

OBG

Hydrogeologic Monitoring Plan

**Wood River Primary East Ash Pond – CCR Unit ID 901
Wood River West Ash Ponds 1, 2E, 2W – CCR Multi-Unit ID 902**

**Wood River Power Station
Alton, Illinois**

Dynegy Midwest Generation, LLC

October 17, 2017



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Hydrogeologic Monitoring Plan

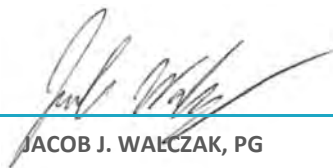
Wood River Primary East Ash Pond – CCR Unit ID 901
Wood River West Ash Ponds 1, 2E, 2W –
CCR Multi-Unit ID 902

Wood River Power Station
Alton, Illinois

Prepared for:
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ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CCR	coal combustion residual
CFR	Code of Federal Regulations
cm/s	centimeters per second
CPT	Cone Penetrometer Test
DMG	Dynegy Midwest Generation, LLC
ft	feet
ft/ft	feet per feet
ft MSL	feet above Mean Sea Level
HMP	Hydrogeologic Monitoring Plan
ID	Identification number
IEPA	Illinois Environmental Protection Agency
ISGS	Illinois State Geological Survey
ISWS	Illinois State Water Survey
NRT	Natural Resource Technology, an OBG Company
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
USEPA	United States Environmental Protection Agency

1 INTRODUCTION

1.1 OVERVIEW

This hydrogeologic monitoring plan (HMP) has been prepared by Natural Resource Technology, an OBG company (NRT) to provide background information necessary to support the monitoring system established to comply with Part 257.91 of the United States Environmental Protection Agency (USEPA) Final Rule to regulate the disposal of Coal Combustion Residual (CCR) as solid waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA) [40 CFR 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015] for the Wood River Power Station, Alton, Illinois. The Wood River Power Station is owned by Dynegy Midwest Generation, LLC (DMG). This HMP will apply specifically to the following CCR Units and Multi-Units: Wood River Primary East Ash Pond (CCR Unit ID 901) and Wood River West Ash Ponds 1, 2E, 2W (CCR Multi-Unit ID 902), as defined further below.

1.2 PREVIOUS INVESTIGATIONS AND REPORTS

Numerous hydrogeologic investigations have been performed concerning the CCR Units/Multi-Units located at Wood River Power Station. The information presented in this HMP includes data collected in support of the monitoring well network established for development of the Sampling and Analysis Plans (SAPs) and supplements comprehensive data collection and evaluations from prior hydrogeologic investigation reports (recent to oldest), including, but not limited to, the following:

- ***NRT/OBG, 2017, Hydrogeologic Characterization Report, East Ash Pond Complex, Wood River Site, Alton, Illinois.*** A hydrogeologic characterization report prepared in support of a Closure Plan for the East Ash Pond Complex location at Wood River Power Station.
- ***NRT, 2016, Hydrogeologic Characterization Report, West Ash Pond Complex, Wood River Power Station, Alton, Illinois.*** A hydrogeologic characterization report prepared in support of a Closure Plan for impoundments within the West Ash Pond Complex located at Wood River Power Station.
- ***AECOM December 31, 2015, 30% Design Data Package for Dynegy Wood River Energy Complex West Ash Pond and East Pond CCR Units.*** A geotechnical program consisting of installation of auger borings, CPT soundings and piezometers to obtain information for compliance with requirements of the federal CCR rule.
- ***Kelron/NRT, August 26, 2009, Assessment of Potential for Groundwater Impact on Identified Water Wells, Dynegy Midwest Generation, Inc., Wood River Power Station, East Alton, Illinois.*** An assessment of the potential for impact on water quality in water wells within 2,500 feet of the Wood River Power Station property boundary, identified in the June 3, 2009 Water Well Survey report.
- ***Kelron/NRT, June 3, 2009, Water Well Survey, Dynegy Midwest Generation, Inc., Wood River Power Station, East Alton, Illinois.*** A survey to identify wells located within 2,500 feet of the Wood River Power Station property boundary.
- ***NRT, May 3, 2006, Transport Model Investigation for the New East Ash Pond, Dynegy Midwest Generation, Inc., Wood River Power Station, Alton, Illinois.*** Calibration of a groundwater flow and transport model to match conditions observed at the New East Ash Pond and utilization of the model to predict the effects of the New East Ash Pond on groundwater quality in the future.
- ***Kelron, December 17, 2004, Hydrogeologic Investigation for the Proposed New East Ash Pond, Dynegy Midwest Generation, Inc., Wood River Power Station, Illinois.*** An investigation to characterize the hydrogeology and groundwater quality at the location of the New East Ash Pond and former Old East Ash Pond and to collect input data for groundwater flow and transport modelling.
- ***NRT, August 2000, Investigation of Closure Options for the West Ash Impoundment, Dynegy Midwest Generation, Inc., Wood River Power Station, Madison County, Illinois.*** An investigation to characterize hydrogeology and groundwater quality at the Wood River West Ash Impoundment and evaluate the effectiveness of closure alternatives for protecting groundwater quality.

- **Kelron, November 29, 1995, Groundwater Investigation Report, Wood River Ash Pond Expansion, Illinois Power Company.** An investigation to characterize hydrogeology and groundwater quality near a proposed ash pond expansion near the existing West Ash Pond Complex including analysis of the groundwater monitoring network designed and installed for the ash pond expansion.
- **ISWS, May 1984, Groundwater Monitoring at the Wood River Power Station's Ash Disposal Ponds and Renovated Ash Disposal Area, Illinois Power Company.** An investigation to design and implement a groundwater monitoring program for determining the impact of ash disposal practices on the local groundwater system. This report includes results from both the West and East Ash Pond Complexes.

This HMP provides a summary of geologic and hydrogeologic data collected at Wood River Power Station. The HMP supports the monitoring well network established for development of the SAPs through providing the following background information:

- Site Geology and Hydrogeology
- Aquifer Properties
- Monitoring Network Placement and Rationale

1.3 SITE LOCATION AND DESCRIPTION

The Wood River Power Station property boundary is located in Section 19 (southeast quarter of the northwest quarter and northeast quarter of the southwest) and Section 20 (southwest quarter and the west half of the northwest quarter), Township 5 North, Range 9 West, Madison County, Illinois and within approximately two miles of the cities of Alton, East Alton (within southwestern municipal limits of the Village of East Alton), and Wood River (Figure 1). The Wood River Power Station is also located on the east bank of the Mississippi River approximately six miles upstream from the confluence of the Mississippi River and Missouri River. The Wood River Power Station property is bordered on the south by State Route 143 and the Mississippi River, the east by the Wood River Creek, the north by vacant/abandoned industrial property and railroad tracks, and the west by vacant land/water retention ponds of the Mississippi River levee system, operated by the Army Corps of Engineers. The Wood River Primary East Ash Pond (CCR Unit ID 901) is located to the north of the power plant (ceased operation in June 2016) and adjacent to the Wood River Creek, which discharges into the Mississippi River; and the Wood River West Ponds 1, 2E, 2W (CCR Multi-Unit ID 902) are located to the northwest of the power plant.

1.4 DESCRIPTION OF CCR UNITS

The CCR Units/Multi-Units at Wood River Power Station consist of two inactive surface impoundments, Wood River Primary East Ash Pond (CCR Unit ID 901) and Wood River West Ponds 1, 2E, 2W (CCR Multi-Unit ID 902) (Figure 2). The two CCR Units/Multi-Units located at Wood River Power Station will hereafter be referred to collectively as the 'Site'. Wood River Primary East Ash Pond covers an area of approximately 50 acres and is located in the east area of the Site. Wood River West Ponds 1, 2E, 2W (Multi-Unit ID 902) covers an area of approximately 48 acres and is located on the west area of the Site. Ponds 1, 2E and 2W of the Multi-Unit cover approximately 18.5, 9.8 and 19.7 acres, respectively, of the Site.

1.4.1 Wood River Primary East Ash Pond (CCR Unit ID 901)

The Wood River Primary East Ash Pond is classified as an inactive lined CCR surface impoundment proposed for closure (Figure 2). The Wood River Primary East Ash Pond exists partially within the footprint of the preexisting Old East Ash Pond. The Wood River Primary East Ash Pond is bordered as follows: to the east by a railroad spur followed further to the east by a flood control levee and then the Wood River Creek; to the south by the power plant, Illinois Route 143 and the Mississippi River; to the west by Chesson Lane, followed by the Wood River Power Station's former coal pile and West Ash Ponds 1, 2E, 2W; and to the north by the City of East Alton's wastewater treatment plant.

1.4.2 Wood River West Ash Ponds 1, 2E, 2W (CCR Multi-Unit ID 902)

The Wood River West Ash Ponds 1, 2E, 2W are a CCR multi-unit consisting of two inactive unlined surface impoundments (Ponds 1 and 2W) and one lined surface impoundment receiving low volume wastewaters (Pond 2E) (Figure 2). A closure plan for the Wood River West Ash Ponds 1, 2E, 2W CCR Multi-Unit was approved by the Illinois Environmental Protection Agency (IEPA) in a letter dated May 25, 2017. The Hydrogeologic Site Characterization Report for Wood River West Ash Pond Complex (NRT, 2016) provides detailed geologic and hydrogeologic information related to the closure plan. The Wood River West Ash Ponds 1, 2E, 2W are bordered as follows: to the southeast by a former coal pile; to the south and southwest by Illinois Route 143 and the Mississippi River; to the west by vacant land/water retention ponds of the Mississippi River levee system, operated by the Army Corps of Engineers; to the north by vacant/abandoned industrial property and railroad track; to the northeast by Pond 3 (a non-CCR lined surface impoundment); and to the east by Chesson Lane and then Wood River Primary East Ash Pond.

The use of this multi-unit system is equally capable of detecting monitoring constituents at the waste boundary of the CCR unit as an individual groundwater monitoring system. The ponds within the multi-unit are adjacent to each other and additional wells encompassing each pond would likely not provide any added benefit. In addition, it would likely be technically challenging to identify and separate out impacts, if any, from the basins.

2 GEOLOGY AND HYDROGEOLOGY

The most recent investigations include soil boring investigations to evaluate the extent of ash associated with the former Old East Ash Pond, completed in January and March 2017 by NRT/OBG, and installation of additional groundwater monitoring wells to further evaluate groundwater quality downgradient of the East Ash Pond Complex. Data collected during the 2017 NRT/OBG investigation was evaluated and included as part of the Hydrogeologic Characterization Report prepared in support of the Closure Plan for the East Ash Pond Complex (NRT/OBG, 2017). In addition to the investigation and report prepared for the East Ash Pond Complex, a Hydrogeologic Characterization Report was also prepared in support of the Closure Plan for impoundments within the West Ash Pond Complex (NRT, 2016). An investigation was also completed in 2015 by AECOM to collect geotechnical information to comply with the Federal CCR Rule. While all data sources listed in Subsection 1.2 were reviewed, this report focuses on the results of more recent investigations and reports described above where the data is the most complete. Much of the information and analysis included in this report was originally presented in the Closure Plans submitted for the East and West Ash Pond Complexes.

2.1 GEOLOGY

Geologic units present at the Site include: fill and coal ash; unlithified alluvial sediments; silt and sandy silt, and silty clay diamicton; and bedrock.

2.1.1 Regional Setting

The Wood River Power Station and associated ash complexes are situated in the northern end of an area of extensive alluvial deposits known as the American Bottoms. The geology of this area was described by Bergstrom and Walker (1987) and is summarized here. Alluvial and glacial sediments fill the Mississippi River valley in this area commonly to depths of 100 feet but can extend to more than 140 feet. The sediments generally coarsen downward; the contact between the alluvium and glacial sediments is typically indistinguishable in the Wood River area. Very coarse sediments generally occur near the base of these valley-fill materials and these layers form a highly productive aquifer.

The sand and gravel in the Alton/Wood River area is overlain by low-permeability alluvial silt and clay and is underlain in places by low-permeability clay. Bedrock in the region consists of Pennsylvanian and Mississippian age shale, sandstone and limestone.

2.1.2 Site Geology

The geology has been extensively evaluated since the first borings and monitoring wells were installed in 1982. The geology at Wood River Power Station consists of the following units (beginning at the ground surface):

- Fill (consisting of clay, sand, and silt mixtures) and coal ash: primarily occurs within the impoundments, impoundment berms and the Wood River Creek and Mississippi River levees
- Upper silty clay unit: Clay and silty clay alluvial deposits of the Mississippi River and Wood River
- Inter-sand unit: a thin (generally 5 feet or less) silty sand/ sand unit above the lower silty clay unit that is continuous across most of the site and may intersect the primary sand unit in the northern and southern portions of the Site
- Lower silty clay unit: Clay and silty clay alluvial deposits of the Mississippi River and Wood River Creek
- Primary Sand Unit: Sand and gravel deposits that are highly variable, well to poorly sorted, with intermittent layers of clay and silt. This unit is the uppermost aquifer unit
- Silt and sandy silt, and silty clay diamicton only observed at depth near the east side of the Wood River Primary East Ash Pond
- The bedrock at the Wood River Power Station may be the Mississippian-age St. Genevieve limestone, which dips gently to the east; elevation of the bedrock surface at the Wood River Power Station is estimated at approximately 300 feet above Mean Sea Level (ft MSL) (Hampton and O'Hearn, 1984)

Detailed descriptions of each of the geologic units identified above and their general occurrence throughout the Site are found in NRT, 2017 and NRT, 2016.

Boring locations of existing wells and recent AECOM boring/piezometer locations (AECOM 2015) are shown on Figure 3. Laboratory grain size analysis and permeability testing results collected during the AECOM 2015 investigation are included in Appendix A1 and A2, respectively. Boring logs and other geotechnical testing data are available in the AECOM data package (2015). The approximate thickness of the Lower Silty Clay Unit is shown on Figure 4 and the approximate elevation of the top of the Primary Sand Unit is shown on Figure 5. Cross-sections depicting the generalized Site geology are also included in Figures 6 and 7. Similar figures showing Silty Clay Unit thickness, top of Primary Sand Unit elevation and additional cross-sections are presented in the Hydrogeologic Characterization Report for the East Ash Pond Complex (NRT/OBG, 2017) and include additional detail specific to the area surrounding the East Ash Pond Complex. Boring logs, well construction forms, and other related monitoring well forms are available in the Operating Records as required by Title 40 CFR Part 257 Section 257.91 for monitoring wells used in monitoring groundwater at each CCR Unit.

2.2 HYDROGEOLOGY

Since initial installations in 1982, the hydrogeology of the Site had been characterized and described through multiple investigations and computer flow modeling. This section discusses information collected since 1995, including the existing well network and piezometers installed by AECOM in 2015, and the soil investigations and additional monitoring well installations completed by NRT/OBG in 2017, as well as appropriate historical data.

2.2.1 Uppermost Aquifer

The Primary Sand Unit is the uppermost aquifer of the American Bottoms area, and has been extensively developed for water supply. The estimated thickness of the permeable valley fill at Wood River Power Station is approximately 120 to 140 feet and the sand and gravel constitutes 80 to 100 feet of this thickness. According to the Illinois State Geological Survey (ISGS), the upper 80 feet of the valley fill has been extensively reworked due to river flooding events (Bergstrom and Walker, 1956). Below this depth, the deposits are glacial outwash and older alluvium. Large boulders are encountered below 80 feet, which can sometimes limit drill penetration and are likely remnants of older Illinoian till.

The top of the Primary Sand Unit (the top of the uppermost aquifer) is mapped on Figure 5 and illustrates the former river channel, which trends east-west across the site. The top of the primary sand ranges in elevation from approximately 420 ft in the northern portion of the Wood River Power Station property to approximately 375 ft in a former channel located in the center of the Wood River West Ash Ponds 1, 2E, 2W CCR Multi-Unit. The top of the sand unit is near the surface (<5 feet below ground surface [bgs]) in the northern portion of the Wood River Power Station property (Wells 21 and 22) and is up to 60 feet deep in the center of the historical channel (Well 38).

2.2.2 Lower Limit of Aquifer

The lower limit of the uppermost aquifer (Primary Sand Unit) is the top of the uppermost bedrock (Mississippian-age St. Genevieve limestone). The bedrock formation yields relatively little water compared to the overlying sand and gravel formation.

2.2.3 Hydraulic Conductivity

Field testing of monitoring wells screened entirely within the sand and gravel unit indicate high horizontal hydraulic conductivities of 10⁻¹ to 10⁻⁴ cm/s; the geometric mean of all wells tested is 1.2 x 10⁻² cm/s. A summary of the hydraulic conductivities measured in monitoring wells is included in Table 1. Hydraulic conductivity within the primary sand unit is variable within the stated range, but there is no correlation of hydraulic conductivity to elevation or depth within the sand unit (Kelron, 2004). Previous modeling reports (NRT, 2006 and NRT, 2000) estimated an effective porosity of 20 percent for the sand and gravel units based on ranges provided by Mercer and Waddell (1993). An effective porosity of 20 percent was considered representative of the Primary Sand Unit for use in groundwater velocity calculations described below.

2.2.4 Groundwater Elevations, Flow Direction and Velocity

Groundwater elevations typically range from about 399 ft during low water conditions in Well 2 near the Mississippi River to 432 ft in upgradient wells to the north. However, water elevations generally fluctuate between 402 and 414 ft. The Mississippi River and Wood River Creek stages strongly influence and control the elevations in the groundwater within the Primary Sand Unit.

Potentiometric maps prepared from elevation data measured in monitoring wells reveal groundwater flow directions are variable and significantly influenced by the Mississippi River stage (Figures 8 and 9). During base stage or low river levels (November 2015, Figure 8), groundwater flow occurs in both a southwesterly direction toward the Mississippi River and southeasterly toward Wood River Creek. During spring flooding and high Mississippi River stages (May 2015, Figure 9), groundwater flow is northerly with either an easterly or westerly component. After flood levels subside, the flow direction reverts to more normal conditions and groundwater again discharges to the rivers. The flooding and high river stages only occur periodically and the dominant flow direction during any given year is toward the rivers.

Horizontal hydraulic gradient ranged from 0.0006 to 0.002 ft/ft (Table 2) in November 2015 base river stage conditions (Figure 8) and May 2015 flood river stage conditions (Figure 9). During November 2015 there was little variation across the Site in horizontal hydraulic gradient; in general, the gradient was 0.001 ft/ft greater in the area west of Wood River West Ash Ponds 1, 2E, 2W (0.002 ft/ft) than all other calculated gradients (approximately 0.001 ft/ft). In May 2015 during flood river stage conditions, the horizontal hydraulic gradient was 0.0008 ft/ft in the area northwest of and near the center of Wood River West Ash Pond 1, while the hydraulic horizontal gradient near the center of Wood River Primary East Ash Pond was 0.0006 ft/ft. Although horizontal gradient was not highly variable between May and November 2015, flow direction was highly variable as a result of changes in river stage.

Nested monitoring wells were historically present at six locations (wells 02/01, 04/03, 32/05, 08/07, 11/10, 13/12) and currently there are three sets of nested wells (wells 39S/39M, 40S/40M and 43S/43M) at the Wood River Power Station. Well 13, located adjacent to 12 on the northeast corner of the West Ash Pond Complex, and well 11, located adjacent to 10 on the northeast corner of the Old East Ash Pond, were screened in the silty clay, and historical elevations measured when both wells were present indicate general downward flow of water from the silty clay into the Primary Sand Unit. Near the rivers, calculated gradients in the Primary Sand Unit are flat to upward (i.e. flat in wells 08/07 and 39S/39M, upward in wells 02/01 and 40S/40M).

Well nest 43S/43M is screened in the inter-sand (43S) and the Primary Sand Unit (43M). Groundwater elevation measurements were collected at these wells during relatively high Mississippi River stage events where groundwater flow in the primary sand unit had a northerly component. The vertical gradients at the 43S/43M well nest were flat to upward and may represent semi-perched groundwater within the inter-sand unit monitored at well 43S. A summary of representative historical and current vertical gradients is included in Table 3.

Groundwater flow velocity did not vary greatly between November 2015 (Figure 8) and May 2015 (Figure 9), although flow direction changed significantly. Table 2 indicates the typical range of groundwater flow velocities across the Site during periods of base river stage from 0.3 to 0.5 ft/day (November 2015) and periods of flood river stage from 0.1 to 0.3 ft/day (May 2015). Calculated groundwater flow velocities were approximately 0.2 ft/day lower during May 2015 flood river stage conditions than in November 2015 base river stage conditions.

3 GROUNDWATER MONITORING

In July 2015, NRT began an assessment of the existing monitoring well network at the Wood River Power Station with respect to the existing CCR units. Included in the assessment was a review of the current placement and number of monitoring wells with respect to individual and contiguous CCR units. The existing wells selected for CCR groundwater monitoring are discussed below.

3.1 CCR Monitoring Well Network

The 40 CFR Part 257 well network consists of thirteen monitoring wells installed in the uppermost aquifer and adjacent to Wood River West Ash Ponds 1, 2E, 2W (25, 31, 36, 02, 04, 32R and 34) and Wood River Primary East Ash Pond (21, 37, 38, 39S, 40S and 41). The boring logs, well construction forms and other related monitoring well forms are available in the Operating Records as required by Title 40 CFR Part 257 Section 257.91 for each monitored CCR Unit. Sampling of these wells commenced November 2015. The 40 CFR Part 257 groundwater monitoring network well locations are shown on Figure 2. Details on the procedures and techniques used to fulfill the groundwater sampling and analysis program requirements are found in the SAPs for Wood River West Ash Ponds 1, 2E, 2W and Wood River Primary East Ash Pond. The well depths, well screen intervals, depth to groundwater and monitored units at the 40 CFR Part 257 monitoring well network locations are summarized in Table 4 below:

Table 4: CCR Groundwater Monitoring Well Information

Well Number	Well Depth (ft bgs)	Well Screen Interval (ft bgs)	Depth to Water (ft bgs)	Unit Monitored	Screened Interval Lithology
25	38.4	18-38.4	23.6	Upgradient/Background	Primary Sand Unit
31	35.7	20.4-35.4	28	Wood River West Ash	Silty Clay Unit
36	25	20-25	7.6	Ponds 1, 2E, 2W	Primary Sand Unit
4	23	21-23	13.8		
2	35	33-35	30.5	Downgradient	
32R	26.8	16.7-26.8	21.8	Wood River West Ash	Primary Sand Unit
34	40	35-40	27.1	Ponds 1, 2E, 2W	
21	40.2	19.1-40.2	26.7	Upgradient/Background	
37	31	23.9-29	24	Wood River Primary East Ash Pond	Primary Sand Unit
38	73.9	66.8-71.8	29.7		
39S	43.3	36.3-41.3	33.8	Downgradient	
40S	43.6	36.6-41.6	38.8	Wood River Primary East Ash Pond	Primary Sand Unit
41	53.3	46.3-51.3	45.7		

Notes:

Groundwater depth measurements were collected November 3, 2015.

Well screen depth (ft bgs) determined from well construction forms prepared at time of installation.

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- USEPA, 2015, Disposal of Coal Combustion Residuals from Electric Utilities, Final Rule, 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System, April 2015.

Tables

Table 1. Summary of Hydraulic Conductivity Test Results in the Primary Sand Unit
Hydrogeologic Monitoring Plan
Wood River Site
Alton, IL

Well	Test Type ¹	Formation	Field Hydraulic Conductivity	
			cm/s	ft/d
Sand Units				
1	a.	Sand	2.5E-02	72
2	a.	Sand	2.0E-03	6
3	a.	Sand	7.8E-04	2
4	a.	Sand	1.8E-03	5
5	a.	Sand	8.1E-03	23
6	a.	Sand	1.2E-03	3
7	a.	Sand	4.2E-04	1
8	a.	Sand	4.2E-03	12
9	a.	Sand	3.2E-03	9
12	a.	Sand	2.3E-02	66
14	a.	Sand	3.5E-02	98
20	b.	Sand	1.3E-02	37
21	b.	Sand	2.1E-02	60
22	b.	Sand	2.3E-02	64
23 ²	b.	Silty Clay (top) / Sand (bottom)	8.1E-03	23
24	b.	Sand	8.1E-03	23
25	b.	Sand	2.1E-03	6
32	c.	Sand	9.0E-02	255
33	c.	Sand	2.6E-02	74
34	c.	Sand	1.1E-03	3
37	d.	Sand	1.1E-01	306
38	d.	Sand	2.7E-02	75
39S	d.	Sand	5.5E-02	155
39M	d.	Sand	1.8E-01	510
40S	d.	Sand	9.5E-03	27
40M	d.	Sand	2.1E-01	587
41	d.	Sand	6.2E-02	175
42	d.	Sand	3.3E-02	95
WOR-P006	e.	Sand	1.7E-02	48
Minimum Hydraulic Conductivity			4.2E-04	1
Maximum Hydraulic Conductivity			2.1E-01	587
Geometric Mean Hydraulic Conductivity			1.2E-02	34

1. Test types:

- a. nitrogen gas slug, analyzed using method of Hvorslev (1951), performed by Hampton and O'Hearn (1984)
- b. PVC slug, analyzed using method of Bouwer & Rice (1976), performed by Kelron Environmental (1995)
- c. PVC slug, analyzed using method of Bouwer & Rice (1976), performed by STMI (this report)
- d. PVC slug and air slug, analyzed using Bouwer and Rice (1976), performed by Kelron Environmental (2004)
- e. Slug tests analyzed with Springer and Gelhar (1991), performed by Natural Resource Technology (2017)

²Data collected from well 23 was not used in statistics because test was not conducted entirely in primary sand unit.

**Table 2. Horizontal Hydraulic Gradients and Groundwater Flow Velocities
Hydrogeologic Monitoring Plan
Wood River Site
May 2015 and November 2015**

November 3, 2015 (Period of Base River Stage)						
Monitoring Wells	General Site Location	Groundwater Flow Direction	Average of Well Primary Sand Unit Hydraulic Conductivities (cm/s)	Horizontal Hydraulic Gradient	Effective Porosity	Velocity (ft/day)
33 to 04	West of Wood River West Ash Ponds 1, 2E, 2W (CCR Multi-Unit)	South-Southeast	1.4E-02	0.002	0.2	0.4
20 to 42	Center of Wood River Site Property	South	2.3E-02	0.001		0.5
38 to 40S	East of Wood River Primary East Ash Pond (CCR Unit)	South	1.8E-02	0.001		0.3
May 21, 2015 (Period of Flood River Stage)						
Monitoring Wells	General Site Location	Groundwater Flow Direction	Average of Well Primary Sand Unit Hydraulic Conductivities (cm/s)	Horizontal Hydraulic Gradient	Effective Porosity	Velocity (ft/day)
33 to 25	Northwest of Wood River West Ash Ponds 1, 2E, 2W (CCR Multi-Unit)	East-Northeast	1.4E-02	0.0008	0.2	0.2
04 to 23	Center of Wood River West Ash Ponds 1, 2E, 2W (CCR Multi-Unit)	East-Northeast	5.0E-03	0.0008		0.1
42 to 39S	Center of Wood River Primary East Ash Pond (CCR Unit)	East	4.4E-02	0.0006		0.3

Note:

1) cm/sec x 2,835 = feet/day

2) Source of hydraulic conductivity values was Table 1, Summary of Hydraulic Conductivity Test Result in the Primary Sand

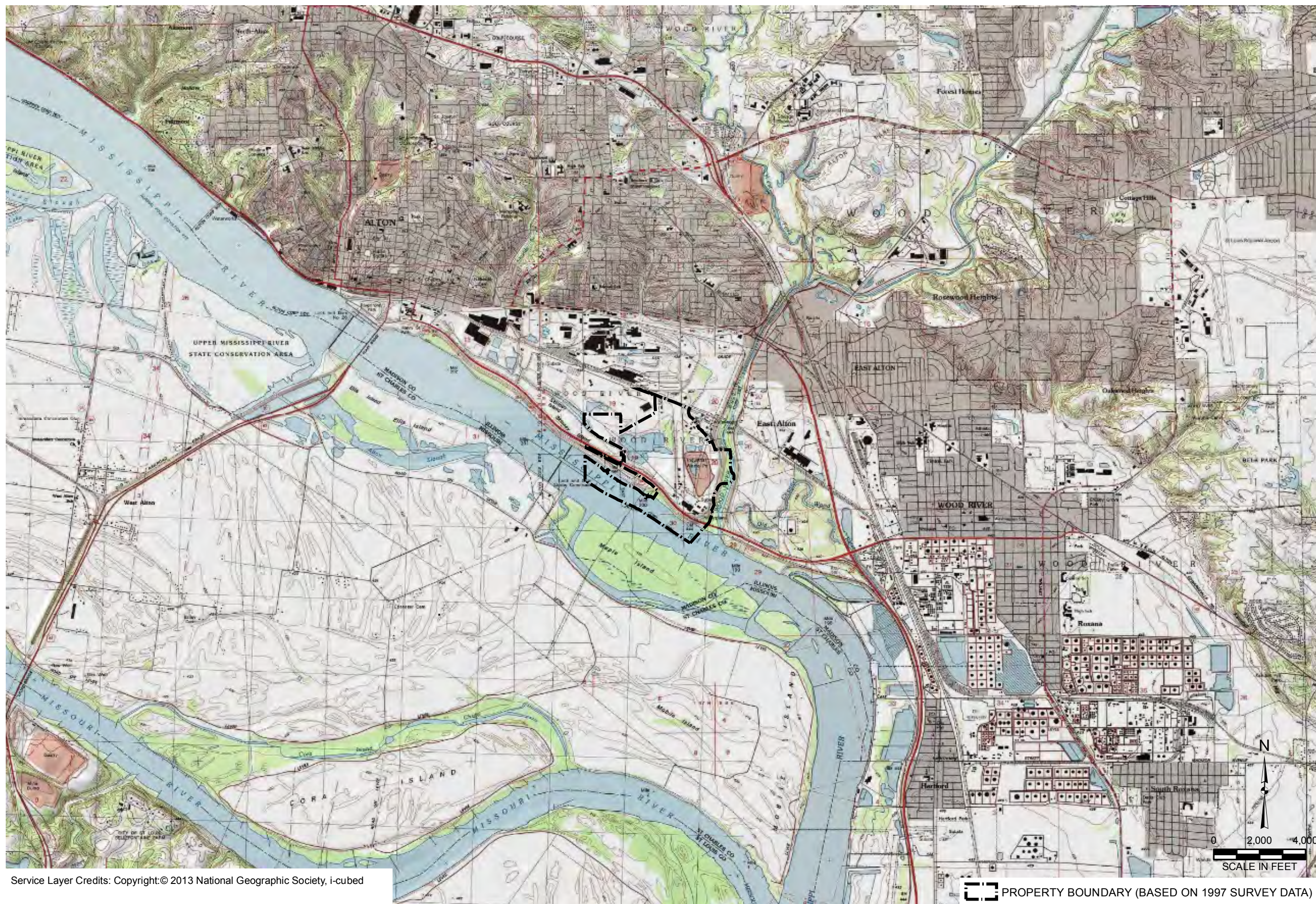
**Table 3. Summary of Vertical Gradients
Hydrogeologic Monitoring Plan
Wood River Site
Alton, IL**

Well ID	Screen Elev. (ft) ¹	Formation	Vertical Gradient Range ²			
			Min	Median	Max	
Historical Well Nests (gradients measured prior to August, 2000)						
Shallow Well 02	396.7	Primary Sand	-0.105	-0.031	0.000	
Deep Well 01	385.3	Primary Sand				
Shallow Well 04	395.4	Primary Sand	-0.108	0.027	1.177	
Deep Well 03	384.3	Primary Sand				
Shallow Well 32	405.0	Primary Sand	-0.602	0.199	0.237	
Deep Well 05	392.7	Primary Sand				
Shallow Well 08	402.9	Primary Sand	-0.007	0.000	0.029	
Deep Well 07	389.6	Primary Sand				
Shallow Well 11	408.1	Clay Unit	-0.125	0.200	0.385	
Deep Well 10	381.6	Clay Unit				
Shallow Well 13	391.3	Clay Unit	-0.343	0.336	0.465	
Deep Well 12	369.9	Primary Sand				
Current Well Nests (2010-2017)						
Shallow Well 39S	398.6	Primary Sand	-0.015	0.000	0.003	
Deep Well 39M	367.4	Primary Sand				
Shallow Well 40S	402.2	Primary Sand	-0.078	-0.002	0.021	
Deep Well 40M	385.6	Primary Sand				
Shallow Well 43S	400.0	Inter-Sand	-0.090	-0.041	0.008	
Deep Well 43M	365.2	Primary Sand				

1. Center of screen
2. Based on dates when both wells were sampled, **negative** values indicate upward gradients while **positive** indicate downward gradients

Figures

Y:\Mapping\Projects\22285\MXD\WR_HCMP\Figure 1_Site Location Map.mxd Author: stclzsd Date/Time: 10/2/2017, 4:20:06 PM



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PROPERTY BOUNDARY (BASED ON 1997 SURVEY DATA)

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REVIEWED BY/DATE:
JJW 10/2/17
APPROVED BY/DATE:
SJC 10/2/17

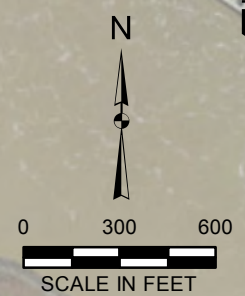
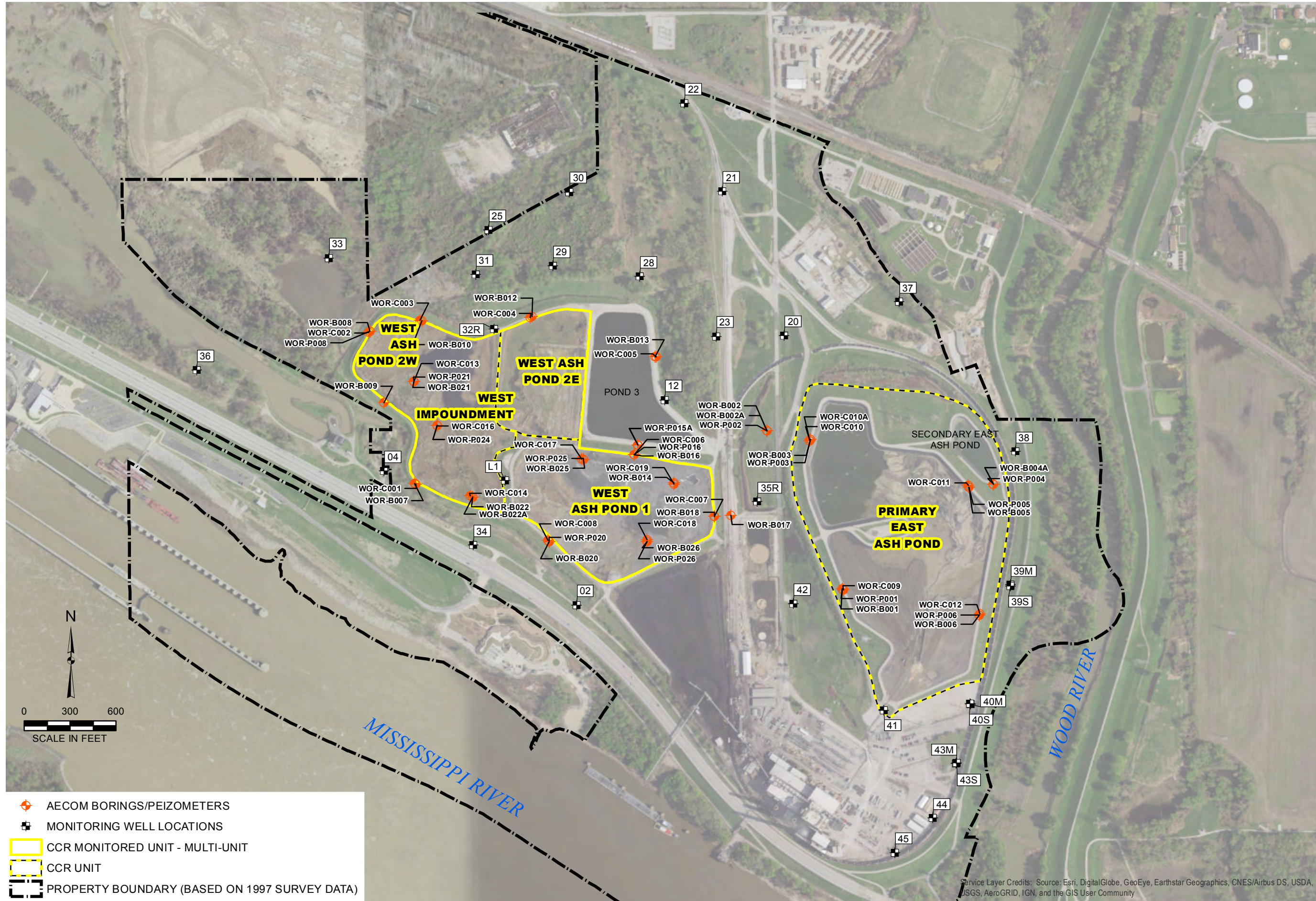
SITE LOCATION MAP
HYDROGEOLOGIC MONITORING PLAN
WOOD RIVER SITE
ALTON, ILLINOIS

PROJECT NO: 2285.10/1.1

FIGURE NO: 1



Y:\Mapping\Projects\22285\WDR_HGM\Figure 3_Monitor Well Location Map.mxd Author: MejaMD; Date/Time: 10/4/2017, 8:47:43 AM



- AECOM BORINGS/PEIZOMETERS
- MONITORING WELL LOCATIONS
- CCR MONITORED UNIT - MULTI-UNIT
- CCR UNIT
- PROPERTY BOUNDARY (BASED ON 1997 SURVEY DATA)

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REVIEWED BY/DATE:
JJW 10/2/17
APPROVED BY/DATE:
SJC 10/2/17

BORING AND MONITORING WELL LOCATION MAP

HYDROGEOLOGIC MONITORING PLAN
WOOD RIVER SITE
ALTON, ILLINOIS

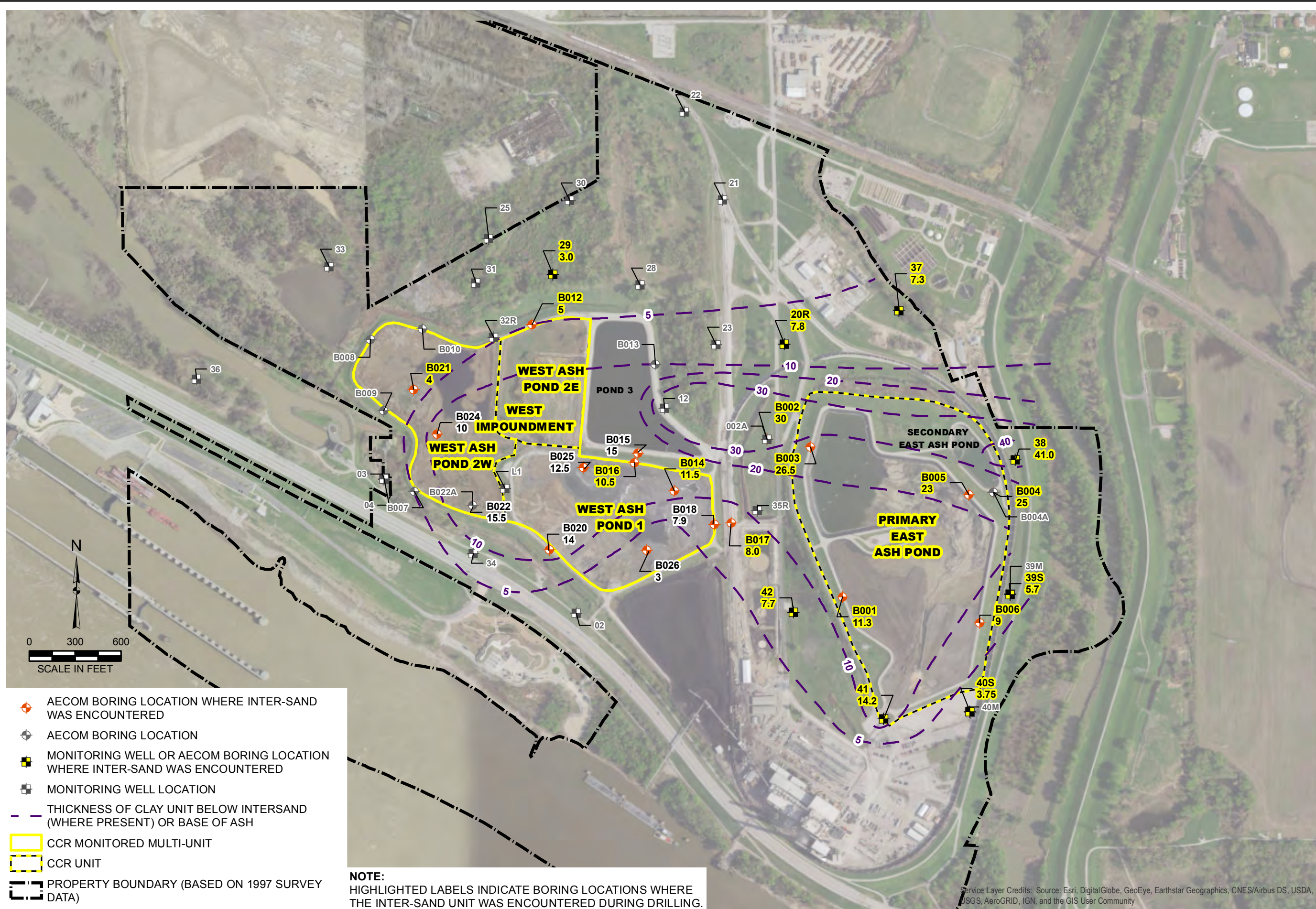
PROJECT NO: 2285.10/1.1

FIGURE NO: 3



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Y:\Mapping\Projects\22285\WXD\WR_HGMP\Figure 4_Thickness of clay.mxd Author: stolzsd Date: 10/2/2017 4:29:22 PM



- ◆ AECOM BORING LOCATION WHERE INTER-SAND WAS ENCOUNTERED
- ◆ AECOM BORING LOCATION
- ◆ MONITORING WELL OR AECOM BORING LOCATION WHERE INTER-SAND WAS ENCOUNTERED
- ◆ MONITORING WELL LOCATION
- THICKNESS OF CLAY UNIT BELOW INTERSAND (WHERE PRESENT) OR BASE OF ASH
- CCR MONITORED MULTI-UNIT
- CCR UNIT
- PROPERTY BOUNDARY (BASED ON 1997 SURVEY DATA)

NOTE:
HIGHLIGHTED LABELS INDICATE BORING LOCATIONS WHERE THE INTER-SAND UNIT WAS ENCOUNTERED DURING DRILLING.

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JJW 10/2/17
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SJC 10/2/17

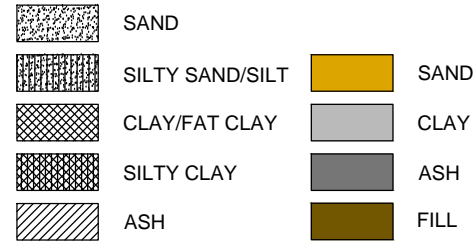
CLAY THICKNESS BELOW ASH COMPLEX OR INTER-SAND UNIT

HYDROGEOLOGIC MONITORING PLAN
WOOD RIVER SITE
ALTON, ILLINOIS

PROJECT NO: 2285.10/1.1

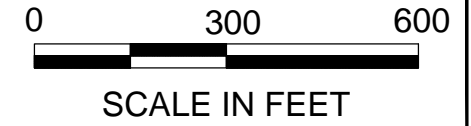
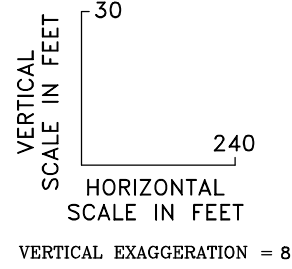
FIGURE NO: 4



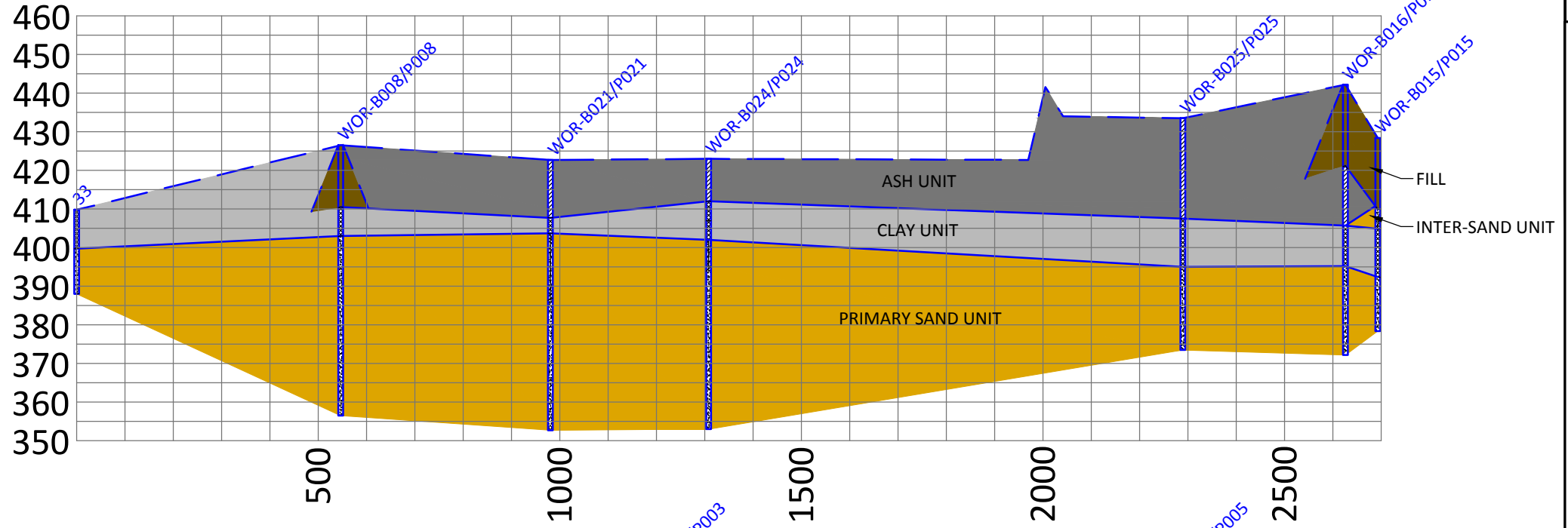


NOTES:

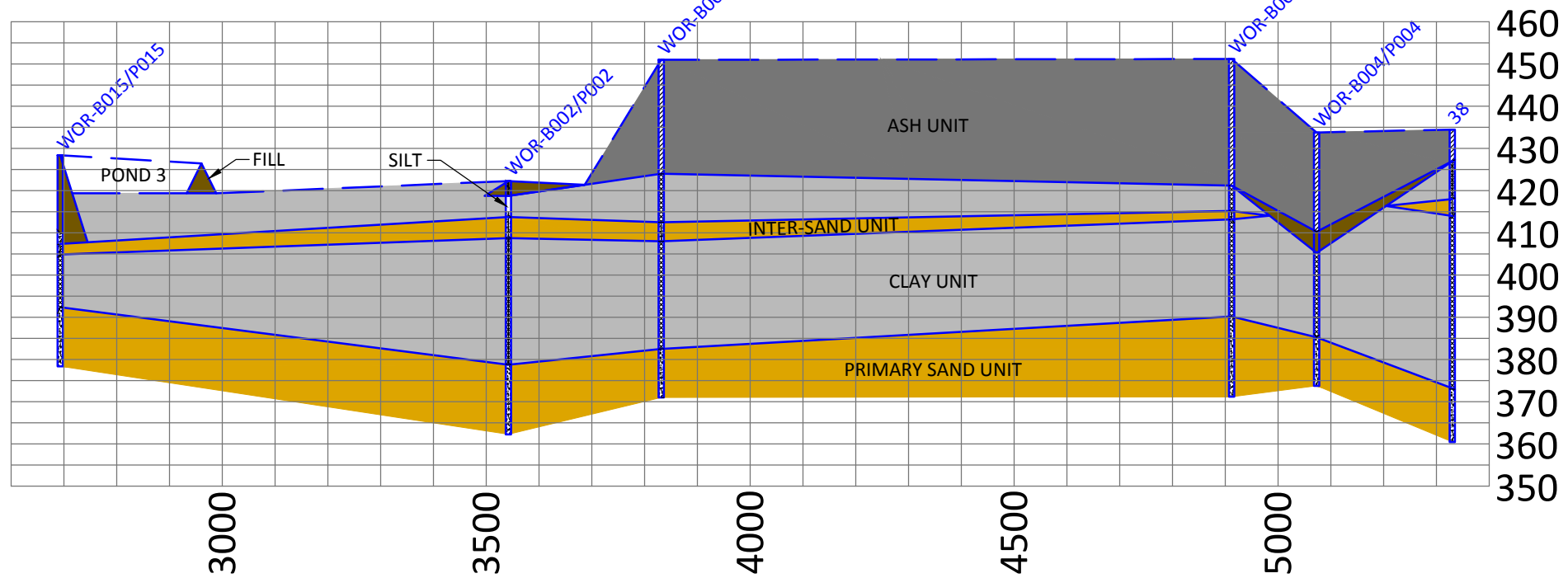
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2. VERTICAL DATUM IS NAVD 88.
3. AERIAL PHOTOGRAPHY SOURCE: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AERGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY



SECTION A-A'



SECTION A-A' (CONT.)



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CHECKED BY:	NRK	DATE:	7/28/16
APPROVED BY:	SJC	DATE:	7/28/16
DRAWING NO: Fig 7_Geologic Cross-Section AA			
REFERENCE: .			

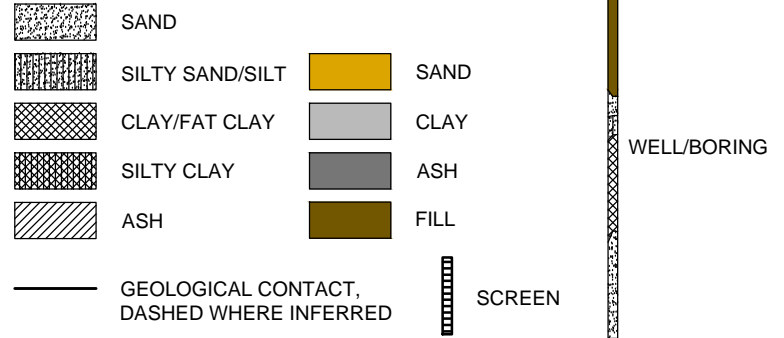
GEOLOGIC CROSS-SECTION
A-A'

HYDROGEOLOGIC MONITORING PLAN
 WOOD RIVER SITE
 ALTON, ILLINOIS



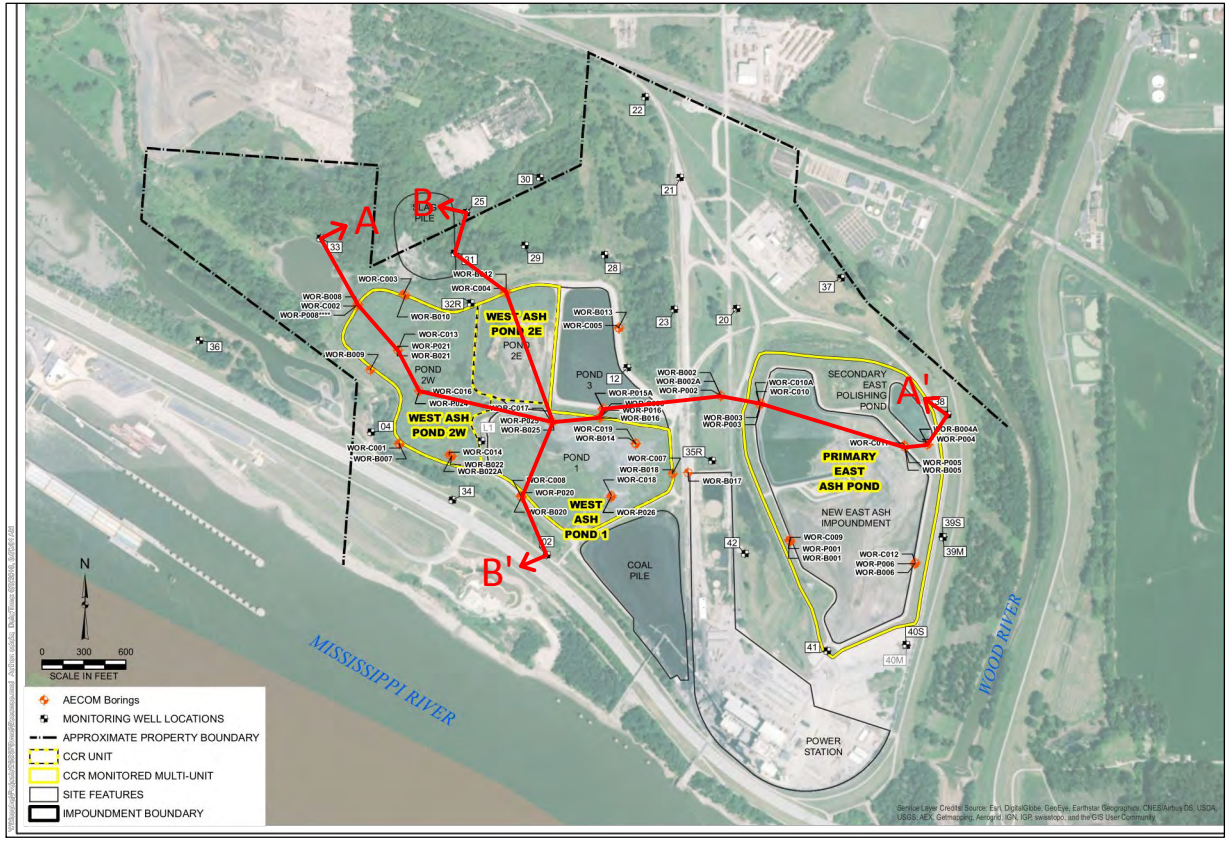
PROJECT NO.
 2285.10/1.1

FIGURE NO.
 6



NOTES:
 1. COORDINATE SYSTEM IS NAD 83 ILLINOIS STATE PLANE WEST, US SURVEY FOOT.
 2. VERTICAL DATUM IS NAVD 88.
 3. AERIAL PHOTOGRAPHY SOURCE: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AERGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY

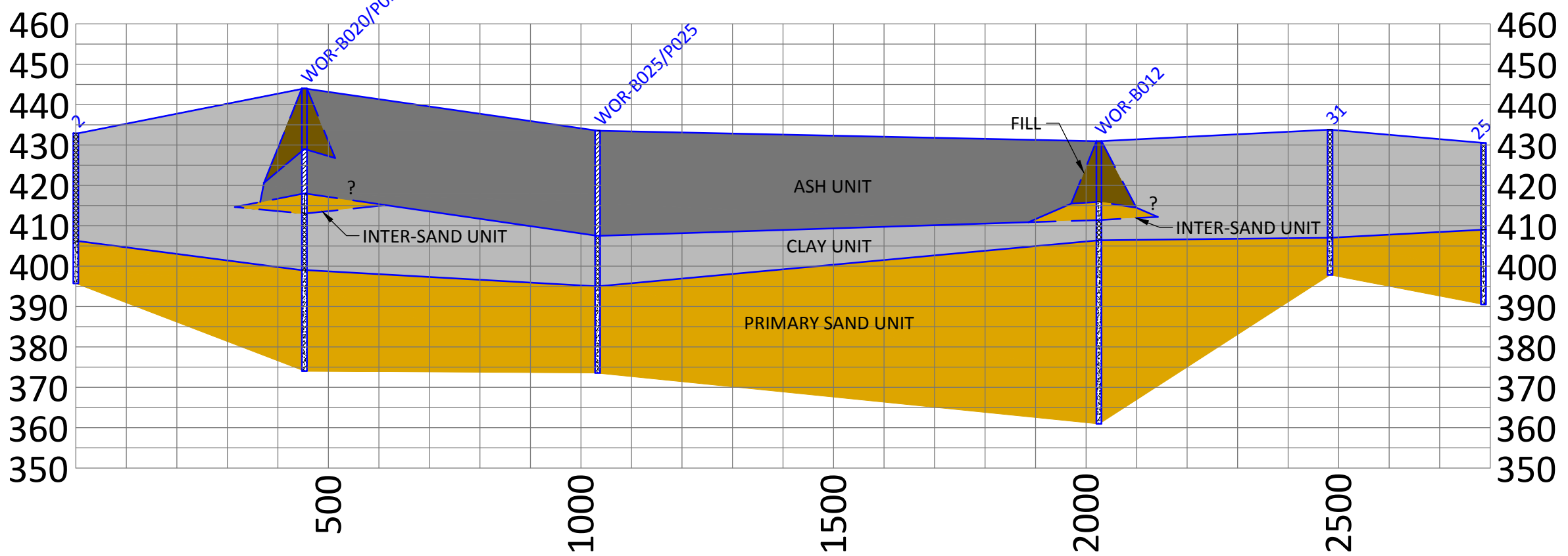
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 HORIZONTAL SCALE IN FEET: 240
 VERTICAL EXAGGERATION = 8



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CHECKED BY:	NRK	DATE:	7/28/16
APPROVED BY:	SJC	DATE:	7/28/16
DRAWING NO: Fig 7_Geologic Cross-Section BB			
REFERENCE: .			

GEOLOGIC CROSS-SECTION B-B'
 HYDROGEOLOGIC MONITORING PLAN
 WOOD RIVER SITE
 ALTON, ILLINOIS

SECTION B-B'

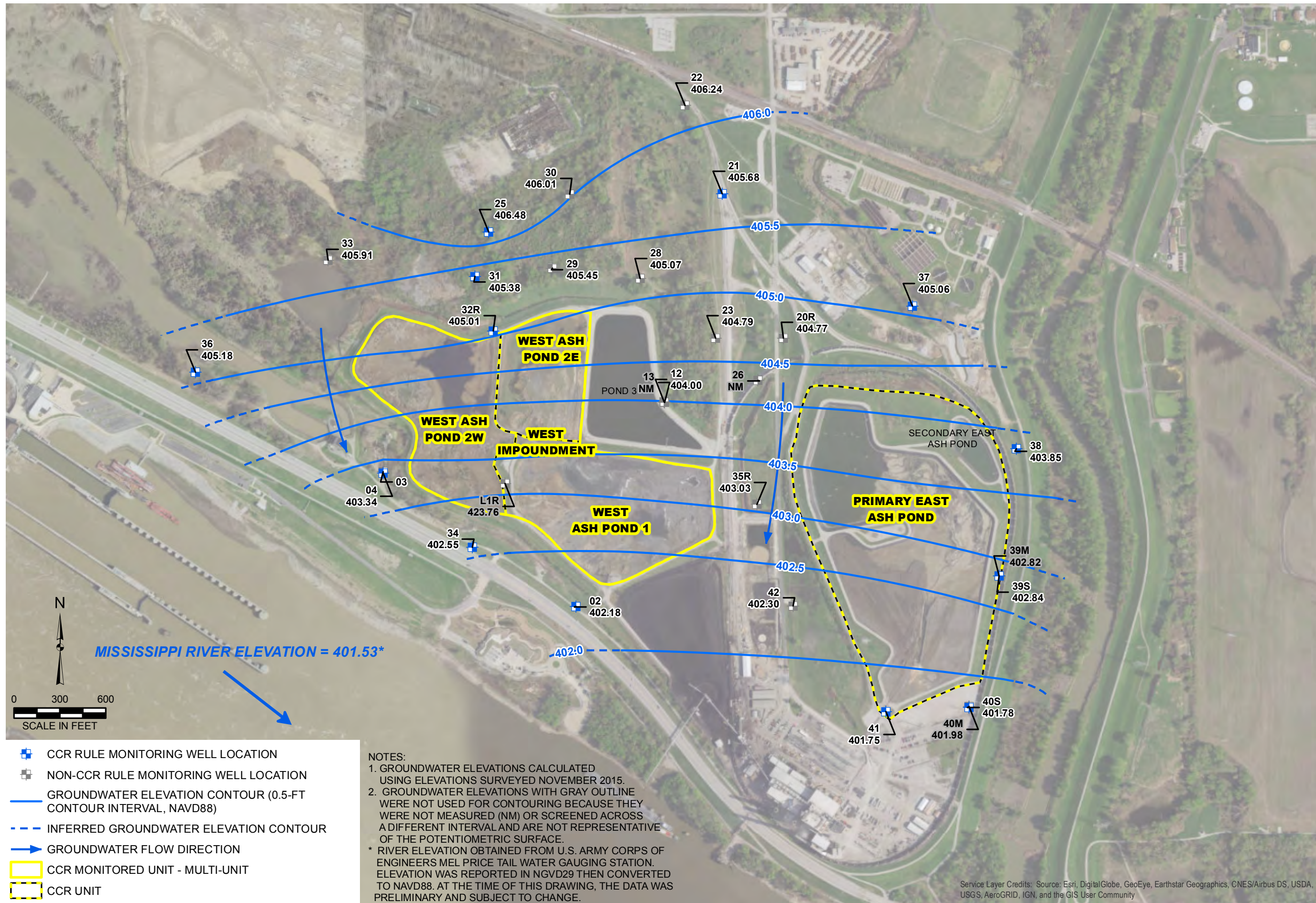


PROJECT NO.
 2285.10/1.1

FIGURE NO.
 7

Oct 03, 2017 9:43am PLOTTED BY: CowrseAG SAVED BY: CowrseAG
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Y:\Mapping\Projects\22285\XDR\WDR_HGMP\Figure 8_WoodRiver_GW_Contours_Nov15.mxd Author: stl/azsd Date/Time: 10/2/2017, 4:48:03 PM



- CCR RULE MONITORING WELL LOCATION
- NON-CCR RULE MONITORING WELL LOCATION
- GROUNDWATER ELEVATION CONTOUR (0.5-FT CONTOUR INTERVAL, NAVD88)
- - - INFERRED GROUNDWATER ELEVATION CONTOUR
- ➔ GROUNDWATER FLOW DIRECTION
- CCR MONITORED UNIT - MULTI-UNIT
- CCR UNIT

NOTES:
 1. GROUNDWATER ELEVATIONS CALCULATED USING ELEVATIONS SURVEYED NOVEMBER 2015.
 2. GROUNDWATER ELEVATIONS WITH GRAY OUTLINE WERE NOT USED FOR CONTOURING BECAUSE THEY WERE NOT MEASURED (NM) OR SCREENED ACROSS A DIFFERENT INTERVAL AND ARE NOT REPRESENTATIVE OF THE POTENTIOMETRIC SURFACE.
 * RIVER ELEVATION OBTAINED FROM U.S. ARMY CORPS OF ENGINEERS MEL PRICE TAIL WATER GAUGING STATION. ELEVATION WAS REPORTED IN NGVD29 THEN CONVERTED TO NAVD88. AT THE TIME OF THIS DRAWING, THE DATA WAS PRELIMINARY AND SUBJECT TO CHANGE.

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SJC 10/2/17

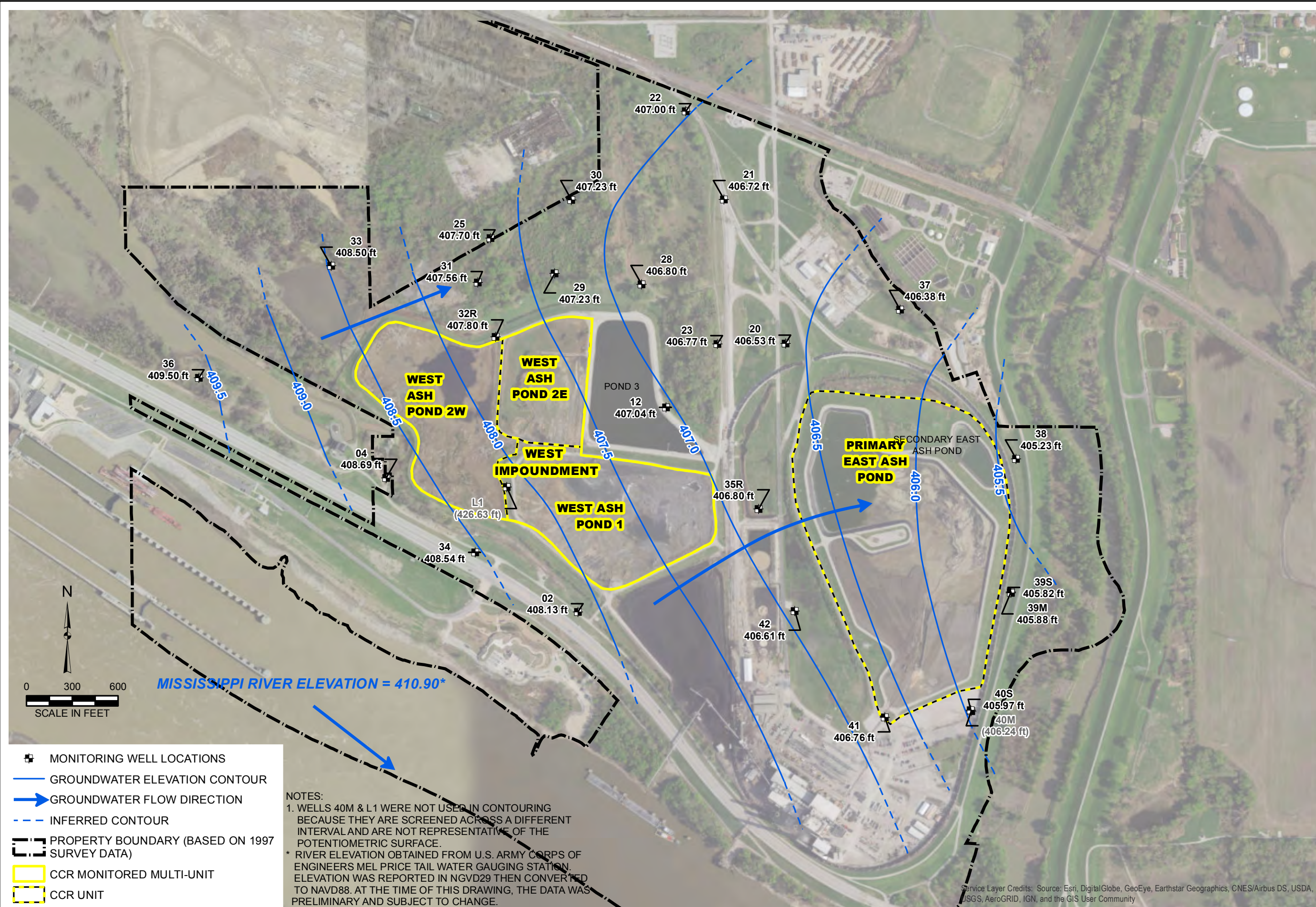
POTENTIOMETRIC SURFACE
NOVEMBER 3, 2015
 HYDROGEOLOGIC MONITORING PLAN
 WOOD RIVER SITE
 ALTON, ILLINOIS

PROJECT NO: 2285.10/1.1

FIGURE NO: 8



Y:\Mapping\Projects\22285\WXD\WR_HGMP\Figure 9_Potentiometric_Surface_May_2015.mxd Author: stolbsci Date/Time: 10/2/2017, 5:37:32 PM



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REVIEWED BY/DATE:
JJW 10/2/17
APPROVED BY/DATE:
SJC 10/2/17


POTENTIOMETRIC SURFACE
MAY 21, 2015
HYDROGEOLOGIC MONITORING PLAN
WOOD RIVER SITE
ALTON, ILLINOIS

PROJECT NO: 2285.10/1.1

FIGURE NO: 9



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Appendix A
Grain Size Analyses and
Laboratory Conductivity
Test Results

*Appendix A From:
AECOM, December 31, 2015. 30% Design Data Report
for the Dynegy Wood River Energy Complex; West Ash
Pond and East Ash Pond CCR Units.*

Appendix A1
Grain Size Analyses

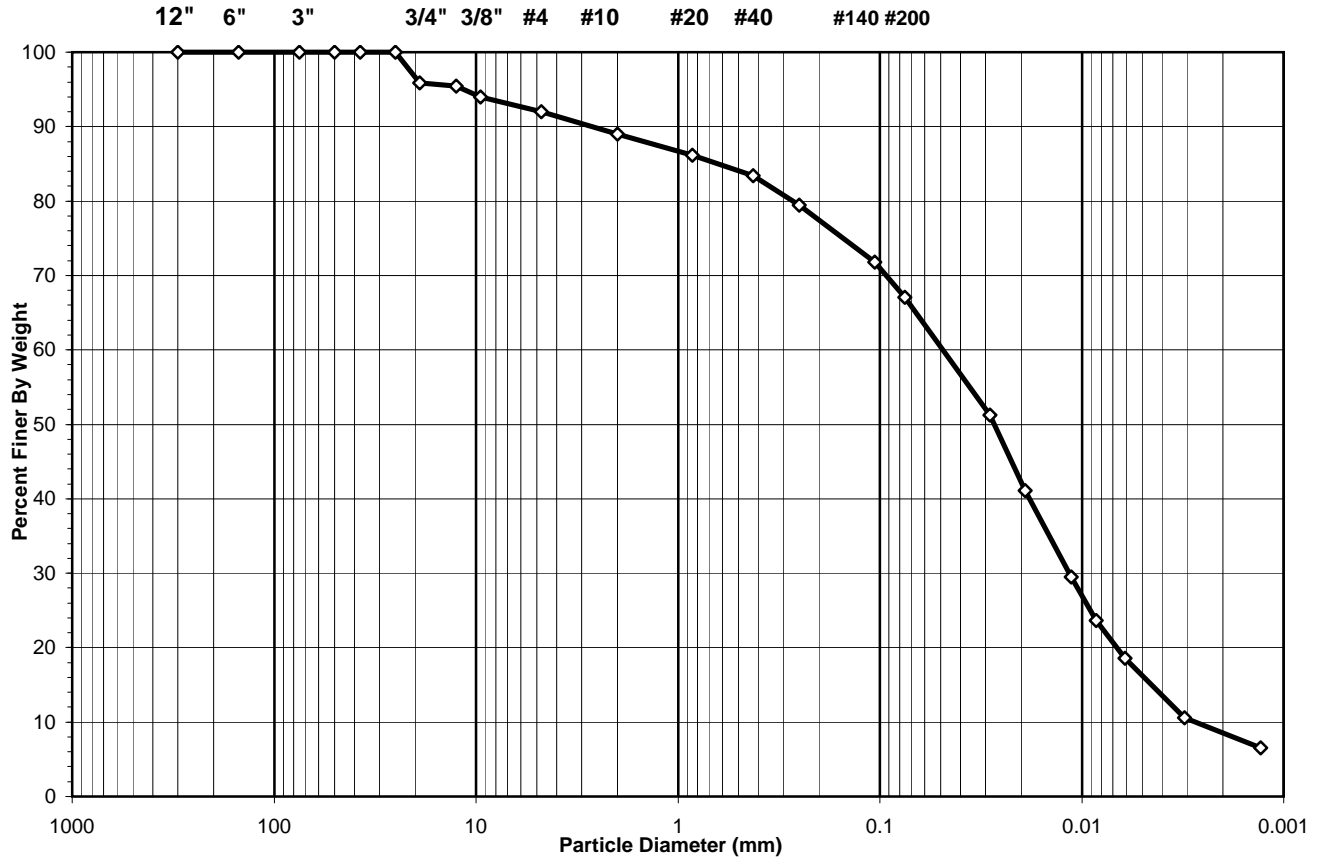
*Appendix A1 From:
AECOM, December 31, 2015. 30% Design Data Report
for the Dynegy Wood River Energy Complex; West Ash
Pond and East Ash Pond CCR Units.*

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-001	Soil Color:	Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

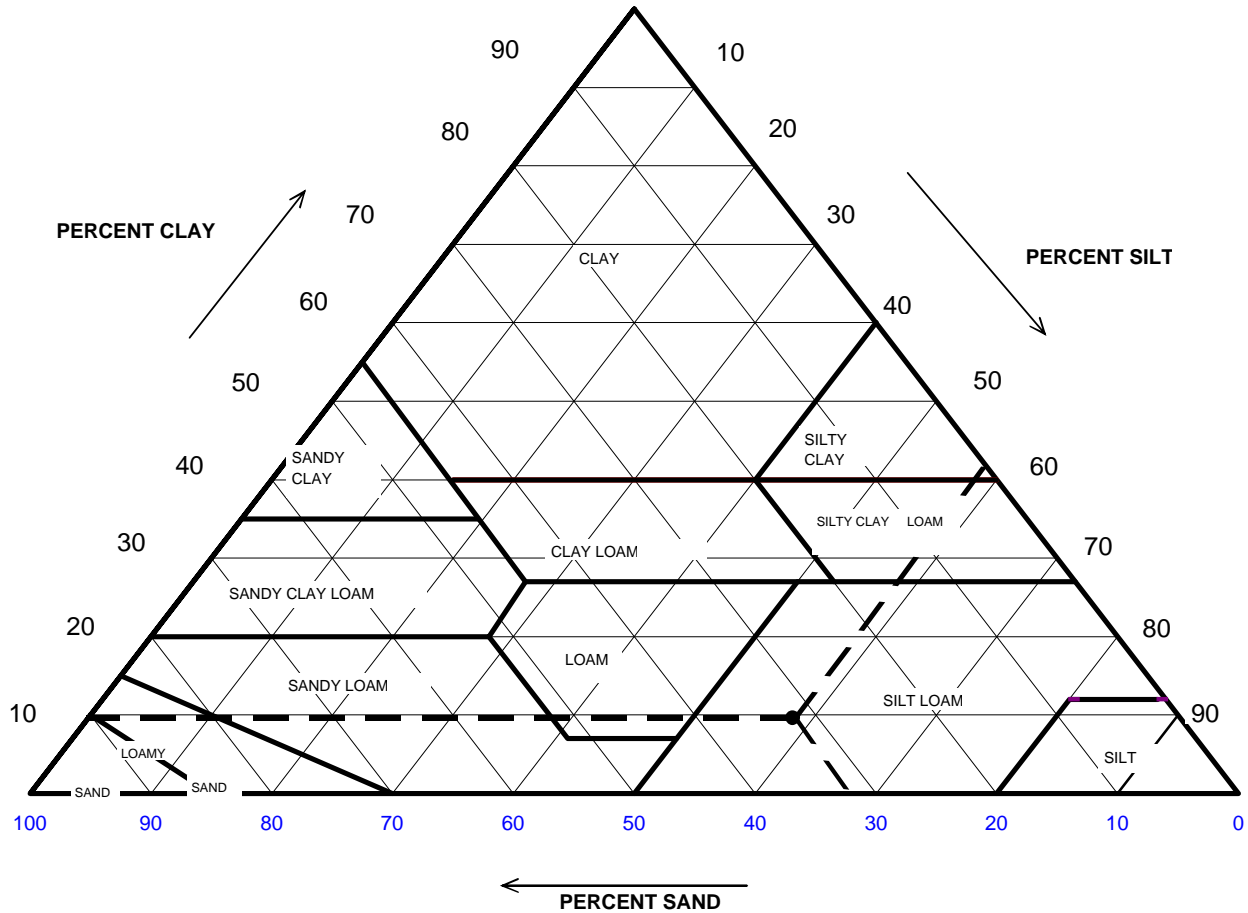


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	8.00
#4 To #200	<i>Sand</i>	24.93
Finer Than #200	<i>Silt & Clay</i>	67.07
USCS Symbol: <i>cl, ASSUMED</i>		
USCS Classification: SANDY LEAN CLAY		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-001

Boring No.: B-1
 Depth (ft): 6.0-7.5
 Sample No.: SS-3
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	88.98	Gravel	11.02	0.00
0.05	60.45	Sand	28.53	32.06
0.002	8.55	Silt	51.91	58.33
		Clay	8.55	9.60
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-001	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1414	Tare No.	NA
Weight of Tare & Wet Sample (g)	590.10	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	475.10	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.50	Weight of Tare (g)	NA
Weight of Water (g)	115.00	Weight of Water (g)	NA
Weight of Dry Sample (g)	329.60	Weight of Dry Sample (g)	NA
Moisture Content (%)	34.9	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	329.60
Dry Weight of -3/4" Sample (g)	94.81	Weight of - #200 Material (g)	221.06
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	108.54
Dry Weight of +3/4" Sample (g)	13.73		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	13.73	4.17	4.17		95.83	95.83
1/2"	12.5	1.23	0.37	4.54		95.46	95.46
3/8"	9.50	4.76	1.44	5.98		94.02	94.02
#4	4.75	6.65	2.02	8.00		92.00	92.00
#10	2.00	9.94	3.02	11.02		88.98	88.98
#20	0.85	9.43	2.86	13.88		86.12	86.12
#40	0.425	8.99	2.73	16.60		83.40	83.40
#60	0.250	12.95	3.93	20.53		79.47	79.47
#140	0.106	25.18	7.64	28.17		71.83	71.83
#200	0.075	15.68	4.76	32.93		67.07	67.07
Pan	-	221.06	67.07	100.00		-	-

Tested By **RAL** Date **10/8/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-001	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	41.5	22.5	6.18	35.3	76.4	0.01305	0.0284	51.2
5	34.5	22.5	6.18	28.3	61.3	0.01305	0.0190	41.1
16	26.5	22.5	6.18	20.3	43.9	0.01305	0.0113	29.5
30	22.5	22.5	6.18	16.3	35.3	0.01305	0.0085	23.7
60	19.0	22.4	6.22	12.8	27.6	0.01307	0.0061	18.5
250	13.5	22.5	6.18	7.3	15.8	0.01305	0.0031	10.6
1440	10.5	23	6.00	4.5	9.7	0.01297	0.0013	6.5

Soil Specimen Data	Other Corrections	
Tare No.	633	
Weight of Tare & Dry Material (g)	146.90	
Weight of Tare (g)	96.13	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	45.8	
	a - Factor	0.99
	Percent Finer than # 200	67.07
	Specific Gravity	2.7 Assumed

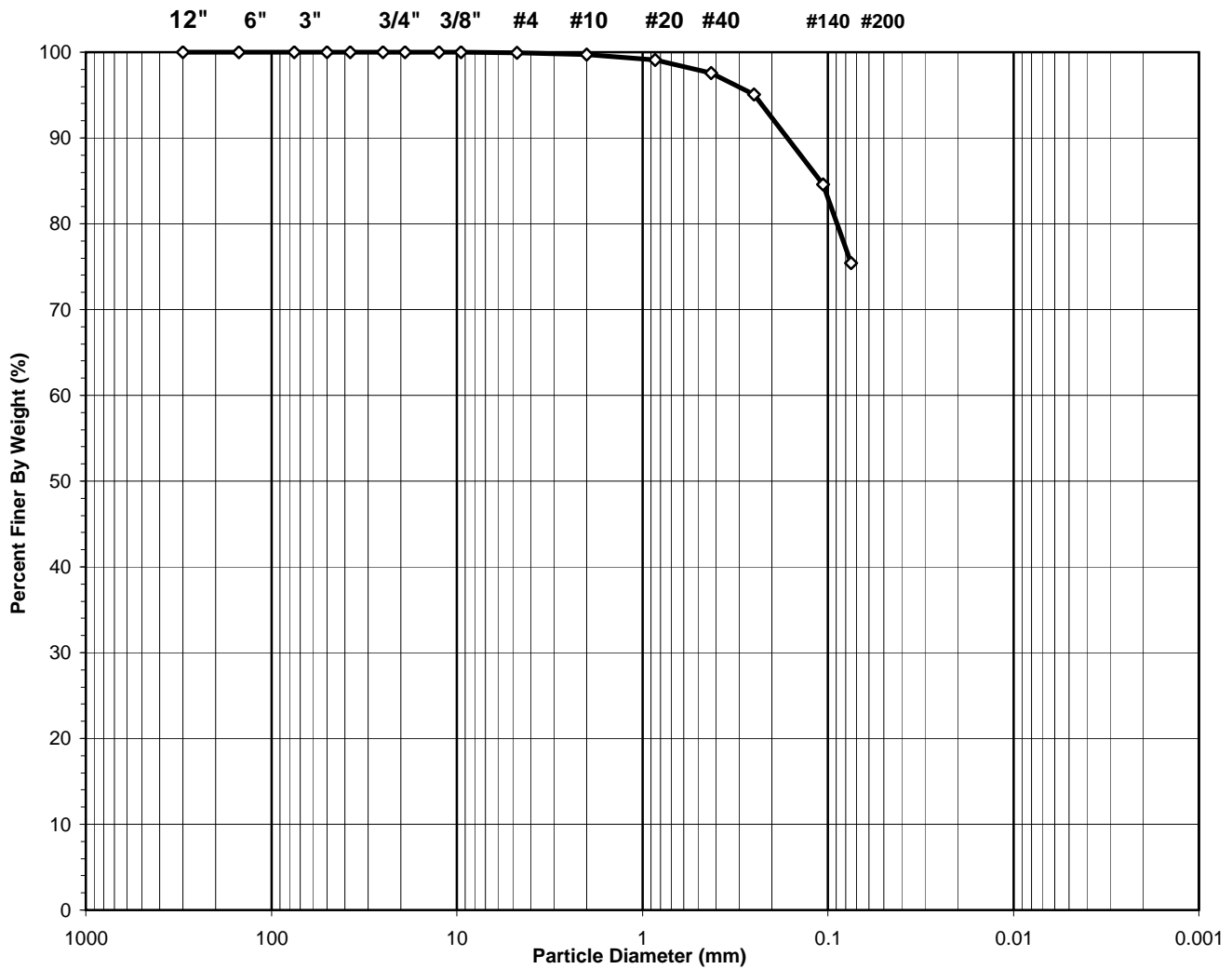
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	10/8/15	Checked By	KC	Date	10/12/15
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SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	18.5-20.0
Project No.:	2015-485-004	Sample No.:	SS-6
Lab ID:	2015-485-004-002	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SILT WITH SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	18.5-20.0
Project No.:	2015-485-004	Sample No.:	SS-6
Lab ID:	2015-485-004-002	Soil Color:	Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1432	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	396.76	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	345.22	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.48	Weight of Tare (g):	NA
Weight of Water (g):	51.54	Weight of Water (g):	NA
Weight of Dry Sample (g):	199.74	Weight of Dry Sample (g):	NA
Moisture Content (%):	25.8	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	199.74
Dry Weight of - 3/4" Sample (g):	49.1	Weight of - #200 Material (g):	150.60
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	49.14
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.20	0.10	0.10	99.90	99.90
#10	2.00	0.39	0.20	0.30	99.70	99.70
#20	0.850	1.22	0.61	0.91	99.09	99.09
#40	0.425	3.06	1.53	2.44	97.56	97.56
#60	0.250	4.95	2.48	4.92	95.08	95.08
#140	0.106	20.99	10.51	15.43	84.57	84.57
#200	0.075	18.33	9.18	24.60	75.40	75.40
Pan	-	150.60	75.40	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-003

Boring No.: B-1
 Depth (ft): 41.0-41.5
 Sample No.: ST-1
 Soil Color: Brown / Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobles	gravel		sand		silt and clay fraction	
	cobles	gravel		sand		silt	clay

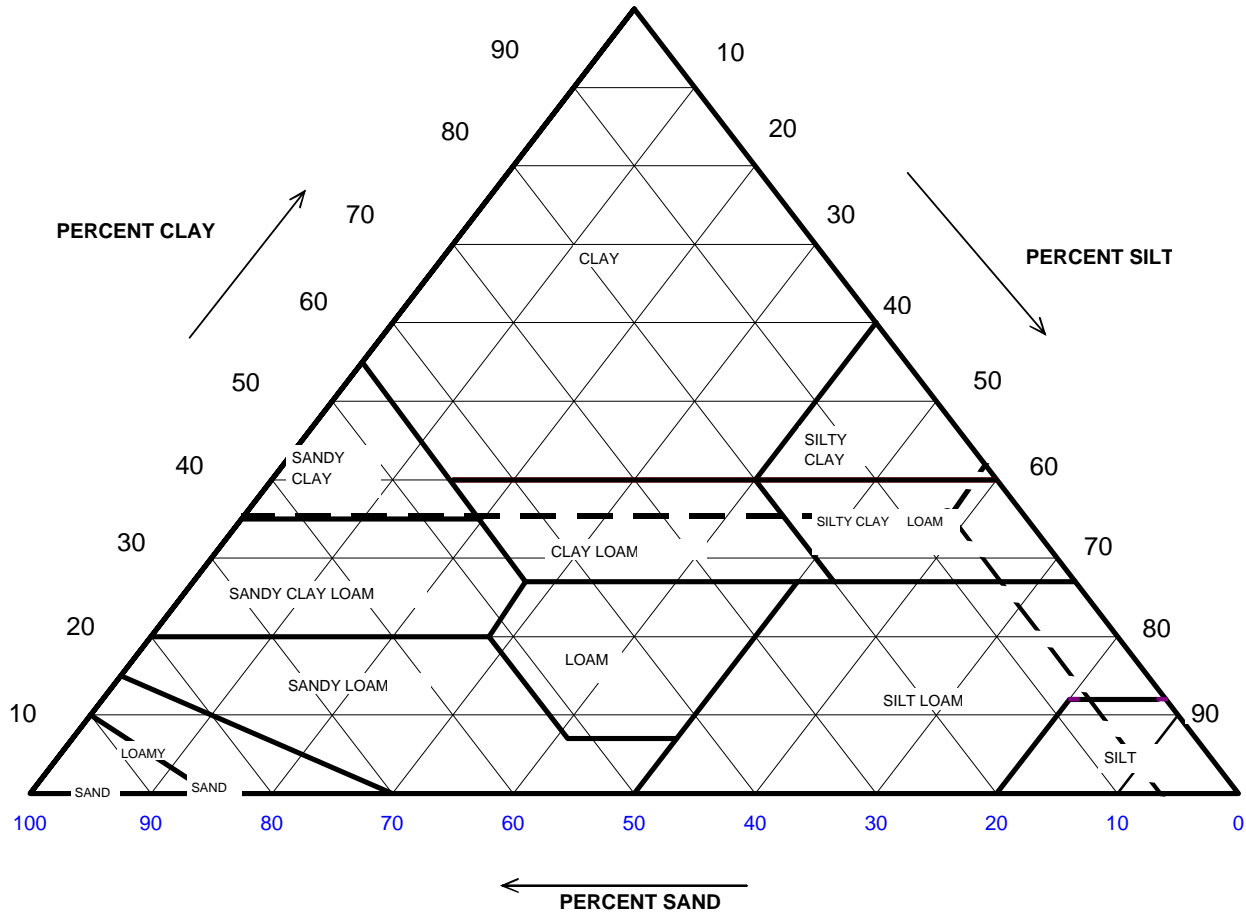


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	0.18
Finer Than #200	<i>Silt & Clay</i>	99.82
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-003

Boring No.: B-1
 Depth (ft): 41.0-41.5
 Sample No.: ST-1
 Soil Color: Brown / Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	100.00	Gravel	0.00	0.00
0.05	93.67	Sand	6.33	6.33
0.002	35.39	Silt	58.28	58.28
		Clay	35.39	35.39
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	41.0-41.5
Project No.:	2015-485-004	Sample No.:	ST-1
Lab ID:	2015-485-004-003	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	25	Tare No.	NA
Weight of Tare & Wet Sample (g)	808.14	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	654.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	203.65	Weight of Tare (g)	NA
Weight of Water (g)	153.84	Weight of Water (g)	NA
Weight of Dry Sample (g)	450.65	Weight of Dry Sample (g)	NA
Moisture Content (%)	34.1	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	450.65
Dry Weight of -3/4" Sample (g)	0.80	Weight of - #200 Material (g)	449.85
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	0.80
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.00	0.00	0.00		100.00	100.00
#20	0.85	0.05	0.01	0.01		99.99	99.99
#40	0.425	0.14	0.03	0.04		99.96	99.96
#60	0.250	0.08	0.02	0.06		99.94	99.94
#140	0.106	0.24	0.05	0.11		99.89	99.89
#200	0.075	0.29	0.06	0.18		99.82	99.82
Pan	-	449.85	99.82	100.00		-	-

Tested By **RAL** Date **10/7/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	41.0-41.5
Project No.:	2015-485-004	Sample No.:	ST-1
Lab ID:	2015-485-004-003	Soil Color:	Brown / Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	46.0	22.9	6.04	40.0	84.6	0.01299	0.0272	84.4
5	41.5	22.9	6.04	35.5	75.0	0.01299	0.0179	74.9
15	34.5	22.9	6.04	28.5	60.2	0.01299	0.0109	60.1
30	30.5	22.9	6.04	24.5	51.8	0.01299	0.0080	51.7
60	28.5	22.6	6.15	22.4	47.3	0.01303	0.0057	47.2
250	24.0	22.5	6.18	17.8	37.7	0.01305	0.0029	37.6
1440	21.5	22.5	6.18	15.4	32.5	0.01305	0.0012	32.4

Soil Specimen Data	Other Corrections	
Tare No.	1019	
Weight of Tare & Dry Material (g)	153.15	
Weight of Tare (g)	101.37	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	46.8	
	a - Factor	0.99
	Percent Finer than # 200	99.82
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

Tested By TO Date 10/7/15 Checked By KC Date 10/14/15
 page 4 of 4 DCN: CT-S3A DATE: 3/18/13 REVISION: 11 S:\Excel\Excel QA\Spreadsheets\SieveHyd.xls

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-004	Sample No.:	SS-12
Lab ID:	2015-485-004-004	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.18 CC = 0.91

USCS Classification:
POORLY GRADED SAND

D30 = 0.13 CU = 1.61

D10 = 0.11

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-004	Sample No.:	SS-12
Lab ID:	2015-485-004-004	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1435	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	491.90	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	423.80	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.48	Weight of Tare (g):	NA
Weight of Water (g):	68.10	Weight of Water (g):	NA
Weight of Dry Sample (g):	278.32	Weight of Dry Sample (g):	NA
Moisture Content (%):	24.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	278.32
Dry Weight of - 3/4" Sample (g):	268.6	Weight of - #200 Material (g):	9.73
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	268.59
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

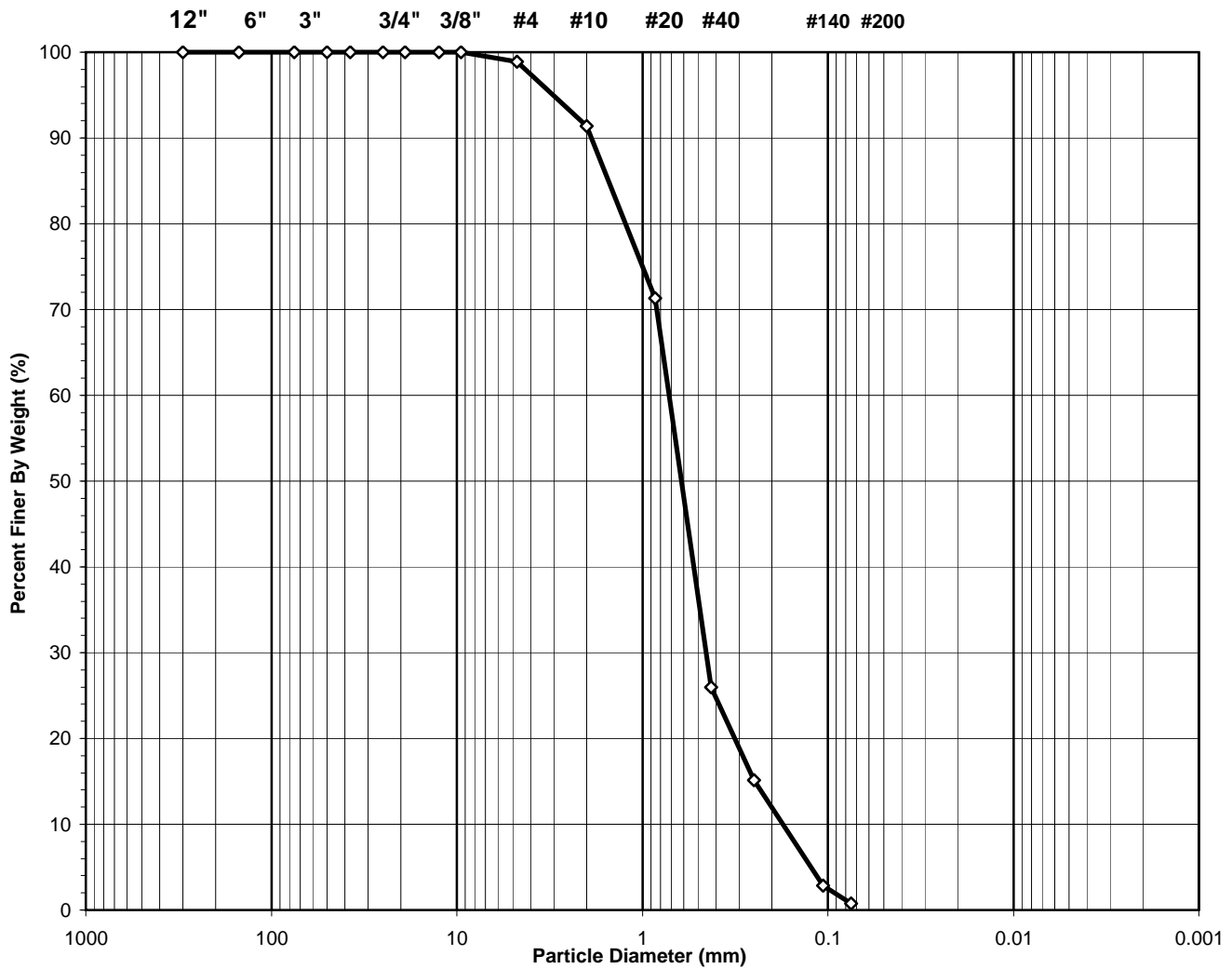
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.850	0.10	0.04	0.04	99.96	99.96
#40	0.425	0.26	0.09	0.13	99.87	99.87
#60	0.250	9.84	3.54	3.66	96.34	96.34
#140	0.106	250.51	90.01	93.67	6.33	6.33
#200	0.075	7.88	2.83	96.50	3.50	3.50
Pan	-	9.73	3.50	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	73.5-75.0
Project No.:	2015-485-004	Sample No.:	SS-17
Lab ID:	2015-485-004-005	Soil Color:	Brownish Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.71 CC = 1.64

USCS Classification:
POORLY GRADED SAND

D30 = 0.45 CU = 4.09

D10 = 0.17

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-1
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	73.5-75.0
Project No.:	2015-485-004	Sample No.:	SS-17
Lab ID:	2015-485-004-005	Soil Color:	Brownish Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1420	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	516.10	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	466.60	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.71	Weight of Tare (g):	NA
Weight of Water (g):	49.50	Weight of Water (g):	NA
Weight of Dry Sample (g):	321.89	Weight of Dry Sample (g):	NA
Moisture Content (%):	15.4	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	321.89
Dry Weight of - 3/4" Sample (g):	319.4	Weight of - #200 Material (g):	2.51
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	319.38
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	3.62	1.12	1.12	98.88	98.88
#10	2.00	24.03	7.47	8.59	91.41	91.41
#20	0.850	64.66	20.09	28.68	71.32	71.32
#40	0.425	145.90	45.33	74.00	26.00	26.00
#60	0.250	34.97	10.86	84.87	15.13	15.13
#140	0.106	39.50	12.27	97.14	2.86	2.86
#200	0.075	6.70	2.08	99.22	0.78	0.78
Pan	-	2.51	0.78	100.00	-	-

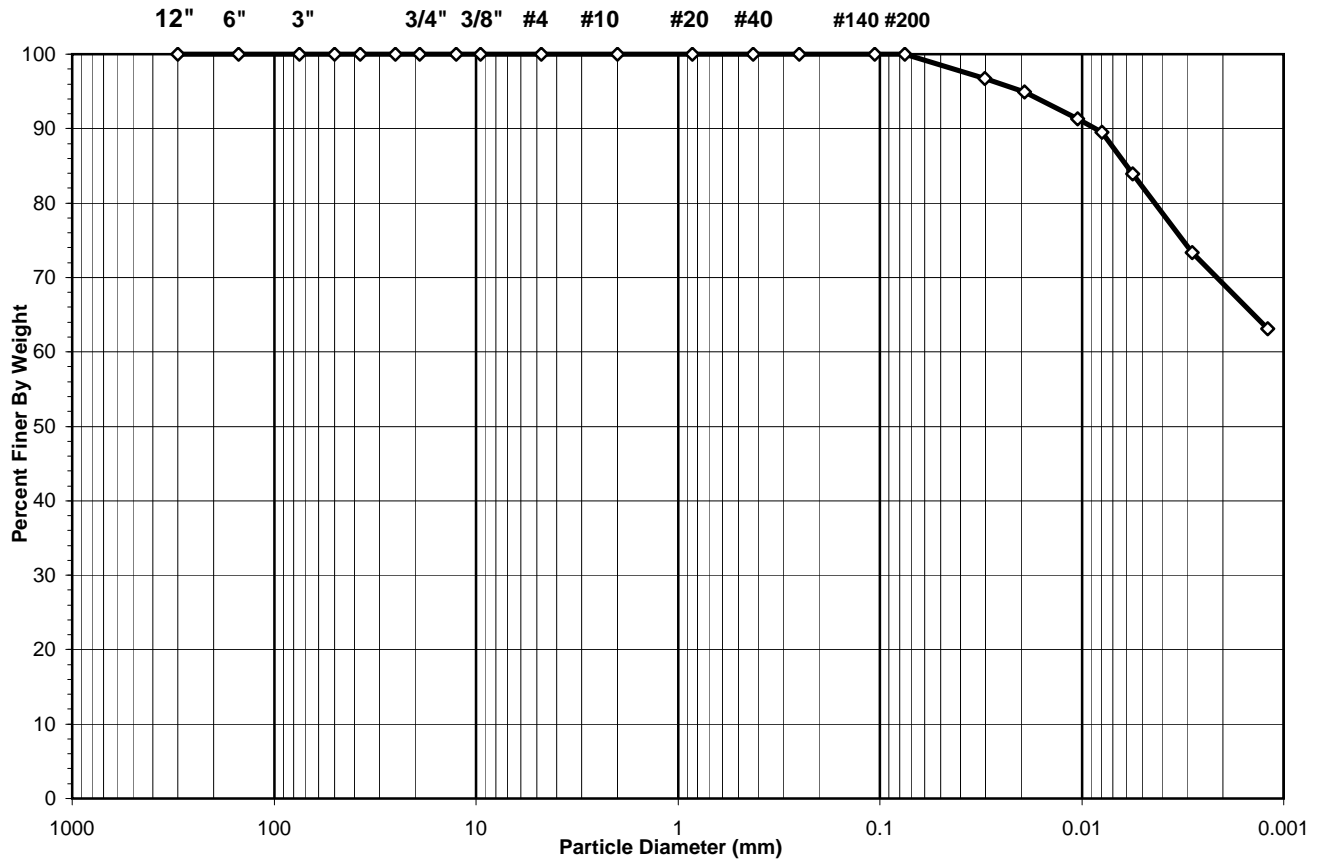
Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	35.4-35.9
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-007	Soil Color:	Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

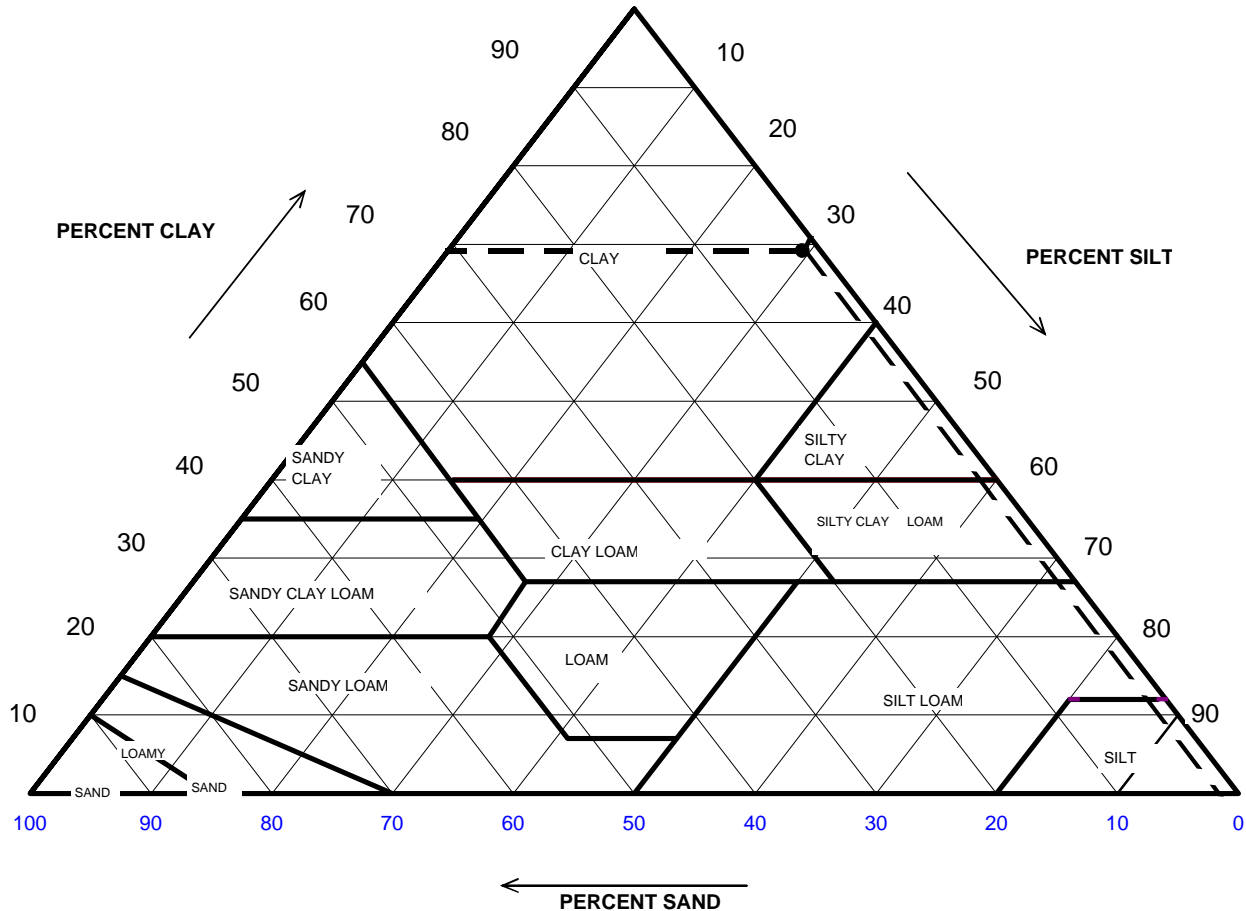


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	0.02
Finer Than #200	<i>Silt & Clay</i>	99.98
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-007

Boring No.: B-2
 Depth (ft): 35.4-35.9
 Sample No.: ST-2
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	100.00	Gravel	0.00	0.00
0.05	98.51	Sand	1.49	1.49
0.002	69.17	Silt	29.34	29.34
		Clay	69.17	69.17
		USDA Classification:	CLAY	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	35.4-35.9
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-007	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	24	Tare No.	NA
Weight of Tare & Wet Sample (g)	925.25	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	646.70	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	202.45	Weight of Tare (g)	NA
Weight of Water (g)	278.55	Weight of Water (g)	NA
Weight of Dry Sample (g)	444.25	Weight of Dry Sample (g)	NA
Moisture Content (%)	62.7	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	444.25
Dry Weight of -3/4" Sample (g)	0.11	Weight of - #200 Material (g)	444.14
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	0.11
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.00	0.00	0.00	100.00	100.00
#40	0.425	0.00	0.00	0.00	100.00	100.00
#60	0.250	0.05	0.01	0.01	99.99	99.99
#140	0.106	0.04	0.01	0.02	99.98	99.98
#200	0.075	0.02	0.00	0.02	99.98	99.98
Pan	-	444.14	99.98	100.00	-	-

Tested By **HL** Date **9/29/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	35.4-35.9
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-007	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	33.0	23.1	5.97	27.0	96.7	0.01296	0.0302	96.7
5	32.5	23.1	5.97	26.5	94.9	0.01296	0.0192	94.9
17	31.5	23.1	5.97	25.5	91.4	0.01296	0.0105	91.3
30	31.0	23.1	5.97	25.0	89.6	0.01296	0.0079	89.5
62	29.5	22.9	6.04	23.5	83.9	0.01299	0.0056	83.9
250	26.5	23	6.00	20.5	73.3	0.01297	0.0028	73.3
1440	23.5	23.4	5.86	17.6	63.1	0.01291	0.0012	63.1

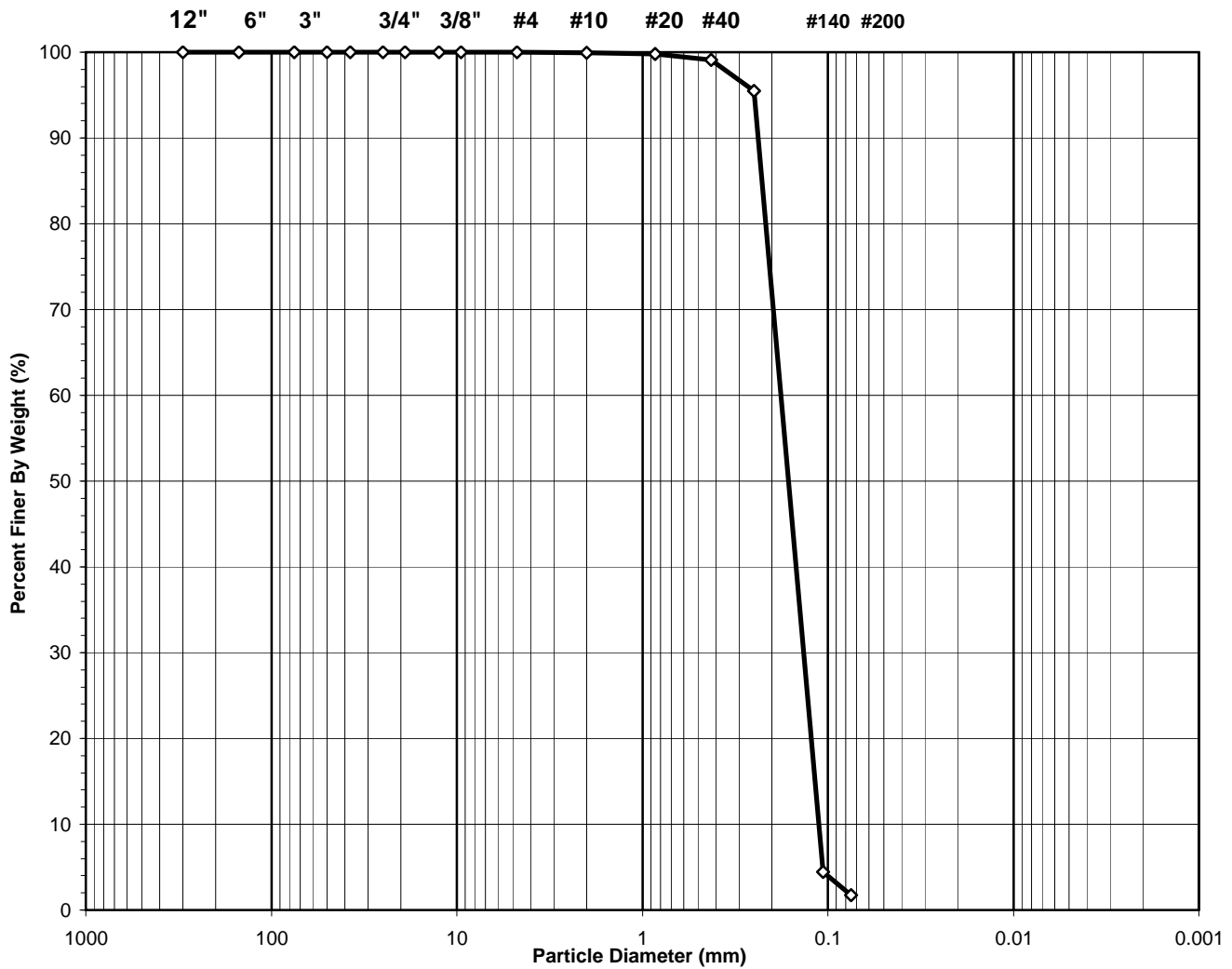
Soil Specimen Data	Other Corrections	
Tare No.	925	
Weight of Tare & Dry Material (g)	132.42	
Weight of Tare (g)	99.75	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	27.7	
	a - Factor	0.99
	Percent Finer than # 200	99.98
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	43.5-45.0
Project No.:	2015-485-004	Sample No.:	SS-10
Lab ID:	2015-485-004-008	Soil Color:	Brownish Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.18 CC = 0.91

USCS Classification:
POORLY GRADED SAND

D30 = 0.13 CU = 1.60

D10 = 0.11

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	43.5-45.0
Project No.:	2015-485-004	Sample No.:	SS-10
Lab ID:	2015-485-004-008	Soil Color:	Brownish Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1452	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	569.50	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	490.10	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.28	Weight of Tare (g):	NA
Weight of Water (g):	79.40	Weight of Water (g):	NA
Weight of Dry Sample (g):	344.82	Weight of Dry Sample (g):	NA
Moisture Content (%):	23.0	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	344.82
Dry Weight of - 3/4" Sample (g):	338.8	Weight of - #200 Material (g):	6.01
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	338.81
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

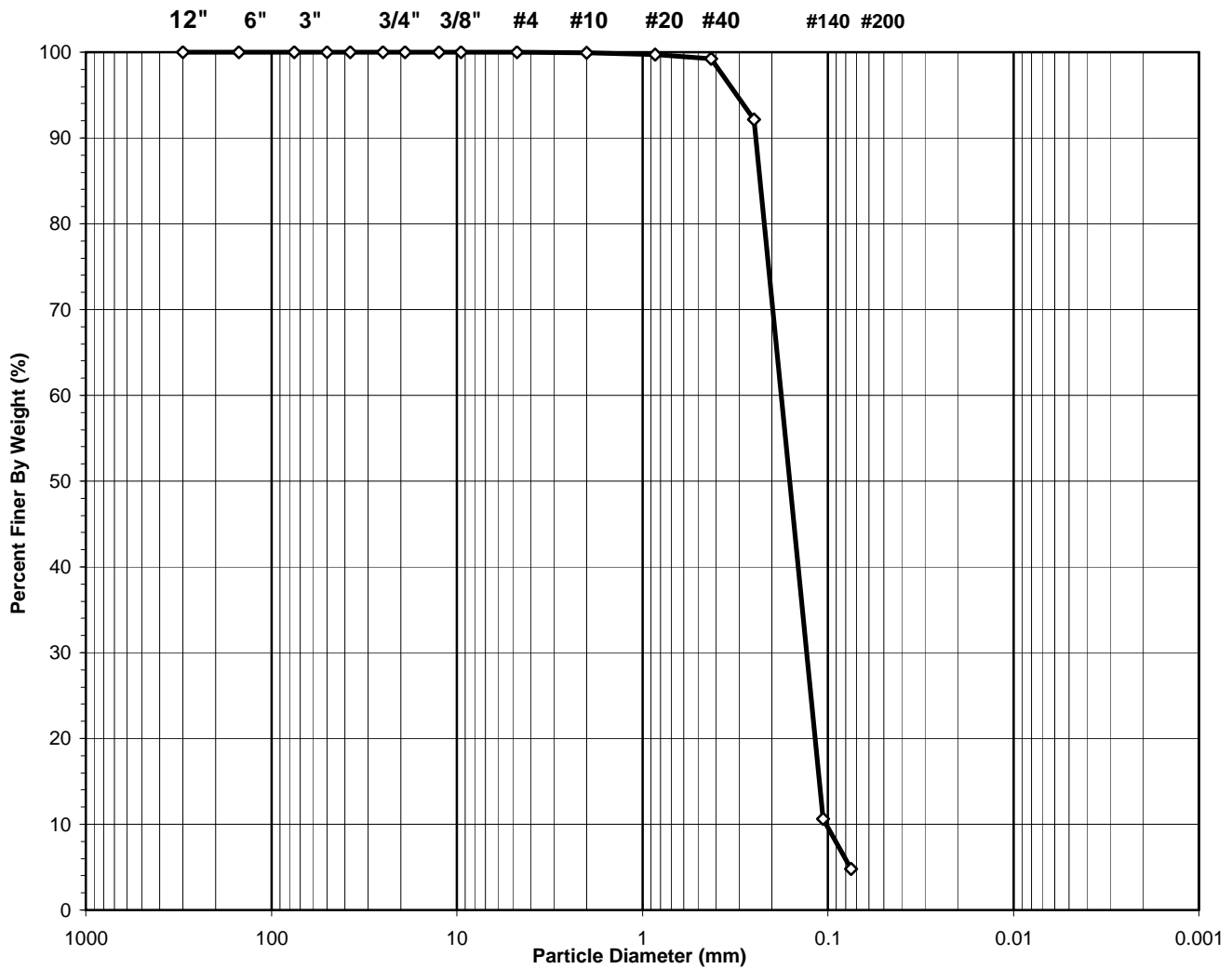
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.16	0.05	0.05	99.95	99.95
#20	0.850	0.57	0.17	0.21	99.79	99.79
#40	0.425	2.29	0.66	0.88	99.12	99.12
#60	0.250	12.55	3.64	4.52	95.48	95.48
#140	0.106	313.90	91.03	95.55	4.45	4.45
#200	0.075	9.34	2.71	98.26	1.74	1.74
Pan	-	6.01	1.74	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-004	Sample No.:	SS-11
Lab ID:	2015-485-004-009	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.18 CC = 0.93

USCS Classification:
POORLY GRADED SAND

D30 = 0.13 CU = 1.75

D10 = 0.10

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-2
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-004	Sample No.:	SS-11
Lab ID:	2015-485-004-009	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1441	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	618.80	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	509.50	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	143.96	Weight of Tare (g):	NA
Weight of Water (g):	109.30	Weight of Water (g):	NA
Weight of Dry Sample (g):	365.54	Weight of Dry Sample (g):	NA
Moisture Content (%):	29.9	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	365.54
Dry Weight of - 3/4" Sample (g):	347.9	Weight of - #200 Material (g):	17.63
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	347.91
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

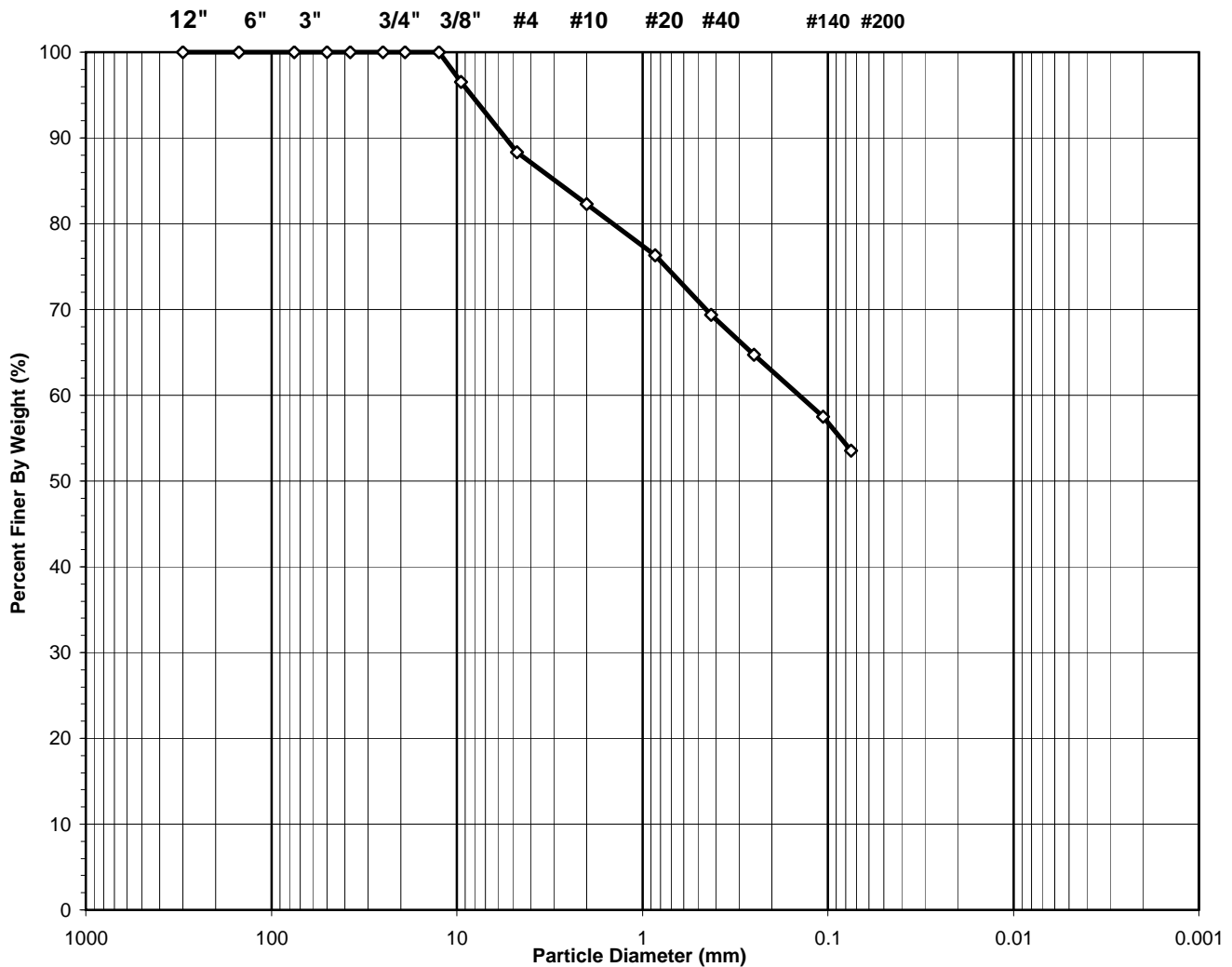
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.12	0.03	0.03	99.97	99.97
#10	2.00	0.26	0.07	0.10	99.90	99.90
#20	0.850	0.63	0.17	0.28	99.72	99.72
#40	0.425	1.90	0.52	0.80	99.20	99.20
#60	0.250	25.90	7.09	7.88	92.12	92.12
#140	0.106	297.80	81.47	89.35	10.65	10.65
#200	0.075	21.30	5.83	95.18	4.82	4.82
Pan	-	17.63	4.82	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	13.5-15.0
Project No.:	2015-485-004	Sample No.:	SS-5
Lab ID:	2015-485-004-010	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SANDY SILT

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	13.5-15.0
Project No.:	2015-485-004	Sample No.:	SS-5
Lab ID:	2015-485-004-010	Soil Color:	Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1437	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	350.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	318.60	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.77	Weight of Tare (g):	NA
Weight of Water (g):	32.10	Weight of Water (g):	NA
Weight of Dry Sample (g):	173.83	Weight of Dry Sample (g):	NA
Moisture Content (%):	18.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	173.83
Dry Weight of - 3/4" Sample (g):	80.7	Weight of - #200 Material (g):	93.13
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	80.70
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

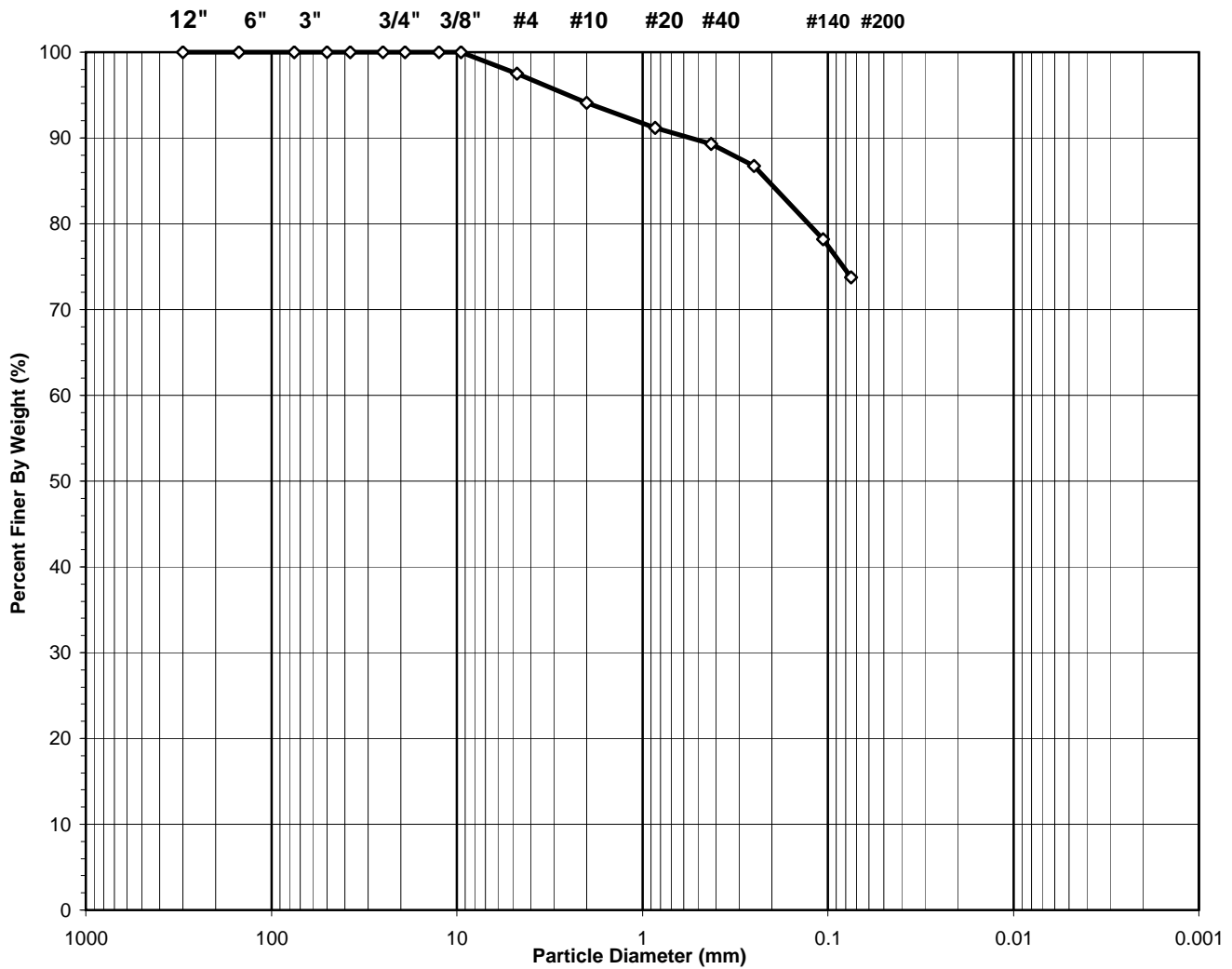
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	6.05	3.48	3.48	96.52	96.52
#4	4.75	14.23	8.19	11.67	88.33	88.33
#10	2.00	10.50	6.04	17.71	82.29	82.29
#20	0.850	10.34	5.95	23.66	76.34	76.34
#40	0.425	12.12	6.97	30.63	69.37	69.37
#60	0.250	8.07	4.64	35.27	64.73	64.73
#140	0.106	12.58	7.24	42.51	57.49	57.49
#200	0.075	6.81	3.92	46.42	53.58	53.58
Pan	-	93.13	53.58	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-004	Sample No.:	SS-7
Lab ID:	2015-485-004-011	Soil Color:	Dark Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
cl, ASSUMED

USCS Classification:
LEAN CLAY WITH SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-004	Sample No.:	SS-7
Lab ID:	2015-485-004-011	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1429	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	226.40	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	211.66	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.86	Weight of Tare (g):	NA
Weight of Water (g):	14.74	Weight of Water (g):	NA
Weight of Dry Sample (g):	66.80	Weight of Dry Sample (g):	NA
Moisture Content (%):	22.1	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	66.80
Dry Weight of - 3/4" Sample (g):	17.5	Weight of - #200 Material (g):	49.26
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	17.54
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.69	2.53	2.53	97.47	97.47
#10	2.00	2.24	3.35	5.88	94.12	94.12
#20	0.850	1.97	2.95	8.83	91.17	91.17
#40	0.425	1.23	1.84	10.67	89.33	89.33
#60	0.250	1.71	2.56	13.23	86.77	86.77
#140	0.106	5.73	8.58	21.81	78.19	78.19
#200	0.075	2.97	4.45	26.26	73.74	73.74
Pan	-	49.26	73.74	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	35.9-36.4
Project No.:	2015-485-004	Sample No.:	ST-3
Lab ID:	2015-485-004-012	Soil Color:	Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

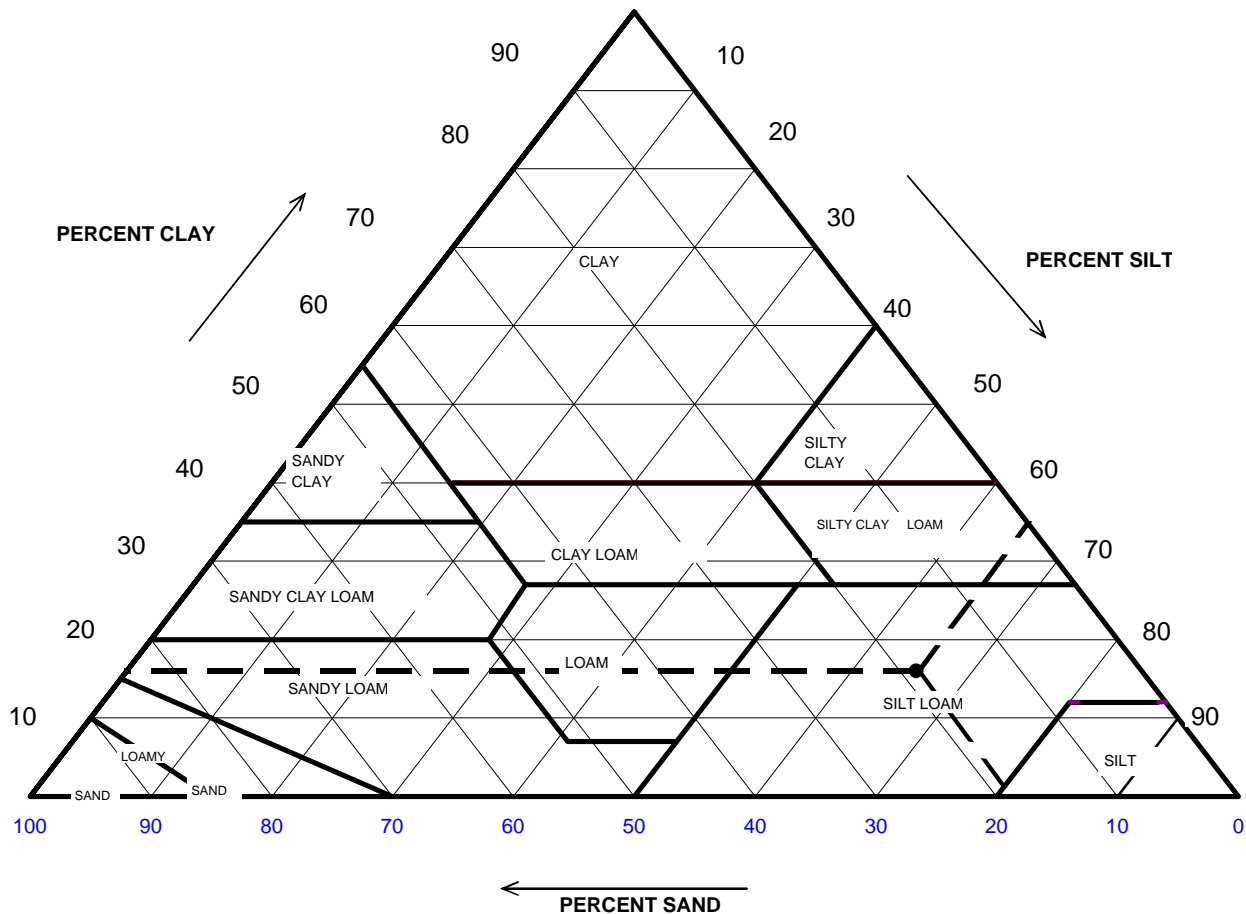


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	6.72
Finer Than #200	<i>Silt & Clay</i>	93.28
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-012

Boring No.: B-3
 Depth (ft): 35.9-36.4
 Sample No.: ST-3
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.96	Gravel	0.04	0.00
0.05	81.31	Sand	18.65	18.65
0.002	16.02	Silt	65.29	65.32
		Clay	16.02	16.03
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	35.9-36.4
Project No.:	2015-485-004	Sample No.:	ST-3
Lab ID:	2015-485-004-012	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	8	Tare No.	NA
Weight of Tare & Wet Sample (g)	1008.46	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	856.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	201.38	Weight of Tare (g)	NA
Weight of Water (g)	152.16	Weight of Water (g)	NA
Weight of Dry Sample (g)	654.92	Weight of Dry Sample (g)	NA
Moisture Content (%)	23.2	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	654.92
Dry Weight of -3/4" Sample (g)	44.00	Weight of - #200 Material (g)	610.92
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	44.00
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.26	0.04	0.04		99.96	99.96
#20	0.85	1.42	0.22	0.26		99.74	99.74
#40	0.425	1.54	0.24	0.49		99.51	99.51
#60	0.250	1.20	0.18	0.67		99.33	99.33
#140	0.106	14.85	2.27	2.94		97.06	97.06
#200	0.075	24.73	3.78	6.72		93.28	93.28
Pan	-	610.92	93.28	100.00		-	-

Tested By **RAL** Date **10/8/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	35.9-36.4
Project No.:	2015-485-004	Sample No.:	ST-3
Lab ID:	2015-485-004-012	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	43.0	22.5	6.18	36.8	68.9	0.01305	0.0281	64.3
5	33.0	22.5	6.18	26.8	50.2	0.01305	0.0193	46.8
15	23.0	22.5	6.18	16.8	31.5	0.01305	0.0119	29.4
30	20.5	22.5	6.18	14.3	26.8	0.01305	0.0086	25.0
60	18.0	22.4	6.22	11.8	22.0	0.01307	0.0062	20.6
250	16.0	22.5	6.18	9.8	18.4	0.01305	0.0031	17.1
1440	14.5	23	6.00	8.5	15.9	0.01297	0.0013	14.8

Soil Specimen Data	Other Corrections	
Tare No.	963	
Weight of Tare & Dry Material (g)	158.72	
Weight of Tare (g)	100.81	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	52.9	
	a - Factor	0.99
	Percent Finer than # 200	93.28
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

Tested By TO Date 10/8/15 Checked By KC Date 10/14/15

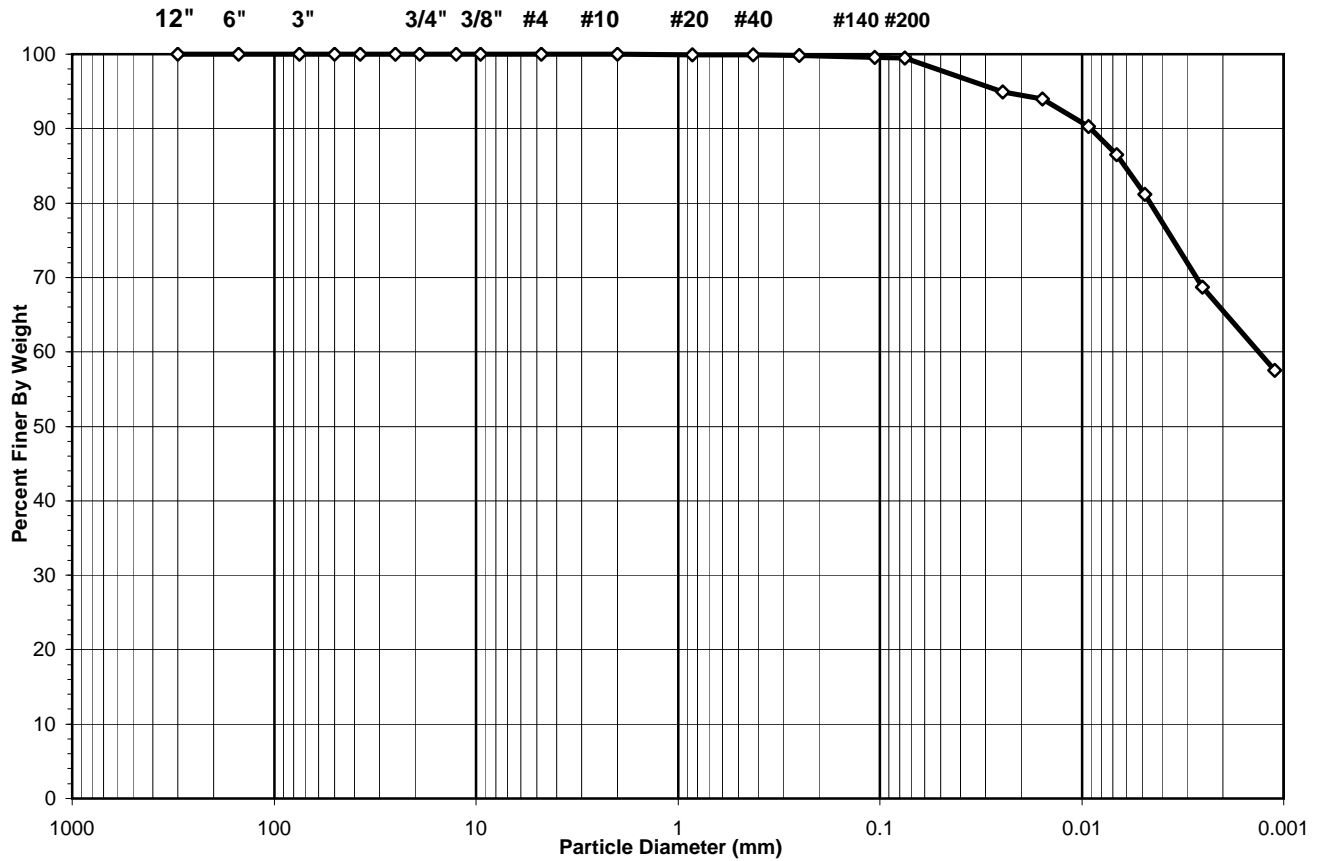
SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-013

Boring No.: B-3
 Depth (ft): 63.5-65.0
 Sample No.: SS-15
 Soil Color: Brown / Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

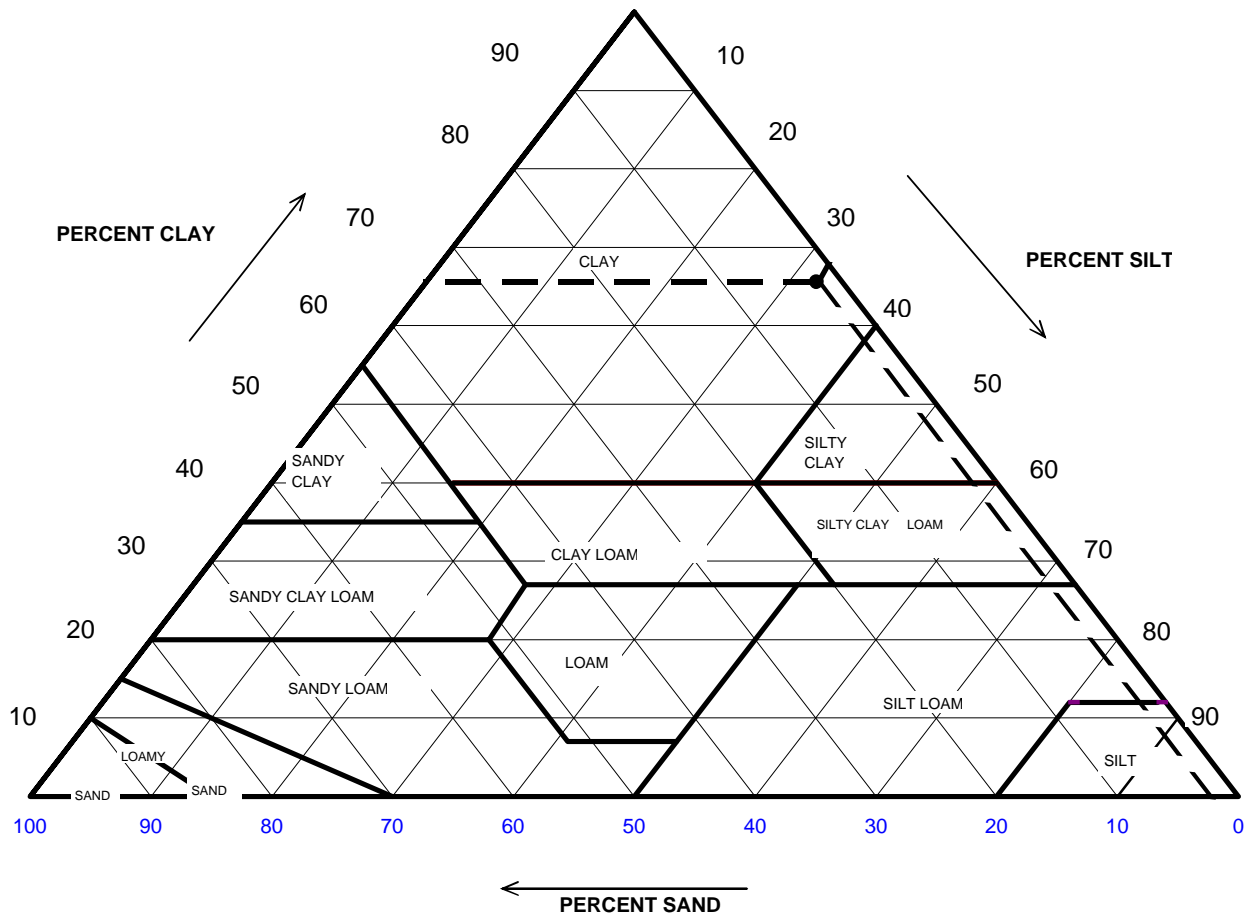


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	0.50
Finer Than #200	<i>Silt & Clay</i>	99.50
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-013

Boring No.: B-3
 Depth (ft): 63.5-65.0
 Sample No.: SS-15
 Soil Color: Brown / Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.96	Gravel	0.04	0.00
0.05	97.84	Sand	2.12	2.12
0.002	65.59	Silt	32.25	32.27
		Clay	65.59	65.61
		USDA Classification:	CLAY	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	63.5-65.0
Project No.:	2015-485-004	Sample No.:	SS-15
Lab ID:	2015-485-004-013	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1427	Tare No.	NA
Weight of Tare & Wet Sample (g)	400.30	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	309.37	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.62	Weight of Tare (g)	NA
Weight of Water (g)	90.93	Weight of Water (g)	NA
Weight of Dry Sample (g)	163.75	Weight of Dry Sample (g)	NA
Moisture Content (%)	55.5	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	163.75
Dry Weight of -3/4" Sample (g)	0.82	Weight of - #200 Material (g)	162.93
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	0.82
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.07	0.04	0.04		99.96	99.96
#20	0.85	0.11	0.07	0.11		99.89	99.89
#40	0.425	0.01	0.01	0.12		99.88	99.88
#60	0.250	0.10	0.06	0.18		99.82	99.82
#140	0.106	0.40	0.24	0.42		99.58	99.58
#200	0.075	0.13	0.08	0.50		99.50	99.50
Pan	-	162.93	99.50	100.00		-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	63.5-65.0
Project No.:	2015-485-004	Sample No.:	SS-15
Lab ID:	2015-485-004-013	Soil Color:	Brown / Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	57.5	20.7	6.83	50.7	95.4	0.01333	0.0247	94.9
5	57.0	20.7	6.83	50.2	94.5	0.01333	0.0157	94.0
15	55.0	20.7	6.83	48.2	90.7	0.01333	0.0093	90.3
30	53.0	20.7	6.83	46.2	87.0	0.01333	0.0067	86.5
60	50.0	21.1	6.68	43.3	81.6	0.01327	0.0049	81.2
250	43.0	22.1	6.33	36.7	69.1	0.01311	0.0025	68.7
1440	37.0	22.2	6.29	30.7	57.8	0.01310	0.0011	57.5

Soil Specimen Data	Other Corrections	
Tare No.	528	
Weight of Tare & Dry Material (g)	149.93	
Weight of Tare (g)	92.36	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	52.6	
	a - Factor	0.99
	Percent Finer than # 200	99.50
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-3
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	73.5-75.0
Project No.:	2015-485-004	Sample No.:	SS-17
Lab ID:	2015-485-004-014	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.19 CC = 0.89

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.14 CU = 1.80

D10 = 0.11

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: B-3
Client Reference: Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft): 73.5-75.0
Project No.: 2015-485-004	Sample No.: SS-17
Lab ID: 2015-485-004-014	Soil Color: Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	679	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	377.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	327.97	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	95.02	Weight of Tare (g):	NA
Weight of Water (g):	49.73	Weight of Water (g):	NA
Weight of Dry Sample (g):	232.95	Weight of Dry Sample (g):	NA
Moisture Content (%):	21.3	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	232.95
Dry Weight of - 3/4" Sample (g):	218.3	Weight of - #200 Material (g):	14.70
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	218.25
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.11	0.05	0.05	99.95	99.95
#20	0.850	0.08	0.03	0.08	99.92	99.92
#40	0.425	1.02	0.44	0.52	99.48	99.48
#60	0.250	40.58	17.42	17.94	82.06	82.06
#140	0.106	170.19	73.06	91.00	9.00	9.00
#200	0.075	6.27	2.69	93.69	6.31	6.31
Pan	-	14.70	6.31	100.00	-	-

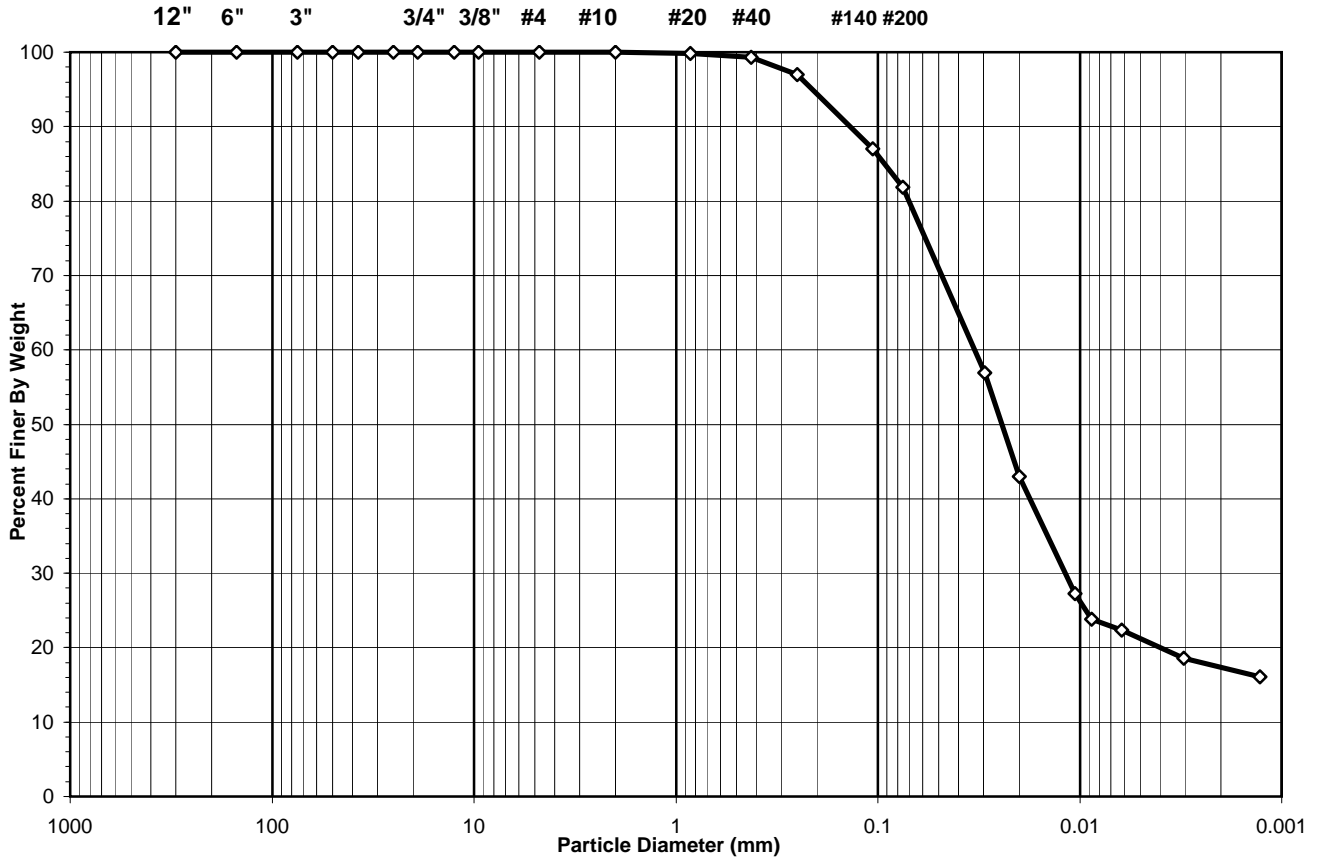
Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	13.5-15.0
Project No.:	2015-485-004	Sample No.:	SS-4
Lab ID:	2015-485-004-015	Soil Color:	Gray / Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

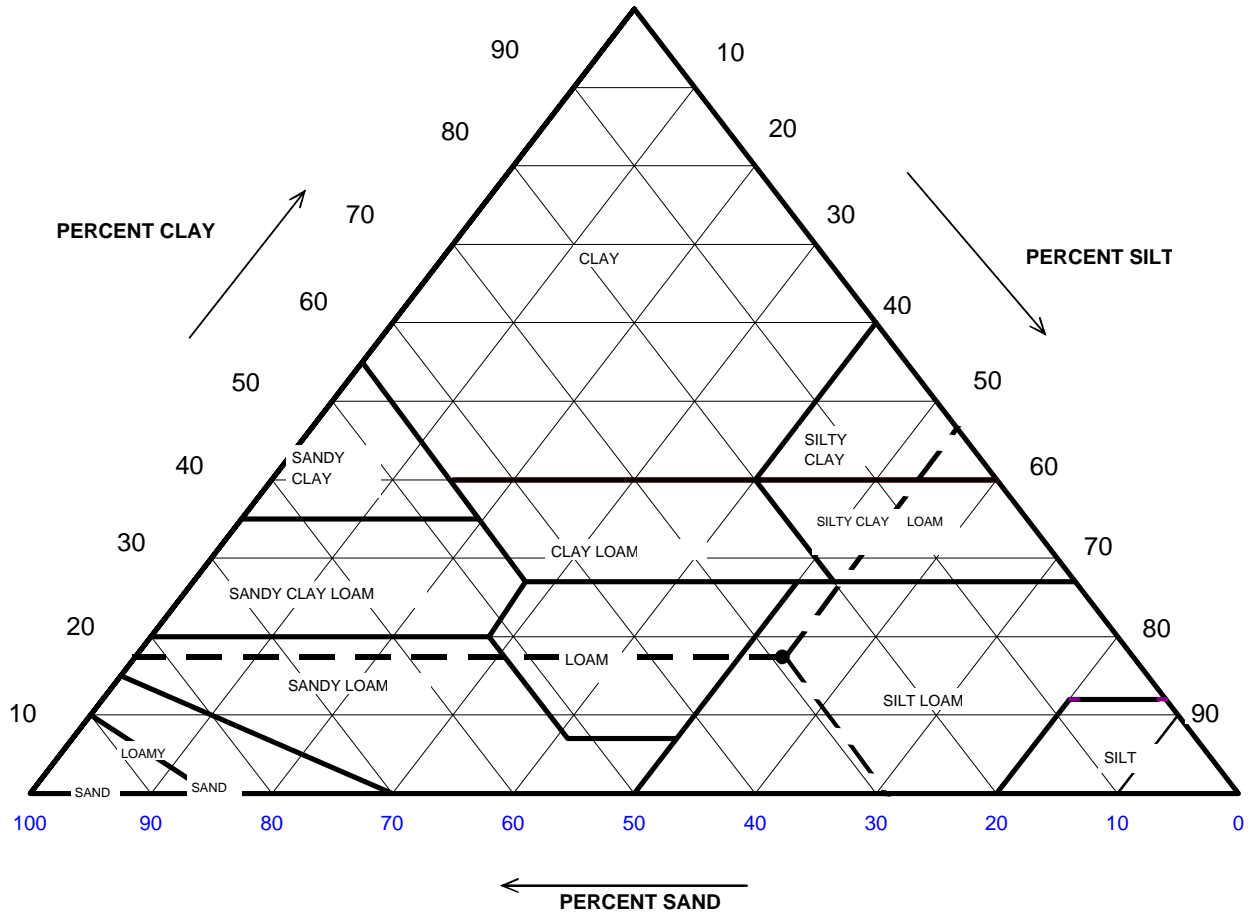


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	18.17
Finer Than #200	<i>Silt & Clay</i>	81.83
USCS Symbol: <i>cl, ASSUMED</i>		
USCS Classification: LEAN CLAY WITH SAND		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-015

Boring No.: B-4
 Depth (ft): 13.5-15.0
 Sample No.: SS-4
 Soil Color: Gray / Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	100.00	Gravel	0.00	0.00
0.05	70.98	Sand	29.02	29.02
0.002	17.35	Silt	53.63	53.63
		Clay	17.35	17.35
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	13.5-15.0
Project No.:	2015-485-004	Sample No.:	SS-4
Lab ID:	2015-485-004-015	Soil Color:	Gray / Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	2343	Tare No.	NA
Weight of Tare & Wet Sample (g)	497.30	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	409.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	93.48	Weight of Tare (g)	NA
Weight of Water (g)	88.00	Weight of Water (g)	NA
Weight of Dry Sample (g)	315.82	Weight of Dry Sample (g)	NA
Moisture Content (%)	27.9	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	315.82
Dry Weight of -3/4" Sample (g)	57.40	Weight of - #200 Material (g)	258.42
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	57.40
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.49	0.16	0.16	99.84	99.84
#40	0.425	1.75	0.55	0.71	99.29	99.29
#60	0.250	7.33	2.32	3.03	96.97	96.97
#140	0.106	31.42	9.95	12.98	87.02	87.02
#200	0.075	16.41	5.20	18.17	81.83	81.83
Pan	-	258.42	81.83	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	13.5-15.0
Project No.:	2015-485-004	Sample No.:	SS-4
Lab ID:	2015-485-004-015	Soil Color:	Gray / Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	39.5	20.7	6.83	32.7	69.5	0.01333	0.0295	56.9
5	31.5	20.7	6.83	24.7	52.5	0.01333	0.0199	43.0
20	22.5	20.7	6.83	15.7	33.4	0.01333	0.0106	27.3
30	20.5	20.7	6.83	13.7	29.1	0.01333	0.0088	23.8
60	19.5	21.1	6.68	12.8	27.3	0.01327	0.0062	22.3
250	17.0	22.1	6.33	10.7	22.7	0.01311	0.0030	18.6
1440	15.5	22.2	6.29	9.2	19.6	0.01310	0.0013	16.0

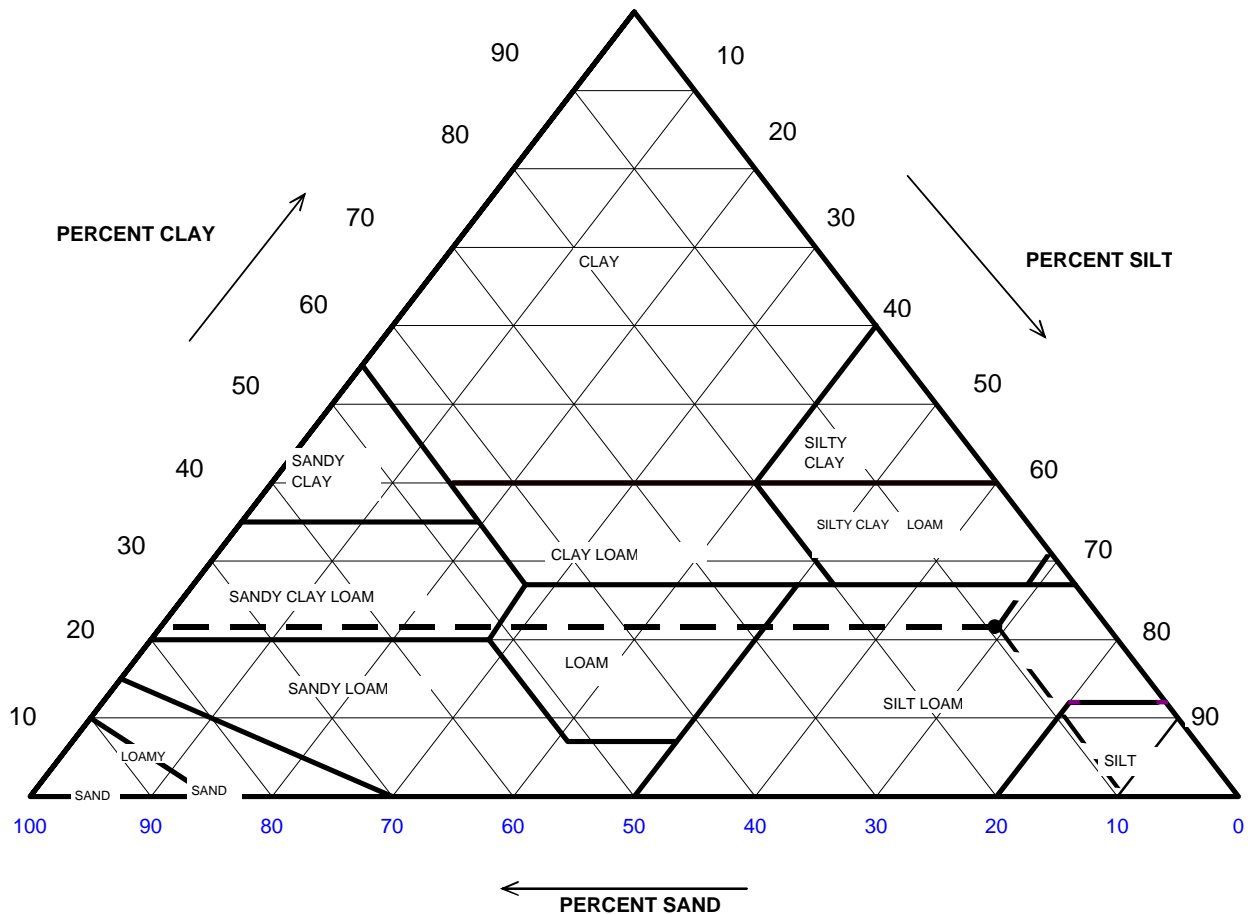
Soil Specimen Data	Other Corrections	
Tare No.	644	
Weight of Tare & Dry Material (g)	151.17	
Weight of Tare (g)	99.66	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	46.5	
	a - Factor	0.99
	Percent Finer than # 200	81.83
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	10/12/15	Checked By	KC	Date	10/14/15
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USDA CLASSIFICATION CHART

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.2-31.7
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-016	Soil Color:	Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.77	Gravel	0.23	0.00
0.05	90.46	Sand	9.31	9.33
0.002	21.58	Silt	68.88	69.04
		Clay	21.58	21.63
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.2-31.7
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-016	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1445	Tare No.	NA
Weight of Tare & Wet Sample (g)	741.60	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	553.20	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	146.37	Weight of Tare (g)	NA
Weight of Water (g)	188.40	Weight of Water (g)	NA
Weight of Dry Sample (g)	406.83	Weight of Dry Sample (g)	NA
Moisture Content (%)	46.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	406.83
Dry Weight of -3/4" Sample (g)	3.71	Weight of - #200 Material (g)	403.12
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	3.71
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.14	0.03	0.03	99.97	99.97
#10	2.00	0.79	0.19	0.23	99.77	99.77
#20	0.85	1.13	0.28	0.51	99.49	99.49
#40	0.425	0.32	0.08	0.59	99.41	99.41
#60	0.250	0.17	0.04	0.63	99.37	99.37
#140	0.106	0.35	0.09	0.71	99.29	99.29
#200	0.075	0.81	0.20	0.91	99.09	99.09
Pan	-	403.12	99.09	100.00	-	-

Tested By **AMC** Date **9/30/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.2-31.7
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-016	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	39.5	23.4	5.86	33.6	79.3	0.01291	0.0286	78.6
5	32.0	23.4	5.86	26.1	61.6	0.01291	0.0192	61.1
15	25.5	23.4	5.86	19.6	46.3	0.01291	0.0116	45.9
30	22.0	23.4	5.86	16.1	38.1	0.01291	0.0084	37.7
60	19.5	23.3	5.89	13.6	32.1	0.01293	0.0060	31.8
250	16.0	22.9	6.04	10.0	23.5	0.01299	0.0030	23.3
1440	14.5	22.9	6.04	8.5	20.0	0.01299	0.0013	19.8

Soil Specimen Data	Other Corrections	
Tare No.	949	
Weight of Tare & Dry Material (g)	144.21	
Weight of Tare (g)	97.22	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	42.0	
	a - Factor	0.99
	Percent Finer than # 200	99.09
	Specific Gravity	2.7 Assumed

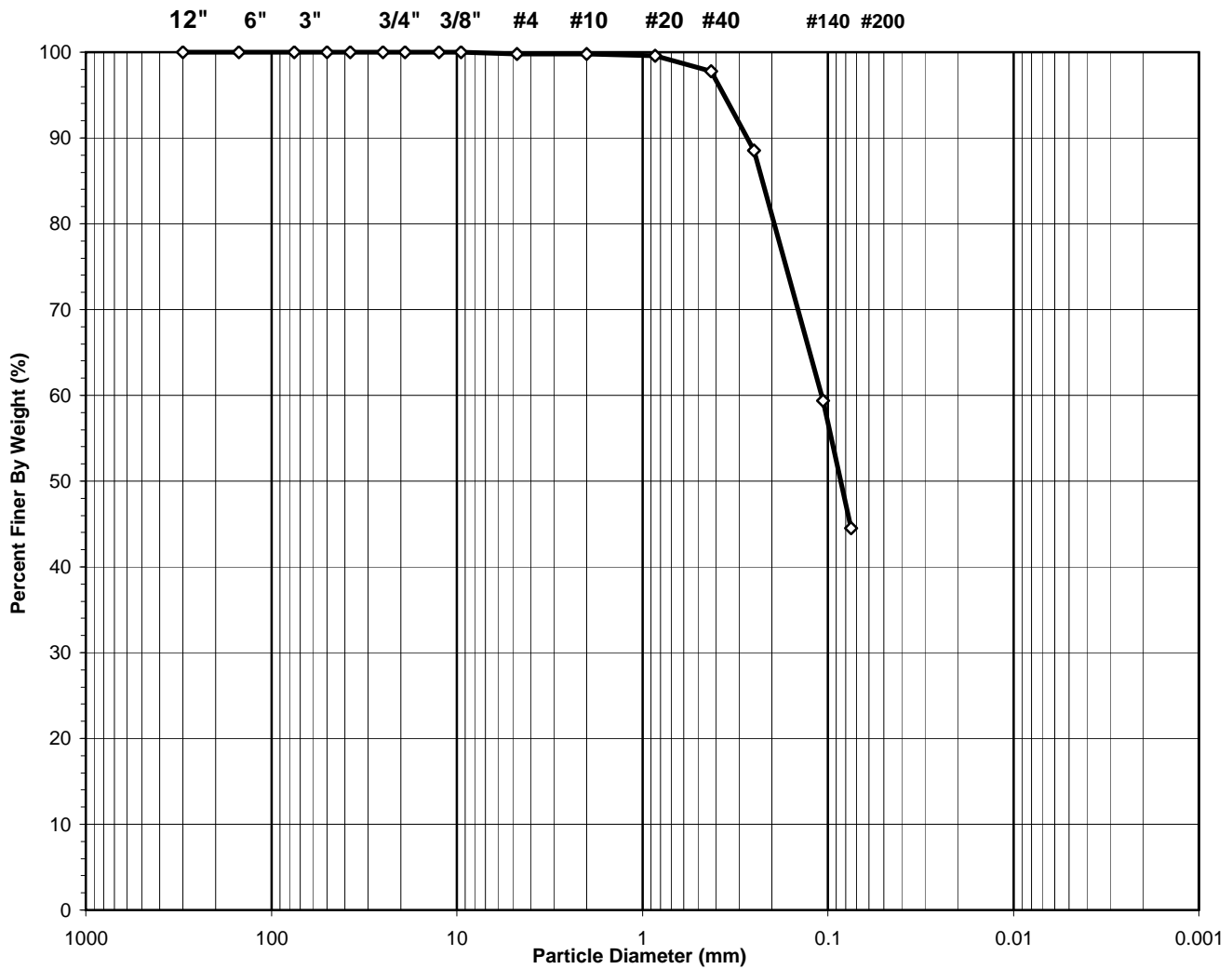
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	9/30/15	Checked By	KC	Date	10/14/15
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SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-004	Sample No.:	SS-11
Lab ID:	2015-485-004-018	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-004	Sample No.:	SS-11
Lab ID:	2015-485-004-018	Soil Color:	Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	301	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	655.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	523.00	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	105.97	Weight of Tare (g):	NA
Weight of Water (g):	132.70	Weight of Water (g):	NA
Weight of Dry Sample (g):	417.03	Weight of Dry Sample (g):	NA
Moisture Content (%):	31.8	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	417.03
Dry Weight of - 3/4" Sample (g):	231.4	Weight of - #200 Material (g):	185.64
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	231.39
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.88	0.21	0.21	99.79	99.79
#10	2.00	0.09	0.02	0.23	99.77	99.77
#20	0.850	0.90	0.22	0.45	99.55	99.55
#40	0.425	7.35	1.76	2.21	97.79	97.79
#60	0.250	38.63	9.26	11.47	88.53	88.53
#140	0.106	121.70	29.18	40.66	59.34	59.34
#200	0.075	61.84	14.83	55.49	44.51	44.51
Pan	-	185.64	44.51	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	53.5-55.0
Project No.:	2015-485-004	Sample No.:	SS-12
Lab ID:	2015-485-004-019	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-4
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	53.5-55.0
Project No.:	2015-485-004	Sample No.:	SS-12
Lab ID:	2015-485-004-019	Soil Color:	Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	929	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	694.40	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	605.10	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	100.14	Weight of Tare (g):	NA
Weight of Water (g):	89.30	Weight of Water (g):	NA
Weight of Dry Sample (g):	504.96	Weight of Dry Sample (g):	NA
Moisture Content (%):	17.7	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	504.96
Dry Weight of - 3/4" Sample (g):	390.6	Weight of - #200 Material (g):	114.38
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	390.58
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.57	0.11	0.11	99.89	99.89
#20	0.850	2.41	0.48	0.59	99.41	99.41
#40	0.425	12.04	2.38	2.97	97.03	97.03
#60	0.250	67.76	13.42	16.39	83.61	83.61
#140	0.106	230.47	45.64	62.03	37.97	37.97
#200	0.075	77.33	15.31	77.35	22.65	22.65
Pan	-	114.38	22.65	100.00	-	-

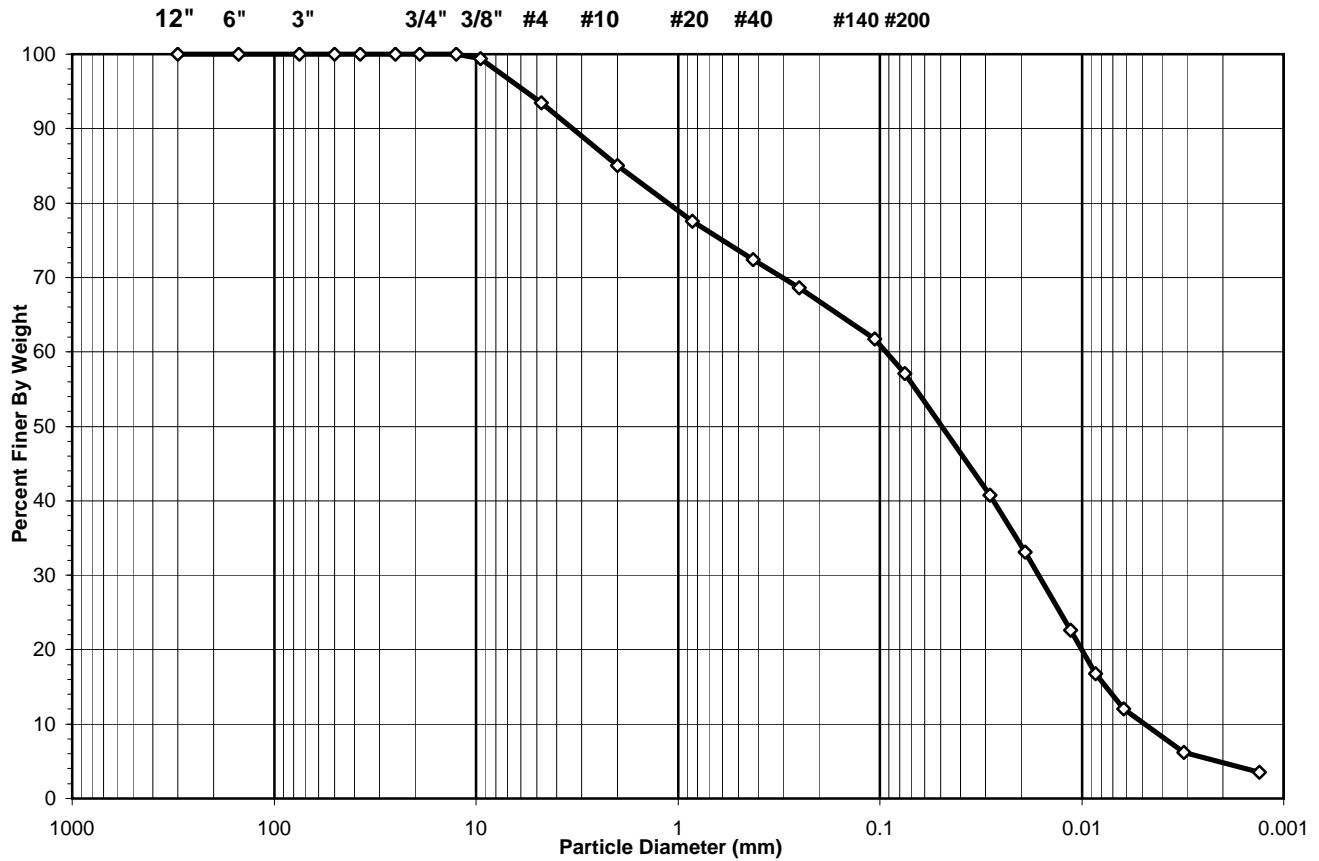
Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-020	Soil Color:	Gray

USCS USDA	SIEVE ANALYSIS						HYDROMETER	
	cobble	gravel		sand		silt and clay fraction		
	cobble	gravel		sand		silt	clay	

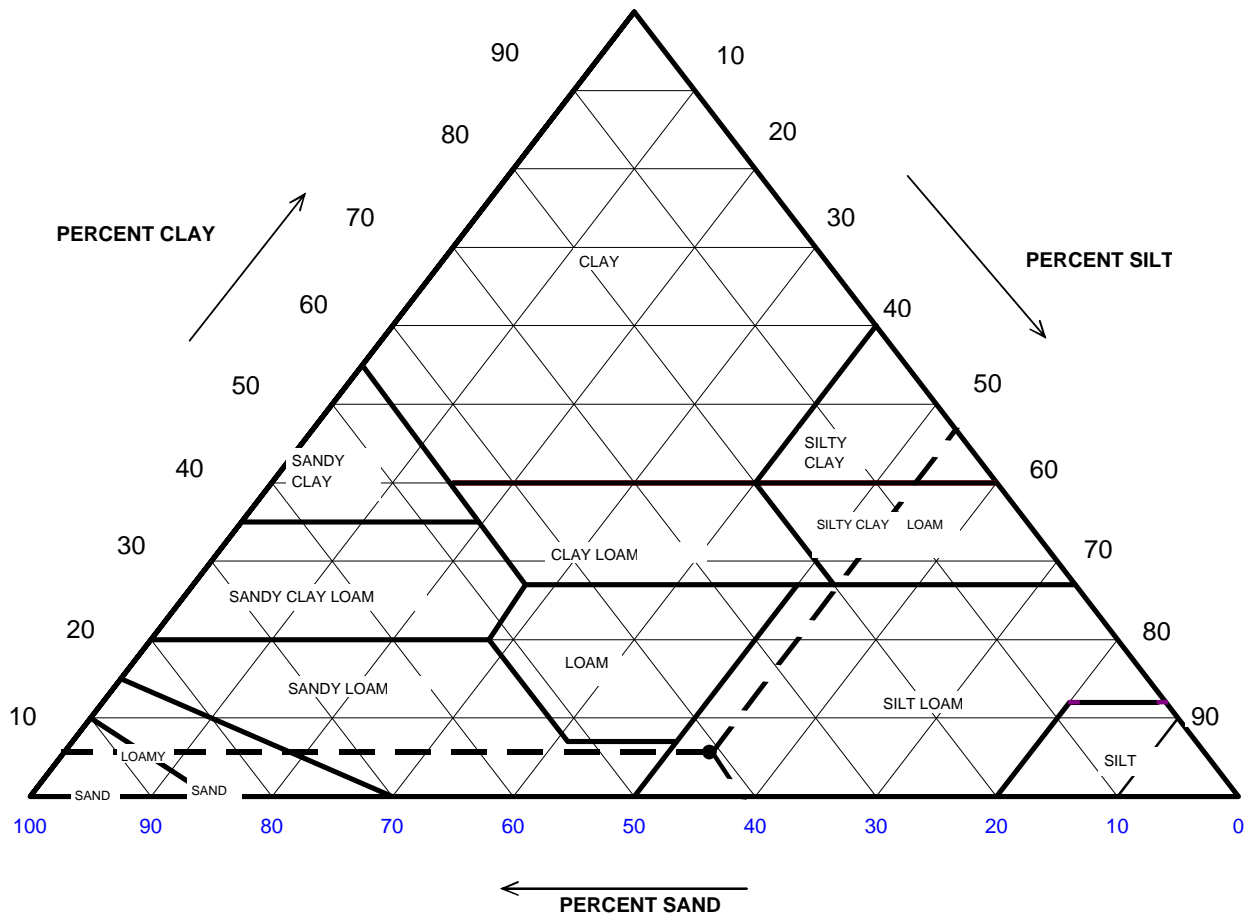


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	6.55
#4 To #200	<i>Sand</i>	36.36
Finer Than #200	<i>Silt & Clay</i>	57.09
USCS Symbol: <i>ml, ASSUMED</i>		
USCS Classification: SANDY SILT		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-020

Boring No.: B-5
 Depth (ft): 6.0-7.5
 Sample No.: SS-3
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	85.01	Gravel	14.99	0.00
0.05	50.21	Sand	34.80	40.93
0.002	4.82	Silt	45.40	53.40
		Clay	4.82	5.66
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-020	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	889	Tare No.	NA
Weight of Tare & Wet Sample (g)	470.70	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	399.92	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	100.62	Weight of Tare (g)	NA
Weight of Water (g)	70.78	Weight of Water (g)	NA
Weight of Dry Sample (g)	299.30	Weight of Dry Sample (g)	NA
Moisture Content (%)	23.6	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	299.30
Dry Weight of -3/4" Sample (g)	128.44	Weight of - #200 Material (g)	170.86
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	128.44
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	1.92	0.64	0.64		99.36	99.36
#4	4.75	17.69	5.91	6.55		93.45	93.45
#10	2.00	25.25	8.44	14.99		85.01	85.01
#20	0.85	22.24	7.43	22.42		77.58	77.58
#40	0.425	15.42	5.15	27.57		72.43	72.43
#60	0.250	11.29	3.77	31.34		68.66	68.66
#140	0.106	20.75	6.93	38.28		61.72	61.72
#200	0.075	13.88	4.64	42.91		57.09	57.09
Pan	-	170.86	57.09	100.00		-	-

Tested By **RAL** Date **10/8/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-020	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	41.0	22.5	6.18	34.8	71.3	0.01305	0.0286	40.7
5	34.5	22.5	6.18	28.3	58.0	0.01305	0.0190	33.1
16	25.5	22.5	6.18	19.3	39.6	0.01305	0.0114	22.6
30	20.5	22.5	6.18	14.3	29.3	0.01305	0.0086	16.7
60	16.5	22.4	6.22	10.3	21.1	0.01307	0.0062	12.0
250	11.5	22.5	6.18	5.3	10.9	0.01305	0.0031	6.2
1440	9.0	23	6.00	3.0	6.1	0.01297	0.0013	3.5

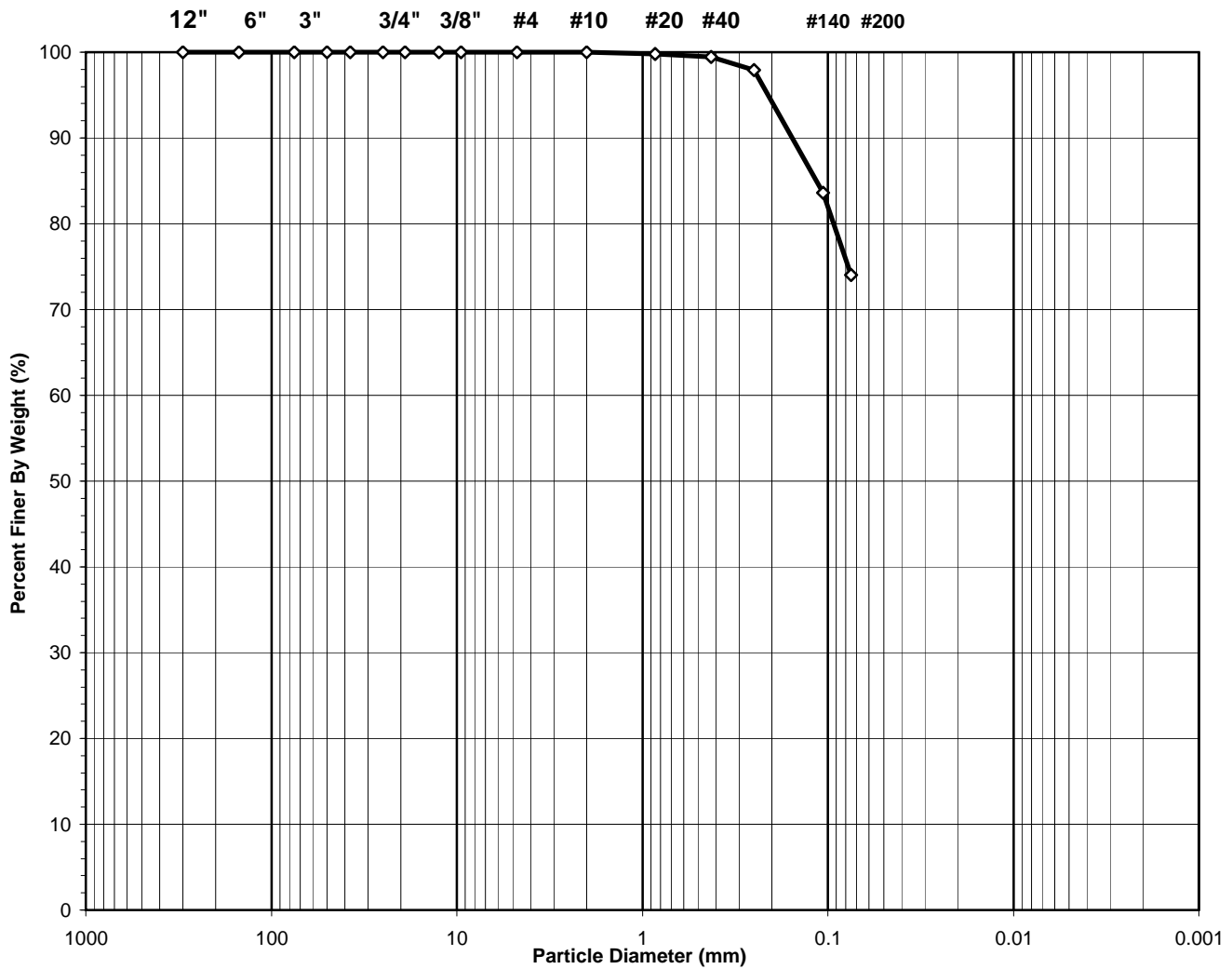
Soil Specimen Data	Other Corrections	
Tare No.	925	
Weight of Tare & Dry Material (g)	153.10	
Weight of Tare (g)	99.77	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	48.3	
	a - Factor	0.99
	Percent Finer than # 200	57.09
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	38.5-40.0
Project No.:	2015-485-004	Sample No.:	SS-10
Lab ID:	2015-485-004-021	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
CL-ML, TESTED

USCS Classification:
SILTY CLAY WITH SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	38.5-40.0
Project No.:	2015-485-004	Sample No.:	SS-10
Lab ID:	2015-485-004-021	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	503	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	659.90	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	544.20	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	93.31	Weight of Tare (g):	NA
Weight of Water (g):	115.70	Weight of Water (g):	NA
Weight of Dry Sample (g):	450.89	Weight of Dry Sample (g):	NA
Moisture Content (%):	25.7	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	450.89
Dry Weight of - 3/4" Sample (g):	117.0	Weight of - #200 Material (g):	333.94
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	116.95
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.12	0.03	0.03	99.97	99.97
#20	0.850	0.77	0.17	0.20	99.80	99.80
#40	0.425	1.63	0.36	0.56	99.44	99.44
#60	0.250	6.85	1.52	2.08	97.92	97.92
#140	0.106	64.39	14.28	16.36	83.64	83.64
#200	0.075	43.19	9.58	25.94	74.06	74.06
Pan	-	333.94	74.06	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	55.0-55.5
Project No.:	2015-485-004	Sample No.:	ST-5
Lab ID:	2015-485-004-022	Soil Color:	Gray

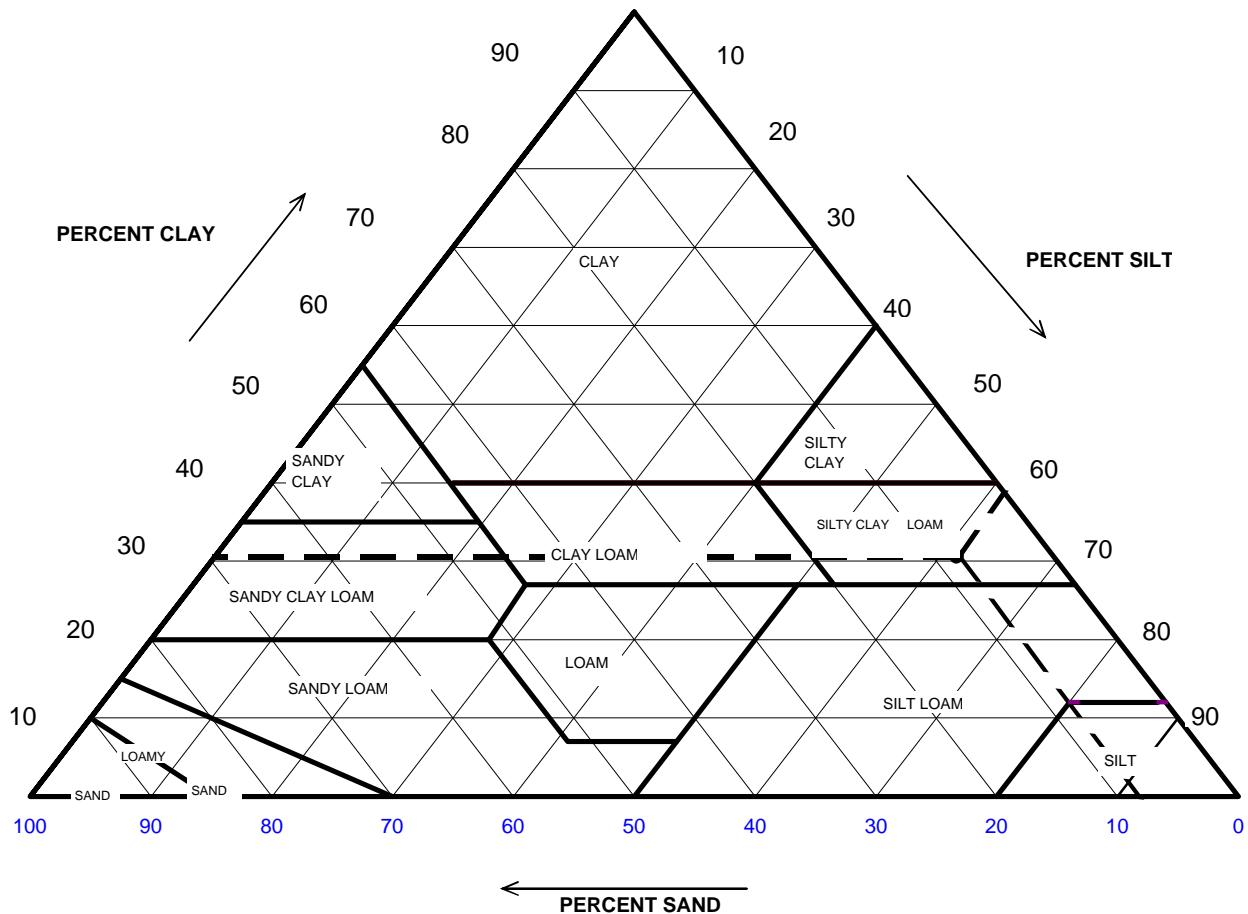
USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobles	gravel		sand		silt and clay fraction	
	cobles	gravel		sand		silt	clay



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	1.68
Finer Than #200	<i>Silt & Clay</i>	98.32
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	55.0-55.5
Project No.:	2015-485-004	Sample No.:	ST-5
Lab ID:	2015-485-004-022	Soil Color:	Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.99	Gravel	0.01	0.00
0.05	91.96	Sand	8.03	8.03
0.002	30.56	Silt	61.40	61.41
		Clay	30.56	30.56
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	55.0-55.5
Project No.:	2015-485-004	Sample No.:	ST-5
Lab ID:	2015-485-004-022	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	2324	Tare No.	NA
Weight of Tare & Wet Sample (g)	551.05	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	415.03	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	97.71	Weight of Tare (g)	NA
Weight of Water (g)	136.02	Weight of Water (g)	NA
Weight of Dry Sample (g)	317.32	Weight of Dry Sample (g)	NA
Moisture Content (%)	42.9	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	317.32
Dry Weight of -3/4" Sample (g)	5.34	Weight of - #200 Material (g)	311.98
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	5.34
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.04	0.01	0.01		99.99	99.99
#20	0.85	0.03	0.01	0.02		99.98	99.98
#40	0.425	0.07	0.02	0.04		99.96	99.96
#60	0.250	0.10	0.03	0.08		99.92	99.92
#140	0.106	1.06	0.33	0.41		99.59	99.59
#200	0.075	4.04	1.27	1.68		98.32	98.32
Pan	-	311.98	98.32	100.00		-	-

Tested By **PC** Date **9/28/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	55.0-55.5
Project No.:	2015-485-004	Sample No.:	ST-5
Lab ID:	2015-485-004-022	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	29.5	22.7	6.11	23.4	86.0	0.01302	0.0312	84.5
5	26.5	22.7	6.11	20.4	75.0	0.01302	0.0201	73.7
16	21.5	22.7	6.11	15.4	56.6	0.01302	0.0116	55.6
32	20.5	22.7	6.11	14.4	52.9	0.01302	0.0083	52.0
71	17.0	22.8	6.07	10.9	40.2	0.01300	0.0057	39.5
250	15.0	22.6	6.15	8.9	32.6	0.01303	0.0031	32.0
1440	14.0	23.1	5.97	8.0	29.5	0.01296	0.0013	29.0

Soil Specimen Data	Other Corrections	
Tare No.	927	
Weight of Tare & Dry Material (g)	129.95	
Weight of Tare (g)	98.02	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	26.9	
	a - Factor	0.99
	Percent Finer than # 200	98.32
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	63.5-65.0
Project No.:	2015-485-004	Sample No.:	SS-15
Lab ID:	2015-485-004-023	Soil Color:	Gray / Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/12/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	63.5-65.0
Project No.:	2015-485-004	Sample No.:	SS-15
Lab ID:	2015-485-004-023	Soil Color:	Gray / Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	958	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	489.50	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	411.20	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	97.44	Weight of Tare (g):	NA
Weight of Water (g):	78.30	Weight of Water (g):	NA
Weight of Dry Sample (g):	313.76	Weight of Dry Sample (g):	NA
Moisture Content (%):	25.0	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	313.76
Dry Weight of - 3/4" Sample (g):	197.6	Weight of - #200 Material (g):	116.14
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	197.62
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

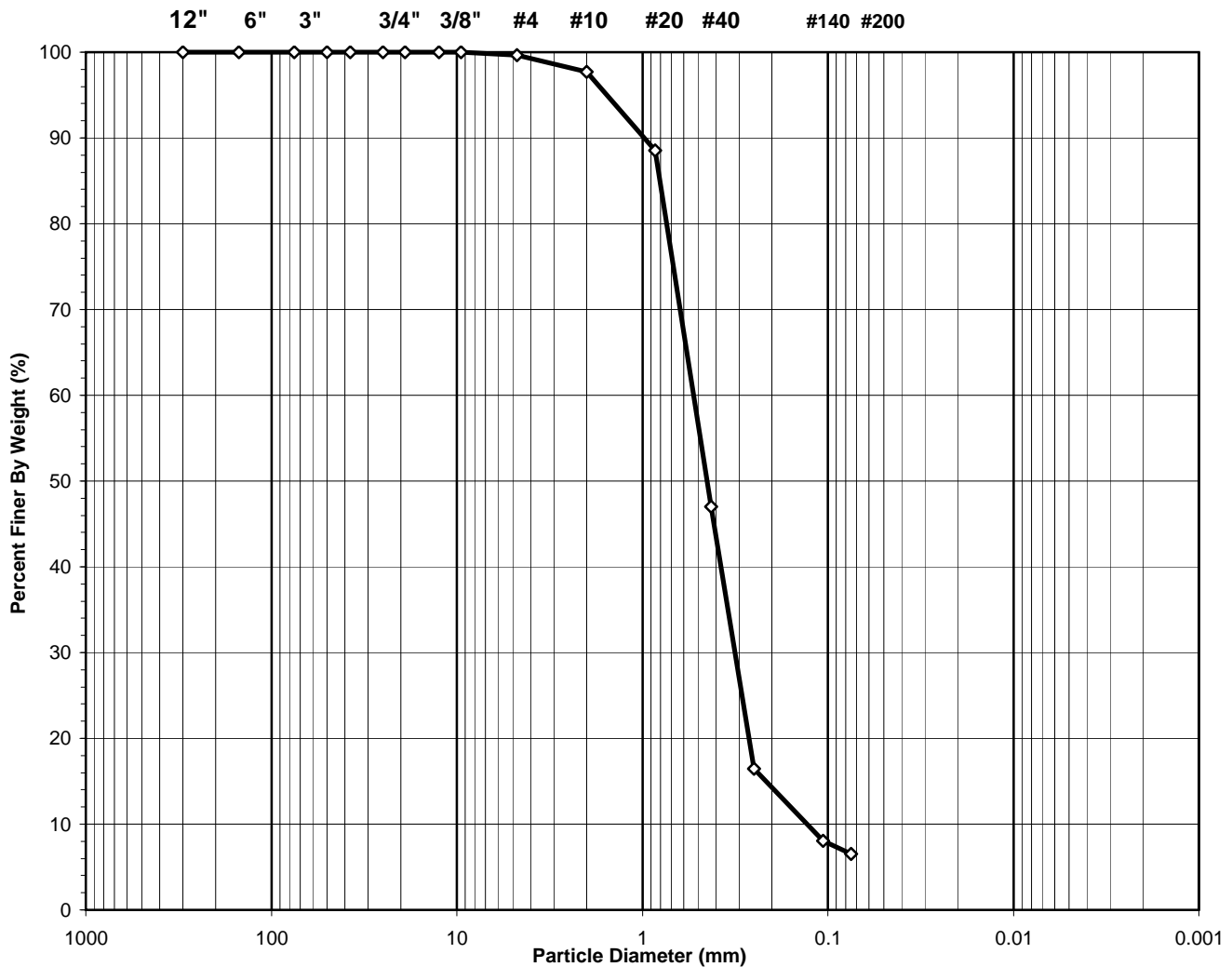
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.01	0.00	0.00	100.00	100.00
#20	0.850	0.11	0.04	0.04	99.96	99.96
#40	0.425	0.20	0.06	0.10	99.90	99.90
#60	0.250	4.89	1.56	1.66	98.34	98.34
#140	0.106	64.46	20.54	22.20	77.80	77.80
#200	0.075	127.95	40.78	62.98	37.02	37.02
Pan	-	116.14	37.02	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/12/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	78.5-80.0
Project No.:	2015-485-004	Sample No.:	SS-18
Lab ID:	2015-485-004-024	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.53 CC = 1.47

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.32 CU = 4.09

D10 = 0.13

Tested By HL Date 10/5/15 Checked By KC Date 10/14/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-5
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	78.5-80.0
Project No.:	2015-485-004	Sample No.:	SS-18
Lab ID:	2015-485-004-024	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1018	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	443.40	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	392.07	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	94.62	Weight of Tare (g):	NA
Weight of Water (g):	51.33	Weight of Water (g):	NA
Weight of Dry Sample (g):	297.45	Weight of Dry Sample (g):	NA
Moisture Content (%):	17.3	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	297.45
Dry Weight of - 3/4" Sample (g):	278.1	Weight of - #200 Material (g):	19.39
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	278.06
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

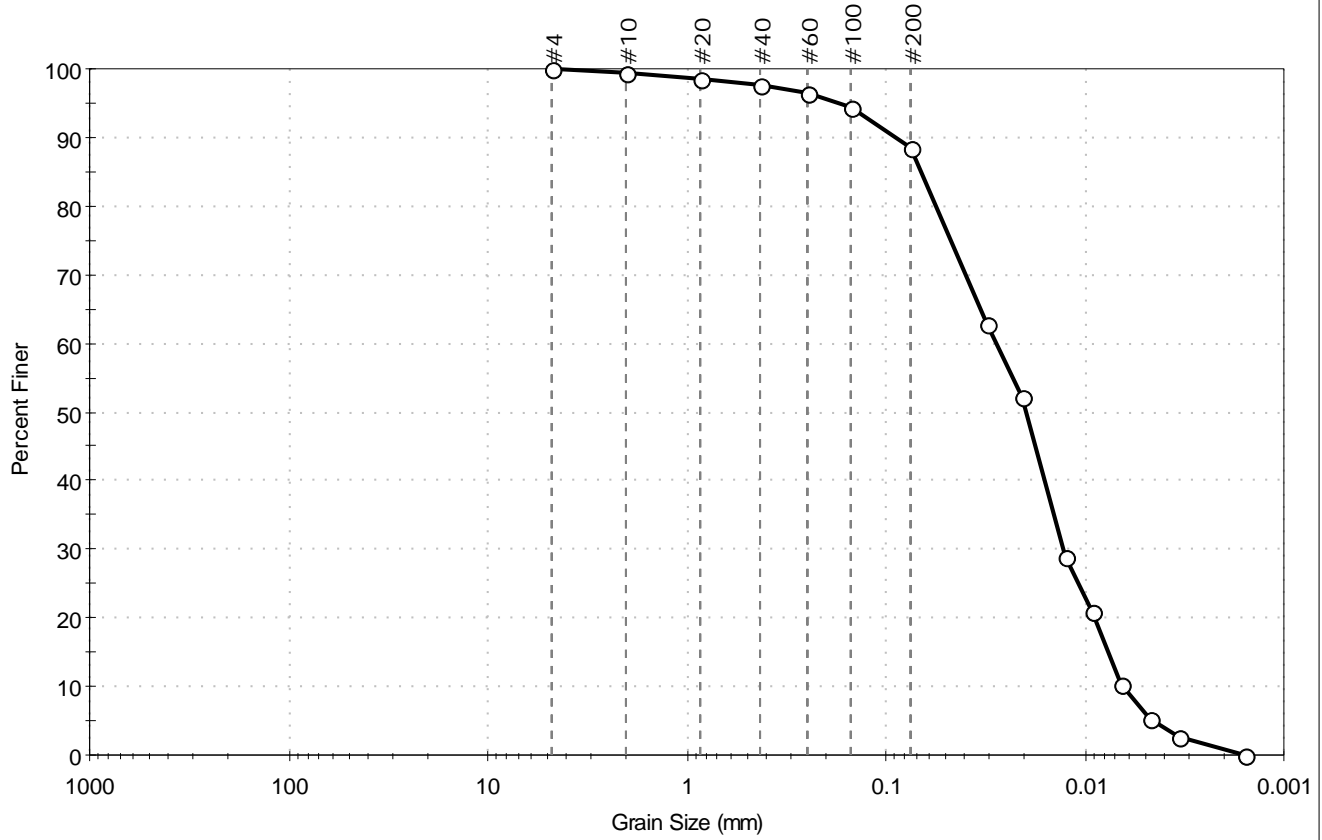
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.06	0.36	0.36	99.64	99.64
#10	2.00	5.78	1.94	2.30	97.70	97.70
#20	0.850	27.26	9.16	11.46	88.54	88.54
#40	0.425	123.61	41.56	53.02	46.98	46.98
#60	0.250	90.69	30.49	83.51	16.49	16.49
#140	0.106	25.03	8.41	91.92	8.08	8.08
#200	0.075	4.63	1.56	93.48	6.52	6.52
Pan	-	19.39	6.52	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/14/15**



Client: AECOM	Project: Dynegy Wood River Power Station		Project No: GTX-303782
Location: Alton, IL	Boring ID: WOR-B006	Sample Type: tube	Tested By: jbr
Sample ID: ST-1 (Top)	Depth: 20-22 ft	Test Date: 12/17/15	Checked By: emm
Test Comment: ---	Visual Description: Moist, gray silt	Test Id: 356847	
Sample Comment: ---			

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	11.4	88.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	99		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.075	89		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0314	63		
---	0.0205	52		
---	0.0127	29		
---	0.0091	21		
---	0.0067	10		
---	0.0047	5		
---	0.0034	3		
---	0.0016	0		

Coefficients

D ₈₅ = 0.0665 mm	D ₃₀ = 0.0130 mm
D ₆₀ = 0.0280 mm	D ₁₅ = 0.0076 mm
D ₅₀ = 0.0196 mm	D ₁₀ = 0.0065 mm
C _u = 4.308	C _c = 0.929

Classification

ASTM	Silt (ML)
AASHTO	Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

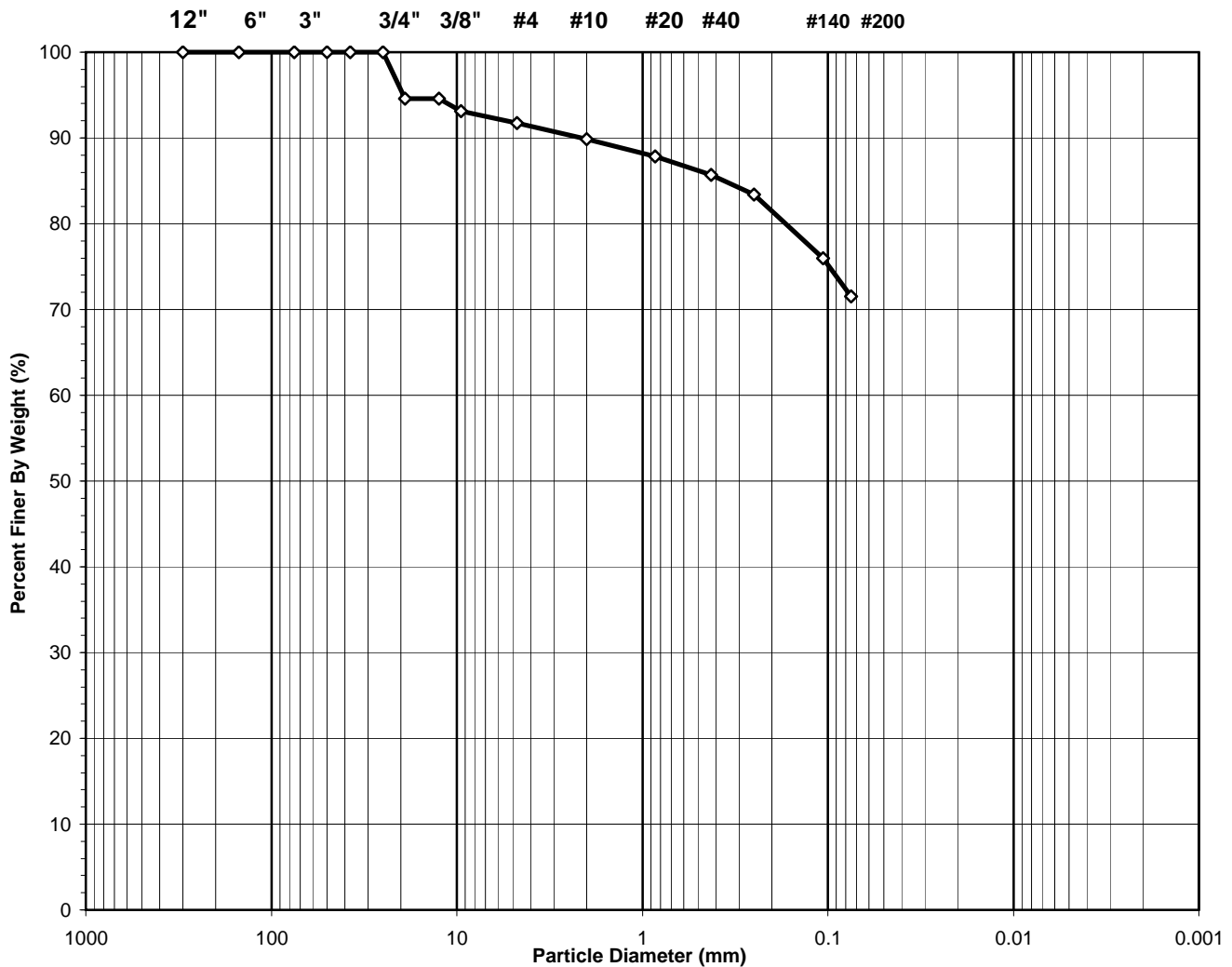
Specific Gravity : 2.65

Separation of Sample: #200 Sieve

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-025	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SILT WITH SAND

Tested By HL Date 10/5/15 Checked By KC Date 10/14/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-004	Sample No.:	SS-3
Lab ID:	2015-485-004-025	Soil Color:	Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	516	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	351.00	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	301.48	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	89.96	Weight of Tare (g):	NA
Weight of Water (g):	49.52	Weight of Water (g):	NA
Weight of Dry Sample (g):	211.52	Weight of Dry Sample (g):	NA
Moisture Content (%):	23.4	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	211.52
Dry Weight of - 3/4" Sample (g):	48.9	Weight of - #200 Material (g):	151.27
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	60.25
Dry Weight of + 3/4" Sample (g):	11.39		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	11.39	5.38	5.38	94.62	94.62
1/2"	12.50	0.00	0.00	5.38	94.62	94.62
3/8"	9.50	3.20	1.51	6.90	93.10	93.10
#4	4.75	2.88	1.36	8.26	91.74	91.74
#10	2.00	3.93	1.86	10.12	89.88	89.88
#20	0.850	4.35	2.06	12.17	87.83	87.83
#40	0.425	4.44	2.10	14.27	85.73	85.73
#60	0.250	4.98	2.35	16.63	83.37	83.37
#140	0.106	15.69	7.42	24.05	75.95	75.95
#200	0.075	9.39	4.44	28.48	71.52	71.52
Pan	-	151.27	71.52	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/14/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.4-31.8
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-026	Soil Color:	Dark Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

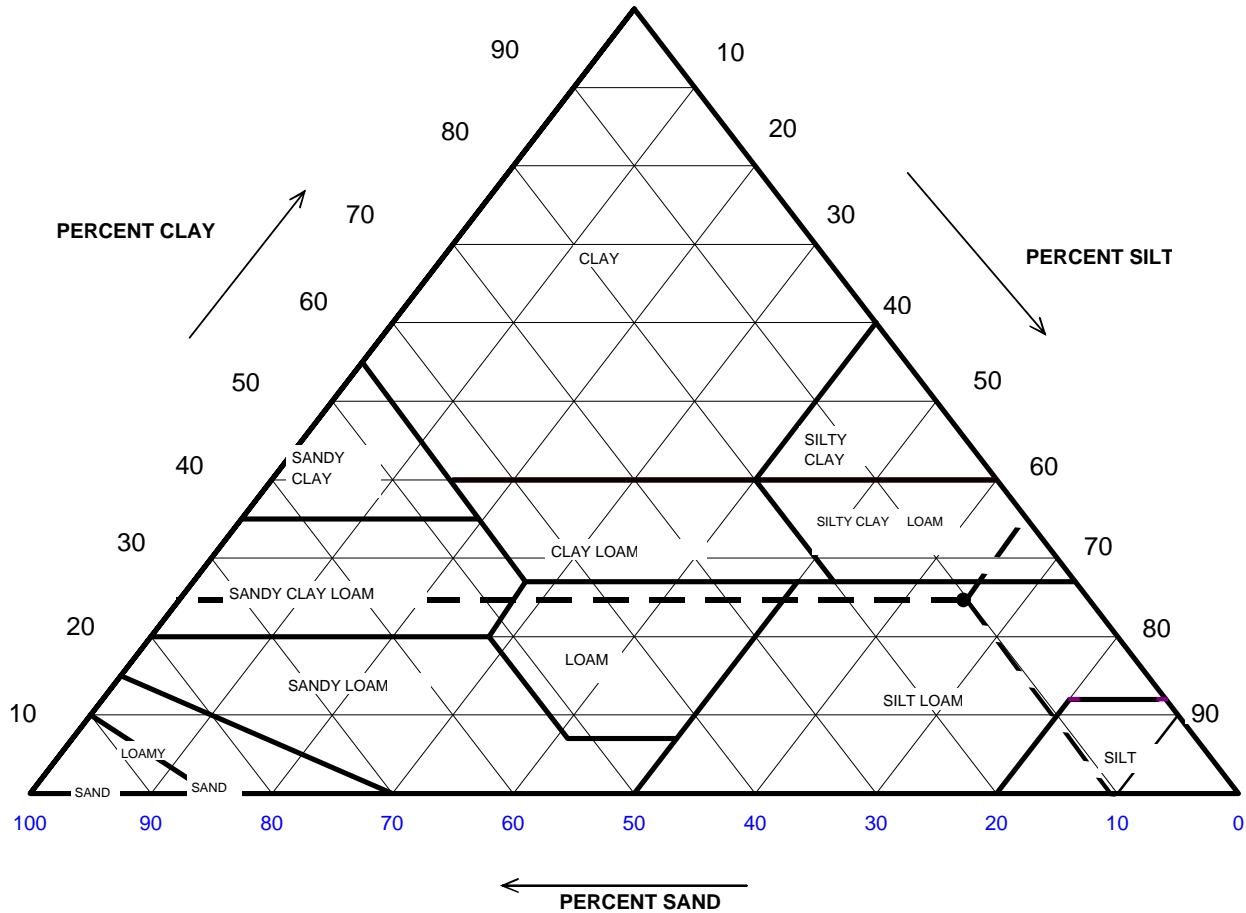


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	2.96
Finer Than #200	<i>Silt & Clay</i>	97.04
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID: 2015-485-004-026

Boring No.: B-6
 Depth (ft): 31.4-31.8
 Sample No.: ST-2
 Soil Color: Dark Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	100.00	Gravel	0.00	0.00
0.05	89.59	Sand	10.41	10.41
0.002	24.66	Silt	64.93	64.93
		Clay	24.66	24.66
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.4-31.8
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-026	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1428	Tare No.	NA
Weight of Tare & Wet Sample (g)	916.18	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	776.80	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.62	Weight of Tare (g)	NA
Weight of Water (g)	139.38	Weight of Water (g)	NA
Weight of Dry Sample (g)	631.18	Weight of Dry Sample (g)	NA
Moisture Content (%)	22.1	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	631.18
Dry Weight of -3/4" Sample (g)	18.69	Weight of - #200 Material (g)	612.49
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	18.69
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.00	0.00	0.00		100.00	100.00
#20	0.85	0.32	0.05	0.05		99.95	99.95
#40	0.425	0.68	0.11	0.16		99.84	99.84
#60	0.250	0.97	0.15	0.31		99.69	99.69
#140	0.106	7.64	1.21	1.52		98.48	98.48
#200	0.075	9.08	1.44	2.96		97.04	97.04
Pan	-	612.49	97.04	100.00		-	-

Tested By **AMC** Date **9/30/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.4-31.8
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID:	2015-485-004-026	Soil Color:	Dark Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	46.5	23.4	5.86	40.6	80.6	0.01291	0.0269	78.2
5	39.5	23.4	5.86	33.6	66.7	0.01291	0.0181	64.7
15	32.0	23.4	5.86	26.1	51.8	0.01291	0.0111	50.3
30	27.5	23.4	5.86	21.6	42.9	0.01291	0.0081	41.6
60	24.0	23.3	5.89	18.1	35.9	0.01293	0.0059	34.8
250	20.0	22.9	6.04	14.0	27.7	0.01299	0.0030	26.9
1440	17.5	22.9	6.04	11.5	22.7	0.01299	0.0013	22.1

Soil Specimen Data	Other Corrections	
Tare No.	690	
Weight of Tare & Dry Material (g)	150.15	
Weight of Tare (g)	95.22	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	49.9	
	a - Factor	0.99
	Percent Finer than # 200	97.04
	Specific Gravity	2.7 Assumed

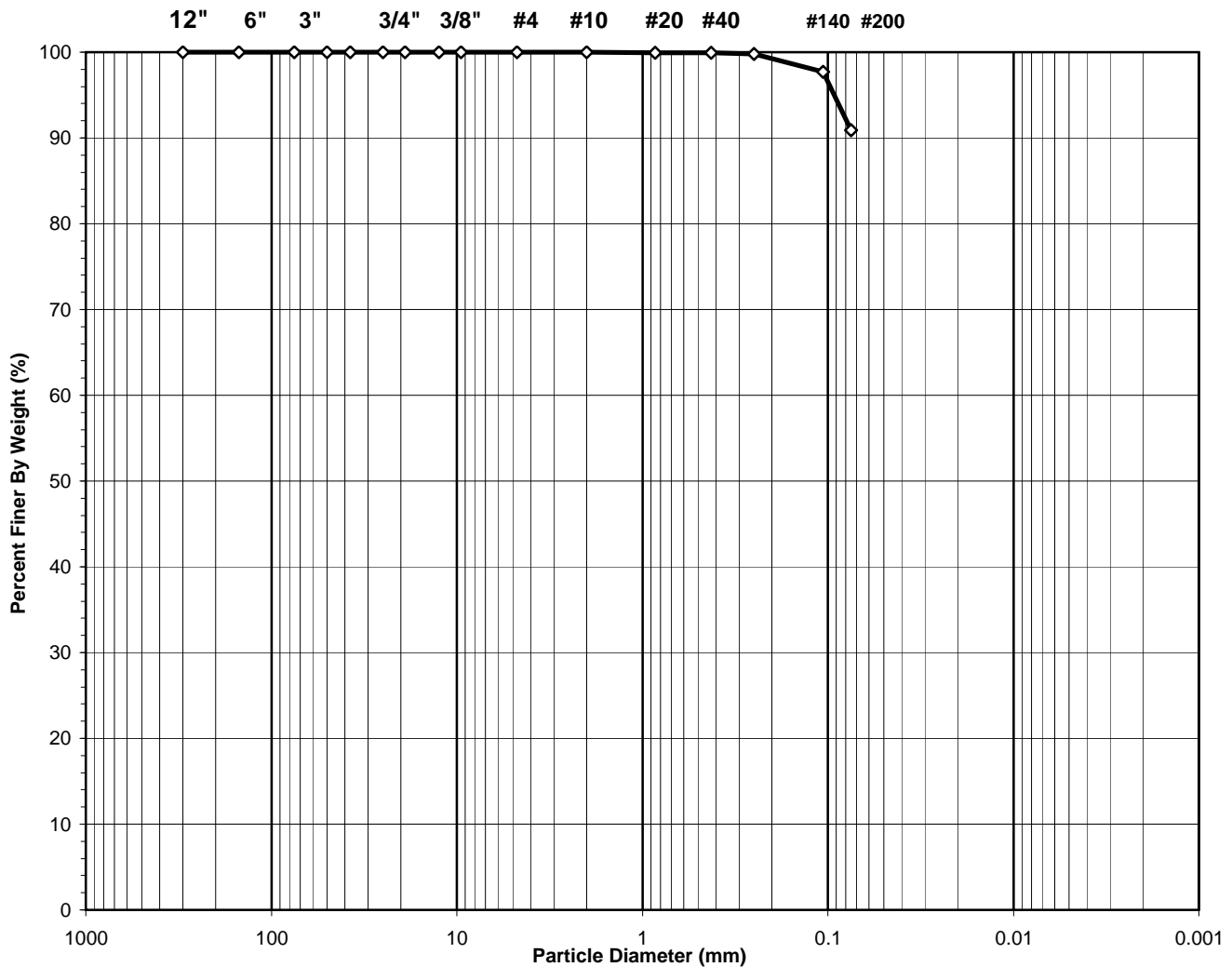
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	9/30/15	Checked By	KC	Date	10/14/15
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SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	43.5-45.0
Project No.:	2015-485-004	Sample No.:	SS-13
Lab ID:	2015-485-004-027	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SILT

Tested By HL Date 10/5/15 Checked By KC Date 10/14/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	43.5-45.0
Project No.:	2015-485-004	Sample No.:	SS-13
Lab ID:	2015-485-004-027	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	923	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	519.10	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	413.30	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	99.21	Weight of Tare (g):	NA
Weight of Water (g):	105.80	Weight of Water (g):	NA
Weight of Dry Sample (g):	314.09	Weight of Dry Sample (g):	NA
Moisture Content (%):	33.7	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	314.09
Dry Weight of - 3/4" Sample (g):	28.5	Weight of - #200 Material (g):	285.61
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	28.48
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

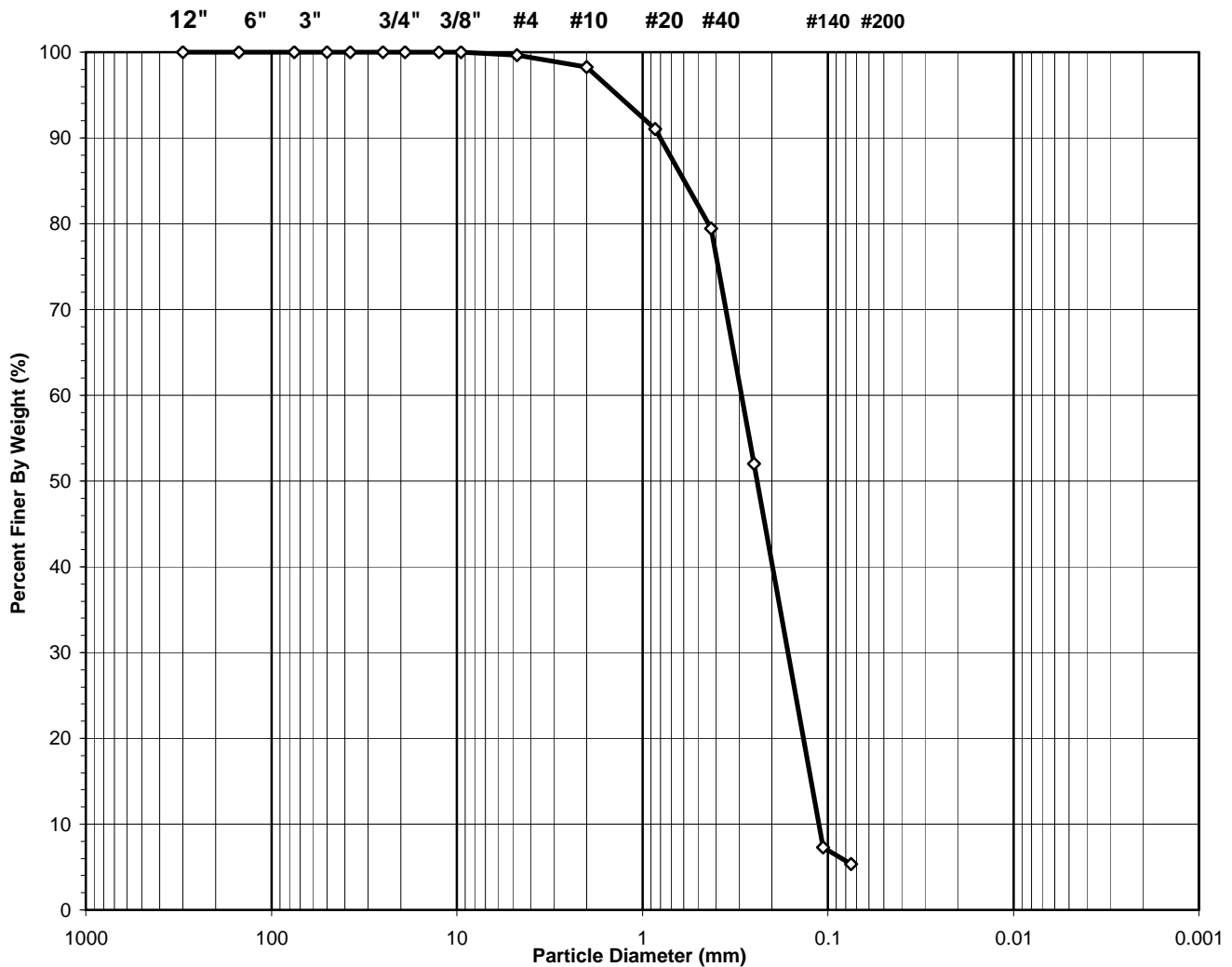
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.850	0.11	0.04	0.04	99.96	99.96
#40	0.425	0.21	0.07	0.10	99.90	99.90
#60	0.250	0.30	0.10	0.20	99.80	99.80
#140	0.106	6.51	2.07	2.27	97.73	97.73
#200	0.075	21.35	6.80	9.07	90.93	90.93
Pan	-	285.61	90.93	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/14/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	53.5-55.0
Project No.:	2015-485-004	Sample No.:	SS-15
Lab ID:	2015-485-004-028	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.29 CC = 0.82

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.16 CU = 2.61

D10 = 0.11

Tested By HL Date 10/5/15 Checked By KC Date 10/14/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-6
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	53.5-55.0
Project No.:	2015-485-004	Sample No.:	SS-15
Lab ID:	2015-485-004-028	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	664	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	453.20	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	387.73	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	95.38	Weight of Tare (g):	NA
Weight of Water (g):	65.47	Weight of Water (g):	NA
Weight of Dry Sample (g):	292.35	Weight of Dry Sample (g):	NA
Moisture Content (%):	22.4	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	292.35
Dry Weight of - 3/4" Sample (g):	276.7	Weight of - #200 Material (g):	15.61
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	276.74
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.00	0.34	0.34	99.66	99.66
#10	2.00	4.11	1.41	1.75	98.25	98.25
#20	0.850	21.05	7.20	8.95	91.05	91.05
#40	0.425	33.86	11.58	20.53	79.47	79.47
#60	0.250	80.27	27.46	47.99	52.01	52.01
#140	0.106	130.70	44.71	92.69	7.31	7.31
#200	0.075	5.75	1.97	94.66	5.34	5.34
Pan	-	15.61	5.34	100.00	-	-

Tested By **HL** Date **10/5/15** Checked By **KC** Date **10/14/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-001

Boring No.: WOR-B009
 Depth (ft): 9.4-9.9
 Sample No.: ST-2
 Soil Color: Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

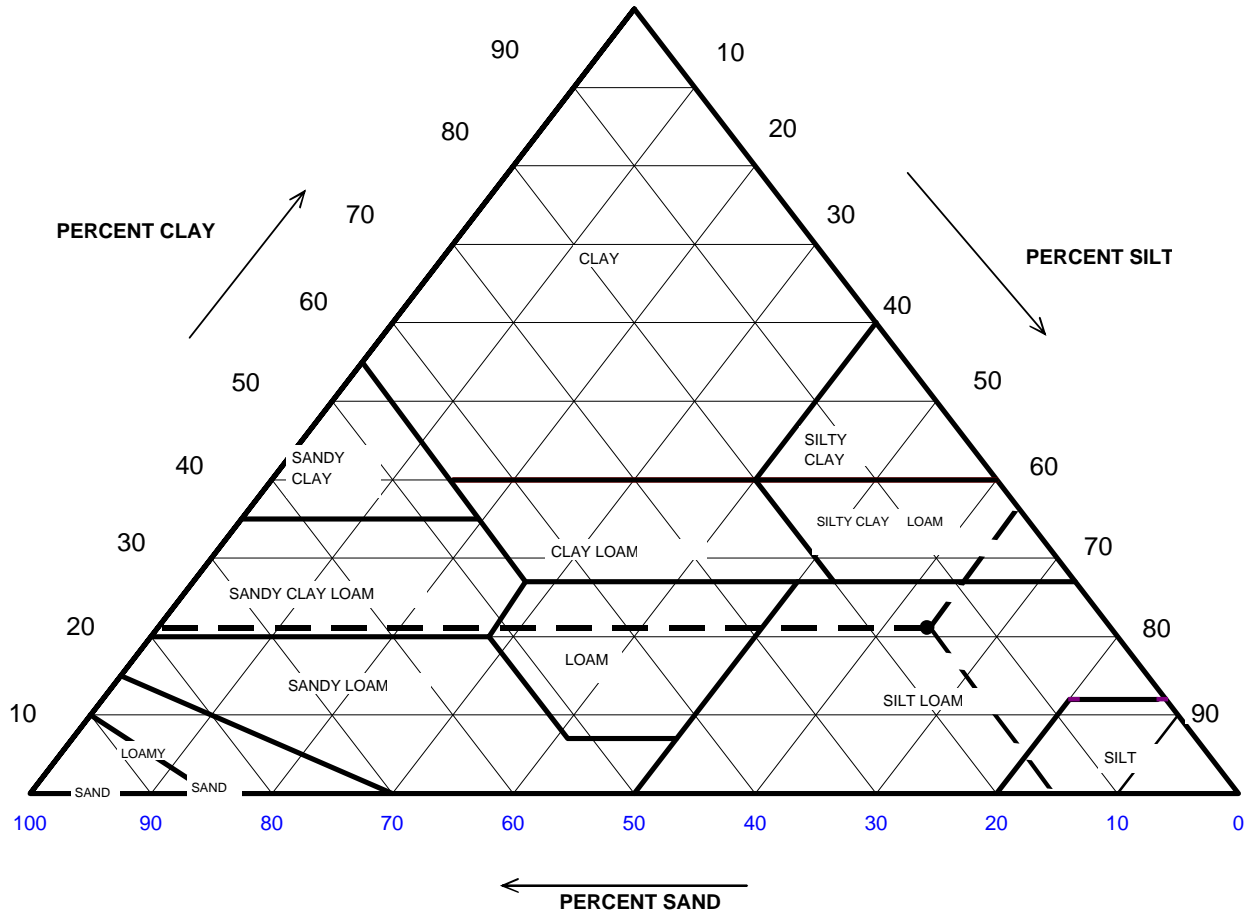


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	6.03
Finer Than #200	<i>Silt & Clay</i>	93.97
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-001

Boring No.: WOR-B009
 Depth (ft): 9.4-9.9
 Sample No.: ST-2
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.97	Gravel	0.03	0.00
0.05	84.81	Sand	15.16	15.16
0.002	21.11	Silt	63.71	63.73
		Clay	21.11	21.11
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B009
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	9.4-9.9
Project No.:	2015-485-007	Sample No.:	ST-2
Lab ID:	2015-485-007-001	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1464	Tare No.	NA
Weight of Tare & Wet Sample (g)	1196.43	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	1035.40	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.16	Weight of Tare (g)	NA
Weight of Water (g)	161.03	Weight of Water (g)	NA
Weight of Dry Sample (g)	890.24	Weight of Dry Sample (g)	NA
Moisture Content (%)	18.1	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	890.24
Dry Weight of -3/4" Sample (g)	53.72	Weight of - #200 Material (g)	836.52
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	53.72
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.01	0.00	0.00	100.00	100.00
#10	2.00	0.27	0.03	0.03	99.97	99.97
#20	0.85	1.35	0.15	0.18	99.82	99.82
#40	0.425	1.96	0.22	0.40	99.60	99.60
#60	0.250	2.58	0.29	0.69	99.31	99.31
#140	0.106	24.10	2.71	3.40	96.60	96.60
#200	0.075	23.45	2.63	6.03	93.97	93.97
Pan	-	836.52	93.97	100.00	-	-

Tested By **HL** Date **11/9/15** Checked By **KC** Date **11/11/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B009
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	9.4-9.9
Project No.:	2015-485-007	Sample No.:	ST-2
Lab ID:	2015-485-007-001	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	40.0	21.6	6.50	33.5	77.3	0.01319	0.0291	72.6
5	33.0	21.6	6.50	26.5	61.1	0.01319	0.0195	57.4
15	25.0	21.6	6.50	18.5	42.7	0.01319	0.0119	40.1
30	22.0	21.6	6.50	15.5	35.7	0.01319	0.0086	33.6
60	19.0	21.9	6.40	12.6	29.1	0.01314	0.0062	27.3
250	17.0	22.2	6.29	10.7	24.7	0.01310	0.0030	23.2
1440	15.0	22.2	6.29	8.7	20.1	0.01310	0.0013	18.9

Soil Specimen Data	Other Corrections	
Tare No.	301	
Weight of Tare & Dry Material (g)	153.91	
Weight of Tare (g)	105.99	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	42.9	
	a - Factor	0.99
	Percent Finer than # 200	93.97
	Specific Gravity	2.7 Assumed

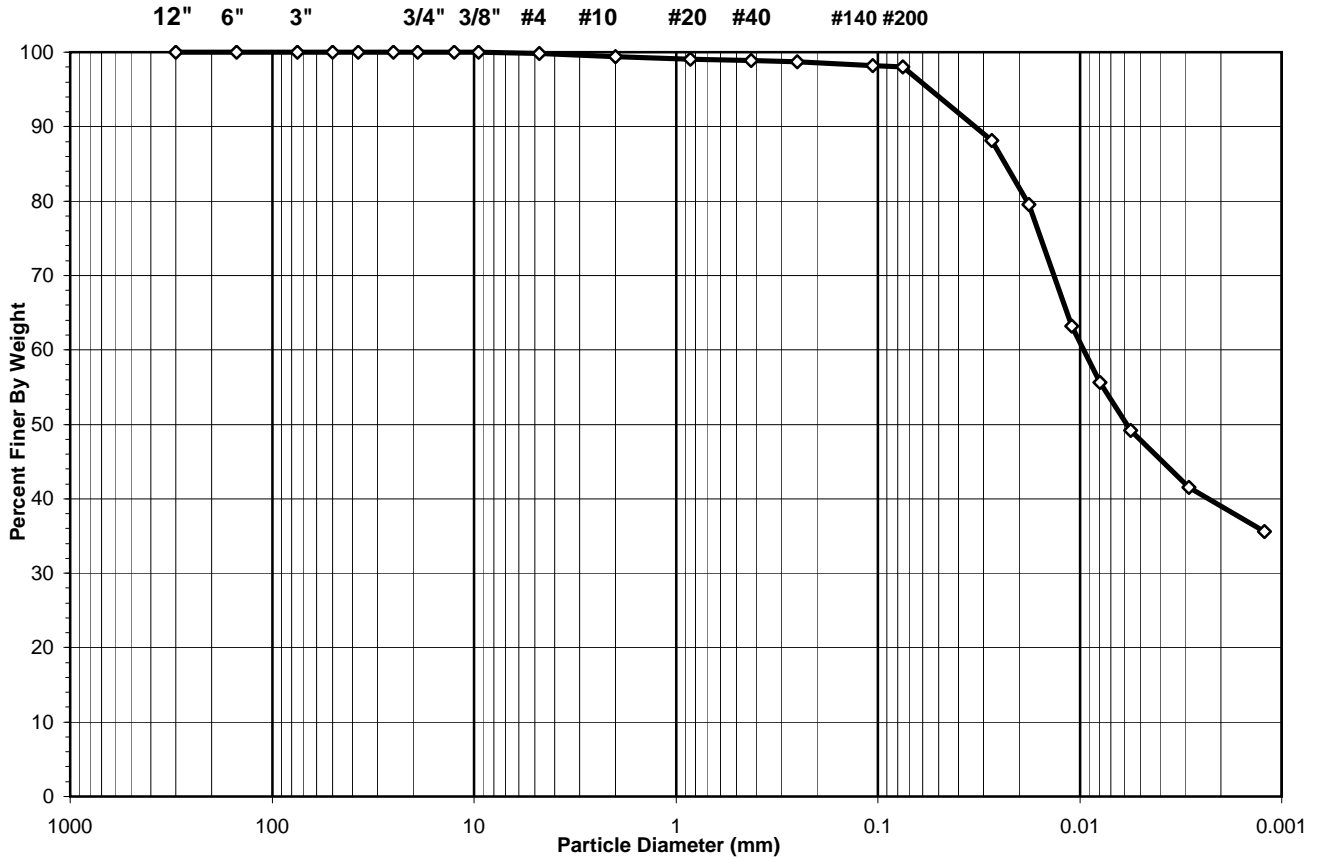
Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.5-6.9
Project No.:	2015-485-006	Sample No.:	ST-1
Lab ID:	2015-485-006-001	Soil Color:	Dark Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobles	gravel		sand		silt and clay fraction	
	cobles	gravel		sand		silt	clay

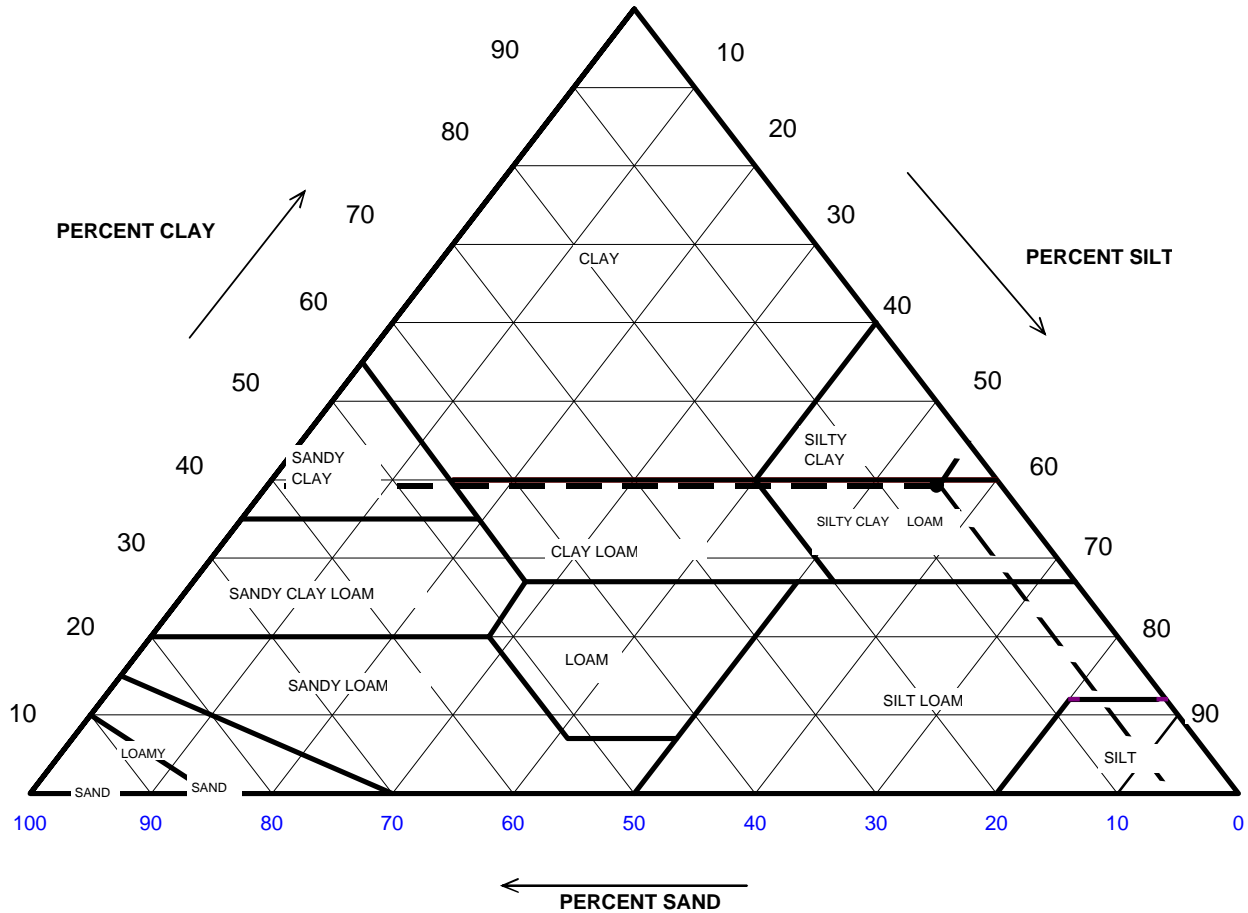


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.19
#4 To #200	<i>Sand</i>	1.83
Finer Than #200	<i>Silt & Clay</i>	97.99
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-006
 Lab ID: 2015-485-006-001

Boring No.: B-10
 Depth (ft): 6.5-6.9
 Sample No.: ST-1
 Soil Color: Dark Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.37	Gravel	0.63	0.00
0.05	94.07	Sand	5.30	5.34
0.002	38.99	Silt	55.08	55.43
		Clay	38.99	39.23
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.5-6.9
Project No.:	2015-485-006	Sample No.:	ST-1
Lab ID:	2015-485-006-001	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	659	Tare No.	NA
Weight of Tare & Wet Sample (g)	698.18	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	570.50	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	95.44	Weight of Tare (g)	NA
Weight of Water (g)	127.68	Weight of Water (g)	NA
Weight of Dry Sample (g)	475.06	Weight of Dry Sample (g)	NA
Moisture Content (%)	26.9	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	475.06
Dry Weight of -3/4" Sample (g)	9.55	Weight of - #200 Material (g)	465.51
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	9.55
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.88	0.19	0.19		99.81	99.81
#10	2.00	2.11	0.44	0.63		99.37	99.37
#20	0.85	1.62	0.34	0.97		99.03	99.03
#40	0.425	0.79	0.17	1.14		98.86	98.86
#60	0.250	0.89	0.19	1.32		98.68	98.68
#140	0.106	2.17	0.46	1.78		98.22	98.22
#200	0.075	1.09	0.23	2.01		97.99	97.99
Pan	-	465.51	97.99	100.00		-	-

Tested By **RAL** Date **10/23/15** Checked By **KC** Date **10/29/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.5-6.9
Project No.:	2015-485-006	Sample No.:	ST-1
Lab ID:	2015-485-006-001	Soil Color:	Dark Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	47.0	22	6.36	40.6	90.0	0.01313	0.0272	88.2
5	43.0	22	6.36	36.6	81.1	0.01313	0.0179	79.5
15	35.5	22	6.36	29.1	64.5	0.01313	0.0110	63.2
30	32.0	22	6.36	25.6	56.8	0.01313	0.0080	55.6
63	29.0	22.1	6.33	22.7	50.2	0.01311	0.0056	49.2
250	25.5	22	6.36	19.1	42.4	0.01313	0.0029	41.5
1440	22.5	22.7	6.11	16.4	36.3	0.01302	0.0012	35.6

Soil Specimen Data	Other Corrections	
Tare No.	960	
Weight of Tare & Dry Material (g)	144.85	
Weight of Tare (g)	95.14	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	44.7	
	a - Factor	0.99
	Percent Finer than # 200	97.99
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	10/27/15	Checked By	KC	Date	10/29/15
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SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: B-10
Client Reference: Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 7.4-7.9
Project No.: 2015-485-002	Sample No.: ST-1
Lab ID: 2015-485-002-001	Soil Color: Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

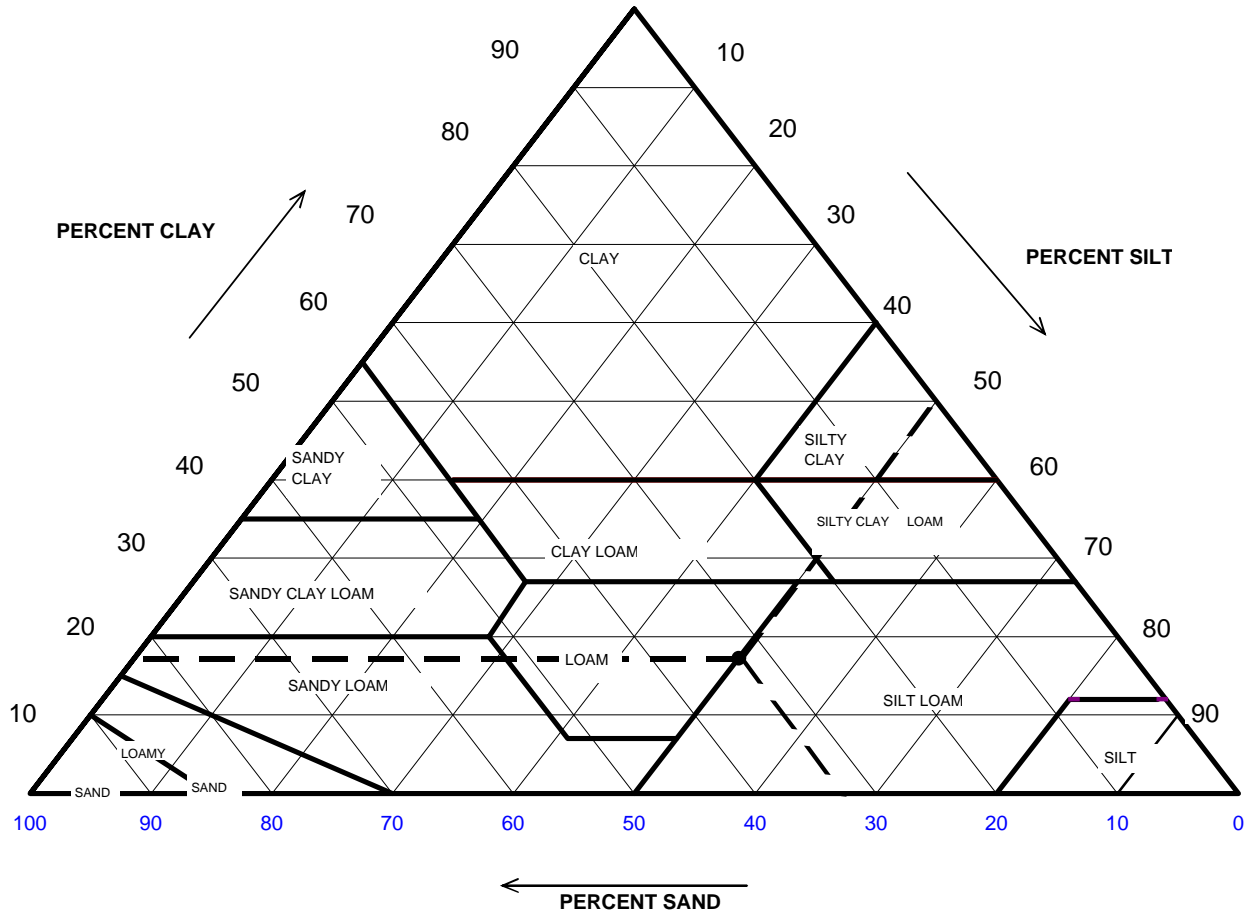


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.03
#4 To #200	<i>Sand</i>	24.16
Finer Than #200	<i>Silt & Clay</i>	75.81
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY WITH SAND</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-001

Boring No.: B-10
 Depth (ft): 7.4-7.9
 Sample No.: ST-1
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.49	Gravel	0.51	0.00
0.05	66.97	Sand	32.52	32.69
0.002	17.15	Silt	49.82	50.07
		Clay	17.15	17.24
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	7.4-7.9
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-001	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1435	Tare No.	NA
Weight of Tare & Wet Sample (g)	1047.20	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	908.00	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.42	Weight of Tare (g)	NA
Weight of Water (g)	139.20	Weight of Water (g)	NA
Weight of Dry Sample (g)	762.58	Weight of Dry Sample (g)	NA
Moisture Content (%)	18.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	762.58
Dry Weight of -3/4" Sample (g)	184.50	Weight of - #200 Material (g)	578.08
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	184.50
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.24	0.03	0.03	99.97	99.97
#10	2.00	3.67	0.48	0.51	99.49	99.49
#20	0.85	7.50	0.98	1.50	98.50	98.50
#40	0.425	4.38	0.57	2.07	97.93	97.93
#60	0.250	10.95	1.44	3.51	96.49	96.49
#140	0.106	101.85	13.36	16.86	83.14	83.14
#200	0.075	55.91	7.33	24.19	75.81	75.81
Pan	-	578.08	75.81	100.00	-	-

Tested By **RAL** Date **9/25/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	7.4-7.9
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-001	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	33.0	23.3	5.89	27.1	73.8	0.01293	0.0302	55.9
5	26.5	23.3	5.89	20.6	56.1	0.01293	0.0200	42.5
15	20.0	23.3	5.89	14.1	38.4	0.01293	0.0120	29.1
30	17.0	23.3	5.89	11.1	30.2	0.01293	0.0087	22.9
60	16.5	23.3	5.89	10.6	28.9	0.01293	0.0062	21.9
250	15.0	23.7	5.75	9.2	25.2	0.01287	0.0030	19.1
1440	13.0	23.8	5.71	7.3	19.8	0.01285	0.0013	15.0

Soil Specimen Data	Other Corrections		
Tare No.	528		
Weight of Tare & Dry Material (g)	133.73		
Weight of Tare (g)	92.37		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	36.4		
	a - Factor	0.99	
	Percent Finer than # 200	75.81	
	Specific Gravity	2.7	Assumed

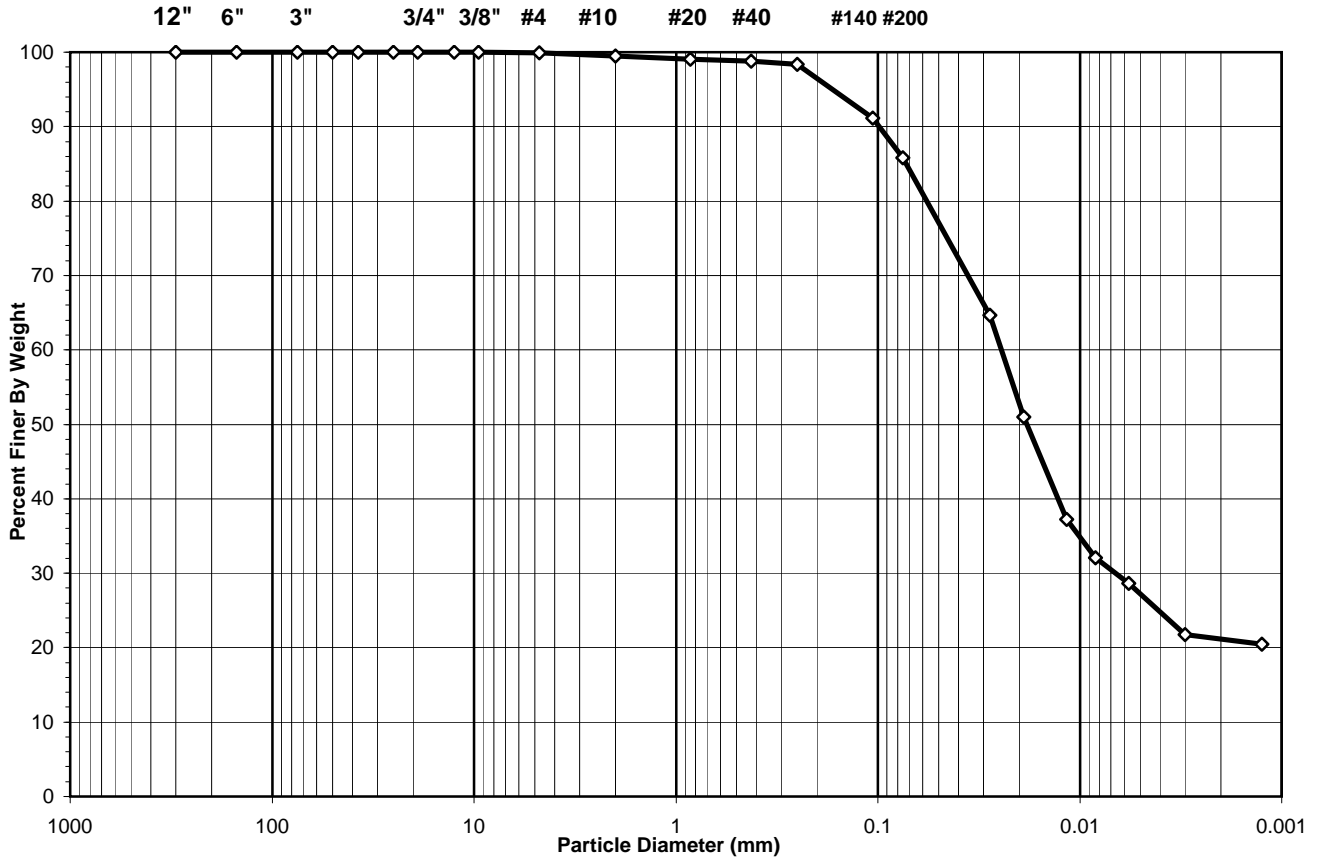
Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: B-10
Client Reference: Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 9.0-9.4
Project No.: 2015-485-006	Sample No.: ST-2
Lab ID: 2015-485-006-002	Soil Color: Brown & Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

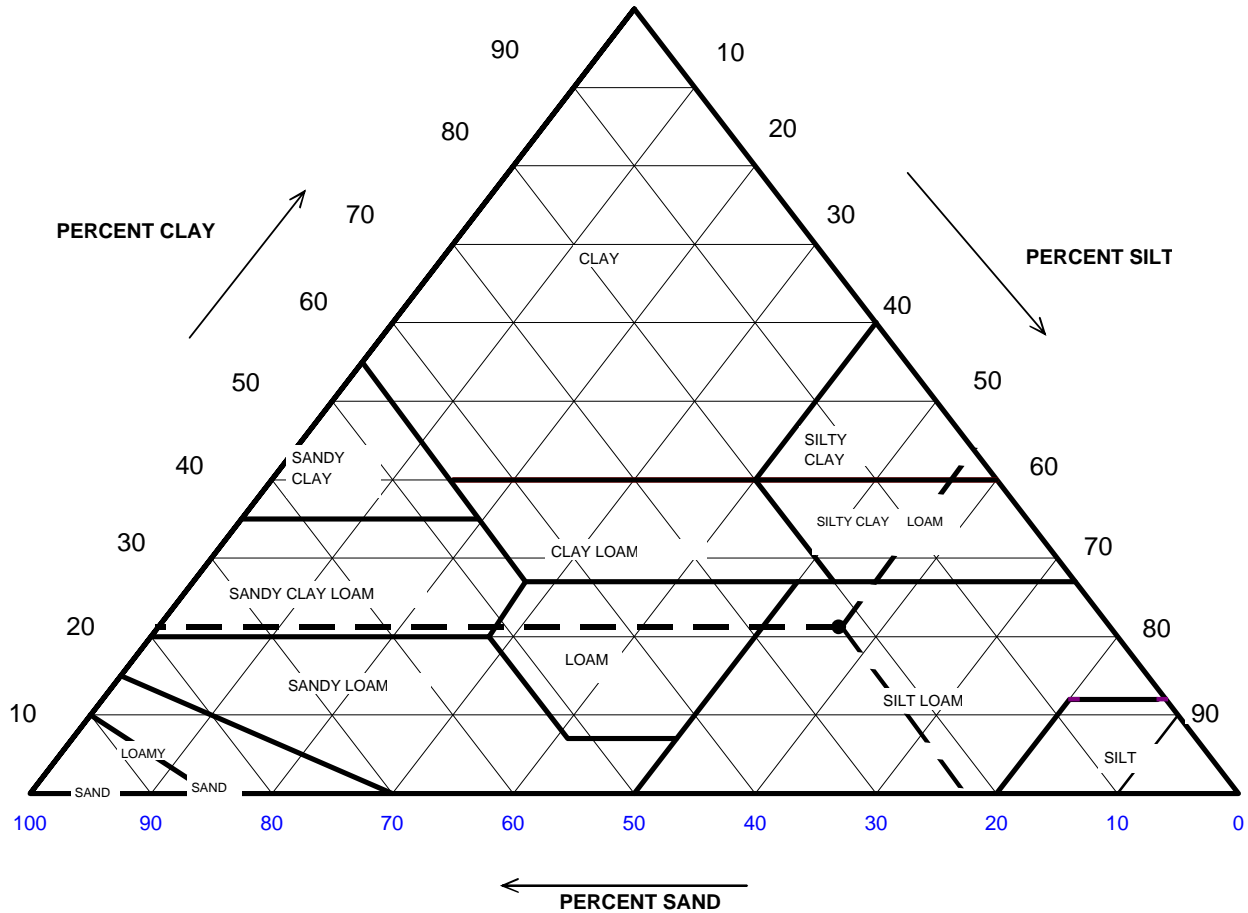


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.07
#4 To #200	<i>Sand</i>	14.08
Finer Than #200	<i>Silt & Clay</i>	85.84
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-006
 Lab ID: 2015-485-006-002

Boring No.: B-10
 Depth (ft): 9.0-9.4
 Sample No.: ST-2
 Soil Color: Brown & Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.48	Gravel	0.52	0.00
0.05	77.15	Sand	22.33	22.45
0.002	21.12	Silt	56.03	56.32
		Clay	21.12	21.23
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	9.0-9.4
Project No.:	2015-485-006	Sample No.:	ST-2
Lab ID:	2015-485-006-002	Soil Color:	Brown & Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	516	Tare No.	NA
Weight of Tare & Wet Sample (g)	832.75	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	711.00	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	90.03	Weight of Tare (g)	NA
Weight of Water (g)	121.75	Weight of Water (g)	NA
Weight of Dry Sample (g)	620.97	Weight of Dry Sample (g)	NA
Moisture Content (%)	19.6	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	620.97
Dry Weight of -3/4" Sample (g)	87.90	Weight of - #200 Material (g)	533.07
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	87.90
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.46	0.07	0.07	99.93	99.93
#10	2.00	2.77	0.45	0.52	99.48	99.48
#20	0.85	2.72	0.44	0.96	99.04	99.04
#40	0.425	1.52	0.24	1.20	98.80	98.80
#60	0.250	2.78	0.45	1.65	98.35	98.35
#140	0.106	44.49	7.16	8.82	91.18	91.18
#200	0.075	33.16	5.34	14.16	85.84	85.84
Pan	-	533.07	85.84	100.00	-	-

Tested By **RAL** Date **10/23/15** Checked By **KC** Date **10/29/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	9.0-9.4
Project No.:	2015-485-006	Sample No.:	ST-2
Lab ID:	2015-485-006-002	Soil Color:	Brown & Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	44.0	22	6.36	37.6	75.4	0.01313	0.0280	64.7
5	36.0	22	6.36	29.6	59.3	0.01313	0.0189	50.9
15	28.0	22	6.36	21.6	43.3	0.01313	0.0116	37.2
30	25.0	22	6.36	18.6	37.3	0.01313	0.0084	32.0
66	23.0	22.1	6.33	16.7	33.4	0.01311	0.0057	28.7
250	19.0	22	6.36	12.6	25.3	0.01313	0.0030	21.7
1440	18.0	22.7	6.11	11.9	23.8	0.01302	0.0013	20.4

Soil Specimen Data	Other Corrections	
Tare No.	693	
Weight of Tare & Dry Material (g)	147.68	
Weight of Tare (g)	93.24	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	49.4	
	a - Factor	0.99
	Percent Finer than # 200	85.84
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-002

Boring No.: B-10
 Depth (ft): 9.9-10.4
 Sample No.: ST-2
 Soil Color: Brown / Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

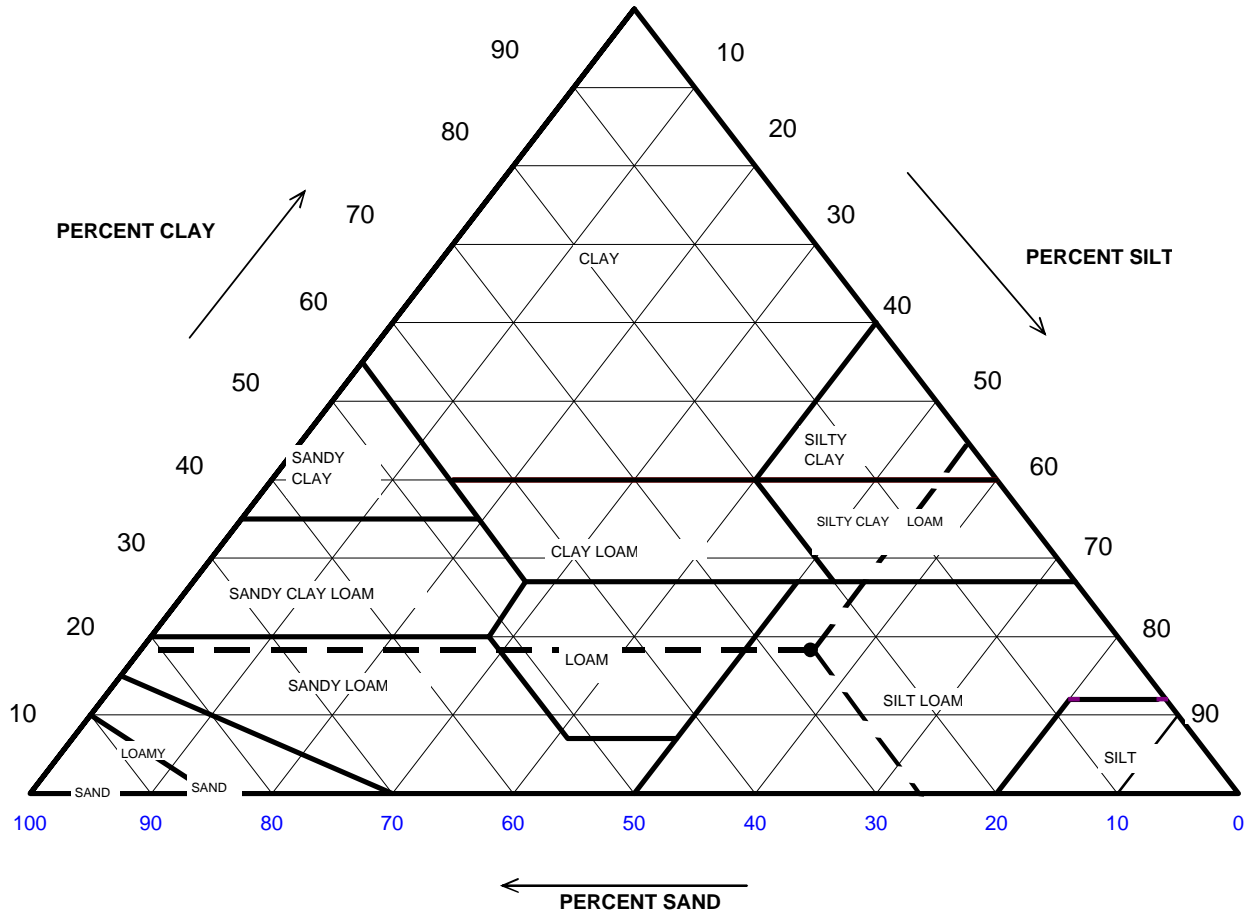


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.05
#4 To #200	<i>Sand</i>	18.50
Finer Than #200	<i>Silt & Clay</i>	81.45
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY WITH SAND</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-002

Boring No.: B-10
 Depth (ft): 9.9-10.4
 Sample No.: ST-2
 Soil Color: Brown / Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.41	Gravel	0.59	0.00
0.05	73.31	Sand	26.11	26.26
0.002	18.14	Silt	55.17	55.50
		Clay	18.14	18.24
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-10
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	9.9-10.4
Project No.:	2015-485-002	Sample No.:	ST-2
Lab ID:	2015-485-002-002	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1453	Tare No.	NA
Weight of Tare & Wet Sample (g)	1061.81	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	924.50	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	137.42	Weight of Tare (g)	NA
Weight of Water (g)	137.31	Weight of Water (g)	NA
Weight of Dry Sample (g)	787.08	Weight of Dry Sample (g)	NA
Moisture Content (%)	17.4	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	787.08
Dry Weight of -3/4" Sample (g)	146.00	Weight of - #200 Material (g)	641.08
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	146.00
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.38	0.05	0.05		99.95	99.95
#10	2.00	4.24	0.54	0.59		99.41	99.41
#20	0.85	9.39	1.19	1.78		98.22	98.22
#40	0.425	6.35	0.81	2.59		97.41	97.41
#60	0.250	4.52	0.57	3.16		96.84	96.84
#140	0.106	64.08	8.14	11.30		88.70	88.70
#200	0.075	57.04	7.25	18.55		81.45	81.45
Pan	-	641.08	81.45	100.00		-	-

Tested By **RAL** Date **9/25/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-002

Boring No.: B-10
 Depth (ft): 9.9-10.4
 Sample No.: ST-2
 Soil Color: Brown / Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	33.0	23.3	5.89	27.1	77.5	0.01293	0.0302	63.2
5	26.0	23.3	5.89	20.1	57.5	0.01293	0.0201	46.8
15	20.0	23.3	5.89	14.1	40.3	0.01293	0.0120	32.9
30	17.0	23.3	5.89	11.1	31.8	0.01293	0.0087	25.9
60	15.5	23.3	5.89	9.6	27.5	0.01293	0.0062	22.4
250	14.0	23.7	5.75	8.2	23.6	0.01287	0.0030	19.2
1440	13.0	23.8	5.71	7.3	20.8	0.01285	0.0013	17.0

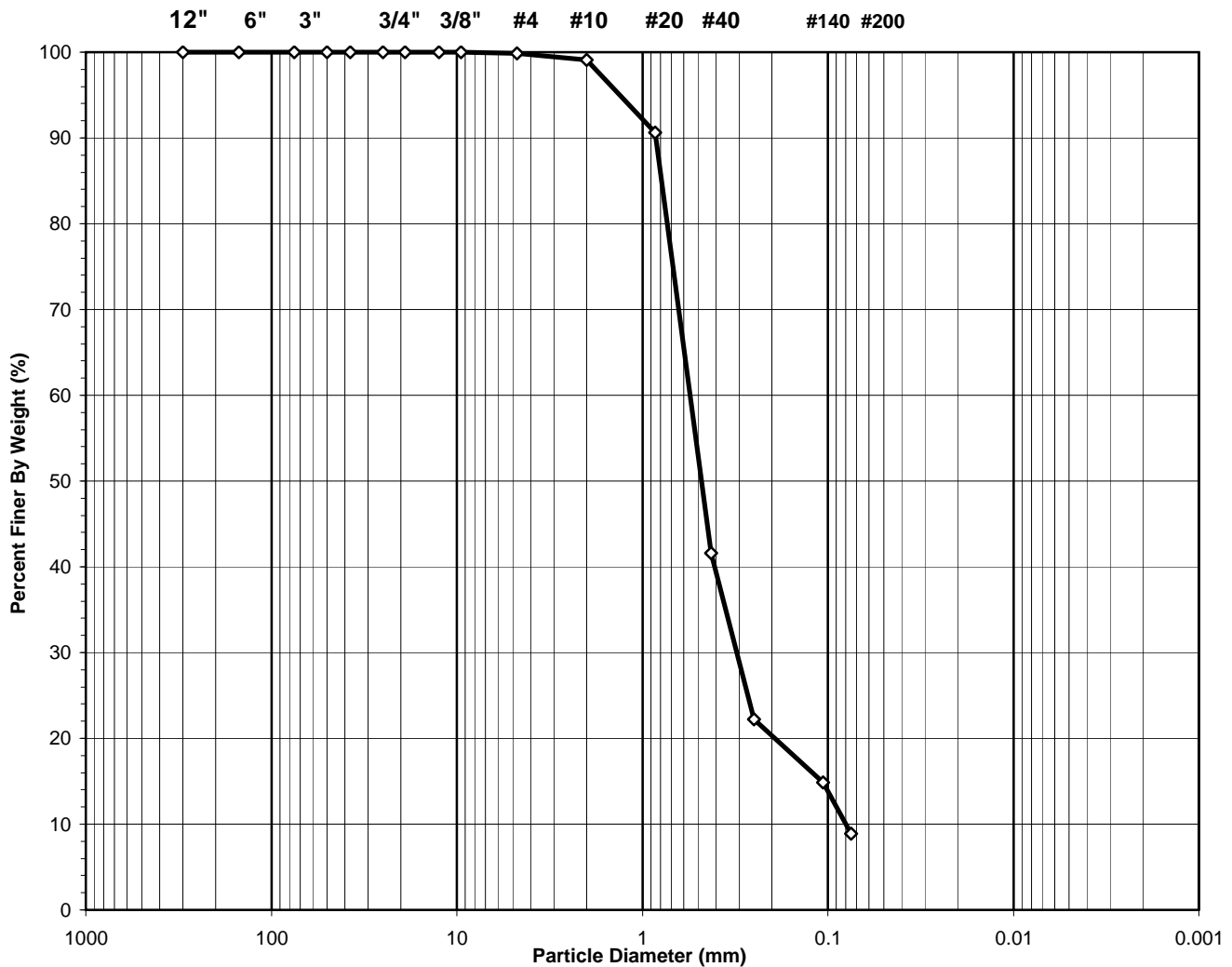
Soil Specimen Data	Other Corrections
Tare No. 2337	
Weight of Tare & Dry Material (g) 135.04	a - Factor 0.99
Weight of Tare (g) 95.43	
Weight of Deflocculant (g) 5.0	Percent Finer than # 200 81.45
Weight of Dry Material (g) 34.6	Specific Gravity 2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B010
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	33.5-35
Project No.:	2015-485-009	Sample No.:	SS-8
Lab ID:	2015-485-009-001	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sw-sm, ASSUMED

D60 = 0.55 CC = 2.17

USCS Classification:
WELL-GRADED SAND WITH SILT

D30 = 0.31 CU = 6.90

D10 = 0.08

Tested By HL Date 11/13/15 Checked By KC Date 11/16/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B010
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	33.5-35
Project No.:	2015-485-009	Sample No.:	SS-8
Lab ID:	2015-485-009-001	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1441	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	371.28	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	339.40	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	143.84	Weight of Tare (g):	NA
Weight of Water (g):	31.88	Weight of Water (g):	NA
Weight of Dry Sample (g):	195.56	Weight of Dry Sample (g):	NA
Moisture Content (%):	16.3	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	195.56
Dry Weight of - 3/4" Sample (g):	178.1	Weight of - #200 Material (g):	17.43
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	178.13
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

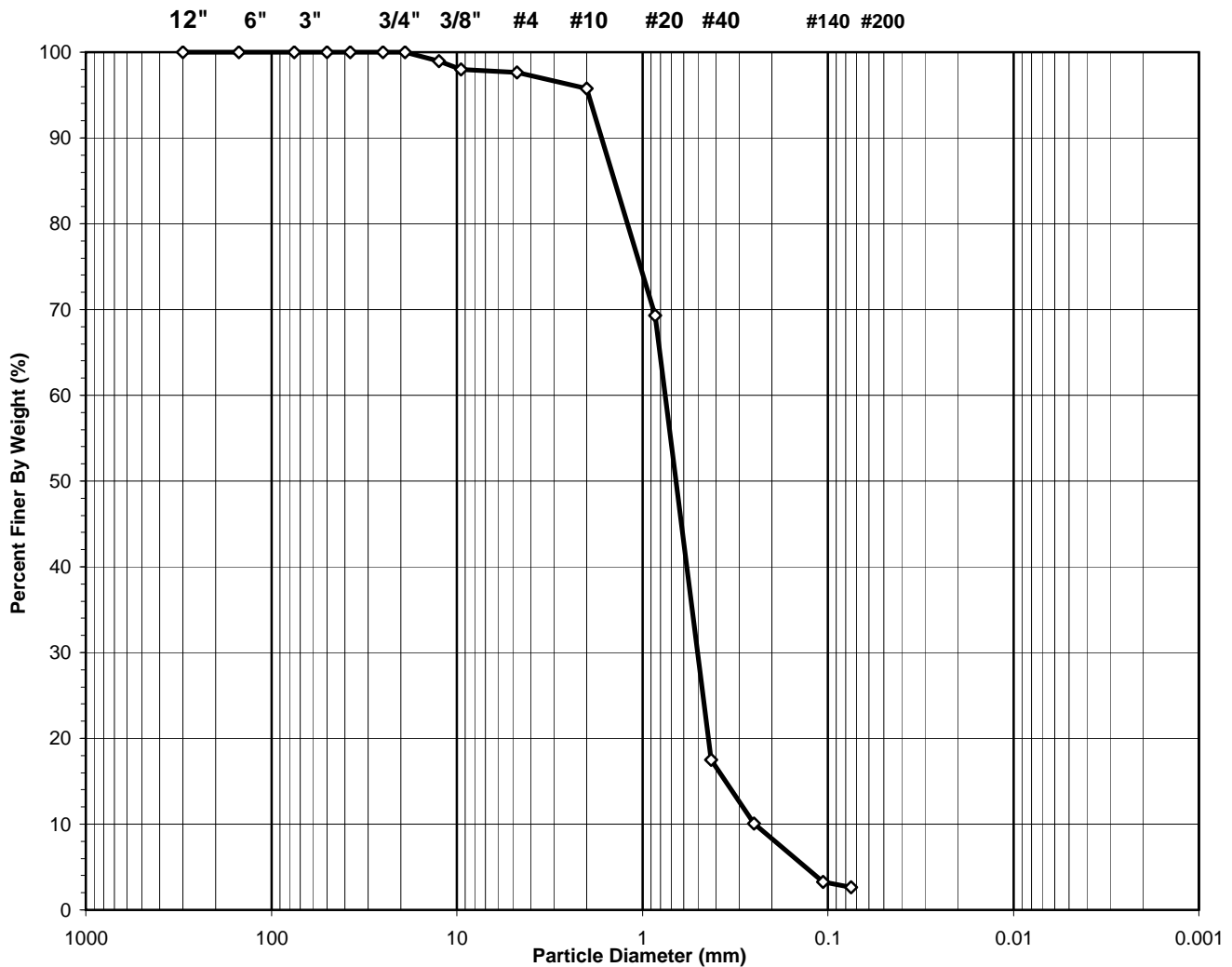
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.24	0.12	0.12	99.88	99.88
#10	2.00	1.55	0.79	0.92	99.08	99.08
#20	0.850	16.54	8.46	9.37	90.63	90.63
#40	0.425	95.95	49.06	58.44	41.56	41.56
#60	0.250	37.80	19.33	77.77	22.23	22.23
#140	0.106	14.44	7.38	85.15	14.85	14.85
#200	0.075	11.61	5.94	91.09	8.91	8.91
Pan	-	17.43	8.91	100.00	-	-

Tested By **HL** Date **11/13/15** Checked By **KC** Date **11/16/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B010
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50
Project No.:	2015-485-009	Sample No.:	SS-11
Lab ID:	2015-485-009-002	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.75 CC = 1.35

USCS Classification:
POORLY GRADED SAND

D30 = 0.50 CU = 3.02

D10 = 0.25

Tested By HL Date 11/13/15 Checked By KC Date 11/16/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B010
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50
Project No.:	2015-485-009	Sample No.:	SS-11
Lab ID:	2015-485-009-002	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1498	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	545.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	488.90	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	149.35	Weight of Tare (g):	NA
Weight of Water (g):	56.80	Weight of Water (g):	NA
Weight of Dry Sample (g):	339.55	Weight of Dry Sample (g):	NA
Moisture Content (%):	16.7	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	339.55
Dry Weight of - 3/4" Sample (g):	330.7	Weight of - #200 Material (g):	8.89
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	330.66
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

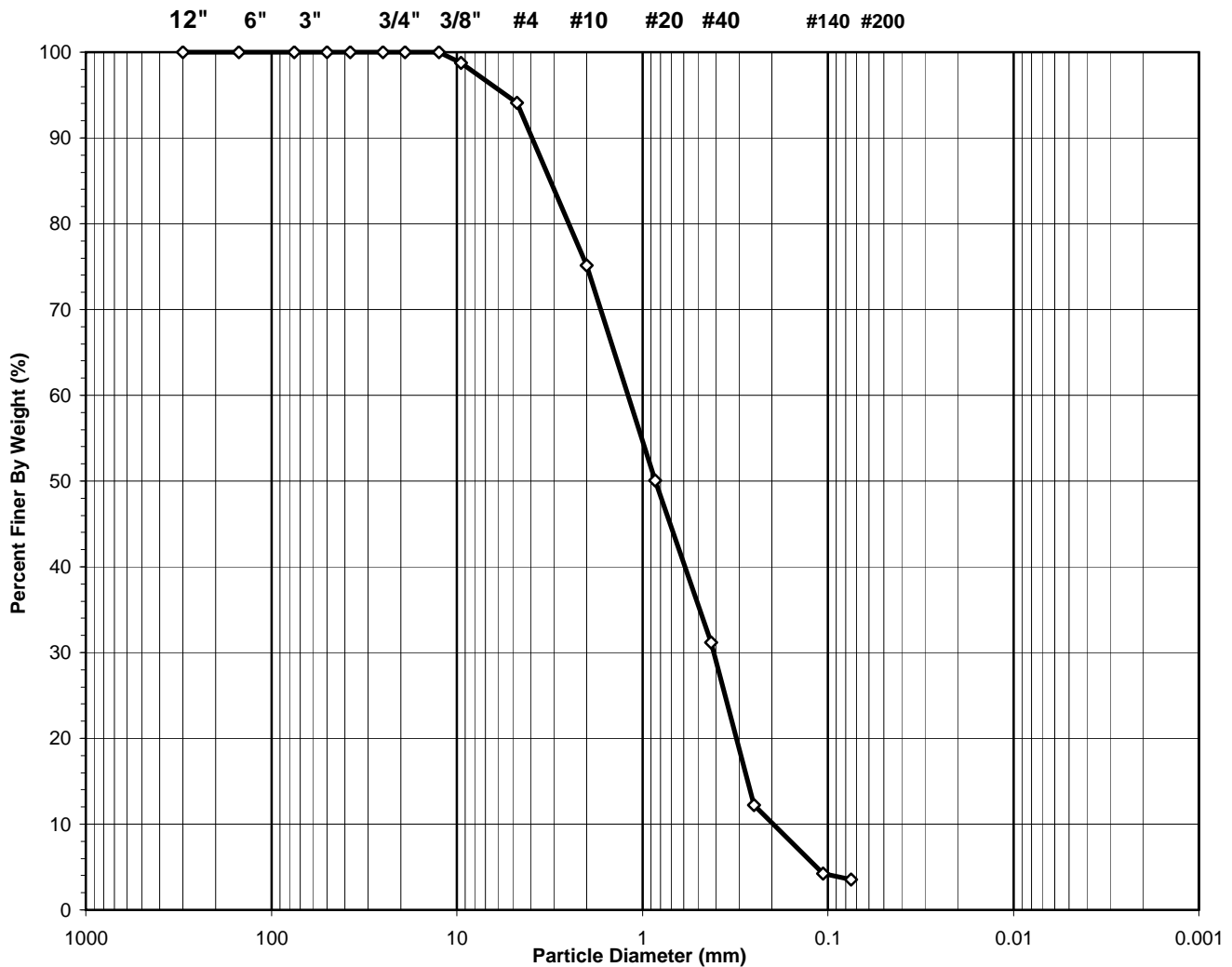
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	3.58	1.05	1.05	98.95	98.95
3/8"	9.50	3.17	0.93	1.99	98.01	98.01
#4	4.75	1.37	0.40	2.39	97.61	97.61
#10	2.00	6.34	1.87	4.26	95.74	95.74
#20	0.850	89.69	26.41	30.67	69.33	69.33
#40	0.425	176.04	51.85	82.52	17.48	17.48
#60	0.250	25.28	7.45	89.96	10.04	10.04
#140	0.106	22.97	6.76	96.73	3.27	3.27
#200	0.075	2.22	0.65	97.38	2.62	2.62
Pan	-	8.89	2.62	100.00	-	-

Tested By **HL** Date **11/13/15** Checked By **KC** Date **11/16/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B010
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	63.5-65.0
Project No.:	2015-485-009	Sample No.:	SS-14
Lab ID:	2015-485-009-003	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 1.19 CC = 0.72

USCS Classification:
POORLY GRADED SAND

D30 = 0.41 CU = 6.03

D10 = 0.20

Tested By HL Date 11/13/15 Checked By KC Date 11/16/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B010
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	63.5-65.0
Project No.:	2015-485-009	Sample No.:	SS-14
Lab ID:	2015-485-009-003	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1451	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	340.80	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	340.80	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.79	Weight of Tare (g):	NA
Weight of Water (g):	0.00	Weight of Water (g):	NA
Weight of Dry Sample (g):	196.01	Weight of Dry Sample (g):	NA
Moisture Content (%):	0.0	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	196.01
Dry Weight of - 3/4" Sample (g):	189.1	Weight of - #200 Material (g):	6.91
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	189.10
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	2.39	1.22	1.22	98.78	98.78
#4	4.75	9.12	4.65	5.87	94.13	94.13
#10	2.00	37.19	18.97	24.85	75.15	75.15
#20	0.850	49.11	25.05	49.90	50.10	50.10
#40	0.425	37.04	18.90	68.80	31.20	31.20
#60	0.250	37.27	19.01	87.81	12.19	12.19
#140	0.106	15.63	7.97	95.79	4.21	4.21
#200	0.075	1.35	0.69	96.47	3.53	3.53
Pan	-	6.91	3.53	100.00	-	-

Tested By **HL** Date **11/13/15** Checked By **KC** Date **11/16/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	1.0-2.5
Project No.:	2015-485-003	Sample No.:	SS-1
Lab ID:	2015-485-003-001	Soil Color:	Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobles	gravel		sand		silt and clay fraction	
	cobles	gravel		sand		silt	clay

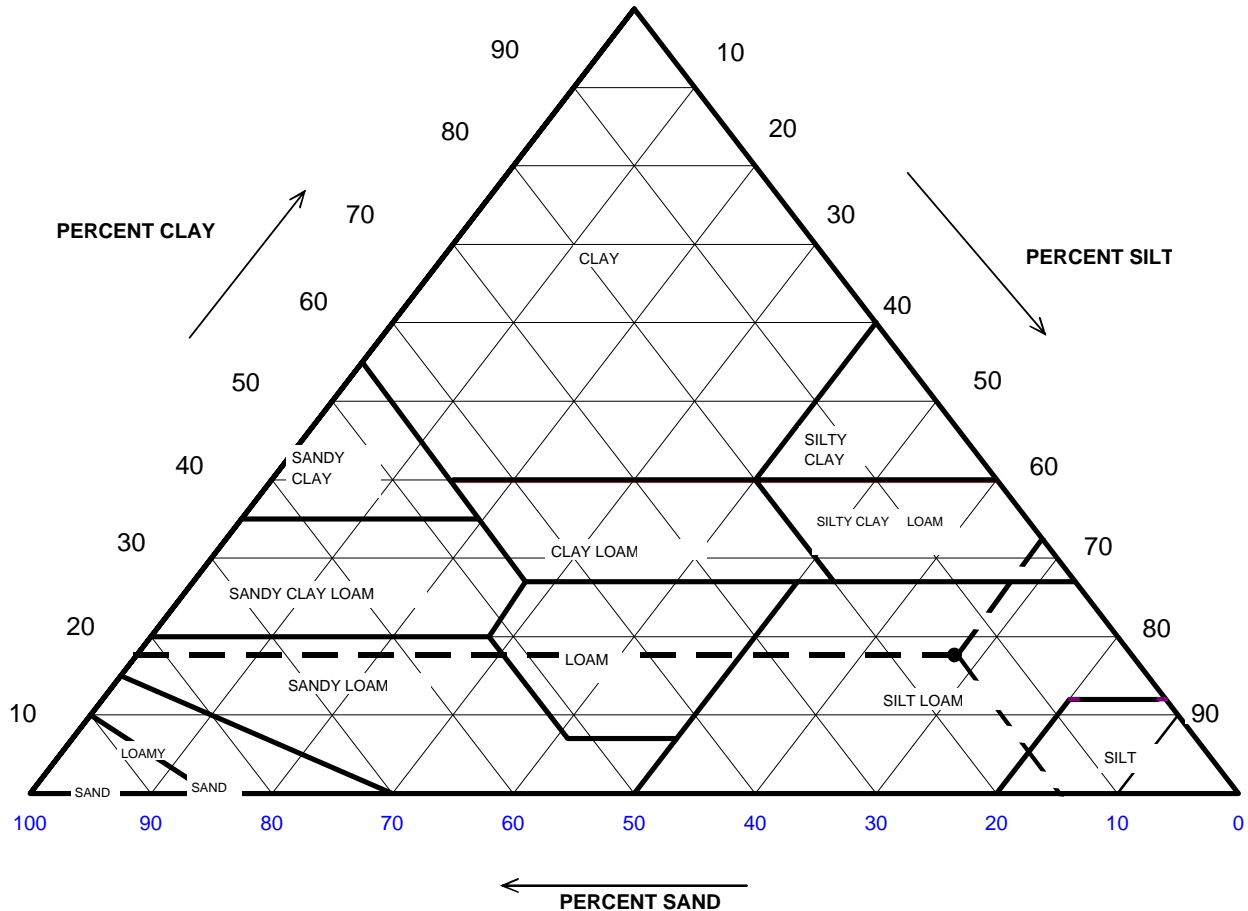


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.05
#4 To #200	<i>Sand</i>	5.37
Finer Than #200	<i>Silt & Clay</i>	94.57
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-001

Boring No.: B-12
 Depth (ft): 1.0-2.5
 Sample No.: SS-1
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.84	Gravel	0.16	0.00
0.05	85.22	Sand	14.63	14.65
0.002	17.60	Silt	67.62	67.73
		Clay	17.60	17.62
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	1.0-2.5
Project No.:	2015-485-003	Sample No.:	SS-1
Lab ID:	2015-485-003-001	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1449	Tare No.	NA
Weight of Tare & Wet Sample (g)	348.22	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	348.22	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.54	Weight of Tare (g)	NA
Weight of Water (g)	0.00	Weight of Water (g)	NA
Weight of Dry Sample (g)	202.68	Weight of Dry Sample (g)	NA
Moisture Content (%)	0.0	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	202.68
Dry Weight of -3/4" Sample (g)	11.00	Weight of - #200 Material (g)	191.68
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	11.00
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.11	0.05	0.05	99.95	99.95
#10	2.00	0.21	0.10	0.16	99.84	99.84
#20	0.85	0.74	0.37	0.52	99.48	99.48
#40	0.425	0.81	0.40	0.92	99.08	99.08
#60	0.250	1.57	0.77	1.70	98.30	98.30
#140	0.106	4.48	2.21	3.91	96.09	96.09
#200	0.075	3.08	1.52	5.43	94.57	94.57
Pan	-	191.68	94.57	100.00	-	-

Tested By **HL** Date **10/12/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	1.0-2.5
Project No.:	2015-485-003	Sample No.:	SS-1
Lab ID:	2015-485-003-001	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	45.5	20.7	6.83	38.7	76.0	0.01333	0.0280	71.9
5	34.5	20.7	6.83	27.7	54.4	0.01333	0.0194	51.4
17	25.0	20.7	6.83	18.2	35.7	0.01333	0.0113	33.8
30	22.5	20.7	6.83	15.7	30.8	0.01333	0.0086	29.1
60	20.5	21.1	6.68	13.8	27.1	0.01327	0.0062	25.7
250	17.0	22.1	6.33	10.7	21.0	0.01311	0.0030	19.8
1440	14.5	22.2	6.29	8.2	16.1	0.01310	0.0013	15.3

Soil Specimen Data	Other Corrections	
Tare No.	2331	
Weight of Tare & Dry Material (g)	149.10	
Weight of Tare (g)	93.71	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	50.4	
	a - Factor	0.99
	Percent Finer than # 200	94.57
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	11.0-12.5
Project No.:	2015-485-003	Sample No.:	SS-5
Lab ID:	2015-485-003-002	Soil Color:	Dark Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

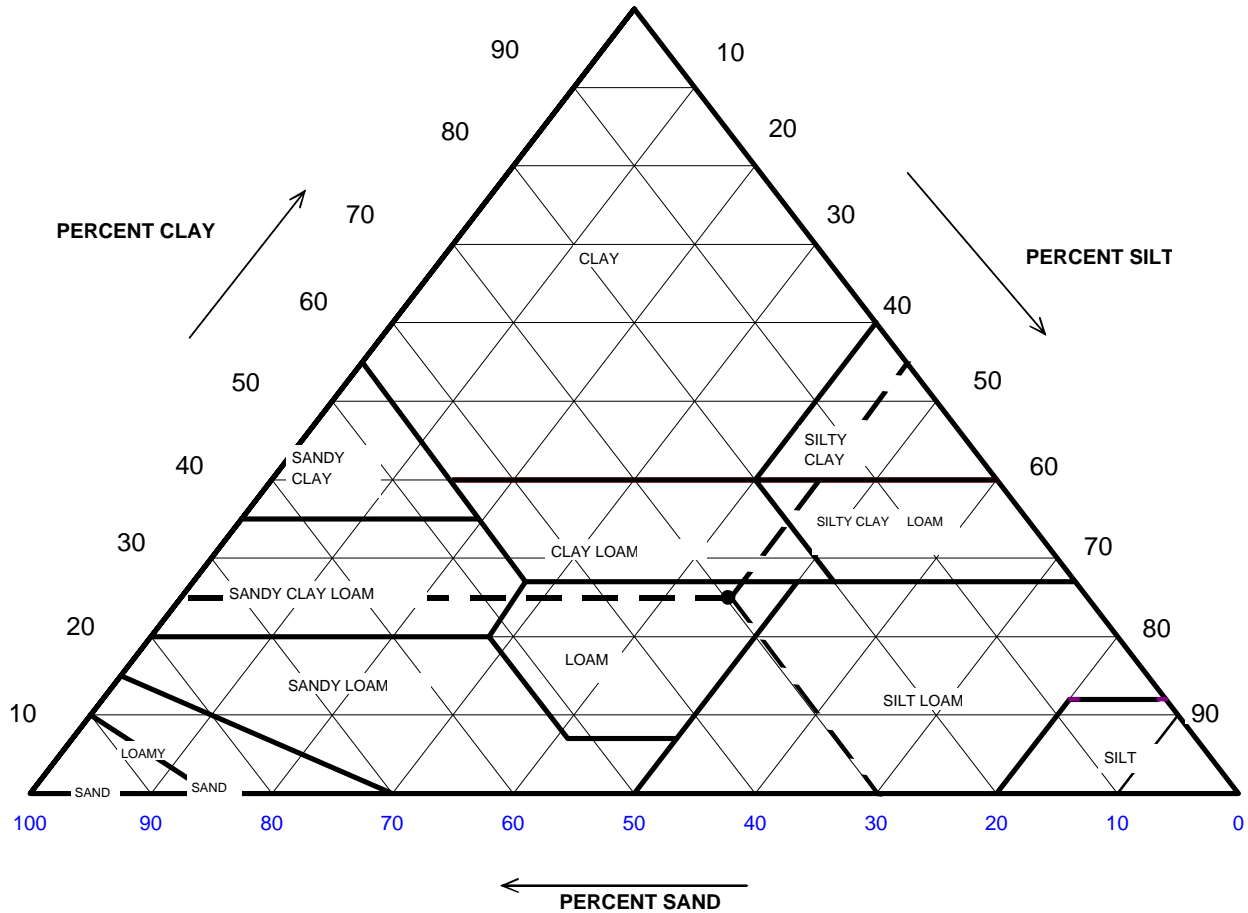


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.06
#4 To #200	<i>Sand</i>	25.02
Finer Than #200	<i>Silt & Clay</i>	74.92
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY WITH SAND</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-002

Boring No.: B-12
 Depth (ft): 11.0-12.5
 Sample No.: SS-5
 Soil Color: Dark Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.86	Gravel	0.14	0.00
0.05	70.16	Sand	29.70	29.74
0.002	24.89	Silt	45.27	45.33
		Clay	24.89	24.93
		USDA Classification:	LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	11.0-12.5
Project No.:	2015-485-003	Sample No.:	SS-5
Lab ID:	2015-485-003-002	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1447	Tare No.	NA
Weight of Tare & Wet Sample (g)	467.20	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	410.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.34	Weight of Tare (g)	NA
Weight of Water (g)	56.90	Weight of Water (g)	NA
Weight of Dry Sample (g)	264.96	Weight of Dry Sample (g)	NA
Moisture Content (%)	21.5	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	264.96
Dry Weight of -3/4" Sample (g)	66.45	Weight of - #200 Material (g)	198.51
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	66.45
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.16	0.06	0.06	99.94	99.94
#10	2.00	0.20	0.08	0.14	99.86	99.86
#20	0.85	0.54	0.20	0.34	99.66	99.66
#40	0.425	3.68	1.39	1.73	98.27	98.27
#60	0.250	9.53	3.60	5.33	94.67	94.67
#140	0.106	20.39	7.70	13.02	86.98	86.98
#200	0.075	31.95	12.06	25.08	74.92	74.92
Pan	-	198.51	74.92	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	11.0-12.5
Project No.:	2015-485-003	Sample No.:	SS-5
Lab ID:	2015-485-003-002	Soil Color:	Dark Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	53.0	22.1	6.33	46.7	83.2	0.01311	0.0256	62.3
5	47.5	22.1	6.33	41.2	73.4	0.01311	0.0171	55.0
15	40.0	22.1	6.33	33.7	60.0	0.01311	0.0106	44.9
30	36.0	22.1	6.33	29.7	52.9	0.01311	0.0077	39.6
60	33.0	22.1	6.33	26.7	47.5	0.01311	0.0056	35.6
250	26.0	22.6	6.15	19.9	35.4	0.01303	0.0029	26.5
1440	23.0	22.9	6.04	17.0	30.2	0.01299	0.0012	22.6

Soil Specimen Data	Other Corrections		
Tare No.	528		
Weight of Tare & Dry Material (g)	153.11		
Weight of Tare (g)	92.54		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	55.6		
	a - Factor	0.99	
	Percent Finer than # 200	74.92	
	Specific Gravity	2.7	Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	10/2/15	Checked By	KC	Date	10/12/15
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SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-003

Boring No.: B-12
 Depth (ft): 21.9-22.4
 Sample No.: ST-1
 Soil Color: Brown / Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	2.76
Finer Than #200	<i>Silt & Clay</i>	97.24

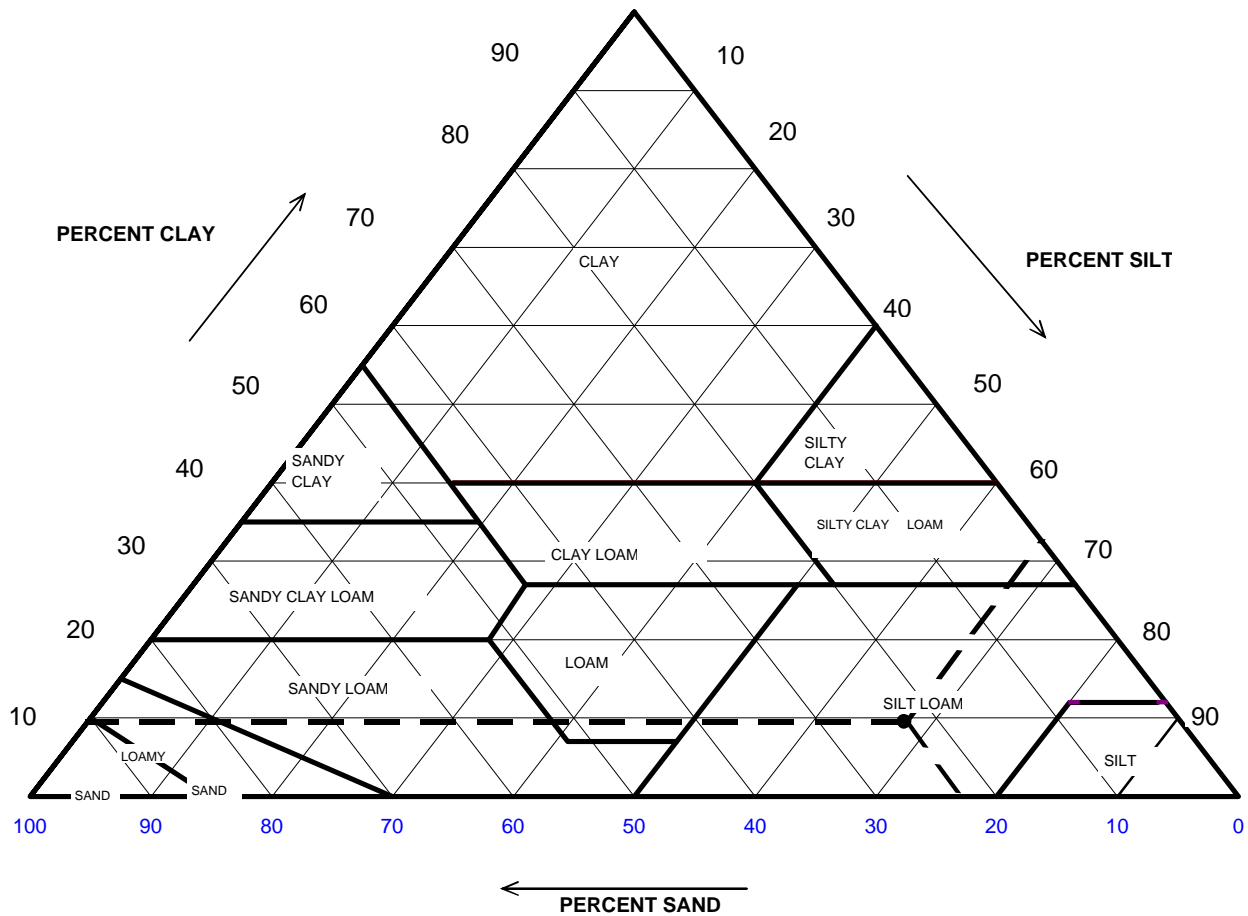
USCS Symbol:
ML, TESTED

USCS Classification:
SILT
(NON-PLASTIC FINES)

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-003

Boring No.: B-12
 Depth (ft): 21.9-22.4
 Sample No.: ST-1
 Soil Color: Brown / Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	100.00	Gravel	0.00	0.00
0.05	77.16	Sand	22.84	22.84
0.002	9.58	Silt	67.58	67.58
		Clay	9.58	9.58
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	21.9-22.4
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-003	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	889	Tare No.	NA
Weight of Tare & Wet Sample (g)	777.76	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	603.40	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	100.66	Weight of Tare (g)	NA
Weight of Water (g)	174.36	Weight of Water (g)	NA
Weight of Dry Sample (g)	502.74	Weight of Dry Sample (g)	NA
Moisture Content (%)	34.7	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	502.74
Dry Weight of -3/4" Sample (g)	13.88	Weight of - #200 Material (g)	488.86
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	13.88
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.00	0.00	0.00		100.00	100.00
#20	0.85	0.24	0.05	0.05		99.95	99.95
#40	0.425	0.39	0.08	0.13		99.87	99.87
#60	0.250	0.50	0.10	0.22		99.78	99.78
#140	0.106	2.37	0.47	0.70		99.30	99.30
#200	0.075	10.38	2.06	2.76		97.24	97.24
Pan	-	488.86	97.24	100.00		-	-

Tested By **HL** Date **9/27/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-12
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	21.9-22.4
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-003	Soil Color:	Brown / Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	30.0	23.1	5.97	24.0	54.8	0.01296	0.0309	53.3
5	20.5	23.1	5.97	14.5	33.2	0.01296	0.0208	32.3
15	14.5	23.1	5.97	8.5	19.5	0.01296	0.0125	18.9
30	13.5	23.1	5.97	7.5	17.2	0.01296	0.0089	16.7
60	12.5	22.9	6.04	6.5	14.7	0.01299	0.0063	14.3
250	10.5	23	6.00	4.5	10.3	0.01297	0.0031	10.0
1440	10.0	23.4	5.86	4.1	9.5	0.01291	0.0013	9.2

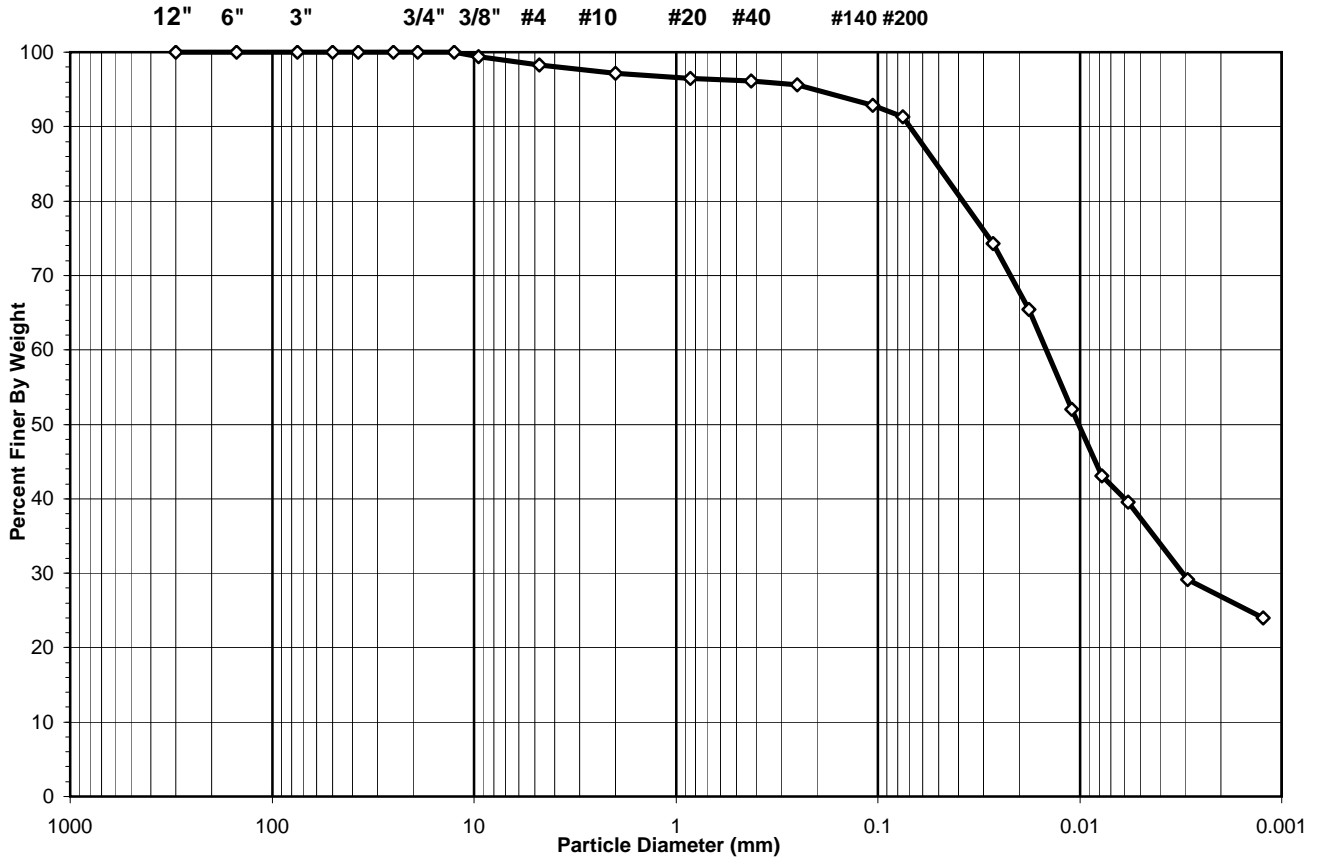
Soil Specimen Data	Other Corrections	
Tare No.	960	
Weight of Tare & Dry Material (g)	143.73	
Weight of Tare (g)	95.35	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	43.4	
	a - Factor	0.99
	Percent Finer than # 200	97.24
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.5-5.0
Project No.:	2015-485-003	Sample No.:	SS-2
Lab ID:	2015-485-003-003	Soil Color:	Dark Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

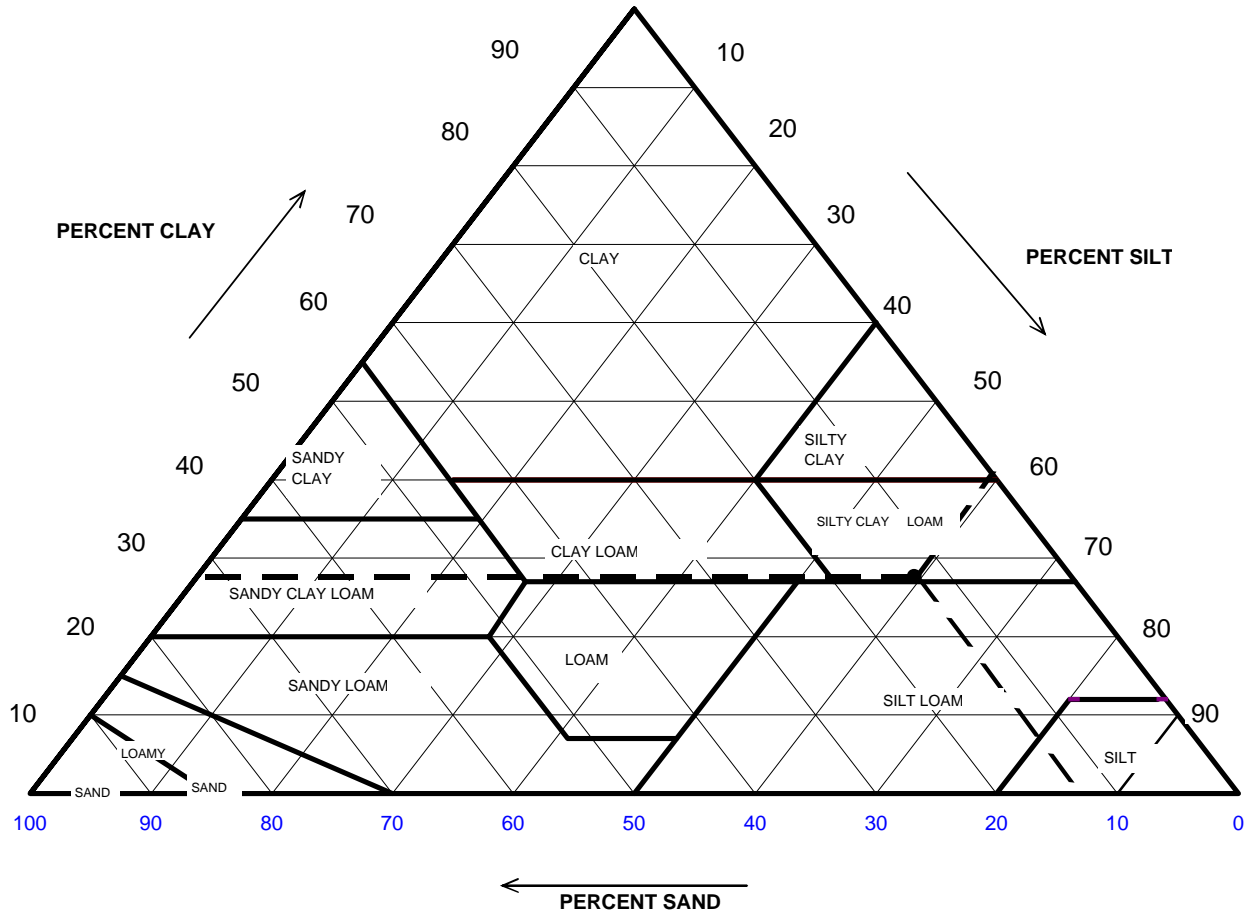


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	1.74
#4 To #200	<i>Sand</i>	6.98
Finer Than #200	<i>Silt & Clay</i>	91.28
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-003

Boring No.: B-13
 Depth (ft): 3.5-5.0
 Sample No.: SS-2
 Soil Color: Dark Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	97.14	Gravel	2.86	0.00
0.05	84.57	Sand	12.57	12.94
0.002	26.88	Silt	57.69	59.39
		Clay	26.88	27.67
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.5-5.0
Project No.:	2015-485-003	Sample No.:	SS-2
Lab ID:	2015-485-003-003	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1434	Tare No.	NA
Weight of Tare & Wet Sample (g)	527.30	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	462.90	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.04	Weight of Tare (g)	NA
Weight of Water (g)	64.40	Weight of Water (g)	NA
Weight of Dry Sample (g)	317.86	Weight of Dry Sample (g)	NA
Moisture Content (%)	20.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	317.86
Dry Weight of -3/4" Sample (g)	27.72	Weight of - #200 Material (g)	290.14
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	27.72
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	1.93	0.61	0.61	99.39	99.39
#4	4.75	3.60	1.13	1.74	98.26	98.26
#10	2.00	3.55	1.12	2.86	97.14	97.14
#20	0.85	2.09	0.66	3.51	96.49	96.49
#40	0.425	1.19	0.37	3.89	96.11	96.11
#60	0.250	1.64	0.52	4.40	95.60	95.60
#140	0.106	8.78	2.76	7.17	92.83	92.83
#200	0.075	4.94	1.55	8.72	91.28	91.28
Pan	-	290.14	91.28	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.5-5.0
Project No.:	2015-485-003	Sample No.:	SS-2
Lab ID:	2015-485-003-003	Soil Color:	Dark Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	48.0	22.1	6.33	41.7	81.4	0.01311	0.0269	74.3
5	43.0	22.1	6.33	36.7	71.7	0.01311	0.0178	65.4
15	35.5	22.1	6.33	29.2	57.0	0.01311	0.0110	52.0
32	30.5	22.1	6.33	24.2	47.2	0.01311	0.0078	43.1
60	28.5	22.1	6.33	22.2	43.3	0.01311	0.0058	39.5
250	22.5	22.6	6.15	16.4	32.0	0.01303	0.0029	29.2
1440	19.5	22.9	6.04	13.5	26.3	0.01299	0.0012	24.0

Soil Specimen Data	Other Corrections	
Tare No.	644	
Weight of Tare & Dry Material (g)	155.53	
Weight of Tare (g)	99.86	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	50.7	
	a - Factor	0.99
	Percent Finer than # 200	91.28
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.9-19.4
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-004	Soil Color:	Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobles	gravel		sand		silt and clay fraction	
	cobles	gravel		sand		silt	clay

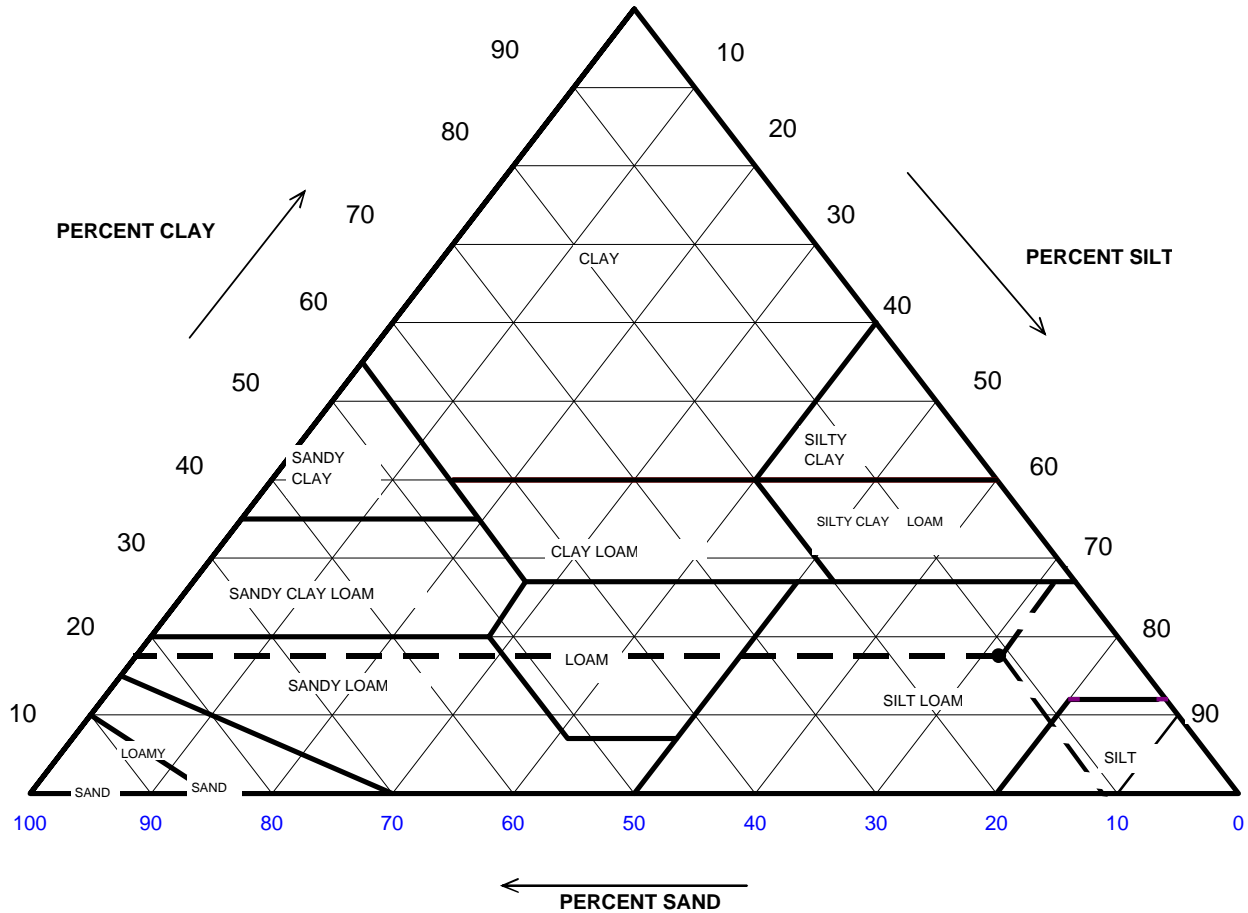


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	1.21
Finer Than #200	<i>Silt & Clay</i>	98.79
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-002
 Lab ID: 2015-485-002-004

Boring No.: B-13
 Depth (ft): 18.9-19.4
 Sample No.: ST-1
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.95	Gravel	0.05	0.00
0.05	88.90	Sand	11.05	11.06
0.002	17.50	Silt	71.40	71.43
		Clay	17.50	17.51
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.9-19.4
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-004	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1465	Tare No.	NA
Weight of Tare & Wet Sample (g)	922.04	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	734.20	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	97.72	Weight of Tare (g)	NA
Weight of Water (g)	187.84	Weight of Water (g)	NA
Weight of Dry Sample (g)	636.48	Weight of Dry Sample (g)	NA
Moisture Content (%)	29.5	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	636.48
Dry Weight of -3/4" Sample (g)	7.73	Weight of - #200 Material (g)	628.75
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	7.73
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.34	0.05	0.05	99.95	99.95
#20	0.85	1.60	0.25	0.30	99.70	99.70
#40	0.425	2.23	0.35	0.66	99.34	99.34
#60	0.250	1.64	0.26	0.91	99.09	99.09
#140	0.106	1.44	0.23	1.14	98.86	98.86
#200	0.075	0.48	0.08	1.21	98.79	98.79
Pan	-	628.75	98.79	100.00	-	-

Tested By **PC** Date **9/28/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.9-19.4
Project No.:	2015-485-002	Sample No.:	ST-1
Lab ID:	2015-485-002-004	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	28.0	22.7	6.11	21.9	78.6	0.01302	0.0315	77.6
5	25.0	22.7	6.11	18.9	67.8	0.01302	0.0203	67.0
15	17.5	22.7	6.11	11.4	40.9	0.01302	0.0123	40.4
30	14.5	22.7	6.11	8.4	30.1	0.01302	0.0089	29.8
74	13.5	22.8	6.07	7.4	26.7	0.01300	0.0057	26.3
250	11.5	22.6	6.15	5.4	19.2	0.01303	0.0031	19.0
1440	10.5	23.1	5.97	4.5	16.3	0.01296	0.0013	16.1

Soil Specimen Data	Other Corrections	
Tare No.	947	
Weight of Tare & Dry Material (g)	132.91	
Weight of Tare (g)	100.33	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	27.6	
	a - Factor	0.99
	Percent Finer than # 200	98.79
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-004

Boring No.: B-13
 Depth (ft): 28.5-30.0
 Sample No.: SS-10
 Soil Color: Brown / Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobles	gravel		sand		silt and clay fraction	
	cobles	gravel		sand		silt	clay

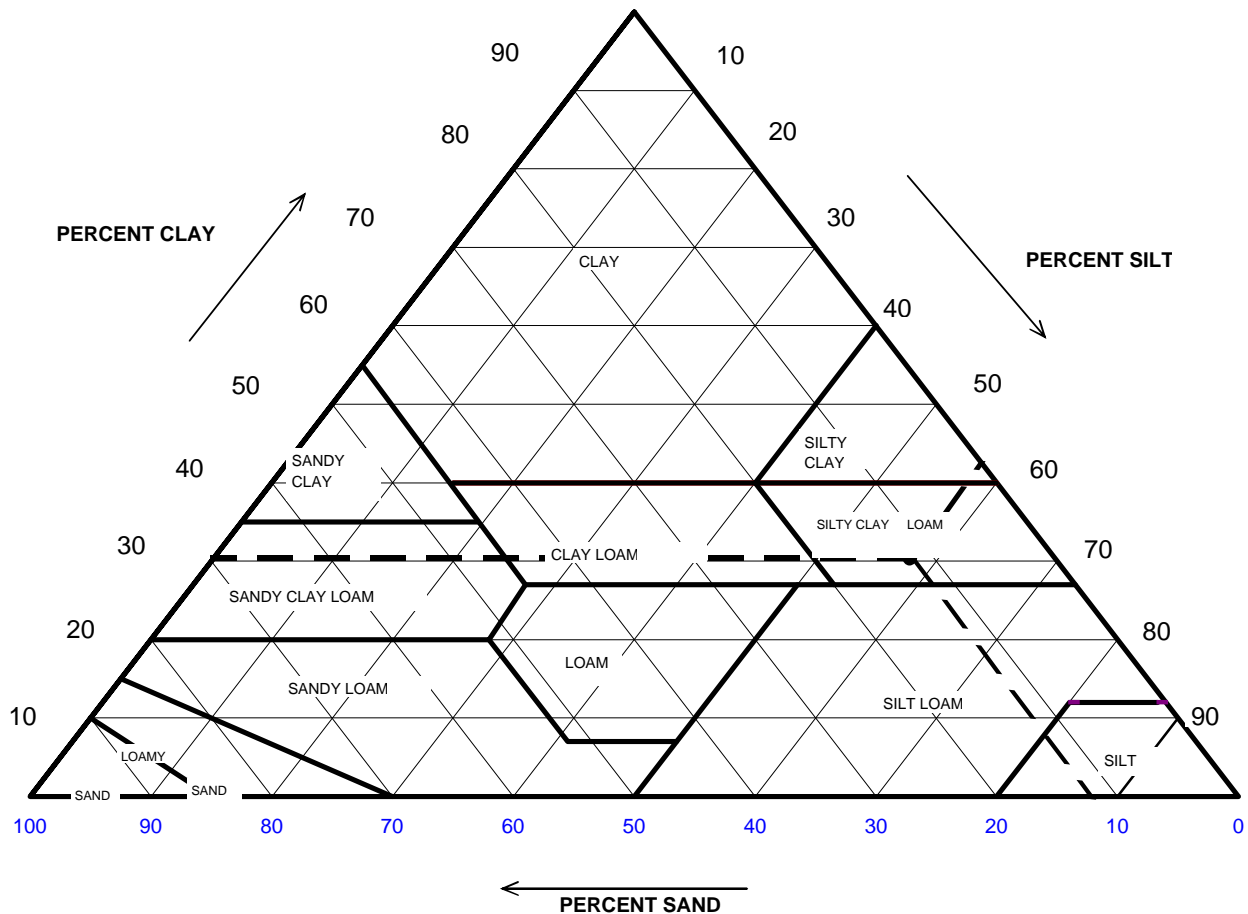


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	1.98
Finer Than #200	<i>Silt & Clay</i>	98.02
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-004

Boring No.: B-13
 Depth (ft): 28.5-30.0
 Sample No.: SS-10
 Soil Color: Brown / Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.98	Gravel	0.02	0.00
0.05	87.97	Sand	12.01	12.01
0.002	30.31	Silt	57.66	57.67
		Clay	30.31	30.32
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	28.5-30.0
Project No.:	2015-485-003	Sample No.:	SS-10
Lab ID:	2015-485-003-004	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1455	Tare No.	NA
Weight of Tare & Wet Sample (g)	428.80	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	342.67	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.30	Weight of Tare (g)	NA
Weight of Water (g)	86.13	Weight of Water (g)	NA
Weight of Dry Sample (g)	197.37	Weight of Dry Sample (g)	NA
Moisture Content (%)	43.6	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	197.37
Dry Weight of -3/4" Sample (g)	3.91	Weight of - #200 Material (g)	193.46
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	3.91
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.03	0.02	0.02	99.98	99.98
#20	0.85	0.10	0.05	0.07	99.93	99.93
#40	0.425	0.15	0.08	0.14	99.86	99.86
#60	0.250	0.23	0.12	0.26	99.74	99.74
#140	0.106	1.22	0.62	0.88	99.12	99.12
#200	0.075	2.18	1.10	1.98	98.02	98.02
Pan	-	193.46	98.02	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	28.5-30.0
Project No.:	2015-485-003	Sample No.:	SS-10
Lab ID:	2015-485-003-004	Soil Color:	Brown / Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	46.0	22.1	6.33	39.7	74.6	0.01311	0.0274	73.1
5	39.5	22.1	6.33	33.2	62.4	0.01311	0.0184	61.1
15	34.5	22.1	6.33	28.2	53.0	0.01311	0.0110	51.9
30	31.5	22.1	6.33	25.2	47.3	0.01311	0.0080	46.4
60	29.5	22.1	6.33	23.2	43.6	0.01311	0.0057	42.7
250	24.5	22.6	6.15	18.4	34.5	0.01303	0.0029	33.8
1440	20.0	22.9	6.04	14.0	26.2	0.01299	0.0012	25.7

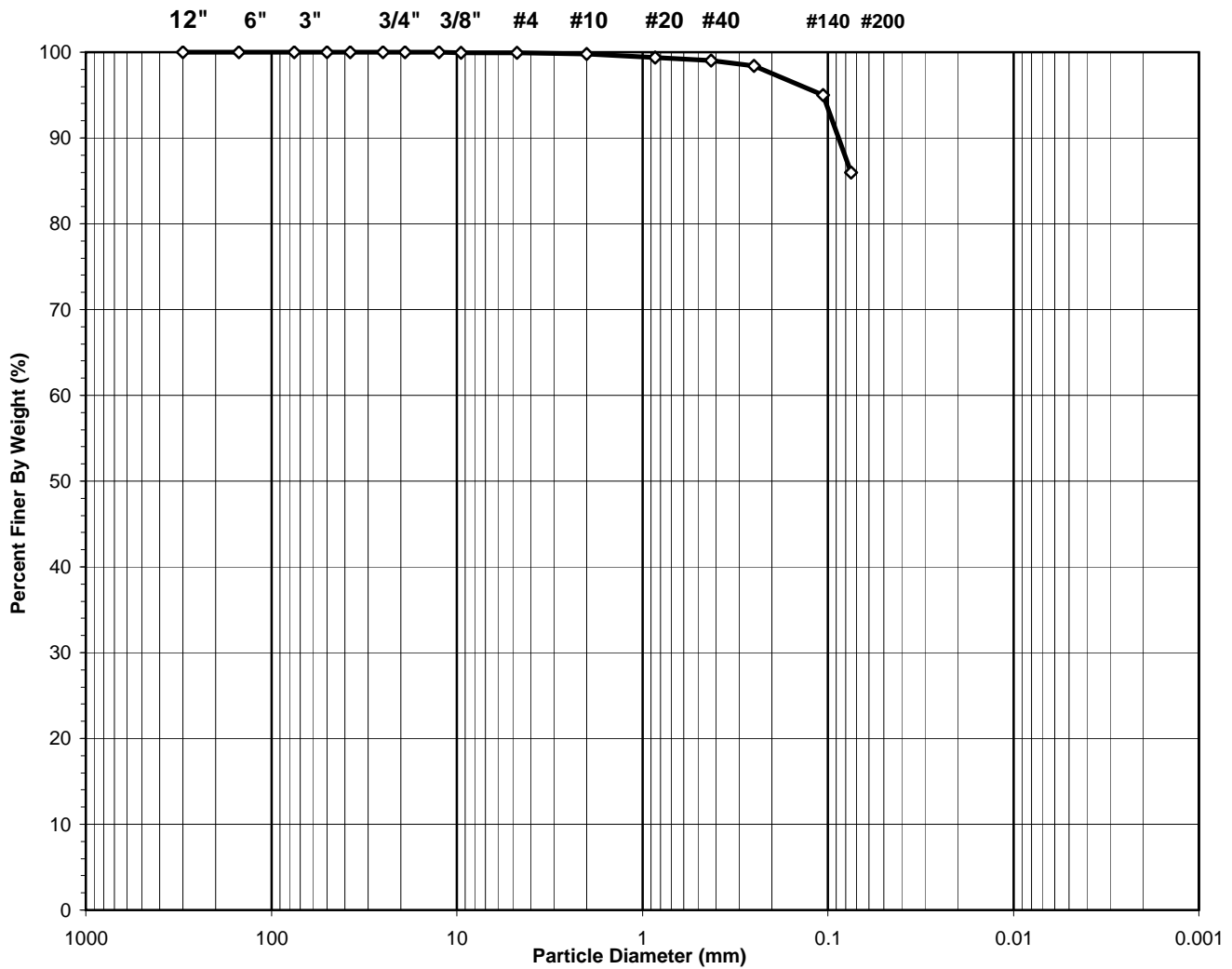
Soil Specimen Data	Other Corrections		
Tare No.	975		
Weight of Tare & Dry Material (g)	153.89		
Weight of Tare (g)	96.22		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	52.7		
	a - Factor	0.99	
	Percent Finer than # 200	98.02	
	Specific Gravity	2.7	Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-003	Sample No.:	SS-11
Lab ID:	2015-485-003-005	Soil Color:	Dark Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
cl, ASSUMED

USCS Classification:
LEAN CLAY

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-003	Sample No.:	SS-11
Lab ID:	2015-485-003-005	Soil Color:	Dark Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	28	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	652.78	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	525.50	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	203.60	Weight of Tare (g):	NA
Weight of Water (g):	127.28	Weight of Water (g):	NA
Weight of Dry Sample (g):	321.90	Weight of Dry Sample (g):	NA
Moisture Content (%):	39.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	321.90
Dry Weight of - 3/4" Sample (g):	45.2	Weight of - #200 Material (g):	276.73
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	45.17
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

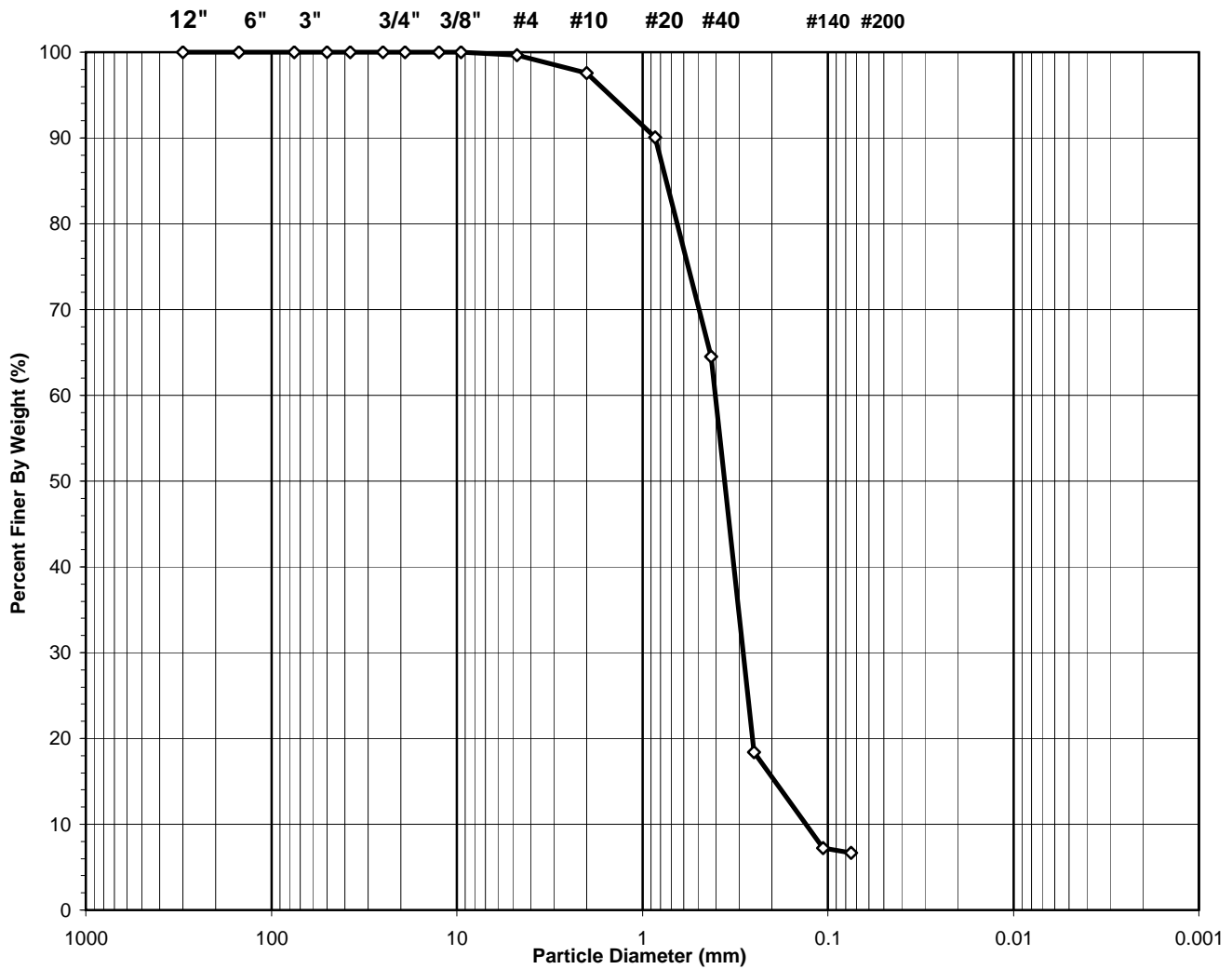
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.27	0.08	0.08	99.92	99.92
#4	4.75	0.06	0.02	0.10	99.90	99.90
#10	2.00	0.44	0.14	0.24	99.76	99.76
#20	0.850	1.19	0.37	0.61	99.39	99.39
#40	0.425	1.20	0.37	0.98	99.02	99.02
#60	0.250	1.98	0.62	1.60	98.40	98.40
#140	0.106	10.92	3.39	4.99	95.01	95.01
#200	0.075	29.11	9.04	14.03	85.97	85.97
Pan	-	276.73	85.97	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	41.0-42.5
Project No.:	2015-485-003	Sample No.:	SS-15
Lab ID:	2015-485-003-006	Soil Color:	Brownish Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.40 CC = 1.54

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.29 CU = 3.07

D10 = 0.13

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	41.0-42.5
Project No.:	2015-485-003	Sample No.:	SS-15
Lab ID:	2015-485-003-006	Soil Color:	Brownish Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1418	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	594.30	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	526.00	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.23	Weight of Tare (g):	NA
Weight of Water (g):	68.30	Weight of Water (g):	NA
Weight of Dry Sample (g):	380.77	Weight of Dry Sample (g):	NA
Moisture Content (%):	17.9	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	380.77
Dry Weight of - 3/4" Sample (g):	355.5	Weight of - #200 Material (g):	25.32
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	355.45
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

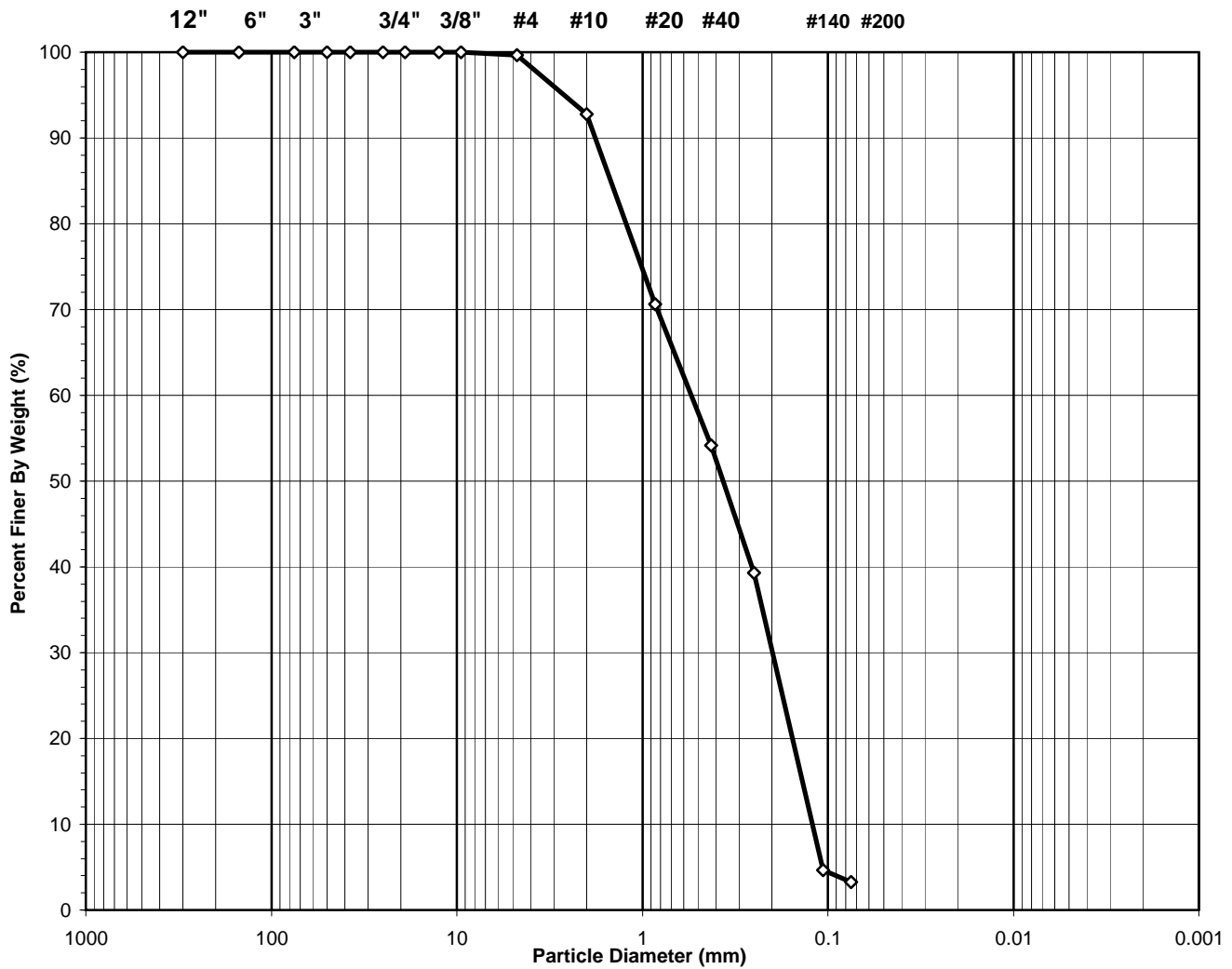
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.31	0.34	0.34	99.66	99.66
#10	2.00	7.86	2.06	2.41	97.59	97.59
#20	0.850	28.66	7.53	9.94	90.06	90.06
#40	0.425	97.29	25.55	35.49	64.51	64.51
#60	0.250	175.70	46.14	81.63	18.37	18.37
#140	0.106	42.56	11.18	92.81	7.19	7.19
#200	0.075	2.07	0.54	93.35	6.65	6.65
Pan	-	25.32	6.65	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	58.5-60.0
Project No.:	2015-485-003	Sample No.:	SS-18
Lab ID:	2015-485-003-007	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.54 CC = 0.60

USCS Classification:
POORLY GRADED SAND

D30 = 0.20 CU = 4.48

D10 = 0.12

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-13
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	58.5-60.0
Project No.:	2015-485-003	Sample No.:	SS-18
Lab ID:	2015-485-003-007	Soil Color:	Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1424	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	618.50	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	542.80	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	146.08	Weight of Tare (g):	NA
Weight of Water (g):	75.70	Weight of Water (g):	NA
Weight of Dry Sample (g):	396.72	Weight of Dry Sample (g):	NA
Moisture Content (%):	19.1	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	396.72
Dry Weight of - 3/4" Sample (g):	383.8	Weight of - #200 Material (g):	12.90
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	383.82
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.46	0.37	0.37	99.63	99.63
#10	2.00	27.08	6.83	7.19	92.81	92.81
#20	0.850	87.93	22.16	29.36	70.64	70.64
#40	0.425	65.25	16.45	45.81	54.19	54.19
#60	0.250	59.20	14.92	60.73	39.27	39.27
#140	0.106	137.40	34.63	95.36	4.64	4.64
#200	0.075	5.50	1.39	96.75	3.25	3.25
Pan	-	12.90	3.25	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

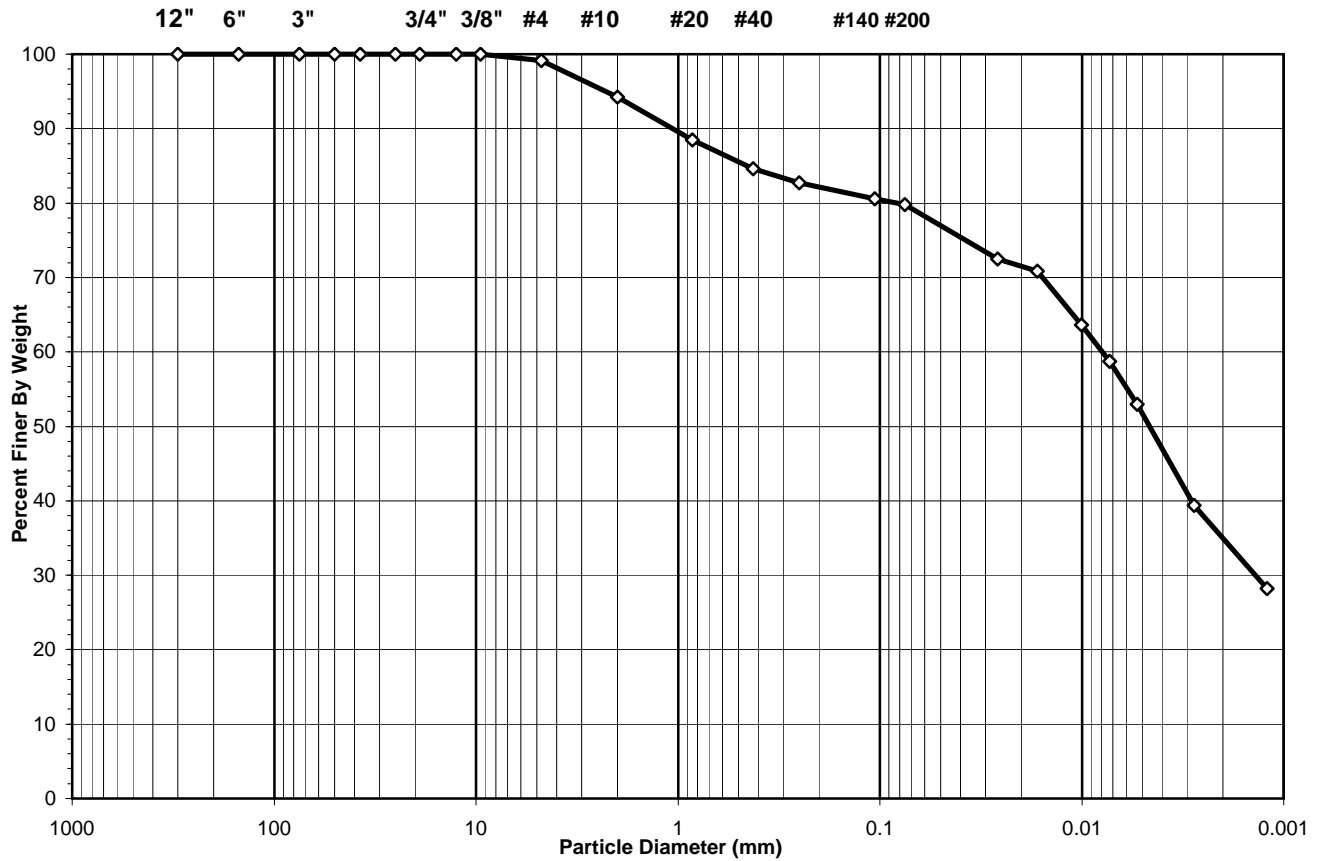
SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-002

Boring No.: WOR-B014
 Depth (ft): 29.2-29.7
 Sample No.: ST-2
 Soil Color: Gray

USCS USDA	SIEVE ANALYSIS						HYDROMETER	
	cobble		gravel		sand		silt and clay fraction	
	cobble	gravel	sand		silt	clay		

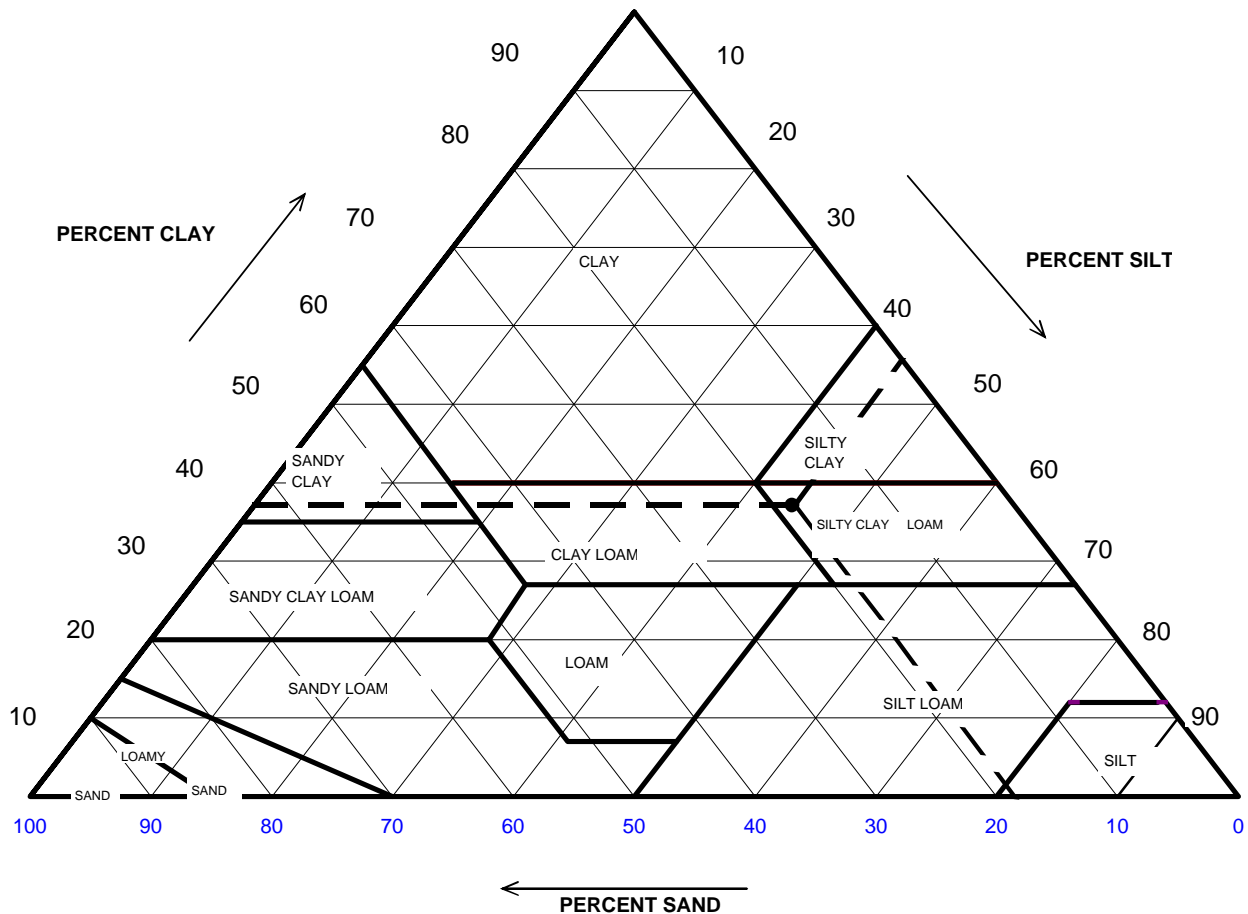


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.88
#4 To #200	<i>Sand</i>	19.36
Finer Than #200	<i>Silt & Clay</i>	79.76
USCS Symbol: <i>MH, TESTED</i>		
USCS Classification: <i>ELASTIC SILT WITH SAND</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-002

Boring No.: WOR-B014
 Depth (ft): 29.2-29.7
 Sample No.: ST-2
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	94.28	Gravel	5.72	0.00
0.05	76.97	Sand	17.31	18.36
0.002	35.02	Silt	41.96	44.50
		Clay	35.02	37.14
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B014
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	29.2-29.7
Project No.:	2015-485-001	Sample No.:	ST-2
Lab ID:	2015-485-001-002	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1440	Tare No.	NA
Weight of Tare & Wet Sample (g)	892.56	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	588.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.59	Weight of Tare (g)	NA
Weight of Water (g)	304.26	Weight of Water (g)	NA
Weight of Dry Sample (g)	442.71	Weight of Dry Sample (g)	NA
Moisture Content (%)	68.7	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	442.71
Dry Weight of -3/4" Sample (g)	89.61	Weight of - #200 Material (g)	353.10
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	89.61
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	3.90	0.88	0.88	99.12	99.12
#10	2.00	21.42	4.84	5.72	94.28	94.28
#20	0.85	25.85	5.84	11.56	88.44	88.44
#40	0.425	16.88	3.81	15.37	84.63	84.63
#60	0.250	8.57	1.94	17.31	82.69	82.69
#140	0.106	9.51	2.15	19.46	80.54	80.54
#200	0.075	3.48	0.79	20.24	79.76	79.76
Pan	-	353.10	79.76	100.00	-	-

Tested By **RAL** Date **9/15/15** Checked By **KC** Date **9/17/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: WOR-B014
Client Reference: Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 29.2-29.7
Project No.: 2015-485-001	Sample No.: ST-2
Lab ID: 2015-485-001-002	Soil Color: Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	51.0	22.4	6.22	44.8	90.9	0.01307	0.0260	72.5
5	50.0	22.4	6.22	43.8	88.9	0.01307	0.0166	70.9
15	45.5	22.4	6.22	39.3	79.7	0.01307	0.0100	63.6
30	42.5	22.4	6.22	36.3	73.6	0.01307	0.0073	58.7
60	39.0	22.3	6.25	32.7	66.5	0.01308	0.0053	53.0
250	30.5	22.6	6.15	24.4	49.4	0.01303	0.0028	39.4
1440	23.5	22.8	6.07	17.4	35.4	0.01300	0.0012	28.2

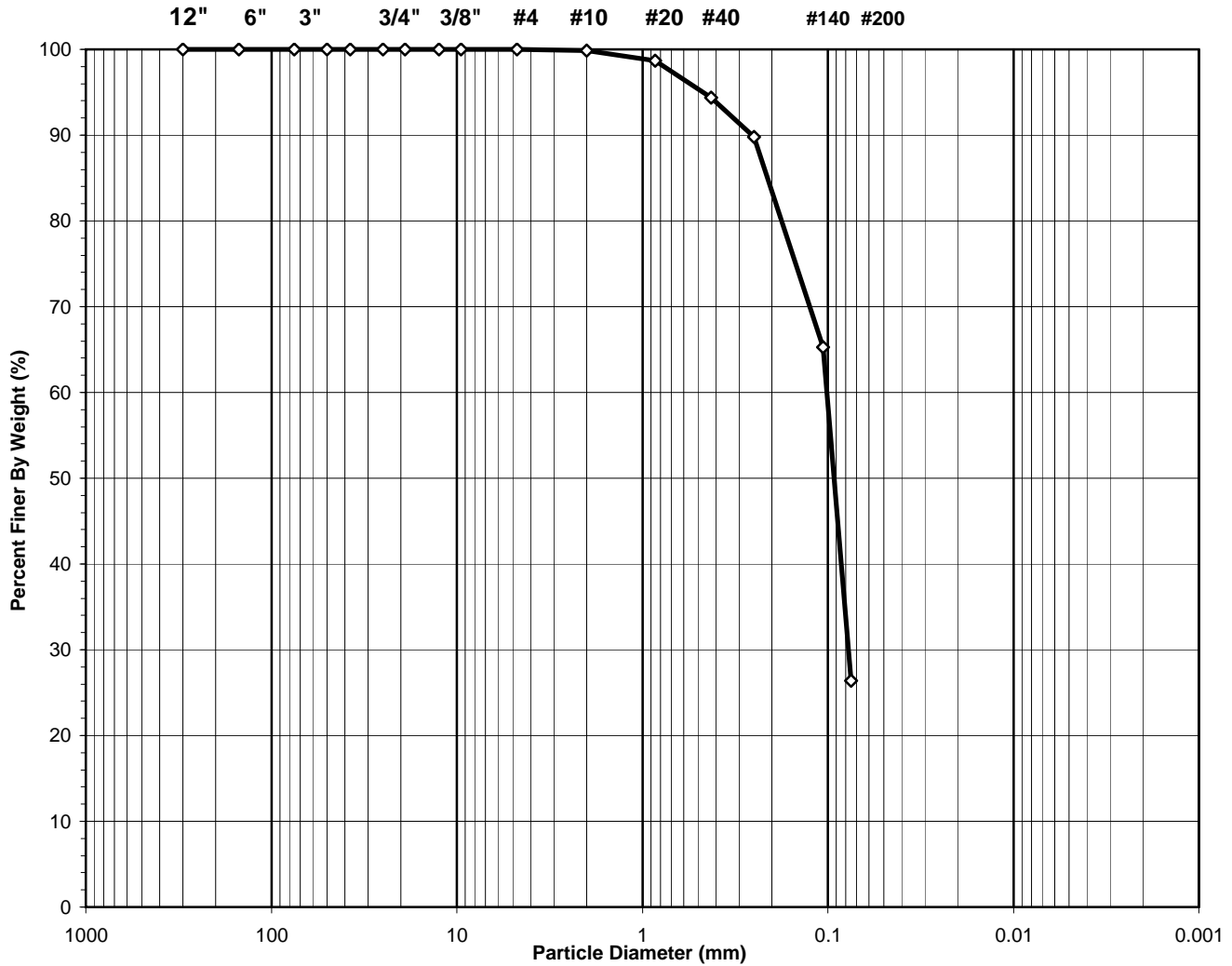
Soil Specimen Data	Other Corrections
Tare No. 925	
Weight of Tare & Dry Material (g) 153.69	a - Factor 0.99
Weight of Tare (g) 99.91	
Weight of Deflocculant (g) 5.0	Percent Finer than # 200 79.76
Weight of Dry Material (g) 48.8	Specific Gravity 2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B014
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	33.5-35.0
Project No.:	2015-485-001	Sample No.:	SS-10
Lab ID:	2015-485-001-003	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By	JP	Date	9/12/15	Checked By	KC	Date	9/15/15
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WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: WOR-B014
Client Reference: Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 33.5-35.0
Project No.: 2015-485-001	Sample No.: SS-10
Lab ID: 2015-485-001-003	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1425	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	477.30	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	413.70	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.92	Weight of Tare (g):	NA
Weight of Water (g):	63.60	Weight of Water (g):	NA
Weight of Dry Sample (g):	268.78	Weight of Dry Sample (g):	NA
Moisture Content (%):	23.7	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	268.78
Dry Weight of - 3/4" Sample (g):	197.8	Weight of - #200 Material (g):	70.97
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	197.81
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.43	0.16	0.16	99.84	99.84
#20	0.850	3.14	1.17	1.33	98.67	98.67
#40	0.425	11.56	4.30	5.63	94.37	94.37
#60	0.250	12.24	4.55	10.18	89.82	89.82
#140	0.106	65.91	24.52	34.70	65.30	65.30
#200	0.075	104.53	38.89	73.60	26.40	26.40
Pan	-	70.97	26.40	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B014
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	46.0-47.5
Project No.:	2015-485-001	Sample No.:	SS-14
Lab ID:	2015-485-001-004	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.19 CC = 0.89

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.13 CU = 1.75

D10 = 0.11

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B014
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	46.0-47.5
Project No.:	2015-485-001	Sample No.:	SS-14
Lab ID:	2015-485-001-004	Soil Color:	Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1438	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	538.80	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	450.40	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.53	Weight of Tare (g):	NA
Weight of Water (g):	88.40	Weight of Water (g):	NA
Weight of Dry Sample (g):	305.87	Weight of Dry Sample (g):	NA
Moisture Content (%):	28.9	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	305.87
Dry Weight of - 3/4" Sample (g):	285.7	Weight of - #200 Material (g):	20.13
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	285.74
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

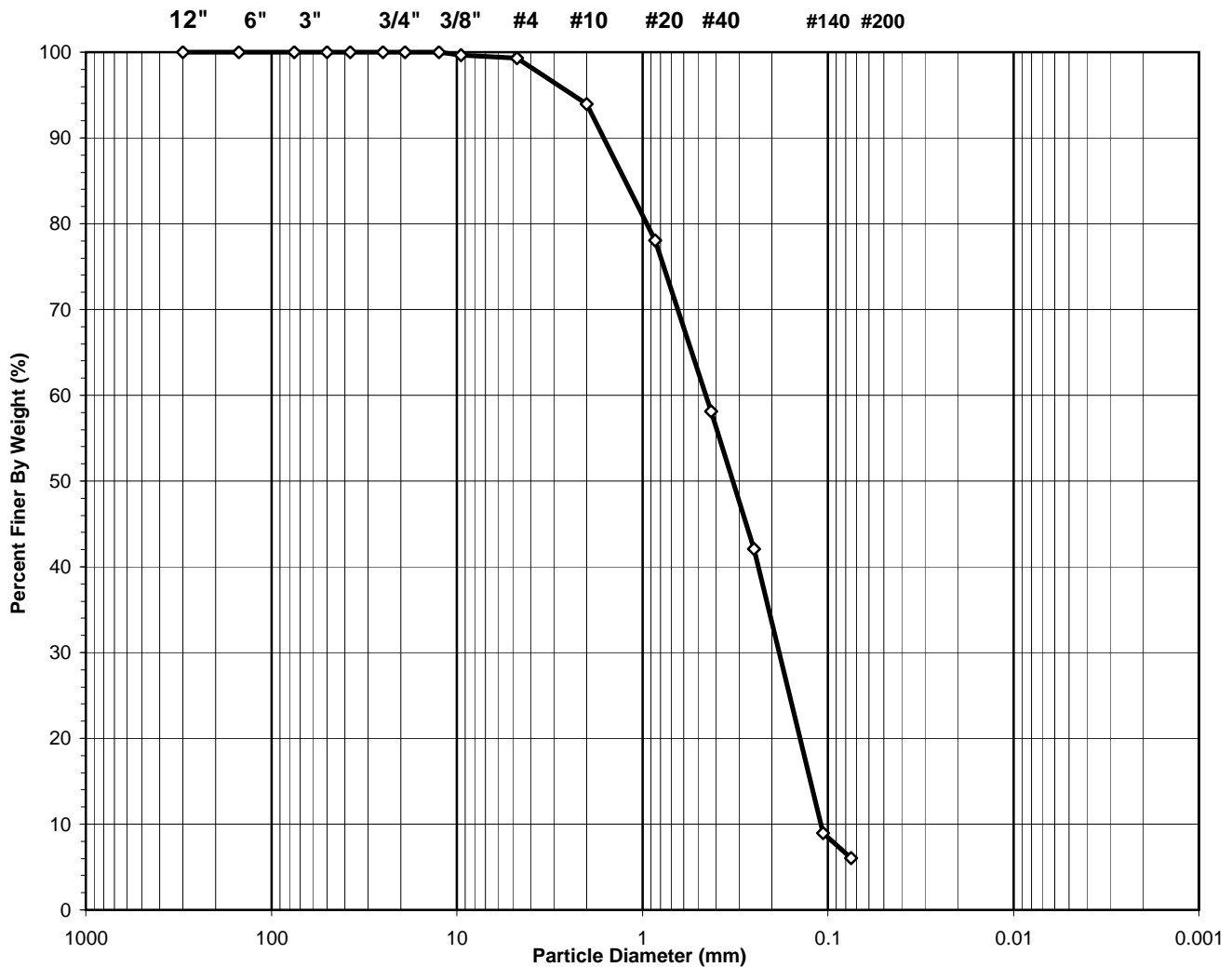
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.12	0.04	0.04	99.96	99.96
#20	0.850	0.30	0.10	0.14	99.86	99.86
#40	0.425	3.94	1.29	1.43	98.57	98.57
#60	0.250	38.46	12.57	14.00	86.00	86.00
#140	0.106	234.90	76.80	90.80	9.20	9.20
#200	0.075	8.02	2.62	93.42	6.58	6.58
Pan	-	20.13	6.58	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B014
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	58.5-60.0
Project No.:	2015-485-001	Sample No.:	SS-19
Lab ID:	2015-485-001-005	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.45 CC = 0.68

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.18 CU = 4.16

D10 = 0.11

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B014
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 58.5-60.0
Project No.:	2015-485-001	Sample No.: SS-19
Lab ID:	2015-485-001-005	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1454	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	692.38	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	590.70	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	138.40	Weight of Tare (g):	NA
Weight of Water (g):	101.68	Weight of Water (g):	NA
Weight of Dry Sample (g):	452.30	Weight of Dry Sample (g):	NA
Moisture Content (%):	22.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	452.30
Dry Weight of - 3/4" Sample (g):	425.1	Weight of - #200 Material (g):	27.25
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	425.05
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	1.70	0.38	0.38	99.62	99.62
#4	4.75	1.33	0.29	0.67	99.33	99.33
#10	2.00	24.35	5.38	6.05	93.95	93.95
#20	0.850	71.79	15.87	21.93	78.07	78.07
#40	0.425	90.12	19.92	41.85	58.15	58.15
#60	0.250	72.81	16.10	57.95	42.05	42.05
#140	0.106	149.68	33.09	91.04	8.96	8.96
#200	0.075	13.27	2.93	93.98	6.02	6.02
Pan	-	27.25	6.02	100.00	-	-

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

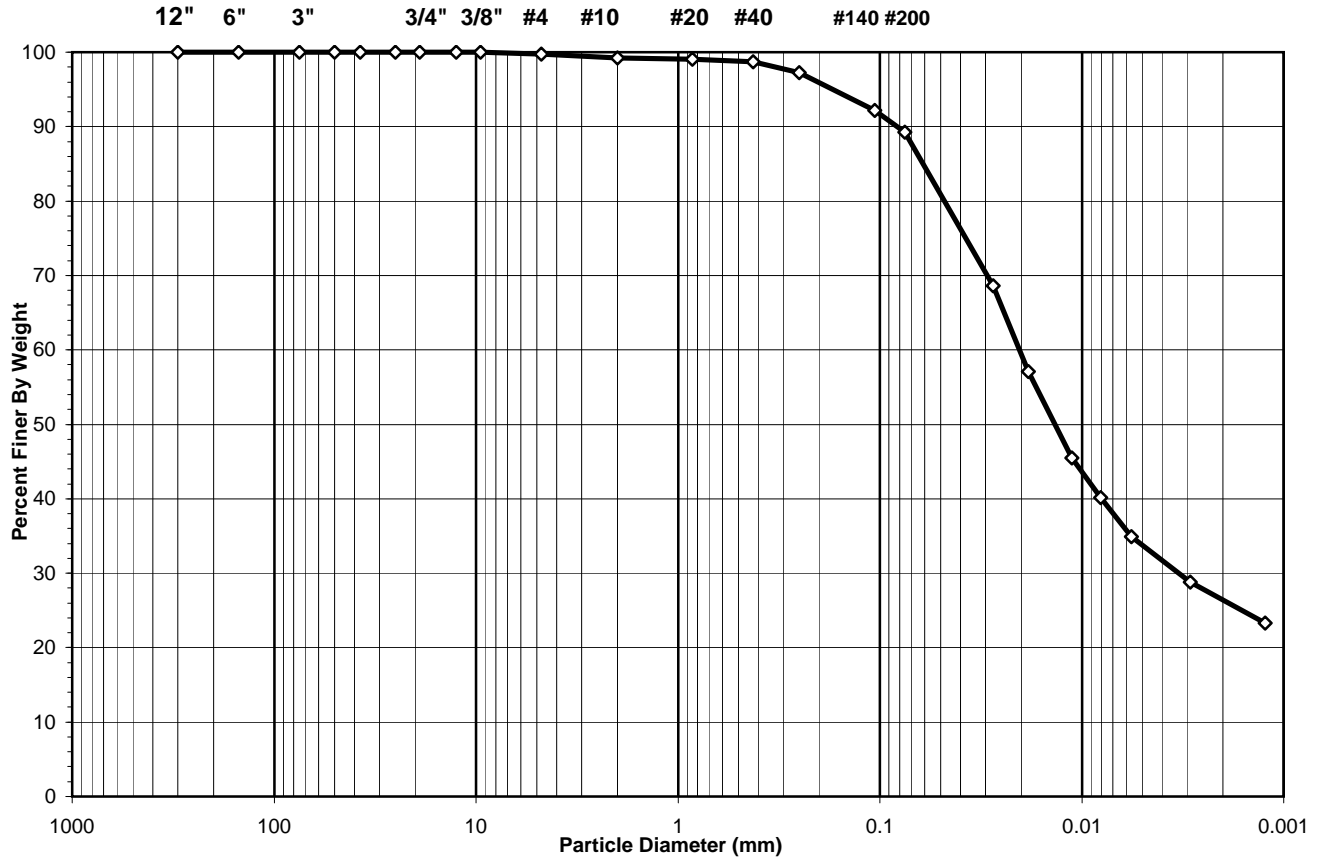
SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-002

Boring No.: WOR-B015A
 Depth (ft): 14.4-14.9
 Sample No.: ST-1
 Soil Color: Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

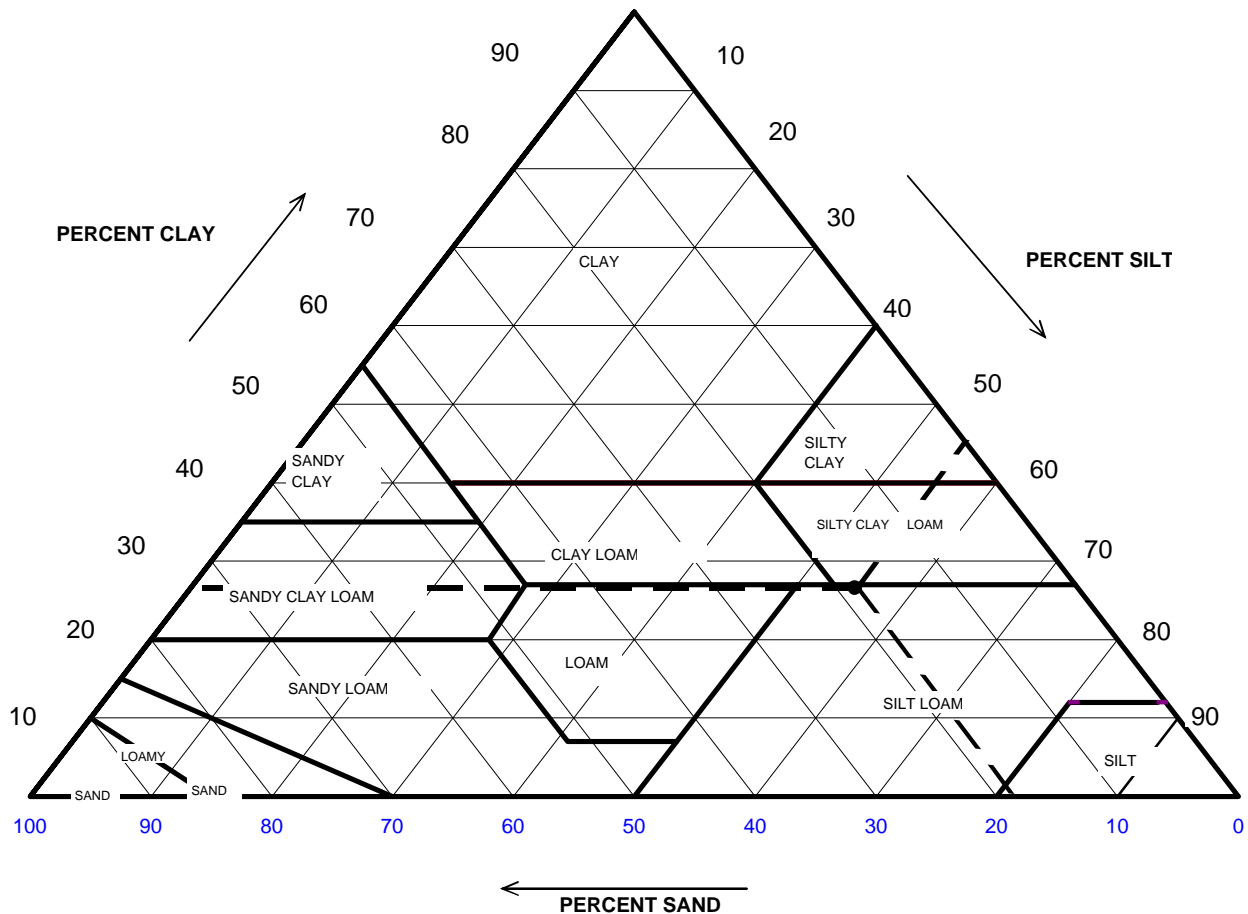


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.29
#4 To #200	<i>Sand</i>	10.42
Finer Than #200	<i>Silt & Clay</i>	89.29
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-002

Boring No.: WOR-B015A
 Depth (ft): 14.4-14.9
 Sample No.: ST-1
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.25	Gravel	0.75	0.00
0.05	80.95	Sand	18.30	18.44
0.002	26.39	Silt	54.56	54.97
		Clay	26.39	26.59
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B015A
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	14.4-14.9
Project No.:	2015-485-007	Sample No.:	ST-1
Lab ID:	2015-485-007-002	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1451	Tare No.	NA
Weight of Tare & Wet Sample (g)	1119.84	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	953.50	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	144.72	Weight of Tare (g)	NA
Weight of Water (g)	166.34	Weight of Water (g)	NA
Weight of Dry Sample (g)	808.78	Weight of Dry Sample (g)	NA
Moisture Content (%)	20.6	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	808.78
Dry Weight of -3/4" Sample (g)	86.59	Weight of - #200 Material (g)	722.19
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	86.59
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	2.31	0.29	0.29		99.71	99.71
#10	2.00	3.76	0.46	0.75		99.25	99.25
#20	0.85	1.56	0.19	0.94		99.06	99.06
#40	0.425	2.84	0.35	1.29		98.71	98.71
#60	0.250	12.08	1.49	2.79		97.21	97.21
#140	0.106	41.07	5.08	7.87		92.13	92.13
#200	0.075	22.97	2.84	10.71		89.29	89.29
Pan	-	722.19	89.29	100.00		-	-

Tested By **HL** Date **11/5/15** Checked By **KC** Date **11/9/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B015A
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	14.4-14.9
Project No.:	2015-485-007	Sample No.:	ST-1
Lab ID:	2015-485-007-002	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	44.5	23.1	5.97	38.5	76.9	0.01296	0.0275	68.6
5	38.0	23.1	5.97	32.0	63.9	0.01296	0.0184	57.1
15	31.5	23.1	5.97	25.5	50.9	0.01296	0.0112	45.5
30	28.5	23.1	5.97	22.5	44.9	0.01296	0.0081	40.1
63	25.5	23.3	5.89	19.6	39.1	0.01293	0.0057	34.9
250	22.0	23.5	5.82	16.2	32.3	0.01290	0.0029	28.8
1440	19.0	23.2	5.93	13.1	26.1	0.01294	0.0012	23.3

Soil Specimen Data	Other Corrections		
Tare No.	1092		
Weight of Tare & Dry Material (g)	153.90		
Weight of Tare (g)	99.27		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	49.6		
	a - Factor	0.99	
	Percent Finer than # 200	89.29	
	Specific Gravity	2.7	Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-003

Boring No.: WOR-B015A
 Depth (ft): 15.0-15.5
 Sample No.: ST-2
 Soil Color: Dark Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

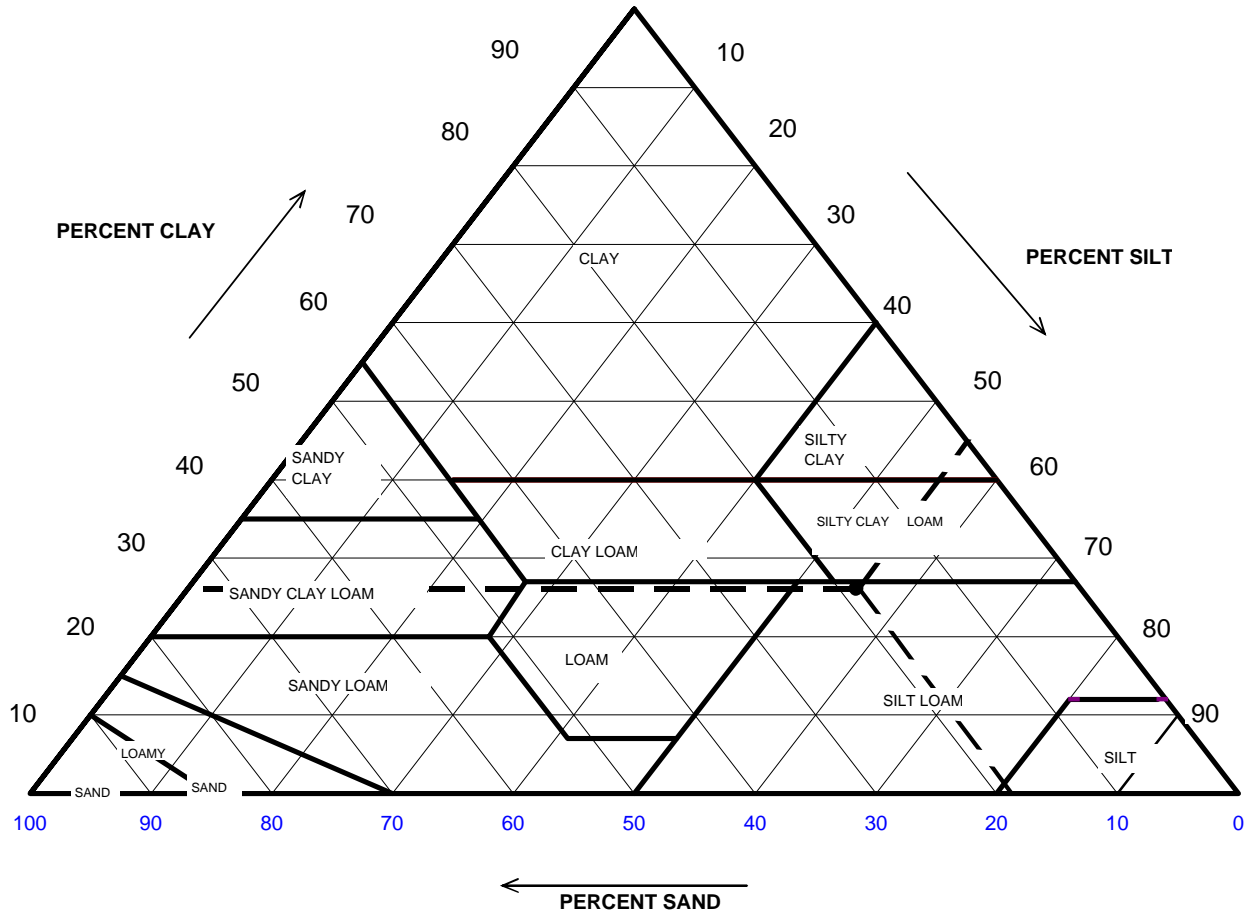


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.23
#4 To #200	<i>Sand</i>	10.43
Finer Than #200	<i>Silt & Clay</i>	89.34
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-003

Boring No.: WOR-B015A
 Depth (ft): 15.0-15.5
 Sample No.: ST-2
 Soil Color: Dark Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.48	Gravel	0.52	0.00
0.05	81.00	Sand	18.49	18.58
0.002	25.96	Silt	55.03	55.32
		Clay	25.96	26.10
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B015A
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	15.0-15.5
Project No.:	2015-485-007	Sample No.:	ST-2
Lab ID:	2015-485-007-003	Soil Color:	Dark Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	925	Tare No.	NA
Weight of Tare & Wet Sample (g)	816.12	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	690.10	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	99.76	Weight of Tare (g)	NA
Weight of Water (g)	126.02	Weight of Water (g)	NA
Weight of Dry Sample (g)	590.34	Weight of Dry Sample (g)	NA
Moisture Content (%)	21.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	590.34
Dry Weight of -3/4" Sample (g)	62.94	Weight of - #200 Material (g)	527.40
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	62.94
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.38	0.23	0.23	99.77	99.77
#10	2.00	1.67	0.28	0.52	99.48	99.48
#20	0.85	3.22	0.55	1.06	98.94	98.94
#40	0.425	3.13	0.53	1.59	98.41	98.41
#60	0.250	5.31	0.90	2.49	97.51	97.51
#140	0.106	25.23	4.27	6.77	93.23	93.23
#200	0.075	23.00	3.90	10.66	89.34	89.34
Pan	-	527.40	89.34	100.00	-	-

Tested By **PC** Date **10/31/15** Checked By **KC** Date **11/2/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-007
 Lab ID: 2015-485-007-003

Boring No.: WOR-B015A
 Depth (ft): 15.0-15.5
 Sample No.: ST-2
 Soil Color: Dark Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	39.5	22.4	6.22	33.3	78.1	0.01307	0.0290	69.8
5	34.0	22.4	6.22	27.8	65.2	0.01307	0.0191	58.2
15	28.5	22.4	6.22	22.3	52.3	0.01307	0.0115	46.7
30	24.5	22.4	6.22	18.3	42.9	0.01307	0.0084	38.3
60	23.0	22.4	6.22	16.8	39.4	0.01307	0.0060	35.2
250	20.0	22.5	6.18	13.8	32.4	0.01305	0.0030	29.0
1440	17.0	22.3	6.25	10.7	25.2	0.01308	0.0013	22.5

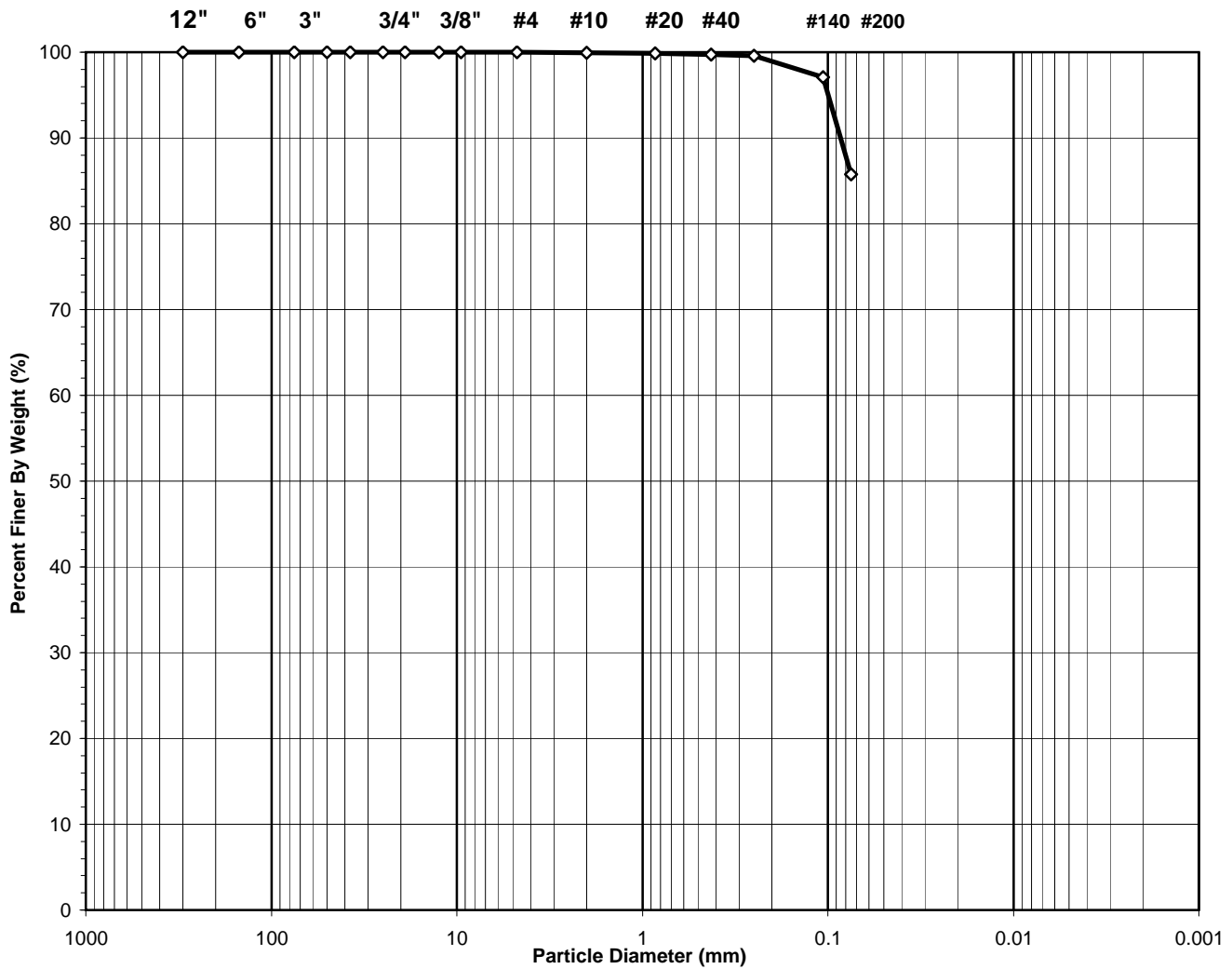
Soil Specimen Data	Other Corrections
Tare No. 644	
Weight of Tare & Dry Material (g) 146.77	a - Factor 0.99
Weight of Tare (g) 99.57	
Weight of Deflocculant (g) 5.0	Percent Finer than # 200 89.34
Weight of Dry Material (g) 42.2	Specific Gravity 2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B016
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.5-5.0
Project No.:	2015-485-001	Sample No.:	SS-2
Lab ID:	2015-485-001-006	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
CL, TESTED

USCS Classification:
LEAN CLAY

Tested By JP Date 9/12/15 Checked By KC Date 9/16/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B016
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 3.5-5.0
Project No.:	2015-485-001	Sample No.: SS-2
Lab ID:	2015-485-001-006	Soil Color: Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1418	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	552.80	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	491.20	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.19	Weight of Tare (g):	NA
Weight of Water (g):	61.60	Weight of Water (g):	NA
Weight of Dry Sample (g):	346.01	Weight of Dry Sample (g):	NA
Moisture Content (%):	17.8	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	346.01
Dry Weight of - 3/4" Sample (g):	49.3	Weight of - #200 Material (g):	296.71
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	49.30
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.20	0.06	0.06	99.94	99.94
#20	0.850	0.29	0.08	0.14	99.86	99.86
#40	0.425	0.42	0.12	0.26	99.74	99.74
#60	0.250	0.45	0.13	0.39	99.61	99.61
#140	0.106	8.66	2.50	2.90	97.10	97.10
#200	0.075	39.28	11.35	14.25	85.75	85.75
Pan	-	296.71	85.75	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/16/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-007

Boring No.: WOR-B016
 Depth (ft): 31.0-32.5
 Sample No.: SS-11
 Soil Color: Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

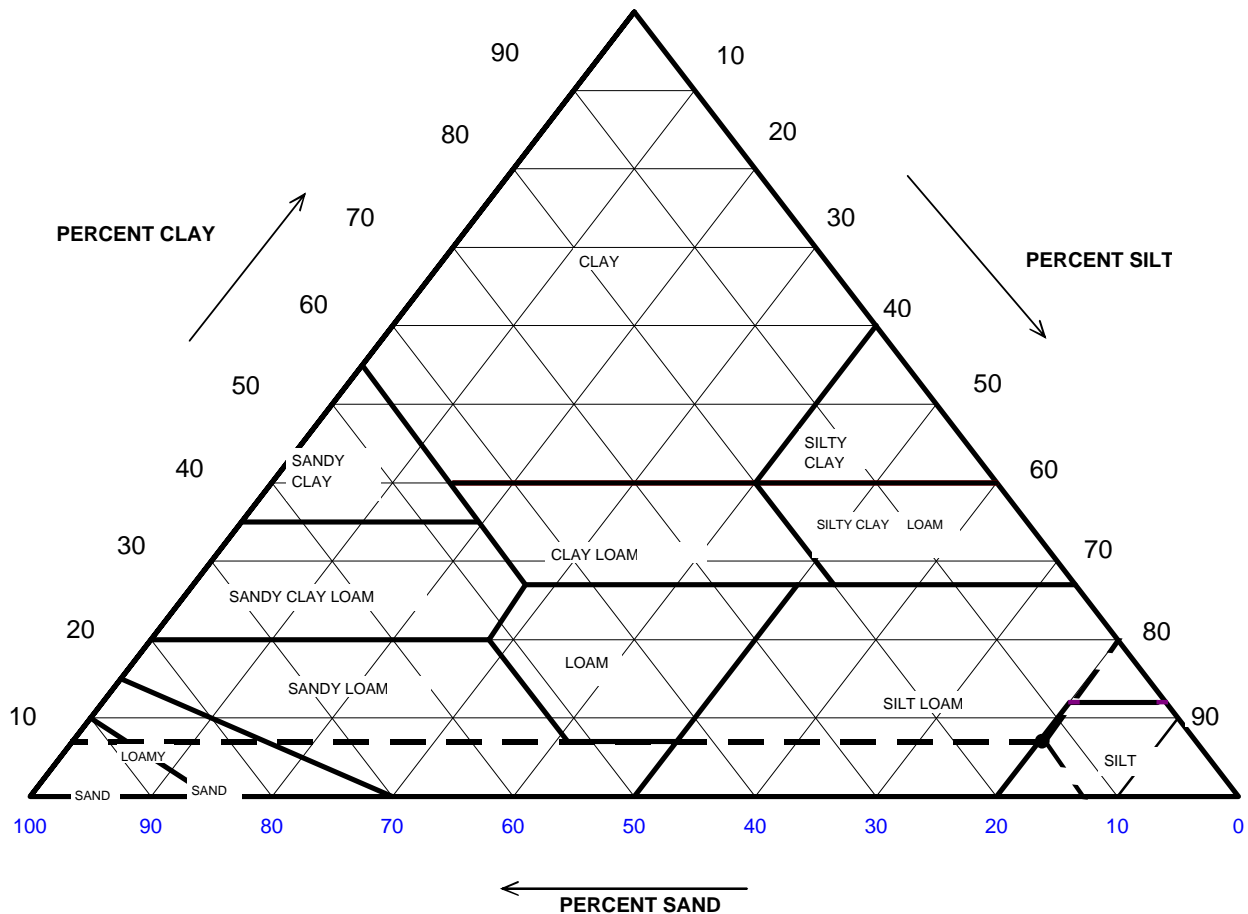


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.14
#4 To #200	<i>Sand</i>	5.17
Finer Than #200	<i>Silt & Clay</i>	94.69
USCS Symbol: <i>ML, TESTED</i>		
USCS Classification: <i>SILT</i> <i>(NON-PLASTIC FINES)</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-007

Boring No.: WOR-B016
 Depth (ft): 31.0-32.5
 Sample No.: SS-11
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.66	Gravel	0.34	0.00
0.05	87.00	Sand	12.66	12.70
0.002	7.03	Silt	79.98	80.25
		Clay	7.03	7.05
		USDA Classification:	SILT	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B016
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-001	Sample No.:	SS-11
Lab ID:	2015-485-001-007	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	975	Tare No.	NA
Weight of Tare & Wet Sample (g)	423.04	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	365.78	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	96.13	Weight of Tare (g)	NA
Weight of Water (g)	57.26	Weight of Water (g)	NA
Weight of Dry Sample (g)	269.65	Weight of Dry Sample (g)	NA
Moisture Content (%)	21.2	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	269.65
Dry Weight of -3/4" Sample (g)	14.32	Weight of - #200 Material (g)	255.33
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	14.32
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.38	0.14	0.14	99.86	99.86
#10	2.00	0.53	0.20	0.34	99.66	99.66
#20	0.85	0.47	0.17	0.51	99.49	99.49
#40	0.425	0.70	0.26	0.77	99.23	99.23
#60	0.250	1.73	0.64	1.41	98.59	98.59
#140	0.106	5.06	1.88	3.29	96.71	96.71
#200	0.075	5.45	2.02	5.31	94.69	94.69
Pan	-	255.33	94.69	100.00	-	-

Tested By **RAL** Date **9/15/15** Checked By **KC** Date **9/17/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B016
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-001	Sample No.:	SS-11
Lab ID:	2015-485-001-007	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	49.5	22.4	6.22	43.3	79.1	0.01307	0.0264	74.9
5	43.0	22.4	6.22	36.8	67.2	0.01307	0.0178	63.7
18	33.0	22.4	6.22	26.8	49.0	0.01307	0.0102	46.4
32	28.0	22.4	6.22	21.8	39.8	0.01307	0.0079	37.7
62	22.0	22.3	6.25	15.7	28.8	0.01308	0.0059	27.3
250	12.5	22.6	6.15	6.4	11.6	0.01303	0.0031	11.0
1440	8.0	22.8	6.07	1.9	3.5	0.01300	0.0013	3.3

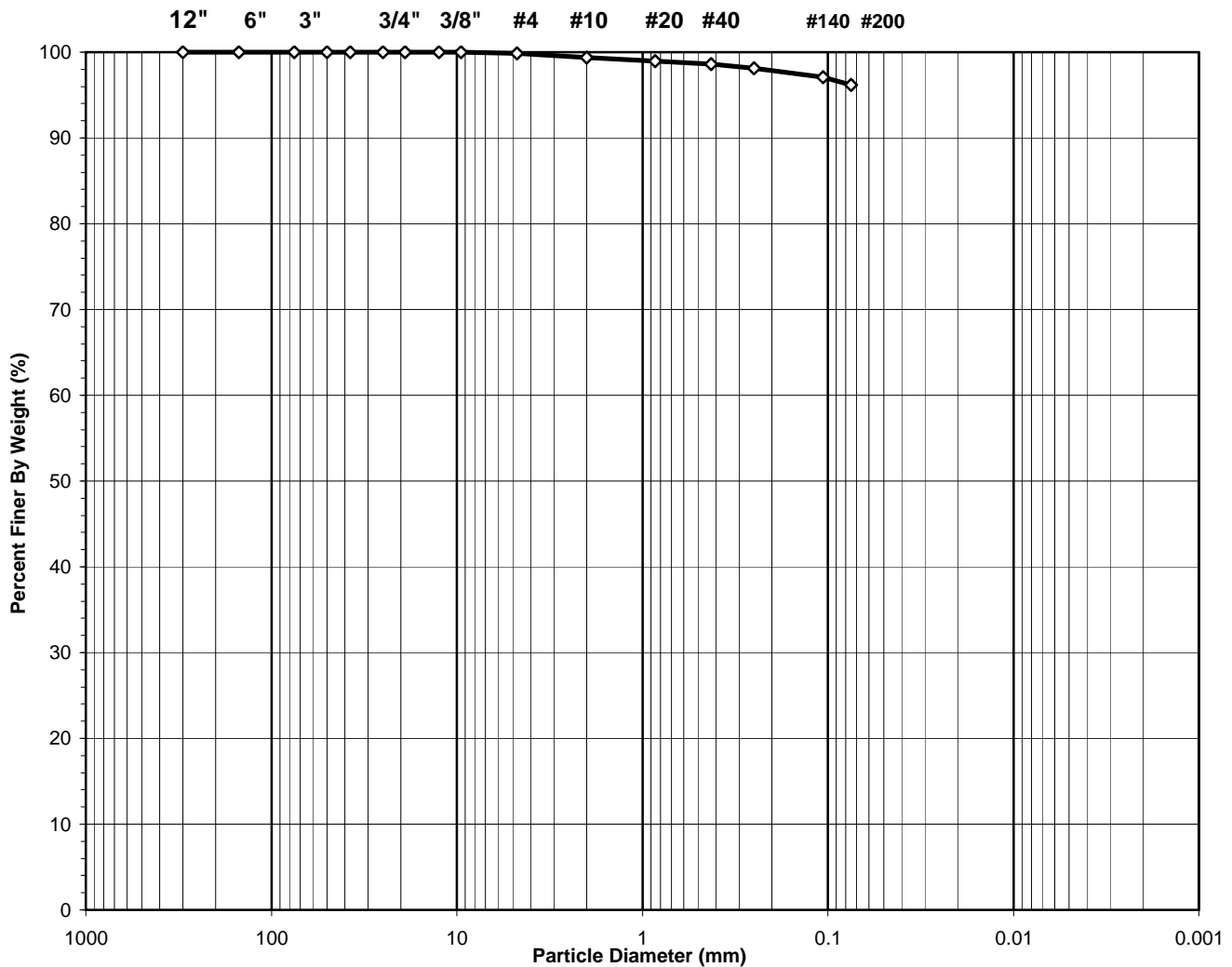
Soil Specimen Data	Other Corrections	
Tare No.	970	
Weight of Tare & Dry Material (g)	159.79	
Weight of Tare (g)	100.63	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	54.2	
	a - Factor	0.99
	Percent Finer than # 200	94.69
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	1.0-2.5
Project No.:	2015-485-003	Sample No.:	SS-1
Lab ID:	2015-485-003-008	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
cl, ASSUMED

USCS Classification:
LEAN CLAY

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	1.0-2.5
Project No.:	2015-485-003	Sample No.:	SS-1
Lab ID:	2015-485-003-008	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1442	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	424.50	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	384.15	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.81	Weight of Tare (g):	NA
Weight of Water (g):	40.35	Weight of Water (g):	NA
Weight of Dry Sample (g):	238.34	Weight of Dry Sample (g):	NA
Moisture Content (%):	16.9	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	238.34
Dry Weight of - 3/4" Sample (g):	9.1	Weight of - #200 Material (g):	229.27
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	9.07
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

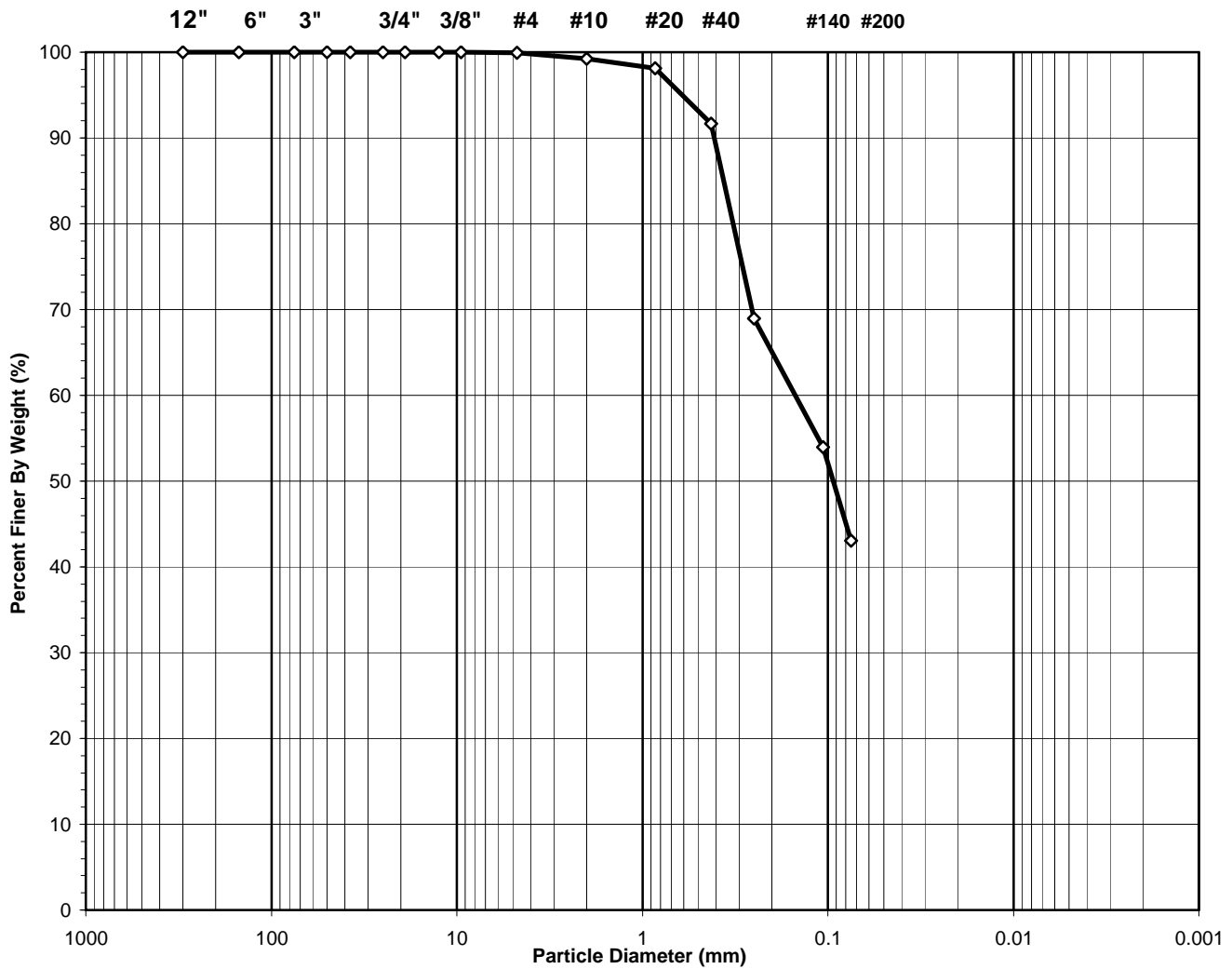
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.40	0.17	0.17	99.83	99.83
#10	2.00	1.09	0.46	0.63	99.37	99.37
#20	0.850	1.00	0.42	1.04	98.96	98.96
#40	0.425	0.87	0.37	1.41	98.59	98.59
#60	0.250	1.13	0.47	1.88	98.12	98.12
#140	0.106	2.38	1.00	2.88	97.12	97.12
#200	0.075	2.20	0.92	3.81	96.19	96.19
Pan	-	229.27	96.19	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	11.0-12.5
Project No.:	2015-485-003	Sample No.:	SS-5
Lab ID:	2015-485-003-009	Soil Color:	Brownish Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	11.0-12.5
Project No.:	2015-485-003	Sample No.:	SS-5
Lab ID:	2015-485-003-009	Soil Color:	Brownish Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	56	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	532.00	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	498.40	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	204.70	Weight of Tare (g):	NA
Weight of Water (g):	33.60	Weight of Water (g):	NA
Weight of Dry Sample (g):	293.70	Weight of Dry Sample (g):	NA
Moisture Content (%):	11.4	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	293.70
Dry Weight of - 3/4" Sample (g):	167.2	Weight of - #200 Material (g):	126.48
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	167.22
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.21	0.07	0.07	99.93	99.93
#10	2.00	2.12	0.72	0.79	99.21	99.21
#20	0.850	3.25	1.11	1.90	98.10	98.10
#40	0.425	18.92	6.44	8.34	91.66	91.66
#60	0.250	66.71	22.71	31.06	68.94	68.94
#140	0.106	44.03	14.99	46.05	53.95	53.95
#200	0.075	31.98	10.89	56.94	43.06	43.06
Pan	-	126.48	43.06	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	21.0-22.5
Project No.:	2015-485-003	Sample No.:	SS-9
Lab ID:	2015-485-003-010	Soil Color:	Dark Gray / Black

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

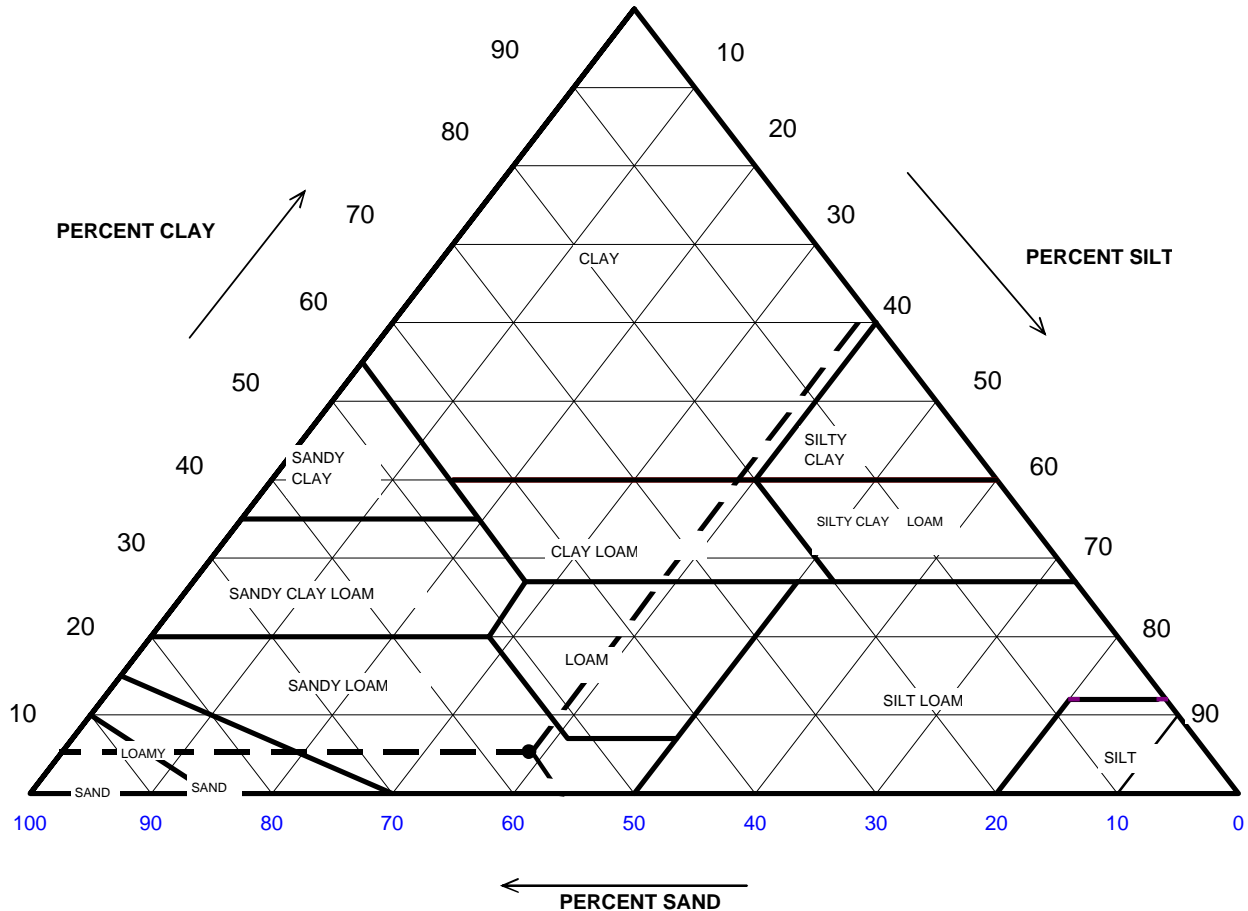


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	16.47
#4 To #200	<i>Sand</i>	45.86
Finer Than #200	<i>Silt & Clay</i>	37.67
USCS Symbol: <i>sm, ASSUMED</i>		
USCS Classification: <i>SILTY SAND WITH GRAVEL</i>		
VISUAL DESCRIPTION: <i>Dark Gray / Black Ash</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-010

Boring No.: B-18
 Depth (ft): 21.0-22.5
 Sample No.: SS-9
 Soil Color: Dark Gray / Black



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	73.38	Gravel	26.62	0.00
0.05	32.28	Sand	41.10	56.01
0.002	3.92	Silt	28.37	38.66
		Clay	3.92	5.34
		USDA Classification:	SANDY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	21.0-22.5
Project No.:	2015-485-003	Sample No.:	SS-9
Lab ID:	2015-485-003-010	Soil Color:	Dark Gray / Black

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	67	Tare No.	NA
Weight of Tare & Wet Sample (g)	631.30	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	554.90	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	199.80	Weight of Tare (g)	NA
Weight of Water (g)	76.40	Weight of Water (g)	NA
Weight of Dry Sample (g)	355.10	Weight of Dry Sample (g)	NA
Moisture Content (%)	21.5	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	355.10
Dry Weight of -3/4" Sample (g)	209.60	Weight of - #200 Material (g)	133.75
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	221.35
Dry Weight of +3/4" Sample (g)	11.75		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	11.75	3.31	3.31		96.69	96.69
3/4"	19.0	0.00	0.00	3.31		96.69	96.69
1/2"	12.5	8.04	2.26	5.57		94.43	94.43
3/8"	9.50	12.11	3.41	8.98		91.02	91.02
#4	4.75	26.59	7.49	16.47		83.53	83.53
#10	2.00	36.04	10.15	26.62		73.38	73.38
#20	0.85	34.59	9.74	36.36		63.64	63.64
#40	0.425	28.46	8.01	44.38		55.62	55.62
#60	0.250	19.91	5.61	49.98		50.02	50.02
#140	0.106	29.74	8.38	58.36		41.64	41.64
#200	0.075	14.12	3.98	62.33		37.67	37.67
Pan	-	133.75	37.67	100.00		-	-

Tested By **RAL** Date **10/7/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	21.0-22.5
Project No.:	2015-485-003	Sample No.:	SS-9
Lab ID:	2015-485-003-010	Soil Color:	Dark Gray / Black

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	28.0	22.9	6.04	22.0	69.3	0.01299	0.0314	26.1
5	23.5	22.9	6.04	17.5	55.1	0.01299	0.0205	20.8
15	19.5	22.9	6.04	13.5	42.5	0.01299	0.0121	16.0
30	16.5	22.9	6.04	10.5	33.0	0.01299	0.0087	12.4
60	13.5	22.6	6.15	7.4	23.2	0.01303	0.0063	8.7
250	10.0	22.5	6.18	3.8	12.1	0.01305	0.0032	4.5
1440	9.0	22.5	6.18	2.8	8.9	0.01305	0.0013	3.4

Soil Specimen Data	Other Corrections	
Tare No.	967	
Weight of Tare & Dry Material (g)	136.73	
Weight of Tare (g)	100.37	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	31.4	
	a - Factor	0.99
	Percent Finer than # 200	37.67
	Specific Gravity	2.7 Assumed

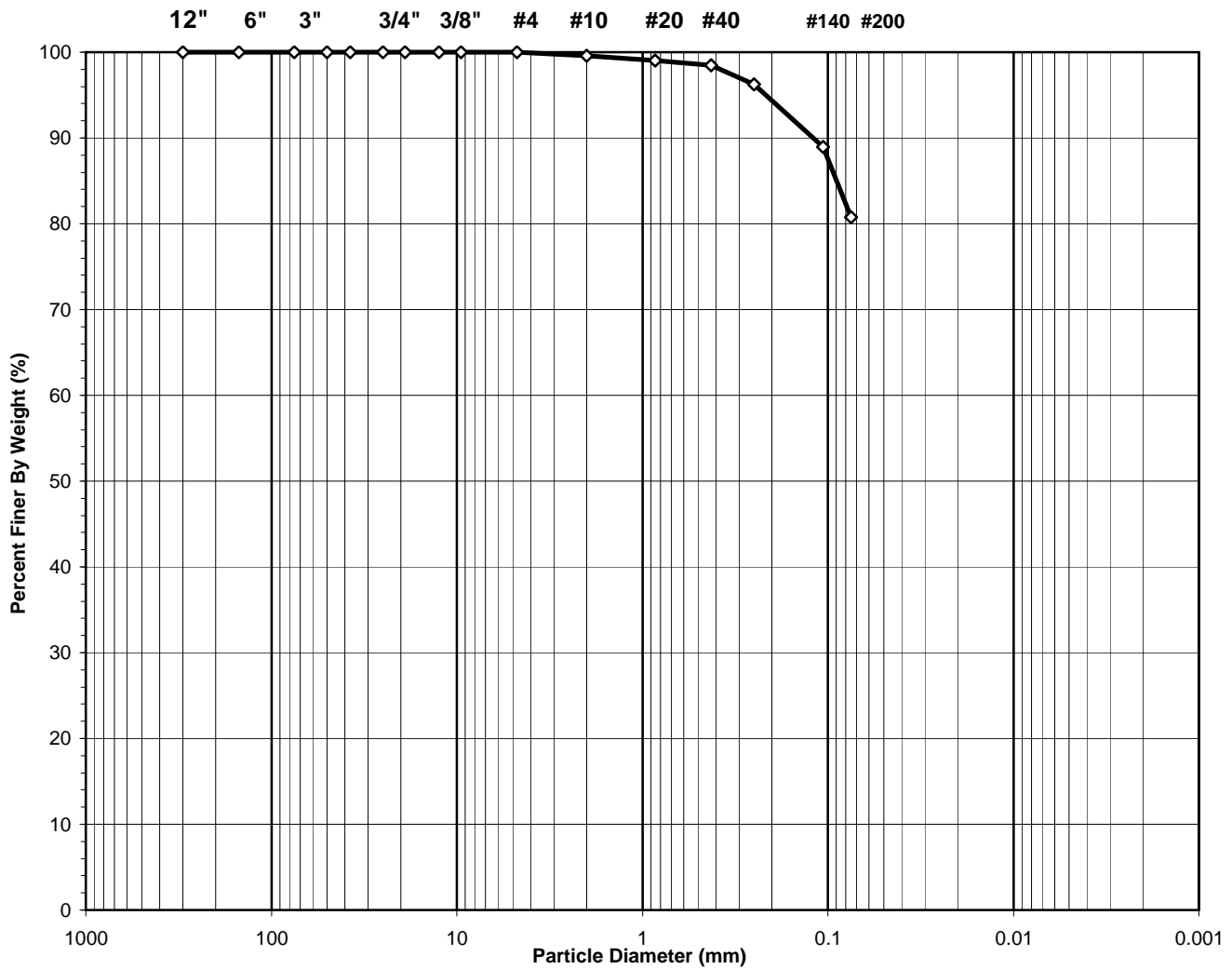
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	10/7/15	Checked By	KC	Date	10/12/15
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SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-003	Sample No.:	SS-13
Lab ID:	2015-485-003-011	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
cl, ASSUMED

USCS Classification:
LEAN CLAY WITH SAND

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-003	Sample No.:	SS-13
Lab ID:	2015-485-003-011	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	26	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	682.30	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	581.40	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	200.68	Weight of Tare (g):	NA
Weight of Water (g):	100.90	Weight of Water (g):	NA
Weight of Dry Sample (g):	380.72	Weight of Dry Sample (g):	NA
Moisture Content (%):	26.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	380.72
Dry Weight of - 3/4" Sample (g):	73.3	Weight of - #200 Material (g):	307.45
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	73.27
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	1.66	0.44	0.44	99.56	99.56
#20	0.850	2.15	0.56	1.00	99.00	99.00
#40	0.425	2.10	0.55	1.55	98.45	98.45
#60	0.250	8.26	2.17	3.72	96.28	96.28
#140	0.106	27.98	7.35	11.07	88.93	88.93
#200	0.075	31.12	8.17	19.25	80.75	80.75
Pan	-	307.45	80.75	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	38.5-40.0
Project No.:	2015-485-003	Sample No.:	SS-16
Lab ID:	2015-485-003-012	Soil Color:	Brownish Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	38.5-40.0
Project No.:	2015-485-003	Sample No.:	SS-16
Lab ID:	2015-485-003-012	Soil Color:	Brownish Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	20	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	634.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	532.28	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	204.50	Weight of Tare (g):	NA
Weight of Water (g):	102.42	Weight of Water (g):	NA
Weight of Dry Sample (g):	327.78	Weight of Dry Sample (g):	NA
Moisture Content (%):	31.2	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	327.78
Dry Weight of - 3/4" Sample (g):	271.1	Weight of - #200 Material (g):	56.72
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	271.06
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	1.02	0.31	0.31	99.69	99.69
#20	0.850	1.44	0.44	0.75	99.25	99.25
#40	0.425	3.09	0.94	1.69	98.31	98.31
#60	0.250	105.15	32.08	33.77	66.23	66.23
#140	0.106	152.64	46.57	80.34	19.66	19.66
#200	0.075	7.72	2.36	82.70	17.30	17.30
Pan	-	56.72	17.30	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	56.0-57.5
Project No.:	2015-485-003	Sample No.:	SS-23
Lab ID:	2015-485-003-013	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.25 CC = 0.84

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.15 CU = 2.35

D10 = 0.11

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-18
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	56.0-57.5
Project No.:	2015-485-003	Sample No.:	SS-23
Lab ID:	2015-485-003-013	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	10	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	515.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	449.00	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	202.37	Weight of Tare (g):	NA
Weight of Water (g):	66.70	Weight of Water (g):	NA
Weight of Dry Sample (g):	246.63	Weight of Dry Sample (g):	NA
Moisture Content (%):	27.0	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	246.63
Dry Weight of - 3/4" Sample (g):	231.6	Weight of - #200 Material (g):	15.05
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	231.58
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.40	0.16	0.16	99.84	99.84
#10	2.00	0.37	0.15	0.31	99.69	99.69
#20	0.850	1.49	0.60	0.92	99.08	99.08
#40	0.425	9.52	3.86	4.78	95.22	95.22
#60	0.250	88.41	35.85	40.62	59.38	59.38
#140	0.106	123.76	50.18	90.80	9.20	9.20
#200	0.075	7.63	3.09	93.90	6.10	6.10
Pan	-	15.05	6.10	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: B-20
Client Reference: Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 3.0-5.5
Project No.: 2015-485-003	Sample No.: SS-2
Lab ID: 2015-485-003-014	Soil Color: Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

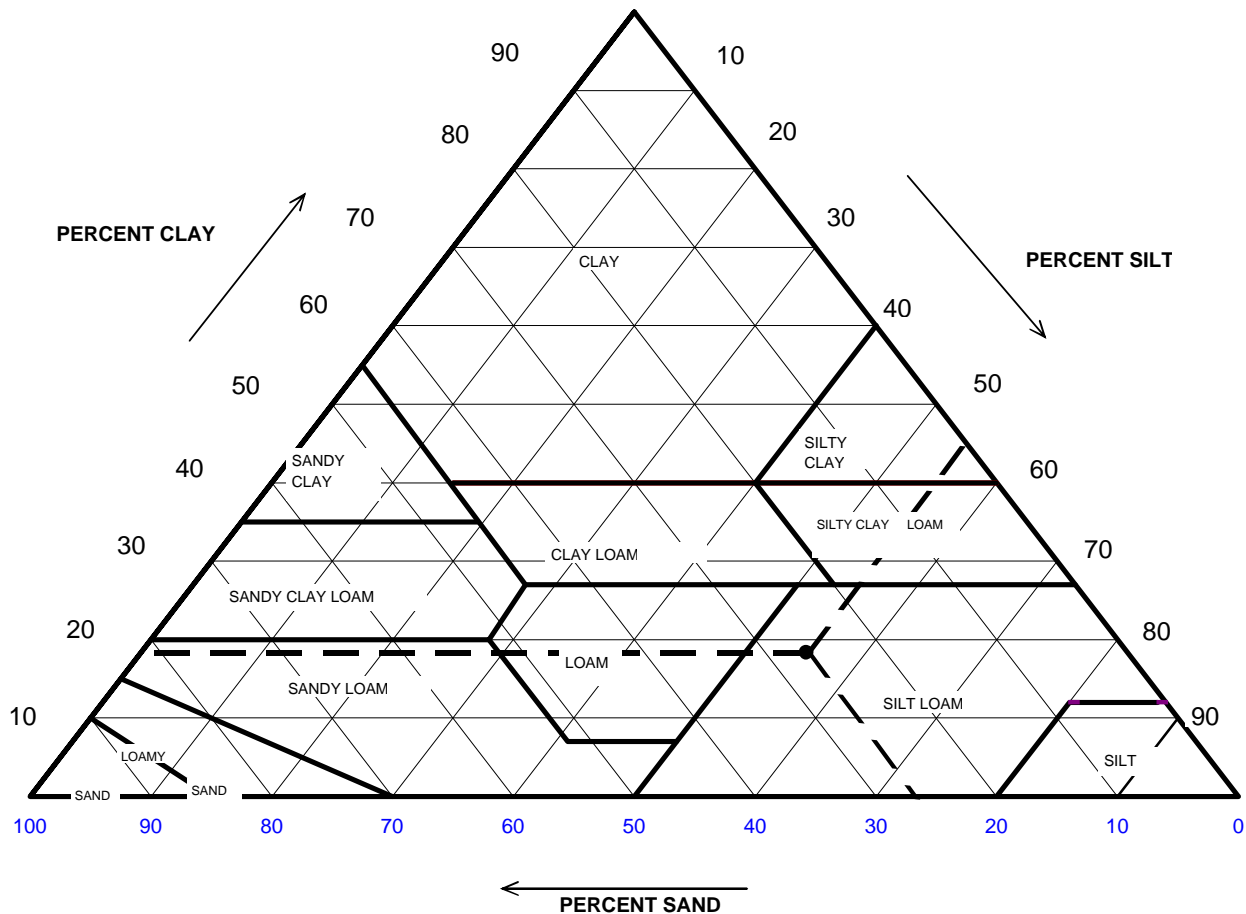


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	10.64
Finer Than #200	<i>Silt & Clay</i>	89.36
USCS Symbol: <i>cl, ASSUMED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-014

Boring No.: B-20
 Depth (ft): 3.0-5.5
 Sample No.: SS-2
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.98	Gravel	0.02	0.00
0.05	73.39	Sand	26.59	26.60
0.002	18.31	Silt	55.08	55.09
		Clay	18.31	18.31
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.0-5.5
Project No.:	2015-485-003	Sample No.:	SS-2
Lab ID:	2015-485-003-014	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	15	Tare No.	NA
Weight of Tare & Wet Sample (g)	552.50	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	495.90	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	201.42	Weight of Tare (g)	NA
Weight of Water (g)	56.60	Weight of Water (g)	NA
Weight of Dry Sample (g)	294.48	Weight of Dry Sample (g)	NA
Moisture Content (%)	19.2	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	294.48
Dry Weight of -3/4" Sample (g)	31.34	Weight of - #200 Material (g)	263.14
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	31.34
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.05	0.02	0.02	99.98	99.98
#20	0.85	0.22	0.07	0.09	99.91	99.91
#40	0.425	0.43	0.15	0.24	99.76	99.76
#60	0.250	0.50	0.17	0.41	99.59	99.59
#140	0.106	5.85	1.99	2.39	97.61	97.61
#200	0.075	24.29	8.25	10.64	89.36	89.36
Pan	-	263.14	89.36	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/12/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.0-5.5
Project No.:	2015-485-003	Sample No.:	SS-2
Lab ID:	2015-485-003-014	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	39.0	22.1	6.33	32.7	58.4	0.01311	0.0292	52.2
5	29.5	22.1	6.33	23.2	41.4	0.01311	0.0198	37.0
15	24.0	22.1	6.33	17.7	31.6	0.01311	0.0119	28.2
30	22.0	22.1	6.33	15.7	28.0	0.01311	0.0085	25.0
60	21.5	22.1	6.33	15.2	27.1	0.01311	0.0060	24.2
250	18.5	22.6	6.15	12.4	22.1	0.01303	0.0030	19.7
1440	16.5	22.9	6.04	10.5	18.7	0.01299	0.0013	16.7

Soil Specimen Data	Other Corrections	
Tare No.	695	
Weight of Tare & Dry Material (g)	152.89	
Weight of Tare (g)	92.49	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	55.4	
	a - Factor	0.99
	Percent Finer than # 200	89.36
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

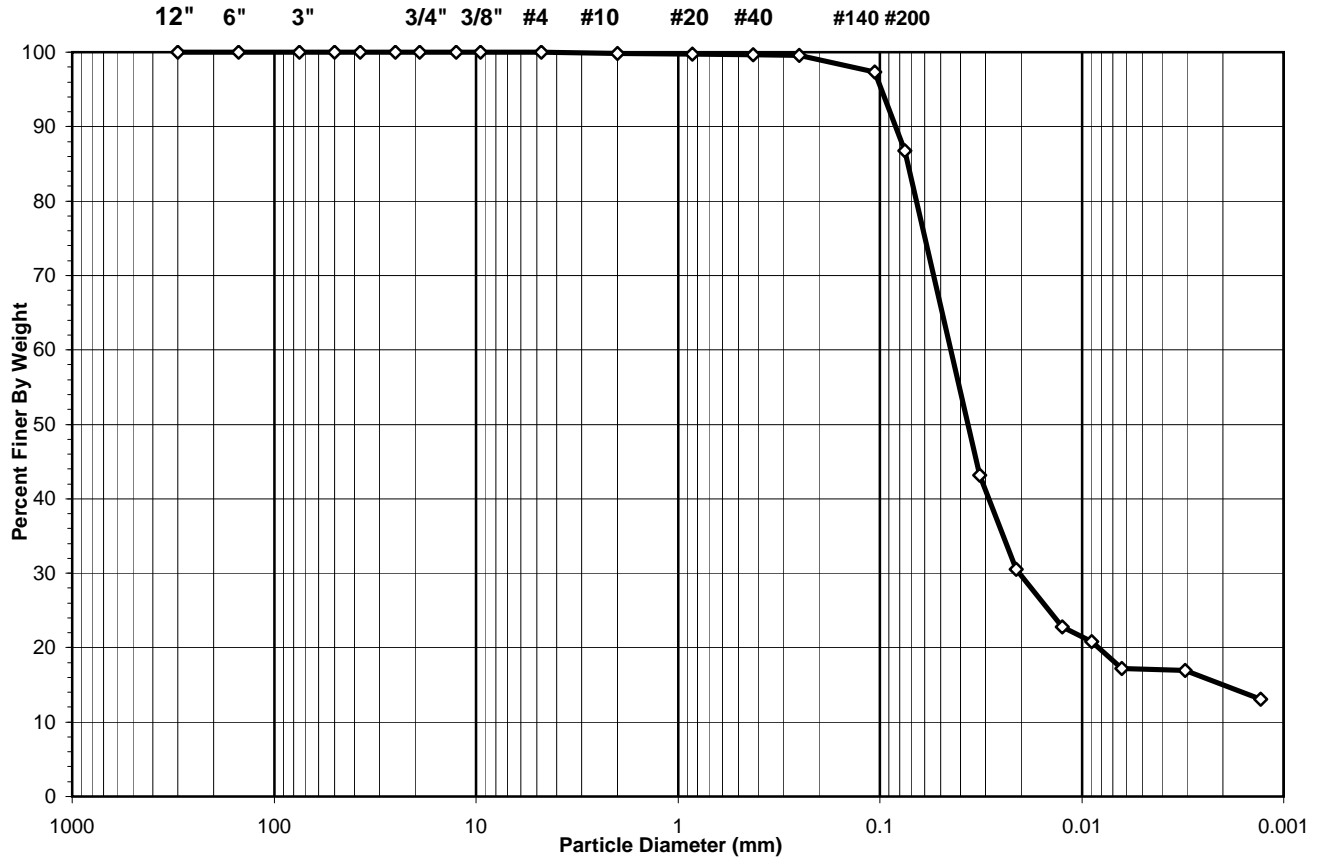
Tested By	TO	Date	10/6/15	Checked By	KC	Date	10/12/15
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SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	8.5-10.0
Project No.:	2015-485-003	Sample No.:	SS-4
Lab ID:	2015-485-003-015	Soil Color:	Brown

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

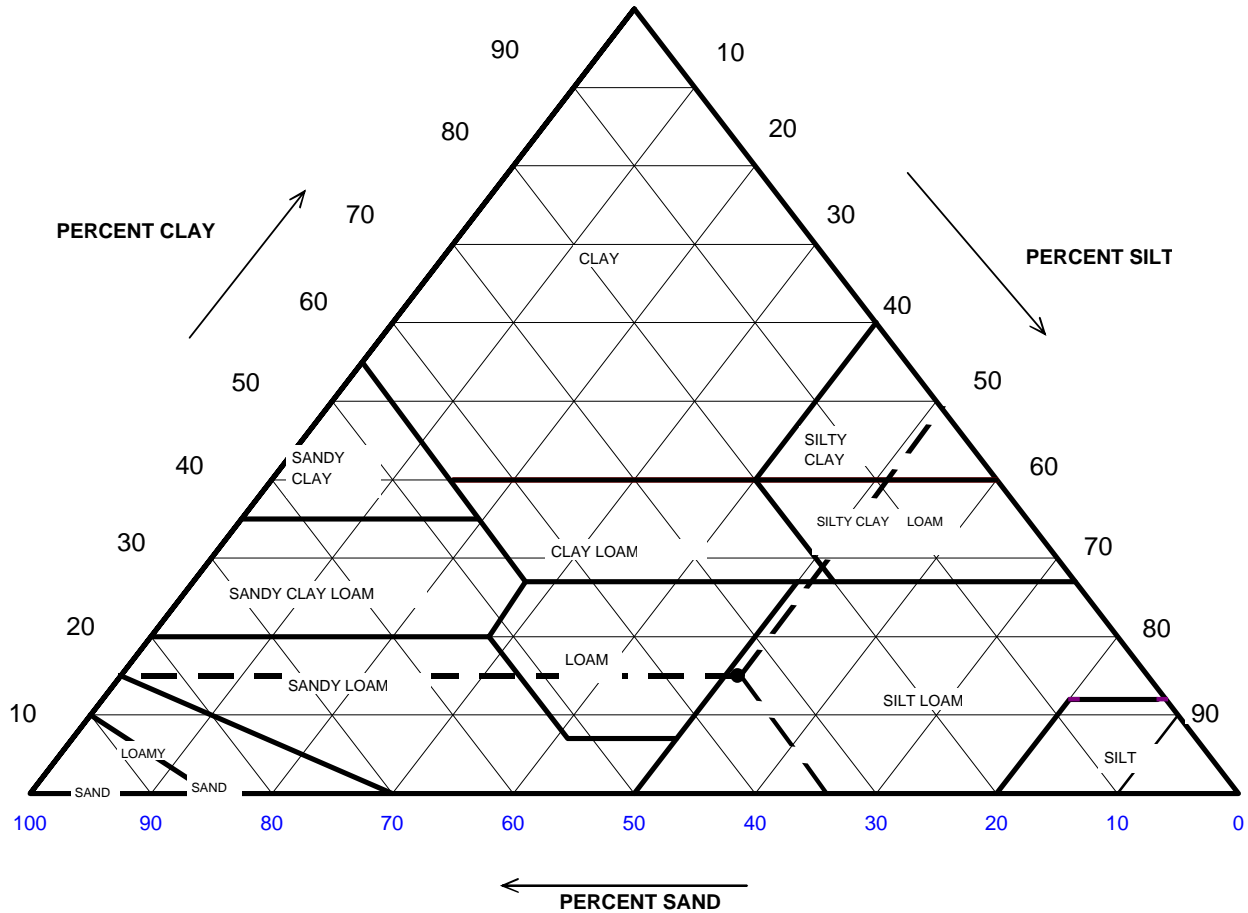


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	13.28
Finer Than #200	<i>Silt & Clay</i>	86.72
USCS Symbol: <i>ml, ASSUMED</i>		
USCS Classification: <i>SILT</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-003
 Lab ID: 2015-485-003-015

Boring No.: B-20
 Depth (ft): 8.5-10.0
 Sample No.: SS-4
 Soil Color: Brown



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.84	Gravel	0.16	0.00
0.05	65.99	Sand	33.85	33.91
0.002	14.99	Silt	51.00	51.08
		Clay	14.99	15.01
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	8.5-10.0
Project No.:	2015-485-003	Sample No.:	SS-4
Lab ID:	2015-485-003-015	Soil Color:	Brown

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	64	Tare No.	NA
Weight of Tare & Wet Sample (g)	474.40	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	424.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	200.72	Weight of Tare (g)	NA
Weight of Water (g)	50.10	Weight of Water (g)	NA
Weight of Dry Sample (g)	223.58	Weight of Dry Sample (g)	NA
Moisture Content (%)	22.4	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	223.58
Dry Weight of -3/4" Sample (g)	29.69	Weight of - #200 Material (g)	193.89
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	29.69
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.36	0.16	0.16	99.84	99.84
#20	0.85	0.14	0.06	0.22	99.78	99.78
#40	0.425	0.22	0.10	0.32	99.68	99.68
#60	0.250	0.25	0.11	0.43	99.57	99.57
#140	0.106	5.00	2.24	2.67	97.33	97.33
#200	0.075	23.72	10.61	13.28	86.72	86.72
Pan	-	193.89	86.72	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	8.5-10.0
Project No.:	2015-485-003	Sample No.:	SS-4
Lab ID:	2015-485-003-015	Soil Color:	Brown

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	29.0	20.7	6.83	22.2	49.8	0.01333	0.0320	43.2
5	22.5	20.7	6.83	15.7	35.2	0.01333	0.0212	30.5
15	18.5	20.7	6.83	11.7	26.2	0.01333	0.0125	22.7
30	17.5	20.7	6.83	10.7	24.0	0.01333	0.0089	20.8
60	15.5	21.1	6.68	8.8	19.8	0.01327	0.0064	17.2
250	15.0	22.1	6.33	8.7	19.5	0.01311	0.0031	16.9
1440	13.0	22.2	6.29	6.7	15.1	0.01310	0.0013	13.1

Soil Specimen Data	Other Corrections		
Tare No.	694		
Weight of Tare & Dry Material (g)	143.19		
Weight of Tare (g)	94.13		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	44.1		
	a - Factor	0.99	
	Percent Finer than # 200	86.72	
	Specific Gravity	2.7	Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	10/12/15	Checked By	KC	Date	10/14/15
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SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.5-20.0
Project No.:	2015-485-003	Sample No.:	SS-6
Lab ID:	2015-485-003-016	Soil Color:	Gray

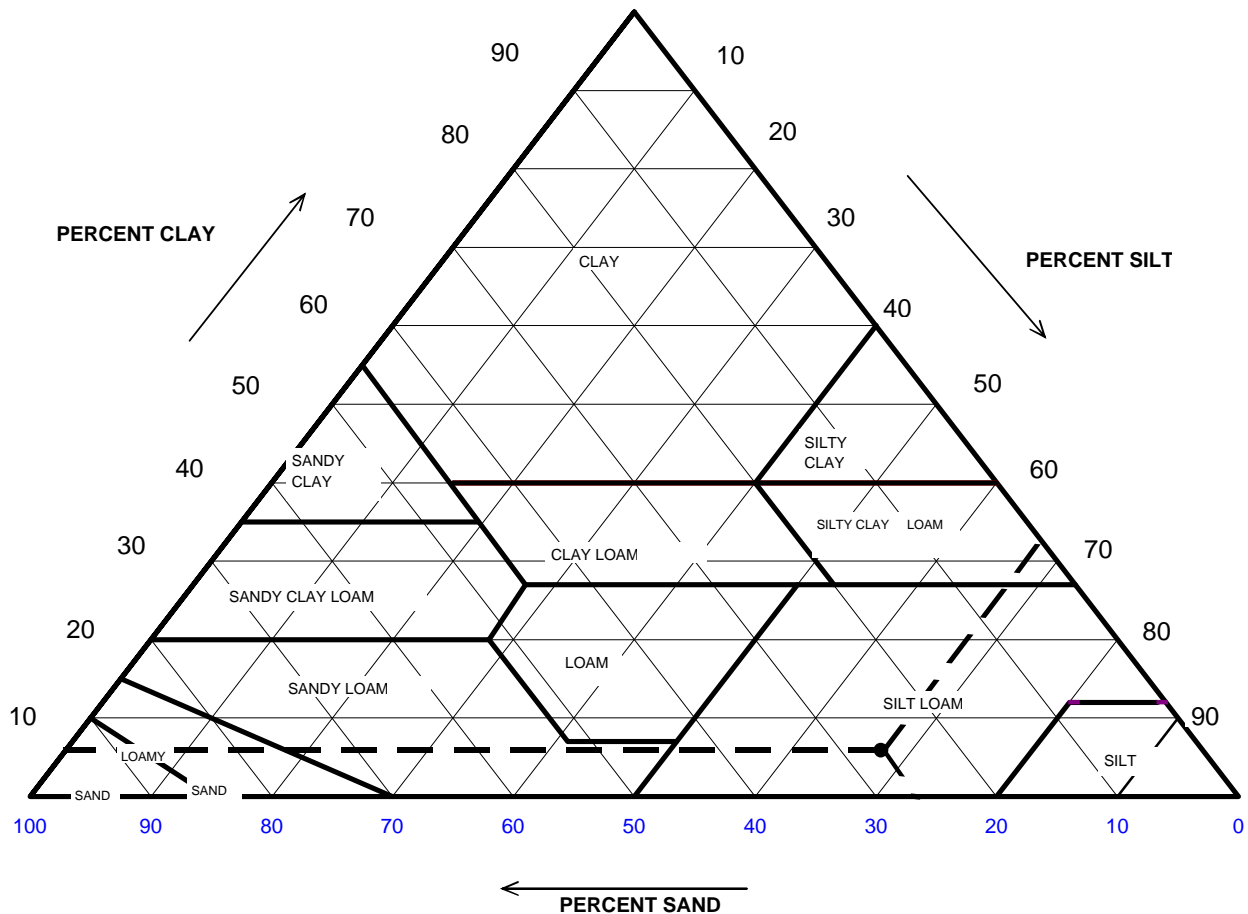
USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.26
#4 To #200	<i>Sand</i>	19.31
Finer Than #200	<i>Silt & Clay</i>	80.43
USCS Symbol: <i>ml, ASSUMED</i>		
USCS Classification: <i>SILT WITH SAND</i>		

USDA CLASSIFICATION CHART

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.5-20.0
Project No.:	2015-485-003	Sample No.:	SS-6
Lab ID:	2015-485-003-016	Soil Color:	Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	98.30	Gravel	1.70	0.00
0.05	72.16	Sand	26.14	26.59
0.002	5.80	Silt	66.36	67.51
		Clay	5.80	5.90
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.5-20.0
Project No.:	2015-485-003	Sample No.:	SS-6
Lab ID:	2015-485-003-016	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	31	Tare No.	NA
Weight of Tare & Wet Sample (g)	575.10	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	464.50	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	203.34	Weight of Tare (g)	NA
Weight of Water (g)	110.60	Weight of Water (g)	NA
Weight of Dry Sample (g)	261.16	Weight of Dry Sample (g)	NA
Moisture Content (%)	42.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	261.16
Dry Weight of -3/4" Sample (g)	51.10	Weight of - #200 Material (g)	210.06
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	51.10
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.67	0.26	0.26	99.74	99.74
#10	2.00	3.77	1.44	1.70	98.30	98.30
#20	0.85	3.18	1.22	2.92	97.08	97.08
#40	0.425	3.60	1.38	4.30	95.70	95.70
#60	0.250	5.43	2.08	6.38	93.62	93.62
#140	0.106	18.04	6.91	13.28	86.72	86.72
#200	0.075	16.41	6.28	19.57	80.43	80.43
Pan	-	210.06	80.43	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.5-20.0
Project No.:	2015-485-003	Sample No.:	SS-6
Lab ID:	2015-485-003-016	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	46.5	20.7	6.83	39.7	74.8	0.01333	0.0278	60.2
5	41.0	20.7	6.83	34.2	64.4	0.01333	0.0184	51.8
15	32.0	20.7	6.83	25.2	47.5	0.01333	0.0114	38.2
30	27.0	20.7	6.83	20.2	38.0	0.01333	0.0084	30.6
60	21.5	21.1	6.68	14.8	27.9	0.01327	0.0061	22.5
250	12.5	22.1	6.33	6.2	11.6	0.01311	0.0031	9.4
1440	8.0	22.2	6.29	1.7	3.2	0.01310	0.0013	2.6

Soil Specimen Data	Other Corrections		
Tare No.	706		
Weight of Tare & Dry Material (g)	156.57		
Weight of Tare (g)	99.06		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	52.5		
	a - Factor	0.99	
	Percent Finer than # 200	80.43	
	Specific Gravity	2.7	Assumed

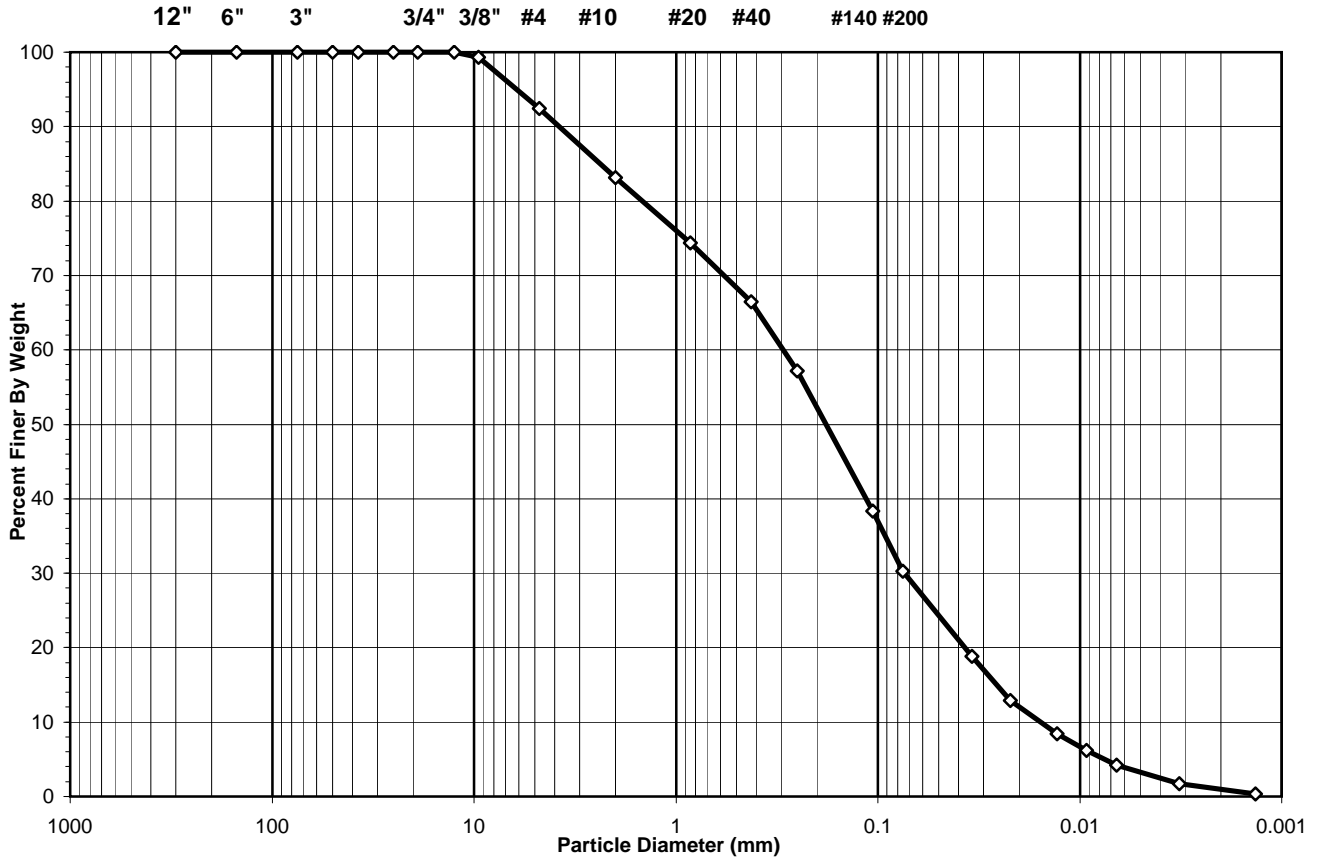
Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-003	Sample No.:	SS-8
Lab ID:	2015-485-003-017	Soil Color:	Gray

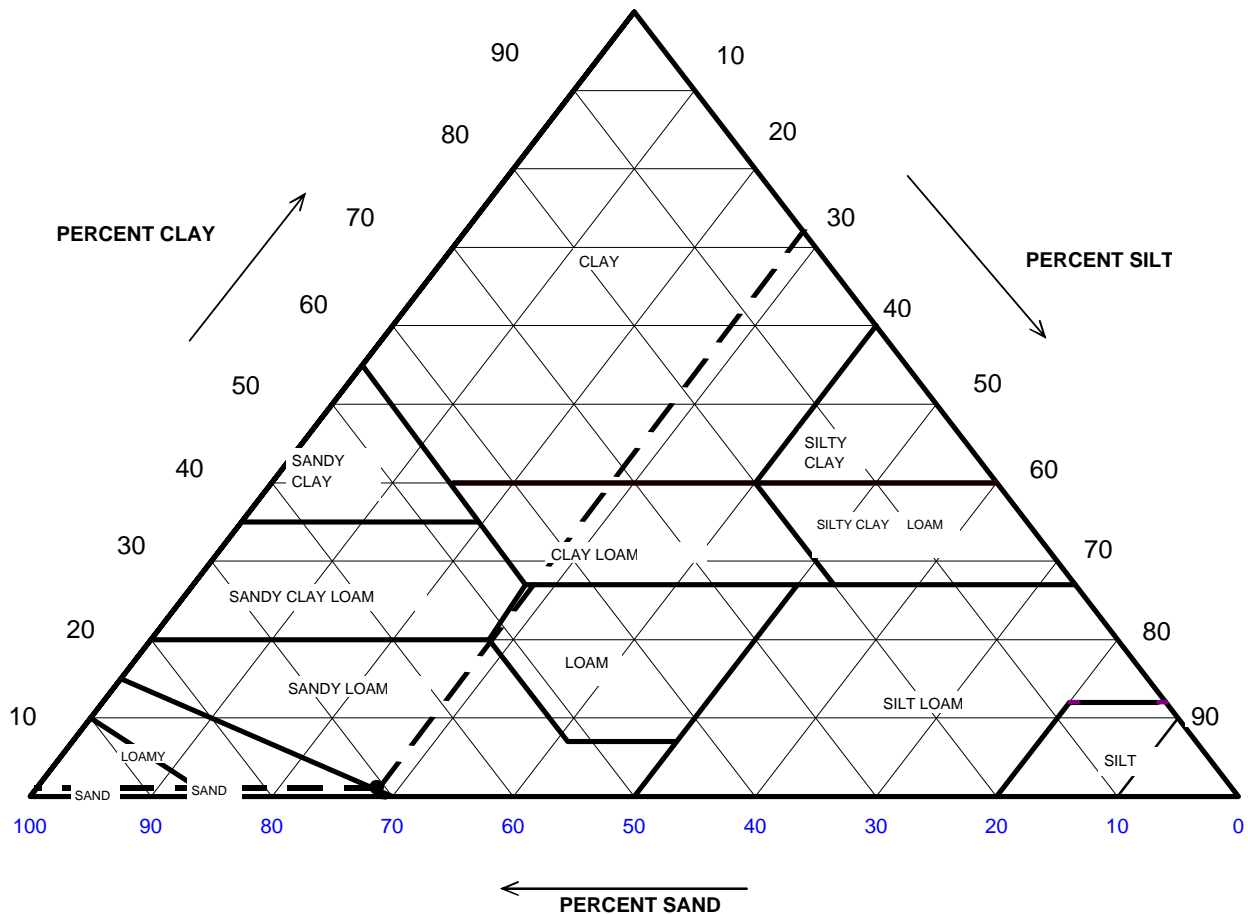
USCS USDA	SIEVE ANALYSIS						HYDROMETER	
	cobble	gravel		sand		silt and clay fraction		
	cobble	gravel		sand		silt	clay	



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	7.52
#4 To #200	<i>Sand</i>	62.20
Finer Than #200	<i>Silt & Clay</i>	30.27
USCS Symbol: <i>sm, ASSUMED</i>		
USCS Classification: <i>SILTY SAND</i>		

USDA CLASSIFICATION CHART

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-003	Sample No.:	SS-8
Lab ID:	2015-485-003-017	Soil Color:	Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	83.17	Gravel	16.83	0.00
0.05	24.36	Sand	58.81	70.71
0.002	0.96	Silt	23.40	28.14
		Clay	0.96	1.16
USDA Classification:		SANDY LOAM		

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-003	Sample No.:	SS-8
Lab ID:	2015-485-003-017	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1422	Tare No.	NA
Weight of Tare & Wet Sample (g)	411.90	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	334.10	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	144.98	Weight of Tare (g)	NA
Weight of Water (g)	77.80	Weight of Water (g)	NA
Weight of Dry Sample (g)	189.12	Weight of Dry Sample (g)	NA
Moisture Content (%)	41.1	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	189.12
Dry Weight of -3/4" Sample (g)	131.87	Weight of - #200 Material (g)	57.25
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	131.87
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	1.29	0.68	0.68		99.32	99.32
#4	4.75	12.94	6.84	7.52		92.48	92.48
#10	2.00	17.60	9.31	16.83		83.17	83.17
#20	0.85	16.69	8.83	25.66		74.34	74.34
#40	0.425	14.82	7.84	33.49		66.51	66.51
#60	0.250	17.66	9.34	42.83		57.17	57.17
#140	0.106	35.67	18.86	61.69		38.31	38.31
#200	0.075	15.20	8.04	69.73		30.27	30.27
Pan	-	57.25	30.27	100.00		-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-003	Sample No.:	SS-8
Lab ID:	2015-485-003-017	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	19.5	20.7	6.83	12.7	62.1	0.01333	0.0341	18.8
5	15.5	20.7	6.83	8.7	42.5	0.01333	0.0221	12.9
15	12.5	20.7	6.83	5.7	27.8	0.01333	0.0130	8.4
30	11.0	20.7	6.83	4.2	20.4	0.01333	0.0093	6.2
60	9.5	21.1	6.68	2.8	13.8	0.01327	0.0066	4.2
250	7.5	22.1	6.33	1.2	5.8	0.01311	0.0032	1.7
1440	6.5	22.2	6.29	0.2	1.0	0.01310	0.0013	0.3

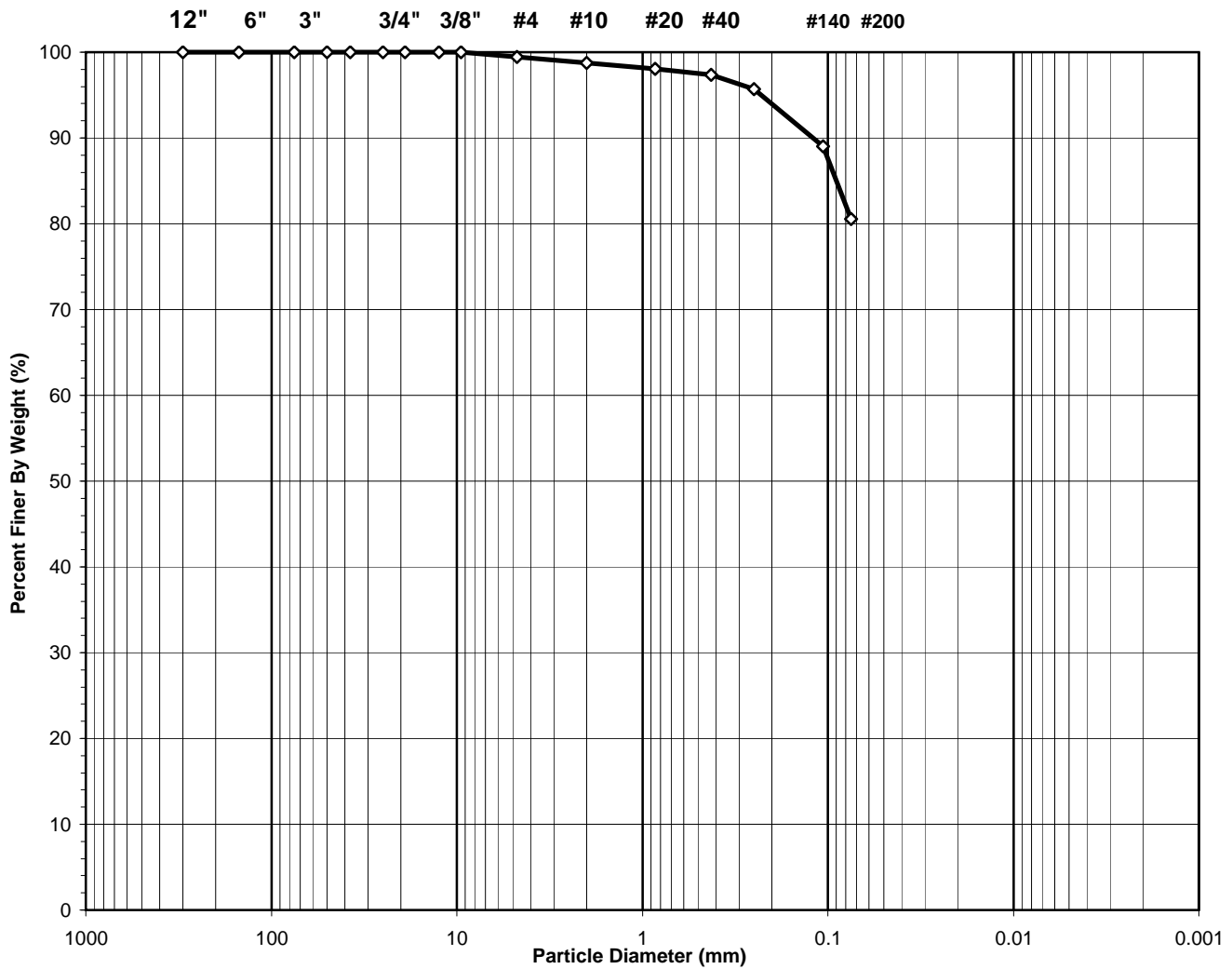
Soil Specimen Data	Other Corrections
Tare No.	927
Weight of Tare & Dry Material (g)	123.05
Weight of Tare (g)	97.84
Weight of Deflocculant (g)	5.0
Weight of Dry Material (g)	20.2
	a - Factor
	0.99
	Percent Finer than # 200
	30.27
	Specific Gravity
	2.7
	Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	31.0-32.5
Project No.:	2015-485-003	Sample No.:	SS-11
Lab ID:	2015-485-003-018	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SILT WITH SAND

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: B-20
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft): 31.0-32.5
Project No.:	2015-485-003	Sample No.: SS-11
Lab ID:	2015-485-003-018	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1426	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	429.80	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	329.66	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.17	Weight of Tare (g):	NA
Weight of Water (g):	100.14	Weight of Water (g):	NA
Weight of Dry Sample (g):	184.49	Weight of Dry Sample (g):	NA
Moisture Content (%):	54.3	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	184.49
Dry Weight of - 3/4" Sample (g):	35.9	Weight of - #200 Material (g):	148.63
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	35.86
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	1.00	0.54	0.54	99.46	99.46
#10	2.00	1.31	0.71	1.25	98.75	98.75
#20	0.850	1.31	0.71	1.96	98.04	98.04
#40	0.425	1.24	0.67	2.63	97.37	97.37
#60	0.250	3.09	1.67	4.31	95.69	95.69
#140	0.106	12.35	6.69	11.00	89.00	89.00
#200	0.075	15.56	8.43	19.44	80.56	80.56
Pan	-	148.63	80.56	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	43.8-44.3
Project No.:	2015-485-002	Sample No.:	ST-2
Lab ID:	2015-485-002-005	Soil Color:	Gray

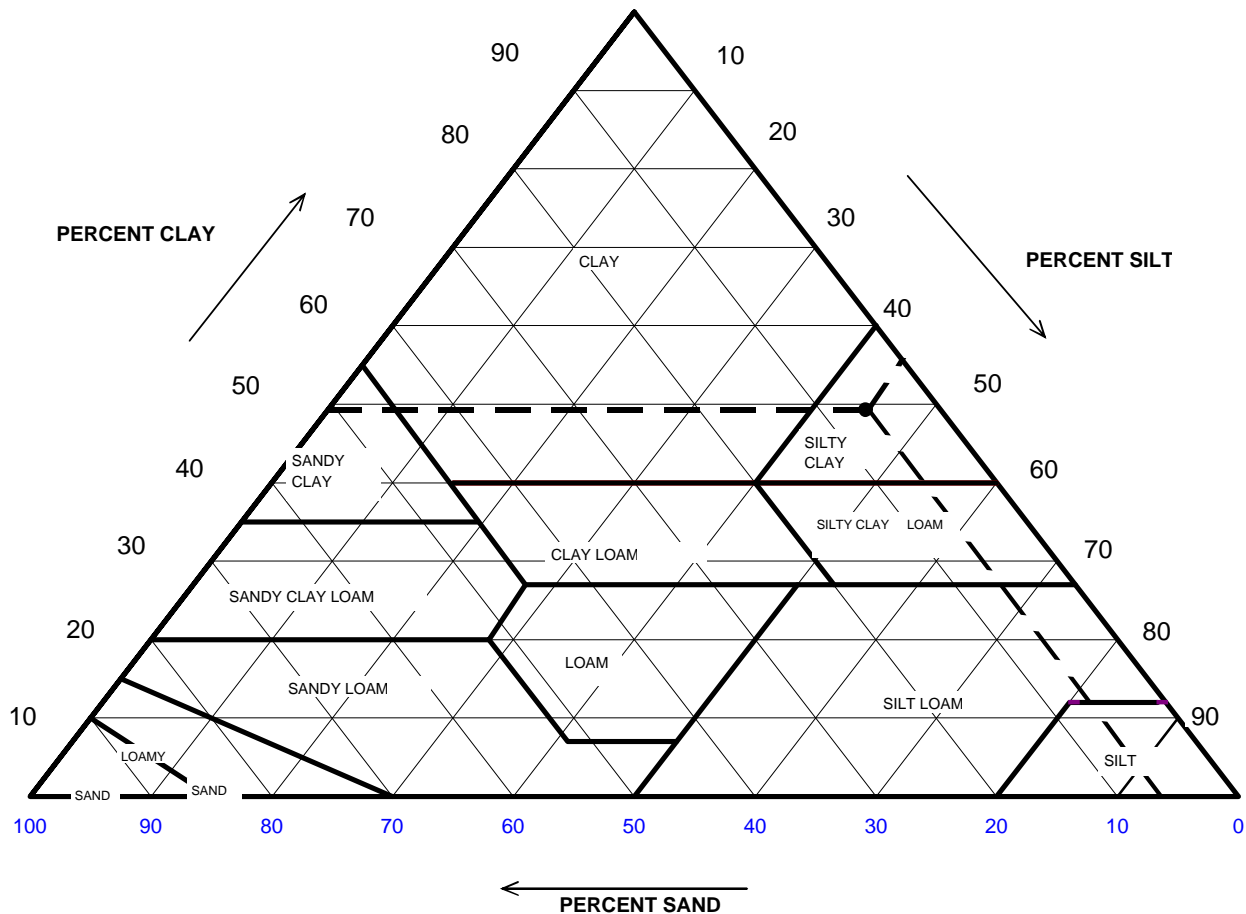
USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.05
#4 To #200	<i>Sand</i>	2.01
Finer Than #200	<i>Silt & Clay</i>	97.95
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	43.8-44.3
Project No.:	2015-485-002	Sample No.:	ST-2
Lab ID:	2015-485-002-005	Soil Color:	Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.72	Gravel	0.28	0.00
0.05	93.50	Sand	6.21	6.23
0.002	49.09	Silt	44.41	44.54
		Clay	49.09	49.23
		USDA Classification:	SILTY CLAY	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	43.8-44.3
Project No.:	2015-485-002	Sample No.:	ST-2
Lab ID:	2015-485-002-005	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1440	Tare No.	NA
Weight of Tare & Wet Sample (g)	858.26	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	649.90	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	145.70	Weight of Tare (g)	NA
Weight of Water (g)	208.36	Weight of Water (g)	NA
Weight of Dry Sample (g)	504.20	Weight of Dry Sample (g)	NA
Moisture Content (%)	41.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	504.20
Dry Weight of -3/4" Sample (g)	10.36	Weight of - #200 Material (g)	493.84
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	10.36
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.24	0.05	0.05	99.95	99.95
#10	2.00	1.18	0.23	0.28	99.72	99.72
#20	0.85	1.48	0.29	0.58	99.42	99.42
#40	0.425	1.29	0.26	0.83	99.17	99.17
#60	0.250	1.17	0.23	1.06	98.94	98.94
#140	0.106	2.39	0.47	1.54	98.46	98.46
#200	0.075	2.61	0.52	2.05	97.95	97.95
Pan	-	493.84	97.95	100.00	-	-

Tested By **AMC** Date **9/30/15** Checked By **KC** Date **10/14/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	43.8-44.3
Project No.:	2015-485-002	Sample No.:	ST-2
Lab ID:	2015-485-002-005	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	42.0	23.4	5.86	36.1	89.0	0.01291	0.0280	87.2
5	40.0	23.4	5.86	34.1	84.1	0.01291	0.0180	82.3
15	36.5	23.4	5.86	30.6	75.4	0.01291	0.0107	73.9
30	34.5	23.4	5.86	28.6	70.5	0.01291	0.0077	69.1
74	31.5	23.3	5.89	25.6	63.0	0.01293	0.0050	61.7
250	28.0	22.9	6.04	22.0	54.1	0.01299	0.0028	53.0
1440	24.0	22.9	6.04	18.0	44.2	0.01299	0.0012	43.3

Soil Specimen Data	Other Corrections	
Tare No.	972	
Weight of Tare & Dry Material (g)	145.82	
Weight of Tare (g)	100.61	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	40.2	
	a - Factor	0.99
	Percent Finer than # 200	97.95
	Specific Gravity	2.7 Assumed

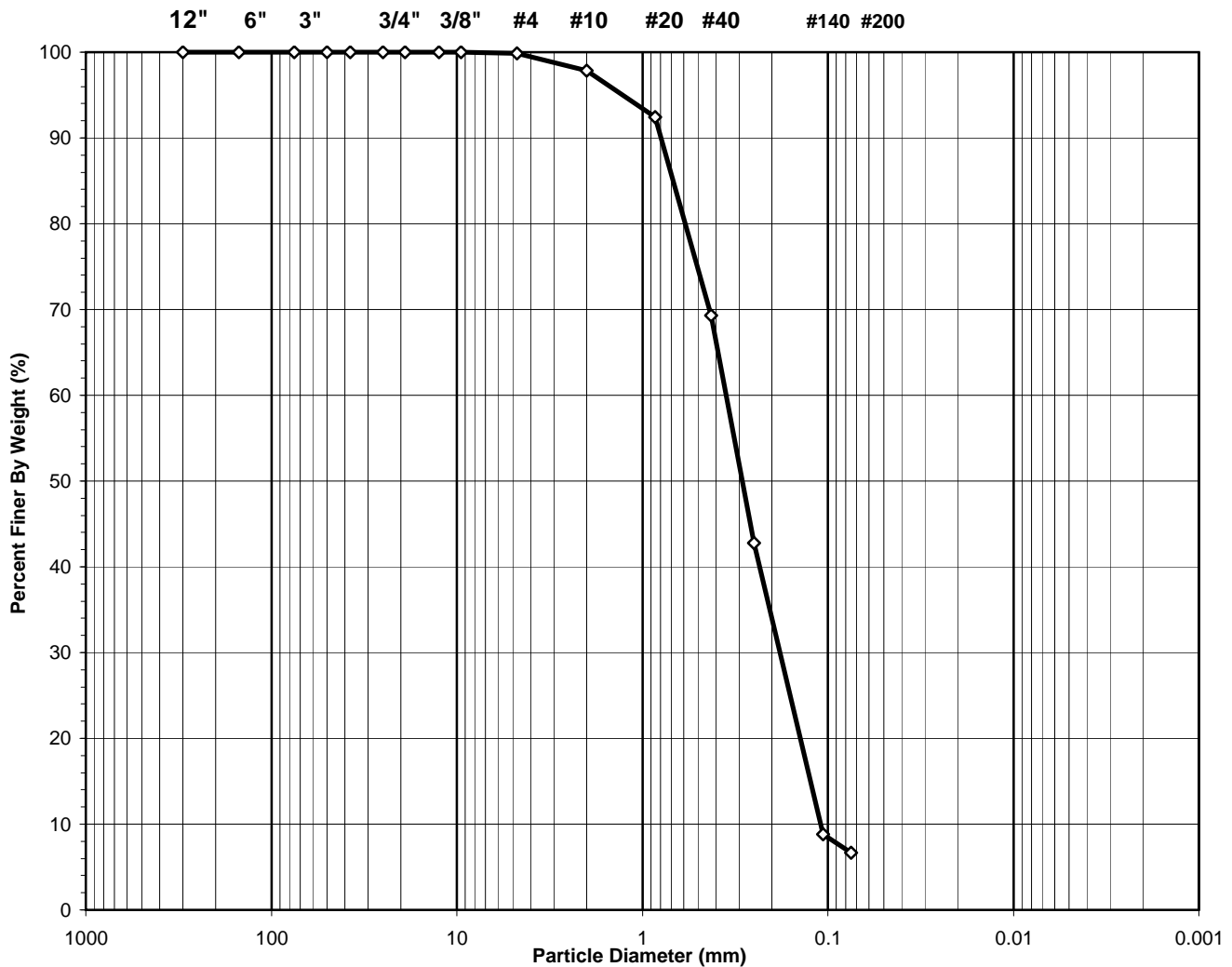
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By TO Date 9/30/15 Checked By KC Date 10/14/15

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-003	Sample No.:	SS-14
Lab ID:	2015-485-003-019	Soil Color:	Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.35 CC = 0.85

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.18 CU = 3.23

D10 = 0.11

Tested By PC Date 10/2/15 Checked By KC Date 10/2/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	B-20
Client Reference:	Dynegy-Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-003	Sample No.:	SS-14
Lab ID:	2015-485-003-019	Soil Color:	Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1450	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	472.00	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	416.60	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	145.02	Weight of Tare (g):	NA
Weight of Water (g):	55.40	Weight of Water (g):	NA
Weight of Dry Sample (g):	271.58	Weight of Dry Sample (g):	NA
Moisture Content (%):	20.4	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	271.58
Dry Weight of - 3/4" Sample (g):	253.4	Weight of - #200 Material (g):	18.17
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	253.41
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.41	0.15	0.15	99.85	99.85
#10	2.00	5.50	2.03	2.18	97.82	97.82
#20	0.850	14.66	5.40	7.57	92.43	92.43
#40	0.425	62.81	23.13	30.70	69.30	69.30
#60	0.250	71.99	26.51	57.21	42.79	42.79
#140	0.106	92.19	33.95	91.16	8.84	8.84
#200	0.075	5.85	2.15	93.31	6.69	6.69
Pan	-	18.17	6.69	100.00	-	-

Tested By **PC** Date **10/2/15** Checked By **KC** Date **10/2/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-009

Boring No.: WOR-B021
 Depth (ft): 3.5-5.0
 Sample No.: SS-1
 Soil Color: Gray

USCS USDA	SIEVE ANALYSIS							HYDROMETER		
	cobles		gravel		sand			silt and clay fraction		
	cobles	cobles	gravel		sand			silt	clay	

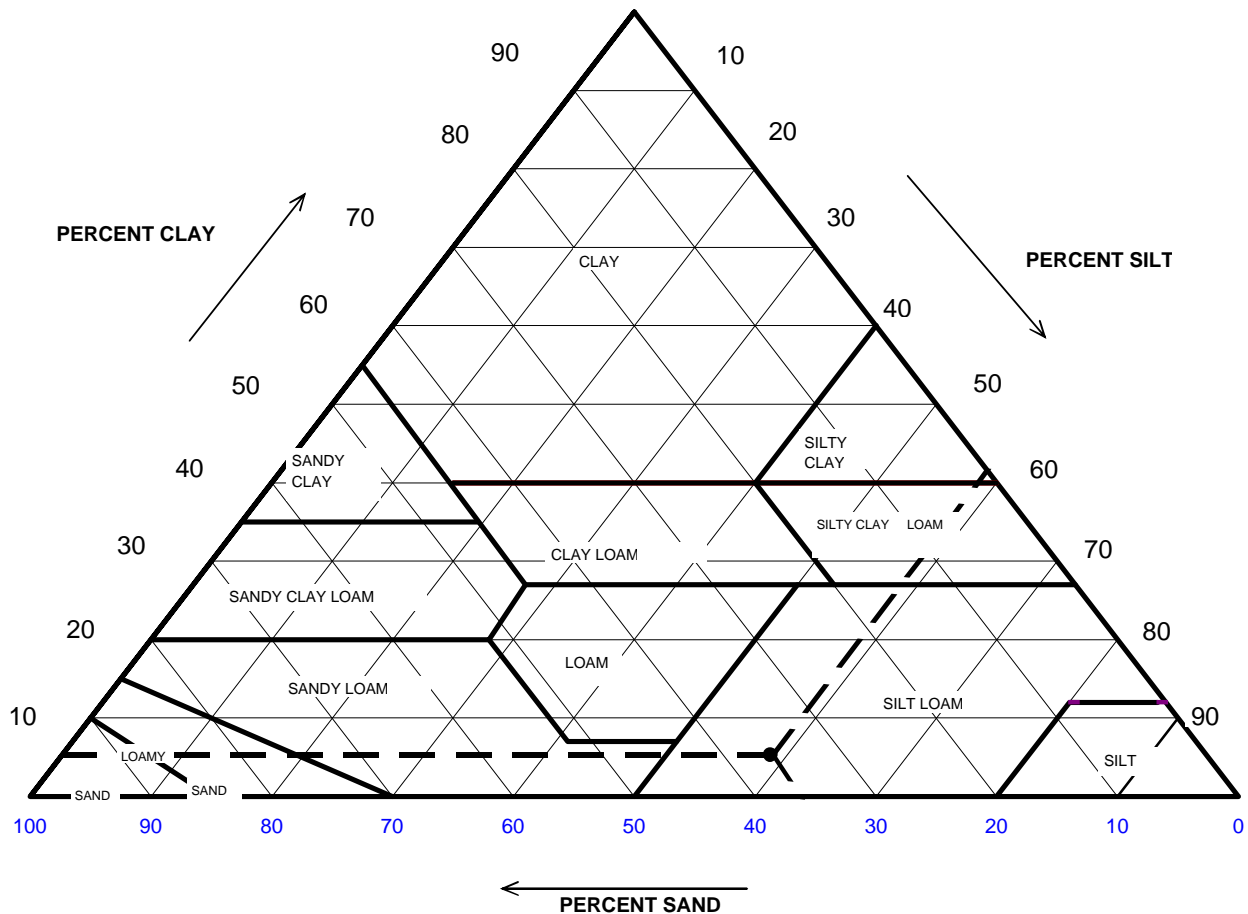


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	2.99
#4 To #200	<i>Sand</i>	28.90
Finer Than #200	<i>Silt & Clay</i>	68.11
USCS Symbol: <i>ml, ASSUMED</i>		
USCS Classification: SANDY SILT		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-009

Boring No.: WOR-B021
 Depth (ft): 3.5-5.0
 Sample No.: SS-1
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	93.49	Gravel	6.51	0.00
0.05	59.79	Sand	33.70	36.05
0.002	4.98	Silt	54.81	58.62
		Clay	4.98	5.33
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.5-5.0
Project No.:	2015-485-001	Sample No.:	SS-1
Lab ID:	2015-485-001-009	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	706	Tare No.	NA
Weight of Tare & Wet Sample (g)	626.80	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	442.70	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	98.94	Weight of Tare (g)	NA
Weight of Water (g)	184.10	Weight of Water (g)	NA
Weight of Dry Sample (g)	343.76	Weight of Dry Sample (g)	NA
Moisture Content (%)	53.6	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	343.76
Dry Weight of -3/4" Sample (g)	109.63	Weight of - #200 Material (g)	234.13
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	109.63
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained	Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)	(%)	(%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	1.28	0.37	0.37	99.63	99.63
#4	4.75	9.01	2.62	2.99	97.01	97.01
#10	2.00	12.10	3.52	6.51	93.49	93.49
#20	0.85	9.51	2.77	9.28	90.72	90.72
#40	0.425	8.84	2.57	11.85	88.15	88.15
#60	0.250	10.44	3.04	14.89	85.11	85.11
#140	0.106	32.54	9.47	24.35	75.65	75.65
#200	0.075	25.91	7.54	31.89	68.11	68.11
Pan	-	234.13	68.11	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/17/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	3.5-5.0
Project No.:	2015-485-001	Sample No.:	SS-1
Lab ID:	2015-485-001-009	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	38.5	22.4	6.22	32.3	71.6	0.01307	0.0292	48.7
5	33.0	22.4	6.22	26.8	59.4	0.01307	0.0193	40.4
17	25.5	22.4	6.22	19.3	42.7	0.01307	0.0110	29.1
30	22.0	22.4	6.22	15.8	35.0	0.01307	0.0085	23.8
60	17.5	22.3	6.25	11.2	24.9	0.01308	0.0062	17.0
250	11.5	22.6	6.15	5.4	11.9	0.01303	0.0031	8.1
1440	7.5	22.8	6.07	1.4	3.2	0.01300	0.0013	2.2

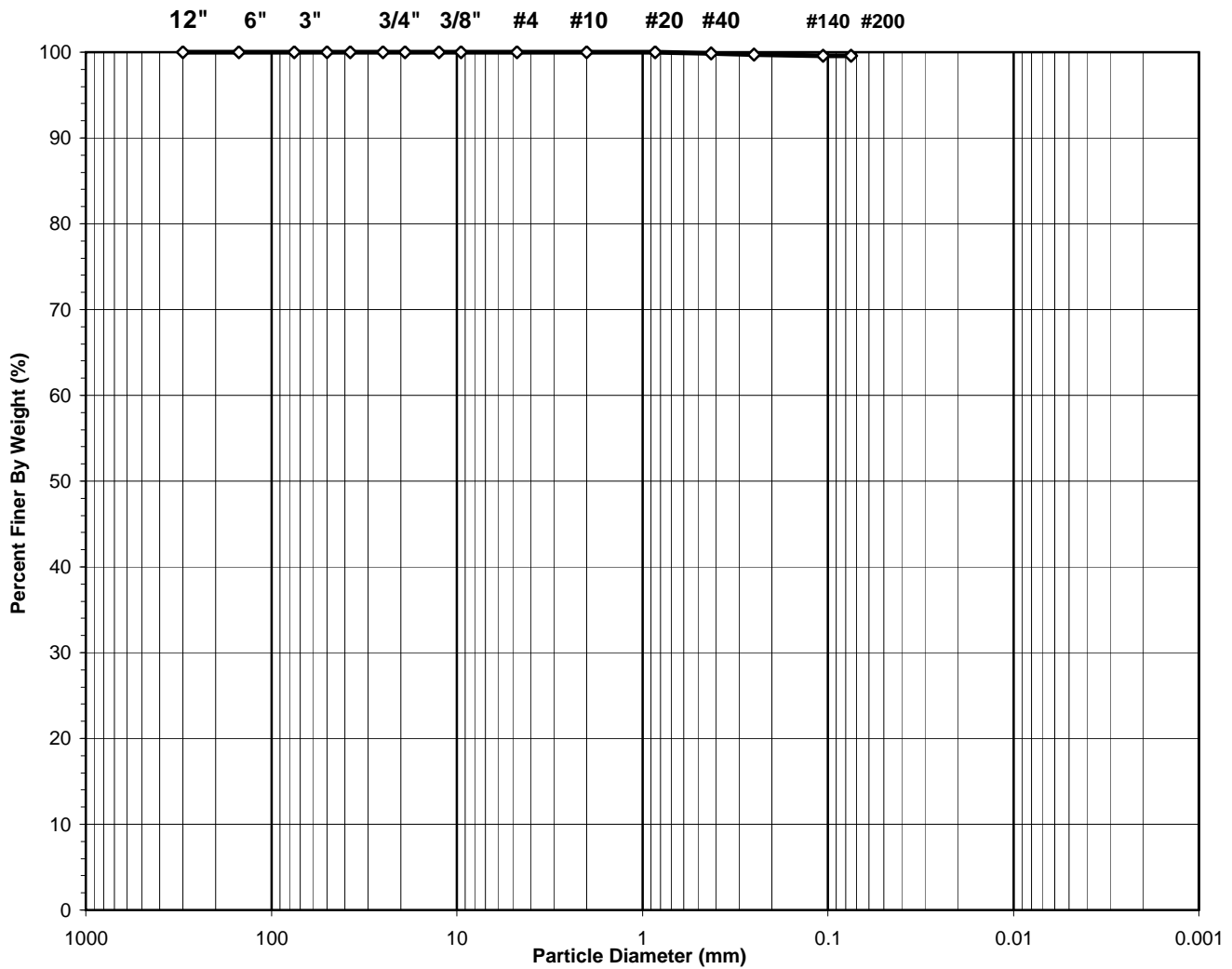
Soil Specimen Data	Other Corrections	
Tare No.	644	
Weight of Tare & Dry Material (g)	149.39	
Weight of Tare (g)	99.73	
Weight of Deflocculant (g)	5.0	
Weight of Dry Material (g)	44.7	
	a - Factor	0.99
	Percent Finer than # 200	68.11
	Specific Gravity	2.7 Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B021
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	16.0-17.5
Project No.:	2015-485-001	Sample No.:	SS-4
Lab ID:	2015-485-001-010	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
CL, TESTED

USCS Classification:
LEAN CLAY

Tested By JP Date 9/12/15 Checked By KC Date 9/16/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 16.0-17.5
Project No.:	2015-485-001	Sample No.: SS-4
Lab ID:	2015-485-001-010	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	961	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	483.60	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	396.40	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	101.06	Weight of Tare (g):	NA
Weight of Water (g):	87.20	Weight of Water (g):	NA
Weight of Dry Sample (g):	295.34	Weight of Dry Sample (g):	NA
Moisture Content (%):	29.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	295.34
Dry Weight of - 3/4" Sample (g):	1.3	Weight of - #200 Material (g):	294.02
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	1.32
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

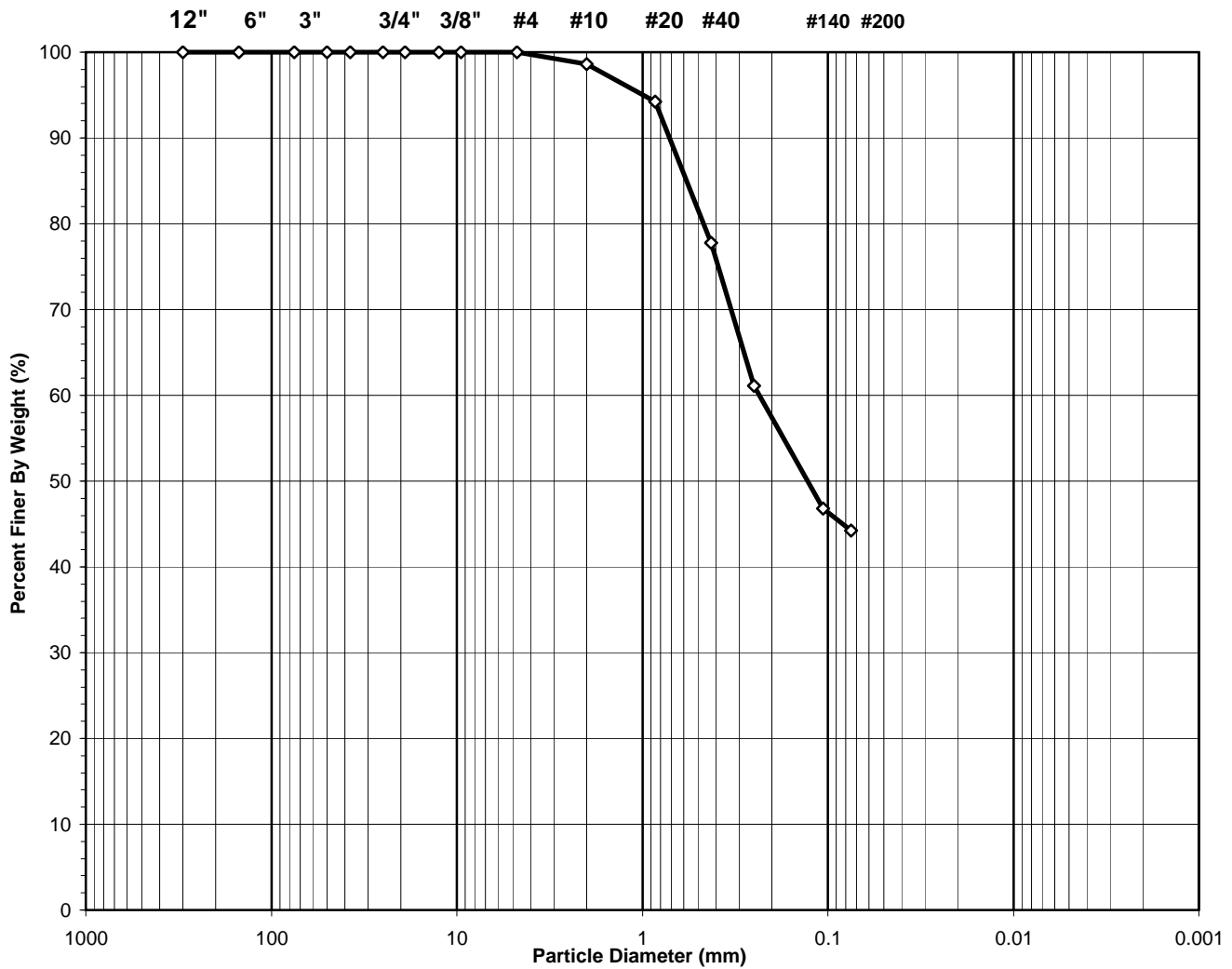
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.850	0.06	0.02	0.02	99.98	99.98
#40	0.425	0.35	0.12	0.14	99.86	99.86
#60	0.250	0.37	0.13	0.26	99.74	99.74
#140	0.106	0.42	0.14	0.41	99.59	99.59
#200	0.075	0.12	0.04	0.45	99.55	99.55
Pan	-	294.02	99.55	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/16/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-001	Sample No.:	SS-6
Lab ID:	2015-485-001-011	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 23.5-25.0
Project No.:	2015-485-001	Sample No.: SS-6
Lab ID:	2015-485-001-011	Soil Color: Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1466	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	561.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	447.90	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	110.51	Weight of Tare (g):	NA
Weight of Water (g):	113.80	Weight of Water (g):	NA
Weight of Dry Sample (g):	337.39	Weight of Dry Sample (g):	NA
Moisture Content (%):	33.7	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	337.39
Dry Weight of - 3/4" Sample (g):	188.0	Weight of - #200 Material (g):	149.36
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	188.03
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

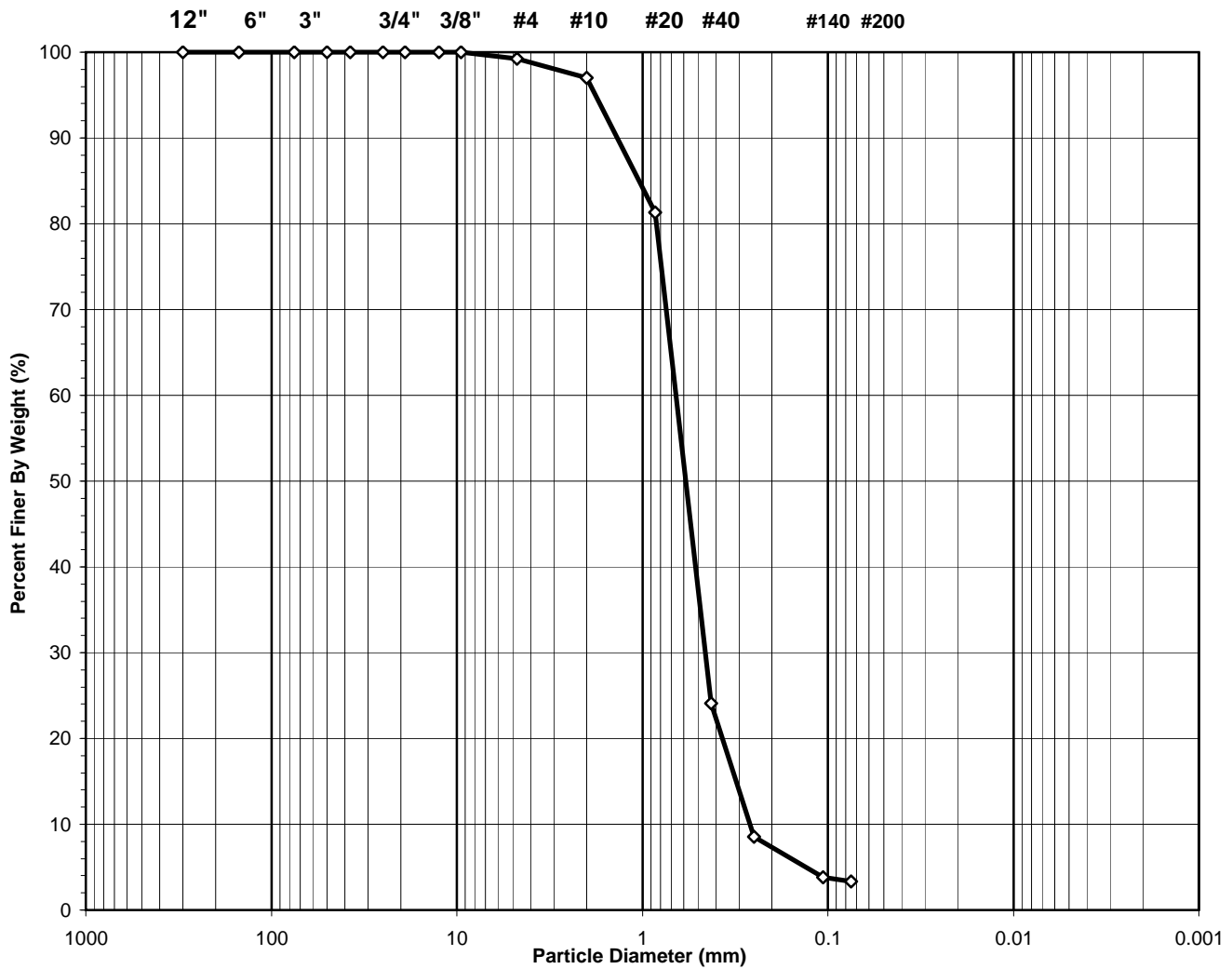
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	4.74	1.40	1.40	98.60	98.60
#20	0.850	14.59	4.32	5.73	94.27	94.27
#40	0.425	55.73	16.52	22.25	77.75	77.75
#60	0.250	56.23	16.67	38.91	61.09	61.09
#140	0.106	48.15	14.27	53.18	46.82	46.82
#200	0.075	8.59	2.55	55.73	44.27	44.27
Pan	-	149.36	44.27	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B021
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	36.0-37.5
Project No.:	2015-485-001	Sample No.:	SS-11
Lab ID:	2015-485-001-012	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.66 CC = 1.21

USCS Classification:
POORLY GRADED SAND

D30 = 0.46 CU = 2.50

D10 = 0.26

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 36.0-37.5
Project No.:	2015-485-001	Sample No.: SS-11
Lab ID:	2015-485-001-012	Soil Color: Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	697	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	479.50	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	418.90	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	97.75	Weight of Tare (g):	NA
Weight of Water (g):	60.60	Weight of Water (g):	NA
Weight of Dry Sample (g):	321.15	Weight of Dry Sample (g):	NA
Moisture Content (%):	18.9	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	321.15
Dry Weight of - 3/4" Sample (g):	310.4	Weight of - #200 Material (g):	10.75
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	310.40
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

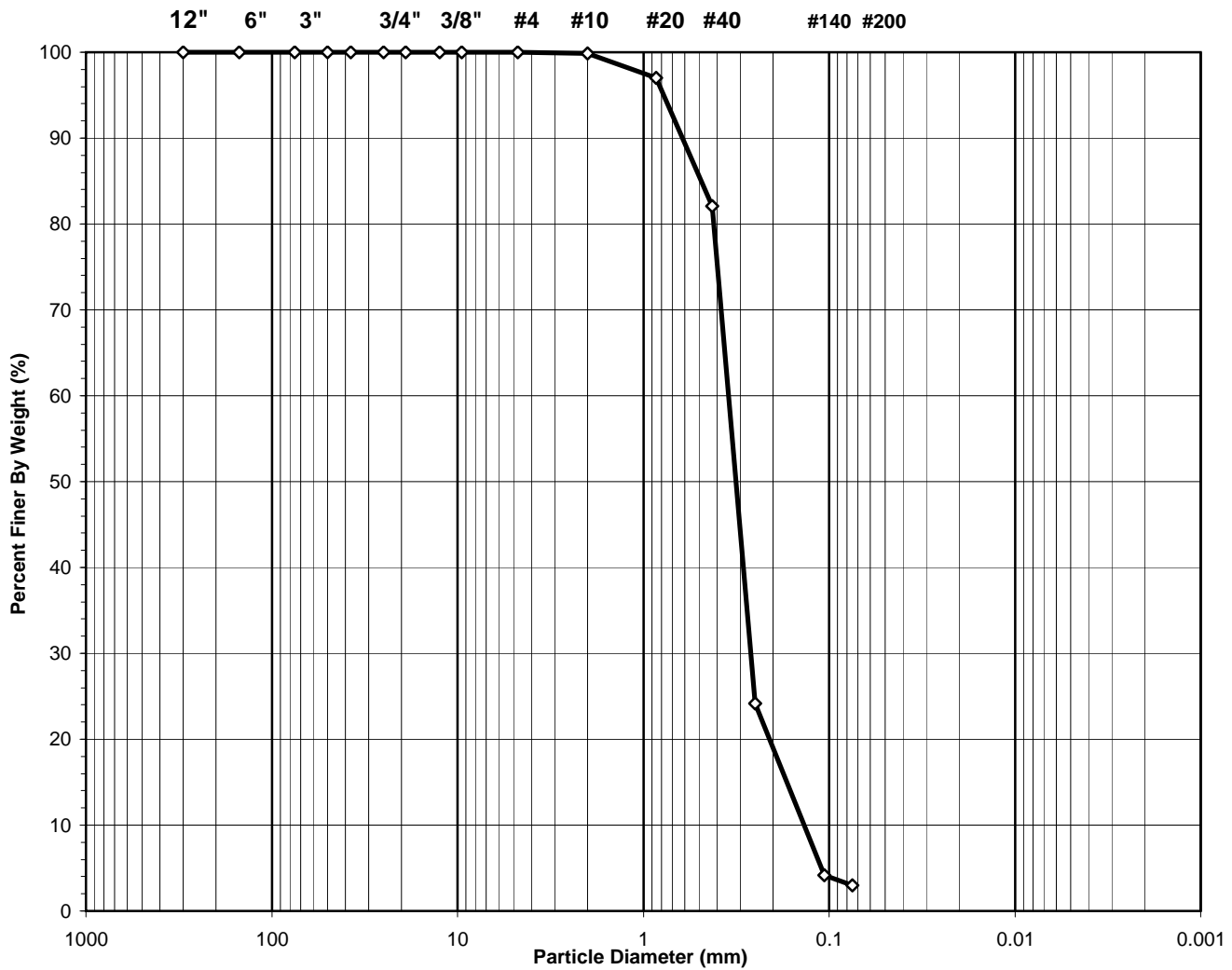
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	2.49	0.78	0.78	99.22	99.22
#10	2.00	7.21	2.25	3.02	96.98	96.98
#20	0.850	50.32	15.67	18.69	81.31	81.31
#40	0.425	183.68	57.19	75.88	24.12	24.12
#60	0.250	49.99	15.57	91.45	8.55	8.55
#140	0.106	15.19	4.73	96.18	3.82	3.82
#200	0.075	1.52	0.47	96.65	3.35	3.35
Pan	-	10.75	3.35	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B021
Client Reference:	Dynege - Wood River Pwr. Sta. 60440115	Depth (ft):	43.5-45.0
Project No.:	2015-485-001	Sample No.:	SS-14
Lab ID:	2015-485-001-013	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.35 CC = 1.47

USCS Classification:
POORLY GRADED SAND

D30 = 0.26 CU = 2.55

D10 = 0.14

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B021
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 43.5-45.0
Project No.:	2015-485-001	Sample No.: SS-14
Lab ID:	2015-485-001-013	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	968	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	640.20	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	549.50	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	99.97	Weight of Tare (g):	NA
Weight of Water (g):	90.70	Weight of Water (g):	NA
Weight of Dry Sample (g):	449.53	Weight of Dry Sample (g):	NA
Moisture Content (%):	20.2	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	449.53
Dry Weight of - 3/4" Sample (g):	436.1	Weight of - #200 Material (g):	13.42
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	436.11
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.75	0.17	0.17	99.83	99.83
#20	0.850	12.78	2.84	3.01	96.99	96.99
#40	0.425	67.12	14.93	17.94	82.06	82.06
#60	0.250	260.21	57.88	75.83	24.17	24.17
#140	0.106	89.80	19.98	95.80	4.20	4.20
#200	0.075	5.45	1.21	97.01	2.99	2.99
Pan	-	13.42	2.99	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-014

Boring No.: WOR-B022
 Depth (ft): 13.9-14.4
 Sample No.: ST-1
 Soil Color: Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

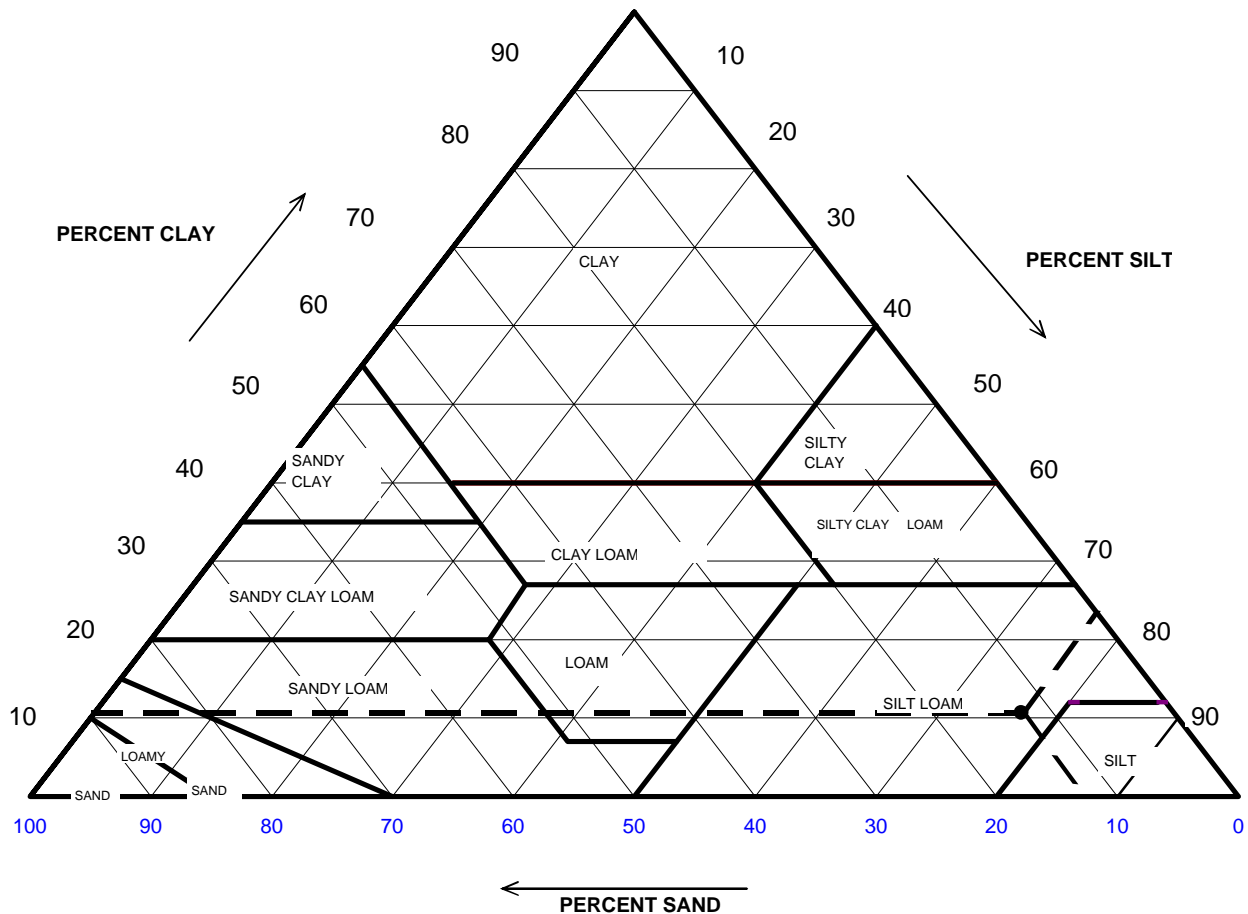


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.05
#4 To #200	<i>Sand</i>	5.94
Finer Than #200	<i>Silt & Clay</i>	94.01
USCS Symbol: <i>ML, TESTED</i>		
USCS Classification: <i>SILT</i> <i>(NON-PLASTIC FINES)</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-014

Boring No.: WOR-B022
 Depth (ft): 13.9-14.4
 Sample No.: ST-1
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.82	Gravel	0.18	0.00
0.05	87.23	Sand	12.60	12.62
0.002	10.63	Silt	76.60	76.74
		Clay	10.63	10.65
		USDA Classification:	SILT LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B022
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	13.9-14.4
Project No.:	2015-485-001	Sample No.:	ST-1
Lab ID:	2015-485-001-014	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	2471	Tare No.	NA
Weight of Tare & Wet Sample (g)	758.04	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	407.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	98.28	Weight of Tare (g)	NA
Weight of Water (g)	350.74	Weight of Water (g)	NA
Weight of Dry Sample (g)	309.02	Weight of Dry Sample (g)	NA
Moisture Content (%)	113.5	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	309.02
Dry Weight of -3/4" Sample (g)	18.51	Weight of - #200 Material (g)	290.51
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	18.51
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.15	0.05	0.05		99.95	99.95
#10	2.00	0.40	0.13	0.18		99.82	99.82
#20	0.85	0.79	0.26	0.43		99.57	99.57
#40	0.425	1.66	0.54	0.97		99.03	99.03
#60	0.250	1.48	0.48	1.45		98.55	98.55
#140	0.106	5.85	1.89	3.34		96.66	96.66
#200	0.075	8.18	2.65	5.99		94.01	94.01
Pan	-	290.51	94.01	100.00		-	-

Tested By **RAL** Date **9/15/15** Checked By **KC** Date **9/17/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B022
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	13.9-14.4
Project No.:	2015-485-001	Sample No.:	ST-1
Lab ID:	2015-485-001-014	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	43.5	22.4	6.22	37.3	82.4	0.01307	0.0280	77.5
5	39.0	22.4	6.22	32.8	72.5	0.01307	0.0184	68.1
15	30.0	22.4	6.22	23.8	52.6	0.01307	0.0114	49.4
32	23.5	22.4	6.22	17.3	38.2	0.01307	0.0081	35.9
60	19.0	22.3	6.25	12.7	28.2	0.01308	0.0061	26.5
250	12.5	22.6	6.15	6.4	14.1	0.01303	0.0031	13.2
1440	10.0	22.8	6.07	3.9	8.7	0.01300	0.0013	8.2

Soil Specimen Data	Other Corrections		
Tare No.	947		
Weight of Tare & Dry Material (g)	149.88		
Weight of Tare (g)	100.11		
Weight of Deflocculant (g)	5.0		
Weight of Dry Material (g)	44.8		
	a - Factor	0.99	
	Percent Finer than # 200	94.01	
	Specific Gravity	2.7	Assumed

Note: Hydrometer test is performed on - # 200 sieve material.

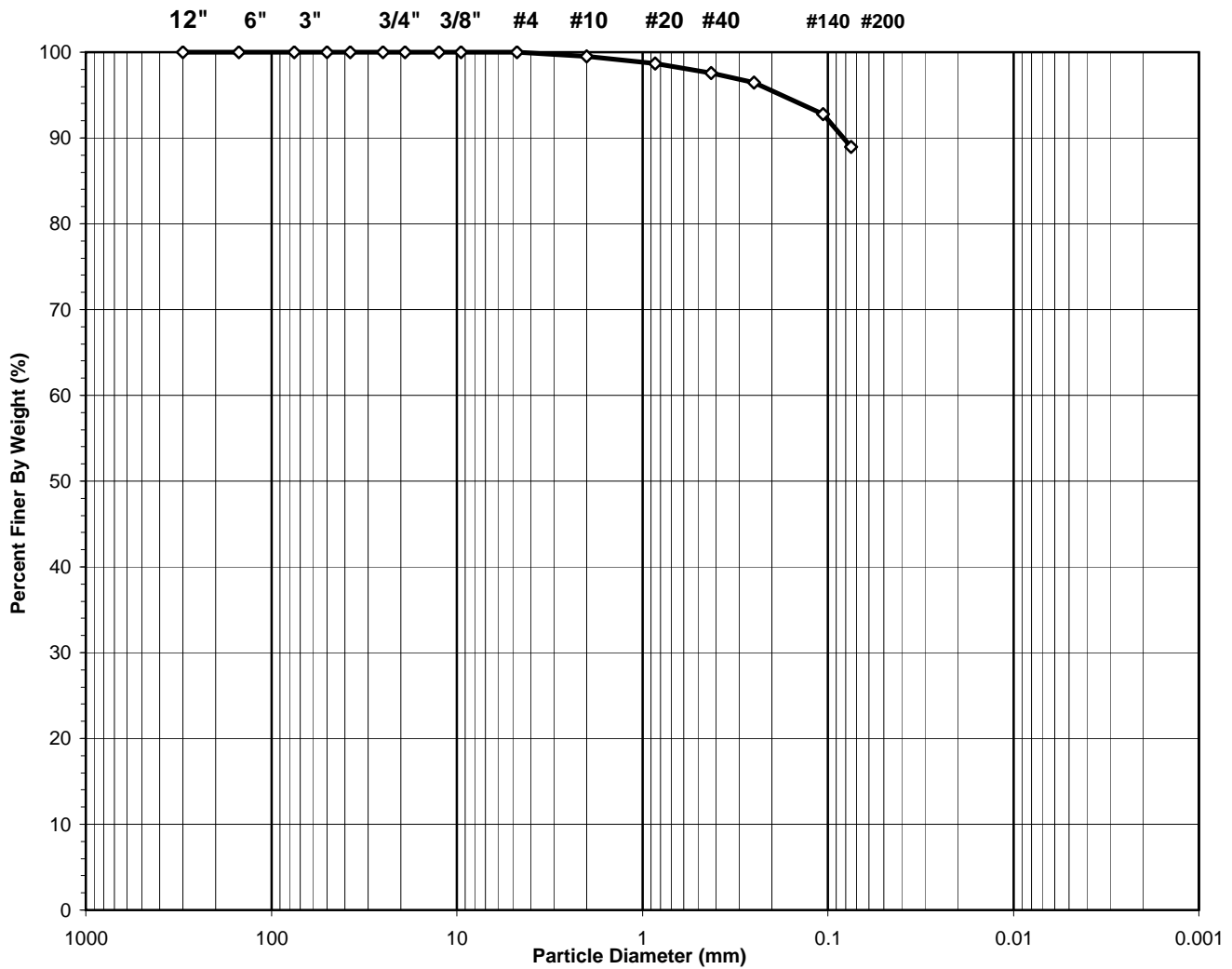
Tested By	TO	Date	9/15/15	Checked By	KC	Date	9/17/15
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SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynege - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-015

Boring No.: WOR-B022
 Depth (ft): 17.0-17.55 Upper
 Sample No.: ST-2
 Soil Color: Grayish Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ML, TESTED

USCS Classification:
SILT
(NON-PLASTIC FINES), UNABLE TO RUN HYDROMETER

Tested By AMC Date 9/17/15 Checked By KC Date 9/18/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B022
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	17.0-17.55 Upper
Project No.:	2015-485-001	Sample No.:	ST-2
Lab ID:	2015-485-001-015	Soil Color:	Grayish Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	21	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	429.10	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	373.34	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	201.74	Weight of Tare (g):	NA
Weight of Water (g):	55.76	Weight of Water (g):	NA
Weight of Dry Sample (g):	171.60	Weight of Dry Sample (g):	NA
Moisture Content (%):	32.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	171.60
Dry Weight of - 3/4" Sample (g):	18.9	Weight of - #200 Material (g):	152.70
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	18.90
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.84	0.49	0.49	99.51	99.51
#20	0.850	1.44	0.84	1.33	98.67	98.67
#40	0.425	1.86	1.08	2.41	97.59	97.59
#60	0.250	1.98	1.15	3.57	96.43	96.43
#140	0.106	6.31	3.68	7.24	92.76	92.76
#200	0.075	6.47	3.77	11.01	88.99	88.99
Pan	-	152.70	88.99	100.00	-	-

Tested By **AMC** Date **9/17/15** Checked By **KC** Date **9/18/15**

SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-016

Boring No.: WOR-B022
 Depth (ft): 18.4-18.8 Lower
 Sample No.: ST-2
 Soil Color: Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

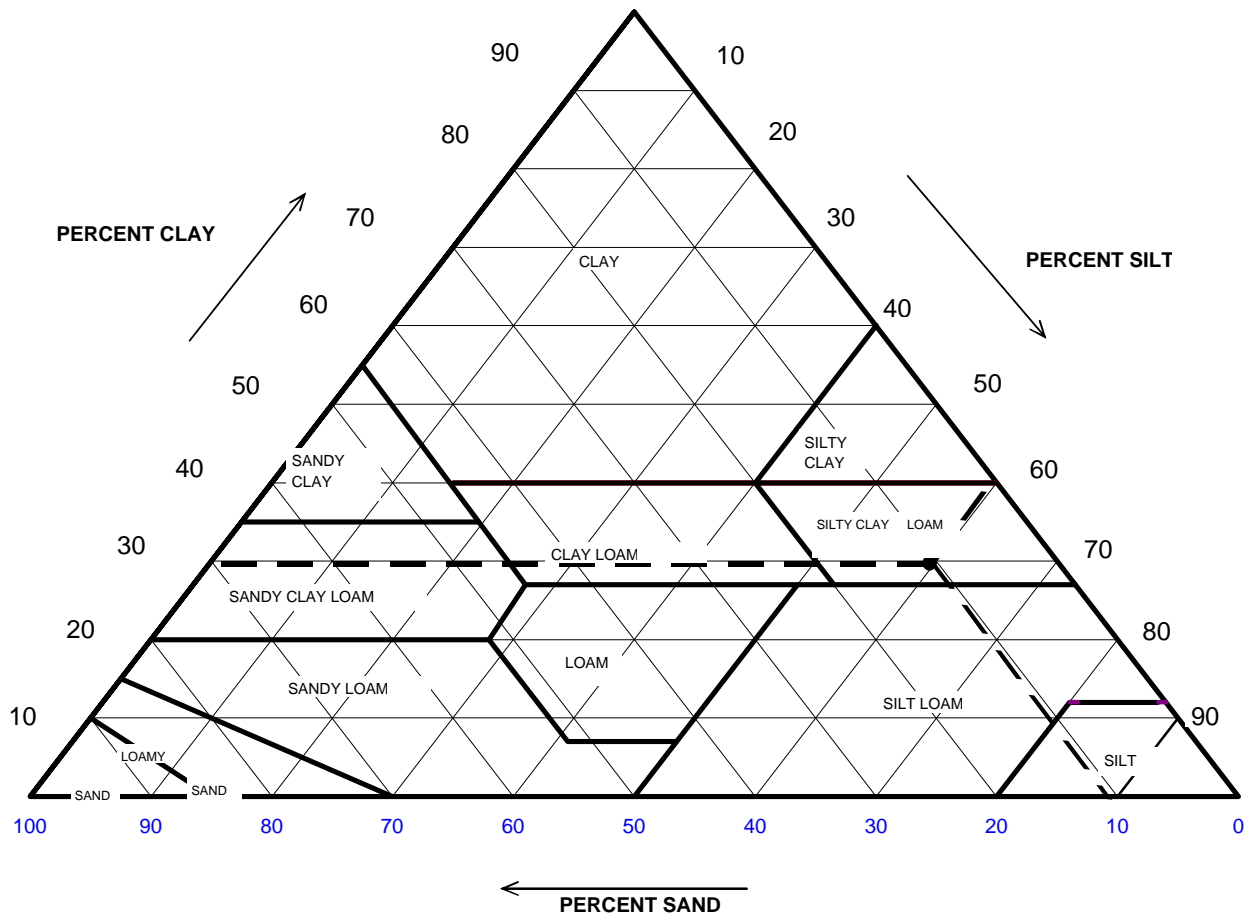


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	3.80
Finer Than #200	<i>Silt & Clay</i>	96.20
USCS Symbol: <i>CL, TESTED</i>		
USCS Classification: <i>LEAN CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-016

Boring No.: WOR-B022
 Depth (ft): 18.4-18.8 Lower
 Sample No.: ST-2
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	99.90	Gravel	0.10	0.00
0.05	89.22	Sand	10.68	10.69
0.002	29.69	Silt	59.54	59.60
		Clay	29.69	29.72
		USDA Classification:	SILTY CLAY LOAM	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B022
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	18.4-18.8 Lower
Project No.:	2015-485-001	Sample No.:	ST-2
Lab ID:	2015-485-001-016	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	932	Tare No.	NA
Weight of Tare & Wet Sample (g)	595.27	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	496.30	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	97.81	Weight of Tare (g)	NA
Weight of Water (g)	98.97	Weight of Water (g)	NA
Weight of Dry Sample (g)	398.49	Weight of Dry Sample (g)	NA
Moisture Content (%)	24.8	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	398.49
Dry Weight of -3/4" Sample (g)	15.16	Weight of - #200 Material (g)	383.33
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	15.16
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.40	0.10	0.10		99.90	99.90
#20	0.85	0.30	0.08	0.18		99.82	99.82
#40	0.425	0.24	0.06	0.24		99.76	99.76
#60	0.250	1.41	0.35	0.59		99.41	99.41
#140	0.106	7.31	1.83	2.42		97.58	97.58
#200	0.075	5.50	1.38	3.80		96.20	96.20
Pan	-	383.33	96.20	100.00		-	-

Tested By **RAL** Date **9/15/15** Checked By **KC** Date **9/17/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-016

Boring No.: WOR-B022
 Depth (ft): 18.4-18.8 Lower
 Sample No.: ST-2
 Soil Color: Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
2	41.0	22.4	6.22	34.8	82.8	0.01307	0.0286	79.6
5	36.0	22.4	6.22	29.8	70.9	0.01307	0.0188	68.2
17	29.0	22.4	6.22	22.8	54.2	0.01307	0.0108	52.1
32	25.5	22.4	6.22	19.3	45.9	0.01307	0.0080	44.1
60	23.5	22.3	6.25	17.2	41.0	0.01308	0.0060	39.5
250	20.0	22.6	6.15	13.9	33.0	0.01303	0.0030	31.7
1440	18.0	22.8	6.07	11.9	28.4	0.01300	0.0013	27.3

Soil Specimen Data	Other Corrections
Tare No. 695	
Weight of Tare & Dry Material (g) 139.19	a - Factor 0.99
Weight of Tare (g) 92.58	
Weight of Deflocculant (g) 5.0	Percent Finer than # 200 96.20
Weight of Dry Material (g) 41.6	Specific Gravity 2.7 Assumed

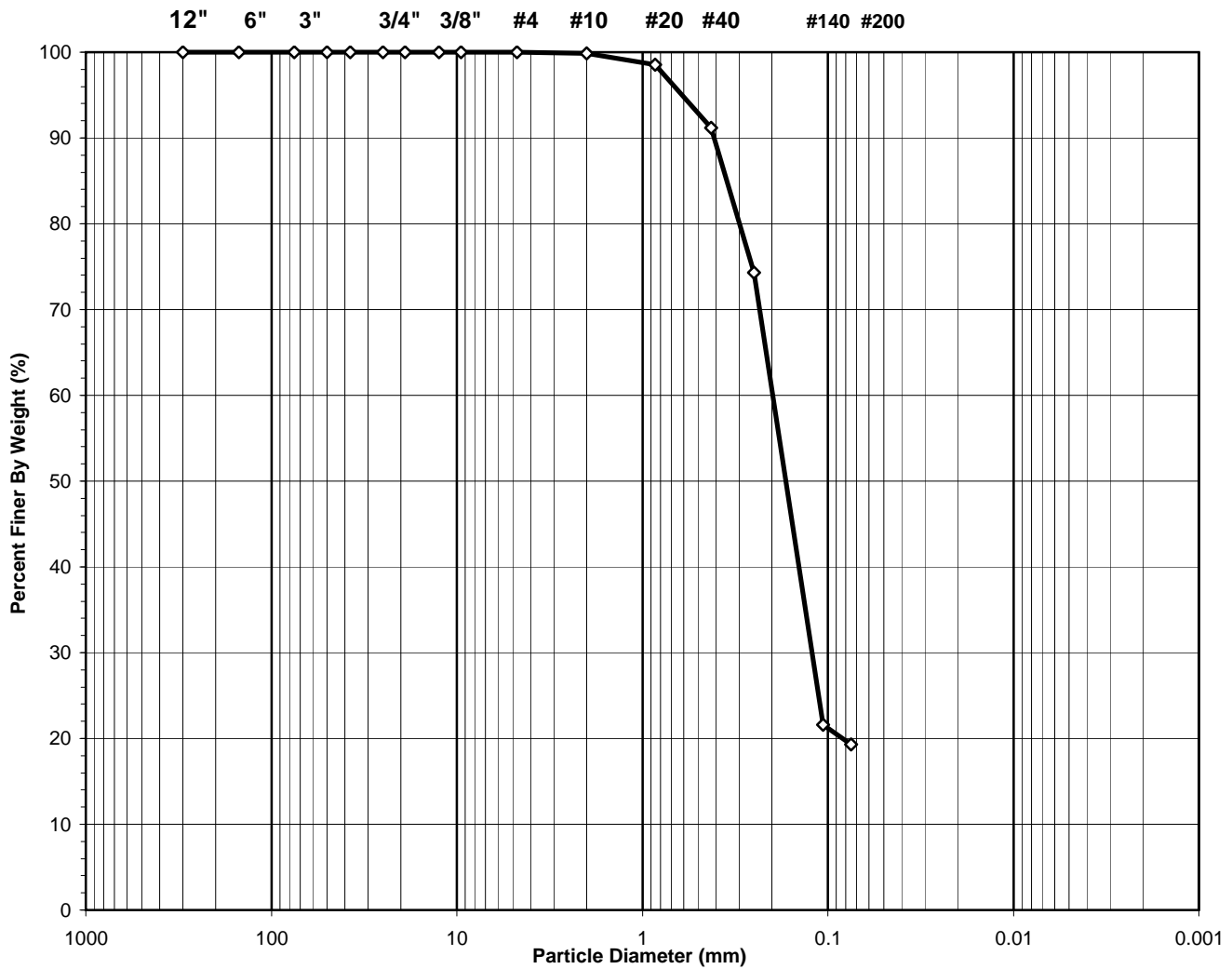
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By TO Date 9/15/15 Checked By KC Date 9/17/15

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B022
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	36.0-37.5
Project No.:	2015-485-001	Sample No.:	SS-11
Lab ID:	2015-485-001-018	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B022
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 36.0-37.5
Project No.:	2015-485-001	Sample No.: SS-11
Lab ID:	2015-485-001-018	Soil Color: Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	1436	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	777.90	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	638.10	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	144.18	Weight of Tare (g):	NA
Weight of Water (g):	139.80	Weight of Water (g):	NA
Weight of Dry Sample (g):	493.92	Weight of Dry Sample (g):	NA
Moisture Content (%):	28.3	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	493.92
Dry Weight of - 3/4" Sample (g):	398.5	Weight of - #200 Material (g):	95.38
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	398.54
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

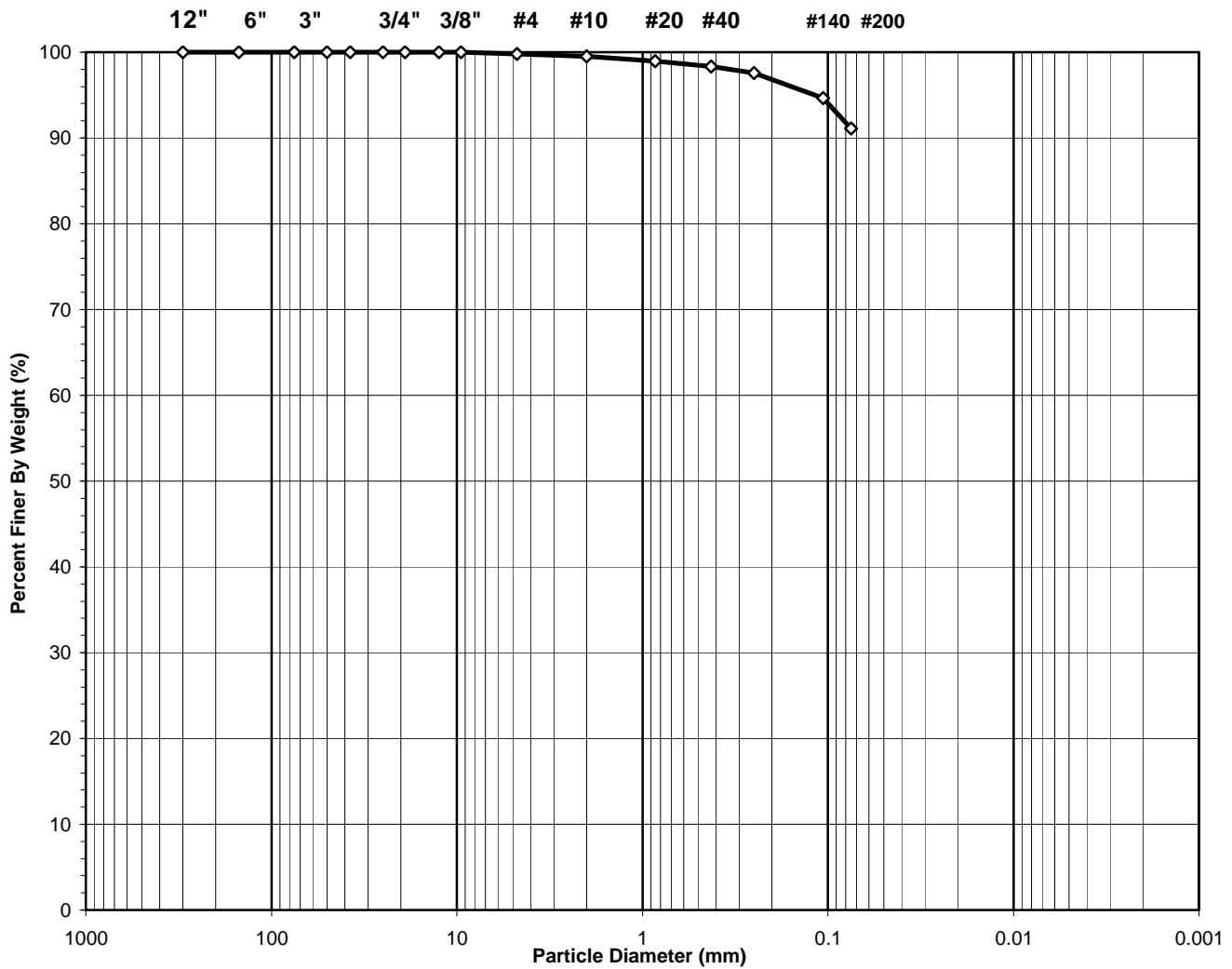
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.81	0.16	0.16	99.84	99.84
#20	0.850	6.30	1.28	1.44	98.56	98.56
#40	0.425	36.57	7.40	8.84	91.16	91.16
#60	0.250	83.17	16.84	25.68	74.32	74.32
#140	0.106	260.54	52.75	78.43	21.57	21.57
#200	0.075	11.15	2.26	80.69	19.31	19.31
Pan	-	95.38	19.31	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B024
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	6.0-7.5
Project No.:	2015-485-001	Sample No.:	SS-2
Lab ID:	2015-485-001-019	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SILT

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM	Boring No.: WOR-B024
Client Reference: Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 6.0-7.5
Project No.: 2015-485-001	Sample No.: SS-2
Lab ID: 2015-485-001-019	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	926	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	521.30	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	378.73	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	95.48	Weight of Tare (g):	NA
Weight of Water (g):	142.57	Weight of Water (g):	NA
Weight of Dry Sample (g):	283.25	Weight of Dry Sample (g):	NA
Moisture Content (%):	50.3	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	283.25
Dry Weight of - 3/4" Sample (g):	25.2	Weight of - #200 Material (g):	258.06
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	25.19
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.65	0.23	0.23	99.77	99.77
#10	2.00	0.80	0.28	0.51	99.49	99.49
#20	0.850	1.41	0.50	1.01	98.99	98.99
#40	0.425	1.82	0.64	1.65	98.35	98.35
#60	0.250	2.23	0.79	2.44	97.56	97.56
#140	0.106	8.18	2.89	5.33	94.67	94.67
#200	0.075	10.10	3.57	8.89	91.11	91.11
Pan	-	258.06	91.11	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B024
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	23.5-25.0
Project No.:	2015-485-001	Sample No.:	SS-7
Lab ID:	2015-485-001-021	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
sm, ASSUMED

USCS Classification:
SILTY SAND

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B024
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 23.5-25.0
Project No.:	2015-485-001	Sample No.: SS-7
Lab ID:	2015-485-001-021	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	703	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	559.20	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	446.70	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	97.71	Weight of Tare (g):	NA
Weight of Water (g):	112.50	Weight of Water (g):	NA
Weight of Dry Sample (g):	348.99	Weight of Dry Sample (g):	NA
Moisture Content (%):	32.2	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	348.99
Dry Weight of - 3/4" Sample (g):	223.3	Weight of - #200 Material (g):	125.74
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	223.25
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

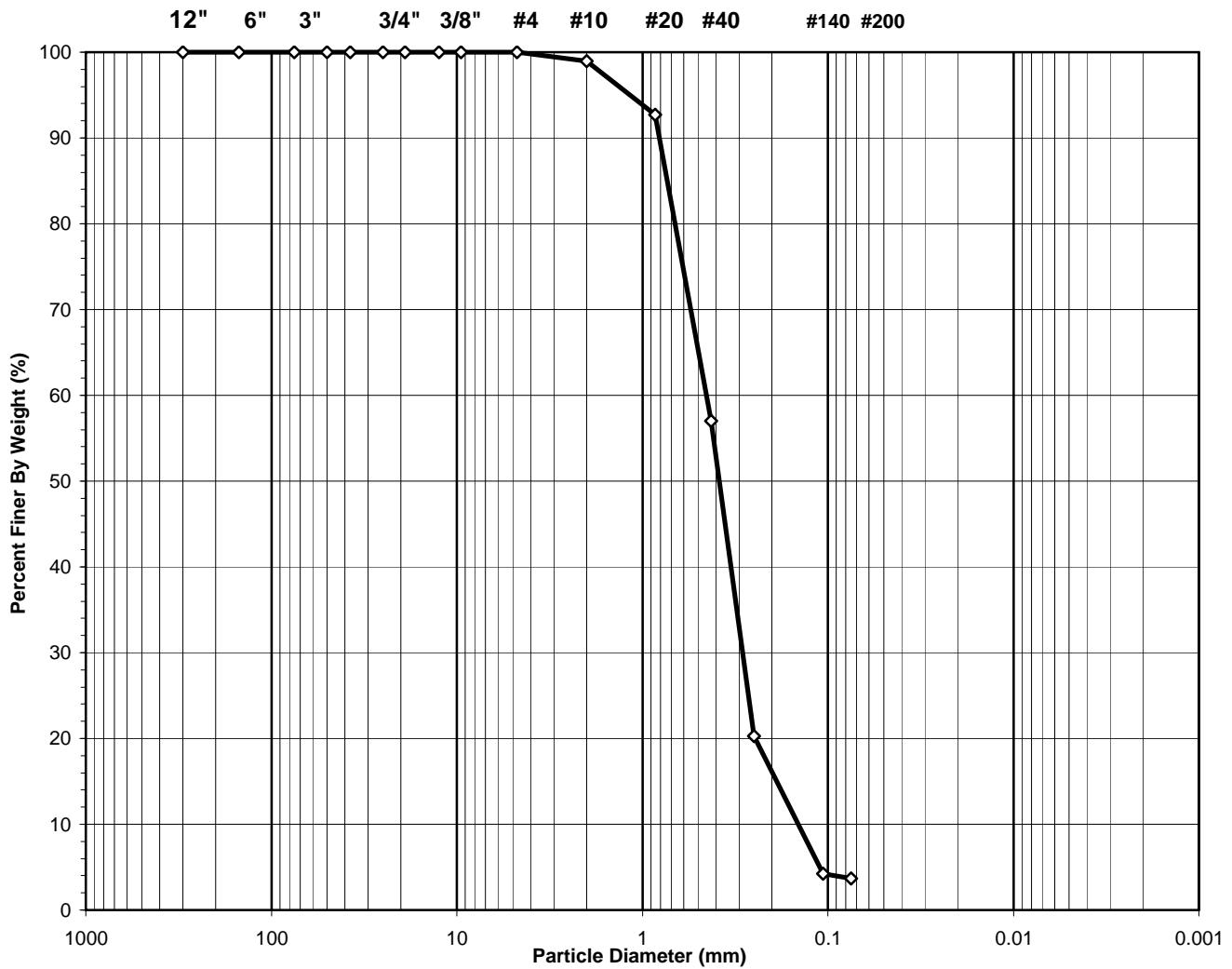
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	1.12	0.32	0.32	99.68	99.68
3/8"	9.50	0.00	0.00	0.32	99.68	99.68
#4	4.75	0.00	0.00	0.32	99.68	99.68
#10	2.00	0.94	0.27	0.59	99.41	99.41
#20	0.850	1.20	0.34	0.93	99.07	99.07
#40	0.425	1.96	0.56	1.50	98.50	98.50
#60	0.250	3.14	0.90	2.40	97.60	97.60
#140	0.106	179.59	51.46	53.86	46.14	46.14
#200	0.075	35.30	10.11	63.97	36.03	36.03
Pan	-	125.74	36.03	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B024
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	33.5-35.0
Project No.:	2015-485-001	Sample No.:	SS-11
Lab ID:	2015-485-001-022	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
SP

D60 = 0.45 CC = 1.27

USCS Classification:
POORLY GRADED SAND

D30 = 0.29 CU = 3.12

D10 = 0.14

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B024
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 33.5-35.0
Project No.:	2015-485-001	Sample No.: SS-11
Lab ID:	2015-485-001-022	Soil Color: Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	52	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	597.80	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	526.00	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	200.08	Weight of Tare (g):	NA
Weight of Water (g):	71.80	Weight of Water (g):	NA
Weight of Dry Sample (g):	325.92	Weight of Dry Sample (g):	NA
Moisture Content (%):	22.0	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	325.92
Dry Weight of - 3/4" Sample (g):	314.0	Weight of - #200 Material (g):	11.91
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	314.01
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	3.47	1.06	1.06	98.94	98.94
#20	0.850	20.28	6.22	7.29	92.71	92.71
#40	0.425	116.27	35.67	42.96	57.04	57.04
#60	0.250	119.81	36.76	79.72	20.28	20.28
#140	0.106	52.24	16.03	95.75	4.25	4.25
#200	0.075	1.94	0.60	96.35	3.65	3.65
Pan	-	11.91	3.65	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

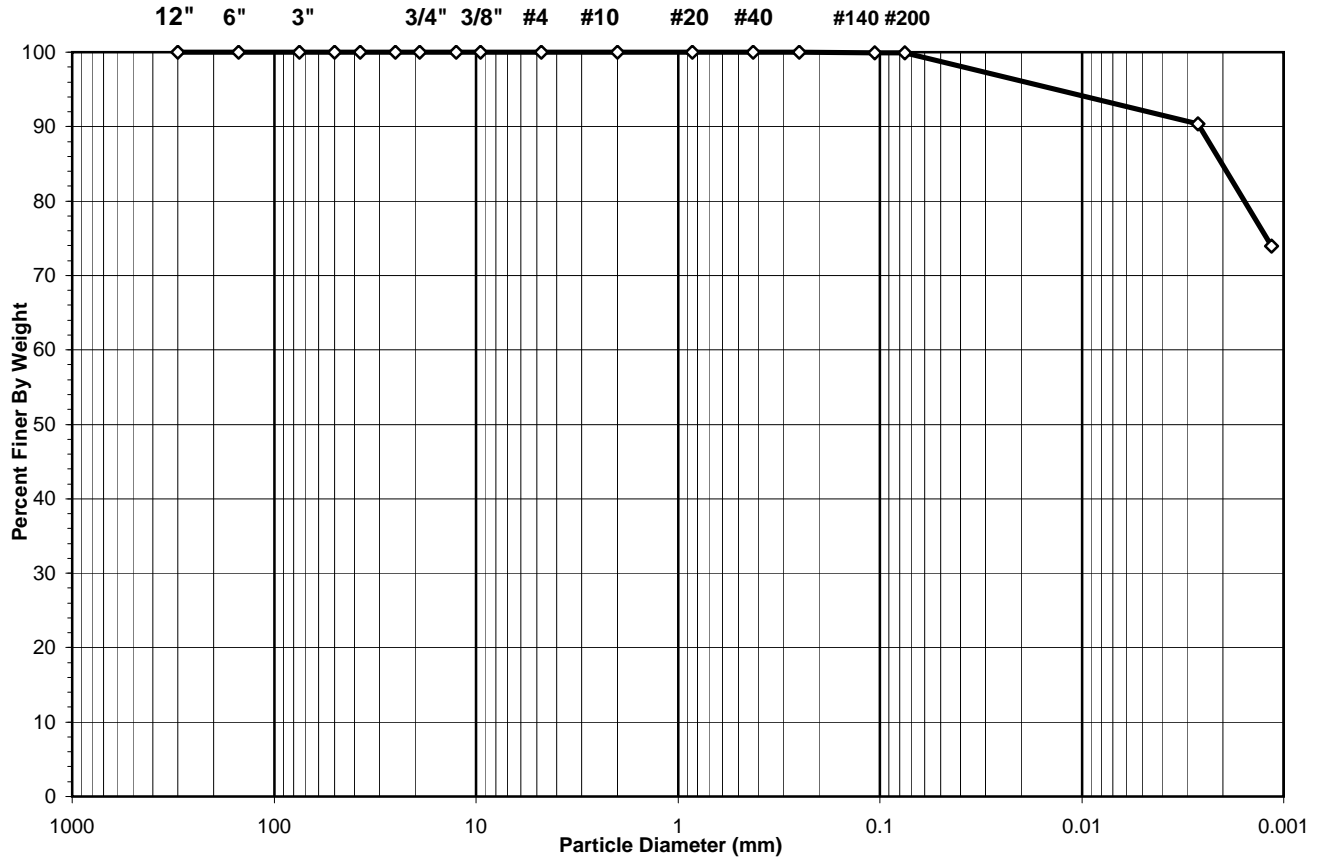
SIEVE AND HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-023

Boring No.: WOR-B025
 Depth (ft): 32.3-32.7
 Sample No.: ST-3
 Soil Color: Gray

USCS USDA	SIEVE ANALYSIS					HYDROMETER	
	cobble	gravel		sand		silt and clay fraction	
	cobble	gravel		sand		silt	clay

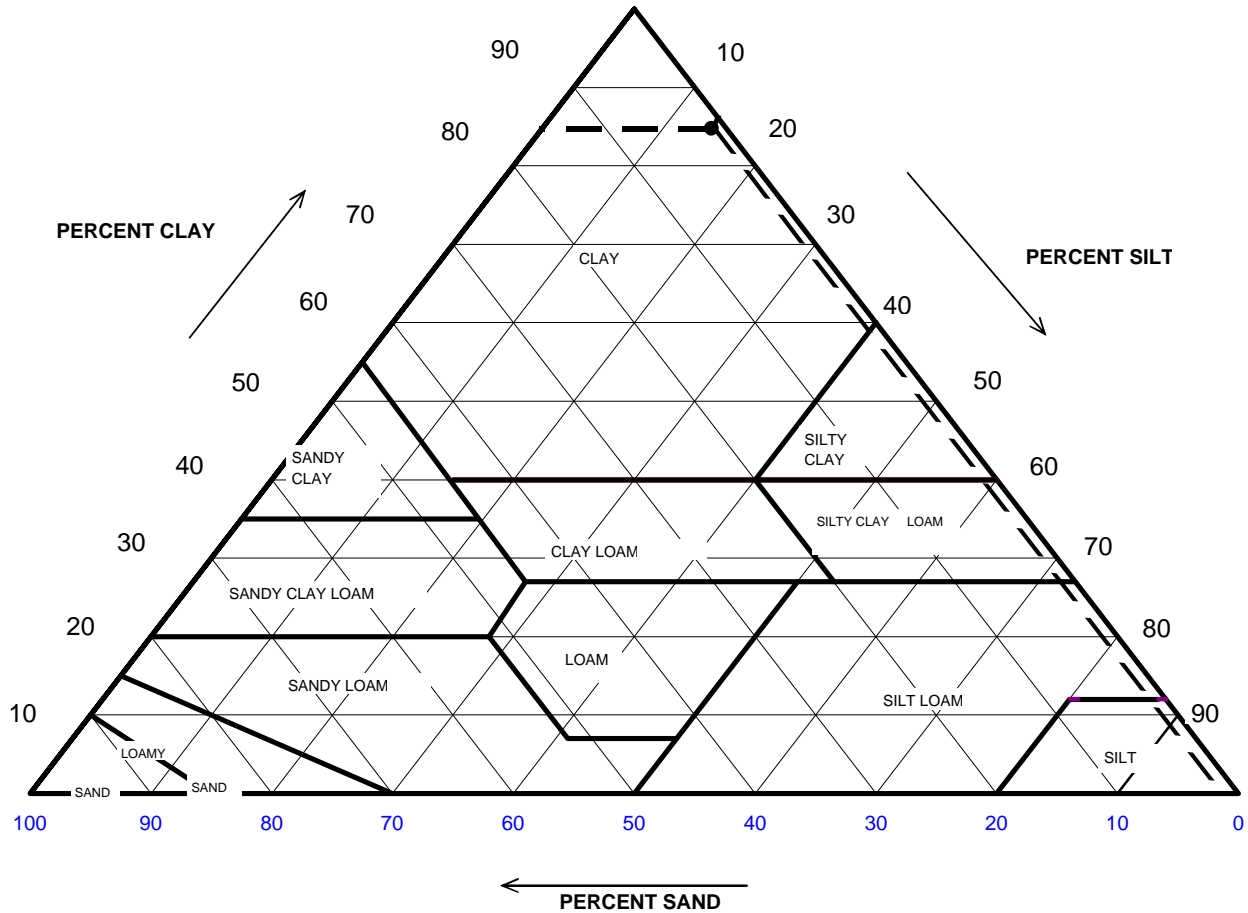


USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	<i>Gravel</i>	0.00
#4 To #200	<i>Sand</i>	0.06
Finer Than #200	<i>Silt & Clay</i>	99.94
USCS Symbol: <i>CH, TESTED</i>		
USCS Classification: <i>FAT CLAY</i>		

USDA CLASSIFICATION CHART

Client: AECOM
 Client Reference: Dynegy - Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-001
 Lab ID: 2015-485-001-023

Boring No.: WOR-B025
 Depth (ft): 32.3-32.7
 Sample No.: ST-3
 Soil Color: Gray



Particle Size (mm)	Percent Finer (%)	USDA SUMMARY	Actual Percentage (%)	Corrected % of Minus 2.0 mm material for USDA Classificat. (%)
2	100.00	Gravel	0.00	0.00
0.05	98.77	Sand	1.23	1.23
0.002	84.77	Silt	14.00	14.00
		Clay	84.77	84.77
		USDA Classification:	CLAY	

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B025
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	32.3-32.7
Project No.:	2015-485-001	Sample No.:	ST-3
Lab ID:	2015-485-001-023	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Water Content of Retained 3/4" Material	
Tare No.	1920	Tare No.	NA
Weight of Tare & Wet Sample (g)	630.49	Weight of Tare & Wet Sample (g)	NA
Weight of Tare & Dry Sample (g)	423.70	Weight of Tare & Dry Sample (g)	NA
Weight of Tare (g)	97.21	Weight of Tare (g)	NA
Weight of Water (g)	206.79	Weight of Water (g)	NA
Weight of Dry Sample (g)	326.49	Weight of Dry Sample (g)	NA
Moisture Content (%)	63.3	Moisture Content (%)	NA

Wet Weight of -3/4" Sample (g)	NA	Weight of the Dry Sample (g)	326.49
Dry Weight of -3/4" Sample (g)	0.21	Weight of - #200 Material (g)	326.28
Wet Weight of +3/4" Sample (g)	NA	Weight of + #200 Material (g)	0.21
Dry Weight of +3/4" Sample (g)	0.00		
Total Dry Weight of Sample (g)	NA		

Sieve Size	Sieve Opening	Weight of Soil Retained	Percent Retained	Accumulated Percent Retained		Percent Finer	Accumulated Percent Finer
	(mm)	(g)	(%)	(%)		(%)	(%)
12"	300	0.00	0.00	0.00		100.00	100.00
6"	150	0.00	0.00	0.00		100.00	100.00
3"	75	0.00	0.00	0.00		100.00	100.00
2"	50	0.00	0.00	0.00		100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00		100.00	100.00
1"	25.0	0.00	0.00	0.00		100.00	100.00
3/4"	19.0	0.00	0.00	0.00		100.00	100.00
1/2"	12.5	0.00	0.00	0.00		100.00	100.00
3/8"	9.50	0.00	0.00	0.00		100.00	100.00
#4	4.75	0.00	0.00	0.00		100.00	100.00
#10	2.00	0.00	0.00	0.00		100.00	100.00
#20	0.85	0.00	0.00	0.00		100.00	100.00
#40	0.425	0.00	0.00	0.00		100.00	100.00
#60	0.250	0.04	0.01	0.01		99.99	99.99
#140	0.106	0.13	0.04	0.05		99.95	99.95
#200	0.075	0.04	0.01	0.06		99.94	99.94
Pan	-	326.28	99.94	100.00		-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/17/15**

HYDROMETER ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B025
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft):	32.3-32.7
Project No.:	2015-485-001	Sample No.:	ST-3
Lab ID:	2015-485-001-023	Soil Color:	Gray

Elapsed Time	R Measured	Temp.	Composite Correction	R Corrected	N	K Factor	Diameter	N'
(min)		(°C)			(%)		(mm)	(%)
0	NA	NA	NA	NA	NA	NA	NA	NA
250	36.0	22.6	6.15	29.9	90.4	0.01303	0.0027	90.4
1440	30.5	22.8	6.07	24.4	74.0	0.01300	0.0012	73.9

Soil Specimen Data	Other Corrections
Tare No. 633	
Weight of Tare & Dry Material (g) 133.79	a - Factor 0.99
Weight of Tare (g) 96.10	
Weight of Deflocculant (g) 5.0	Percent Finer than # 200 99.94
Weight of Dry Material (g) 32.7	Specific Gravity 2.7 Assumed

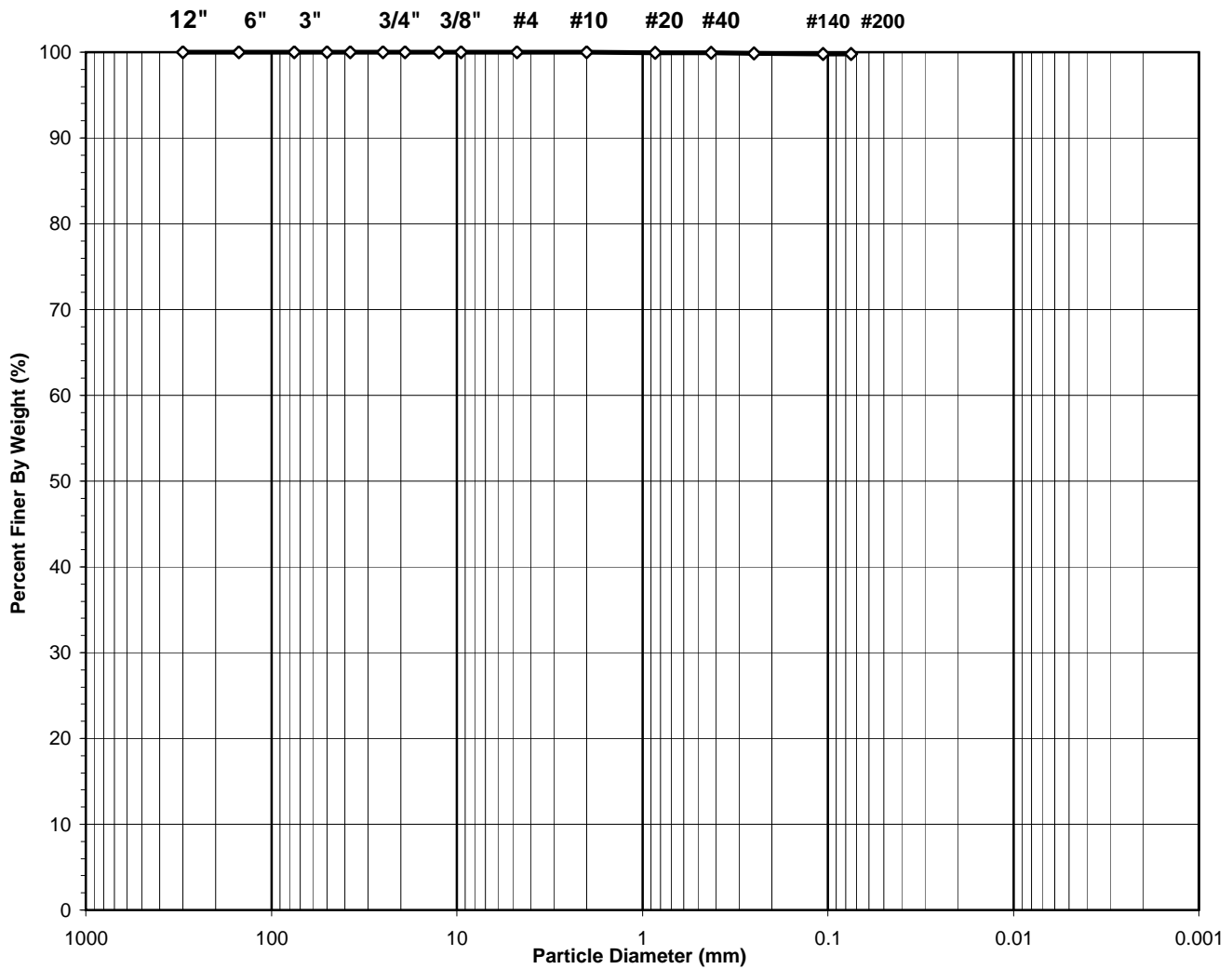
Note: Hydrometer test is performed on - # 200 sieve material.

Tested By	TO	Date	9/15/15	Checked By	KC	Date	9/17/15
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SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B025
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	36.0-37.5
Project No.:	2015-485-001	Sample No.:	SS-11
Lab ID:	2015-485-001-024	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:
ml, ASSUMED

USCS Classification:
SILT

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B025
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 36.0-37.5
Project No.:	2015-485-001	Sample No.: SS-11
Lab ID:	2015-485-001-024	Soil Color: Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	18	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	526.30	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	409.30	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	202.70	Weight of Tare (g):	NA
Weight of Water (g):	117.00	Weight of Water (g):	NA
Weight of Dry Sample (g):	206.60	Weight of Dry Sample (g):	NA
Moisture Content (%):	56.6	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	206.60
Dry Weight of - 3/4" Sample (g):	0.5	Weight of - #200 Material (g):	206.13
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	0.47
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

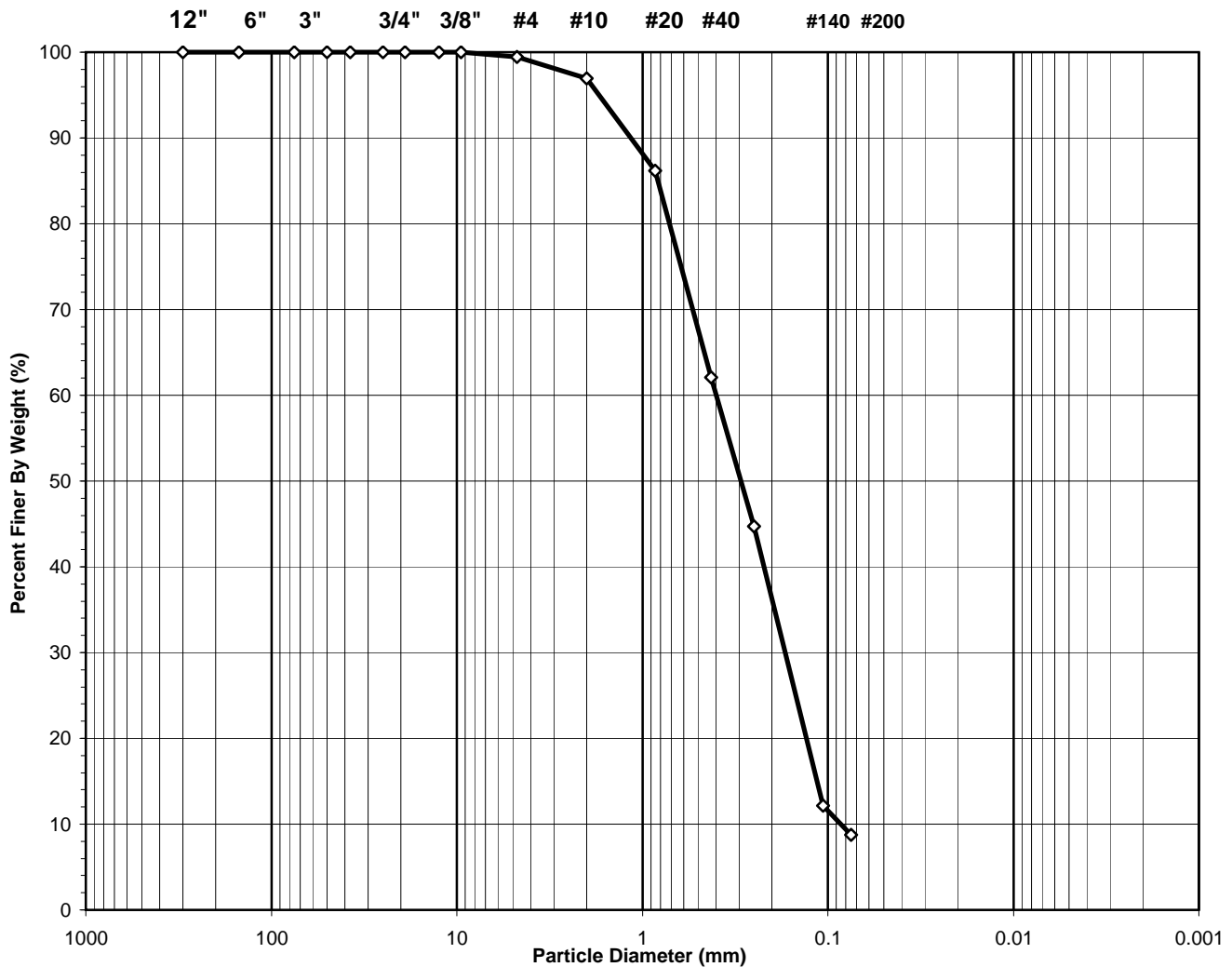
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.04	0.02	0.02	99.98	99.98
#20	0.850	0.04	0.02	0.04	99.96	99.96
#40	0.425	0.09	0.04	0.08	99.92	99.92
#60	0.250	0.08	0.04	0.12	99.88	99.88
#140	0.106	0.13	0.06	0.18	99.82	99.82
#200	0.075	0.09	0.04	0.23	99.77	99.77
Pan	-	206.13	99.77	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B025
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	43.5-45.0
Project No.:	2015-485-001	Sample No.:	SS-14
Lab ID:	2015-485-001-025	Soil Color:	Brown / Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.40 CC = 0.85

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.17 CU = 4.68

D10 = 0.09

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B025
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 43.5-45.0
Project No.:	2015-485-001	Sample No.: SS-14
Lab ID:	2015-485-001-025	Soil Color: Brown / Gray

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	41	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	649.70	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	577.30	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	205.85	Weight of Tare (g):	NA
Weight of Water (g):	72.40	Weight of Water (g):	NA
Weight of Dry Sample (g):	371.45	Weight of Dry Sample (g):	NA
Moisture Content (%):	19.5	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	371.45
Dry Weight of - 3/4" Sample (g):	338.9	Weight of - #200 Material (g):	32.54
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	338.91
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

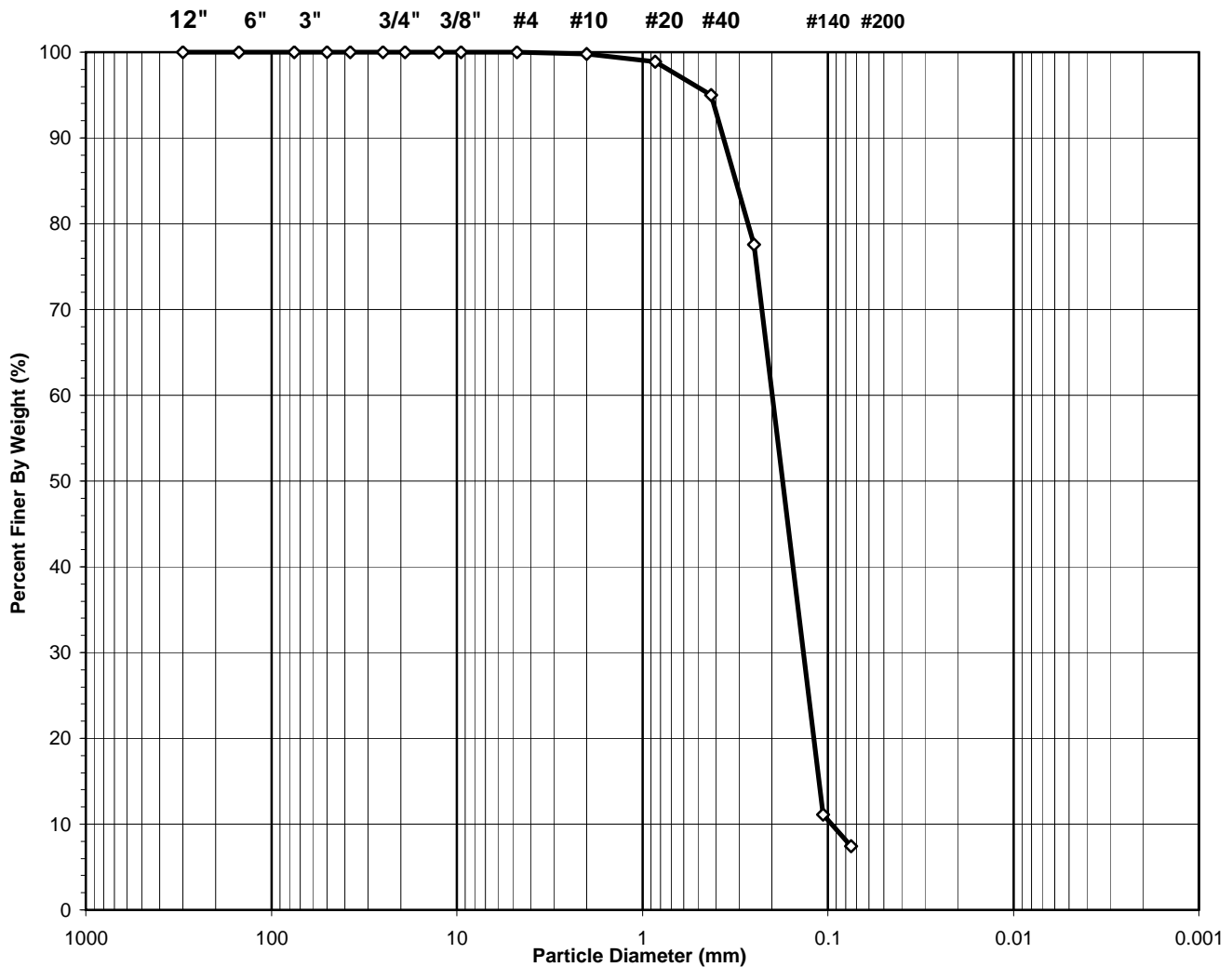
Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	2.06	0.55	0.55	99.45	99.45
#10	2.00	9.31	2.51	3.06	96.94	96.94
#20	0.850	39.98	10.76	13.82	86.18	86.18
#40	0.425	89.47	24.09	37.91	62.09	62.09
#60	0.250	64.55	17.38	55.29	44.71	44.71
#140	0.106	121.00	32.58	87.86	12.14	12.14
#200	0.075	12.54	3.38	91.24	8.76	8.76
Pan	-	32.54	8.76	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

SIEVE ANALYSIS
ASTM D 422-63 (2007)

Client:	AECOM	Boring No.:	WOR-B025
Client Reference:	Dynergy - Wood River Pwr. Sta. 60440115	Depth (ft):	48.5-50.0
Project No.:	2015-485-001	Sample No.:	SS-16
Lab ID:	2015-485-001-026	Soil Color:	Gray / Brown

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



USCS Symbol:

sp-sm, ASSUMED

D60 = 0.20 CC = 0.96

USCS Classification:

POORLY GRADED SAND WITH SILT

D30 = 0.14 CU = 2.09

D10 = 0.10

Tested By JP Date 9/12/15 Checked By KC Date 9/15/15

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)

Client:	AECOM	Boring No.: WOR-B025
Client Reference:	Dynegy - Wood River Pwr. Sta. 60440115	Depth (ft): 48.5-50.0
Project No.:	2015-485-001	Sample No.: SS-16
Lab ID:	2015-485-001-026	Soil Color: Gray / Brown

Moisture Content of Passing 3/4" Sample		Water Content of Retained 3/4" Sample	
Tare No.:	61	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	589.90	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	510.70	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	205.33	Weight of Tare (g):	NA
Weight of Water (g):	79.20	Weight of Water (g):	NA
Weight of Dry Sample (g):	305.37	Weight of Dry Sample (g):	NA
Moisture Content (%):	25.9	Moisture Content (%):	NA

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	305.37
Dry Weight of - 3/4" Sample (g):	282.6	Weight of - #200 Material (g):	22.76
Wet Weight of +3/4" Sample (g):	NA	Weight of + #200 Material (g):	282.61
Dry Weight of + 3/4" Sample (g):	0.00		
Total Dry Weight of Sample (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.50	0.00	0.00	0.00	100.00	100.00
3/8"	9.50	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.56	0.18	0.18	99.82	99.82
#20	0.850	2.90	0.95	1.13	98.87	98.87
#40	0.425	11.81	3.87	5.00	95.00	95.00
#60	0.250	53.30	17.45	22.45	77.55	77.55
#140	0.106	202.91	66.45	88.90	11.10	11.10
#200	0.075	11.13	3.64	92.55	7.45	7.45
Pan	-	22.76	7.45	100.00	-	-

Tested By **JP** Date **9/12/15** Checked By **KC** Date **9/15/15**

Appendix A2
Laboratory Conductivity
Test Results

*Appendix A2 From:
AECOM, December 31, 2015. 30% Design Data Report
for the Dynegy Wood River Energy Complex; West Ash
Pond and East Ash Pond CCR Units.*

PERMEABILITY TEST

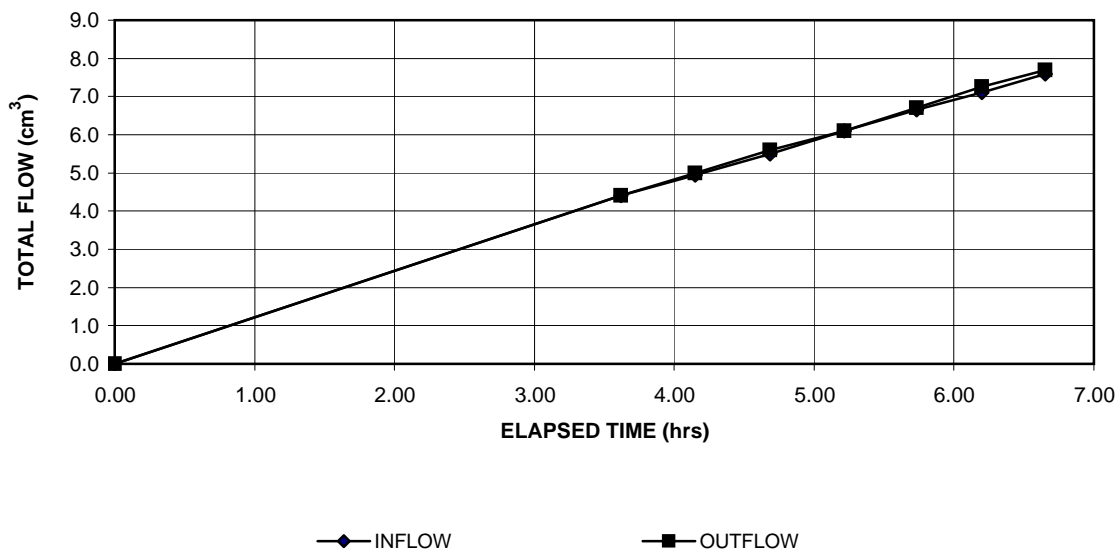
ASTM D 5084-10



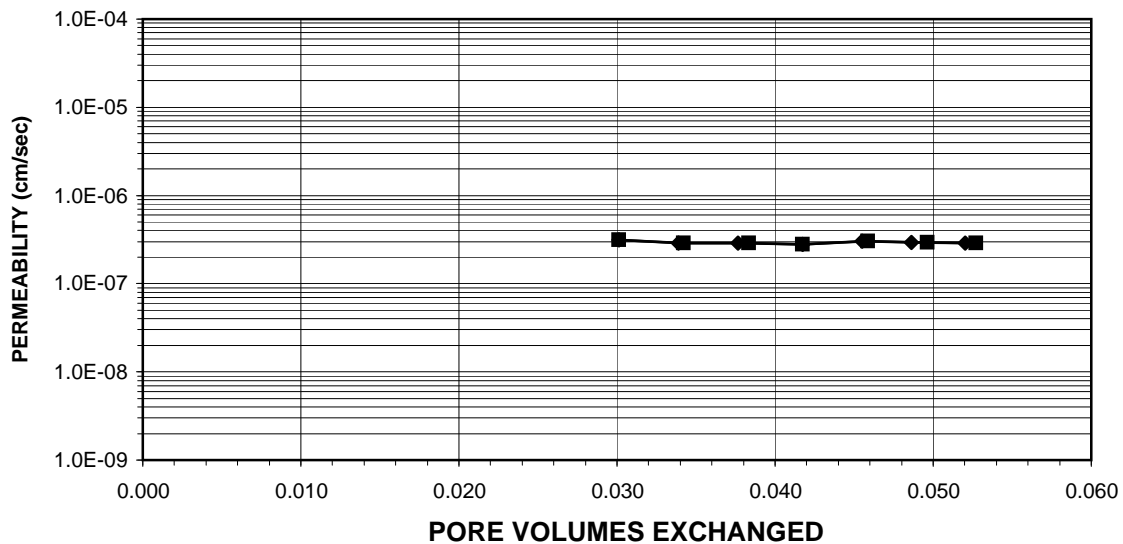
Client:	AECOM	Boring No.:	B-1
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	41.7 - 41.9
Project No.:	2015-485-004	Sample No.:	ST-1
Lab ID No.:	2015-485-004-003		

AVERAGE PERMEABILITY = 2.9E-07 cm/sec @ 20°C
AVERAGE PERMEABILITY = 2.9E-09 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: JAB Date: 9/28/15 Checked By: KC Date: 9/30/15

PERMEABILITY TEST

ASTM D 5084-10



Client: AECOM
Client Project: DYNEGY-Wood River Pwr. Sta. 60440115
Project No.: 2015-485-004
Lab ID No.: 2015-485-004-003

Boring No.: B-1
Depth (ft): 41.7 - 41.9
Sample No.: ST-1

Specific Gravity: 2.70 Assumed
Sample Condition: Undisturbed

Visual Description: Gray Clay

MOISTURE CONTENT:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Tare Number	577	875
Weight of Tare & Wet Sample (g)	279.21	741.71
Weight of Tare & Dry Sample (g)	234.28	604.90
Weight of Tare (g)	84.37	110.40
Weight of Water (g)	44.93	136.81
Weight of Dry Sample (g)	149.91	494.50
Moisture Content (%)	30.0	27.7

SPECIMEN:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Weight of Tube & Wet Sample (g)	853.83	NA
Weight of Tube (g)	218.56	NA
Weight of Wet Sample (g)	635.27	624.00
Length 1 (in)	3.093	3.101
Length 2 (in)	3.073	3.097
Length 3 (in)	3.094	3.093
Top Diameter (in)	2.895	2.861
Middle Diameter (in)	2.879	2.858
Bottom Diameter (in)	2.884	2.875
Average Length (in)	3.09	3.10
Average Area (in ²)	6.54	6.45
Sample Volume (cm ³)	330.88	327.10
Unit Wet Weight (g/cm ³)	1.92	1.91
Unit Wet Weight (pcf)	119.8	119.1
Unit Dry Weight (pcf)	92.2	93.3
Unit Dry Weight (g/cm ³)	1.48	1.49
Void Ratio, e	0.83	0.81
Porosity, n	0.45	0.45
Pore Volume (cm ³)	149.9	146.1
Total Weight of Sample After Test (g)		631.6

Tested By: JAB Date: 9/28/15 Checked By: KC Date: 9/30/15

PERMEABILITY TEST

ASTM D 5084-10



Client:	AECOM	Boring No.:	B-1
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	41.7 - 41.9
Project No.:	2015-485-004	Sample No.:	ST-1
Lab ID No.:	2015-485-004-003		

Pressure Heads (Constant)

Top Cap (psi)	67.5
Bottom Cap (psi)	70.0
Cell (psi)	75.0
Total Pressure Head (cm)	175.8
Hydraulic Gradient	22.34

Final Sample Dimensions

Sample Length (cm), L	7.87
Sample Diameter (cm)	7.28
Sample Area (cm ²), A	41.58
Inflow Burette Area (cm ²), a-in	0.866
Outflow Burette Area (cm ²), a-out	0.855
B Parameter (%)	97

AVERAGE PERMEABILITY = 2.9E-07 cm/sec @ 20°C

AVERAGE PERMEABILITY = 2.9E-09 m/sec @ 20°C

DATE	TIME		ELAPSED TIME	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD	FLOW	TEMP.	INCREMENTAL PERMEABILITY
(mm/dd/yy)	(hr)	(min)	t (hr)	(cm ³)	(cm ³)	h (cm)	(0 flow) (1 stop)	(°C)	@ 20°C (cm/sec)
9/29/15	8	36	0.000	0.0	0.0	200.8	0	21.5	NA
9/29/15	12	13	3.617	4.4	4.4	190.6	0	21.5	3.1E-07
9/29/15	12	45	4.150	5.0	5.0	189.3	0	21.5	2.9E-07
9/29/15	13	17	4.683	5.5	5.6	188.0	0	21.5	2.9E-07
9/29/15	13	49	5.217	6.1	6.1	186.7	0	21.5	2.8E-07
9/29/15	14	20	5.733	6.7	6.7	185.4	0	21.5	3.0E-07
9/29/15	14	48	6.200	7.1	7.3	184.2	0	21.5	2.9E-07
9/29/15	15	15	6.650	7.6	7.7	183.1	1	21.5	2.9E-07

Tested By: JAB Date: 9/28/15 Checked By: KC Date: 9/30/15

PERMEABILITY TEST

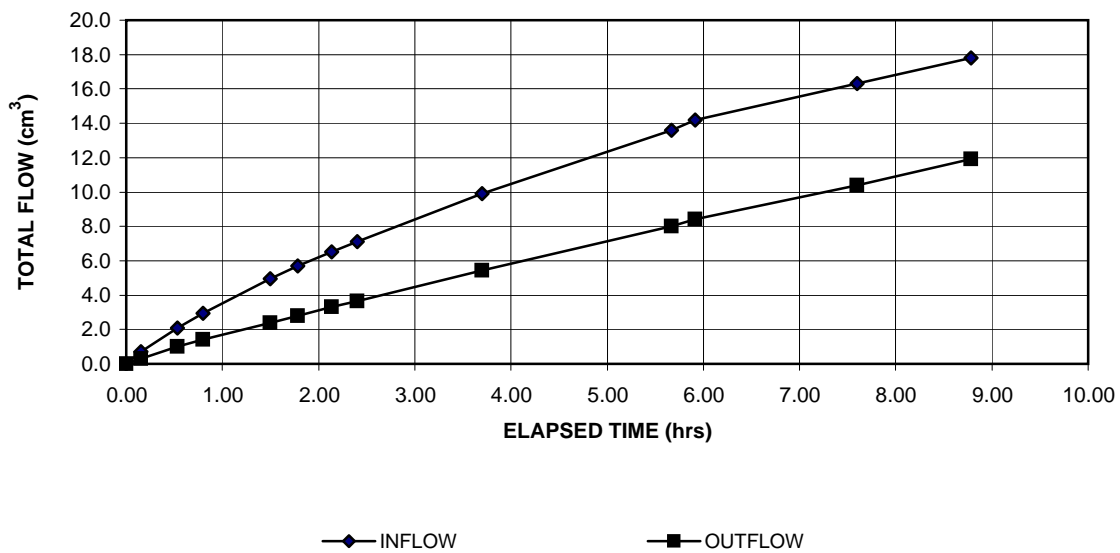
ASTM D 5084-10



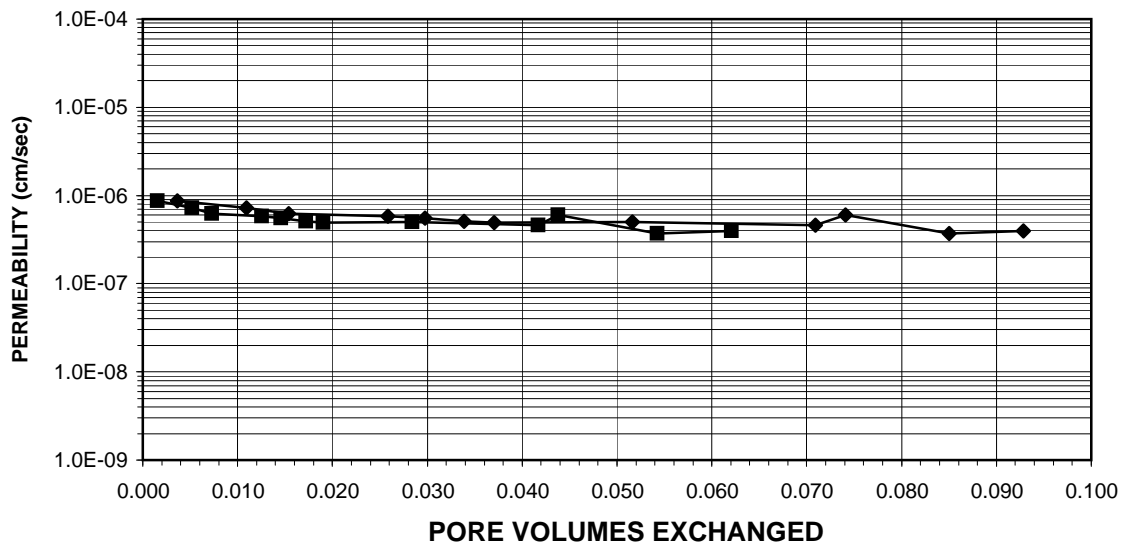
Client:	AECOM	Boring No.:	B-4
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	31.7-31.9
Project No.:	2015-485-004	Sample No.:	ST-2
Lab ID No.:	2015-485-004-016		

AVERAGE PERMEABILITY = 4.6E-07 cm/sec @ 20°C
AVERAGE PERMEABILITY = 4.6E-09 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: JAB Date: 9/28/15 Checked By: KC Date: 10/2/15

PERMEABILITY TEST

ASTM D 5084-10



Client: AECOM
Client Project: DYNEGY-Wood River Pwr. Sta. 60440115
Project No.: 2015-485-004
Lab ID No.: 2015-485-004-016
Boring No.: B-4
Depth (ft): 31.7-31.9
Sample No.: ST-2

Specific Gravity: 2.70 Assumed
Sample Condition: Undisturbed

Visual Description: Gray Silt

MOISTURE CONTENT:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Tare Number	887	605
Weight of Tare & Wet Sample (g)	230.65	646.17
Weight of Tare & Dry Sample (g)	189.73	456.90
Weight of Tare (g)	109.63	86.42
Weight of Water (g)	40.92	189.27
Weight of Dry Sample (g)	80.10	370.48
Moisture Content (%)	51.1	51.1

SPECIMEN:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Weight of Tube & Wet Sample (g)	785.70	NA
Weight of Tube (g)	218.18	NA
Weight of Wet Sample (g)	567.52	567.53
Length 1 (in)	3.119	3.166
Length 2 (in)	3.114	3.159
Length 3 (in)	3.105	3.134
Top Diameter (in)	2.882	2.855
Middle Diameter (in)	2.888	2.860
Bottom Diameter (in)	2.878	2.851
Average Length (in)	3.11	3.15
Average Area (in ²)	6.53	6.40
Sample Volume (cm ³)	332.90	330.85
Unit Wet Weight (g/cm ³)	1.70	1.72
Unit Wet Weight (pcf)	106.4	107.1
Unit Dry Weight (pcf)	70.4	70.9
Unit Dry Weight (g/cm ³)	1.13	1.14
Void Ratio, e	1.39	1.38
Porosity, n	0.58	0.58
Pore Volume (cm ³)	193.8	191.7
Total Weight of Sample After Test (g)		631.6

Tested By: JAB Date: 9/28/15 Checked By: KC Date: 10/2/15

PERMEABILITY TEST

ASTM D 5084-10



Client: AECOM
 Client Project: DYNEGY-Wood River Pwr. Sta. 60440115
 Project No.: 2015-485-004
 Lab ID No.: 2015-485-004-016

Boring No.: B-4
 Depth (ft): 31.7-31.9
 Sample No.: ST-2

Pressure Heads (Constant)

Top Cap (psi) 67.5
 Bottom Cap (psi) 70.0
 Cell (psi) 75.0
 Total Pressure Head (cm) 175.8
 Hydraulic Gradient 21.95

Final Sample Dimensions

Sample Length (cm), L 8.01
 Sample Diameter (cm) 7.25
 Sample Area (cm²), A 41.31
 Inflow Burette Area (cm²), a-in 0.861
 Outflow Burette Area (cm²), a-out 0.851
 B Parameter (%) 98

AVERAGE PERMEABILITY = 4.6E-07 cm/sec @ 20°C
AVERAGE PERMEABILITY = 4.6E-09 m/sec @ 20°C

DATE	TIME	ELAPSED TIME	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD	FLOW	TEMP.	INCREMENTAL PERMEABILITY
(mm/dd/yy)	(hr) (min)	t (hr)	(cm ³)	(cm ³)	h (cm)	(0 flow) (1 stop)	(°C)	@ 20°C (cm/sec)
9/30/15	8 48	0.000	0.0	0.0	199.6	0	21.3	NA
9/30/15	8 57	0.150	0.7	0.3	198.4	0	21.3	8.7E-07
9/30/15	9 20	0.533	2.1	1.0	196.0	0	21.3	7.2E-07
9/30/15	9 36	0.800	3.0	1.4	194.5	0	21.3	6.2E-07
9/30/15	10 18	1.500	5.0	2.4	191.0	0	21.3	5.8E-07
9/30/15	10 35	1.783	5.7	2.8	189.7	0	21.3	5.5E-07
9/30/15	10 56	2.133	6.5	3.3	188.2	0	21.3	5.1E-07
9/30/15	11 12	2.400	7.1	3.7	187.1	0	21.3	4.9E-07
9/30/15	12 30	3.700	9.9	5.5	181.7	0	21.3	5.0E-07
9/30/15	14 28	5.667	13.6	8.0	174.5	0	21.3	4.6E-07
9/30/15	14 43	5.917	14.2	8.4	173.3	0	21.3	6.0E-07
9/30/15	16 24	7.600	16.3	10.4	168.5	0	21.4	3.7E-07
9/30/15	17 35	8.783	17.8	11.9	165.0	1	21.5	3.9E-07

Tested By: JAB Date: 9/28/15 Checked By: KC Date: 10/2/15

PERMEABILITY TEST

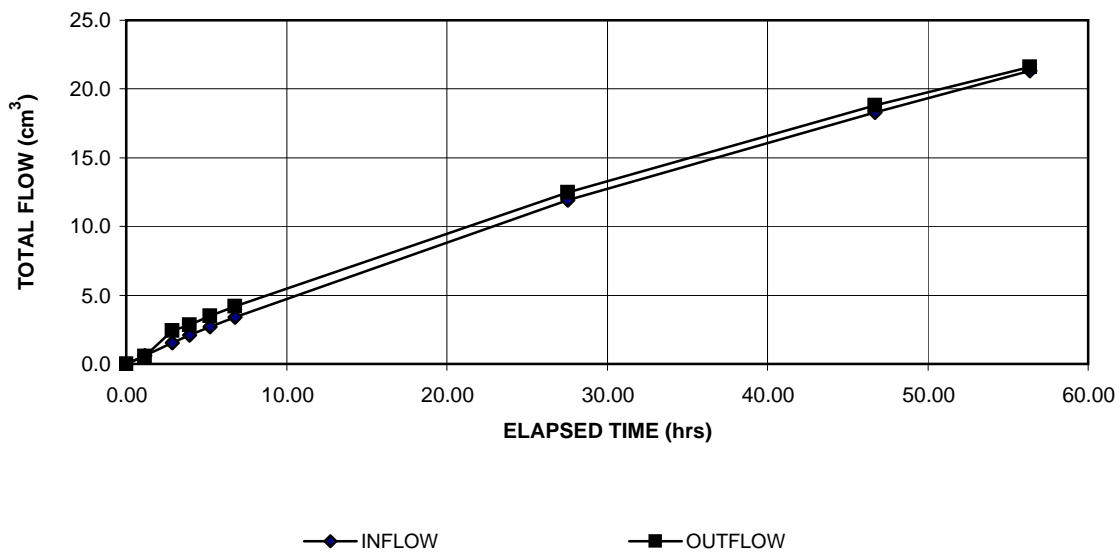
ASTM D 5084-10



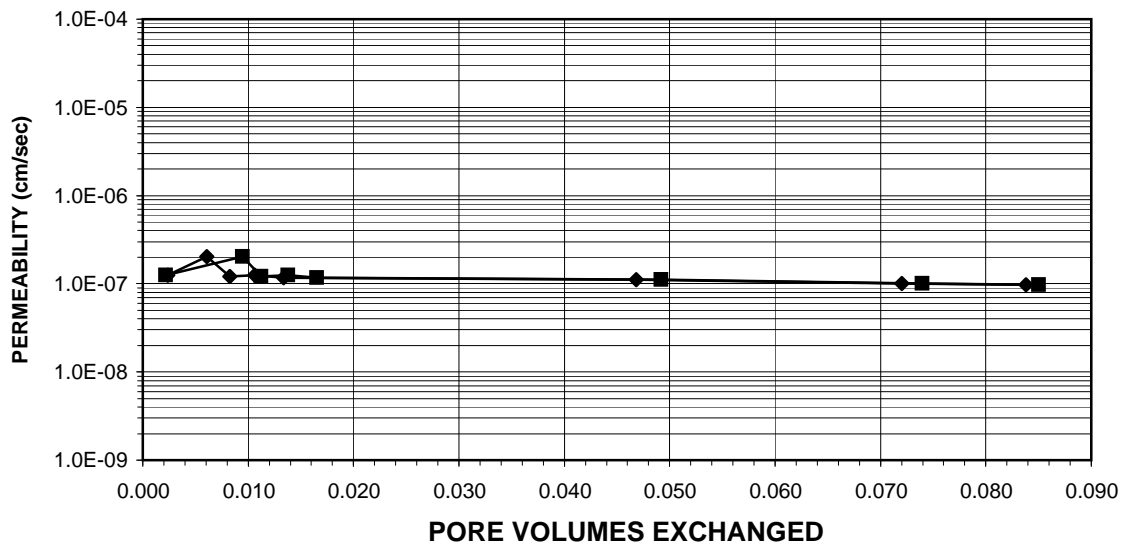
Client:	AECOM	Boring No.:	WOR-B014
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	28.95-29.2
Project No.:	2015-485-001	Sample No.:	ST-2
Lab ID No.:	2015-485-001-002		

AVERAGE PERMEABILITY = 1.1E-07 cm/sec @ 20°C
AVERAGE PERMEABILITY = 1.1E-09 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: JAB Date: 9/10/15 Checked By: KC Date: 9/15/15

PERMEABILITY TEST

ASTM D 5084-10



Client: AECOM
Client Project: DYNEGY-Wood River Pwr. Sta. 60440115
Project No.: 2015-485-001
Lab ID No.: 2015-485-001-002
Boring No.: WOR-B014
Depth (ft): 28.95-29.2
Sample No.: ST-2

Specific Gravity: 2.70 Assumed
Sample Condition: Undisturbed

Visual Description: Gray Clay

MOISTURE CONTENT:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Tare Number	3083	623
Weight of Tare & Wet Sample (g)	71.00	583.43
Weight of Tare & Dry Sample (g)	43.98	379.16
Weight of Tare (g)	6.52	83.41
Weight of Water (g)	27.02	204.27
Weight of Dry Sample (g)	37.46	295.75
Moisture Content (%)	72.1	69.1

SPECIMEN:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Weight of Tube & Wet Sample (g)	548.51	NA
Weight of Tube (g)	212.80	NA
Weight of Wet Sample (g)	335.71	329.74
Length 1 (in)	3.048	3.108
Length 2 (in)	3.040	3.089
Length 3 (in)	3.031	3.115
Top Diameter (in)	2.871	2.856
Middle Diameter (in)	2.884	2.857
Bottom Diameter (in)	2.872	2.861
Average Length (in)	3.04	3.10
Average Area (in ²)	6.49	6.42
Sample Volume (cm ³)	323.51	326.32
Unit Wet Weight (g/cm ³)	1.04	1.01
Unit Wet Weight (pcf)	64.8	63.1
Unit Dry Weight (pcf)	37.6	37.3
Unit Dry Weight (g/cm ³)	0.60	0.60
Void Ratio, e	3.48	3.52
Porosity, n	0.78	0.78
Pore Volume (cm ³)	251.3	254.1
Total Weight of Sample After Test (g)		511.0

Tested By: JAB Date: 9/10/15 Checked By: KC Date: 9/15/15

PERMEABILITY TEST

ASTM D 5084-10



Client:	AECOM	Boring No.:	WOR-B014
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	28.95-29.2
Project No.:	2015-485-001	Sample No.:	ST-2
Lab ID No.:	2015-485-001-002		

Pressure Heads (Constant)

Top Cap (psi)	67.5
Bottom Cap (psi)	70.0
Cell (psi)	75.0
Total Pressure Head (cm)	175.8
Hydraulic Gradient	22.29

Final Sample Dimensions

Sample Length (cm), L	7.88
Sample Diameter (cm)	7.26
Sample Area (cm ²), A	41.39
Inflow Burette Area (cm ²), a-in	0.897
Outflow Burette Area (cm ²), a-out	0.899
B Parameter (%)	98

AVERAGE PERMEABILITY = 1.1E-07 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.1E-09 m/sec @ 20°C

DATE	TIME		ELAPSED TIME	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD	FLOW	TEMP.	INCREMENTAL PERMEABILITY
(mm/dd/yy)	(hr)	(min)	t (hr)	(cm ³)	(cm ³)	h (cm)	(0 flow) (1 stop)	(°C)	@ 20°C (cm/sec)
9/11/15	9	37	0.000	0.0	0.0	202.5	0	22.0	NA
9/11/15	10	46	1.150	0.6	0.6	201.2	0	22.0	1.2E-07
9/11/15	12	30	2.883	1.6	2.4	198.1	0	21.8	2.0E-07
9/11/15	13	33	3.933	2.1	2.9	197.0	0	21.8	1.2E-07
9/11/15	14	51	5.233	2.7	3.5	195.6	0	21.5	1.2E-07
9/11/15	16	24	6.783	3.4	4.2	194.0	0	21.5	1.2E-07
9/12/15	13	10	27.550	11.9	12.5	175.4	0	21.5	1.1E-07
9/13/15	8	20	46.717	18.3	18.8	161.3	0	21.4	1.0E-07
9/13/15	18	0	56.383	21.3	21.6	154.8	1	21.4	9.7E-08

Tested By: JAB Date: 9/10/15 Checked By: KC Date: 9/15/15

PERMEABILITY TEST

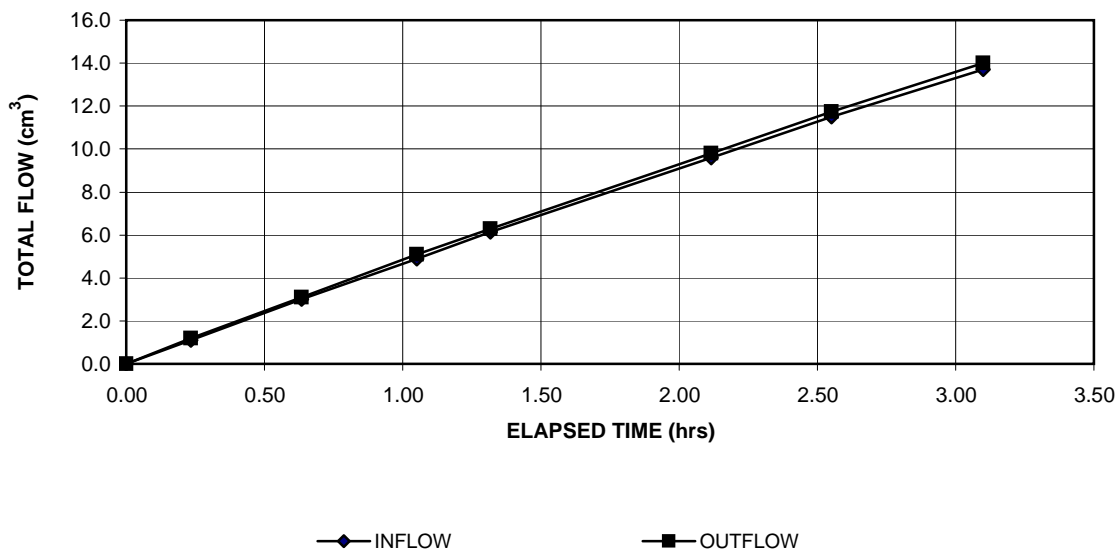
ASTM D 5084-10



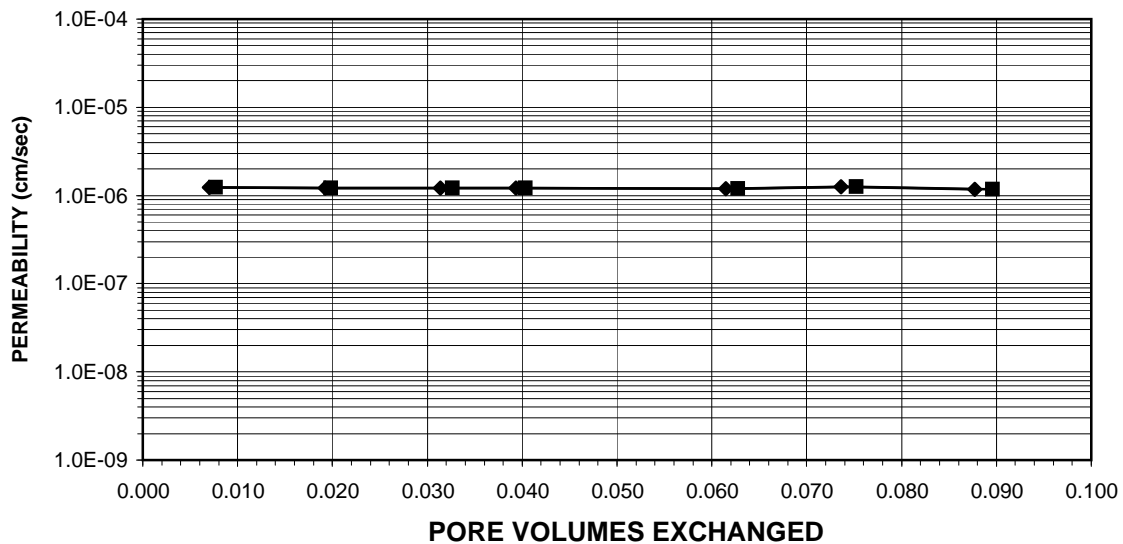
Client:	AECOM	Boring No.:	WOR-B022
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	17.8 - 18.2
Project No.:	2015-485-010	Sample No.:	ST-2
Lab ID No.:	2015-485-010-001		

AVERAGE PERMEABILITY = 1.2E-06 cm/sec @ 20°C
AVERAGE PERMEABILITY = 1.2E-08 m/sec @ 20°C

TOTAL FLOW vs. ELAPSED TIME



PORE VOLUMES EXCHANGED vs. PERMEABILITY



Tested By: TRE Date: 11/11/15 Checked By: KC Date: 11/13/15

PERMEABILITY TEST

ASTM D 5084-10



Client: AECOM
Client Project: DYNEGY-Wood River Pwr. Sta. 60440115
Project No.: 2015-485-010
Lab ID No.: 2015-485-010-001

Boring No.: WOR-B022
Depth (ft): 17.8 - 18.2
Sample No.: ST-2

Specific Gravity: 2.70 Assumed
Sample Condition: Undisturbed

Visual Description: Gray Clay

MOISTURE CONTENT:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Tare Number	1706	881
Weight of Tare & Wet Sample (g)	186.57	669.31
Weight of Tare & Dry Sample (g)	160.96	529.30
Weight of Tare (g)	82.74	110.35
Weight of Water (g)	25.61	140.01
Weight of Dry Sample (g)	78.22	418.95
Moisture Content (%)	32.7	33.4

SPECIMEN:	<u>BEFORE TEST</u>	<u>AFTER TEST</u>
Weight of Tube & Wet Sample (g)	568.56	NA
Weight of Tube (g)	0.00	NA
Weight of Wet Sample (g)	568.56	571.47
Length 1 (in)	3.085	2.961
Length 2 (in)	3.096	3.026
Length 3 (in)	3.088	3.006
Top Diameter (in)	2.873	2.835
Middle Diameter (in)	2.856	2.860
Bottom Diameter (in)	2.848	2.875
Average Length (in)	3.09	3.00
Average Area (in ²)	6.42	6.41
Sample Volume (cm ³)	325.04	314.84
Unit Wet Weight (g/cm ³)	1.75	1.82
Unit Wet Weight (pcf)	109.2	113.3
Unit Dry Weight (pcf)	82.3	84.9
Unit Dry Weight (g/cm ³)	1.32	1.36
Void Ratio, e	1.05	0.98
Porosity, n	0.51	0.50
Pore Volume (cm ³)	166.4	156.2
Total Weight of Sample After Test (g)		559.3

Tested By: TRE Date: 11/11/15 Checked By: KC Date: 11/13/15

PERMEABILITY TEST

ASTM D 5084-10



Client:	AECOM	Boring No.:	WOR-B022
Client Project:	DYNEGY-Wood River Pwr. Sta. 60440115	Depth (ft):	17.8 - 18.2
Project No.:	2015-485-010	Sample No.:	ST-2
Lab ID No.:	2015-485-010-001		

Pressure Heads (Constant)

Top Cap (psi)	67.5
Bottom Cap (psi)	70.0
Cell (psi)	75.0
Total Pressure Head (cm)	175.8
Hydraulic Gradient	23.08

Final Sample Dimensions

Sample Length (cm), L	7.61
Sample Diameter (cm)	7.26
Sample Area (cm ²), A	41.35
Inflow Burette Area (cm ²), a-in	0.866
Outflow Burette Area (cm ²), a-out	0.855
B Parameter (%)	100

AVERAGE PERMEABILITY = 1.2E-06 cm/sec @ 20°C

AVERAGE PERMEABILITY = 1.2E-08 m/sec @ 20°C

DATE	TIME		ELAPSED TIME	TOTAL INFLOW	TOTAL OUTFLOW	TOTAL HEAD	FLOW	TEMP.	INCREMENTAL PERMEABILITY
(mm/dd/yy)	(hr)	(min)	t (hr)	(cm ³)	(cm ³)	h (cm)	(0 flow) (1 stop)	(°C)	@ 20°C (cm/sec)
11/12/15	8	44	0.000	0.0	0.0	200.8	0	20.7	NA
11/12/15	8	58	0.233	1.1	1.2	198.1	0	20.7	1.2E-06
11/12/15	9	22	0.633	3.0	3.1	193.7	0	20.7	1.2E-06
11/12/15	9	47	1.050	4.9	5.1	189.2	0	20.7	1.2E-06
11/12/15	10	3	1.317	6.2	6.3	186.4	0	20.7	1.2E-06
11/12/15	10	51	2.117	9.6	9.8	178.4	0	20.7	1.2E-06
11/12/15	11	17	2.550	11.5	11.8	173.9	0	20.7	1.3E-06
11/12/15	11	50	3.100	13.7	14.0	168.8	1	20.7	1.2E-06

Tested By: TRE Date: 11/11/15 Checked By: KC Date: 11/13/15

OBG

THERE'S A WAY

