2009), which is currently under review by NYSDEC. TES delineated wetlands along NMC from the mouth upstream to the Interbed Area located between SBs 9/10 and 11. This effort included an assessment and delineation of NYSDEC wetland SYW-18 and the lower reach of Geddes Brook. Boundaries for these delineated wetlands are presented on **Figure 4**.

The eastern end of the proposed pipeline route is associated with the western portion of the Wastebed B/Harbor Brook Site. O'Brien & Gere performed a wetland delineation at the Wastebed B/Harbor Brook Site in the summers of 2000 and 2003 as part of the ongoing Wastebed B/Harbor Brook Site Remedial Investigation.

Wetland delineation findings are reported in *Jurisdictional Wetland Delineation Report, Harbor Brook Site, Geddes, New York* (O'Brien & Gere 2003). Boundaries of these delineated wetlands that are in the vicinity of the eastern end of the proposed pipeline route are presented on **Figure 4**.

On-Site Investigation
O'Brien & Gere biologists trained in wetland delineation and assessment performed the field activities associated with the survey area delineation on October 13-16, 20 and 21, 2009. On-site activities included the evaluation of vegetative communities, the soil substrate, and hydrologic characteristics to identify and delineate wetland boundaries within an 80-foot corridor along the proposed pipeline route. Field data were gathered at sample plots chosen in potential wetland areas and adjacent upland areas. Wetlands were identified based on the presence of the following three parameters:

- hydric soils
- a vegetative community dominated by hydrophytes
- inundated or saturated soil conditions, and/or indicators of hydrologic patterns.

Vegetative, soil, and hydrologic conditions were recorded on Wetland Data Forms specified for the Routine Determination Method, which are included as **Attachment 2**.

Soils
Observed survey area soil characteristics were compared to the mapped soil descriptions of the soil survey to identify whether the survey area soils were consistent with the mapping, as characteristics can vary from mapped descriptions due to the scale at which the soil mapping was performed. Soil physical characteristics were evaluated using a manual auger to install a boring to 18 inches below ground surface, unless shallower refusal occurred. Soil color was evaluated using *Munsell Soil Color Charts* (Munsell 2000).

Based on this investigation, hydric soils were observed on the western portion of the survey area (Wayland) and at the Interbed Area (Fluvaquents). Hydric soil characteristics were observed in some areas mapped as Cut and fill land and Palmyra, which are listed as non-hydric soils per the Web Soil Survey (USDA-NRCS 2009a). Hydric soil characteristics observed in areas mapped as non-hydric likely developed due to prolonged saturation from surface or groundwater. Areas that exhibited hydric soil characteristics such as low chroma colors and/or evidence of reducing conditions (presence of mottles or gleying) met the hydric soil criterion per USACE (1987). Observed soil characteristics at each sample plot are summarized on Wetland Data Forms included as **Attachment 2**.

Vegetation
The criterion for wetland vegetation is a dominance of hydrophytic (water tolerant) species. A species is considered hydrophytic per USACE (1987) if it is classified either as obligate (OBL), facultative wet (FACW), or facultative (FAC), exclusive of a FAC- designation, in the *National List of Plant Species That Occur in Wetlands: Northeast (Region 1)* published by the USFWS (1988). A dominance of hydrophytes requires that more than 50% of the vegetative species in an area are classified as hydrophytic.

In accordance with USACE (1987), observations of vegetation focus on dominant vegetative species in four categories: trees (3 inch diameter at breast height), saplings/shrubs (less than 3 inch diameter and greater than 3.2 feet tall), herbs, and woody vines. Vegetation along the survey area varied from herbaceous species (*e.g*, wildflowers) to successional woody species. The dominant vegetative species observed within each of the sample plots were recorded and are presented on the Wetland Data Forms included as **Attachment 2**. Additionally, the *Draft Ecological Communities of New York State* (Edinger *et al*. 2002) was utilized to identify the ecological

community best represented by the dominant vegetative species observed in the delineated wetlands. Additional discussion regarding the observed vegetation is presented in the delineated wetland descriptions, below.

Hydrology
The survey area was examined for field indicators of wetland hydrology. According to USACE (1987), wetland hydrology consists of permanent or periodic inundation, or soil saturation to the surface during the growing season. Criteria used to indicate the existence of wetland hydrology include, but are not limited to:

- ground surface inundation or evidence of inundation
- saturated soils within 12 inches of the ground surface
- standing water in soil evaluation boreholes
- drainage patterns.

If these indicators were present within the sample plots, the hydrology criterion for wetlands was met. The primary hydrologic influence along the survey area appears to be NMC high water events and surface water runoff and drainage from steeper areas (*e.g.*, SB 11 and access roads) to depressional or low gradient areas. Ground water discharge may also be a potential hydrologic influence to some portions of the survey area. Hydrologic indicators observed within the sample plots were recorded on Wetland Data Forms included as **Attachment 2**.

Observed Wetland Areas
When all three wetland criteria (hydric soils, dominance of hydrophytes and wetland hydrology) were met, the area represented by the sample plot was identified as wetland. The delineated wetland boundaries were identified in the field with sequentially numbered (WL1-1, WL1-2, WL1-3, *etc*.) "Wetland Boundary" surveyor markers (flagging tape tied to vegetation). Wetland sample data plot locations were also identified with flagging and labeled WP1 through WP30. The wetland boundary and sample plot flagging locations were surveyed by the field biologists using a hand-held Trimble Global Positioning System (GPS) unit and subsequent post processing of the raw data.

A total of 20 wetland areas (totaling 2.78 acres) were identified and delineated within the survey area. These wetlands are listed in **Table 1** below. The location of the surveyed wetland boundaries and wetland sample plots are presented on the Delineated Wetlands maps included herein as **Figures 5A**, **5B**, and **5C**.

Table 1. Delineated Wetland Habitats

Wetland ID	Acreage	General Location	Figure
Wetland (WL)1	0.016	Eastern end of Sun Petroleum right-of-way (ROW)	5A
WL2	0.006	West of WL1 in ROW	5A
WL3	0.004	West of WL2 in ROW	5A
WL4	0.021	West of WL3 along stream/drainage ditch	5A
WL5	0.005	West of WL6 along a drainage ditch	5A
WL6	1.654	Central portion of ROW between WL4 and WL5	5A
WL7	0.025	Central portion of ROW south of WL6	5A
WL8	0.011	North bank of NMC west of Belle Isle bridge	5A
WL9	0.043	South bank of NMC west of CSX bridge	5A
WL10	0.032	South bank of NMC west of CSX bridge; east of WL9	5A
WL11	0.063	South bank of NMC west of CSX bridge	5A
WL12	0.050	South bank of NMC west of Belle Isle bridge	5A
WL12A	0.0005	East of Belle Isle bridge center of NMC	5A
WL12B	0.001	South bank of NMC east of Belle Isle bridge	5A

Table 1. Delineated Wetland Habitats

Wetland ID	Acreage	General Location	Figure
WL14	0.024	Between NMC and SB 11 access road	5C
WL15	0.236	West of WL14	5C
WL16	0.047	West of WL15	5C
WL17	0.005	West of WL16	5B
WL18	0.003	West of WL17	5B
WL19	0.530	West of WL18 and east of WL1	5B
Total Acreage	**2.7765**		

Three ecological community types described in Edinger *et al*. (2002); shallow emergent marsh, shrub swamp, and reedgrass/purple loosestrife marsh, are representative of these 20 wetland areas. Wetland-specific descriptions are presented below. A photographic log depicting some of the observed wetlands is included as **Attachment 3**.

Survey Area - West

O'Brien & Gere identified fourteen wetland habitats (WL1 through WL12B) along the western portion of the survey area, as presented on **Figure 5A**.

Wetland 1, WL2, and WL3 are small depressional wetland habitats located on the eastern portion of the ROW. Vegetation observed in these wetlands was dominated by reed canary grass (*Phalaris arundinacea*) and purple loosestrife (*Lythrum salicaria*). Hydrology was indicated by surface water drainage from higher elevations and hydric soils were indicated by the presence of low chroma colors and mottling.

Wetland 4 and WL5 are narrow wetland habitats identified along small streams discharging to NMC. Dominant species observed in these areas include reed canary grass, purple loosestrife, soft rush (*Juncus effusus*), bur reed (*Sparganium sp*.), and forget-me-not (*Myosotis scorpioides*). Hydrology was indicated by surface water drainage associated with the streams as well as soil saturation within the upper 12 inches of soil. Hydric soils were indicated by the presence of a sulfidic odor and low chroma colors and mottling within the upper 10 inches of soil. The northern boundary of WL4 is identified with a broken line on **Figure 5A** to indicate that the wetland boundary is open and continues north beyond the survey area. Based on the vegetative species observed, wetlands WL1 through WL5 are classified as shallow emergent marsh communities.

Wetland 6 is a relatively larger habitat located between WL4 and WL5 along the ROW. The eastern and central portions of WL6 are dominated by common reed. The western portion of WL6 is dominated by forget-me-not, moneywort (*Lysimachia nummularia*), and American black currant (*Ribes americanum*) with green ash (*Fraxinus pennsylvanica*) and black willow (*Salix nigra*) observed in the overstory. Snags, or standing dead trees, were also observed in this area. The western boundary of WL6 is identified with a broken line on **Figure 5A** to indicate that the wetland is open and continues west beyond the survey area. Hydrology for WL6 was indicated by surface water drainage from higher elevations and hydric soils were indicated by the presence of low chroma colors and mottling.

A portion of WL6 extends south to the edge of NMC. This area is dominated by reed canary grass. Hydrology in this area was indicated by surface water drainage patterns and potential high water flood events from NMC and sediment deposits along the stream bank creating uneven topography. Hydric soils were indicated by the presence of low chroma colors and mottling. WL6 contains a mixture of vegetative species that represent a combination of shallow emergent marsh and shrub swamp ecological communities (Edinger *et al*. 2002) surrounded by areas of mature trees.

Fringe wetlands that were identified along the banks of NMC include WL7, WL8 (north bank) and WL 9, WL10, WL11, WL12, WL12A, and WL12B (south bank). The western boundary of WL9 is identified with a broken line on **Figure 5A** to indicate that the wetland is open and continues west outside the survey area. The observed vegetation was dominated by reed canary grass and common reed. Hydrology in these areas was indicated by surface water drainage from higher topographic locations, potential flood events from NMC and sediment deposits along the stream bank creating uneven topography. Hydric soil was indicated by the presence of low chroma colors and mottling. These wetlands are best described as shallow emergent marsh communities, based on the vegetative species present and proximity to NMC.

Survey Area - Central

Three wetland habitats (WL17, WL18, and WL19) were identified along the central portion of the survey area as presented on **Figure 5B**. Wetlands 17 and 18 are shallow emergent marsh habitats located along the north bank of NMC. The observed vegetation was dominated by reed canary grass and common reed. Hydrology in these areas was indicated by surface water drainage from higher topographic locations, potential flood events from NMC and sediment deposits along the stream bank creating uneven topography. Hydric soil was indicated by the presence of low chroma colors and mottling. Wetland 19 is a reedgrass/purple loosestrife marsh community dominated by common reed with lesser densities of reed canary grass and giant goldenrod (*Solidago gigantea*). Wetland 19 receives surface water drainage via a drainage ditch and culvert located at the northwestern end of the wetland.

Survey Area - East

Three wetland habitats (WL14, WL15, and WL16) were delineated within the eastern portion of the survey area as shown on **Figure 5C**. Similar to WL19, these wetlands are located between NMC and the Setting Basin 11 access road and are dominated by common reed with lesser densities of reed canary grass and giant goldenrod. Hydric soils were indicated by the presence of low color chroma and mottling. These areas are hydrologically influenced by surface water runoff from SB 11 and seeps observed within the wetlands. These areas have likely been previously disturbed by draining, filling and/or roadside activities.

Delineated Wetland Values and Services

Data gathered during document review and wetland boundary delineation activities were used to qualitatively assess the values and services of the delineated wetlands identified within the survey area. Field observations indicate that the delineated wetlands provide suitable habitat for various species of wildlife. Amphibians, predominantly frogs and turtles, various species of songbirds, and animal sign, such as deer tracks and mammal scat, were observed throughout the survey area.

The fringe wetland habitats along NMC provide sediment/shoreline stabilization, and the wetlands identified between NCM and SB 11 likely provide sediment and toxicant retention from surface water and seep drainage directed from SB 11.

SUMMARY

O'Brien & Gere and Parsons conducted a wetland delineation for Honeywell along the proposed slurry pipeline route to evaluate potential impacts to wetlands associated with the construction of the pipeline. Field efforts were performed along the survey area on October 13-16, 20 and 21, 2009 and focused on the portion of the pipeline route located between the Interbed Area and the terminus of the pipeline at the SCA on SB 13.

For this wetland delineation task, O'Brien & Gere identified 20 wetland habitats totaling approximately 2.78 acres. Shallow emergent marsh communities were observed on the western portion of the survey area and along the riparian area of NMC. A mix of shallow emergent marsh and shrub swamp communities was observed at

WL6, the largest of the delineated areas (1.6 acres). Reedgrass/purple loosestrife marsh communities were observed on the eastern portion of the survey area between NMC and the SB 11 access road.

The information presented herein will be used by the project designers to finalize the pipeline routing and minimize potential impacts to wetlands where practicable.

REFERENCES

Edinger *et al*. 2002. *Draft Ecological Communities of New York State*. Second Edition. NY Natural Heritage Program. NYSDEC. January 2002.

Munsell. 2000. *Munsell Soil Color Charts*. Gretag Macbeth. New Windsor, New York.

O'Brien & Gere and Parsons. 2009. *Wetland and Floodplain Assessment Revised Report, Onondaga Lake, Geddes and Syracuse, NY*. Prepared on behalf of Honeywell, International, Syracuse, New York. June 2009.

Parsons. 2005. *Geddes Brook/Ninemile Creek Feasibility Study Revised Report*. Prepared for Honeywell. Parsons Engineering of New York, Inc. Liverpool, New York**.**

Parsons, O'Brien & Gere, and Anchor Environmental (POA). 2009. *Draft Onondaga Lake Dredging, Sediment Management, & Water Treatment Initial Design Submittal*. Prepared for Honeywell. February 2009.

New York Code of Rules and Regulations (NYCRR). 2008. 6 NYCRR 701. *Part 701 Classifications -Surface Waters and Groundwaters. Subpart 701.8 Class C fresh surface waters.* New York State Department of Environmental Conservation Chapter X – Division of Water. Water Quality Regulations. February 16, 2008. http://www.dec.ny.gov/regs/4592.html.

New York State Department of Environmental Conservation (NYSDEC). 2009. Environmental Resources Mapper. http://www.dec.ny.gov/imsmaps/ERM/viewer.htm. Accessed September 28, 2009.

Terrestrial Environmental Specialists, Inc. (TES). 2009. *Wetland/Floodplain Assessment Ninemile Creek and Lower Reach of Geddes Brook, Town of Geddes, New York (Draft)*. Prepared for Parsons Engineering of New York, Inc. TES, Phoenix, New York. January 2009.

TES. 2003. *Wetland Delineation Report Lower Reach of Ninemile Creek and Geddes Brook at the West Flume*. Prepared for Parsons Engineering of New York, Inc. TES, Phoenix, New York. December 2003. (Provided as Appendix A of TES 2009)

U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS). 2009a. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed September 28, 2009.

USDA-NRCS. 2009b. *New York Hydric Soils List*. Natural Resources Conservation Service. United States Department of Agriculture. http://soils.usda.gov/use/hydric/lists/state.html. January 2009.

USDA-NRCS. 1995. *New York Soils and Soils with Potential Hydric Inclusions*. U.S. Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. December 15, 1995 Revision.

USDA Soil Conservation Service (USDA-SCS). 1977. *Soil Survey of Onondaga County, New York.* U.S. Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. January 1977.

U.S. Fish and Wildlife Service (USFWS). 2009. National Wetlands Inventory. Wetlands Mapper. World Wide Web site. http://www.fws.gov/nwi/mapper_tool.htm. Accessed September 29, 2009.

USFWS. 1988. *National List of Plant Species That Occur in Wetlands: Northeast (Region 1).* U.S. Department of the Interior in cooperation with the National and Regional Interagency Review Panels.

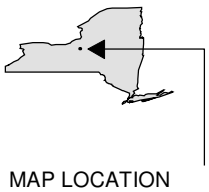
FIGURES

FIGURE 1

PATH: I:\Honeywell 1163\STDS\GIS\Syr-Portfolio\MXD\Pipeline\SITE-LOC.mxd
NAME: MortonAK
DATE: 10/28/2009 11:57:56 AM

This document was developed in color. Reproduction in B/W may not represent the data as intended.

ADAPTED FROM: CAMILLUS AND SYRACUSE WEST USGS QUADRANGLES



MAP LOCATION

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS, NEW YORK

SITE LOCATION

LEGEND

- SLURRY PIPELINE ROUTE
- A, B, C SURVEY AREA BETWEEN POINTS A AND C

N

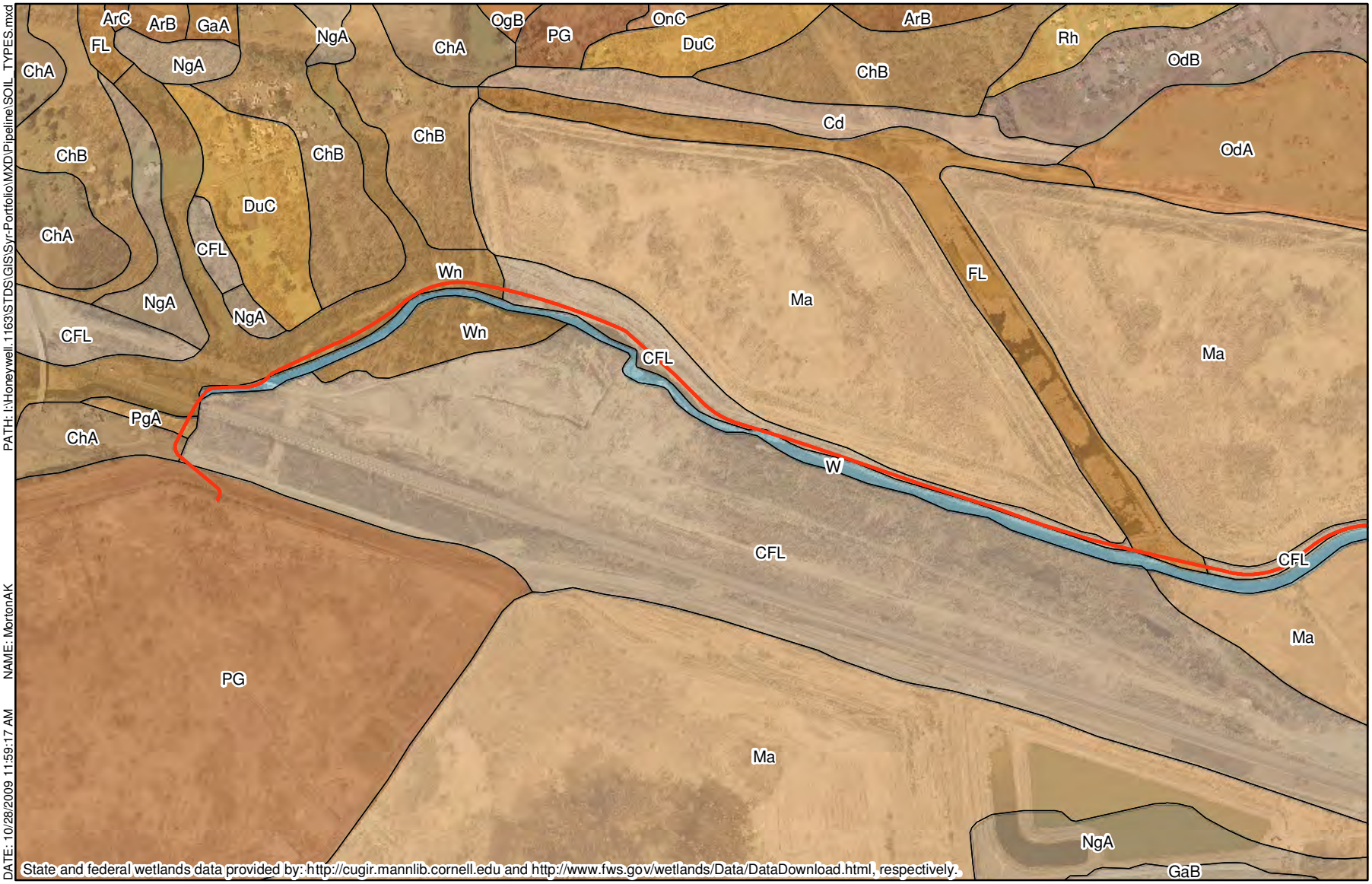
0 1,000 2,000 4,000 6,000 8,000

Feet

NOVEMBER 2009
1163/43776

1:28,000

O'BRIEN & GERE



LEGEND

SLURRY PIPELINE ROUTE

CFL SOIL TYPE

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS, NEW YORK

SOIL TYPES

0 500 1,000 2,000
Feet

N

FIGURE 2

O'BRIEN & GERE

NOVEMBER 2009
1163/43776

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS, NEW YORK

STATE AND FEDERAL WETLANDS

0 500 1,000 2,000
Feet

N

FIGURE 3

O'BRIEN & GERE

NOVEMBER 2009
1163/43776

PATH: I:\Honeywell.1163\STDS\GIS\Syr-Portfolio\MXD\Pipeline\PREV_DEL_WETLANDS.mxd

NAME: MortonAK

DATE: 10/28/2009 11:56:37 AM

FIGURE 4

This document was developed in color. Reproduction in B/W may not represent the data as intended. The 2006 aerial photographs were obtained from the NYS GIS Clearinghouse - http://www.nysgis.state.ny.us/gateway/mg/

LEGEND

- SLURRY PIPELINE ROUTE
- PREVIOUSLY DELINEATED WETLANDS (BY TES AND O'BRIEN & GERE)
- A, B, C SURVEY AREA BETWEEN POINTS A ND C

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS, NEW YORK

0 1,250 2,500 5,000
Feet

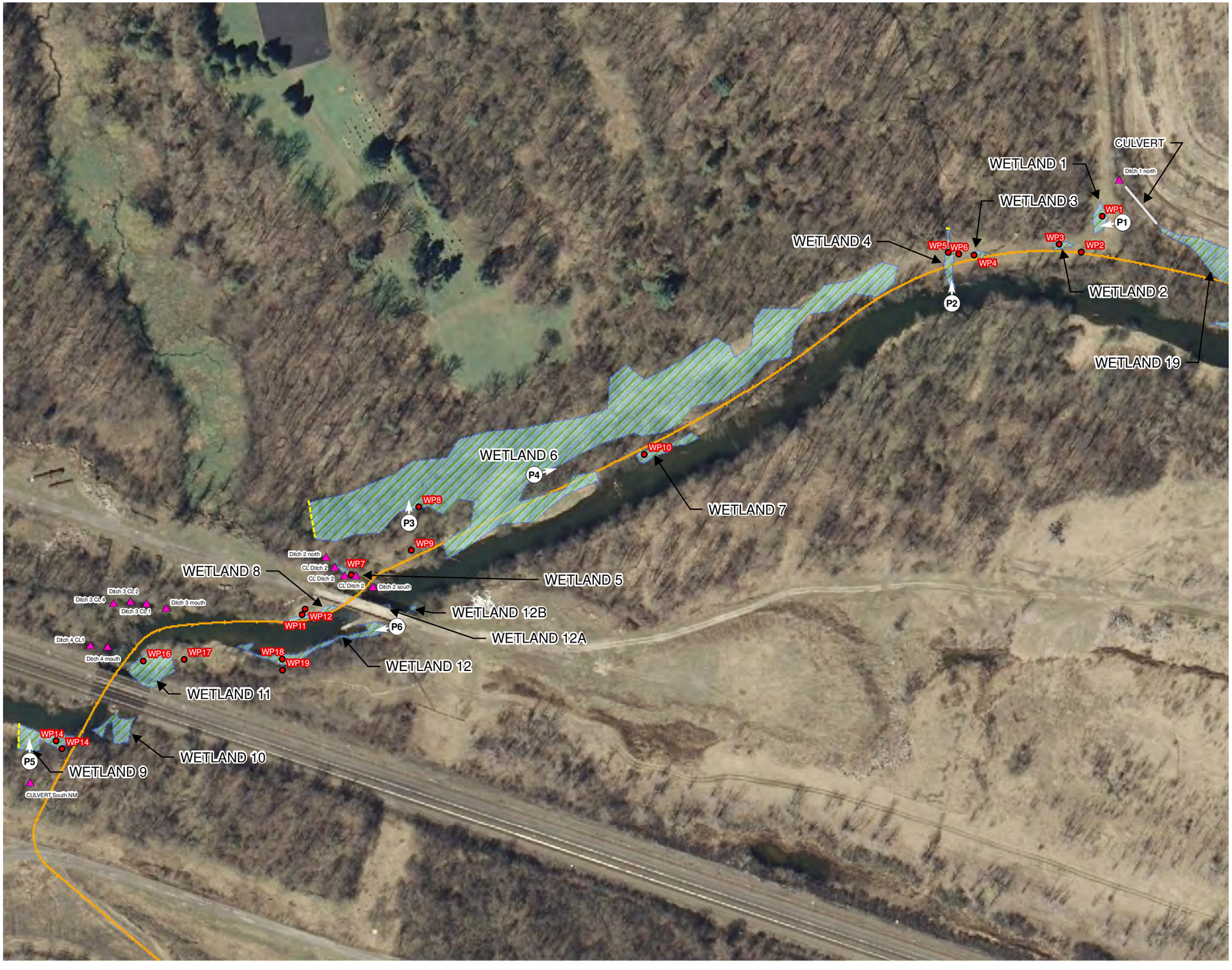
N

PREVIOUSLY DELINEATED WETLANDS

NOVEMBER 2009
1163.43776

O'BRIEN & GERE

PATH: I:\Honeywell.1163\STDS\GIS\Syr-Portfolio\MXD\Pipeline\NMC_WetDelin_W.mxd



This document was developed in color. Reproduction in B/W may not represent the data as intended.

NAME: Newton.JM

DATE: 10/27/2009 4:20:27 PM

FIGURE 5A

N

LEGEND

- DELINEATED WETLAND
- SLURRY PIPELINE ROUTE
- WETLAND PLOTS
- REFERENCE POINT
- OPEN END OF WETLAND
- P1 PHOTO LOCATIONS

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS,
NEW YORK

DELINEATED WETLANDS (WEST)

0 75 150 300

Feet

NOVEMBER 2009
1163.43776

O'BRIEN & GERE

PATH: I:\Honeywell.1163\STDS\GIS\Syr-Portfolio\MXD\Pipeline\NMC_WetDelin_Central.mxd

This document was developed in color. Reproduction in B/W may not represent the data as intended.

NAME: NewtonJM

DATE: 10/27/2009 4:36:11 PM

FIGURE 5B

N

LEGEND

- DELINEATED WETLAND
- SLURRY PIPELINE ROUTE
- WETLAND PLOTS
- REFERENCE POINT

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS,
NEW YORK

DELINEATED WETLANDS (CENTRAL)

0 75 150 300
Feet

NOVEMBER 2009
1163.43776

O'BRIEN & GERE

PATH: I:\Honeywell.1163\STDS\GIS\Syr-Portfolio\MXD\Pipeline\NMC_WetDelin_East.mxd

FIGURE 5C

N

LEGEND

- DELINEATED WETLAND
- SLURRY PIPELINE ROUTE
- PREVIOUSLY DELINEATED WETLANDS (TES)
- WETLAND PLOTS
- P8 PHOTO LOCATIONS

HONEYWELL
SLURRY PIPELINE
WETLAND DELINEATION
GEDDES AND CAMILLUS,
NEW YORK

DELINEATED WETLANDS (EAST)

0 75 150 300
Feet

NOVEMBER 2009
1163.43776

O'BRIEN & GERE

This document was developed in color. Reproduction in B/W may not represent the data as intended.

NAME: NewtonJM

DATE: 10/27/2009 4:27:02 PM

ATTACHMENT 1

Soils Information

Map Unit Description (Brief)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the selected area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit. A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The "Map Unit Description (Brief)" report gives a brief, general description of the major soils that occur in a map unit. Descriptions of nonsoil (miscellaneous areas) and minor map unit components may or may not be included. This description is written by the local soil scientists responsible for the respective soil survey area data. A more detailed description can be generated by the "Map Unit Description" report.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief)

Onondaga County, New York

Description Category: NASIS

Map Unit: CFL—Cut and fill land

CFL = Cut and fill land Soil characteristics of this component can vary widely from one location to another. On-site investigation is needed to determine the suitability for specific use.

Map Unit: ChA—Collamer silt loam, 0 to 2 percent slopes

ChA = Collamer silt loam, 0 to 2 percent slopes This soil is very deep and moderately well drained. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to the top of a seasonal high water table ranges from 18 to 24 inches. Shrink-swell potential is low. Available water capacity is high. The Kf erodibility factor assigned to the top mineral soil layer is .49 and the soil loss tolerance factor T is 4. Hydrologic group: C Farmland class: prime farmland Hydric soil rating: no Land capability classification: 2w

Map Unit: ChB—Collamer silt loam, 2 to 6 percent slopes

ChB = Collamer silt loam, 2 to 6 percent slopes This soil is very deep and moderately well drained. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to the top of a seasonal high water table ranges from 18 to 24 inches. Shrink-swell potential is low. Available water capacity is high. The Kf erodibility factor assigned to the top mineral soil layer is .49 and the soil loss tolerance factor T is 4. Hydrologic group: C Farmland class: prime farmland Hydric soil rating: no Land capability classification: 2e

Map Unit: DuC—Dunkirk silt loam, rolling

DuC = Dunkirk silt loam, rolling This soil is very deep and well drained. Slopes range from 6 to 12 percent. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to the top of a seasonal high water table is greater than 60 inches. Shrink-swell potential is low. Available water capacity is high. The Kf erodibility factor assigned to the top mineral soil layer is .49 and the soil loss tolerance factor T is 4. Hydrologic group: B Farmland class: farmland of statewide importance Hydric soil rating: no Land capability classification: 3e

Map Unit: FL—Fluvaquents, frequently flooded

FL = Fluvaquents, frequently flooded This soil is very deep and poorly drained. Slopes range from 0 to 5 percent. The parent material consists of alluvium with highly variable texture. Depth to the top of a seasonal high water table is 0 inches. Annual flooding is frequent. Annual ponding is frequent. Shrink-swell potential is low. Available water capacity is moderate. The Kf erodibility factor assigned to the top mineral soil layer is .28 and the soil loss tolerance factor T is not assigned. Hydrologic group: D Farmland class: not prime farmland Hydric soil rating: yes Land capability classification: 5w

Map Unit: Ma—Made land, chemical waste

Ma = Made land, chemical waste Soil data not provided for this component.

Map Unit: NgA—Niagara silt loam, 0 to 4 percent slopes

NgA = Niagara silt loam, 0 to 4 percent slopes This soil is very deep and somewhat poorly drained. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to the top of a seasonal high water table ranges from 6 to 18 inches. Shrink-swell potential is low. Available water capacity is high. The Kf erodibility factor assigned to the top mineral soil layer is .49 and the soil loss tolerance factor T is 4. Hydrologic group: C Farmland class: prime farmland if drained Hydric soil rating: no Land capability classification: 3w

Map Unit: PgA—Palmyra gravelly loam, 0 to 3 percent slopes

PgA = Palmyra gravelly loam, 0 to 3 percent slopes This soil is very deep and well drained. The parent material consists of loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks. Depth to the top of a seasonal high water table is greater than 60 inches. Shrink-swell potential is low. Available water capacity is moderate. The Kf erodibility factor assigned to the top mineral soil layer is .28 and the soil loss tolerance factor T is 3. Hydrologic group: B Farmland class: prime farmland Hydric soil rating: no Land capability classification: 1

Map Unit: W—Water

W = Water Soil data not provided for this component.

Map Unit: Wn—Wayland silt loam

Wn = Wayland silt loam This soil is very deep and poorly drained. Slopes range from 0 to 3 percent. The parent material consists of silty and clayey alluvium washed from uplands that contain some calcareous drift. Depth to the top of a seasonal high water table is 0 inches. Annual flooding is frequent. Annual ponding is frequent. Shrink-swell potential is low. Available water capacity is high. The Kf erodibility factor assigned to the top mineral soil layer is .43 and the soil loss tolerance factor T is 5. Hydrologic group: C/D Farmland class: not prime farmland Hydric soil rating: yes Land capability classification: 5w

Data Source Information

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 4, Dec 11, 2006

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Onondaga County, New York

Map Unit: CFL—Cut and fill land

Component: Udorthents (70%)

The Udorthents component makes up 70 percent of the map unit. Slopes are 0 to 8 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map Unit: ChA—Collamer silt loam, 0 to 2 percent slopes

Component: Collamer (80%)

The Collamer component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during March, April, May. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map Unit: ChB—Collamer silt loam, 2 to 6 percent slopes

Component: Collamer (80%)

The Collamer component makes up 80 percent of the map unit. Slopes are 2 to 6 percent. This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during March, April, May. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: DuC—Dunkirk silt loam, rolling

Component: Dunkirk, rolling (80%)

The Dunkirk, rolling component makes up 80 percent of the map unit. Slopes are 6 to 12 percent. This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map Unit: FL—Fluvaquents, frequently flooded

Component: Fluvaquents (75%)

The Fluvaquents component makes up 75 percent of the map unit. Slopes are 0 to 5 percent. This component is on flood plains. The parent material consists of alluvium with highly variable texture. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Map Unit: Ma—Made land, chemical waste

Component: Made land, chemical waste (70%)

Generated brief soil descriptions are created for major soil components. The Made land is a miscellaneous area.

Map Unit: NgA—Niagara silt loam, 0 to 4 percent slopes

Component: Niagara (75%)

The Niagara component makes up 75 percent of the map unit. Slopes are 0 to 4 percent. This component is on lake plains. The parent material consists of silty and clayey glaciolacustrine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Map Unit: PgA—Palmyra gravelly loam, 0 to 3 percent slopes

Component: Palmyra (80%)

The Palmyra component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on deltas, outwash plains, terraces. The parent material consists of loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 15 percent.

Map Unit: W—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Map Unit: Wn—Wayland silt loam

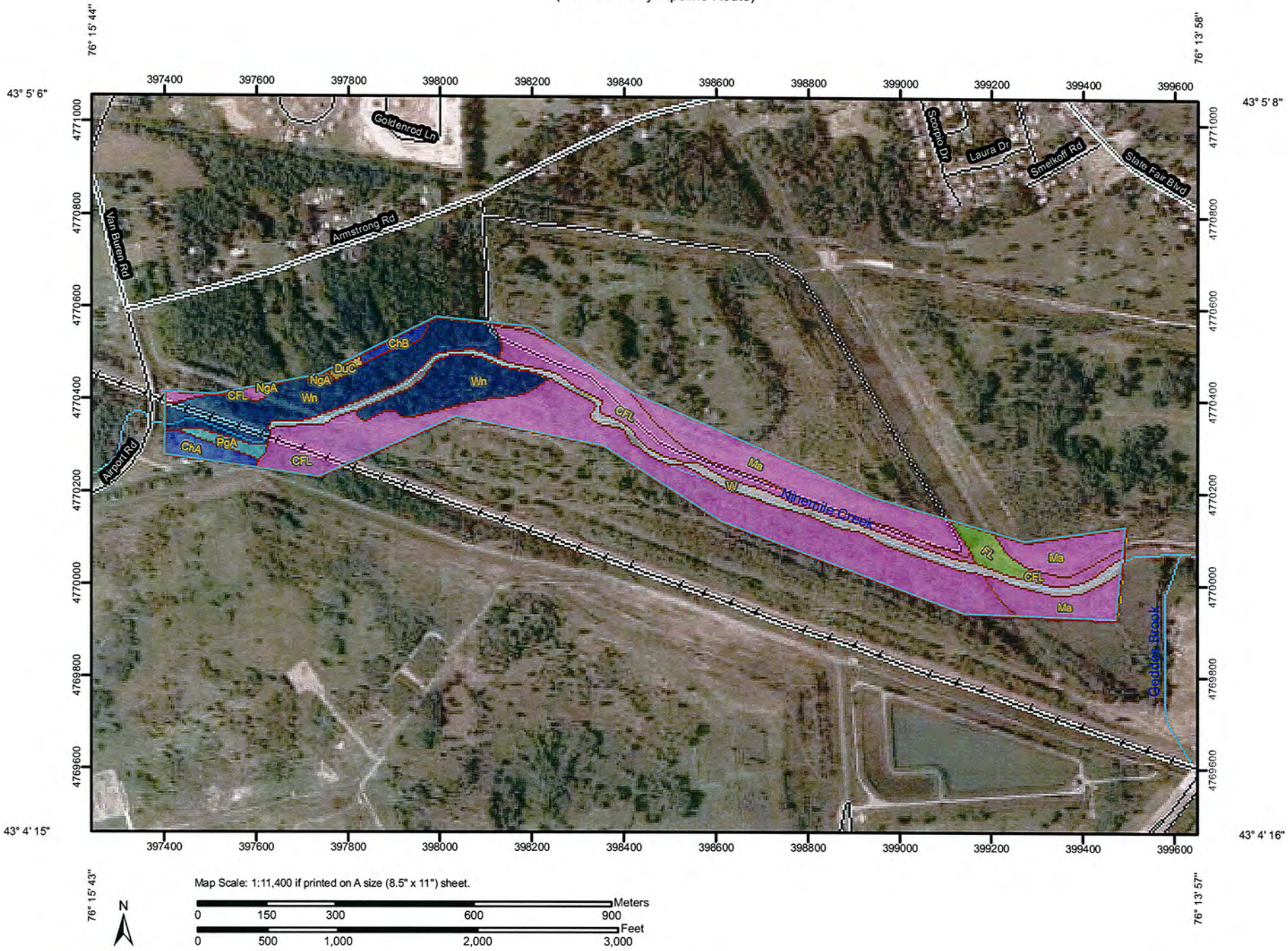
Component: Wayland (75%)

The Wayland component makes up 75 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains. The parent material consists of silty and clayey alluvium washed from uplands that contain some calcareous drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Data Source Information

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 4, Dec 11, 2006

Soil Taxonomy Classification—Onondaga County, New York
(SB 9-15 Slurry Pipeline Route)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- AERIC OCHRAQUALFS, FINE-SILTY, MIXED, MESIC
- FLUVAQUENTS
- GLOSSAQUIC HAPLUDALFS, FINE-SILTY, MIXED, MESIC
- GLOSSOBORIC HAPLUDALFS, FINE-LOAMY OVER SANDY OR SANDY-SKELETAL, MIXED, MESIC
- GLOSSOBORIC HAPLUDALFS, FINE-SILTY, MIXED, MESIC
- MOLLIC FLUVAQUENTS, FINE-SILTY, MIXED, NONACID, MESIC
- UDORTHENTS
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:11,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 4, Dec 11, 2006

Date(s) aerial images were photographed: 7/16/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Soil Taxonomy Classification

Soil Taxonomy Classification— Summary by Map Unit — Onondaga County, New York				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
CFL	Cut and fill land	UDORTHENTS	41.8	43.0%
ChA	Collamer silt loam, 0 to 2 percent slopes	GLOSSAQUIC HAPLUDALFS, FINE-SILTY, MIXED, MESIC	2.0	2.1%
ChB	Collamer silt loam, 2 to 6 percent slopes	GLOSSAQUIC HAPLUDALFS, FINE-SILTY, MIXED, MESIC	0.9	0.9%
DuC	Dunkirk silt loam, rolling	GLOSSOBORIC HAPLUDALFS, FINE-SILTY, MIXED, MESIC	0.4	0.4%
FL	Fluvaquents, frequently flooded	FLUVAQUENTS	2.1	2.2%
Ma	Made land, chemical waste	UDORTHENTS	19.4	20.0%
NgA	Niagara silt loam, 0 to 4 percent slopes	AERIC OCHRAQUALFS, FINE-SILTY, MIXED, MESIC	0.4	0.4%
PgA	Palmyra gravelly loam, 0 to 3 percent slopes	GLOSSOBORIC HAPLUDALFS, FINE-LOAMY OVER SANDY OR SANDY-SKELETAL, MIXED, MESIC	1.1	1.2%
W	Water		9.1	9.3%
Wn	Wayland silt loam	MOLLIC FLUVAQUENTS, FINE-SILTY, MIXED, NONACID, MESIC	19.9	20.5%
Totals for Area of Interest			**97.0**	**100.0%**

Description

This rating presents the taxonomic classification based on Soil Taxonomy.

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. This table shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in sol. An example is Alfisols.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalfs (Ud, meaning humid, plus alfs, from Alfisols).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (Hapl, meaning minimal horizonation, plus udalfs, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

References:

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. (The soils in a given survey area may have been classified according to earlier editions of this publication.)

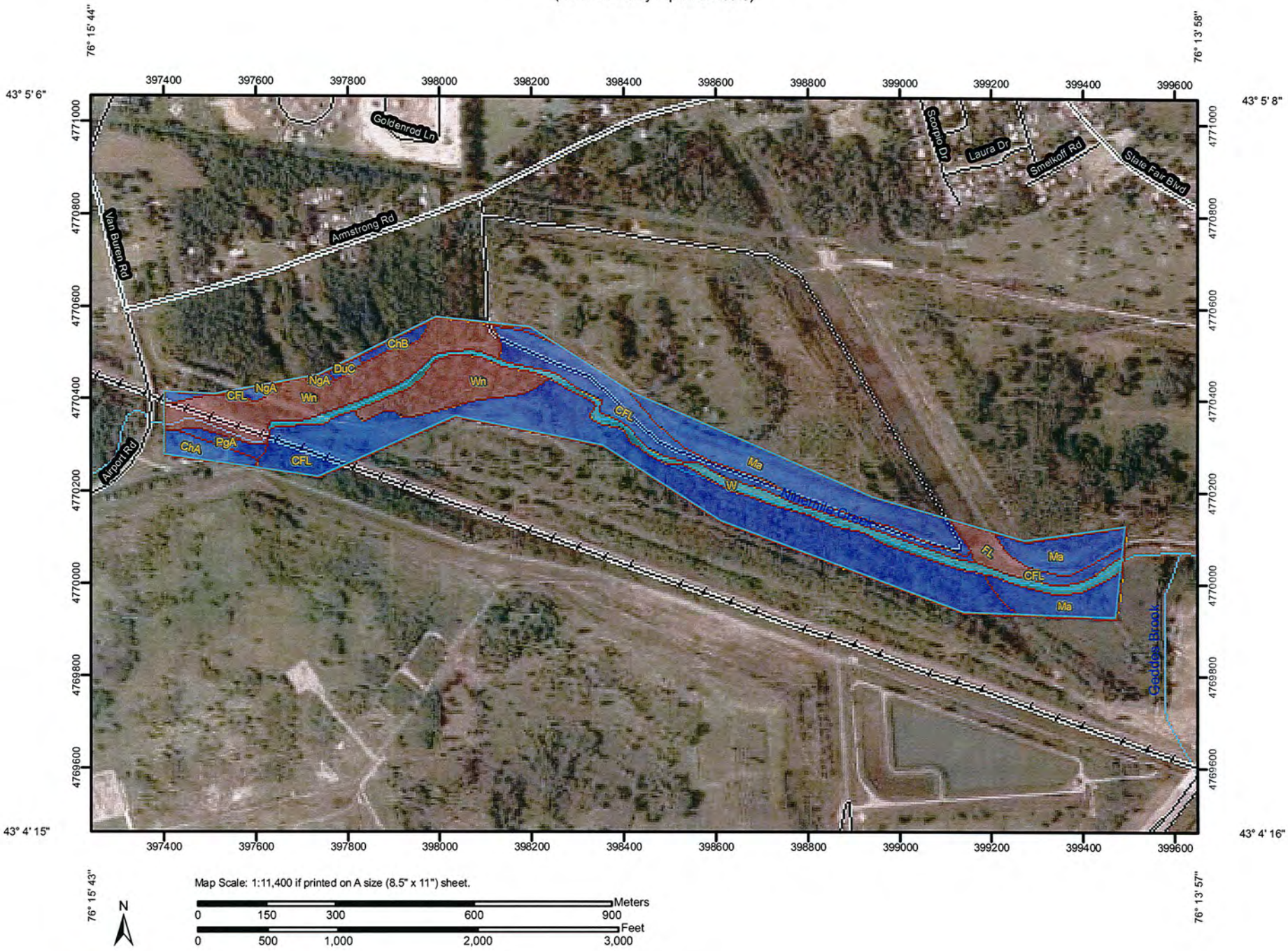
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Hydric Rating by Map Unit—Onondaga County, New York
(SB 9-15 Slurry Pipeline Route)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- All Hydric
- Partially Hydric
- Not Hydric
- Unknown Hydric
- Not rated or not available

Political Features
- Cities

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:11,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 4, Dec 11, 2006

Date(s) aerial images were photographed: 7/16/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Onondaga County, New York				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
CFL	Cut and fill land	Not Hydric	41.8	43.0%
ChA	Collamer silt loam, 0 to 2 percent slopes	Not Hydric	2.0	2.1%
ChB	Collamer silt loam, 2 to 6 percent slopes	Not Hydric	0.9	0.9%
DuC	Dunkirk silt loam, rolling	Not Hydric	0.4	0.4%
FL	Fluvaquents, frequently flooded	All Hydric	2.1	2.2%
Ma	Made land, chemical waste	Not Hydric	19.4	20.0%
NgA	Niagara silt loam, 0 to 4 percent slopes	Not Hydric	0.4	0.4%
PgA	Palmyra gravelly loam, 0 to 3 percent slopes	Not Hydric	1.1	1.2%
W	Water	Unknown Hydric	9.1	9.3%
Wn	Wayland silt loam	All Hydric	19.9	20.5%
Totals for Area of Interest			**97.0**	**100.0%**

Description

This rating indicates the proportion of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is designated as "all hydric," "partially hydric," "not hydric," or "unknown hydric," depending on the rating of its respective components.

"All hydric" means that all components listed for a given map unit are rated as being hydric, while "not hydric" means that all components are rated as not hydric. "Partially hydric" means that at least one component of the map unit is rated as hydric, and at least one component is rated as not hydric. "Unknown hydric" indicates that at least one component is not rated so a definitive rating for the map unit cannot be made.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Absence/Presence

Tie-break Rule: Lower

ATTACHMENT 2

Wetland Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL1**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
***1 Phalaris arundinacea** *	**herb**	**FACW+**	**9**		
2 Onoclea sensibilis	**herb**	**FACW**	**10**		
3 Lythrum salicaria	**herb**	**FACW+**	**11**		
4 Eupatoriadelphus maculatus	**herb**	**FACW**	**12**		
5 Aster lateriflorus	**herb**	**FACW-**	**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup) **Mollic Fluvaquents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3		**10YR 3/2**	**--**	**--**	**clay loam**
3-9		**10YR 4/2**	**7.5YR 4/6**	**low/low**	**clay loam**
9-16		**10YR 5/2**	**7.5YR 5/8**	**high/moderate**	**sandy clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
X Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No			
Wetland Hydrology Present?	**Yes**	No	Is this Sampling Point		
Hydric Soils Present?	**Yes**	No	Within a Wetland	**Yes**	No

Remarks: **Plot located in depressional area located along the Sun Petroleum right-of-way adjacent to Ninemile Creek. (Orange flagging WL1-1 thru WL1-5)**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL1 and WL2**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP2**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Artemisia vulgaris*	**herb**	**FACU-**	**9**		
2 Solidago canadensis*	**herb**	**FACU**	**10**		
***3 Rubus* sp.**	**herb**	**--**	**11**		
4 Helianthus tuberosus	**herb**	**FAC**	**12**		
5 Clematis virginiana	**herb**	**FAC**	**13**		
6 Phalaris arundinacea	**herb**	**FACW+**	**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup) **Mollic Fluvaquents**
Confirm Mapped Type? Yes **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12		**10YR 3/2**	**--**	**--**	**silty clay loam**
12-16		**10YR 5/2**	--	**--**	**silty clay loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**			
Wetland Hydrology Present?	Yes	**No**	Is this Sampling Point		
Hydric Soils Present?	Yes	**No**	Within a Wetland	Yes	**No**

Remarks: **WP2 is the associated dry hole for WL1 and WL2.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL2**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP3**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phalaris arundinacea*	**herb**	**FACW+**	**9**		
2 Lythrum salicaria	**herb**	**FACW+**	**10**		
3 Aster lanceolatus	**herb**	**FACW**	**11**		
4 Clematis virginiana	**herb**	**FAC**	**12**		
***5 Apocynum* sp.**	**herb**	**--**	**13**		
6 Verbena urticifolia	**herb**	**FACU**	**14**		
7 Chelone glabra	**herb**	**OBL**	**15**		
			16		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	-	(in.)
Depth of Free Water in Pit:	-	(in.)
Depth to Saturated Soil:	-	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup): **Mollic Fluvaquents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5		**10YR 3/2**	**--**	**--**	**silty clay loam**
5-9		**10YR 3/2**	**7.5YR 4/6**	**low/low**	**silty clay loam**
9-16		**10YR 4/2**	**7.5YR 4/6**	**moderate/moderate**	**silty clay loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
X Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks: **Plot collected in a depressional area. Small wetland flagged WL2-1 thru WL2-4. Dry hole for WL2 is WP2.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **Slurry Pipeline Route**
Applicant/Owner: **Honeywell**
Investigator: **RPC/AKM/AES**

Date: **10/15/2009**
County: **Onondaga**
State: **NY**

Do Normal Circumstances exist on the site? **Yes** / No
Is the site significantly disturbed (atypical situation?) Yes / **No**
Is the area a potential Problem Area? Yes / **No**
(if needed, explain on reverse).

Community ID: **WL3**
Transect ID: **wet**
Plot ID **WP4**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phalaris arundinacea*	herb	FACW+	9		
2 Lythrum salicaria*	herb	FACW+	10		
3 Carex crinita	herb	OBL	11		
4 Rosa multiflora	herb	FACU	12		
5 Lysimachia nummularia	herb	OBL	13		
6 Acer saccharum	herb	FACU-	14		
7 Apocynum cannabinum	herb	FACU	15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**
*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: - (in.)
Depth of Free Water in Pit: - (in.)
Depth to Saturated Soil: - (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup) **Mollic Fluvaquents**
Confirm Mapped Type? **Yes** / No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8		10YR 4/2	--	--	clay loam
8-16		10YR 4/1	7.5YR 4/6	moderate/moderate	clay loam

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
x Reducing Conditions
x Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes** / No
Wetland Hydrology Present? **Yes** / No
Hydric Soils Present? **Yes** / No

Is this Sampling Point Within a Wetland **Yes** / No

Remarks: **Plot collected in a depressional area. Flags WL3-1 thru WL3-4.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes** / No	Community ID:	**WL4**
Is the site significantly disturbed (atypical situation?)	Yes / **No**	Transect ID:	**wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes / **No**	Plot ID	**WP5**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phalaris arundinacea *	**herb**	**FACW+**	***9 Euthamia graminifolia***	**herb**	**FAC**
2 Lythrum salicaria*	**herb**	**FACW+**	***10 Phragmites australis***	**herb**	**FACW**
3 Juncus effusus*	**herb**	**FACW+**	***11 Lycopus americanus***	**herb**	**OBL**
4 Sparganium americanum*	**herb**	**OBL**	***12 Carex lurida***	**herb**	**OBL**
5 Myosotis scorpioides	**herb**	**FACW+**	**13**		
6 Eupatorium perfoliatum	**herb**	**FACW+**	**14**		
7 Solidago canadensis	**herb**	**FACU**	**15**		
8 Aster lanceolatus	**herb**	**FACW**	**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**-**	(in.)
Depth to Saturated Soil:	**0**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
X Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Stream/drainage draining into Ninemile Creek.**

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class: **poorly drained**
Taxonomy (Subgroup): **Mollic Fluvaquents**
Field Observations Confirm Mapped Type? **Yes** / No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-7		**10YR 3/2**	**--**	**--**	**silty loam**
7-15		**10YR 4/1**	**--**	**--**	**silty loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
X Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Saturated at surface. High percentage of organic material with presence of gleying, roots/leaves, sulfidic odor. from 7-15". Hard layer/refusal reached at 15".**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes** / No	Is this Sampling Point Within a Wetland	**Yes** / No
Wetland Hydrology Present?	**Yes** / No		
Hydric Soils Present?	**Yes** / No		

Remarks: **Flags WL4-1 thru WL4-11.**
At flags 5 and 6 the wetland continues north beyond survey area.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes** / No	Community ID:	**WL4**
Is the site significantly disturbed (atypical situation?)	Yes / **No**	Transect ID:	**dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes / **No**	Plot ID	**WP6**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Artemisia vulgaris*	**herb**	**FACU-**	***9 Carex* sp.****	**herb**	**--**
2 Solidago canadensis*	**herb**	**FACU**	**10**		
3 Verbena urticifolia	**herb**	**FACU**	**11**		
4 Rosa multiflora	**herb**	**FACU**	**12**		
5 Aster novae-angliae	**herb**	**FACW-**	**13**		
6 Phalaris arundinacea	**herb**	**FACW+**	**14**		
***7 Viola* sp.**	**herb**	**--**	**15**		
***8 Equisetum* sp.**	**herb**	**--**	**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup): **Mollic Fluvaquents**
Confirm Mapped Type? Yes / **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5		**10YR 3/3**	**--**	**--**	**clay loam**
5-14		**7.5YR 4/2**	**--**	**--**	**gravelly loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Between 5-14 inches increase of gravel percentage; loose structure. Refusal at 14 inches.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**
Wetland Hydrology Present?	Yes	**No**
Hydric Soils Present?	Yes	**No**

Is this Sampling Point Within a Wetland: Yes / **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL5 (Ditch-BI bridge)**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP7**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phalaris arundinacea*	**herb**	**FACW+**	**9**		
2 Myosotis scorpioides*	**herb**	**FACW+**	**10**		
3 Solidago canadensis	**herb**	**FACU**	**11**		
4 Aster lanceolatus	**herb**	**FACW**	**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**3**	(in.)
Depth to Saturated Soil:	**0**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
X Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class **poorly drained**
Field Observations
Taxonomy (Subgroup) **Mollic Fluvaquents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10		**10YR 3/1**	**--**	**--**	**silt**
10-16		**10YR 4/1**	**--**	**--**	**silty sand**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
X Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **0-10" increase in organic material.**
10-16" displayed streaking of surface organic material.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks: **Flags WL5-1 thru WL5-3 along western edge and center line of ditch.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL6**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP8**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Myosotis scorpioides*	herb	FACW+	9		
2 Sparganium americanum*	herb	OBL	10		
3 Ribes americanum*	shrub	FACW	11		
4 Lysimachia nummularia	herb	OBL	12		
5 Fraxinus pennsylvanica	shrub	FACU-	13		
6 Fraxinus pennsylvanica	tree	FACU-	14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks: **Just north of plot, *Phalaris* , *Phragmites* , and *Cornus* sp. become more dominant.**

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	-	(in.)
Depth of Free Water in Pit:	-	(in.)
Depth to Saturated Soil:	-	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class **poorly drained**
Field Observations
Taxonomy (Subgroup) **Mollic Fluvaquents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3		**10YR 3/1**	**--**	**--**	**loam**
3-16		**10YR 3/1**	**7.5 YR 4/6**	**high/low**	**loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Moist soil.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks: **Flags WL6-1 thru WL6-75. Flag WL6-47 located near WP5.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/15/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL6**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP9**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Rosa multiflora*	**herb**	**FACU**	**9**		
2 Aster lateriflorus*	**herb**	**FACW-**	**10**		
3 Clematis virginiana*	**herb**	**FAC**	**11**		
4 Lysimachia nummularia*	**herb**	**OBL**	**12**		
5 Solidago canadensis*	**herb**	**FACU**	**13**		
6 Solidago gigantea*	**herb**	**FACW**	**14**		
7 Viola* sp.*,*	**herb**	**--**	**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **50%**

*** = dominant species ** = species are not included as part of the percent dominance calculation.**

Remarks: **All species equally dominant.**

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	-	(in.)
Depth of Free Water in Pit:	-	(in.)
Depth to Saturated Soil:	-	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class **poorly drained**
Taxonomy (Subgroup) **Mollic Fluvaquents**
Field Observations Confirm Mapped Type? Yes **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14		**10YR 3/2**	**--**	**--**	**loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **No mottling observed.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	
Wetland Hydrology Present?	Yes	**No**	Is this Sampling Point Within a Wetland Yes **No**
Hydric Soils Present?	Yes	**No**	

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **Slurry Pipeline Route**
Applicant/Owner: **Honeywell**
Investigator: **RPC/AKM/AES**

Date: **10/15/2009**
County: **Onondaga**
State: **NY**

Do Normal Circumstances exist on the site? **Yes** / No
Is the site significantly disturbed (atypical situation?) Yes / **No**
Is the area a potential Problem Area? Yes / **No**
(if needed, explain on reverse).

Community ID: **WL7**
Transect ID: **wet**
Plot ID **WP10**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phalaris arundinacea *	**herb**	**FACW+**	***9 Clematis virginiana***	**herb**	**FAC**
2 Elymus riparius*	**herb**	**FACW**	***10 Arcticum minus***	**herb**	**--**
3 Ribes americanum*	**shrub**	**FACW**	***11 Peltandra virginica***	**herb**	**OBL**
4 Lythrum salicaria	**herb**	**FACW+**	***12 Toxicodendron radicans***	**herb**	**FAC**
5 Verbena urticifolia	**herb**	**FACU**	***13 Ageratina altissima***	**herb**	**FACU-**
6 Myosotis scorpioides	**herb**	**FACW+**	***14 Fraxinus americana***	**herb**	**FACU**
7 Rosa multiflora	**herb**	**FACU**	**15**		
8 Lysimachia nummularia	**herb**	**OBL**	**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**
*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **--** (in.)
Depth of Free Water in Pit: **--** (in.)
Depth to Saturated Soil: **--** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Soil slightly moist at surface.**
Proximity to Ninemile Creek (at edge).

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup) **Mollic Fluvaquents**
Confirm Mapped Type? **Yes** / No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10		**10YR 4/2**	**10YR 5/6**	**moderate/moderate**	**silty loam**
10-16		**10YR 4/2**	**7.5Yr 4/6**	**moderate/moderate**	**silty loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
X Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes** / No
Wetland Hydrology Present? **Yes** / No
Hydric Soils Present? **Yes** / No
Is this Sampling Point Within a Wetland **Yes** / No

Remarks: **Sample plot located adjacent to flags WL6-32 to WL6-35.**
Flags WL7-1 thru WL7-7.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/16/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL8**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP11**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	***9 Cirsium discolor***	**herb**	**--**
2 Phalaris arundinacea *	**herb**	**FACW+**	***10 Lythrum salicaria***	**herb**	**FACW+**
3 Brassica nigra	**herb**	**--**	***11 Dipsacus sylvestris***	**herb**	**NI**
4 Urtica procera	**herb**	**FACU**	***12 Xanthium chinense***	**herb**	**FAC**
5 Arcticum lappa	**herb**	**--**	**13**		
6 Solidago canadensis	**herb**	**FACU**	**14**		
7 Alliaria officinalis	**herb**	**FACU-**	**15**		
8 Solanum dulcamara	**herb**	**FAC-**	**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	-	(in.)
Depth of Free Water in Pit:	-	(in.)
Depth to Saturated Soil:	-	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
X Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Adjacent to stream and displays evidence of scour and deposition.**

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class **poorly drained**
Taxonomy (Subgroup) **Mollic Fluvaquents**
Field Observations Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6		**10YR 4/2**	**--**	**--**	**silty clay**
6-16		**10YR 3/2**	**7.5YR 4/4**	**moderate/low**	**clay silt**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
X Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks: **Flags WL-8-1 to WL8-6. Reference points taken on GPS demarcating Ninemile Creek bank edge.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/16/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM/AES**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes** / No	Community ID:	**WL8**
Is the site significantly disturbed (atypical situation?)	Yes / **No**	Transect ID:	**dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes / **No**	Plot ID	**WP12**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Solanum dulcamara*	**herb**	**FAC-**	**9**		
2 Alliaria officinalis*	**herb**	**FACU-**	**10**		
3 Cirsium discolor*, **	**herb**	**--**	**11**		
4 Fraxinus americana	**tree**	**FACU**	**12**		
5 Phragmites australis	**herb**	**FACW**	**13**		
6 Urtica procera	**herb**	**FACU**	**14**		
7 Phalaris arundinacea	**herb**	**FACW+**	**15**		
8 Brassica nigra	**herb**	**--**	**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species ** = species are not included as part of the percent dominance calculation.**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**-**	(in.)
Depth to Saturated Soil:	**-**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Wayland silt loam (Wn)**
Drainage Class Field Observations: **poorly drained**
Taxonomy (Subgroup): **Mollic Fluvaquents**
Confirm Mapped Type? Yes / **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12		**10YR 4/2**	**--**	**--**	**silty clay**
12-16		**10YR 4/2**	**7.5YR 4/6**	**low/low**	**silty clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Mottling not observed within the depth criteria.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**
Wetland Hydrology Present?	Yes	**No**
Hydric Soils Present?	Yes	**No**

Is this Sampling Point Within a Wetland: Yes / **No**

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/16/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL9**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP13**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2			**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks: **Closer to creekside, *Impatiens pallida* and *Lythrum salicaria* were observed.**

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**-**	(in.)
Depth to Saturated Soil:	**0**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
X Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Soil saturated at surface.**

SOILS

Map Unit Name (Series and Phase): **Palmyra gravelly loam (PgA)**
Drainage Class **well drained**
Taxonomy (Subgroup) **Glossoboric Hapludalfs**
Field Observations Confirm Mapped Type? Yes **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8		**10YR 4/2**	**7.5YR 4/6**	**high/high**	**silty clay**
8-16		**Gley 1 2.5N**	**--**	**--**	**muck**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks: **Plot collected approximately 10 feet from Ninemile Creek edge on south bank.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/16/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL9 and WL10**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP14**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Tilia americana*	**tree**	**FACU**	**9**		
2 Prunus serotina*	**tree**	**FACU**	**10**		
3 Rhamnus cathartica	**shrub**	**FACU**	**11**		
4 Lonicera tatarica*	**shrub**	**FACU**	**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Palmyra gravelly loam (PgA)**
Drainage Class **well drained**
Field Observations
Taxonomy (Subgroup) **Glossoboric Hapludalfs**
Confirm Mapped Type? Yes **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-16		**10YR 2/2**	**--**	**--**	**dry silty loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**	Is this Sampling Point Within a Wetland	Yes **No**
Wetland Hydrology Present?	Yes	**No**		
Hydric Soils Present?	Yes	**No**		

Remarks: **Plot collected on bank southeast of WP13.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **Slurry Pipeline Route**
Applicant/Owner: **Honeywell**
Investigator: **RPC/AKM**

Date: **10/16/2009**
County: **Onondaga**
State: **NY**

Do Normal Circumstances exist on the site? **Yes** / No
Is the site significantly disturbed (atypical situation?) Yes / **No**
Is the area a potential Problem Area? Yes / **No**
(if needed, explain on reverse).

Community ID: **WL10**
Transect ID: **wet**
Plot ID **WP15**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2			**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**
*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Palmyra gravelly loam (PgA) / Cut and Fill Land (CFL)**
Drainage Class **well drained / somewhat excessively drained**
Field Observations
Taxonomy (Subgroup) **Glossoboric Hapludalfs / Udorthents**
Confirm Mapped Type? Yes / **No**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-10		**10YR 4/2**	**7.5YR 4/6**	**high/high**	**silty clay**
10-14		**Gley 1 3N**	**--**	**--**	**grey muck**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Refusal at 14 inches.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes** / No
Wetland Hydrology Present? **Yes** / No
Hydric Soils Present? **Yes** / No

Is this Sampling Point Within a Wetland **Yes** / No

Remarks: **Plot location on the south bank of Ninemile Creek southwest of CSX railroad bridge.**
Dry hole paired location is WP14.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/16/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL11**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP16**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2 Phalaris arundinacea*	**herb**	**FACW+**	**10**		
3 Agrostis stolonifera*	**herb**	**FACW**	**11**		
4 Apocynum cannabinum	**herb**	**FACU**	**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Taxonomy (Subgroup) **Udorthents**
Drainage Class Field Observations: **somewhat excessively drained**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8		**10YR 4/2**	**--**	**--**	**silt loam**
8-15		**10YR 4/2**	**5YR 5/8**	**moderate/moderate**	**silt loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks: **Plot located on south bank of Ninemile Creek immediately east of CSX railroad bridge.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/16/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes** / No	Community ID:	**WL11**
Is the site significantly disturbed (atypical situation?)	Yes / **No**	Transect ID:	**dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes / **No**	Plot ID	**WP17**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1Solidago canadensis*	**herb**	**FACU**	**9**		
2			**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class Field Observations: **somewhat excessively drained**
Taxonomy (Subgroup): **Udorthents**
Confirm Mapped Type? **Yes** / No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-11		**10YR 3/2**	**--**	**--**	**loose silty loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Refusal at 11 inches. Gross roots in soil.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**	Is this Sampling Point Within a Wetland	Yes / **No**
Wetland Hydrology Present?	Yes	**No**		
Hydric Soils Present?	Yes	**No**		

Remarks: **Plot located south of WP16 in a stand of *Solidago* sp.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/20/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL12**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP18**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2 Phalaris arundinacea*	**herb**	**FACW+**	**10**		
3 Solanum dulcamara*	**herb**	**FAC-**	**11**		
4 Brassica nigra	**herb**	**--**	**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **67%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**-**	(in.)
Depth to Saturated Soil:	**-**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class Field Observations: **somewhat excessively drained**
Taxonomy (Subgroup) **Udorthents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5		**10YR 4/2**	**--**	**--**	**silt with some clay**
5-13		**10YR 4/2**	**7.5YR 5/8**	**moderate/moderate**	**silty clay**
13-18		**2.5Y 4/1**	**--**	**--**	**silty clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: ***Phragmites*** **shoots throughout. Grey to black streaking at 18"+ with a sewage/manure odor.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	
Wetland Hydrology Present?	**Yes**	No	Is this Sampling Point Within a Wetland **Yes** No
Hydric Soils Present?	**Yes**	No	

Remarks: **Plot located on south bank of Ninemile Creek between CSX and Belle Isle bridges. Flags WL12-1 thru WL12-16.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/20/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL12**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP19**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Rhamnus cathartica*	**shrub**	**FACU**	**9**		
2 Lonicera tatarica*	**shrub**	**FACU**	**10**		
3 Cornus racemosa*	**shrub**	**FAC-**	**11**		
4 Solidago altissima	**herb**	**FACU-**	**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **none**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class Field Observations: **somewhat excessively drained**
Taxonomy (Subgroup) **Udorthents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-15		**2.5Y 3/1**	**--**	**--**	**dry, loose silt loam with gross roots with some gravel**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Plot located in a suspected fill area on the south bank above Ninemile Creek. Soil meets color indicator, but does not resemble a hydric soil. Likely a fill area associated with the railroad.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**	Is this Sampling Point Within a Wetland	Yes **No**
Wetland Hydrology Present?	Yes	**No**		
Hydric Soils Present?	Yes	**No**		

Remarks: **Plot located south of WP18.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/20/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL14**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP22**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2			**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**9**	(in.)
Depth to Saturated Soil:	**8**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
X Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Seep drainage area with puddles of standing water.**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class: **somewhat excessively drained**
Taxonomy (Subgroup) **Udorthents**
Field Observations Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
surface		**--**	**--**	**--**	***Phragmites* litter**
0-10		**5Y 2.5/1**	**5YR 4/6**	**moderate/moderate**	**clay silt**
10+		**Gley 2 2.5/10B**	**--**	**--**	**gravelly black, clay silt**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No		
Wetland Hydrology Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Hydric Soils Present?	**Yes**	No		

Remarks: **Plot located at base of access road slope just north of Ninemile Creek.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL14 and WL15**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP23**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Solidago canadensis*	**herb**	**FACU**	**9**		
2 Poa pratensis*	**herb**	**FACU**	**10**		
3 Phragmites australis	**herb**	**FACW**	**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**-**	(in.)
Depth to Saturated Soil:	**-**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class **somewhat excessively drained**
Taxonomy (Subgroup) **Udorthents**
Field Observations Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12		**10YR 4/2**	**--**	**--**	**silty clay**
12-13		**10YR 5/6**	**--**	**--**	**silty clay**
13+		**10YR 5/2**	**10YR 4/6**	**low/moderate**	**silty clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **A few mottles below 13 inches. Does not meet hydric indicator depth.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**	Is this Sampling Point Within a Wetland	Yes **No**
Wetland Hydrology Present?	Yes	**No**		
Hydric Soils Present?	Yes	**No**		

Remarks: **Plot is a dry hole for WL14 and WL15.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL15**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP24**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2 Solidago gigantea*	**herb**	**FACW**	**10**		
3 Solidago canadensis*	**herb**	**FACU**	**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **75%**

*** = dominant species**

Remarks: ***Phragmites*** **50% dominant,** ***Solidago*** **sp. each 25% dominant.**

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Proximity to Ninemile Creek and toe of slope of SB 11 and access road.**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Taxonomy (Subgroup) **Udorthents**
Drainage Class Field Observations: **somewhat excessively drained**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3		**10YR 3/2**	**--**	**--**	**loose loam with roots**
3-14		**10YR 4/1**	**10YR 4/6**	**moderate/moderate**	**silty clay**
14-18		**2.5Y 5/3**	**10YR 5/6**	**moderate/moderate**	**sandy clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? **Yes** No
Wetland Hydrology Present? **Yes** No
Hydric Soils Present? **Yes** No
Is this Sampling Point Within a Wetland **Yes** No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL16**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP25**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2			**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**2**	(in.)
Depth to Saturated Soil:	**0**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 inches
___ Water marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **Saturated at surface.**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class: **somewhat excessively drained**
Field Observations
Taxonomy (Subgroup): **Udorthents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-2		**--**	**--**	**--**	**Phragmites litter**
2-10		**7.5YR 5/2**	**2.5Y 3/1**	**--**	**clay with small/medium gravel**
10-15		**7.5YR 5/2**	**2.5Y 3/1**	**--**	**clay with increase in gravel size and presence**

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
X Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: **Rust coloring. An increase in gravel size and abundance at 10" in depth.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No		
Wetland Hydrology Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Hydric Soils Present?	**Yes**	No		

Remarks: **Plot located in a potential drainage ditch (north to south) connecting with Ninemile Creek. Ditch is approximately 3 feet wide. No apparent culvert is associated with the ditch.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes** / No	Community ID:	**WL16**
Is the site significantly disturbed (atypical situation?)	Yes / **No**	Transect ID:	**dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes / **No**	Plot ID	**WP26**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Festuca arundinacea*	**herb**	**FACU**	**9**		
2 Plantago major*	**herb**	**FACU**	**10**		
3 Solidago canadensis	**herb**	**FACU**	**11**		
4 Aster lateriflorus	**herb**	**FACW-**	**12**		
5 Daucus carota	**herb**	**--**	**13**		
6 Achillea millefolium	**herb**	**FACU**	**14**		
7 Lythrum salicaria	**herb**	**FACW+**	**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**-**	(in.)
Depth of Free Water in Pit:	**-**	(in.)
Depth to Saturated Soil:	**-**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class: **somewhat excessively drained**
Taxonomy (Subgroup): **Udorthents**
Field Observations Confirm Mapped Type? **Yes** / No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-5		**10YR 3/2**	**--**	**--**	**silt loam**
5-7		**10YR 3/2**	**10YR 6/8**	**low/low**	**silt loam**
7-8		**10YR 3/2**	**--**	**--**	**silt loam with shale**
8-15		**10YR 5/6**	**--**	**--**	**loam with gravel**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **No moisture. Soil matrix colors not strong. Mottling present was faint and not consistent throughout depth interval. Refusal at 15 inches.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**	Is this Sampling Point Within a Wetland	Yes / **No**
Wetland Hydrology Present?	Yes	**No**		
Hydric Soils Present?	Yes	**No**		

Remarks: **Plot located upgradient of ditch area and Ninemile Creek bank.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL17**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP27**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2 Lythrum salicaria	**herb**	**FACW+**	**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: **-** (in.)
Depth of Free Water in Pit: **-** (in.)
Depth to Saturated Soil: **-** (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Likely seep drainage from side of slope and high water events from Ninemile Creek.**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class **somewhat excessively drained**
Field Observations
Taxonomy (Subgroup) **Udorthents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-2		**--**	**--**	**--**	**cinder material**
2-14		**7.5YR 5/2**	**10YR 5/6**	**--**	**silt loam with some clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Cinder material - hard material, not natural.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes**	No
Wetland Hydrology Present?	**Yes**	No			
Hydric Soils Present?	**Yes**	No			

Remarks: **Plot located on north bank of Ninemile Creek directly across from gravel deposit (island) centrally located in Ninemile Creek. Large amounts of driftwood debris have collected on this island.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL18**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP28**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Phragmites australis*	**herb**	**FACW**	**9**		
2 Lythrum salicaria	**herb**	**FACW+**	**10**		
3 Solanum dulcamara	**herb**	**FAC-**	**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

*** = dominant species**

Remarks: **Line between wet and dry vegetation is a line of *Festuca arundinacea* .**

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: - (in.)
Depth of Free Water in Pit: - (in.)
Depth to Saturated Soil: - (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Fringe wetland along north bank of Ninemile Creek.**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class **somewhat excessively drained**
Taxonomy (Subgroup) **Udorthents**
Field Observations Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14		**10YR 4/2**	**--**	**--**	**silty clay**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: **Plot located on stream bank with deposition and scouring, so mottling likely does not have time to form. Refusal at 14 inches.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes**	No
Wetland Hydrology Present?	**Yes**	No			
Hydric Soils Present?	**Yes**	No			

Remarks: **Flags WL18-1 thru WL18-3. Shoreline can be demarcated by connecting flags 1 and 3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL19**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **dry**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP29**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 Festuca arundinacea*	**herb**	**FACU**	**9**		
2 Lonicera tatarica*	**shrub**	**FACU**	**10**		
3 Solidago canadensis	**herb**	**FACU**	**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **0%**

*** = dominant species**

Remarks: ***Rhamnus cathartica*** **observed in the surrounding area.**

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water: - (in.)
Depth of Free Water in Pit: - (in.)
Depth to Saturated Soil: - (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class Field Observations: **somewhat excessively drained**
Taxonomy (Subgroup) **Udorthents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-15		**10YR 3/2**	**--**	**--**	**silty clay loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	**No**	Is this Sampling Point Within a Wetland	Yes **No**
Wetland Hydrology Present?	Yes	**No**		
Hydric Soils Present?	Yes	**No**		

Remarks: **Plot located approximately 20 feet south of access road.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site:	**Slurry Pipeline Route**	Date:	**10/21/2009**
Applicant/Owner:	**Honeywell**	County:	**Onondaga**
Investigator:	**RPC/AKM**	State:	**NY**

Do Normal Circumstances exist on the site?	**Yes**	No	Community ID: **WL19**
Is the site significantly disturbed (atypical situation?)	Yes	**No**	Transect ID: **wet**
Is the area a potential Problem Area? (if needed, explain on reverse).	Yes	**No**	Plot ID **WP30**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
***1 Phalaris arundinacea** *	**herb**	**FACW+**	**9**		
***2 Phragmites australis** *	**herb**	**FACW**	**10**		
3			**11**		
4			**12**		
5			**13**		
6			**14**		
7			**15**		
8			**16**		

Percent of Dominant Species that are OBL, FACW or FAC, (excluding FAC-). **100%**

***** = dominant species**

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake or Tide Gauge
_____ Aerial Photographs
_____ Other
__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	-	(in.)
Depth of Free Water in Pit:	-	(in.)
Depth to Saturated Soil:	-	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water marks
_____ Drift Lines
_____ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: **Proximity to Ninemile Creek approximately 6 feet from creek waters edge.**

SOILS

Map Unit Name (Series and Phase): **Cut and Fill Land (CFL)**
Drainage Class **somewhat excessively drained**
Field Observations
Taxonomy (Subgroup) **Udorthents**
Confirm Mapped Type? **Yes** No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-8		**10YR 4/2**	**--**	**--**	**silty clay loam**
8-16		**10YR 4/2**	**7.5 YR 4/6**	**moderate/low**	**silty clay loam**

Hydric Soil Indicators:
_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
X Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	**Yes**	No	Is this Sampling Point Within a Wetland	**Yes** No
Wetland Hydrology Present?	**Yes**	No		
Hydric Soils Present?	**Yes**	No		

Remarks:

ATTACHMENT 3

Photograph Log

Photo 1 (P1). Looking west at Wetland 1 (WL1) a depressed area dominated by reed canary grass.
Date: October 15, 2009

Photo 2 (P2). Looking north at Wetland 4 (WL4) along a stream/drainage way discharging to Ninemile Creek.
Date: October 15, 2009

Photo 3 (P3). Looking north at the western portion of WL6 dominated with reed canary grass and forget-me-not.
Date: October 15, 2009

Photo 4 (P4). Looking east along the southern boundary of Wetland 6 (WL6).
Date: October 15, 2009

Photo 5 (P5). Looking north at fringe Wetland 9 (WL9) along Ninemile Creek dominated by common reed and reed canary grass.
Date: October 16, 2009

Photo 6 (P6). Looking southwest from Belle Isle bridge along Ninemile Creek fringe Wetland 12 (WL12).
Date: October 20, 2009

Photo 7 (P7). Looking southwest at Wetland 15 (WL15) consisting of a typical stand of common reed.
Date: October 21, 2009

Photo 8 (P8). Looking east along the southern boundary of Wetland 16 (WL16) consisting of a stand of common reed.
Date: October 21, 2009