PERMIT AMENDMENT APPLICATION

Part III, Attachment 4

GEOLOGY REPORT

Edinburg Regional Disposal Facility

Edinburg, Hidalgo County, Texas

TCEQ Permit MSW-956C

Chad E. Ireland

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7/21/17

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INTENDED FOR PERMITTING
PURPOSES ONLY

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EXECUTIVE SUMMARY

This Geology Report is prepared and signed by a qualified groundwater scientist. Previously prepared documents supplement this report as necessary to provide the requested information. Sources and references for information are provided. This report summarizes available data related to regional geology and local geology and aquifers in the vicinity of the facility in accordance with 30 TAC §330.63(e). Based on a review of information gathered and on the results of subsurface, geotechnical, and hydrogeological investigations, the Edinburg Regional Disposal Facility is suitable for its continued operation and development as a municipal solid waste disposal facility.

1.0 REGIONAL GEOLOGY

The Gulf of Mexico (GOM) is a semi-enclosed ocean basin surrounded by continental shelves and coastal plains. The GOM’s depositional system is a three-dimensional body of sediment deposited in a contiguous suite of process-related sedimentary environments and each sedimentary environment produces specific c facies / rock types. The stratigraphy along the GOM is composed of fluvial depositional systems created by regionally cyclic episodes of focused deposition and progradation of the shoreline followed by non-deposition and transgression of the coastal plain. The timing and cyclicity of progradational and transgressive events depends upon the interplay of sediment supply, subsidence, and sea-level change caused by both tectonic development and continental glaciation (Young, 2010).

In the Lower Rio Grande Valley (LRGV) the depositional stratigraphy described as the Gulf Coast Aquifer (GCA) are Quaternary and Neogene period sediments consisting primarily of fine to medium-grained materials deposited by fluvial and eolian processes. The outcrop of each progressively older, underlying unit is found to the west of the younger, overlying unit. Because of differential subsidence, units typically thicken and dip toward the coastline of the GOM.

1.1 Geologic Map

30 TAC §330.63(e)(1)(A)

Figure III4-1, Geologic Map presents the McAllen-Brownsville Sheet, Geologic Atlas of Texas prepared by the Bureau of Economic Geology. This map presents geologic units and structural features within the vicinity of the facility with text describing the stratigraphy and lithology of the map units. The facility is located on Neogene sediment overlain by Quaternary (Holocene) windblown (eolian) sediment.

1.2 Generalized Stratigraphic Column

30 TAC §330.63(e)(1)(B)

The generalized stratigraphic column of the area beneath the facility is presented to a depth of approximately 1,600 ft-bgs, which is the base of the Evangeline Aquifer. Based on Figure III4-1, Geologic Map and Figure III4-2, Regional Stratigraphic Cross-Section, the Goliad Formation outcrops in the vicinity and is overlain by a veneer of Holocene eolian deposits. A description of the stratigraphy, including geologic age, lithology including variations, thickness, depth, geometry, hydraulic conductivity, and depositional setting of each geologic unit, as available through current geologic information, is included in Table III4-1.

Table III4-1: Stratigraphic Units Underlying Facility

System	Series	Age (M.Y.)	Stratigraphic Units	Lithology	Approx. Thickness (ft)	Approx. Depth (ft-bgs)	Geometry	Hydraulic Conductivity	Depositional Facies
Quaternary	Holocene	0.02	Stabilized Sand Dune Deposits	Sand; Silt	0-30	10	Sand sheets and dunes	Moderate to High	Eolian
Neogene	Miocene	4.4	Upper Goliad	Clay or Mud; Sandstone; Mudstone, Carbonate, Limestone, Conglomerate	400	400	Large planar, cross bedding, and lamination. Dips east towards GOM coastline; units thicken down dip	Moderate	Fluvial / Meander belt
		11.3	Lower Goliad		550	950			Lower Coastal Plain Fluvial / Coastal
		13.3	Upper Lagarto	Sandstone	650	1600			
		15.6	Middle Lagarto	Clay or Mud	700	2300		Low	

(Table compiled after Baker, 1979; Chowdhury and Mace, 2007; and Young et al., 2010)

1.2.1 Quaternary System

Surface deposits in the vicinity are primarily Holocene-age, eolian (windblown) deposits of the Quaternary Period. The eolian deposits are predominantly sand dunes, stabilized by vegetation, although recent blowout features are not uncommon. The dunes characteristically have moderate to very high permeability, low to moderate water-holding capacity, low shrink and swell potential, good to fair drainage, high shear strength, low plasticity, and a shallow water table where present (Barnes, 1976). Within the site, a thin veneer of eolian deposits exists across most of the area, except the north-eastern to south-eastern portion as depicted on Figure III4-1, Geologic Map.

1.2.2 Neogene System

The Neogene system underlies the Quaternary deposits and is divided into two series, the Pliocene and the Miocene. Pliocene sediments from youngest to older consist of Beaumont, Lissie, and Willis formations. Miocene sediments underlying the facility from youngest to older consist the Goliad and Lagarto Formations.

1.2.2.1 Goliad Formation

The Goliad Formation underlying the facility is further divided into upper and lower units. This formation includes fluvial deposits exhibiting large planar and trough crossbedding and horizontal lamination.

Deposits include successions of clay, marl, and caliche. Base elevations and thicknesses for the upper and lower Goliad Formation are presented on Figures III4-3 and III4-4 respectively.

The Upper Goliad's depositional facies is fluvial / meander belt. Fluvial channel-fill facies are composed mainly of medium- to coarse-grained sand and gravel, displaying large-scale cross-bedding. Inter-channel facies include sandy crevasse splays, and muddy floodplain and playa lake facies formed where flood waters breached channel levees and deposited broad aprons of sandy sediment on the floodplain. These facies surround channel-fill and crevasse-splay facies and were deposited across inter-channel areas during floods. Mottled red clays dominate floodplain successions, and secondary calichification and pedogenesis are pervasive. The Lower Goliad's depositional facies is lower coastal plain fluvial / coastal which includes small deltaic and barrier-lagoon depositional systems. Channel belt composition is sandy sediment whereas interchannel composition is calcareous mudstone (Young, 2010).

1.2.2.2 Lagarto Formation

The Lagarto Formation underlies the Goliad Formation and is divided into upper, middle, and lower units. Base elevations and thicknesses for the upper and middle Lagarto Formation are presented on Figures III4-5 and III4-6 respectively. The depositional facies underlying the facility is lower coastal plain fluvial / coastal which includes small deltaic and barrier-lagoon depositional systems. The Lagarto Formation represents a fluvial-deltaic depositional episode in which the upper Lagarto forms the upper progradational part, and the middle and lower Lagarto forms the lower retrogradational part. Therefore, the upper part is generally sand-rich, whereas the middle and lower parts are relatively more mud-rich. The mud-rich parts of the Lagarto are referred to as the Burkeville Aquitard which underlies the Evangeline Aquifer.

2.0 ACTIVE GEOLOGIC PROCESSES

30 TAC §330.63(e)(2)

A description of active geologic processes in the vicinity of the facility including identification of any faults and subsidence in the area of the facility is discussed in the following sections.

2.1 Erosion

Erosion potential caused by surface water processes such as overland flow, channeling, gullying, and wind has been evaluated.

2.1.1 Soils

Figure III4-7, Soils Map presents the distribution of six soil series, predominantly loamy, located across the facility according to the Soil Survey of Hidalgo County, Texas (Jacobs, 1981). These soil series include: the Brennan, Hebbronville (#22, #23, and #24), Hidalgo, Racombs, and Willacy Series. Table III4-2 lists sixteen soil types within the facility boundary, percentage of area covered, and potential for water and wind erosion.

Table III4-2: Soil Types

Soil	Unit Name	Area Covered[1] (%)	Water Erosion Hazard	Wind Blowing Hazard
3	Brennan fine sandy loam, 0 to 1 percent slopes	7.8	Slight	Moderate
9	Delfina loamy fine sand, warm, 0 to 2 percent slopes	4.2	Moderate	Severe
16	Hargill fine sandy loam, 0 to 1 percent slopes	9.5	Slight	Moderate
17	Hargill fine sandy loam, 1 to 3 percent slopes	6.6	Moderate	Moderate
22	Hebbronville sandy loam, 0 to 1 percent slopes	7.7	Slight	Moderate
23	Hebbronville sandy loam, 1 to 3 percent slopes	11.7	Moderate	Moderate
24	Hebbronville sandy loam, 3 to 5 percent slopes	8.9	Severe	Moderate
25	Hidalgo fine sandy loam, 0 to 1 percent slopes	9.1	Slight	Moderate
48	Racombes sandy clay loam	5.1	Slight	Slight
60	Rio clay loam	1.2	Moderate	Slight
70	Willacy fine sandy loam, 0 to 1 percent slopes	19.1	Slight	Moderate
71	Willacy fine sandy loam, 1 to 3 percent slopes	4.0	Moderate	Moderate

Notes:

1. The percentages do not add up to 100% due to part of the area being occupied by the landfill and ponds that are not accounted for in the data. The data is obtained from the NRCS Web Soil Survey Tool: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

2.1.2 Surface Water Erosion

Surface water erosion will not adversely affect the operation of the facility. Gullying and channeling are uncommon in the area because of high infiltration rates and little relief. Soils in the area are well drained and have slopes of less than or equal to 5.2% (Jacobs et al., 1981). Sheet flow only occurs during very heavy rainfall as evident by lack of natural drainage features on or near the facility.

The soil types located in the facility are either slightly or moderately erodible by surface water with an exception of Hebbronville #24. This soil, located in the middle of the facility, exhibits severe water erosion potential and covers approximately nine percent of the facility. Most of this soil will be removed as development of the facility progresses.

An erosion and sedimentation control plan is included in Part III2, Surface Water Drainage Report of this application was developed to mitigate erosion potential along landfill embankments and sedimentation in surface water drainage features. Erosion and sediment controls will be implemented during the construction and operational periods of the facility.

2.1.3 Wind Erosion

Wind erosion will not adversely affect the operation of the facility. Prevailing winds can erode surface sediments in the area (Barnes, 1976). The soil types located in the facility are either slightly or moderately erodible by wind with an exception of Delfina #9. This soil, located in the south east corner of the facility, exhibits severe wind erosion potential and covers approximately four percent of the facility. This soil will be removed as development of the facility progresses for construction of a future perimeter berm, access road, and storm water pond.

2.2 Active Geological Faulting Assessment

30 TAC §330.555(b)

A location restriction criterion requires that new municipal solid waste landfill units and lateral expansions shall not be located within 200 feet of a fault that has had displacement in Holocene time (representing the most recent 10,000 years), referred to herein as an active fault. Sites located within areas that may be subject to differential subsidence or active geological faulting must include detailed fault studies. When an active fault is known to exist within 1/2 mile of the site, the site must be investigated for unknown faults. There is no evidence of active geological faulting or differential subsidence that would impair the integrity of any landfill component.

Salt domes cause much of the recent fault activity in the Gulf Coastal Plains. In Hidalgo County salt domes are rare because the Jurassic salt layer, found throughout the Gulf Coast, is thin (Worral & Snelson, 1989). This occurrence has reduced recent fault activity to a minimum in Hidalgo County. The Geologic Atlas of Texas (McAllen-Brownsville Sheet) presented in Figure III4-1, Geology Map and Texas Water Development Board (TWDB) Reports (Young et al. 2010 and Mace et al. 2006) showing faults, were reviewed to determine the presence of faults within the vicinity. Based on the review of the maps and published literature, there are no faults or surface expression of Holocene faults indicated within a one-half-mile radius of the facility. As depicted on Figure III4-1, Geologic Map there are no mapped surface expressions of active or inactive faults located within at least a five-mile-radius of the facility.

2.3 Seismic Impact Zone Assessment

30 TAC §330.557

A location restriction criterion requires new municipal solid waste landfill units and lateral expansions shall not be located in seismic impact zones. A seismic impact zone is defined as an area with a 10-percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 250 years.

The 2014 U.S. Geological Survey (USGS) National Seismic Hazard Maps display earthquake ground motions for various probability levels across the United States up to 50 years. According to the USGS, ground motion values having a 2% probability of exceedance in 50 years should be approximately the same as those having 10% probability of being exceeded in 250 years. Figure III4-8, Seismic Impact Zone Map shows the maximum horizontal acceleration is approximately 0.02g at the location of the facility. Because the maximum horizontal acceleration is less than 0.1g, the facility is not located in a seismic impact zone.

2.4 Unstable Area Assessment

30 TAC §330.559

An unstable area is defined to be a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of a landfill's structural components responsible for preventing releases from the landfill; unstable areas can include poor foundation conditions, areas susceptible to mass movement, and karst terrains. No unstable areas exist within the vicinity of the facility that would impair the integrity of any landfill components.

2.4.1 Local Soil Conditions

The soils within vicinity of the facility are predominantly sandy loam and have similar soil properties. They are well drained because of high infiltration rates and lack natural drainage features. No significant differential settling is anticipated.

2.4.2 Local Geologic or Geomorphologic Features

The lithology within the vicinity of the facility is moderately consistent and no indication of any karst conditions, active geological faulting, or presence of salt domes; therefore no differential subsidence is anticipated.

2.4.3 Local Human-Made Features

In Part III3, Waste Management Unit Design analyses were performed to assess the performance of the landfill with respect to slope stability and settlement using very conservation assumptions. Results of the analyses indicate slope stability and long-term settlement would not impair the performance of the leachate collection system during landfill.

3.0 EVANGELINE AQUIFER

30 TAC §330.63(e)(3)(A)

Significant regional aquifers in the vicinity of the facility are collectively grouped as the Gulf Coast Aquifer (GCA), which consists of the following aquifers listed youngest to oldest: the Chicot, the Evangeline, and the Jasper (Chowdhury and Mace 2007). Figure III4-9, Extent of Gulf Coast Aquifers in Lower Rio Grande Valley shows the outcrop areas of the different aquifers in the region.

Underlying the facility is the Evangeline Aquifer which overlies the Burkeville Confining Unit; their association with geologic units is presented in Table III4-3.

Table III4-3: Hydrogeologic Units Underlying the Facility

System	Series	Stratigraphic Units	Lithology	Approx. Thickness (ft)	Approx. Depth (ft-bgs)	Hydro-stratigraphy	Water Bearing Properties
Quaternary	Holocene	Stabilized Sand Dune Deposits	Sand; Silt	0-30	10	Evangeline Aquifer	Moderate to very high permeability, low to moderate water-holding capacity.
Neogene	Miocene	Upper Goliad	Clay or Mud; Sandstone; Mudstone, Carbonate, Limestone, Conglomerate	400	400		Moderate permeability, moderate water-holding capacity. Provides water for domestic and irrigation uses.
		Lower Goliad		550	950		
		Upper Lagarto	Sandstone	650	1600		
		Middle Lagarto	Clay or Mud	700	2300	Burkeville Confining Unit	Regional aquitard, low permeability.

(Table compiled after Baker, 1979; Chowdhury and Mace, 2007; and Young et al., 2010)

3.1 Composition

30 TAC §330.63(e)(3)(B)

The Evangeline Aquifer is composed primarily of the Goliad Sand, but may also contain sections of sand and clay from the Upper Lagarto Formation. It is approximately 1,600 feet thick under the facility and dips towards the coast approaching thicknesses greater than 2,300 ft. Sand fractions in the Evangeline are observed to range from less than 0.4 to greater than 0.6 (Young et al., 2010).

3.2 Hydraulic Properties

30 TAC §330.63(e)(3)(C)

Transmissivity values are observed to range from 3,000 to 15,000 ft^2/day (Chowdhury and Mace, 2007). Average horizontal and vertical hydraulic conductivities are 80 feet/day and 1×10^{-3} feet/day, for horizontal and vertical, respectively (Ryder, 1988). The storativity of the Evangeline Aquifer ranges from 0.001 to 0.01 in the unconfined areas and 0.0004 to 0.001 in the confined areas (Chowdhury and Mace, 2007).

3.3 Under Water Table or Artesian Conditions

30 TAC §330.63(e)(3)(D)

The Evangeline Aquifer generally exhibits under water table conditions, however successions of clay may cause portions to behave as a semi-confined aquifer.

3.4 Hydraulic Connectivity

30 TAC §330.63(e)(3)(E)

The Evangeline Aquifer is hydraulically bounded by the underlying Burkeville Confining Unit, located at a depth of approximately 1600 ft, which separates it from the underlying Jasper Aquifer. Within the Goliad's sand-dominated fluvial systems, sand bodies are highly interconnected (Young, 2010).

3.5 Regional Water-Table Potentiometric Surface Maps

30 TAC §330.63(e)(3)(F)

Figure III4-10, Evangeline Aquifer Potentiometric Surface and Hydraulic Conductivity presents a regional potentiometric surface map which demonstrates the regional groundwater flow direction to the east/southeast.

3.6 Rate of Groundwater Flow

30 TAC §330.63(e)(3)(G)

The aquifers of the GCA dip towards the coast and groundwater flow is towards the Gulf of Mexico. The estimated average rate of horizontal groundwater flow for the Evangeline Aquifer is 80 ft/day (Ryder, 1988).

3.7 Total Dissolved Solids

30 TAC §330.63(e)(3)(H)

Typical range of values for total dissolved solids content of groundwater, mineral constituents dissolved from rocks and soils within the Evangeline Aquifer is 632 – 8,774 mg/L with a 0.0 to 0.2 fraction of aquifer thickness that is fresh water (Young, 2010). A general classification of water based on dissolved solids content is as follows; waters containing less than 1,000 mg/L of dissolved solids are considered fresh; 1,000 to 3,000 mg/L, slightly saline; 3,000 to 10,000 mg/L, moderately saline; 10,000 to 35,000 mg/L, very saline, and more than 35,000 mg/L, brine (Winslow and Kister, 1956, p.5)

3.8 Areas of Recharge

30 TAC §330.63(e)(3)(I)

The source of the water which recharges the associated hydrostratigraphic units of the GCA is from precipitation directly onto outcrops, discharging surface water in the Rio Grande and Arroyo Colorado Rivers, and irrigation return flow. According to Figure III4-9, Extent of Gulf Coast Aquifers in Lower Rio Grande Valley, the facility is located in a recharge area for the Chicot Aquifer. Figure III4-1, Geologic Map demonstrates Holocene-age eolian deposits overlying the Goliad Formation of the Evangeline Aquifer and the Lissie Formation of the Chicot Aquifer within a five-mile radius of the facility. Therefore areas within a five-mile radius recharge both the Chicot and Evangeline Aquifers.

3.9 Local Groundwater Use

30 TAC §330.63(e)(3)(J)

The Rio Grande River is the primary source of domestic water in the Lower Rio Grande Valley. When groundwater is used, it generally comes from the thin layer of the Chicot aquifer, if present, or upper portions of the Evangeline aquifer. Groundwater wells within a one-mile-radius of the facility were located based on a water well database search of located wells from the Texas Water Development Board (TWDB) and on information supplied by the Red Sands Groundwater Conservation District (RSGCD). Figure III4-11, Water Well Location Map depicts approximate water well locations.

The TWDB database search identified six located water wells within a one-mile-radius of the facility summarized in Table III4-4A. From available screened depth information, total depths of these water wells range from 74 ft to 1250 ft and extend into the upper parts of the Evangeline Aquifer. In addition to the TWDB database search, RSGCD provided approximate locations for six additional water wells within a one-mile-radius of the facility summarized in Table III4-4B. The locations of these additional wells or records could not be verified.

Table III4-4A: Water Well Locations within One-Mile-Radius Provided by TWDB

State Well Number	Map ID[1]	Latitude	Longitude	Surface Elev. (ft)	Total Depth (ft)	Screen Interval (ft)	Approx. Distance from site[2] (ft)	Water Use[3]
8739901	WW-1	26°24’06”N	98°08’16”W	86	258	NA	1,440	Domestic (P) Stock (S)
8739902	WW-2	26°23’41”N	98°08’29”W	84	240	160-240	2,230	Domestic (P) Stock (S)
8739903	WW-3	26°23’36”N	98°08’31”W	83	1125	NA	2,340	Irrigation
8740701	WW-4	26°24’48”N	98°06’25”W	87	223	124-155	4,740	Stock

State Well Number	Map ID[1]	Latitude	Longitude	Surface Elev. (ft)	Total Depth (ft)	Screen Interval (ft)	Approx. Distance from site[2] (ft)	Water Use[3]
8740702	WW-5	26°24’17”N	98°06’29”W	89	74	185-216	2,200	Stock
8740703	WW-6	26°24’59”N	98°06’59”W	101	1250	NA	5,150	Irrigation

1. Map ID as shown on Figure III4-7, Water Wells
2. Distances are estimated to nearest facility property boundary
3. (P) – primary water use; (S) – secondary water use (obtained from well logs)

Table III-4B: Water Well Locations within One-Mile-Radius Provided by RSGCD

Well Reference/Owner Name	Map ID[1]	Latitude[2]	Longitude[2]	Approx. Distance from site[3] (ft)
E.B. Guerra Elementary School	WW-7	26°24’07”N	98°08’57”W	5,110
Garza Well	WW-8	26°24’04”N	98°08’50”W	4,480
Chandler Well	WW-9	26°24’07”N	98°08’26”W	2,390
Labus Water Well	WW-10	26°24’01”N	98°08’27”W	2,350
Gin Well	WW-11	26°24’29”N	98°08’14”W	3,200
Neal Well	WW-12	26°24’45”N	98°08’10”W	4,530

1. Map ID as shown on Figure III4-7, Water Wells
2. Well locations are approximately estimated based on hand-marked map provided by RSGCD, dated March 18, 2016
3. Distances are estimated to nearest facility property boundary.

The facility’s engineered design and operational groundwater monitoring mitigate potential impacts on groundwater use within the vicinity. The facility’s waste disposal units are constructed with a low-permeability geosynthetic lining system to prevent potential contaminant transport into the groundwater. In an unlikely event contaminants are released, the facility’s groundwater monitoring system will detect the release and corrective measures will be implemented. In addition, the closest water well has over 1,400 ft of separation from the facility property boundary; therefore, any contaminants will be attenuated or remediated prior to potential impacts on groundwater use.

4.0 SUBSURFACE INVESTIGATION

30 TAC §330.63(e)(4)

The subsurface investigation at the facility includes a description of all borings drilled on site to test soils and characterize groundwater. Geologic strata have been characterized to depths of up to 100 feet below ground surface from the current and previous subsurface investigations.

4.1 Soil Boring Plan

30 TAC §330.63(e)(4)

Presented in Appendix III4A, Soil Boring Plan (SBP) including locations and depths of all proposed borings for the expansion area was submitted to the TCEQ and approved prior to initiation of the subsurface investigation.

4.1.1 Number of Borings

30 TAC §330.63(e)(4)(A)

The SBP proposed 35 borings, a sufficient number of borings to establish subsurface stratigraphy and to determine geotechnical properties of the soils beneath the facility. The number of borings were determined based on general characteristics of the facility and on the heterogeneity of subsurface materials analyzed from previously performed subsurface investigations.

4.1.2 Depth of Borings

30 TAC §330.63(e)(4)(B)

The approved SBP proposed borings that are sufficiently deep enough to allow identification of the uppermost aquifer and underlying hydraulically interconnected aquifers. They penetrate the uppermost aquifer and are deep enough to identify the aquiclude at the lower boundary. All the borings are at least five feet deeper than the elevation of the deepest excavation, 70 ft-msl, and 18 of the 35 borings are at least thirty feet below the deepest excavation.

4.1.3 Established Field Exploration Methods

30 TAC §330.63(e)(4)(C)

All borings were conducted in accordance with established field exploration methods detailed in the approved SBP. The subsurface investigation, borings, and plugging and abandonment were conducted in accordance with applicable rules in 16 TAC §76 – Water Well Drillers and Water Well Pump Installers including the preparation and submittal of well installation and plugging reports. The drilling and sampling program of the SBP includes drilling methods, sampling plan, and boring log documentation.

4.2 Soil Boring Logs

30 TAC §330.63(e)(4)

Appendix III4B, Boring logs include a boring logs from the current and previous subsurface investigations. Boring logs from the current investigation outlined in the SBP include detailed description of materials encountered including any discontinuities such as fractures, fissures, slickensides, lenses, or seams. Each boring is presented in the form of a log that contains, at a minimum, the boring number; surface elevation and location coordinates; and a columnar section with text showing the elevation of all contacts between soil and rock layers, description of each layer using the unified soil classification, color, degree of compaction, and moisture content. A key explaining the symbols used on the boring logs and the classification terminology for soil type, consistency, and structure is provided. Water levels observed during drilling are indicated on the boring logs.

The current and previous subsurface investigations of the geology, geotechnical properties, and hydrogeology of the facility have resulted in a total of 99 borings including piezometers and monitoring wells. Figure III4-12A, Boring Location Map depicts the surveyed locations and elevation of all borings.

4.2.1 Previous Subsurface Investigations

The following previous investigations were prepared for the site in support of previous permitting activities:

- 1976 – Langley-Pittman Lab drilled a total of six borings (No.1 through No.6) within the then existing 100-acre facility, to characterize the original site. Borings were advanced to a depth of 40 ft. bgs.
- 1993 – Borings B-1 through B-5 were drilled by Professional Services Industries, Inc. (PSI) in 1993. B-5 was drilled to a depth of 100 feet BGS, while the each of the other boreholes went to a depth of 50 feet. This investigation included standard penetration test values (SPT) and pocket penetrometer shear strength values obtained during the field investigation. Further, index texting was performed in the laboratory for soil classification. This investigation was followed by the installation of groundwater monitoring wells MW-1 through MW-4 adjacent to B-1 to B-4.
- 1996 – Five soil borings, SB-01 through SB-05 were advanced to characterize the western portion of the contemporary expansion area during the geotechnical investigation conducted by Rust Environment and Infrastructure as part of the 100-acre expansion. Boreholes SB-01 to SB-04 were 40 feet deep, while SB-05 was drilled to a depth of 100 feet at the middle of the facility. SPT and pocket penetrometer values were obtained during the field investigation. Laboratory testing was performed to classify the soil and determine its permeability.
- 1996 – Four monitoring wells – MW-5 through MW-8 - were installed, each to a depth of 35 feet BGS, by Raba-Kistner-Brytest Consultants. The wells were installed to complete the groundwater monitoring system proposed in Permit No. 956A.
- 1999 – As part of the Permit Amendment No. 956B for landfill expansion, fourteen borings G-1 through G-14 were drilled by PSI. Golder performed oversight, logging, and laboratory testing. Thirteen of these borings were drilled to at least 30 feet, while the shallowest borings extended to at least 5 feet below the lowest excavation grades. SPT and pocket penetrometer values were obtained in the field and index tests were performed in the lab for soil classification. In addition permeability tests (ASTM D5084), unconfined compressive strength tests (ASTM D2166) and consolidation tests (ASTM D2435) were performed. In borings G-8 and G-9, groundwater piezometers, P-1 and P-2 were installed.
- 2000 – Geologic Drilling Inc. drilled six monitoring wells – MW-9 through MW-14, and Southern Ecology Management performed oversight and logging. The monitoring well screen intervals determined the depth of the borings.

- 2003 – CCI EnviroDrilling, Inc. plugged and re-installed monitoring wells MW-1 through MW-4. The wells were renamed MW-1R through MW-4R. Golder provided oversight.
- 2004 – EnviroCore, Inc. replaced the damaged MW-3R to installed MW-3RA. Golder provided oversight.
- 2005 – EnviroCore, Inc. installed MW-15 through MW-18 under Golder's oversight.
- 2009 – Lewis Environmental drilled three new wells – MW-22, MW-23, and MW-24. Several old wells were redrilled/replaced including MW-3A, MW-4A, MW-7R through MW-10R, MW-15R, MW-16R, and MW-18R. Golder provided oversight.
- 2013 – EnviroCore drilled two monitoring wells MWD-6 and MWD-7. Golder provided oversight.

Table III4-5A: Coordinates and Elevations of Previously Advanced Borings (ft)

Boring	Northing	Easting	Ground Elevation	Depth	Bottom Elevation
Langley-Pitman Testing Lab, 1976 (Soil Borings)					
No.1	16,668,336.87	1,105,717.33	91	40	51
No.2	16,669,135.55	1,105,455.21	86	40	46
No.3	16,669,867.66	1,105,398.98	87	40	47
No.4	16,670,296.17	1,104,238.29	86	40	46
No.5	16,668,738.00	1,104,072.69	91	40	51
No.6	16,668,807.16	1,105,020.81	91	40	51
Professional Services Industries, 1993 (Soil Borings and Monitoring Wells)					
B-1	16,670,435.62	1,104,102.38	85	50	35
B-2	16,668,479.69	1,103,794.80	85	50	35
B-3	16,668,153.82	1,105,849.69	91	50	41
B-4	16,670,034.21	1,106,143.67	88	50	38
B-5	16,669,351.49	1,105,106.22	90	100	-10
MW-1	16,670,435.62	1,104,102.38	85	27	58
MW-2	16,668,479.69	1,103,794.80	86	27	59
MW-3	16,668,153.82	1,105,849.69	90	30	60
MW-4	16,670,034.21	1,106,143.67	88	27	61
Rust Environment & Infrastructure, March 1996 (Soil Borings)					
SB-01	16,669,568.08	1,106,617.13	87	40	47
SB-02	16,668,575.32	1,106,460.78	83	40	43
SB-03	16,668,404.19	1,107,547.38	87	40	47
SB-04	16,669,396.95	1,107,703.73	91	40	51
SB-05	16,669,045.31	1,107,108.28	88	100	-12
Raba-Kistner-Brytest Consultants, December 1996 (Monitoring Wells)					
MW-5	16,668,819.18	1,105,953.07	87	35	52

Boring	Northing	Easting	Ground Elevation	Depth	Bottom Elevation
MW-6	16,669,467.10	1,106,057.05	84	35	49
MW-7	16,670,228.55	1,105,449.97	84	35	49
MW-8	16,670,327.25	1,104,791.54	84	35	49
Golder Associates/ PSI, 1999 (Soil Borings and Piezometers)					
G-1	16,670,047.99	1,106,483.70	87	50	37
G-2	16,669,792.20	1,107,218.82	88	50	38
G-3	16,669,634.68	1,108,135.47	96	58	38
G-4	16,669,719.89	1,108,864.82	100	62.5	38
G-5	16,669,445.90	1,107,174.40	88	25	63
G-6	16,669,189.68	1,108,692.02	106	68.5	38
G-7	16,669,169.33	1,106,288.59	83	45	38
G-8 (P-1)	16,668,919.88	1,107,855.10	87	50	37
G-9 (P-2)	16,668,473.27	1,107,013.57	83	45	38
G-10	16,668,500.43	1,108,575.37	98	60	38
G-11	16,668,298.65	1,108,146.76	86	48.5	38
G-12	16,668,075.59	1,106,168.70	88	50	38
G-13	16,668,028.30	1,107,311.54	84	46.5	38
G-14	16,667,706.94	1,108,555.69	87	50	37
Southern Ecology Management/ PSI, 2000 (Monitoring Wells)					
MW-9	16,669,138.78	1,103,896.60	88	37.7	50
MW-10	16,669,758.36	1,104,000.04	89	37.7	51
MW-11	16,670,047.99	1,106,483.70	88	37	51
MW-12	16,668,075.59	1,106,168.70	90	39.2	51
MW-14	16,669,719.89	1,108,864.82	100	55	46
Golder Associates/ CCI EnviroDrilling, Inc., 2003 (Monitoring Wells)					
MW-1R	16,670,499.43	1,104,230.98	85	29.5	55
MW-2R	16,668,462.15	1,103,807.64	87	31.5	55
MW-3R	N/A	N/A	NA	37	NA
MW-4R	16,670,139.26	1,106,060.54	89	37.5	51
Golder Associates/ EnviroCore, Inc., 2004 (Monitoring Well)					
MW-3RA	16,629,881.403	1,093,651.047	92	38	54
Golder Associates/ EnviroCore, Inc., 2005 (Monitoring Wells)					
MW-15	16,669,968.26	1,107,279.30	91	45	46
MW-18	16,667,905.72	1,107,198.44	88	36.5	52

Boring	Northing	Easting	Ground Elevation	Depth	Bottom Elevation
Golder Associates/ Lewis Environmental, April 2009 (Monitoring Wells)					
MW-3A	16,668,160.24	1,105,577.78	96	42.5	53
MW-4A	16,670,154.21	1,105,936.63	88	38	49
MW-7R	16,670,243.18	1,105,343.73	86	37	49
MW-8R	16,670,342.18	1,104,749.81	85	37	48
MW-9R	16,669,020.21	1,103,870.99	87	38	50
MW-10R	16,669,614.74	1,103,959.80	88	39	49
MW-15R	16,670,029.73	1,107,082.63	88	37.5	51
MW-16	16,669,910.05	1,107,645.48	86	34	53
MW-18R	16,667,889.53	1,107,351.67	85	33	52
MW-22	16,668,246.95	1,104,990.12	93	39	54
MW-23	16,668,348.50	1,104,397.05	88	28	60
MW-24	16,670,205.18	1,104,058.59	87	37	51
Golder Associates (2013) (Monitoring Wells)					
MWD-6	16,667,942.38	1,106,762.85	91	45	46
MWD-7	16,667,796.19	1,107,944.36	85	31	54

Notes: N/A – Information not available

4.2.2 Current Subsurface Investigation

The current subsurface investigation was performed in accordance with the approved SBP. A total of 35 borings were advanced in expansion area where all the borings are at least five feet deeper than the elevation of the deepest excavation, 70 ft-msl, and 18 of the 35 borings are at least thirty feet below the deepest excavation. Twelve borings were completed as piezometers to provide groundwater elevation data. The boreholes are identified as 101 through 135 with a prefix of ‘B-‘ for the boreholes and ‘PZ-‘ for the piezometers.

Table III4-5B: Coordinates and Elevations of Borings Advanced in the Expansion Area (ft)

Boring	Northing	Easting	Ground Elevation	Depth	Bottom Elevation
PZ-101	16,672,192.55	1,106,495.22	97.8	60	37.8
B-102	16,672,066.31	1,107,318.56	95.3	35	60.3
B-103	16,671,938.34	1,108,124.57	94.4	55	39.4
PZ-104	16,671,821.46	1,108,965.02	95.5	35	60.5
B-105	16,671,681.02	1,109,781.78	88.7	50	38.7
PZ-106	16,671,555.69	1,110,594.81	84.8	30	54.8
B-107	16,671,516.22	1,106,392.87	87.9	25	62.9

Boring	Northing	Easting	Ground Elevation	Depth	Bottom Elevation
B-108	16,671,377.05	1,107,210.46	98.3	60	38.3
B-109	16,671,251.10	1,108,033.90	87.9	25	62.9
B-110	16,671,136.94	1,108,850.76	92.1	55	37.1
B-111	16,671,002.92	1,109,671.86	89.1	30	59.1
B-112	16,670,874.68	1,110,498.71	86.8	50	36.8
PZ-113	16,670,843.25	1,106,277.71	85.8	50	35.8
B-114	16,670,703.98	1,107,109.34	91.6	30	61.6
B-115	16,670,592.78	1,107,899.67	99.3	62	37.3
PZ-116	16,670,444.83	1,108,755.73	93.2	30	63.2
B-117	16,670,335.07	1,109,568.12	91.8	55	36.8
PZ-118	16,670,193.76	1,110,392.83	89.4	35	54.4
B-119	16,669,643.34	1,109,465.29	84.3	25	59.3
B-120	16,669,515.09	1,110,285.15	92.8	55	37.8
B-121	16,669,413.56	1,111,072.66	94.5	32	62.5
PZ-122	16,669,091.56	1,111,975.25	92.2	55	37.2
B-123	16,668,982.12	1,109,304.96	83	45	38
PZ-124	16,668,836.59	1,110,178.48	97.6	40	57.6
B-125	16,668,708.21	1,111,001.47	94.9	60	34.9
B-126	16,668,443.85	1,111,760.57	93.3	30	63.3
B-127	16,668,290.12	1,109,248.44	94.3	45	49.3
B-128	16,668,168.26	1,110,069.45	98.2	60	38.2
B-129	16,668,024.21	1,110,893.17	100	35.3	64.7
PZ-130	16,667,916.49	1,111,609.19	100.5	65	35.5
PZ-131	16,667,606.90	1,109,142.73	96.3	60	36.3
B-132	16,667,493.43	1,109,964.91	94.9	35	59.9
PZ-133	16,667,399.31	1,110,759.32	98.2	60	38.2
PZ-134	16,670,873.39	1,104,174.27	82.4	45	37.4
B-135	16,670,700.05	1,105,208.90	83.1	22	61.1

4.2.3 Boring Installation, Abandonment, and Plugging

30 TAC §330.63(e)(4)(D)

Twelve borings were completed as piezometers in accordance with applicable rules in 16 TAC §76 – Water Well Drillers and Water Well Pump Installers to provide groundwater elevation data. The remaining borings were plugged with a cement-bentonite grout.

4.3 Interpretive Geologic Cross-Sections

30 TAC §330.63(e)(4)(G)

Interpretive geologic cross-sections are presented on Figures III4-12B through III4-12H and include a key map of the cross-section locations depicted on Figure III4-12A, Soil Boring Plan. These cross-sections utilized boring information gathered from the current and previous subsurface investigations to show boring profiles relative to existing ground and interpretive soil stratum boundaries. The boring profiles include corresponding soil classifications, any static and initial water levels, and well screen locations for any piezometers and monitoring wells.

4.4 Subsurface Stratigraphy

30 TAC §330.63(e)(4)(H)

The results of the subsurface investigation is consistent with previous studies at the facility. The facility is underlain by three distinct strata, identified below in order from ground surface down:

- Stratum I: sandy clays or clayey sands, with layers of silty clay, silty sand, or clayey silt.
- Stratum II: sands/silty sands, fine, poorly graded, and is the uppermost water-bearing unit (uppermost aquifer).
- Stratum III: predominantly clay, with some amounts of sandy clay or silty clay, high plasticity, hard, brown, and dry, and is the confining unit underlying the uppermost water-bearing unit (lower confining unit).

5.0 GEOTECHNICAL PROPERTIES

30 TAC §330.63(e)(5)

5.1 Laboratory Testing

30 TAC §330.63(e)(5)(A)&(B)

Multiple samples were collected in accordance with the approved SBP including both Shelby tube and split-spoon samples. All soil samples were observed to determine the stratigraphy; a total of 81 soil samples were used for laboratory testing. Laboratory testing was performed on the selected samples in accordance with commonly accepted methods and practices of American Society for Testing and Materials (ASTM).

Falling head permeability tests were performed according to ASTM D5084, Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter, on undisturbed soil samples using tap water as the permeant. Five undisturbed samples that represent the sidewall of cell excavation were tested for the coefficient of permeability on the sample's in-situ horizontal axis; all others were tested on the in-situ vertical axis. Calculations for the final coefficient of permeability test results for each sample tested indicate the type of test used and the orientation of each tested sample.

Sieve analysis were performed using ASTM D422 and D1140; Atterberg limits per ASTM D4318; moisture content per ASTM D2216; the unit weight per ASTM D7263; and specific gravity per ASTM D854. Shear strength testing consisted of unconsolidated-undrained (UU) triaxial compression tests per ASTM D2850 and consolidation testing was performed per ASTM D2435.

Appendix III4C, Soil Laboratory Testing Data includes the aforementioned testing for the selected samples. A summary of the soil samples and their corresponding tests is provided in Table III4-6. Collectively, 61 samples from Stratum I, 10 samples from Stratum II, and 10 samples from Stratum III were tested. These strata collectively represent the bottom and side of the proposed excavation, as well as the 30 feet below the lowest elevation of excavation. Laboratory testing data from previous investigations are included in Appendix III4D, Previous Geotechnical Testing Data.

Table III4-6: Soil Sample Laboratory Testing Summary

Boring	Sample Depth (ft-bgs)	Stratum	ASTM Test Method							
			D 2216	D 4318	D 1140	D 7263	D 854	D 2850	D 2435	D 5084
			Water Content	Atterberg Limits	Sieve Analysis	Unit Weight	Specific Gravity	Triaxial U/U	Consolidation (ILC)	Permeability
B-102	3-5	I	✓	✓		✓				
B-102	15-17	I	✓							
B-102	23-25	I	✓	✓	✓			✓		
B-103	0-2	I	✓							
B-103	10-12	I	✓							
B-103	18-20	I	✓							
B-103	40-42	II	✓							
B-105	0-2	I	✓							
B-105	38-40	II			✓					
B-107	5-7	I	✓							
B-107	8-10	I	✓	✓	✓					
B-108	13-15	I	✓	✓	✓					
B-108	23-25	I	✓	✓			✓	✓		
B-108	53-55	II			✓					
B-109	0-2	I	✓	✓						
B-109	10-12	I	✓							
B-109	13-15	I	✓	✓	✓					✓(V)
B-110	6.5-8.5	I	✓		✓					
B-110	23-25	I	✓							✓(H)
B-110	30-32	I	✓	✓	✓					
B-111	0-2	I	✓							

Boring	**Sample Depth (ft-bgs)**	**Stratum**	**ASTM Test Method**							
			D 2216	**D 4318**	**D 1140**	**D 7263**	**D 854**	**D 2850**	**D 2435**	**D 5084**
			Water Content	**Atterberg Limits**	**Sieve Analysis**	**Unit Weight**	**Specific Gravity**	**Triaxial U/U**	**Consolidation (ILC)**	**Permeability**
B-111	18-20	I							✓	
B-112	0-2	I	✓	✓	✓					
B-112	10-12	I	✓							
B-112	43-45	II			✓					✓(V)
B-114	20-22	I	✓							
B-114	28-30	I			✓					
B-115	25-27	I	✓							
B-115	28-30	I	✓	✓	✓					
B-115	45-47	III	✓							
B-115	53-55	III	✓		✓					✓(H)
B-117	0-2	I	✓							
B-117	8-10	I		✓						
B-117	10-12	I	✓		✓					
B-117	30-32	II	✓							
B-117	53-55	III								✓(V)
B-119	10-12	I	✓							
B-119	13-15	I	✓	✓						
B-120	20-22	I	✓							
B-120	25-27	I	✓							
B-120	50-52	III	✓							
B-121	30-32	I	✓							
B-123	13-15	I	✓	✓	✓					
B-123	15-17	I	✓							
B-125	10-12	I	✓							
B-125	38-40	III		✓	✓			✓		✓(V)
B-125	43-45	III	✓		✓				✓	✓(H)
B-125	55-57	III	✓							
B-126	0-2	I	✓							
B-126	25-27	I	✓	✓						
B-127	0-2	I	✓							
B-127	25-27	I	✓							
B-127	38-40	II			✓					
B-128	45-47	II	✓	✓						
B-128	55-57	III	✓							
B-129	0-2	I	✓	✓	✓					
B-129	8-10	I	✓							
B-129	33-35	I	✓						✓	
B-132	18-20	I	✓	✓						
B-132	20-22	I	✓							
B-135	0-2	I	✓							
PZ-101	8-10	I	✓	✓	✓					
PZ-101	33-35	I			✓					
PZ-104	13-15	I	✓	✓	✓					

Boring	**Sample Depth (ft-bgs)**	**Stratum**	**ASTM Test Method**							
			D 2216	**D 4318**	**D 1140**	**D 7263**	**D 854**	**D 2850**	**D 2435**	**D 5084**
			Water Content	**Atterberg Limits**	**Sieve Analysis**	**Unit Weight**	**Specific Gravity**	**Triaxial U/U**	**Consolidation (ILC)**	**Permeability**
PZ-106	8-10	I	✓	✓	✓					
PZ-113	3-5	I	✓							
PZ-116	3-5	I	✓	✓	✓					
PZ-118	3-5	I								✓(H)
PZ-118	23-25	I	✓	✓	✓					
PZ-122	8-10	I								✓(H)
PZ-122	18-20	I	✓	✓	✓					
PZ-122	20-22	I	✓							
PZ-122	33-35	II			✓					
PZ-122	38-40	II	✓							
PZ-124	8-10	I	✓	✓	✓					
PZ-124	28-30	I	✓	✓	✓					
PZ-130	38-40	I	✓	✓	✓					
PZ-130	58-60	III	✓							
PZ-131	8-10	I	✓	✓	✓					
PZ-133	58-60	III	✓	✓	✓					
PZ-134	33-35	II	✓	✓	✓					

✓(H) denotes tested for the coefficient of permeability on the sample's in-situ horizontal axis.
✓(V) denotes tested for the coefficient of permeability on the sample's in-situ vertical axis.

5.2 Geotechnical Properties of the Subsurface Soil Materials

30 TAC §330.63(e)(5)

5.2.1 Stratum I

This stratum is described as sandy clays or clayey sands, with layers of silty clay, silty sand, or clayey silt that ranges in thickness from approximately 18 to 45 ft. The water table generally lies within the lower part of Stratum I. This Stratum roughly corresponds to the uppermost soil layer described in previous subsurface investigations. Table III4-7A summarizes the geotechnical properties of Stratum I.

Table III4-7A: Geotechnical Properties of Stratum I

	Minimum Value	**Maximum Value**	**Average Value**	**Number of Tests**	**Test Method**
Water Content (%)	3.7	33.5	13.6	55	ASTM D2216
Liquid Limit	20	58	30.5	22	ASTM D4318
Plastic Limit	10	19	13.25	16	ASTM D4318
Plasticity Index	9	43	19.88	16	ASTM D4318
Liquidity Index	-1	0.2	-0.10	16	ASTM D4318

	Minimum Value	Maximum Value	Average Value	Number of Tests	Test Method
Unconsolidated Undrained Compressive Strength (tsf)	1.6	3.7	2.6	2	ASTM D2850
Vertical Permeability (cm/s)	--	--	6.38×10^{-8}	1	ASTM D5084
Horizontal Permeability (cm/s)	5.78×10^{-7}	5.30×10^{-6}	1.32×10^{-6} *	3	ASTM D5084

Note: * = Geometric mean

5.2.2 Stratum II

Stratum II consists mainly of fine, poorly graded, sands or silty sand as encountered in most boreholes that were drilled past Stratum I. However, there were some boreholes containing more clayey sands than silty sands. This second layer ranges in thickness from approximately 5 to 30 ft and corresponds to the uppermost water-bearing unit (uppermost aquifer) described in previous subsurface investigations. Because the presence of overlying clayey soils in Stratum I, Stratum II can be a locally confined water-bearing unit. The minimum elevation where the top of Stratum II was encountered was approximately 51 ft-msl. The average top of the layer is approximately at elevation 62 ft-msl.

Table III4-7B summarizes the geotechnical properties of Stratum II. The geometric mean of the horizontal permeability measured from field slug tests presented in Appendix III4G, Slug Test Data is 1.65×10^{-4} cm/s. The vertical permeability from laboratory soil testing is 1.91×10^{-4} cm/s.

Table III4-7B: Geotechnical Properties of Stratum II

	Minimum Value	Maximum Value	Average Value	Number of Tests	Test Method
Water Content (%)	4.3	24.1	17.9	5	ASTM D2216
Liquid Limit	–	–	–	–	ASTM D4318
Plastic Limit	–	–	–	–	ASTM D4318
Plasticity Index	–	–	–	–	ASTM D4318
Liquidity Index	–	–	–	–	ASTM D4318
Vertical Permeability (cm/s)	–	–	1.91×10^{-4}	1	ASTM D5084
Horizontal Permeability (cm/s)	3.74×10^{-6}	4.40×10^{-3}	1.65×10^{-4} *	–	ASTM D4044

Note: * = Geometric mean is presented for the permeability measured from slug tests performed as discussed in §6.5.2

5.2.3 Stratum III

Stratum III consists of predominantly high plasticity, hard, brown, dry clay with minor amounts of sandy clay or silty clay; caliche has been observed within the plastic clay. Stratum III corresponds to the lower confining unit described in previous subsurface investigations and hydraulically separates uppermost water-bearing unit from lower aquifers. The top of Stratum III was found between an approximate elevation of 39 ft-msl and 70 ft-msl with an average of approximately 50 ft-msl. The bottom of this stratum was only encountered in one historical boring. Borehole B-5, drilled by PSI in 1993, encountered a lower fourth stratum composed of clayey sand at an elevation 7 ft-msl to -5 ft-msl followed by fine sand down to -10 ft-msl. The thickness of Stratum III from this borehole is approximately 36 ft.

Table III4-7C summarizes the geotechnical properties of Stratum III. Based on the laboratory soil testing, the vertical and horizontal permeability of this layer are estimated to be 8.84 x 10^{-9} cm/s and 1.63 x 10^{-7} cm/s, respectively. The average permeability of Stratum III soil materials is three orders of magnitude lower than that of Stratum II. Hence, Stratum III acts as an aquiclude, restricting groundwater flow from vertical movement into underlying units.

Table III4-7C: Geotechnical Properties of Stratum III

	Minimum Value	Maximum Value	Average Value	Number of Tests	Test Method
Water Content (%)	17.6	33.9	24.2	8	ASTM D2216
Liquid Limit	56	60	58	2	ASTM D4318
Plastic Limit	16	18	17	2	ASTM D4318
Plasticity Index	38	44	41	2	ASTM D4318
Liquidity Index	-0.47	0.16	-0.16	2	ASTM D4318
Unconsolidated Undrained Compressive Strength (tsf)	5.0	--	--	1	ASTM D2850
Vertical Permeability (cm/s)	8.84 x 10^{-9}	6.84 x 10^{-5}	7.78 x 10^{-7} *	2	ASTM D5084
Horizontal Permeability (cm/s)	1.92 x 10^{-8}	1.38 x 10^{-6}	1.63 x 10^{-7} *	2	ASTM D5084

Note: * = Geometric mean

5.2.4 Suitability of Soils

On-site soils will be required for construction of the protective cover component of the liner system, for construction of the cohesive soil cover layer and erosion layer components of the final cover system, for daily and intermediate cover, and for general fill.

The construction of cohesive soil cover layers must be from compacted soils with hydraulic permeability less than 1 x 10^{-5} cm/s; laboratory soil testing demonstrate that excavated surface soils should meet this requirement. Also, excavated soils are suitable for operational and protective cover, erosion layer component of the final cover system, daily and intermediate cover, and general fill.

Part III3, Waste Management Unit Design Report includes detailed engineering evaluations and analyses using the geotechnical properties of on-site soils. The analyses indicate that the soils at the facility are suitable for the intended purpose.

6.0 GROUNDWATER INVESTIGATION

6.1 Local Hydrogeology

The second stratigraphic layer, Stratum II, which is composed of sands/silty sands, is the upper water bearing unit at the site (uppermost aquifer). As mentioned in §5.2.2, the thickness of Stratum II varies from 5 to 30 feet, except in portions of the northwest corner of the proposed expansion area where it was not encountered. The extent of this stratum can be seen in Figures III4-12B through III4-12H, which depicts the monitoring wells, borings and sub-surface profiles obtained from the soil investigations at the site. Groundwater occurs primarily within Stratum II, separated from lower aquifers by underlying Stratum III, which acts as an aquiclude. The groundwater within Stratum II is also locally, partially confined by the clayey soils encountered in Stratum I. In other areas, recharge could occur through vertical flows through overlying sandy soils. Recharge areas for the Gulf Coast Aquifers are shown in Figure III4-9. A detailed discussion of the groundwater conditions in the site area is presented in Part III5, Groundwater Characterization Report.

6.2 Groundwater Investigation

30 TAC §330.63(e)(5)(C)

Numerous subsurface investigations have been carried out at the facility for purposes related to geological and hydrogeological characterization, groundwater monitoring, and gas monitoring, as detailed in §4.2.1, Previous Subsurface Investigations. Initial and static water level data for these borings are compiled in Table III4-8.

Table III4-8: Summary of Initial and Static Water Level Data

Boring	Groundwater Elevation (ft-msl)		Boring	Groundwater Elevation (ft-msl)		Boring	Groundwater Elevation (ft-msl)		Boring	Groundwater Elevation (ft-msl)	
	Initial	Static		Initial	Static		Initial	Static		Initial	Static
No.1	18	NR	G-4	37.0	NR	GP-27	NR	NR	GP-46	NR	NR
No.2	21	NR	G-5	20.0	20.5	MW-3A	26.0	24.5	GP-47	NR	NR
No.3	21	NR	G-6	43.0	43.0	MW-4A	20.0	17.7	PZ-113	17.5	15.4
No.4	19.5	NR	G-7	20.0	19.7	MW-7R	26.0	19.3	B-114	23.0	NR
No.5	17	NR	G-8	18.0	23.5	MW-8R	6.0	4.1	B-115	35.0	NR
No.6	19	NR	G-9	20.5	20.0	MW-9R	13.0	16.6	PZ-116	25.0	23.5
B-1	18	NR	G-10	36.0	39.5	MW-10R	14.0	15.8	B-117	30.0	NR
B-2	23	NR	G-11	23.0	24.0	MW-15R	20.5	17.1	PZ-118	30.0	27.4
B-3	NR	20.5	G-12	22.0	21.5	MW-16	20.0	16.2	B-119	15.0	NR
B-4	25	21.5	G-13	19.5	20.0	MW-18R	10.6	14.9	B-120	30.0	NR
B-5	NR	20.8	G-14	23.0	22.0	MW-22	24.5	24.5	B-121	NE	NR

Boring	Groundwater Elevation (ft-msl)		Boring	Groundwater Elevation (ft-msl)		Boring	Groundwater Elevation (ft-msl)		Boring	Groundwater Elevation (ft-msl)	
	Initial	**Static**		**Initial**	**Static**		**Initial**	**Static**		**Initial**	**Static**
MW-1	NR	19.7	P-1 (G-8)	18.0	23.5	MW-23	16.8	17.1	PZ-122	40.0	35.9
MW-2	NR	20.81	P-2 (G-9)	20.5	20.0	MW-24	15.8	16.6	B-123	15.0	NR
MW-3	NR	NR	MW-9	NR	NR	MWD-7	17.0	19.0	PZ-124	35.0	30.2
MW-4	NR	NR	MW-10	NR	NR	MWD-6	NR	NR	B-125	40.0	NR
SB-01	22.5	22.6	MW-11	NR	NR	PZ-101	28.0	29.2	B-126	NE	NR
SB-02	16.4	17	MW-12	NR	NR	B-102	28.0	NR	B-127	35.0	NR
SB-03	24	20.9	MW-13	NR	NR	B-103	25.0	NR	B-128	30.0	NR
SB-04	25.2	25.2	MW-14	NR	NR	PZ-104	29.0	28.5	B-129	NE	NR
SB-05	26.5	21	MW-1R	20.0	14.2	B-105	23.0	NR	PZ-130	30.0	34.1
MW-5	26	NR	MW-2R	19.0	23.2	PZ-106	24.5	25.8	PZ-131	33.0	25.9
MW-6	24	NR	MW-3R	30.0	28.2	B-107	18.0	NR	B-132	30.0	NR
MW-7	26	NR	MW-4R	23	NR	B-108	30.0	NR	PZ-133	34.0	19.9
MW-8	30	NR	MW-3RA	30.0	NR	B-109	22.5	NR	PZ-134	15.0	10.4
G-1	20	22.5	MW-15	22.5	24.4	B-110	31.5	NR	B-135	NE	NR
G-2	20.0	23.5	MW-18	22.0	22.3	B-111	20.0	NR			
G-3	37.5	34.5	GP-37	25.0	NR	B-112	25.0	NR			

Note: NR – Not recorded; NE – Not encountered in borehole
Piezometer readings were measured during the first groundwater level monitoring event following their installation.

6.3 Historical Water-Level Measurements in Monitoring Wells

30 TAC §330.63(e)(5)(D)

Water level data collected from April 1993 to December 2016 for 21 existing monitoring wells and 12 newly installed piezometers. Historic water-level measurements made during any previous groundwater monitoring are presented in a table for each monitoring well and piezometer in Appendix III4E, Historic Groundwater Elevations.

Using data from February 2015 to December 2016, potentiometric maps of the uppermost aquifer present on-site were prepared and are included as Figures III4-13A through III4-13N. A seasonal high potentiometric surface is presented in Figure III4-13O.

6.4 Tabulation of Groundwater Monitoring Data

30 TAC §330.63(e)(5)(E)

A tabulation of all relevant groundwater monitoring data from wells on site is presented in Appendix III4F, Historic Groundwater Quality Testing Data. The groundwater monitoring data includes results of all semiannual and applicable quarterly groundwater monitoring events since 1999. Verification resamples, if collected as part of the statistical analysis, are also included.

6.5 Uppermost Aquifer

30 TAC §330.63(e)(5)(F)

Based upon an evaluation of the soil boring and groundwater data from subsurface investigations, the uppermost water-bearing unit (uppermost aquifer) is identified as Stratum II. Based on hydrogeologic investigations of the facility area, vertical flow is restricted by underlying low permeability Stratum III clays that act as a local aquiclude dividing the uppermost water-bearing unit from lower aquifers.

6.5.1 Groundwater Flow Direction

Figures III4-13A through III4-13N, Potentiometric Surfaces demonstrate groundwater flow direction across the facility. Groundwater within the currently permitted area of TCEQ Permit MSW-956B has a very low hydraulic gradient with variable flow directions. The hydraulic gradients range from 0.000003 to 0.012 with an average gradient of 0.0013. Within the expansion area to be included in TCEQ Permit MSW-956C, groundwater flow is predominantly towards the east, northeast, or southeast in subdued conformance to topography. The hydraulic gradients range from 0.0001 to 0.012 with an average gradient of 0.0040.

6.5.2 Groundwater Flow Rate

Previous investigations performed slug testing within the currently permitted area of TCEQ Permit MSW-956B to determine hydraulic properties of Stratum II, uppermost water-bearing unit (uppermost aquifer), resulting in a hydraulic conductivity of 1.80 x 10^{-3} cm/s. Slug testing was performed on the twelve piezometers installed during the latest subsurface investigation as well within the expansion area to be included in TCEQ Permit MSW-956C to determine hydraulic properties of Stratum II. These tests were conducted using the falling and rising head methods, whereby the water levels were displaced by introducing a “slug” into the water column. The drop and subsequent rise (following removal of the slug) in water level were monitored with respect to time to determine the horizontal hydraulic conductivity for each piezometer. Hydraulic conductivity values determined using AqteSolv Pro® software for each slug test is included in Appendix III4G, Slug Tests. The geometric mean of the resulting hydraulic conductivity values is 1.65 x 10^{-4} cm/s.

Groundwater flow rates were estimated for Stratum II, uppermost water-bearing unit (uppermost aquifer), using estimated hydraulic gradients, estimated hydraulic conductivities, and effective porosity for silty sand using the following formula: $V = (ki)/n_e$.

Table III4-9: Groundwater Flow Rates

Area of Evaluation	**Hydraulic Conductivity (k) (cm/s)**	**Hydraulic Gradient (i) (ft/ft)***	**Effective Porosity (n_e)****	**Groundwater flow rate (V) (ft/yr)**
Currently Permitted Area (TCEQ Permit MSW-956B)	1.80×10^{-3}	0.0013	0.33	7.4
Expansion Area (Included in TCEQ Permit MSW-956C)	1.65×10^{-4}	0.0040	0.33	2.0

* Gradient estimated from monthly potentiometric maps from February 2015 to December 2016.
** Assumed for fine sands with some silt based on Freeze and Cherry (1979).

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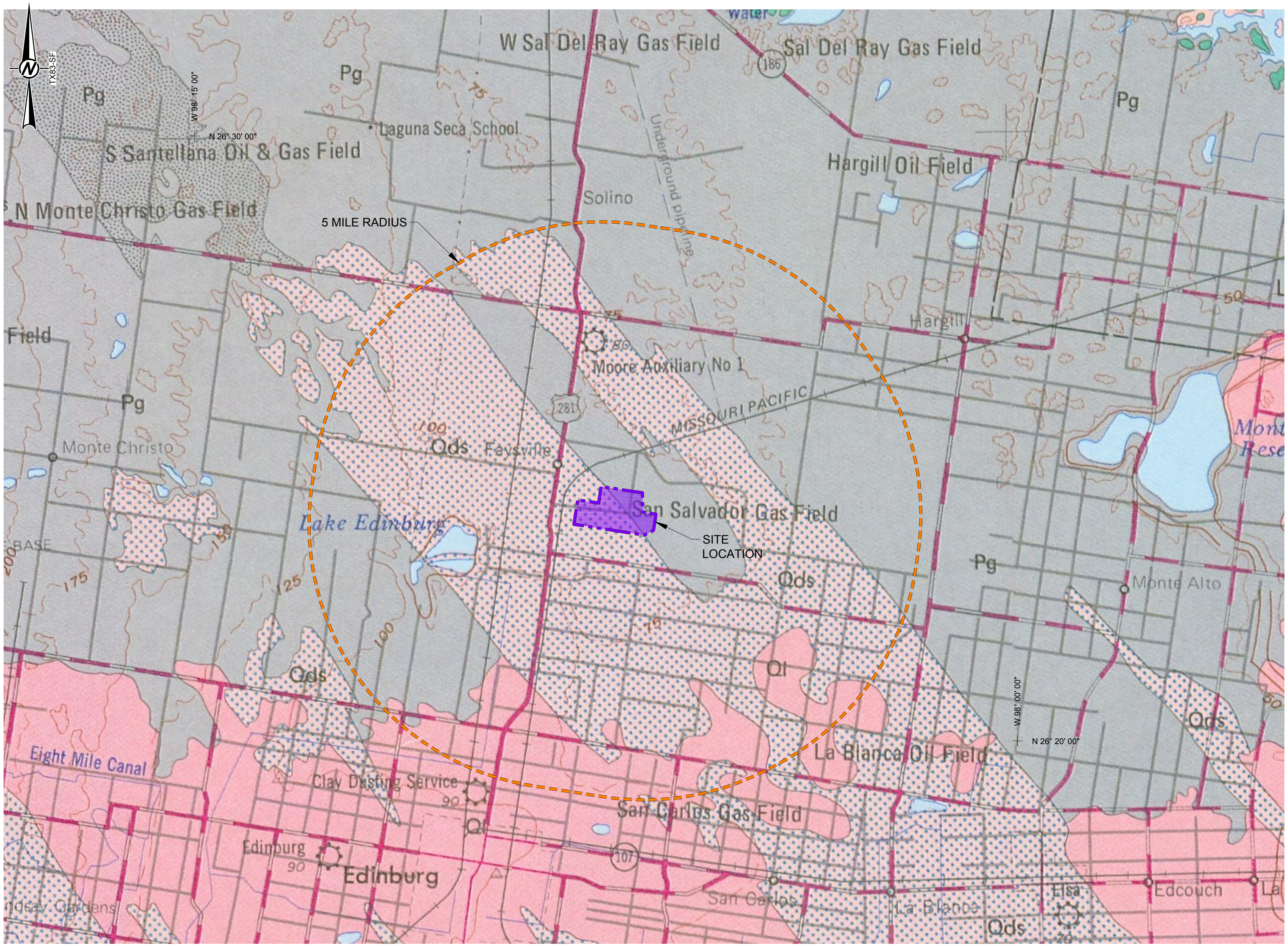
FIGURES



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5 MILE RADIUS

Qds	STABILIZED SAND DUNE DEPOSITS - STRONG RELICT EOLIAN GRAIN, SPARSE GRASS; INCLUDES ACTIVE BLOWOUT AREAS WITH DEPRESSED RELIEF, HUMMOCKY. LOCALLY BECOMES FRESH-WATER MARSH IN WET SEASON, AND WELL-STABILIZED SAND DUNES WITH DENSE LIVE-OAK MOTTES AND SCRUB; "MODERATE TO VERY HIGH PERMEABILITY,LOW TO MODERATE WATER-HOLDING CAPACITY, LOW COMPRESSIBILITY, LOW SHRINK-SWELL POTENTIAL, GOOD TO FAIR DRAINAGE, HIGH SHEAR STRENGTH, LOW PLASTICITY, SHALLOW WATER TABLE"
Ql	LISSIE FORMATION UNDIVIDED - CLAY, SILT, GRAVEL , AND CALICHE; GRAY TO BROWN TO PALE YELLOW; GRAVEL MAINLY SILICEOUS, LOCALLY CEMENTED BY AND INTERBEDDED WITH SANDY CALICHE; CALICHE MASSIVE TO NODULAR; SURFACE CHARACTERIZED BY MANY UNDRAINED CIRCULAR TO IRREGULAR DEPRESSIONS, BY RELICT CLAY DUNES, AND BY STABILIZED NORTHWEST-TRENDING LONGITUDINAL DUNES.
Pg	GOLIAD FORMATION - CLAY, SAND, MARL, CALICHE, LIMESTONE, AND CONGLOMERATE; CLAY, COMMONLY LIGHT SHADES OF PICK AND GREEN, CALCAREOUS CONCRETIONS; SAND AND SANDSTONE, MEDIUM TO VERY COARSE GRAINED, IN PART CROSSBEDDED, MOSTLY QUARTZ, SOME BLACK AND RED CHERT; CONGLOMERATE, BLACK CHERT AND DARK SILICEOUS GRANULES AND PEBBLES IN CALCAREOUS (CALICHE) MATRIX; SANDSTONE AND CONGLOMERATE LOCALLY WELL BEDDED; MARL AND LIMESTONE POORLY BEDDED OR MASSIVE; TERTIARY VERTEBRATE AND REWORKED CRETACEOUS INVERTEBRATE FOSSILS FAIRLY COMMON; THICKNESS UP TO 600 FEET. THE STIPPLED OVERPRINT SHOWS AREAS OF CALICHE, SAND VENEERED WITH STRONG RELICT EOLIAN GRAIN.

REFERENCE(S)

BASE MAP TAKEN GEOLOGIC ATLAS OF TEXAS, MCALLEN-BROWNSVILLE SHEET. (BARNES 1976)

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1" = 2 mi MILES

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TITLE
GEOLOGIC MAP

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	1 of 34	III4-1

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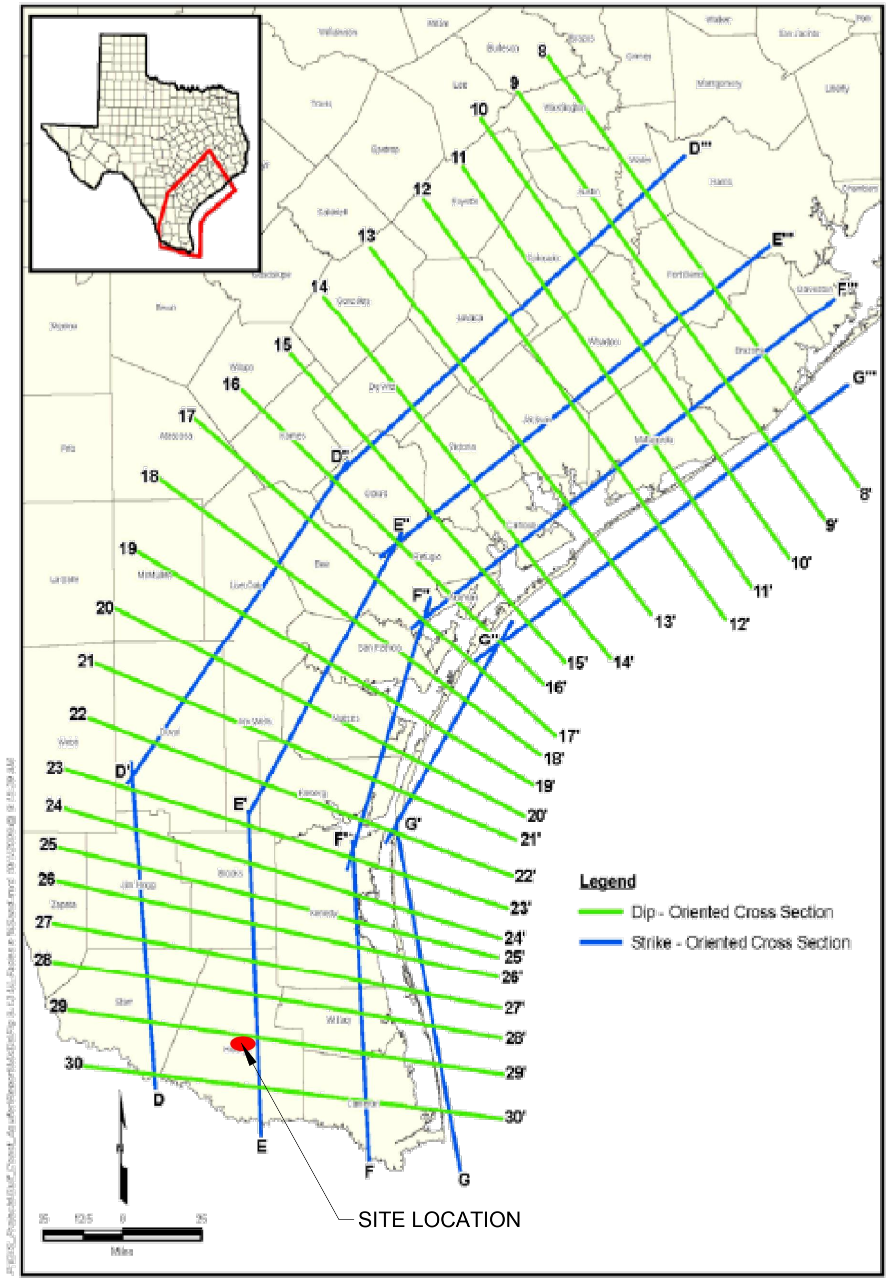

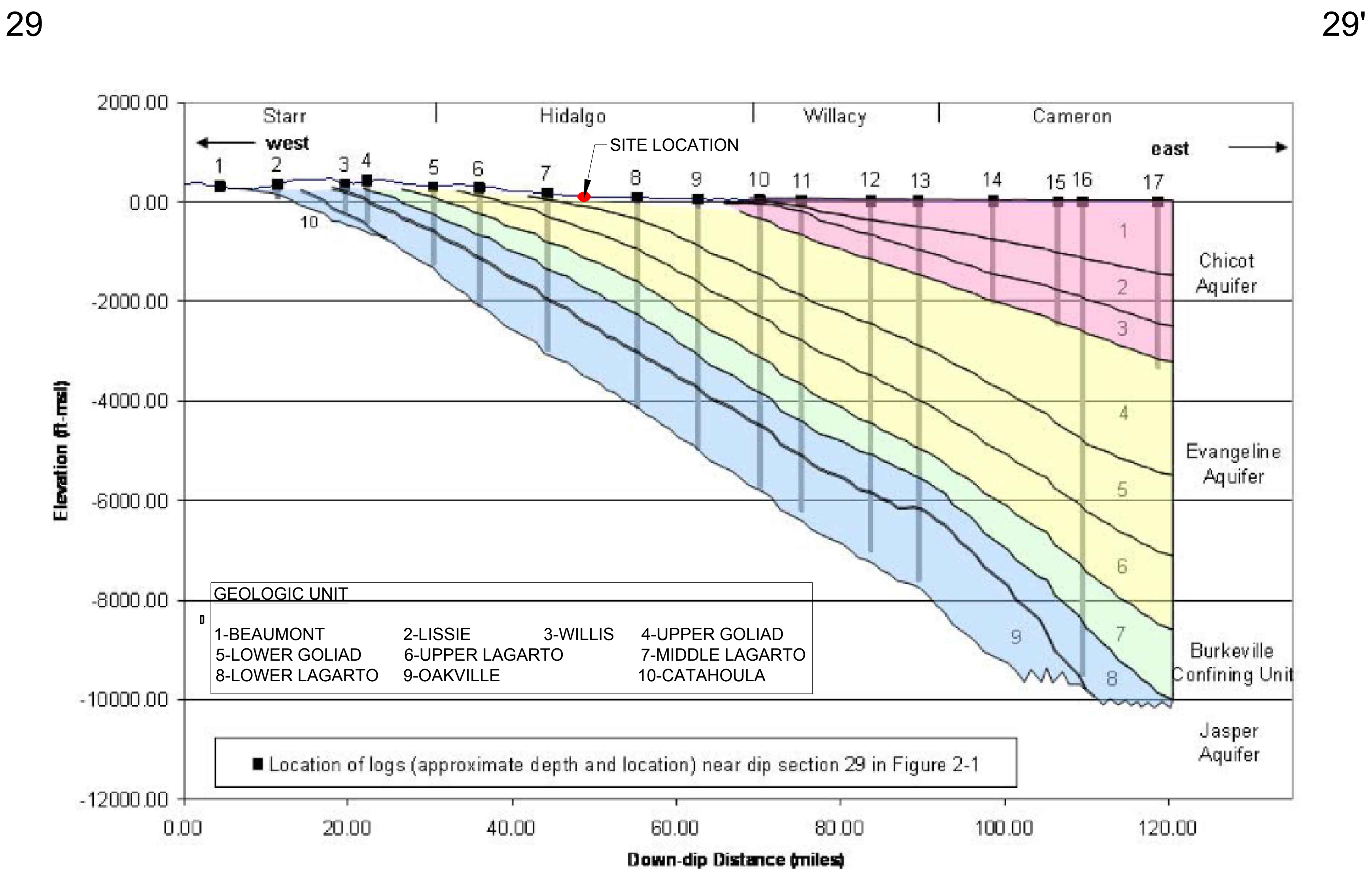

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REGIONAL STRATIGRAPHIC CROSS-SECTION

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
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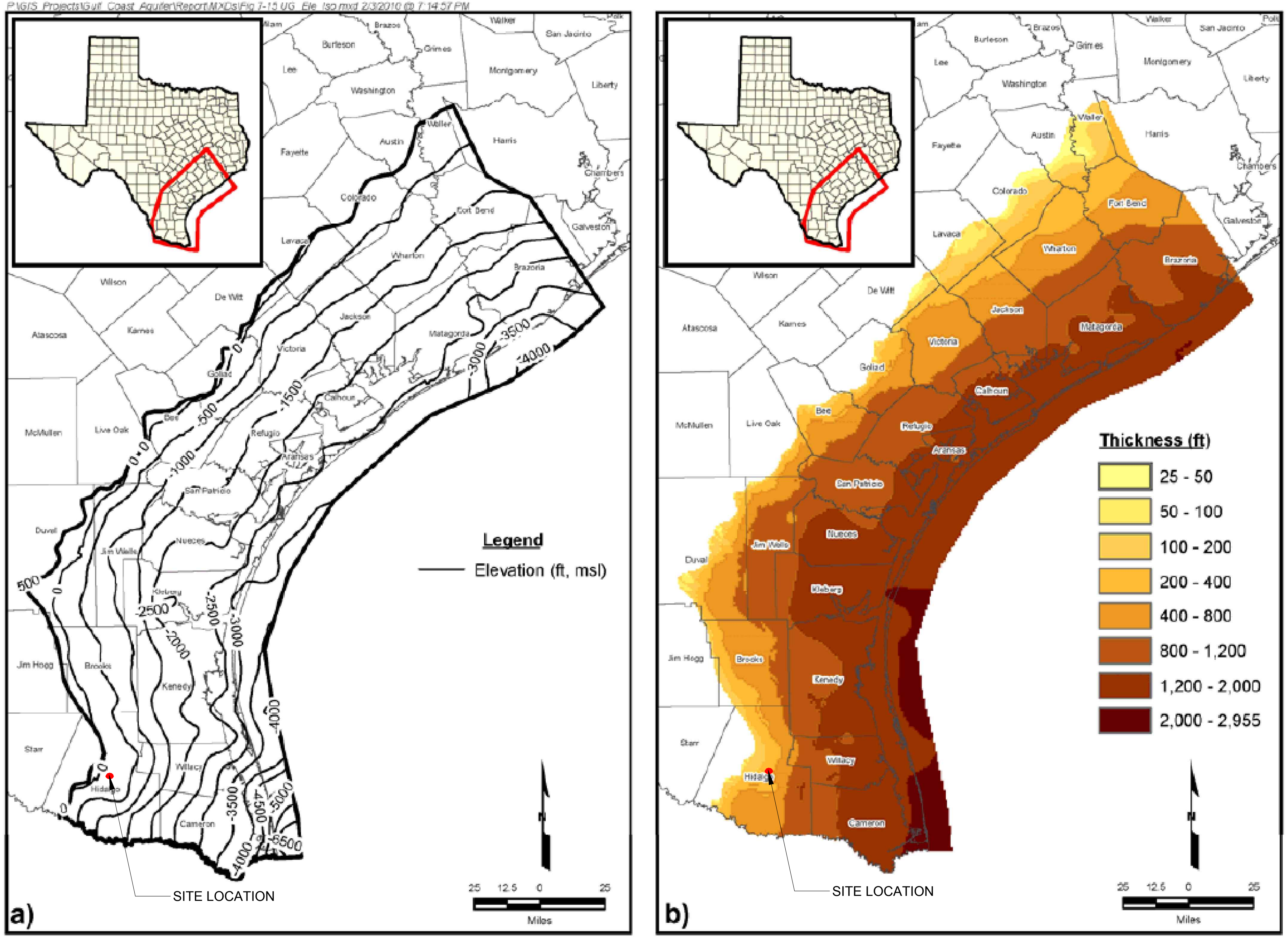

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UPPER GOLIAD FORMATION - BASE ELEVATION AND THICKNESS

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
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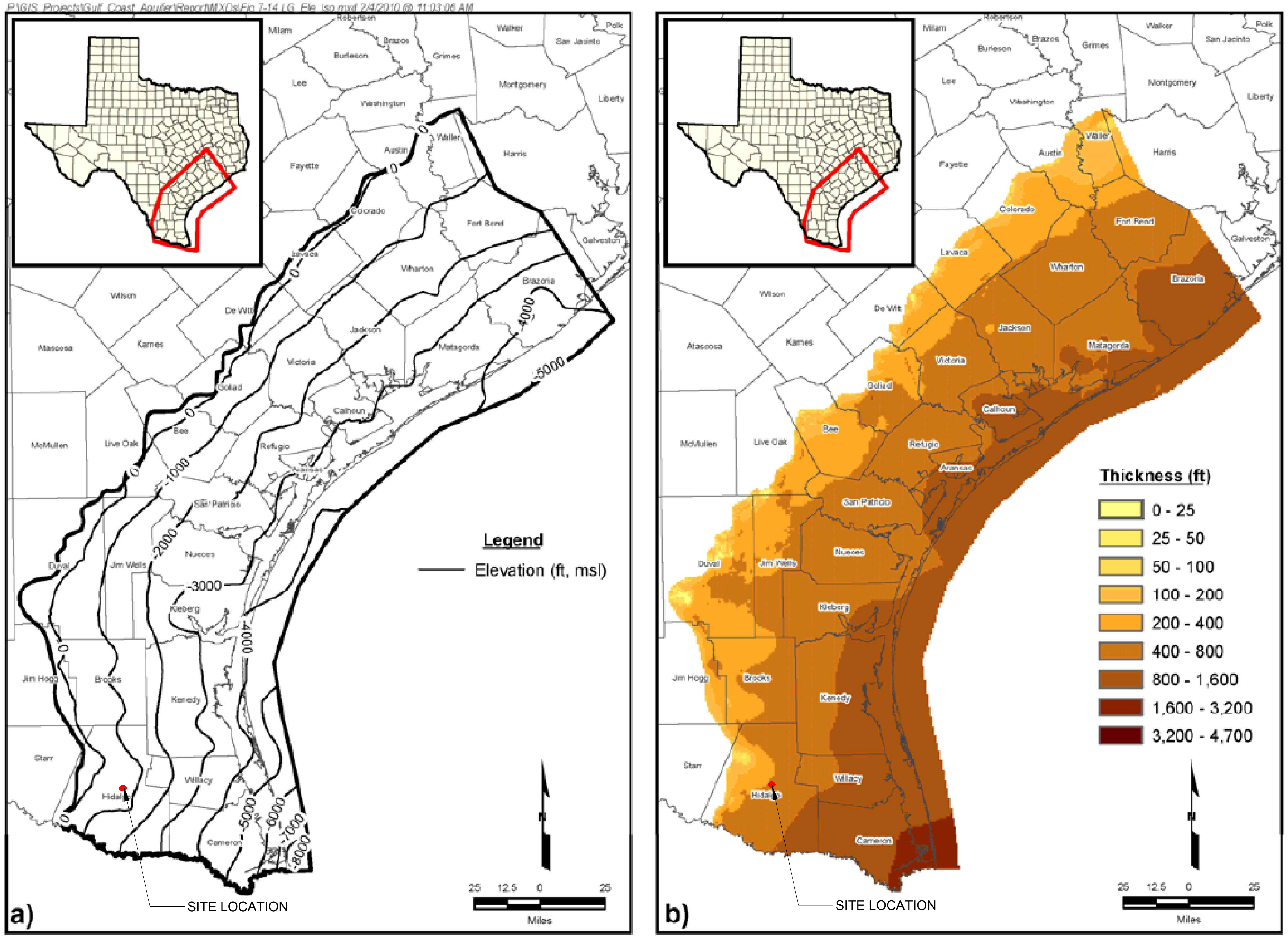

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LOWER GOLIAD FORMATION - BASE ELEVATION AND THICKNESS

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
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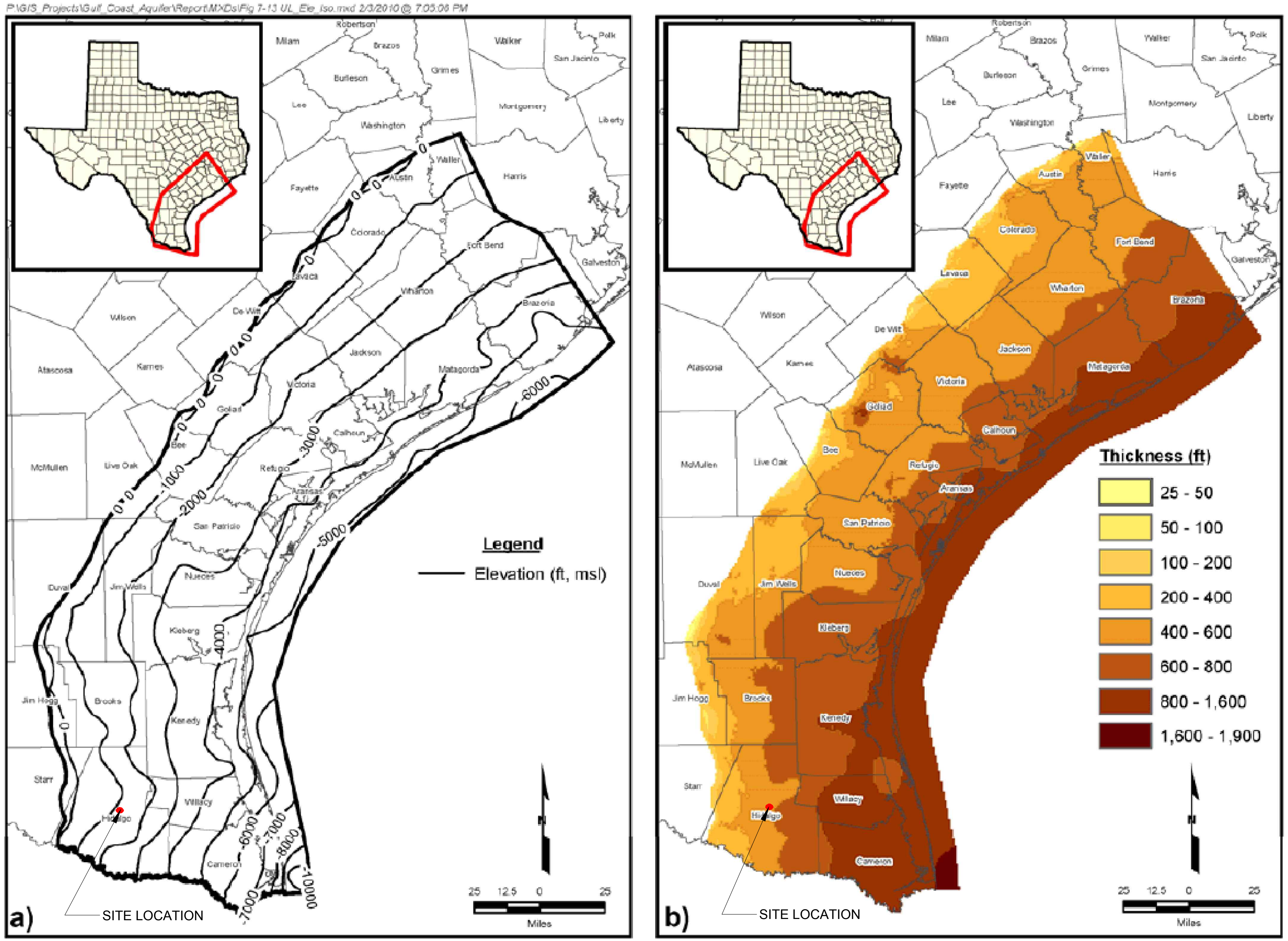

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UPPER LAGARTO FORMATION - BASE ELEVATION AND THICKNESS

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	5 of 34	III4-5

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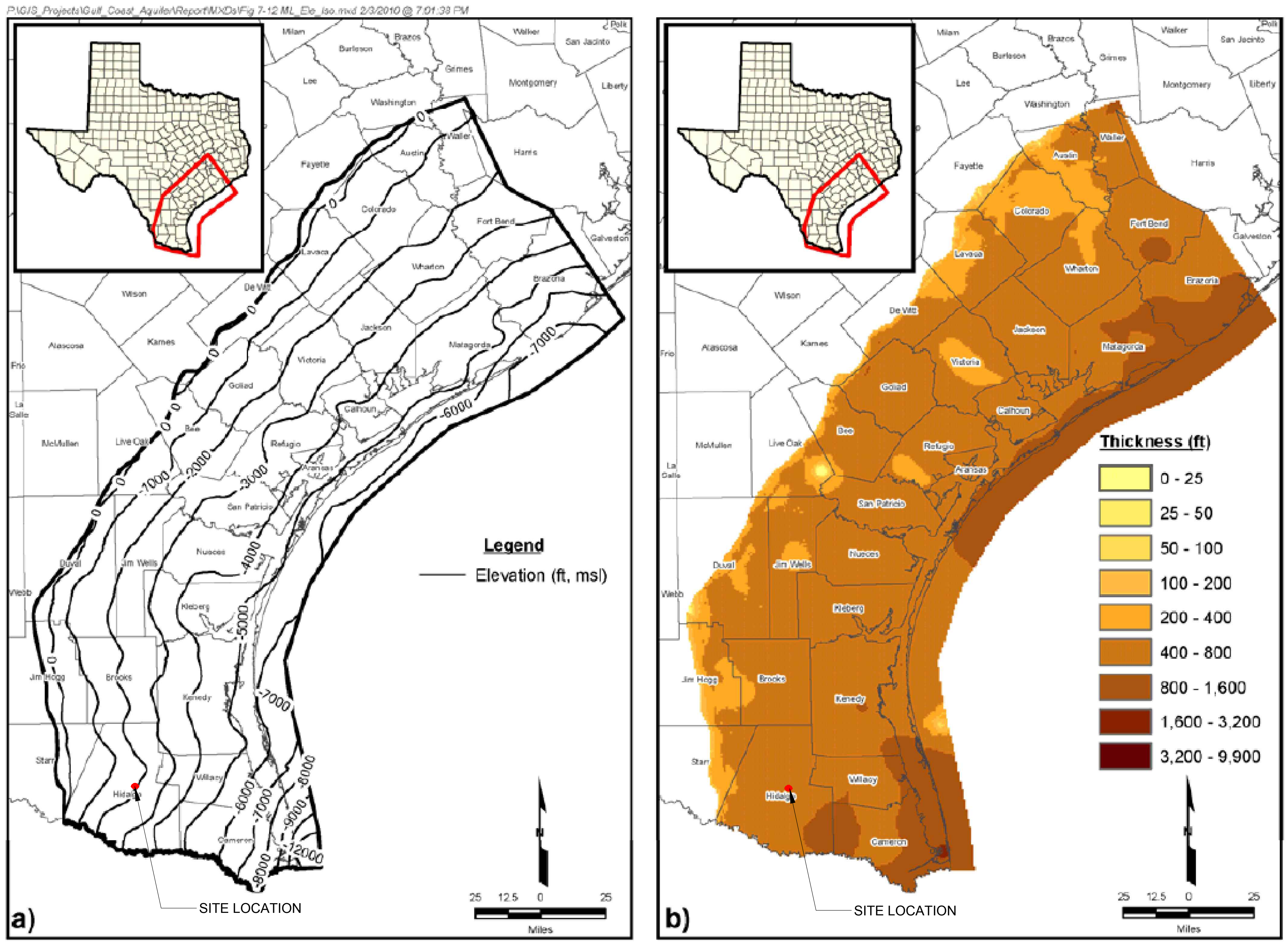

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MIDDLE LAGARTO FORMATION - BASE ELEVATION AND THICKNESS

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
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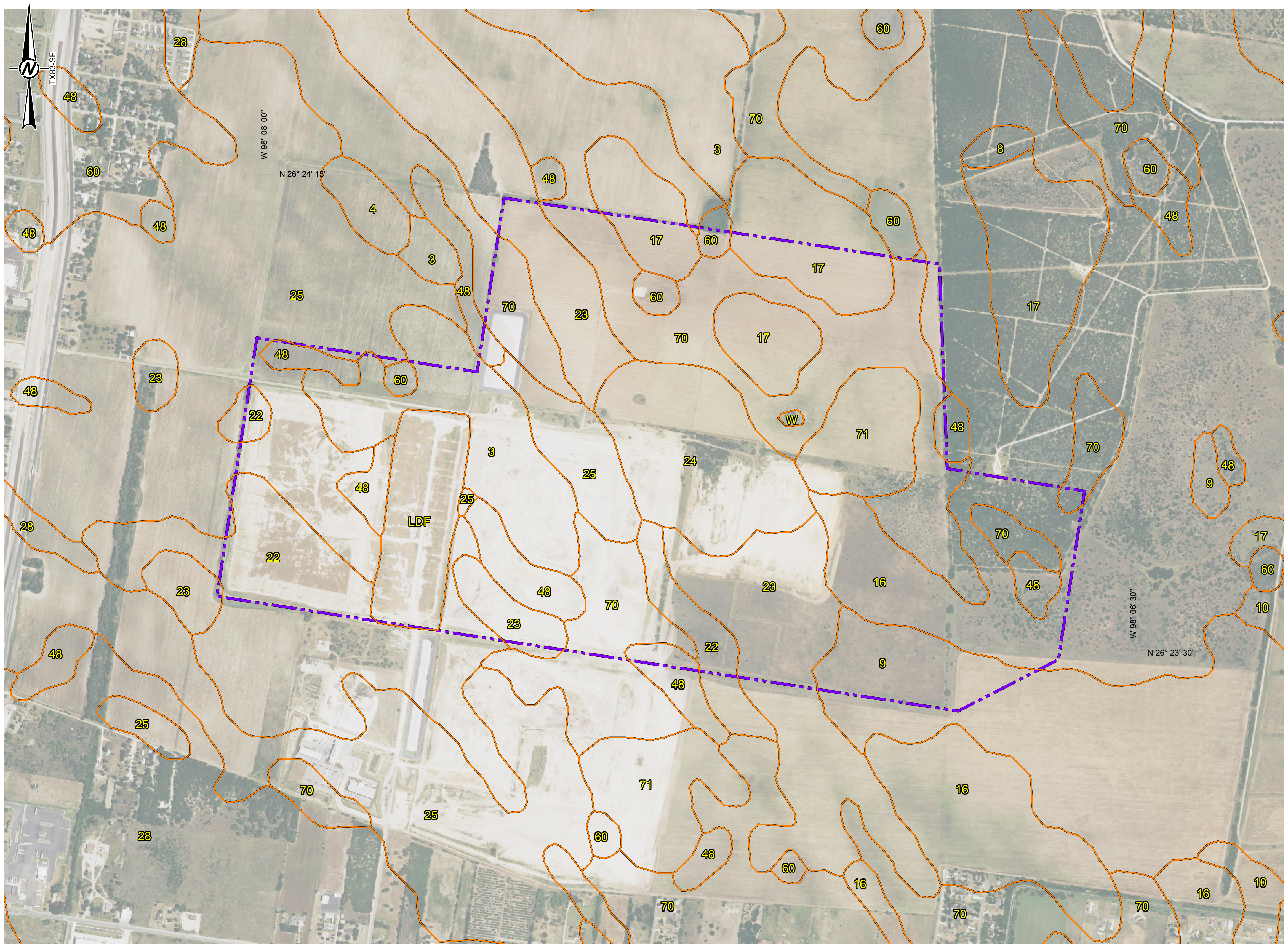

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▬ ▪ ▬ PERMIT BOUNDARY
▬ SOIL TYPE BOUNDARY

SOIL TYPES

SYMBOL	MAP UNIT NAME
3	BRENNAN FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES
4	BRENNAN FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES
8	COMITAS LOAMY FINE SAND, 0 TO 3 PERCENT SLOPES
9	DELFINA LOAMY FINE SAND, 0 TO 3 PERCENT SLOPES
10	DELFINA FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES
16	HARGILL FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES
17	HARGILL FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES
22	HEBRONVILLE SANDY LOAM, 0 TO 1 PERCENT SLOPES
23	HEBRONVILLE SANDY LOAM, 1 TO 3 PERCENT SLOPES
24	HEBRONVILLE SANDY LOAM, 3 TO 5 PERCENT SLOPES
25	HIDALGO FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES
28	HIDALGO SANDY CLAY LOAM, 0 TO 1 PERCENT SLOPES
48	RACOMBES SANDY CLAY LOAM
60	RIO CLAY LOAM
70	WILLACY FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES
71	WILLACY FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES
LDF	LANDFILL
W	WATER

REFERENCE(S)

BASE MAP TAKEN FROM NATIONAL AGRICULTURE IMAGERY PROGRAM (NAIP) DIGITAL ORTHO PHOTO IMAGE PUBLISHED BY USDA-FSA-APFO DATED DECEMBER 16, 2014.

SOIL DATA TAKEN FROM SOIL SURVEY STAFF, NATURAL RESOURCES CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE. WEB SOIL SURVEY. AVAILABLE ONLINE AT http://websoilsurvey.nrcs.usda.gov/. ACCESSED SEPTEMBER 2014

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0 500 1000
1" = 1000' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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7/21/17
CHAD E. IRELAND
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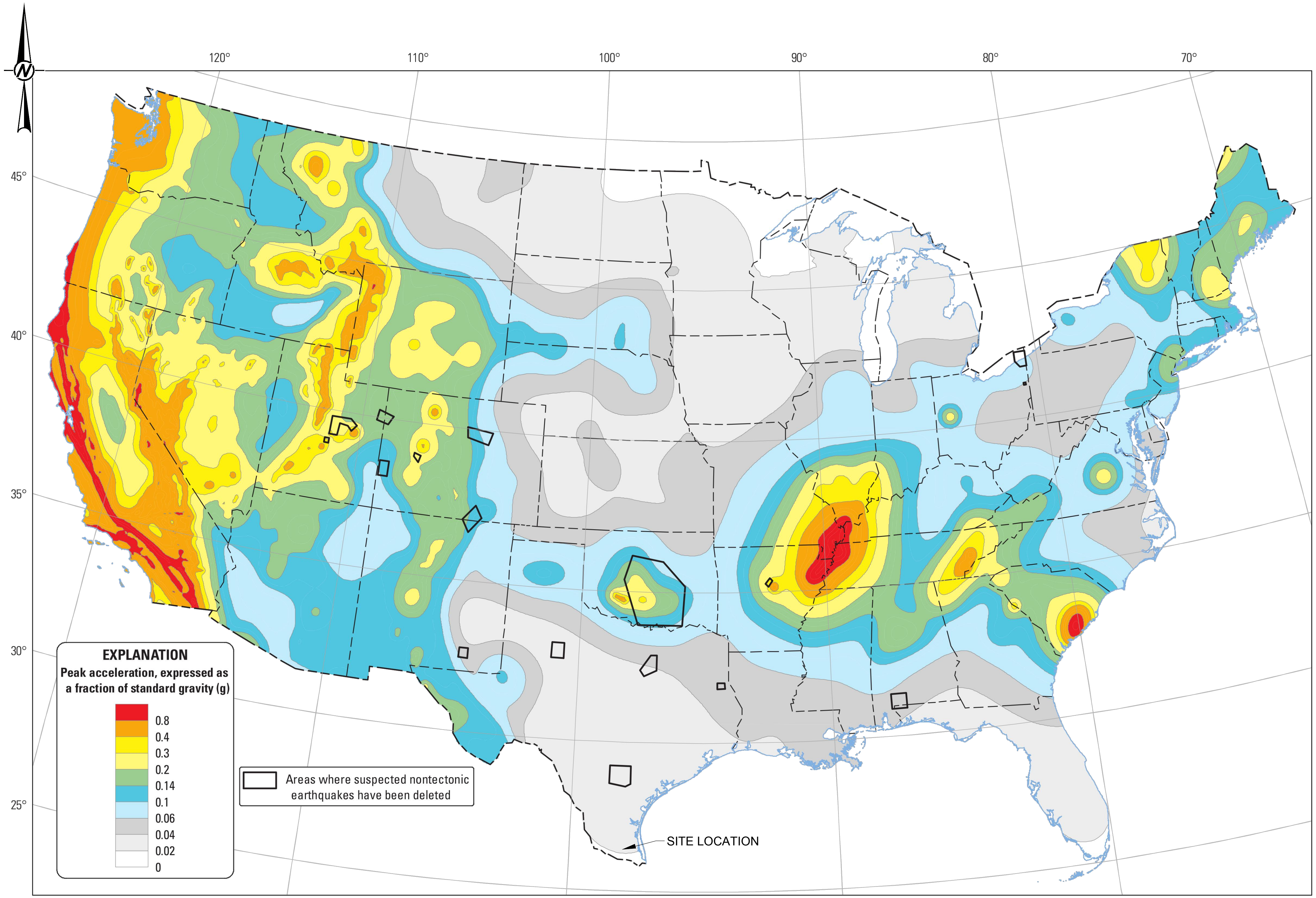
PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
SOILS MAP

PROJECT NO.	APPLICATION SECTION	REV.	7 of 34	FIGURE
1401491	III4	0		III4-7

Path: \\houston\drafting_2014\1401491 - city of edinburg\PRODUCTION\A - Permit Amendment Application\ | File Name: 1401491A028.dwg

0 1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



NOTE(S)

1. THIS NATIONAL SEISMIC HAZARD MAP REPRESENTS A 2 PERCENT PROBABILITY OF EXCEEDANCE IN 50 YEARS.
2. ACCORDING TO U.S. GEOLOGICAL SURVEY, GROUND MOTION VALUES HAVING A 2 PERCENT PROBABILITY OF EXCEEDANCE IN 50 YEARS SHOULD BE APPROXIMATELY THE SAME AS THOSE HAVING 10 PERCENT PROBABILITY OF BEING EXCEEDED IN 250 YEARS.
3. THE FACILITY IS LOCATED IN AN AREA WITH AN APPROXIMATE MAXIMUM HORIZONTAL ACCELERATION OF 0.02g. BECAUSE THE MAXIMUM HORIZONTAL ACCELERATION IS LESS THAN 0.1g, THE FACILITY IS NOT LOCATED IN A SEISMIC IMPACT ZONE.

REFERENCE(S)

MAP TAKEN FROM U.S. GEOLOGICAL SURVEY, EARTHQUAKES HAZARD PROGRAM, 2014 USGS NATIONAL SEISMIC HAZARD MAPS, PGA 2% IN 50 YRS, DATED 2014, DELIVERED IN PDF FORMAT, ftp://hazards.cr.usgs.gov/web/nshm/conterminous/2014/2014pga2pct.pdf.

ISSUED FOR PERMITTING PURPOSES ONLY

0 125 250
1" = 250 mi MILES

0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

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PROJECT
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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
SEISMIC IMPACT ZONE MAP

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	8 of 34	III4-8

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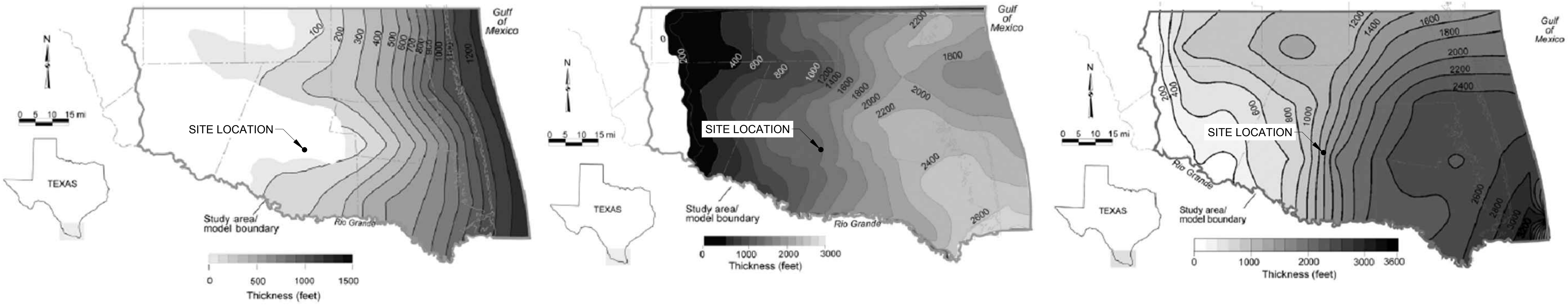
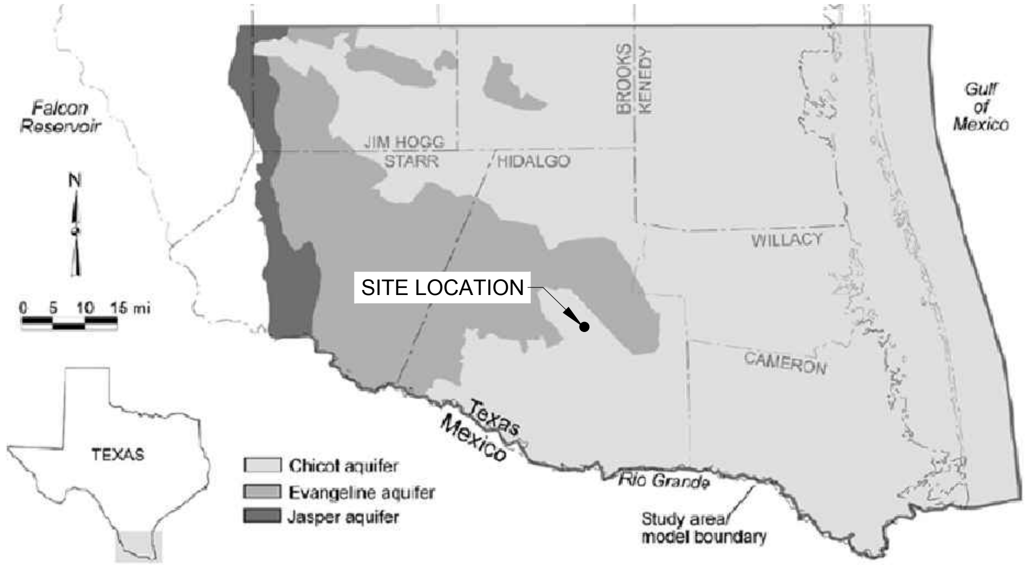


(a) CHICOT AQUIFER

(b) EVANGELINE AQUIFER

(c) JASPER AQUIFER



(d) RECHARGE AREAS

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After Chowdhury and Mace, 2007. Groundwater Resource Evaluation and Availability Model of the Gulf Coast Aquifer in the Lower Rio Grande Valley of Texas, Texas Water Development Board.

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
GULF COAST AQUIFERS IN LOWER RIO GRANDE VALLEY

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	9 of 34	III4-9

Path: \\houston\drafting_2014\1401491 - city of edinburg\PRODUCTION\A - Permit Amendment Application | File Name: 1401491A144.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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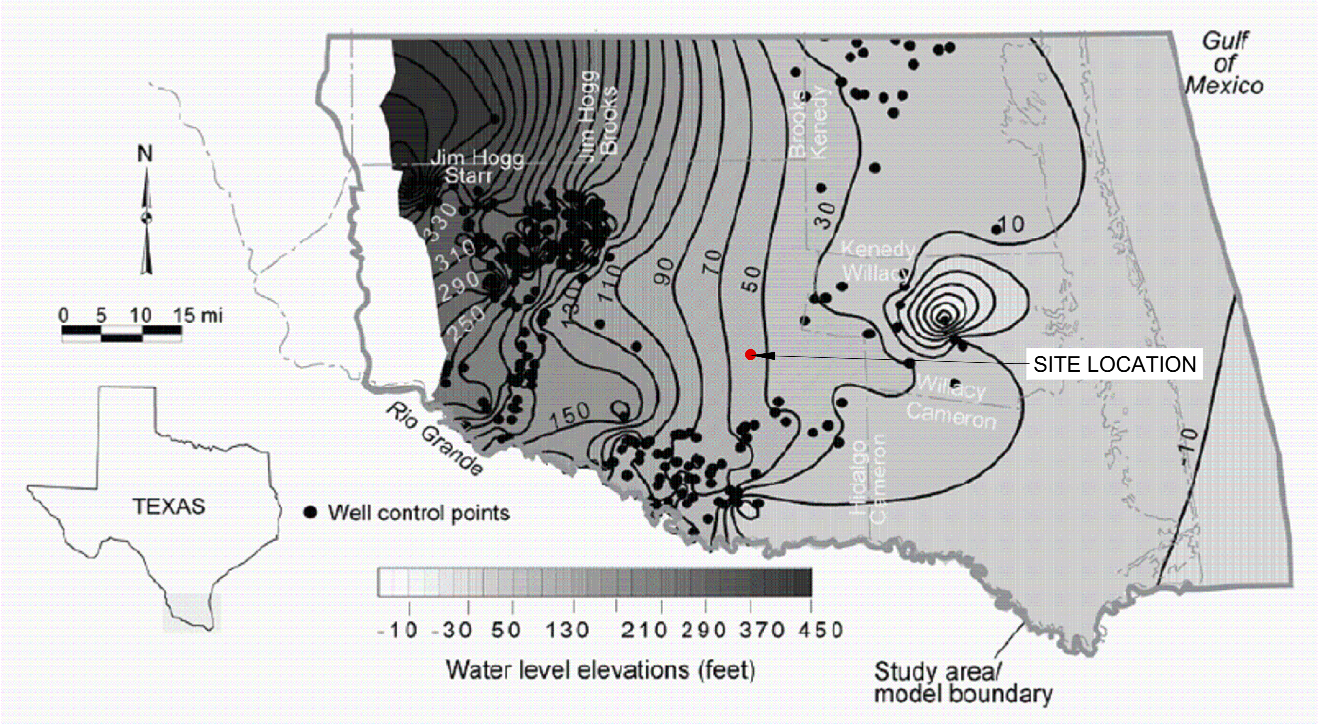

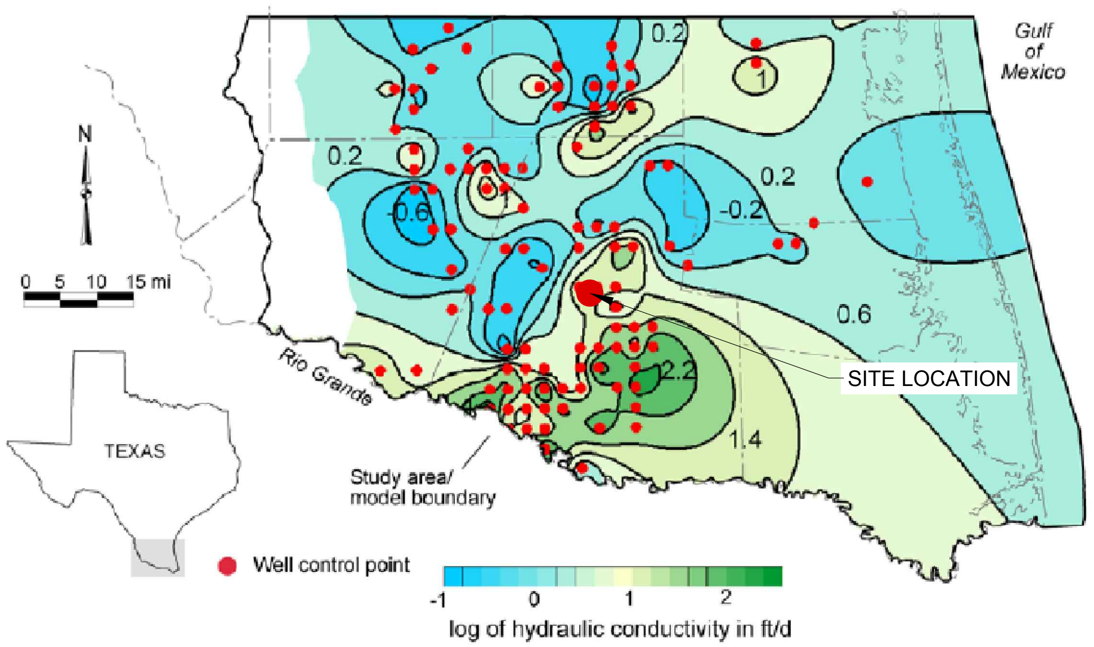

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
EVANGILINE AQUIFER POTENTIOMETRIC MAP AND HYDRAULIC CONDUCTIVITY

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	10 of 34	III4-10

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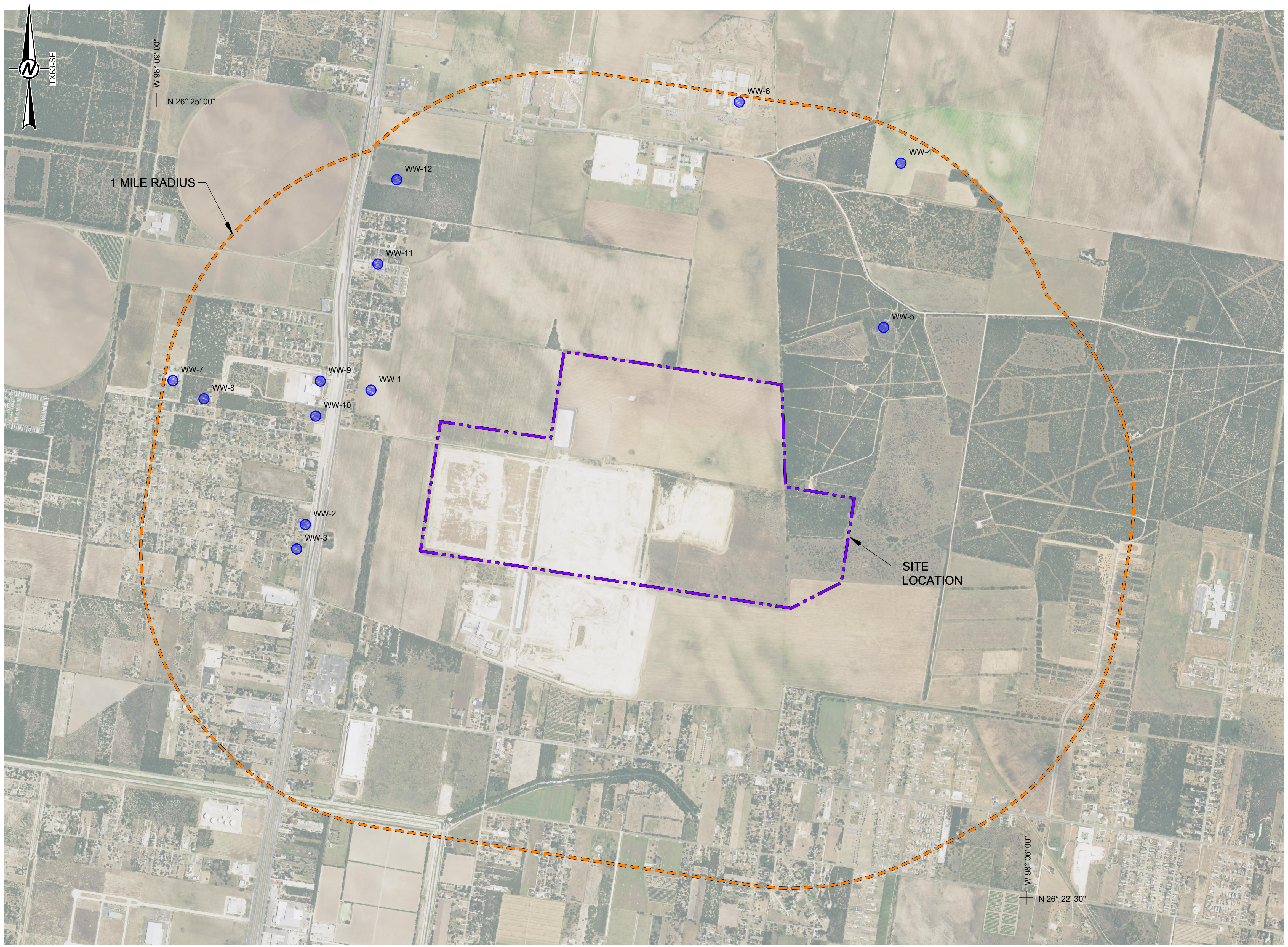

LEGEND

▬ · ▬	PERMIT BOUNDARY
‒ ‒ ‒	1 MILE RADIUS
●	WATER WELL

WATER WELLS WITHIN 1 MILE

TEXAS WATER DEVELOPMENT BOARD 2016		RED SANDS GROUNDWATER CONSERVATION DISTRICT I 2016	
MAP ID	STATE WELL NUMBER	MAP ID	WELL REFERENCE
WW-1	8739901	WW-7	E.B. GUERRA ELEMENTARY
WW-2	8739902	WW-8	GARZA WELL
WW-3	8739903	WW-9	CHANDLER WELL
WW-4	8740701	WW-10	LABUS WATER WELL
WW-5	8740702	WW-11	GIN WELL
WW-6	8740703	WW-12	NEAL WELL

REFERENCE(S)

1. BASE MAP TAKEN FROM NATIONAL AGRICULTURE IMAGERY PROGRAM (NAIP) DIGITAL ORTHO PHOTO IMAGE PUBLISHED BY USDA-FSA-APFO DATED DECEMBER 16, 2014.
2. WATER WELL LOCATION INFORMATION PROVIDED BY TEXAS GROUNDWATER DEVELOPMENT BOARD, WATER DATA INTERACTIVE VIEWER, DATED OCTOBER 25, 2016, http://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer
3. ADDTIONAL WATER WELL LOCATION INFORMATION PROVIDED BY MR. ARMANDO VELA FROM RED SANDS GROUNDWATER CONSERVATION DISTRICT (RSGCD), LINN, TX, DATED MARCH 18, 2016

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0 1000 2000
1" = 2000' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
WATER WELLS LOCATION MAP

PROJECT NO.	APPLICATION SECTION	REV.	12 of 34	FIGURE
1401491	III4	0		III4-11

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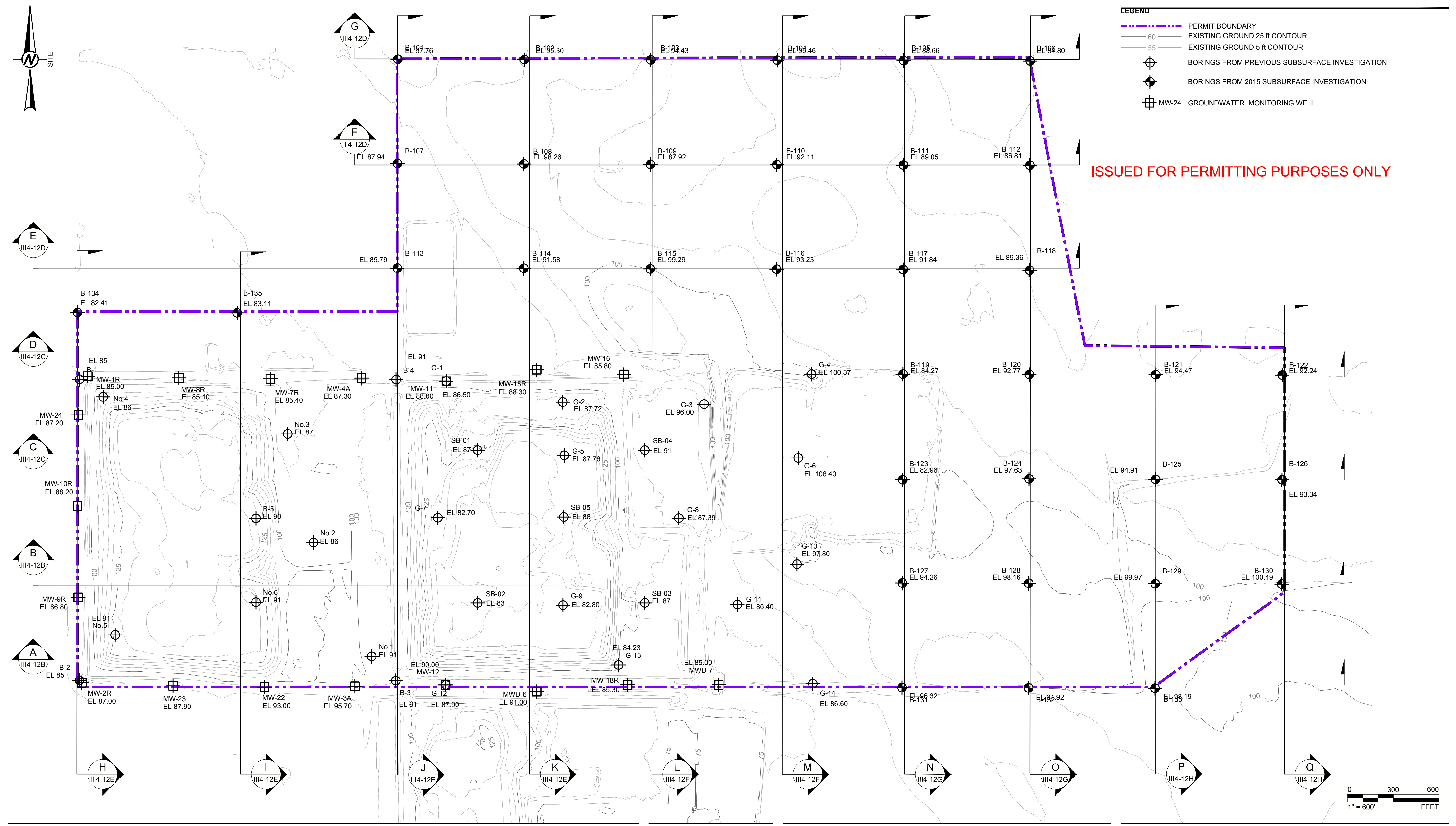

LEGEND

	PERMIT BOUNDARY
60	EXISTING GROUND 25 ft CONTOUR
55	EXISTING GROUND 5 ft CONTOUR
⊕	BORINGS FROM PREVIOUS SUBSURFACE INVESTIGATION
⊕	BORINGS FROM 2015 SUBSURFACE INVESTIGATION
⊞ MW-24	GROUNDWATER MONITORING WELL

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0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
BORING LOCATION MAP

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	13 of 34	III4-12A

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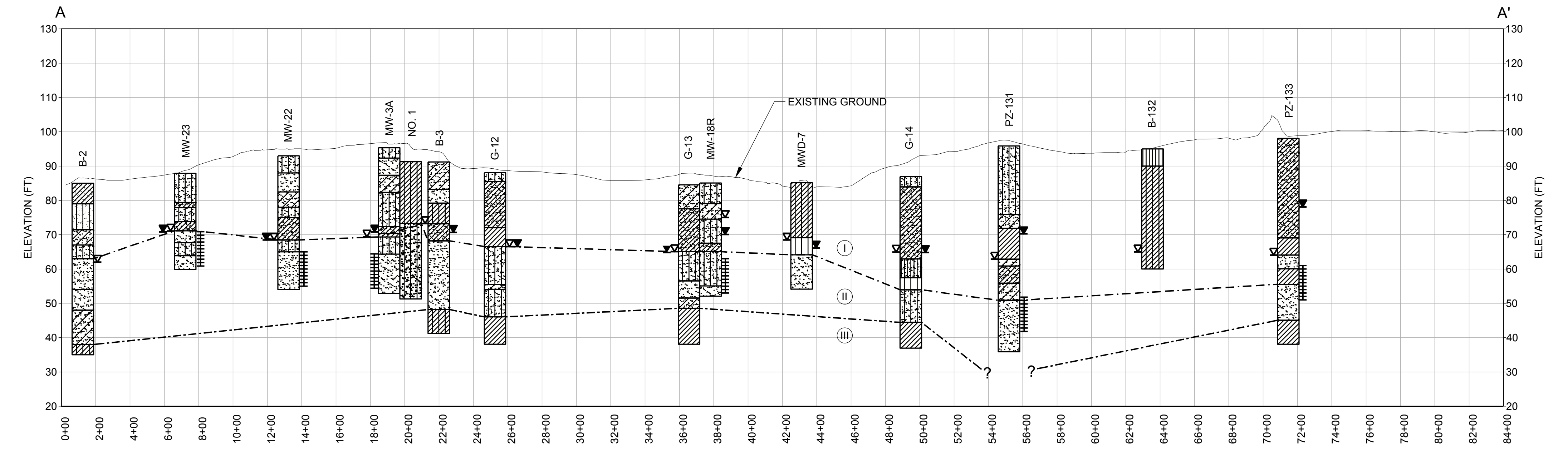
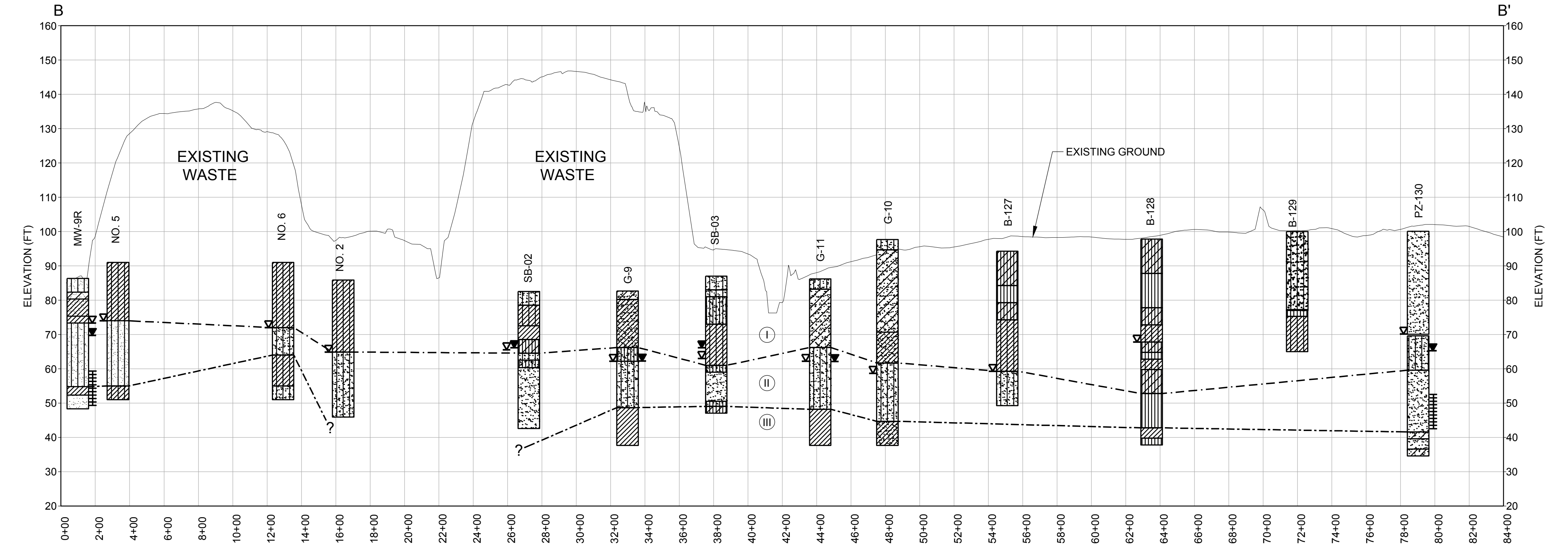
1 in

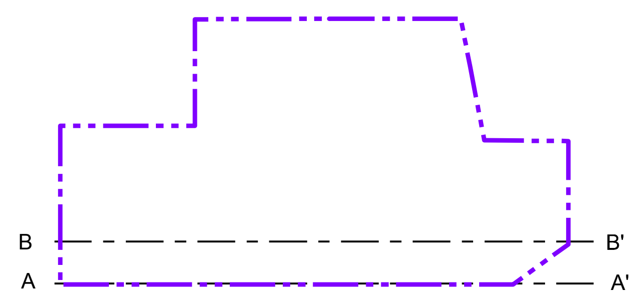


SCALE 1" = 800' A GEOLOGIC SECTION III4-12B



SCALE 1" = 800' B GEOLOGIC SECTION III4-12B

KEY MAP



LEGEND

———	EXISTING GROUND	No. 2	LANGLEY-PITTMAN 1976 BORINGS
— · — · —?	END OF DATA FOR TOP OF STRATUM II	B-3	PSI 1993 BORINGS
-·-·-·-·-?	END OF DATA FOR TOP OF STRATUM III	SB-01	RUST 1996 BORINGS
Ⓘ Ⓘ Ⓘ	STRATUM IDs	PZ-101/B-103	GOLDER 2015 BORINGS
▼	STATIC WATER LEVEL		
▽	INITIAL WATER LEVEL		
╪	SCREENED INTERVAL		

▩	TOP SOIL	▨	SANDY CLAY
▥	SILT	▨	CLAYEY SAND
▒	SAND	▨	CLAYEY SILT
▨	CLAY	▨	SANDY SILTY CLAY
▥	SILTY SAND	▨	SILTY CLAYEY SAND
▨	SILTY CLAY	☐	NO RECOVERY
▥	SANDY SILT		

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REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION I

PROJECT NO.	APPLICATION SECTION	REV.	13 of 34	FIGURE
1401491	III4	0		III4-12B

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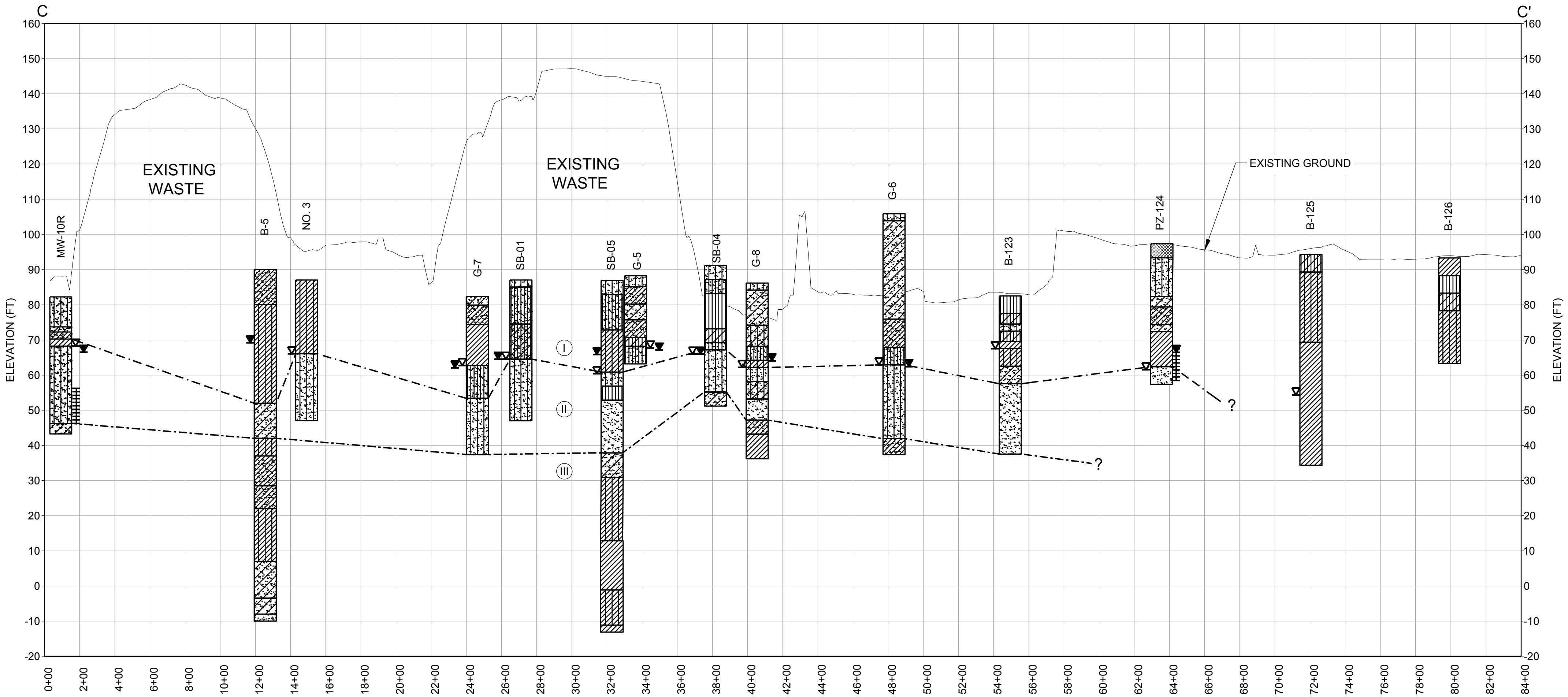
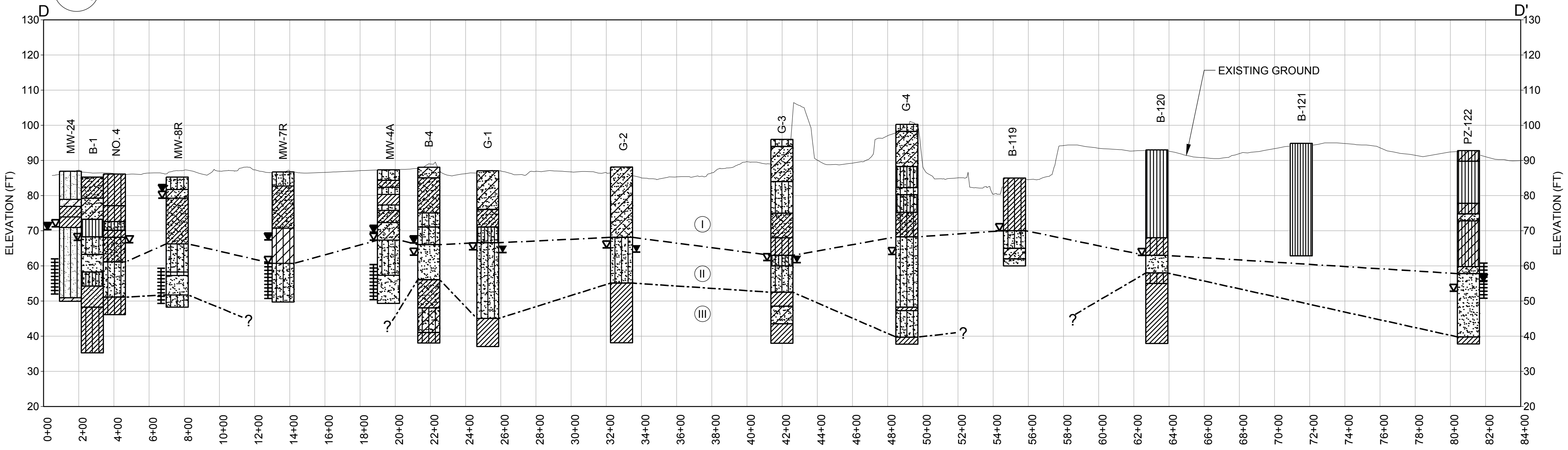
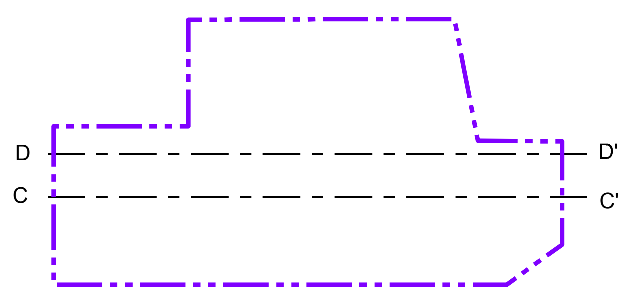


SCALE 1" = 800' (C / III4-12C) GEOLOGIC SECTION



SCALE 1" = 800' (D / III4-12C) GEOLOGIC SECTION

KEY MAP



LEGEND

───	EXISTING GROUND
— · — · —?	END OF DATA FOR TOP OF STRATUM II
— · · — · · —?	END OF DATA FOR TOP OF STRATUM III
Ⓘ Ⓘ Ⓘ	STRATUM IDs
▼	STATIC WATER LEVEL
▽	INITIAL WATER LEVEL
╪	SCREENED INTERVAL

No. 2	LANGLEY-PITTMAN 1976 BORINGS
B-3	PSI 1993 BORINGS
SB-01	RUST 1996 BORINGS
PZ-101/B-103	GOLDER 2015 BORINGS

▩	TOP SOIL	▨	SANDY CLAY
▥	SILT	▨	CLAYEY SAND
▒	SAND	▨	CLAYEY SILT
▨	CLAY	▨	SANDY SILTY CLAY
▒	SILTY SAND	▨	SILTY CLAYEY SAND
▨	SILTY CLAY	☐	NO RECOVERY
▒	SANDY SILT		

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0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PROJECT
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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION II

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	14 of 34	III4-12C

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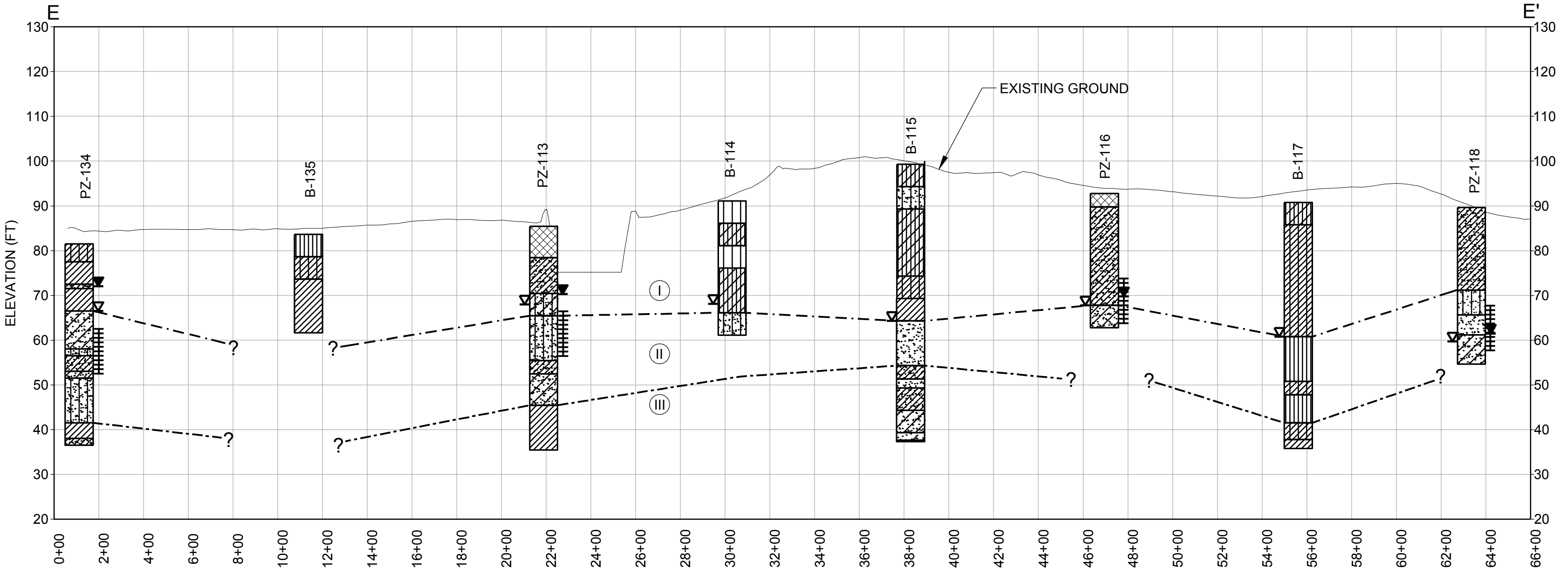
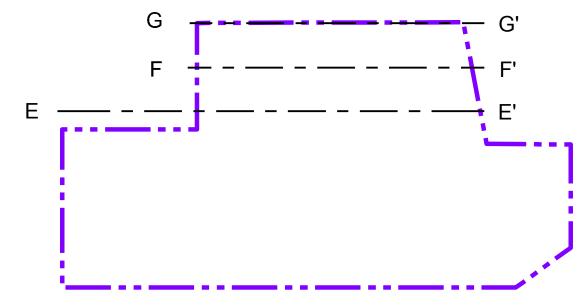


SCALE 1" = 800' E GEOLOGIC SECTION III4-12D

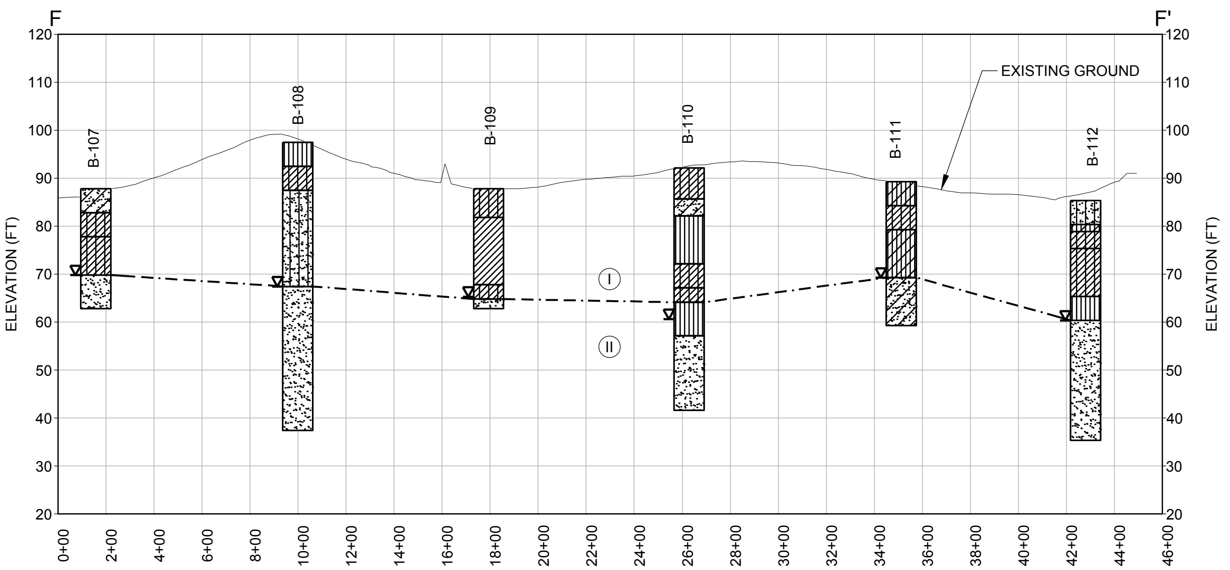
KEY MAP



LEGEND

EXISTING GROUND		No. 2	LANGLEY-PITTMAN 1976 BORINGS
— · — ?	END OF DATA FOR TOP OF STRATUM II	B-3	PSI 1993 BORINGS
— · · — ?	END OF DATA FOR TOP OF STRATUM III	SB-01	RUST 1996 BORINGS
Ⓘ Ⓘⓘ Ⓘⓘⓘ	STRATUM IDs	PZ-101/B-103	GOLDER 2015 BORINGS
▼	STATIC WATER LEVEL		
▽	INITIAL WATER LEVEL		
╪	SCREENED INTERVAL		

▨	TOP SOIL	▨	SANDY CLAY
▥	SILT	▨	CLAYEY SAND
▒	SAND	▨	CLAYEY SILT
▨	CLAY	▨	SANDY SILTY CLAY
▨	SILTY SAND	▨	SILTY CLAYEY SAND
▨	SILTY CLAY	☐	NO RECOVERY
▒	SANDY SILT		



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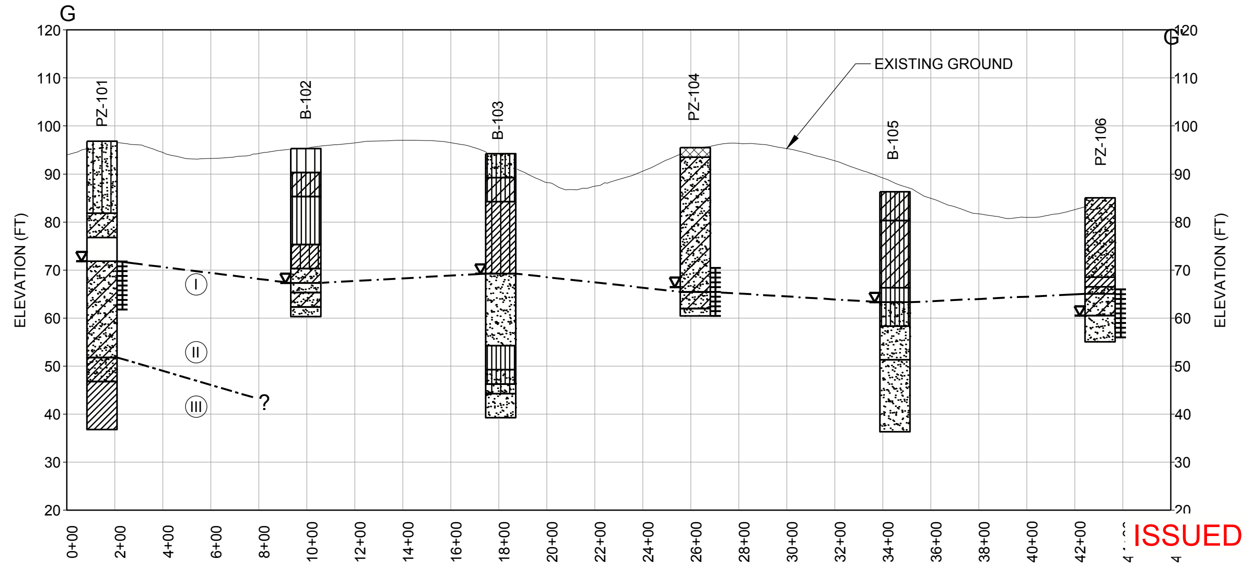

SCALE 1" = 800' G GEOLOGIC SECTION III4-12D

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0 400 800
1" = 800' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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PROJECT
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PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION III

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	15 of 34	III4-12D

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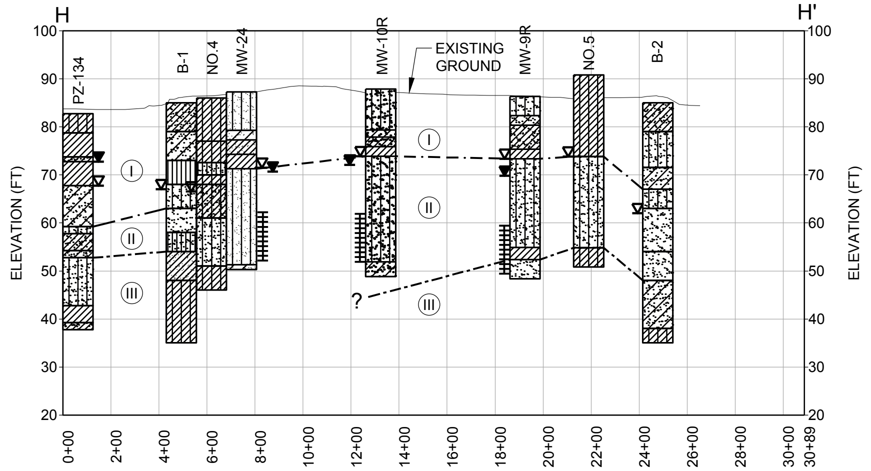
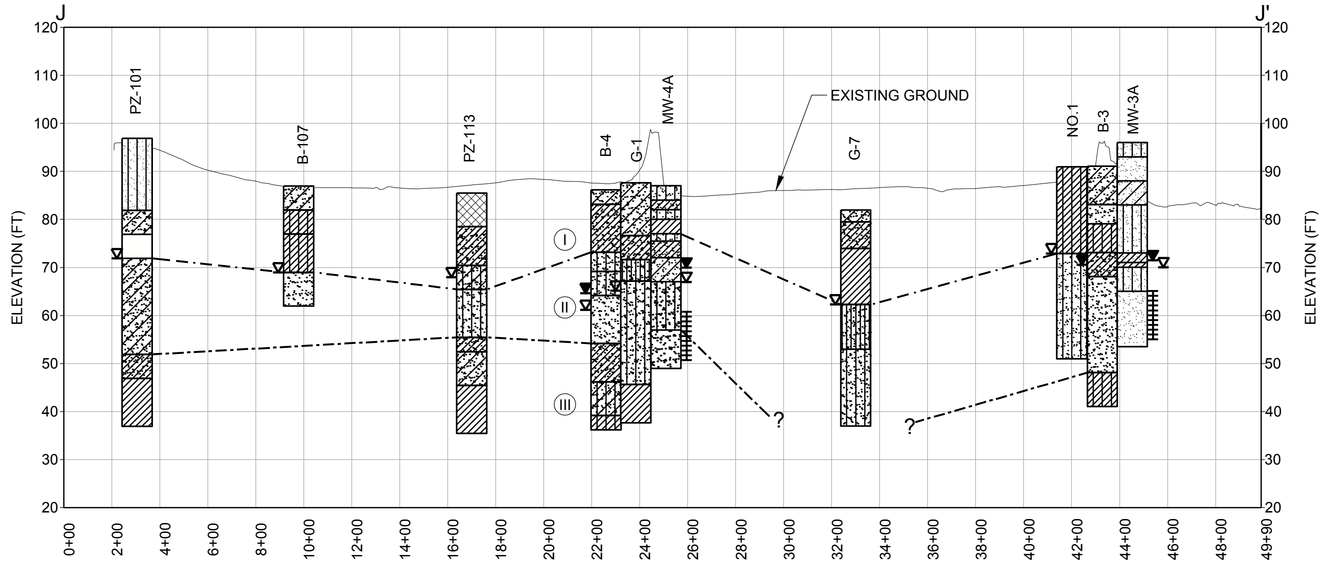
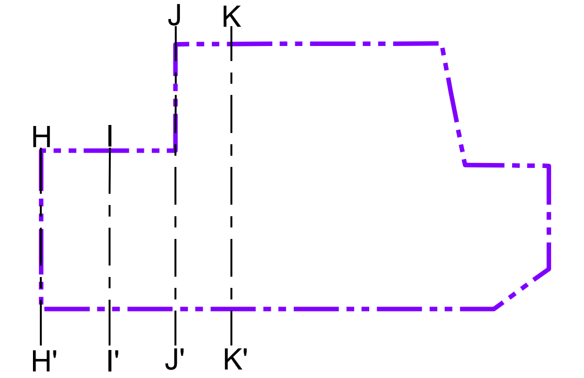


SCALE 1" = 800' H III4-12E GEOLOGIC SECTION



SCALE 1" = 800' J III4-12E GEOLOGIC SECTION



LEGEND

EXISTING GROUND

END OF DATA FOR TOP OF STRATUM II

END OF DATA FOR TOP OF STRATUM III

Ⓘ Ⓘⓘ Ⓘⓘⓘ STRATUM IDs

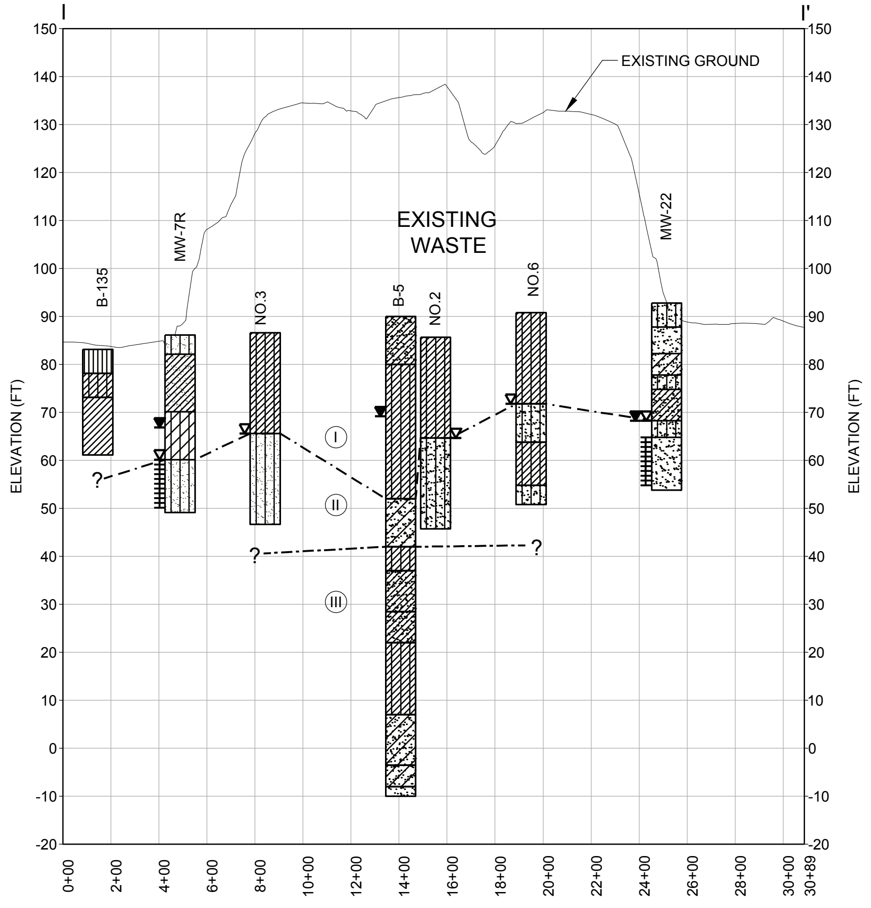
▼ STATIC WATER LEVEL

▽ INITIAL WATER LEVEL

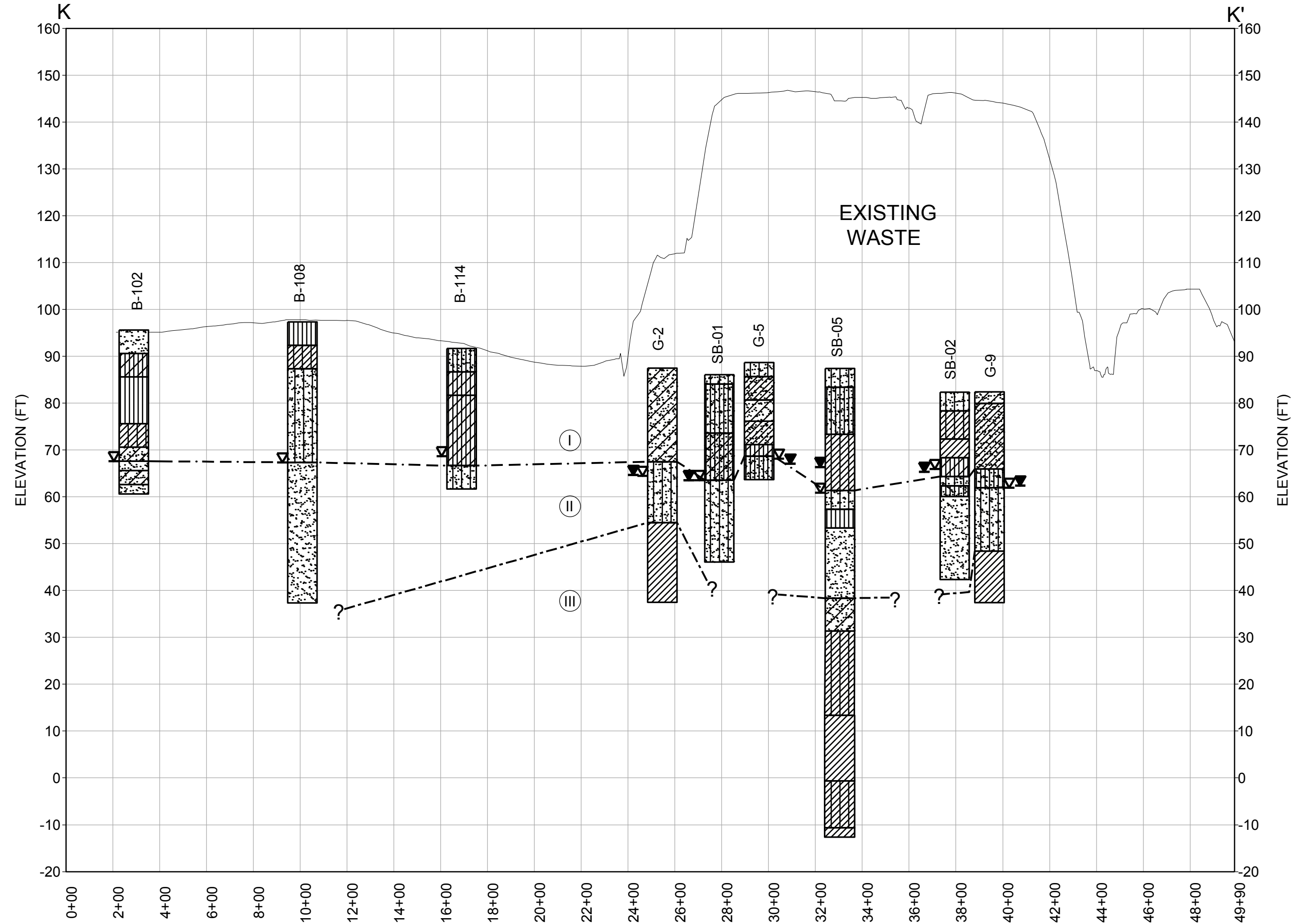
SCREENED INTERVAL

No. 2	LANGLEY-PITTMAN 1976 BORINGS
B-3	PSI 1993 BORINGS
SB-01	RUST 1996 BORINGS
PZ-101/B-103	GOLDER 2015 BORINGS

▩ TOP SOIL	▨ SANDY CLAY
▥ SILT	▨ CLAYEY SAND
▒ SAND	▨ CLAYEY SILT
▨ CLAY	▩ SANDY SILTY CLAY
▒ SILTY SAND	▩ SILTY CLAYEY SAND
▨ SILTY CLAY	☐ NO RECOVERY
▥ SANDY SILT	



SCALE 1" = 800' I III4-12E GEOLOGIC SECTION



SCALE 1" = 800' K III4-12E GEOLOGIC SECTION

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0 400 800
1" = 800' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION IV

PROJECT NO.	APPLICATION SECTION	REV.	16 of 34	FIGURE
1401491	III4	0		III4-12E

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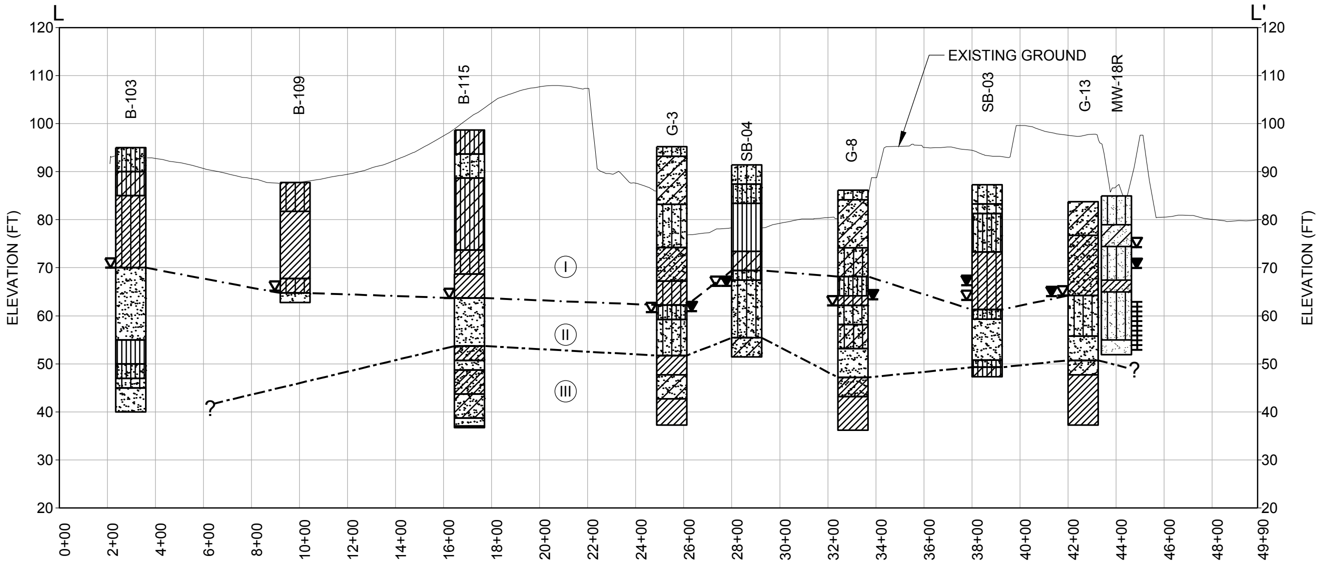
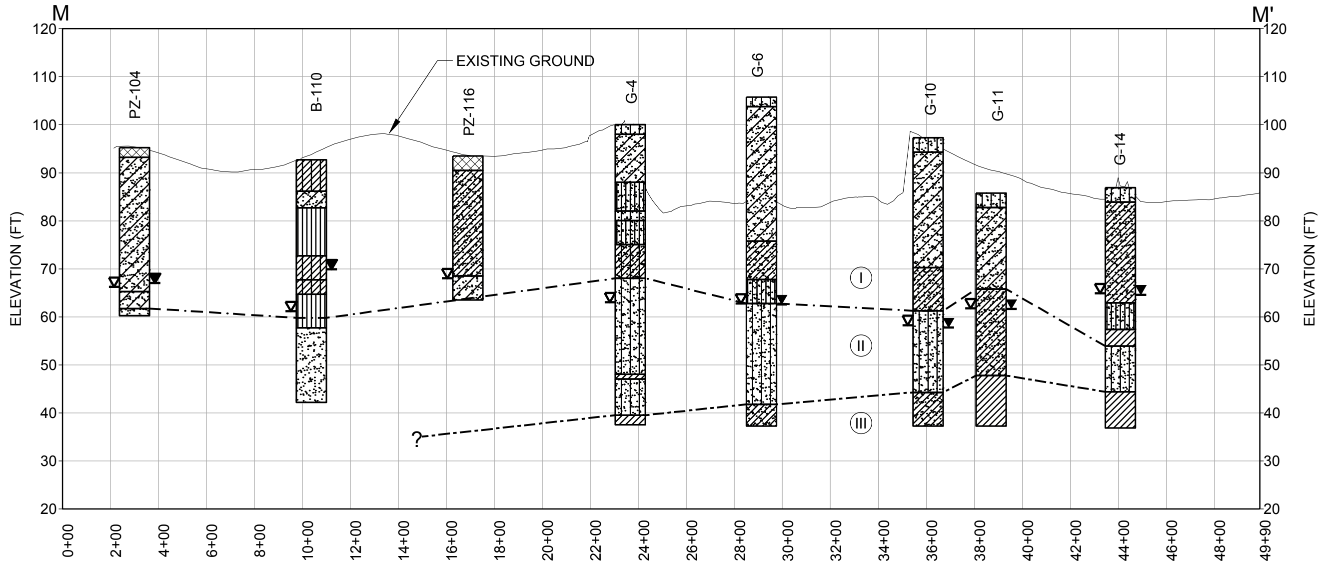
0 1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

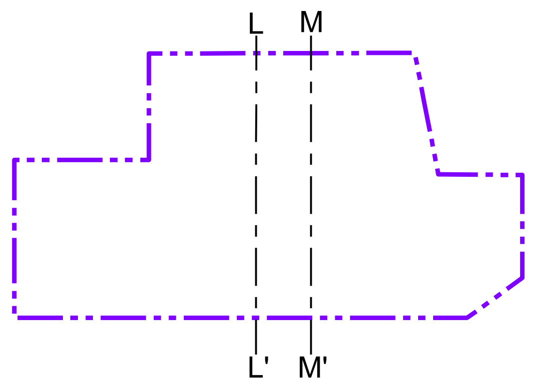


SCALE 1" = 800' L / III4-12F GEOLOGIC SECTION



SCALE 1" = 800' M / III4-12F GEOLOGIC SECTION

KEY MAP



LEGEND

───	EXISTING GROUND
— · — · — ?	END OF DATA FOR TOP OF STRATUM II
— · · — · · — ?	END OF DATA FOR TOP OF STRATUM III
Ⓘ Ⓘ Ⓘ	STRATUM IDs
▼	STATIC WATER LEVEL
▽	INITIAL WATER LEVEL
╪	SCREENED INTERVAL

No. 2	LANGLEY-PITTMAN 1976 BORINGS
B-3	PSI 1993 BORINGS
SB-01	RUST 1996 BORINGS
PZ-101/B-103	GOLDER 2015 BORINGS

▨	TOP SOIL	▨	SANDY CLAY
▥	SILT	▨	CLAYEY SAND
▨	SAND	▨	CLAYEY SILT
▨	CLAY	▨	SANDY SILTY CLAY
▨	SILTY SAND	▨	SILTY CLAYEY SAND
▨	SILTY CLAY	☐	NO RECOVERY
▨	SANDY SILT		

ISSUED FOR PERMITTING PURPOSES ONLY

0 400 800
1" = 800' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION V

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	17 of 34	III4-12F

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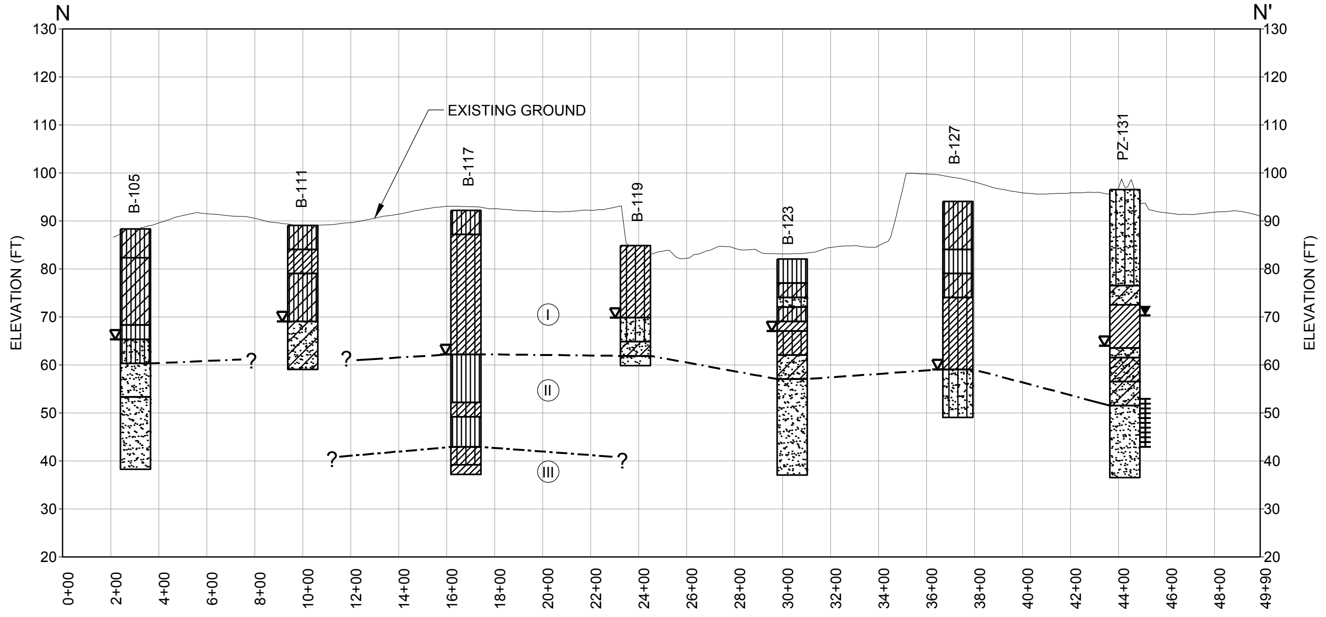
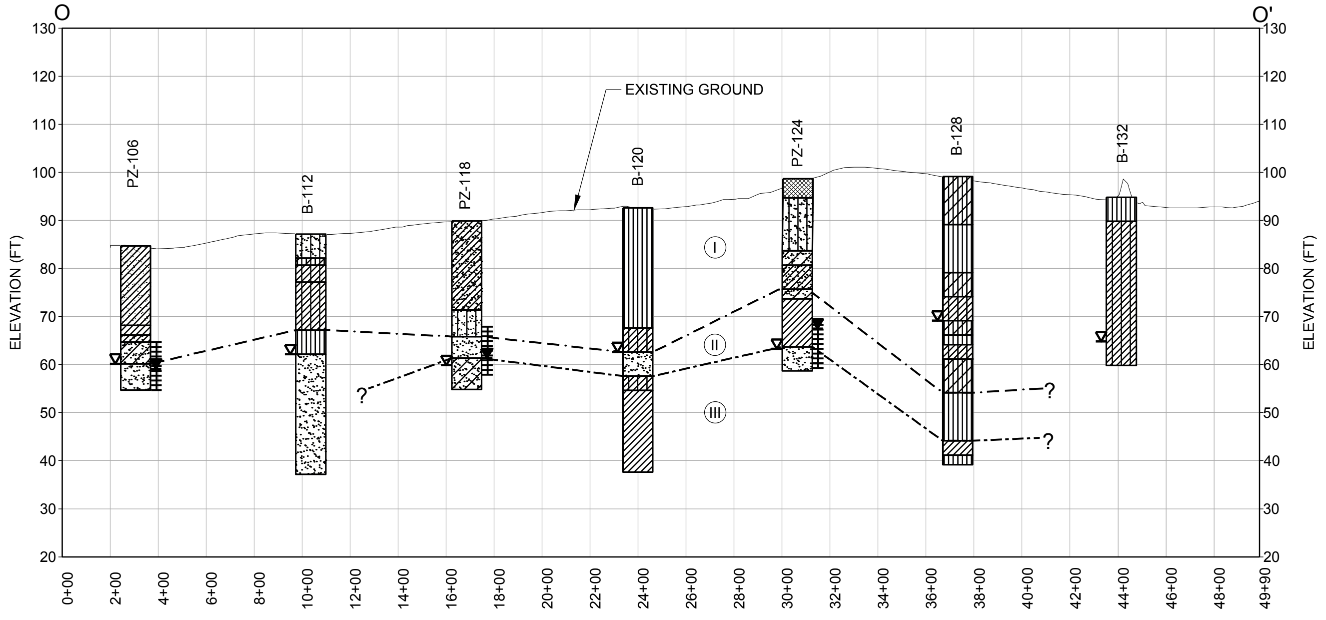
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
0
1 in

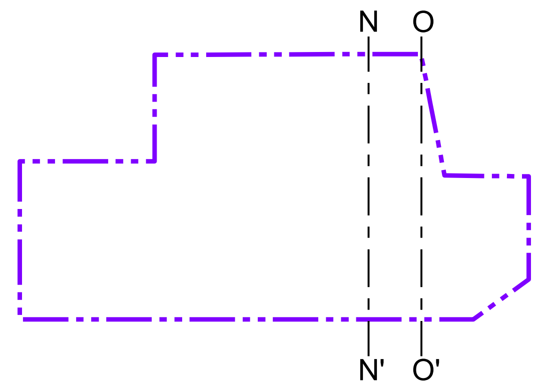


SCALE 1" = 800' N III4-12G GEOLOGIC SECTION



SCALE 1" = 800' O III4-12G GEOLOGIC SECTION

KEY MAP



LEGEND

EXISTING GROUND
—·—·—? END OF DATA FOR TOP OF STRATUM II
—··—··—? END OF DATA FOR TOP OF STRATUM III
Ⅰ Ⅱ Ⅲ STRATUM IDs
▼ STATIC WATER LEVEL
▽ INITIAL WATER LEVEL
SCREENED INTERVAL

No. 2	LANGLEY-PITTMAN 1976 BORINGS
B-3	PSI 1993 BORINGS
SB-01	RUST 1996 BORINGS
PZ-101/B-103	GOLDER 2015 BORINGS

▨ TOP SOIL
▥ SILT
▨ SAND
▨ CLAY
▨ SILTY SAND
▨ SILTY CLAY
▨ SANDY SILT
▨ SANDY CLAY
▨ CLAYEY SAND
▨ CLAYEY SILT
▨ SANDY SILTY CLAY
▨ SILTY CLAYEY SAND
☐ NO RECOVERY

ISSUED FOR PERMITTING PURPOSES ONLY

0 400 800
1" = 800' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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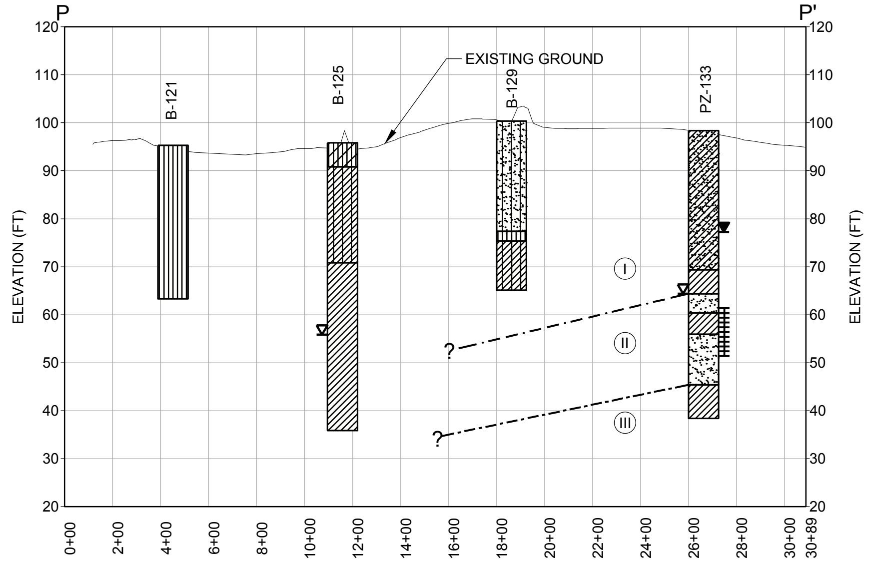
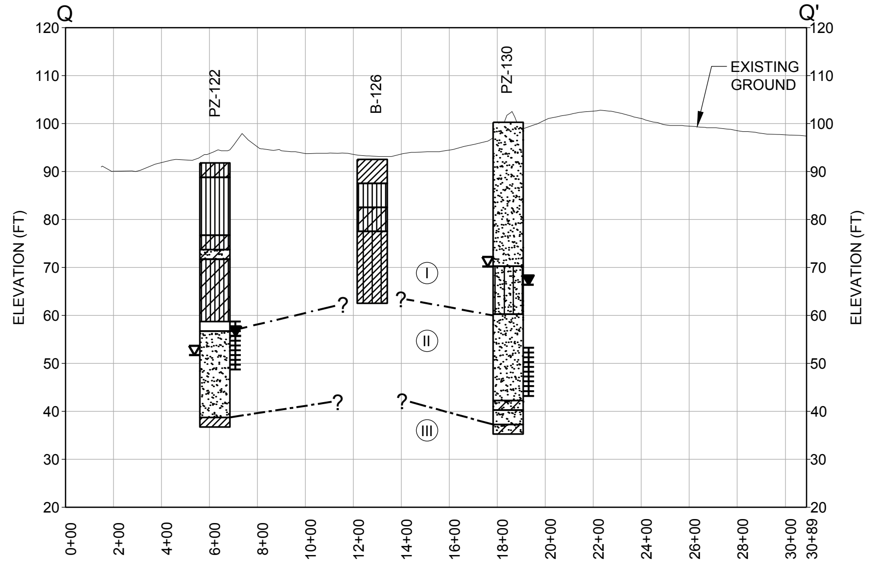
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION VI

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	18 of 34	III4-12G

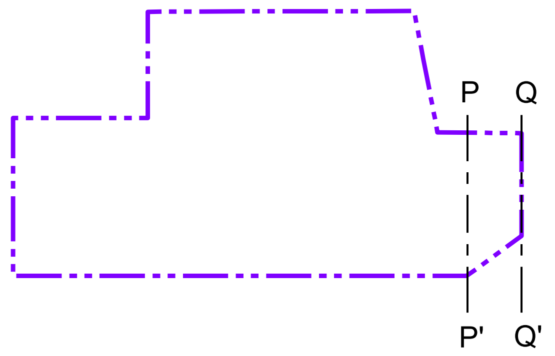


SCALE 1" = 800' P III4-12H GEOLOGIC SECTION



SCALE 1" = 800' Q III4-12H GEOLOGIC SECTION

KEY MAP



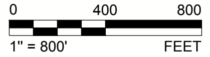
LEGEND

―	EXISTING GROUND
— · — · —?	END OF DATA FOR TOP OF STRATUM II
- · - · - · -?	END OF DATA FOR TOP OF STRATUM III
Ⓘ Ⓘⓘ Ⓘⓘⓘ	STRATUM IDs
▼	STATIC WATER LEVEL
▽	INITIAL WATER LEVEL
╪	SCREENED INTERVAL

No. 2	LANGLEY-PITTMAN 1976 BORINGS
B-3	PSI 1993 BORINGS
SB-01	RUST 1996 BORINGS
PZ-101/B-103	GOLDER 2015 BORINGS

▩	TOP SOIL	▨	SANDY CLAY
▥	SILT	▨	CLAYEY SAND
░	SAND	▨	CLAYEY SILT
▨	CLAY	▨	SANDY SILTY CLAY
▥	SILTY SAND	▨	SILTY CLAYEY SAND
▨	SILTY CLAY	☐	NO RECOVERY
▥	SANDY SILT		

ISSUED FOR PERMITTING PURPOSES ONLY



REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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7/21/17
CHAD E. IRELAND
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PROJECT
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PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
INTERPRETIVE GEOLOGIC CROSS-SECTION VII

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	19 of 34	III4-12H

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
0
1 in

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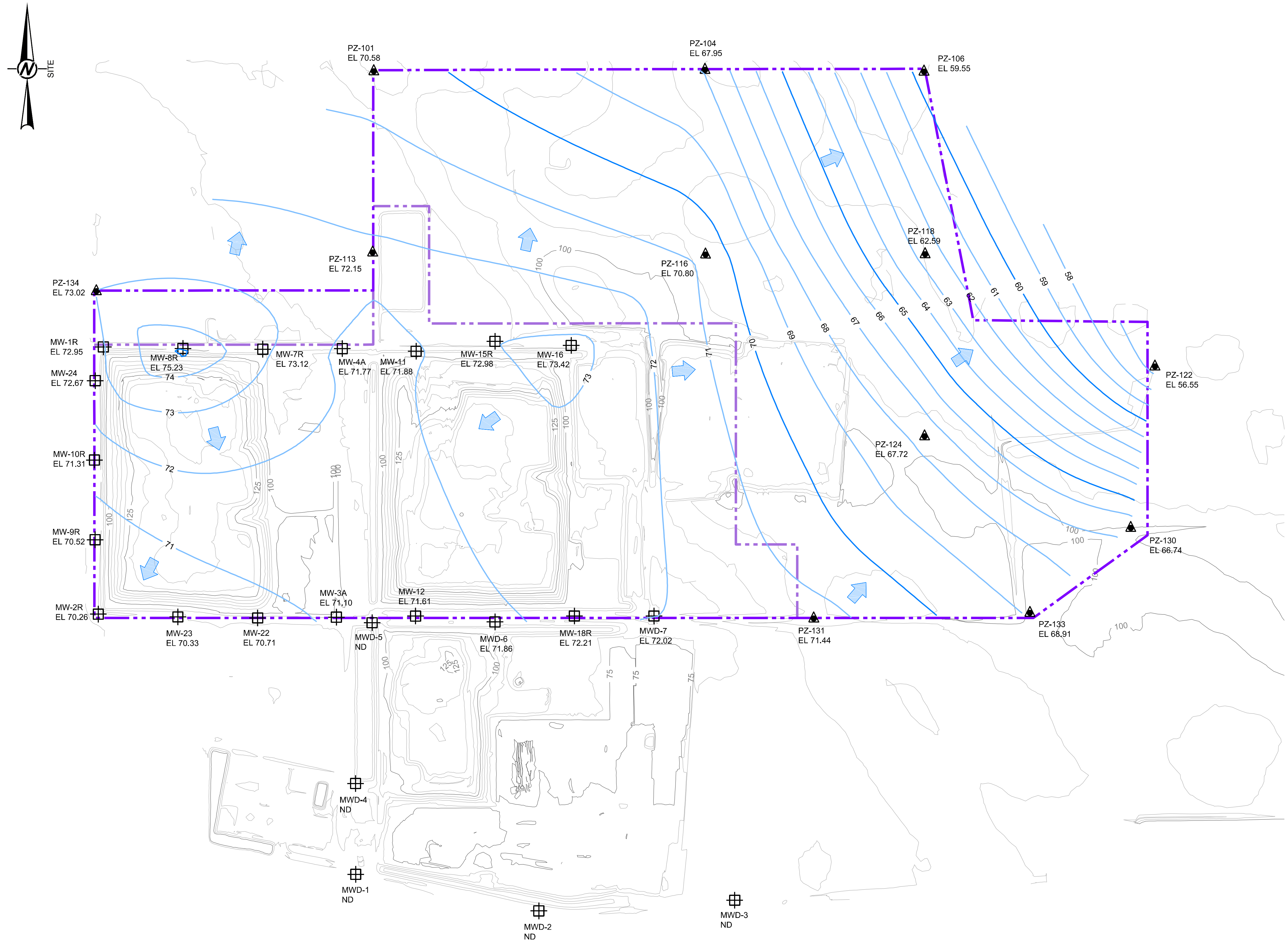

LEGEND

— · — · —	EXPANSION PERMIT BOUNDARY
— · — · —	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
—— 65 ——	GROUNDWATER 5 ft CONTOUR
—— 61 ——	GROUNDWATER 1 ft CONTOUR
—— 60 ——	EXISTING GROUND 25 ft CONTOUR
—— 55 ——	EXISTING GROUND 5 ft CONTOUR
⌖ MW-16	GROUNDWATER MONITORING WELLS
▲ PZ-101	PIEZOMETER
ND	UNABLE TO OBTAIN WATER LEVELS
⇨	GROUNDWATER FLOW DIRECTION

NOTE(S)

1. EXISTING TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 7/24/14.
2. GROUNDWATER CONTOURS AND FLOW DIRECTION SHOWN ON THIS FIGURE ARE APPROXIMATE.
3. GROUNDWATER CONTOURS DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION (NNI) METHOD FROM PART III4E, HISTORICAL GROUNDWATER ELEVATIONS DATA.

ISSUED FOR PERMITTING PURPOSES ONLY

0 400 800
1" = 800' FEET

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0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *FEBRUARY 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	20 of 34	III4-13A

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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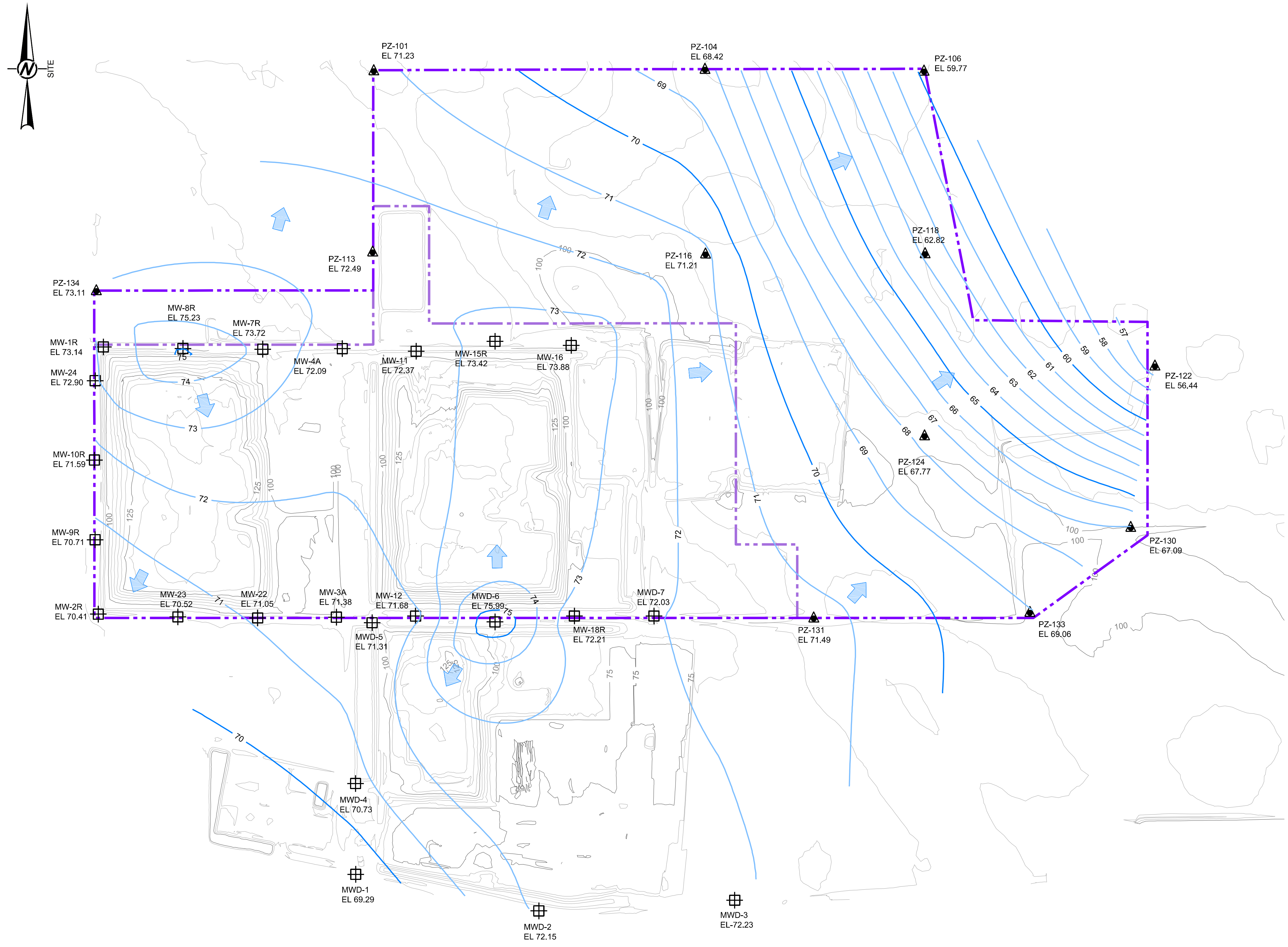

LEGEND

▬ ▪ ▪ ▬	EXPANSION PERMIT BOUNDARY
▬ ▪ ▪ ▬	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
—— 65 ——	GROUNDWATER 5 ft CONTOUR
—— 61 ——	GROUNDWATER 1 ft CONTOUR
—— 60 ——	EXISTING GROUND 25 ft CONTOUR
—— 55 ——	EXISTING GROUND 5 ft CONTOUR
⌖ MW-16	GROUNDWATER MONITORING WELLS
▲ PZ-101	PIEZOMETER
ND	UNABLE TO OBTAIN WATER LEVELS
⇨	GROUNDWATER FLOW DIRECTION

NOTE(S)

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0 400 800
1" = 800' FEET

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0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *MARCH 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	21 of 34	III4-13B

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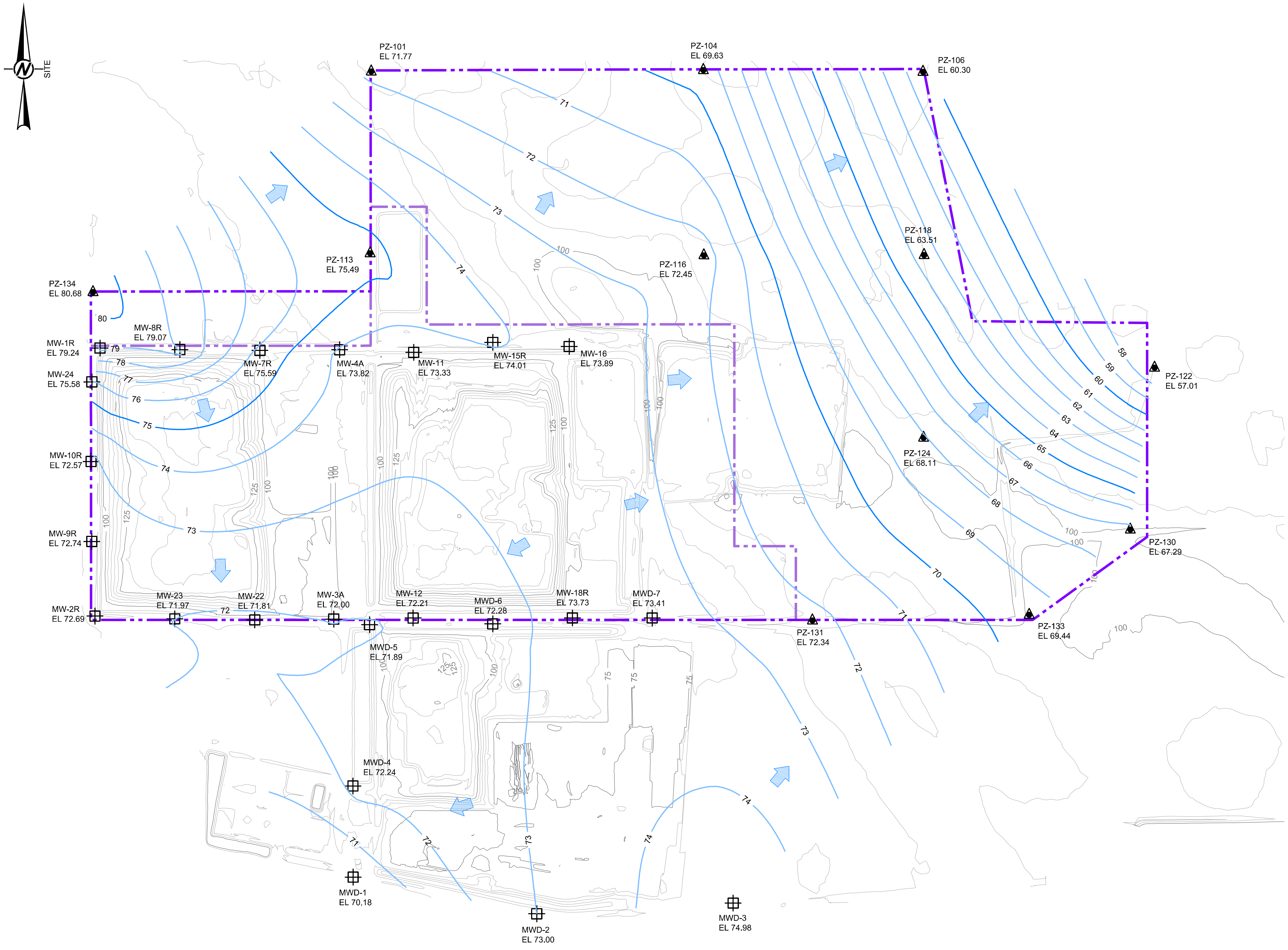

LEGEND

— · · —	EXPANSION PERMIT BOUNDARY
— · · —	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
—— 65 ——	GROUNDWATER 5 ft CONTOUR
—— 61 ——	GROUNDWATER 1 ft CONTOUR
—— 60 ——	EXISTING GROUND 25 ft CONTOUR
—— 55 ——	EXISTING GROUND 5 ft CONTOUR
⌖ MW-16	GROUNDWATER MONITORING WELLS
▲ PZ-101	PIEZOMETER
ND	UNABLE TO OBTAIN WATER LEVELS
⇨	GROUNDWATER FLOW DIRECTION

NOTE(S)

1. EXISTING TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 7/24/14.
2. GROUNDWATER CONTOURS AND FLOW DIRECTION SHOWN ON THIS FIGURE ARE APPROXIMATE.
3. GROUNDWATER CONTOURS DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION (NNI) METHOD FROM PART III4E, HISTORICAL GROUNDWATER ELEVATIONS DATA.

ISSUED FOR PERMITTING PURPOSES ONLY

0 400 800
1" = 800' FEET

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *APRIL 2015*

PROJECT NO.	APPLICATION SECTION	REV.	22 of 34	FIGURE
1401491	III4	0		III4-13C

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
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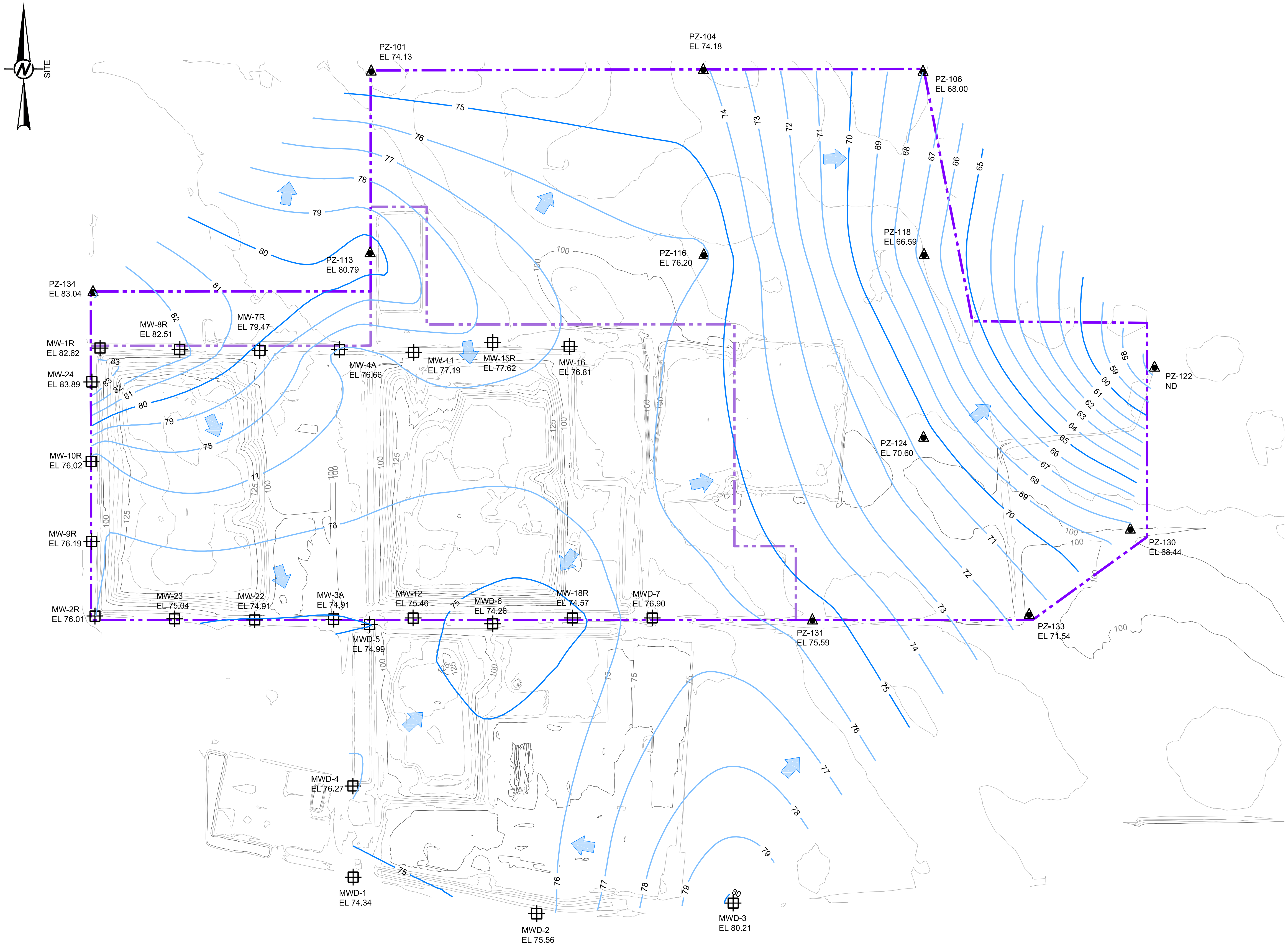

LEGEND

▬ · · ▬	EXPANSION PERMIT BOUNDARY
▬ · · ▬	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
—— 65 ——	GROUNDWATER 5 ft CONTOUR
—— 61 ——	GROUNDWATER 1 ft CONTOUR
—— 60 ——	EXISTING GROUND 25 ft CONTOUR
—— 55 ——	EXISTING GROUND 5 ft CONTOUR
⌖ MW-16	GROUNDWATER MONITORING WELLS
▲ PZ-101	PIEZOMETER
ND	UNABLE TO OBTAIN WATER LEVELS
⇨	GROUNDWATER FLOW DIRECTION

NOTE(S)

1. EXISTING TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 7/24/14.
2. GROUNDWATER CONTOURS AND FLOW DIRECTION SHOWN ON THIS FIGURE ARE APPROXIMATE.
3. GROUNDWATER CONTOURS DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION (NNI) METHOD FROM PART III4E, HISTORICAL GROUNDWATER ELEVATIONS DATA.

ISSUED FOR PERMITTING PURPOSES ONLY

0 400 800
1" = 800' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *JUNE 2015*

PROJECT NO.	APPLICATION SECTION	REV.	23 of 34	FIGURE
1401491	III4	0		III4-13D

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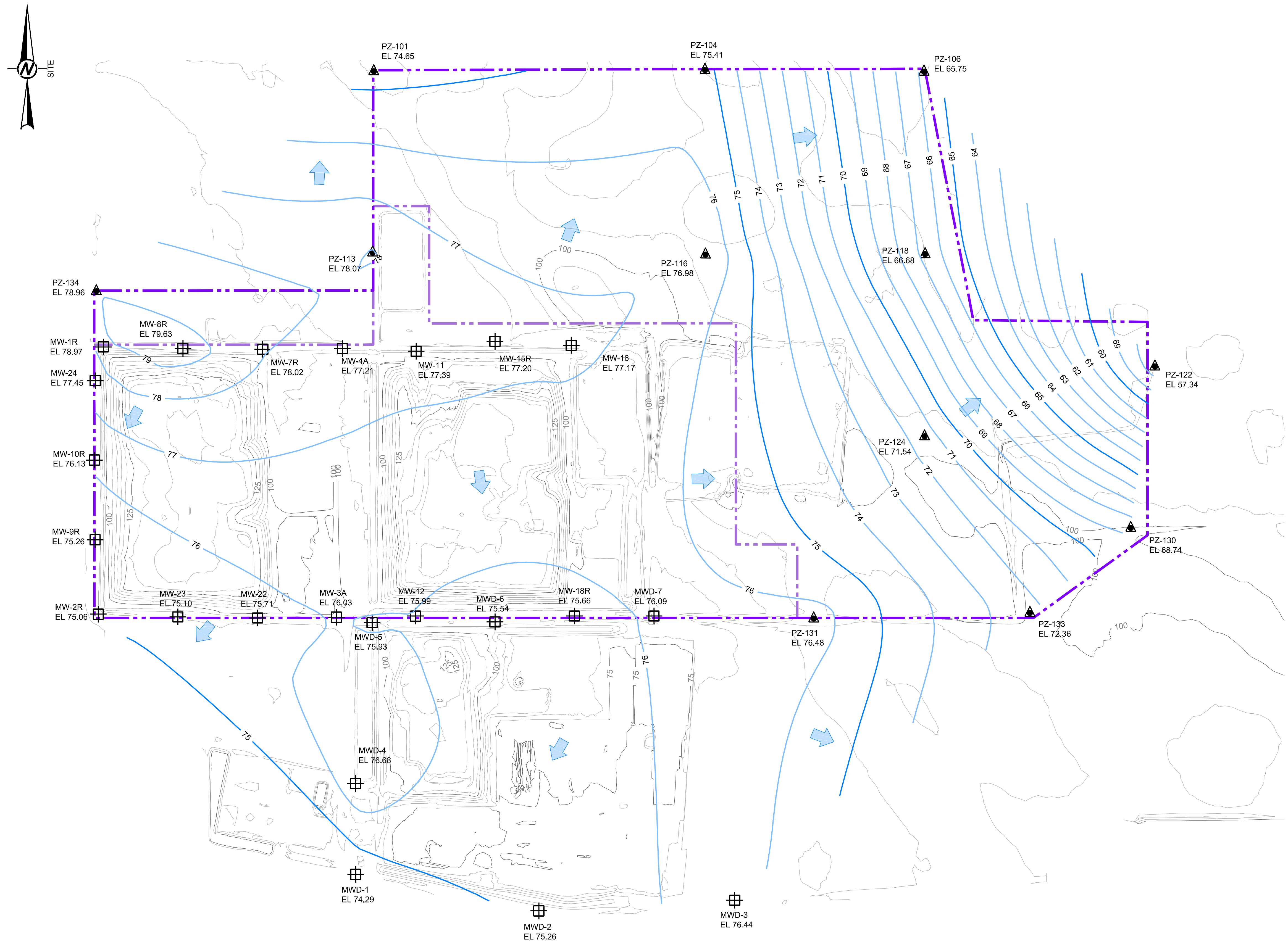
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
1 in
0



LEGEND

▬ · · ▬	EXPANSION PERMIT BOUNDARY
▬ · · ▬	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
—— 65 ——	GROUNDWATER 5 ft CONTOUR
—— 61 ——	GROUNDWATER 1 ft CONTOUR
—— 60 ——	EXISTING GROUND 25 ft CONTOUR
—— 55 ——	EXISTING GROUND 5 ft CONTOUR
⌖ MW-16	GROUNDWATER MONITORING WELLS
▲ PZ-101	PIEZOMETER
ND	UNABLE TO OBTAIN WATER LEVELS
➡	GROUNDWATER FLOW DIRECTION

NOTE(S)

1. EXISTING TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 7/24/14.
2. GROUNDWATER CONTOURS AND FLOW DIRECTION SHOWN ON THIS FIGURE ARE APPROXIMATE.
3. GROUNDWATER CONTOURS DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION (NNI) METHOD FROM PART III4E, HISTORICAL GROUNDWATER ELEVATIONS DATA.

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REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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STATE OF TEXAS
7/21/17
CHAD E. IRELAND
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SOLID WASTE
MANAGEMENT

CONSULTANT

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *JULY 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	24 of 34	III4-13E

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
1 in
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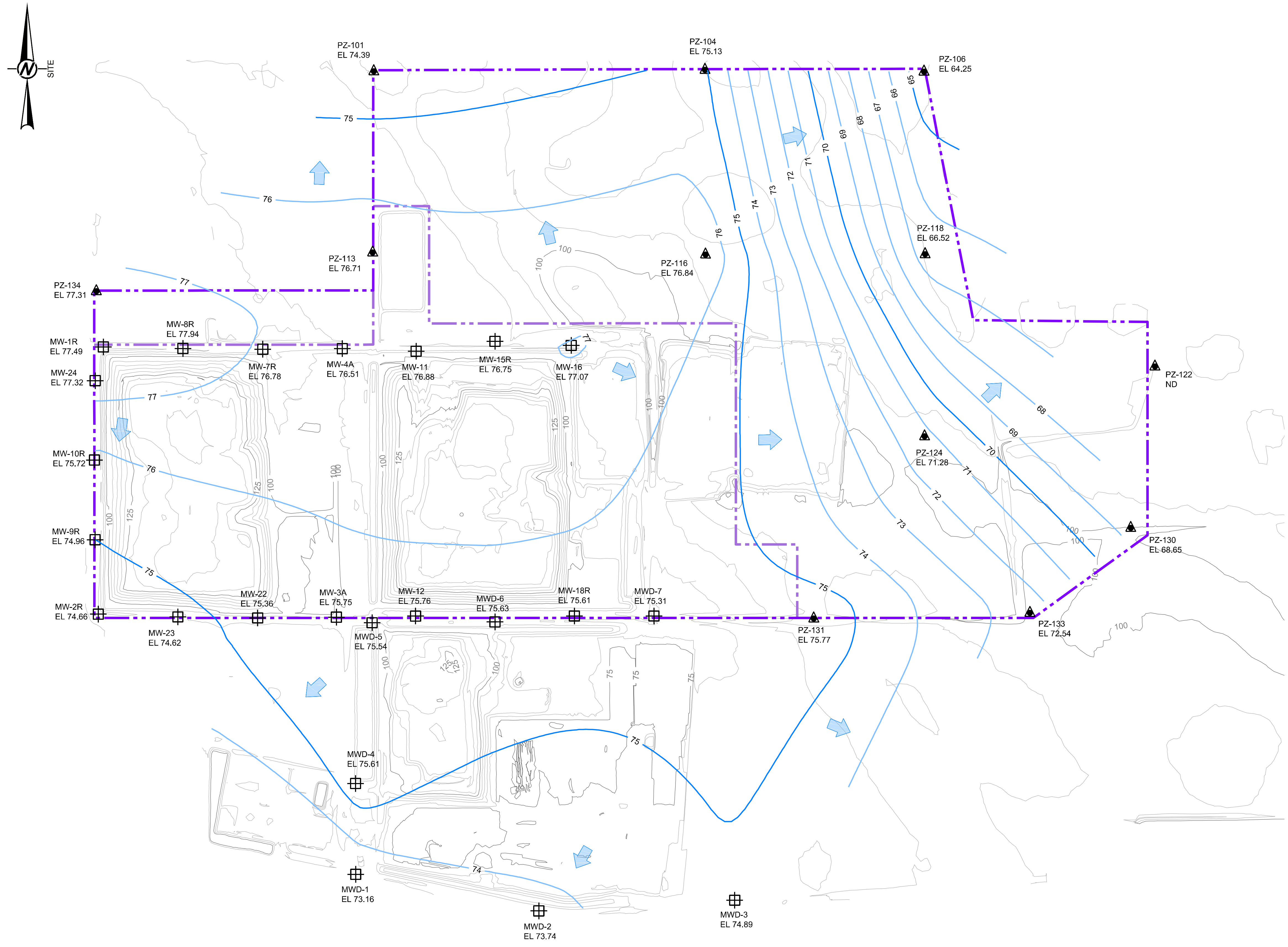

LEGEND

▬ · · ▬	EXPANSION PERMIT BOUNDARY
▬ · · ▬	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
— 65 —	GROUNDWATER 5 ft CONTOUR
— 61 —	GROUNDWATER 1 ft CONTOUR
— 60 —	EXISTING GROUND 25 ft CONTOUR
— 55 —	EXISTING GROUND 5 ft CONTOUR
⌖ MW-16	GROUNDWATER MONITORING WELLS
▲ PZ-101	PIEZOMETER
ND	UNABLE TO OBTAIN WATER LEVELS
⇨	GROUNDWATER FLOW DIRECTION

NOTE(S)

1. EXISTING TOPOGRAPHY COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 7/24/14.
2. GROUNDWATER CONTOURS AND FLOW DIRECTION SHOWN ON THIS FIGURE ARE APPROXIMATE.
3. GROUNDWATER CONTOURS DEVELOPED USING NATURAL NEIGHBOR INTERPOLATION (NNI) METHOD FROM PART III4E, HISTORICAL GROUNDWATER ELEVATIONS DATA.

ISSUED FOR PERMITTING PURPOSES ONLY

0 400 800
1" = 800' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2017-07-21	ISSUED FOR CLIENT REVIEW	CEI	AA	JAW	CEI

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Chad E. Ireland
CHAD E. IRELAND
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TITLE
POTENTIOMETRIC SURFACE MAP *AUGUST 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	25 of 34	III4-13F

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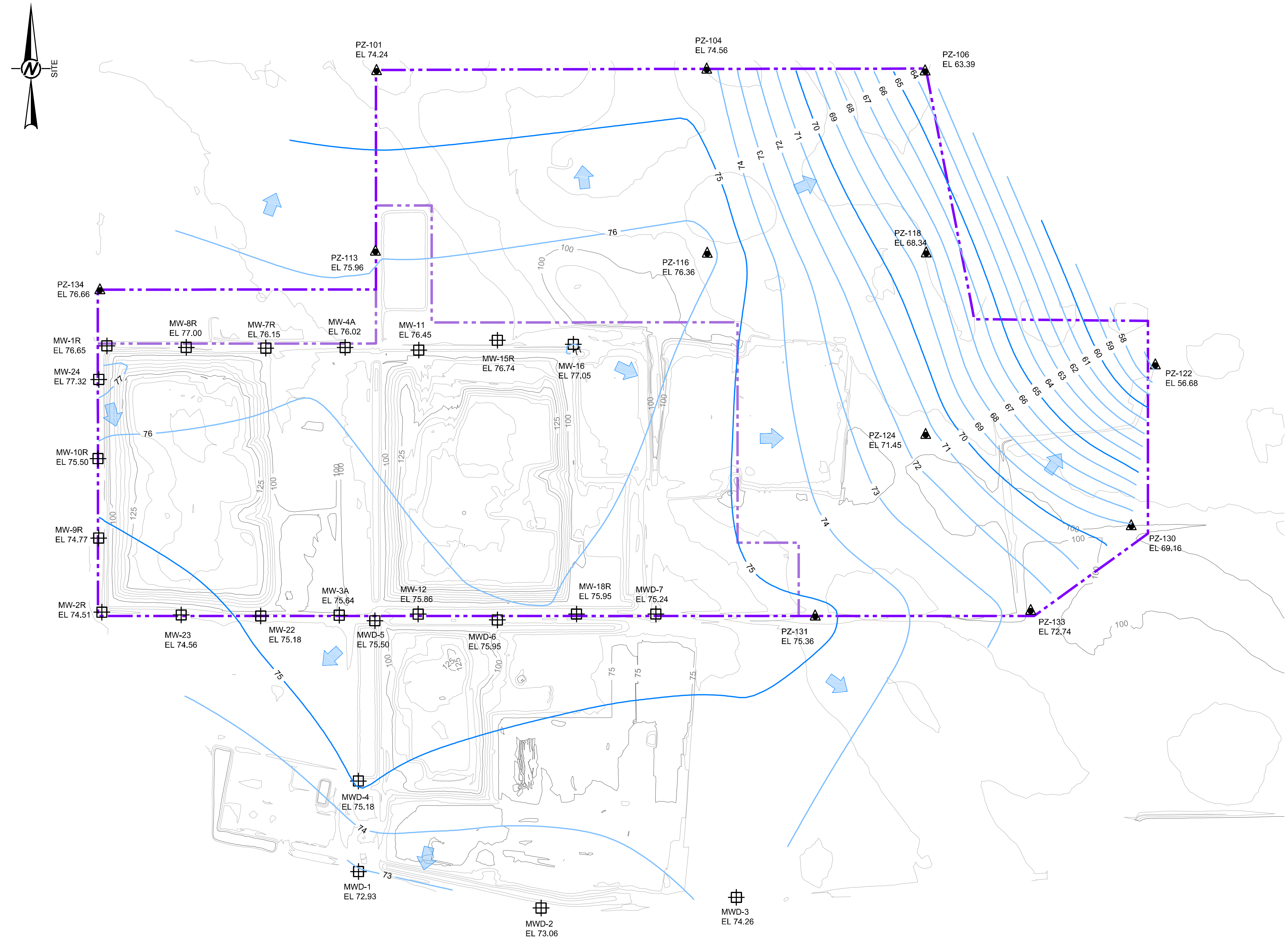

LEGEND

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *SEPTEMBER 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	26 of 34	III4-13G

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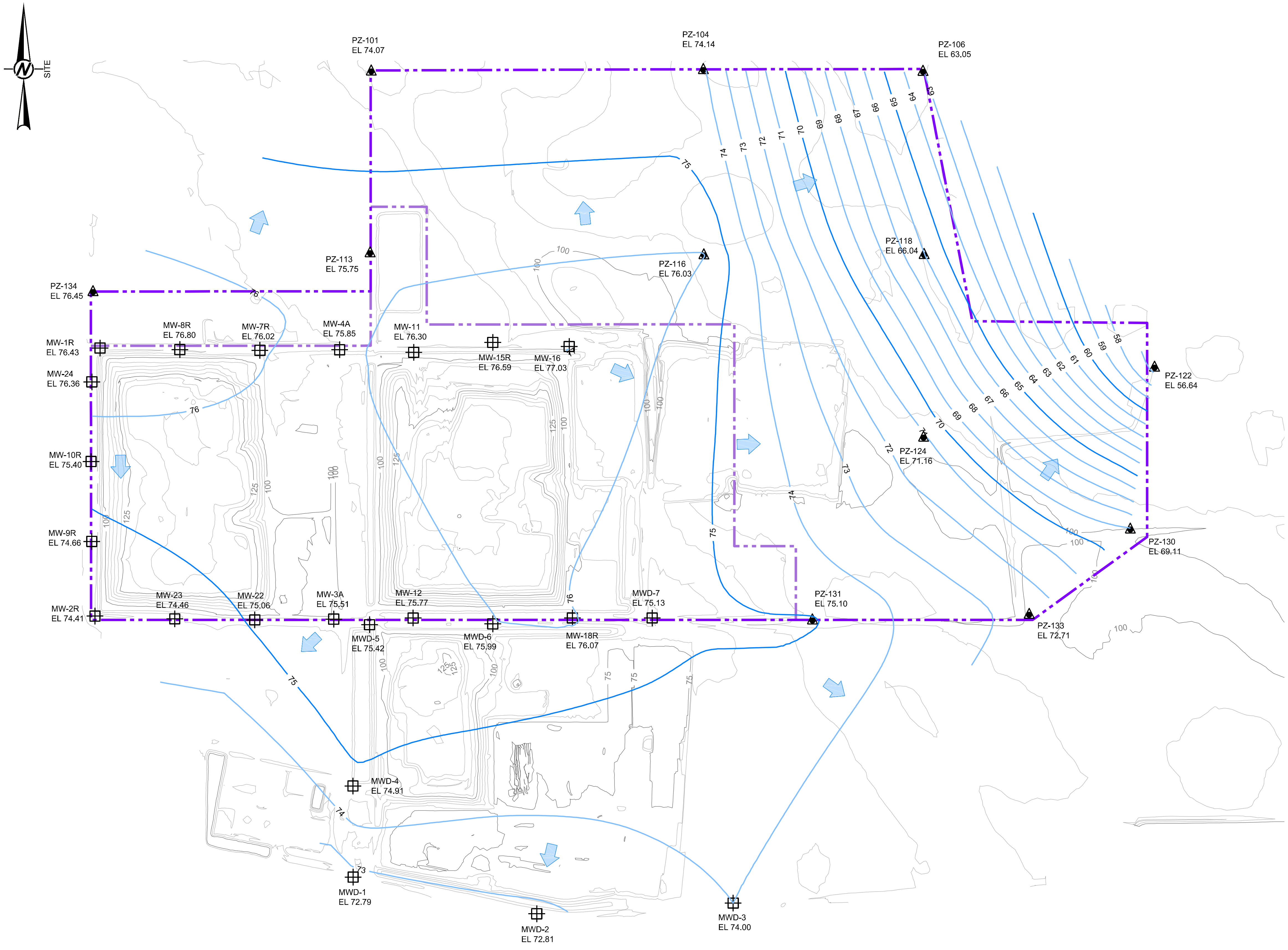

LEGEND

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *OCTOBER 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	27 of 34	III4-13H

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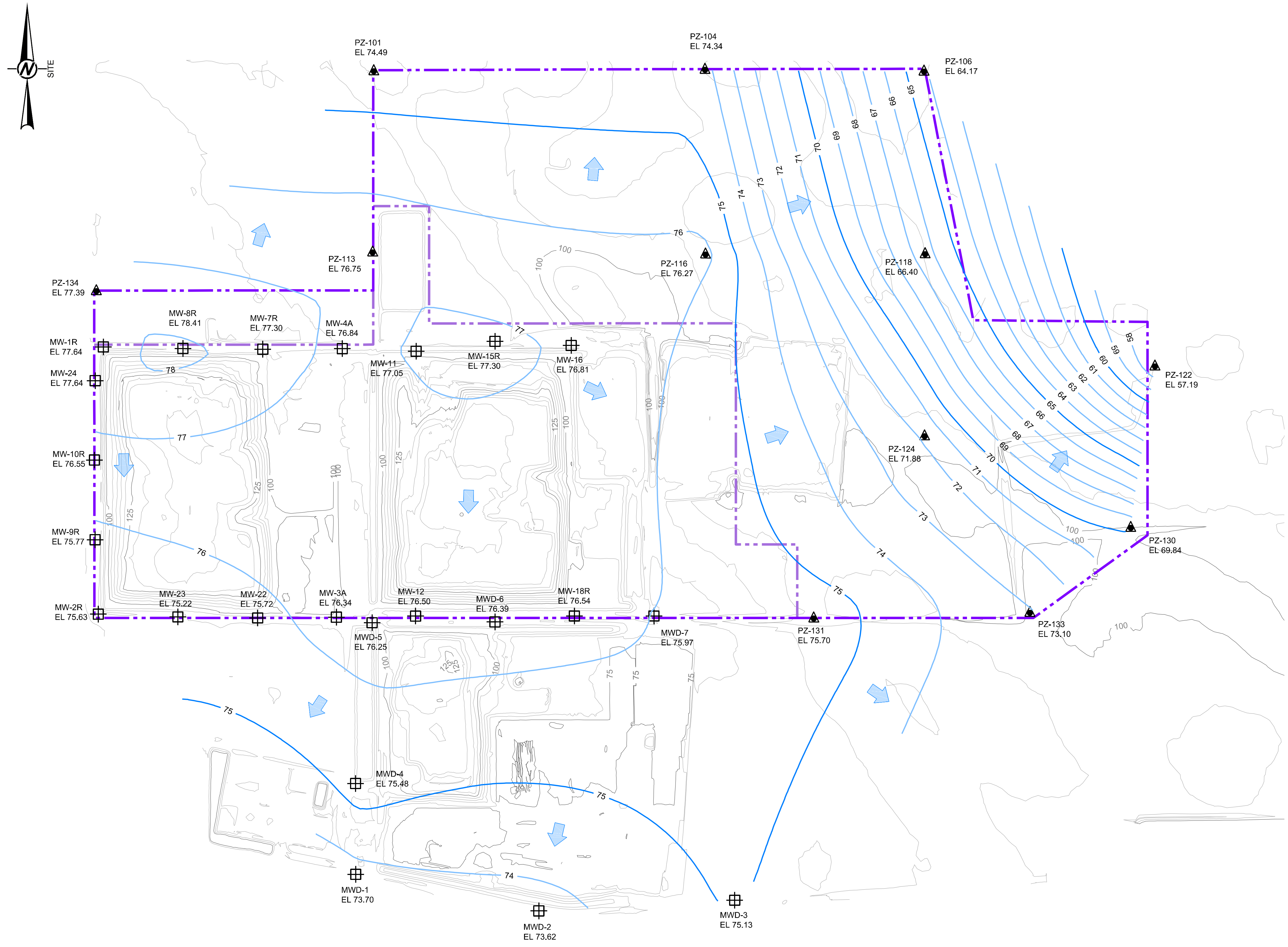

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LEGEND

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	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
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TITLE
POTENTIOMETRIC SURFACE MAP *NOVEMBER 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	28 of 34	III4-13I

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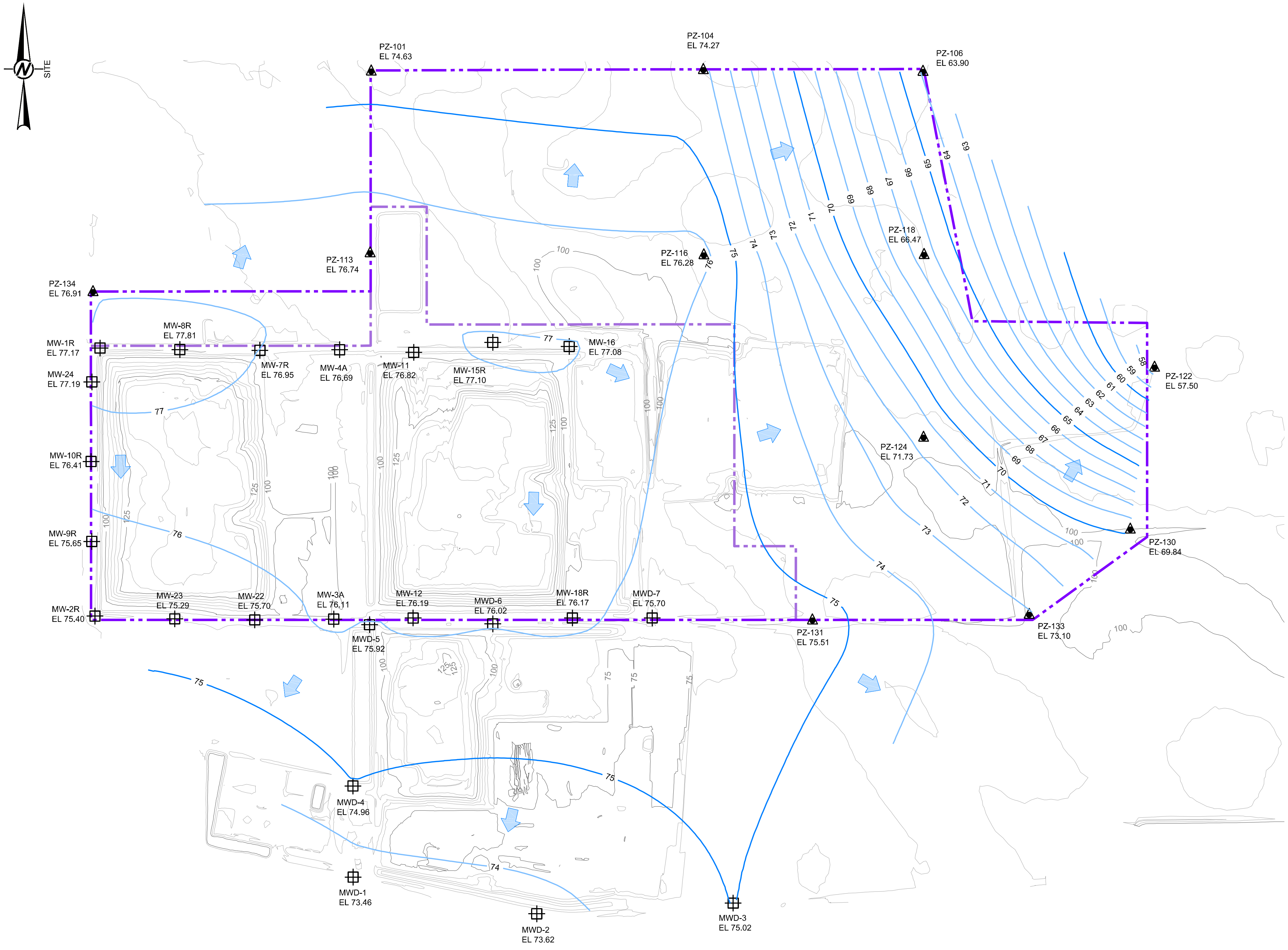

LEGEND

━ ▪ ▪ ━	EXPANSION PERMIT BOUNDARY
━ ▪ ▪ ━	PERMIT BOUNDARY TCEQ PERMIT MSW-956B
— 65 —	GROUNDWATER 5 ft CONTOUR
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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *DECEMBER 2015*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	29 of 34	III4-13J

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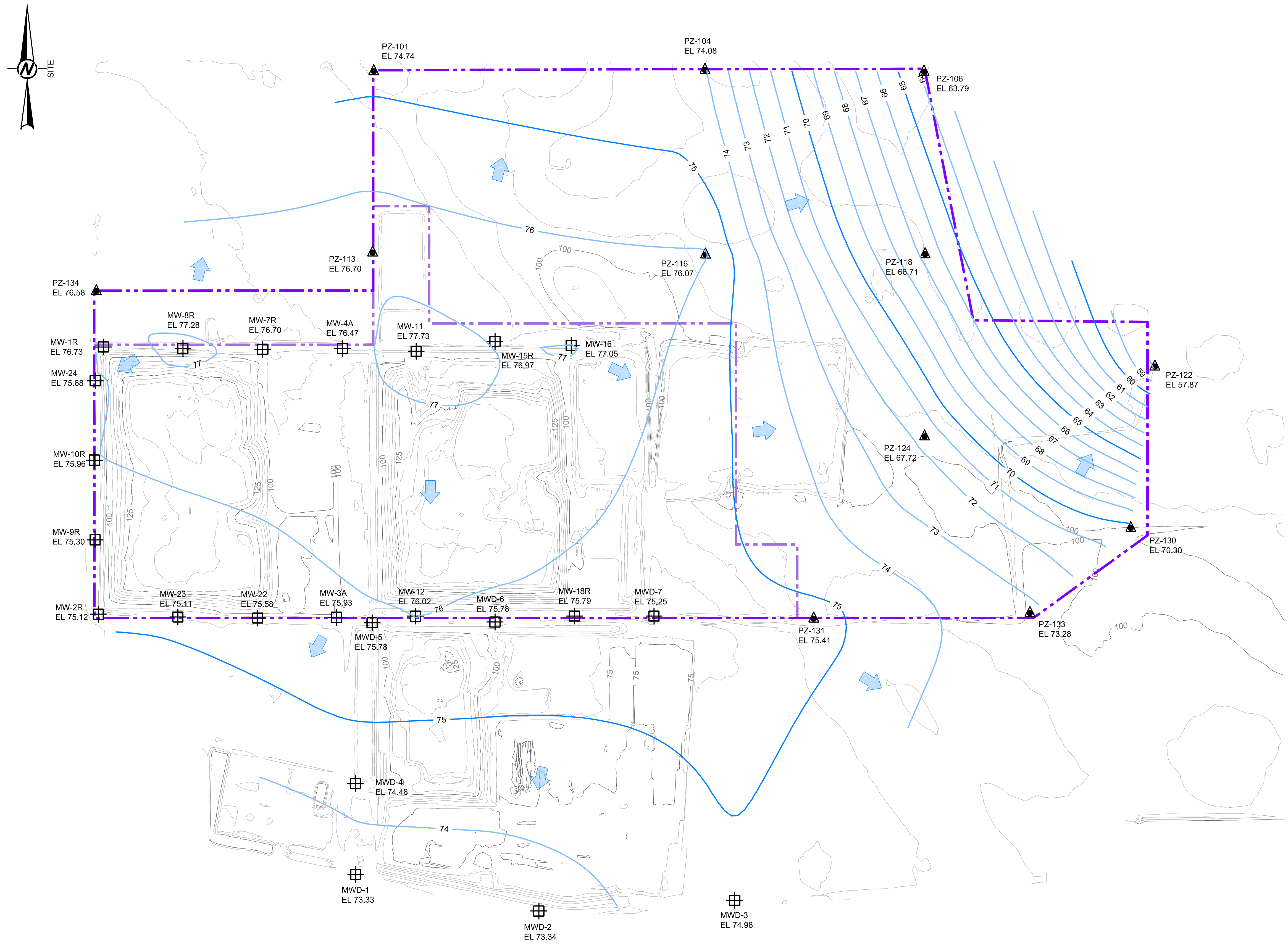

LEGEND

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *JANUARY 2016*

PROJECT NO.	APPLICATION SECTION	REV.	30 of 34	FIGURE
1401491	III4	0		III4-13K

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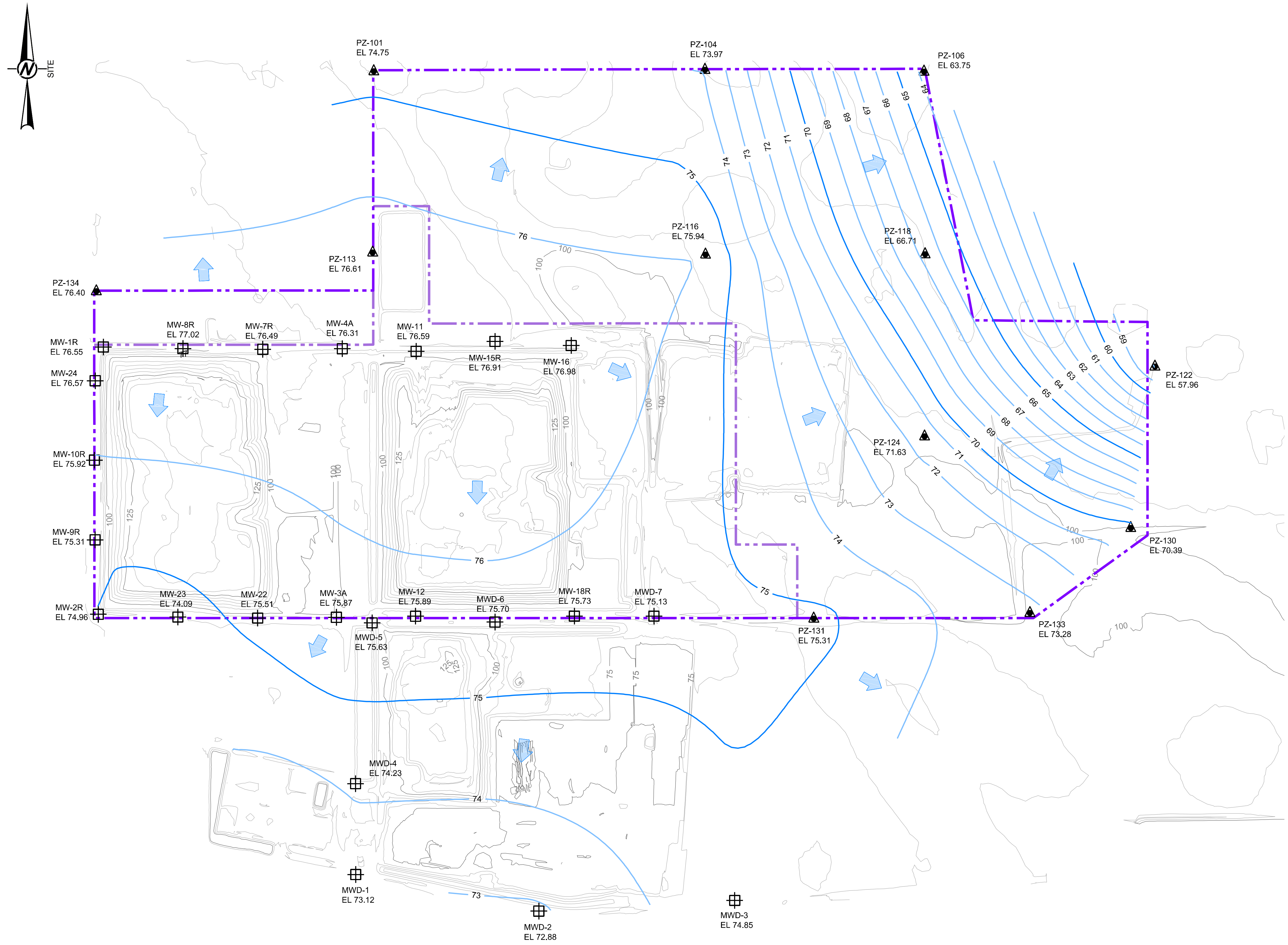

LEGEND

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *FEBRUARY 2016*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	31 of 34	III4-13L

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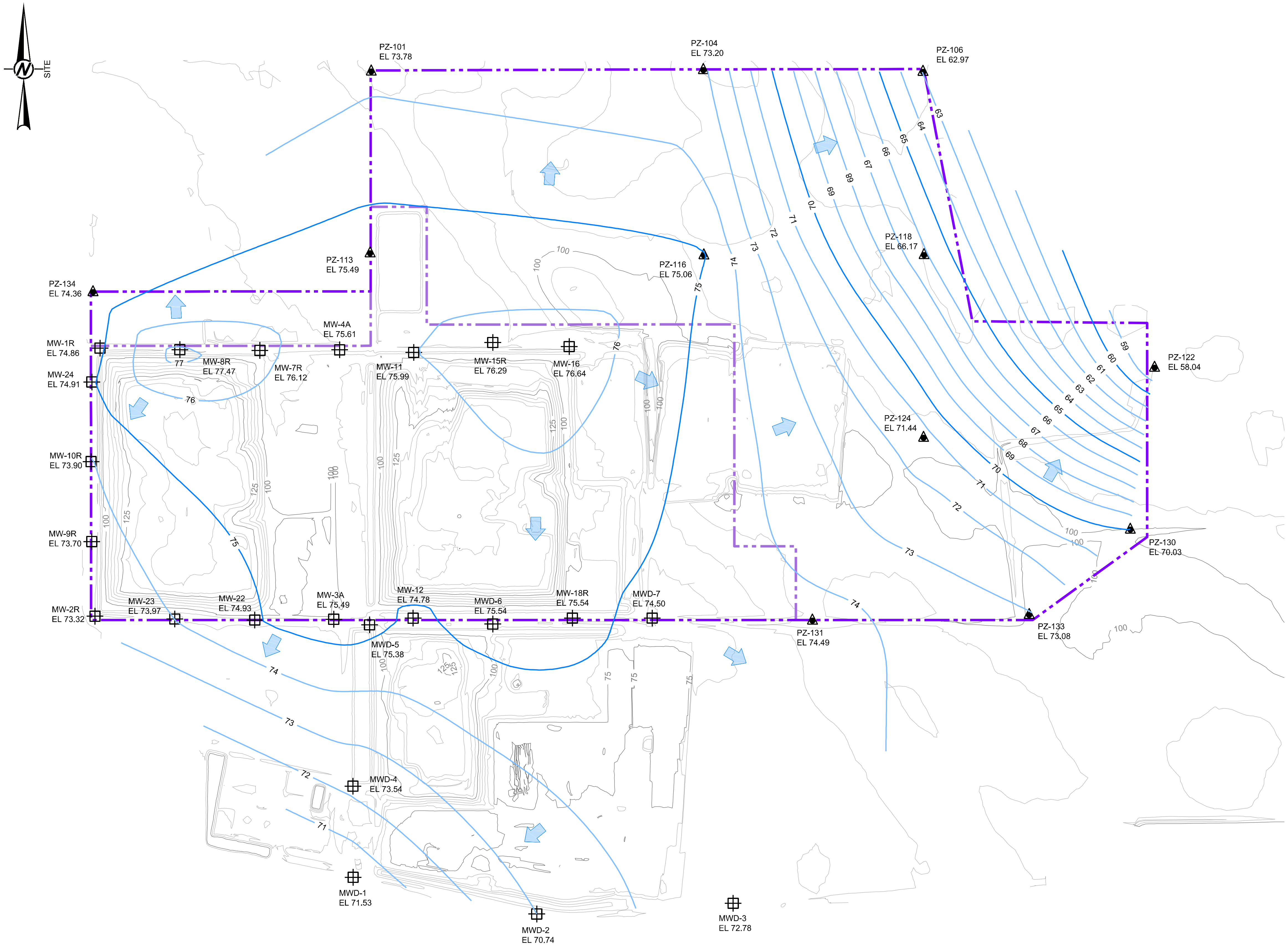

LEGEND

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61	GROUNDWATER 1 ft CONTOUR
60	EXISTING GROUND 25 ft CONTOUR
55	EXISTING GROUND 5 ft CONTOUR
MW-16	GROUNDWATER MONITORING WELLS
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TITLE
POTENTIOMETRIC SURFACE MAP *JUNE 2016*

PROJECT NO.	APPLICATION SECTION	REV.		FIGURE
1401491	III4	0	32 of 34	III4-13M

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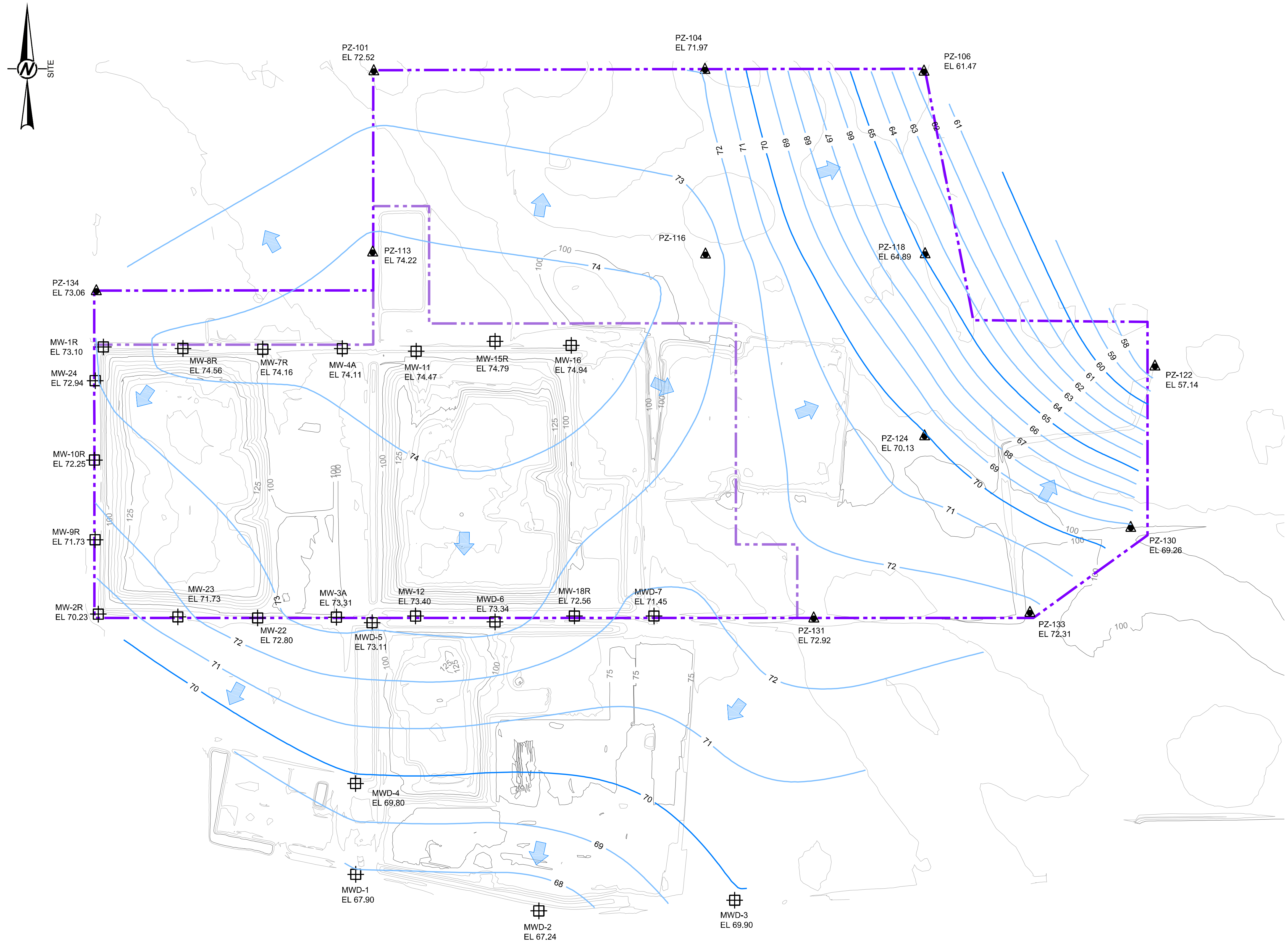

LEGEND

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EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP *DECEMBER 2016*

PROJECT NO.	APPLICATION SECTION	REV.	33 of 34	FIGURE
1401491	III4	0		III4-13N

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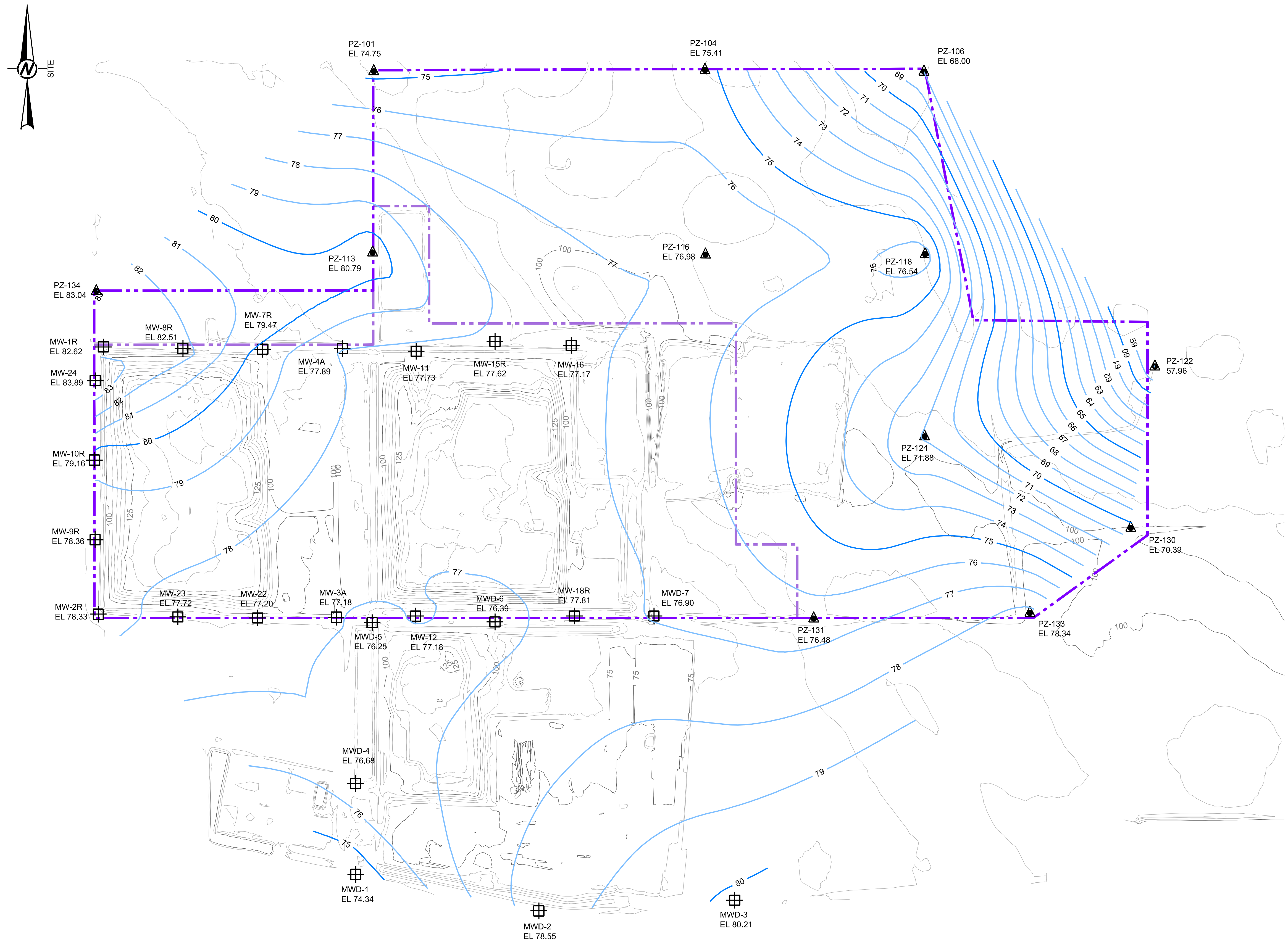

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7/21/17
GOLDER ASSOCIATES INC.
TEXAS REGISTRATION F-2578

CLIENT
CITY OF EDINBURG SOLID WASTE MANAGEMENT

CONSULTANT
Golder Associates

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
POTENTIOMETRIC SURFACE MAP SEASONAL HIGH

PROJECT NO.	APPLICATION SECTION	REV.	34 of 34	FIGURE
1401491	III4	0		III4-13O

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APPENDIX III4A

SOIL BORING PLAN

Golder
Associates

October 8, 2014 Project No. 1401491

Mr. Chance Goodin, Manager
Texas Commission on Environmental Quality
Waste Permits Division, Municipal Solid Waste Permits
12100 Park 35 Circle, Building F
Austin, Texas 78753

RE: BORING PLAN
PERMIT AMENDMENT APPLICATION
EDINBURG REGIONAL DISPOSAL FACILITY
HIDALGO COUNTY, TEXAS
TCEQ PERMIT MSW-956C

Dear Mr. Goodin:

Golder Associates Inc. is pleased to present this boring plan for a proposed field investigation for the anticipated lateral expansion of the City of Edinburg's Sanitary Landfill located in Hidalgo County, Texas. Included in this plan are maps showing the existing and proposed permit boundaries, existing and proposed soil boring locations, existing monitoring well locations, and proposed piezometer locations. Information about the existing and proposed borings is tabulated.

If you have any questions or require additional information, please contact me at (281) 821-6868 or at cireland@golder.com.

Sincerely,

GOLDER ASSOCIATES INC.

Chad E. Ireland
Chad E. Ireland, P.E.
Senior Project Geological Engineer

Jay Wint
Jay A. Winters, P.G.
Principal

STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST
10-8-14

cc: Ramiro L. Gomez, Jr., City of Edinburg Department of Solid Waste

Attachments or Enclosures:

CEI/JAW/kc

1.1 INTRODUCTION

This boring plan is submitted by Golder Associates Inc. (Golder) on behalf of the City of Edinburg in accordance for the requirement to submit a soil boring plan as identified in 30 TAC §330.63(e)(4). This plan was prepared in support of the City of Edinburg's Permit Amendment Application for the expansion of Edinburg Sanitary Landfill, TCEQ Permit MSW-956B. The plan includes the following:

- the goals of the boring program;
- the geology and hydrogeology near the site;
- a discussion of the proposed number and depths of the borings;
- a description of the drilling methods;
- a sampling plan; and
- a laboratory testing plan.

The purpose of site investigations presented in this boring plan is to establish site-specific geotechnical, geological and hydrogeological data pertinent to the development of future landfill units. Specifically, the goals of this program are:

- Further characterization of the local geology and the identification of significant stratigraphic units;
- The definition of geotechnical parameters for each of the major units and any other units that may impact landfill development at the proposed expansion unit;
- The determination of the presence or absence of unstable areas at the site;
- The establishment of stratigraphy and parameters for the evaluation of landfill-related liquids travel time;
- The determination of the location of the top of the uppermost aquifer beneath the unit; and
- The determination of the location of the bottom of the aquiclude.

This boring plan includes a discussion of the site background, a proposal for the number, location, and depth of the borings, a description of the drilling and sampling program, and a proposed laboratory testing program.

2.0 SITE BACKGROUND

The existing Edinburg Sanitary Landfill is located approximately 3/4 mile north of the intersection of FM 2812 and Jasman Road, approximately 1 mile east of Highway I-69C, within the city limits of Edinburg in Hidalgo County, Texas. Approximately 254 acres are currently permitted as a Type I municipal solid waste facility under TCEQ Permit MSW-965B. The City of Edinburg proposes to add approximately 350 acres to the north and east of the permitted area, for a total area of 604 acres. Figures 1 and 2 show the current and proposed permit boundaries.

The site is located on the boundary between the Rio Grande Plain and the Lower Valley physiographic regions, subdivisions of the Gulf Coastal Plain physiographic province of Texas. The Gulf Coastal Plain varies from rolling hills in central and east Texas to flat plains adjacent to the Gulf of Mexico near the Edinburg Regional Disposal Facility. The soils are light in color, thick and are composed primarily of sandy loams. The surface drainage in the area is limited due to the flat topography, but regional drainage in the Edinburg area is to the south/southwest toward the Rio Grande River, approximately 9 miles away. There are no natural drainage features on or near the site.

2.1 Regional Geology

The project site lies in an area underlain by upper Quaternary period eolian deposits, which in turn are underlain by fluvial deposited sediments of the lower Quaternary and Neogene periods. The eolian deposits are predominantly Holocene-age sand dunes, stabilized by vegetation, although recent blowout features are not uncommon (Barnes, 1976). This group of dunes is referred to as the Faysville Banner Dune Train. Underneath the Banner Dune sediments are clay, silt, sand, gravel, and caliche deposits of the Pleistocene Lissie Formation, which outcrops south of the facility and the Pliocene Goliad Formation, which outcrops north and south of the facility. The Lissie and Goliad Formations are approximately 700 feet thick in the Edinburg area (Ryder, 1988). The Lissie Formation is mostly eroded in Hidalgo County, but is present as thinly-bedded sands underlain by caliche (Price, 1934). The Pliocene Goliad Formation also consists of limestone and conglomerate. Miocene-age mudstone, claystone, sandstone, tuff, and clay underlie the Goliad Formation. The Miocene-age sediments are approximately 3000 feet thick in the Edinburg area (Ryder, 1988).

2.2 Regional Hydrogeology

The primary source of domestic water in the Edinburg area is the Rio Grande River, but groundwater is also used for domestic and industrial applications. When groundwater is used it generally comes from the Gulf Coast Aquifer System. The most important aquifer in, and around, the Edinburg area is the Coastal Lowlands Aquifer, a subdivision of the Gulf Coast Aquifer (Ryder, 1988). The Coastal Lowlands Aquifer, in Hidalgo County, reaches a thickness of approximately 8500 ft. (Ryder, 1988).

The Coastal Lowlands Aquifer system is composed of the upper-unconfined Chicot and Evangeline aquifers, which consist of Holocene to Pliocene-aged sands and interbedded clays of the Lissie, Goliad, and Fleming Sandstone formations, respectively. This system has a thickness of approximately 3000 ft. in the Edinburg area. Underlying the Fleming formation is the first confining unit encountered with depth, the Burkeville Clay Formation. The Burkeville Clay separates the lower Evangeline Aquifer from the lower confined Jasper Aquifer and Catahoula Aquifer. In Hidalgo County, the Coastal Lowlands Aquifer System dips to the east and is regionally a discharge area for the aquifer. Samples obtained from the upper groundwater bearing unit are consistent with non-potable water, but regionally exhibits fresh to brackish quantities of total dissolved solids.

2.3 Site Stratigraphy

During previous investigations, the following prominent soil types were encountered from the surface downward:

1. Surficial unit consisting of sandy and silty clay;
2. Secondary unit, water-bearing, consisting of silty fine sands;
3. Third unit consisting of clay; and
4. Fourth unit, water-bearing, consisting of clayey sand.

3.0 BORING PLAN

The currently permitted area is approximately 254 acres and the proposed lateral expansion area, located east and north of the currently permitted Unit 6 disposal cells, includes approximately 350 acres of property. Based on comments received during a pre-application meeting held at the TCEQ on September 26, 2014, only the expansion area and not the currently permitted area will be considered in determining the number and depth of borings for the proposed geotechnical investigation; therefore, the total acreage to be investigated is approximately 350 acres.

3.1 Number of Borings

The establishment of the number of borings required for a geotechnical investigation is described in 30 TAC §330.63(e)(4)(A), "A sufficient number of borings shall be performed to establish subsurface stratigraphy and to determine geotechnical properties of the soils and rocks beneath the facility. Other types of samples may also be taken to provide geologic and geotechnical data. The number of borings necessary can only be determined after the general characteristics of a site are analyzed and will vary depending on the heterogeneity of subsurface materials. Locations with stratigraphic complexities such as non-uniform beds that pinch out, vary significantly in thickness, coalesce, or grade into other units, will require a significantly greater degree of subsurface investigation than areas with simple geologic frameworks."

Table of Borings in 30 TAC §330.63(e)(4) recommends 32 to 35 borings for areas between 300 and 350 acres. We proposed to conduct 35 borings. The proposed boring locations are shown on Figure 1.

3.2 Boring Depth

The establishment of the boring depth required for a geotechnical investigation is described in 30 TAC §330.63(e)(4)(B), "Borings shall be sufficiently deep enough to allow identification of the uppermost aquifer and underlying hydraulically interconnected aquifers. Borings shall penetrate the uppermost aquifer and all deeper hydraulically interconnected aquifers and be deep enough to identify the aquiclude at the lower boundary. All the borings shall be at least five feet deeper than the elevation of the deepest excavation. In addition, at least the number of borings shown on the Table of Borings shall be drilled to a depth at least 30 feet below the deepest excavation planned at the waste management unit, unless the executive director approves a different depth. If no aquifers exist within 50 feet of the elevation of the deepest excavation, at least one test hole shall be drilled to the top of the first perennial aquifer beneath the site, if sufficient data does not exist to accurately locate it. The executive director may accept data equivalent to a deep boring on the site to determine information for aquifers more than 50 feet below the site. Aquifers more than 300 feet below the lowest excavation and where the estimated travel times for constituents to the aquifer are in excess of 30 years plus the estimated life of the site need not be identified through borings."

Table of Borings in 30 TAC §330.63(e)(4) recommends at least 17 to 18 borings to be drilled 30 feet below the elevation of deepest excavation (EDE) for areas between 300 and 350 acres. Eighteen borings with a depth at least 30 feet below the EDE are shown on Figure 1. The remainder of the borings will be advanced to at least 5 feet below EDE. The deepest excavation for the proposed expansion area is El. 70.0 ft-msl.

Previous investigations demonstrate a water-bearing unit consisting of silty fine sands underlain by a clay aquiclude unit within the proposed boring depths, therefore a boring with a depth greater than 30 feet below the EDE will not be required.

The existing and proposed boring locations are shown on Figure 1. Approximate ground surface elevations, depths, and bottom elevations for the existing borings and proposed borings are shown in Tables 1 and 2, respectively.

3.3 Piezometer Installation

To characterize the uppermost aquifer, eleven piezometers will be installed in the area of the proposed expansion and screened within the uppermost aquifer. The locations of proposed and existing piezometers and monitor wells are shown on Figure 2. The proposed piezometers will be installed to monitoring well standards, and may be designated as monitoring wells in the future compliance monitoring system. Slug tests will be performed in each completed piezometer to obtain in situ permeability data.

4.0 DRILLING AND SAMPLING PROGRAM

The subsurface investigation, borings, and plugging and abandonment will be conducted in accordance with applicable rules in 16 TAC §76 – Water Well Drillers and Water Well Pump Installers including the preparation and submittal of well installation and plugging reports.

4.1 Drilling Methods

The proposed boring will be conducted with established field exploration methods as required by 30 TAC §330.63(e)(4)(C). The borings will be drilled using hollow-stem auger or wet-rotary methods. Drilling will be conducted by a registered Texas water well driller.

All drilling equipment will be cleaned prior to entering the site. The borings not completed as piezometers, will be grouted with a cement-bentonite grout.

The borings will be logged by a Golder engineer or geologist. A field log will be maintained showing the drilling details, the stratigraphy, the depth and type of samples, sampling details (SPT blow counts, etc.) and other measurements (pocket penetrometer, etc.).

All borings will be surveyed for location and elevation by a licensed Texas land surveyor.

4.2 Sampling Plan

Based on the site geology and the results of previous geotechnical investigations at the site, standard geotechnical sampling techniques will be implemented using 3-inch diameter Shelby tubes in cohesive soils. Soil sampling will also consist of standard penetration tests (SPTs) conducted on 5-foot intervals for non-cohesive soils.

Samples will be sealed in jars or zip-lock bags, labeled, and sent to Golder’s geotechnical laboratory for testing. Shelby tube samples will be sealed in the field or extruded, wrapped in foil or plastic, and protected in a sealed acrylic tube. All samples will be logged in the laboratory and stored for future testing.

If water is used for drilling, only potable water will be utilized. In addition, a representative water sample will be retained for analytical testing for volatile organic compounds (VOCs).

4.3 Boring Logs

Boring logs will include a detailed description of materials encountered, including any discontinuities such as fractures, fissures, slickensides, lenses, or seams. In the subsurface investigation report, each boring will be presented in the form of a log that contains, at a minimum, the boring number; surface elevation and location coordinates; and a columnar section with text showing the elevation of all contacts between soil layers; a description of each layer using the unified soil classification system, color, degree of compaction; and moisture content. A key explaining the symbols used on the boring logs and the classification terminology for soil type, consistency, and structure will be provided. Cross-sections will be prepared from the borings depicting the generalized strata at the facility.

5.0 LABORATORY TESTING

Samples will be tested in accordance with ASTM procedures. In accordance with 30 TAC §330.63(e)(5), the scope of the laboratory program includes:

- stratigraphic characterization;
- geotechnical strength/consolidation testing; and
- permeability testing.

Stratigraphic characterization will include testing for moisture content, unit weight, Atterberg limits, and material grain size distribution. We anticipate collecting at least one sample from each soil layer or stratum per boring that will form the bottom and side of the proposed excavation and from those that are less than 30 feet below the EDE. No laboratory work need be performed on highly permeable soil layers such as sand or gravel.

Geotechnical strength and consolidation testing will be conducted on select samples taken from significant layers of soft to stiff cohesive materials. The consistency of the soil will be monitored using SPT blow counts and field pocket penetrometer measurements as appropriate to the soil type.

Permeability testing will be conducted using flexible-wall permeameters on representative samples to provide permeability data. Those undisturbed samples that represent the sidewall of any proposed cell, will be tested for the coefficient of permeability on the sample's in-situ horizontal axis; all others willl be tested on the in-situ vertical axis. These tests will be conducted on representative materials across the site.

Permeability testing will be conducted using flexible-wall permeameters on representative samples to provide both horizontal and vertical permeability data. These tests will be conducted on representative materials across the site.

6.0 CLOSING

This boring plan is presented in fulfillment of 30 TAC §330.63(e)(4). The factual results of the drilling program will be included in a Geology Report of the permit amendment application. The data derived from the program will be used in the overall engineering design including, but not limited to, the containment system design and the groundwater monitoring plan for the site.

7.0 REFERENCES

Barnes, Virgil E. 1976. Geologic Atlas of Texas, McAllen-Brownsville Sheet. University of Texas at Austin, Bureau of Economic Geology.

Price, W. A. 1934. Lissie Formation and Beaumont Clay in South Texas. Bulletin of the American Association of Petroleum Geologists v.18, no.7: pp. 948-959

Ryder, Paul D. 1988. Hydrogeology and Predevelopment Flow in the Texas Gulf Coast Aquifer Systems. (USGS Water Resources Investigations Report 87-4248). Austin, TX: US Geological Survey, 116 pp. Online: http://pubs.er.usgs.gov/publication/wri874248 (accessed October 2014)

STATE OF TEXAS
10-8-14
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST

Table 1: Existing Borings

Boring	Ground Surface Elev. (ft-msl)	Total Depth (ft)	Bottom Elev. (ft-msl)	Depth Below EDE (ft)
No.1	91	40	51	19
No.2	86	40	46	24
No.3	87	40	47	23
No.4	86	40	46	24
No.5	91	40	51	19
No.6	91	40	51	19
SB-01	87	40	47	23
SB-02	83	40	43	27
SB-03	87	40	47	23
SB-04	91	40	51	19
SB-05	88	100	-12	82
B-1/MW-1	85	50	35	35
B-2/MW-2	85	50	35	35
B-3/MW-3	91	50	41	29
B-4/MW-4	88	50	38	32
B-5	90	100	-10	80
G-1/MW-11	87	50	37	34
G-2	88	50	38	32
G-3	96	58	38	32
G-4/MW-14	100	63	38	32
G-5	88	25	63	7
G-6	106	69	38	32
G-7	83	45	38	32
G-8/PZ-1	87	50	37	33
G-9/PZ-2	83	45	38	32
G-10	98	60	38	32
G-11	86	49	38	32
G-12/MW-12	88	50	38	32
G-13	84	47	38	32
G-14/MW-13	87	50	37	33
MW-1R	85	30	55	15
MW-2R	87	32	55	15
MW-3A	97	43	54	16
MW-4R	88	38	51	19
MW-4A	88	38	50	20
MW5	87	35	52	18
MW6	84	35	49	21
MW7	84	35	49	21
MW-7R	88	37	51	19
MW8	84	35	49	21
MW-8R	86	37	49	21
MW-9	88	38	50	20
MW-9R	88	38	50	20
MW-10	89	38	51	19
MW-10R	89	39	50	20
MW-15	91	45	46	24
MW-15R	89	38	52	18
MW-16	87	34	53	17
MW-18	88	37	52	18
MW-18R	86	33	53	17
MW-22	94	39	55	15
MW-23	89	28	61	9
MW-24	88	37	51	19
MWD-7	85	31	54	16

Table 2: Proposed Borings

Boring	Ground Surface Elev. (ft-msl)	Total Depth (ft)	Bottom Elev. (ft-msl)	Depth Below EDE (ft)
B-101*	96	56	40	30
B-102	95	30	65	5
B-103	94	54	40	30
B-104*	95	30	65	5
B-105	88	48	40	30
B-106*	84	19	65	5
B-107	87	22	65	5
B-108	99	59	40	30
B-109	88	23	65	5
B-110	93	53	40	30
B-111	89	24	65	5
B-112	87	47	40	30
B-113*	87	47	40	30
B-114	92	27	65	5
B-115	100	60	40	30
B-116*	94	29	65	5
B-117	93	53	40	30
B-118*	90	25	65	5
B-119	85	20	65	5
B-120	93	53	40	30
B-121	94	29	65	5
B-122*	92	52	40	30
B-123	83	43	40	30
B-124*	98	33	65	5
B-125	95	55	40	30
B-126	94	29	65	5
B-127	99	34	65	5
B-128	99	59	40	30
B-129	100	35	65	5
B-130*	101	61	40	30
B-131*	98	58	40	30
B-132	99	34	65	5
B-133*	99	59	40	30
B-134	84	44	40	30
B-135	84	19	65	5

Note: Borings with an asterisk will be converted to piezometers after completion. See Figure 2.

LEGEND

▬ ▪ ▪ ▬	EXISTING PERMIT BOUNDARY
▬ · · ▬ · · ▬	PROPOSED PERMIT BOUNDARY
▬ ▬ ▬	EXISTING WASTE FOOTPRINT
▬ ▬ ▬ ▬	PROPOSED WASTE FOOTPRINT
─	EXISTING GROUND SURFACE 2 ft CONTOUR
─	EXISTING GROUND SURFACE 10 ft CONTOUR
⊕	EXISTING BORING TO DEPTH 5 ft BELOW ELEVATION OF DEEPEST EXCAVATION
⊕	EXISTING DEEP BORING TO DEPTH 30 BELOW DEEPEST EXCAVATION
◐	PROPOSED SHALLOW BORING TO DEPTH 5 ft BELOW ELEVATION OF DEEPEST EXCAVATION
◐	PROPOSED DEEP BORING TO DEPTH 30 BELOW DEEPEST EXCAVATION
△	ABANDONED PIEZOMETER
⊞	EXISTING MONITORING WELL
▣	MONITORING WELL TO BE INSTALLED UNDER CURRENT PERMIT
▩	ABANDONED MONITORING WELL

NOTES

1. REFER TO FIGURE 2 FOR PROPOSED PIEZOMETER LOCATIONS.
2. PROPOSED BORING LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS MAY VARY BASED ON FIELD CONDITIONS.

REFERENCE

TOPOGRAPHY PROVIDED BY DALLAS AERIAL SURVEY DATED JULY 24, 2014.

ISSUED FOR ATTORNEY REVIEW

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SCALE FEET

Rev.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGN	REVIEW	APPROVED
0	2017-07-21	PERMIT AMENDMENT APPLICATION SUBMITTAL	CEI	CEI	JBF	JAW
A	2014-10-02	CLIENT REVIEW	CEI	CEI	MX	JBF

SEAL

Chad E. Ireland
7/21/17
CHAD E. IRELAND
99293
STATE OF TEXAS
LICENSED PROFESSIONAL ENGINEER

CLIENT

CITY OF EDINBURG SOLID WASTE MANAGEMENT

CONSULTANT

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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
BORING LOCATIONS

PROJECT No.	APPLICATION SECTION	Rev.		FIGURE
1401491	III4	0	1 of 2	III4A-1

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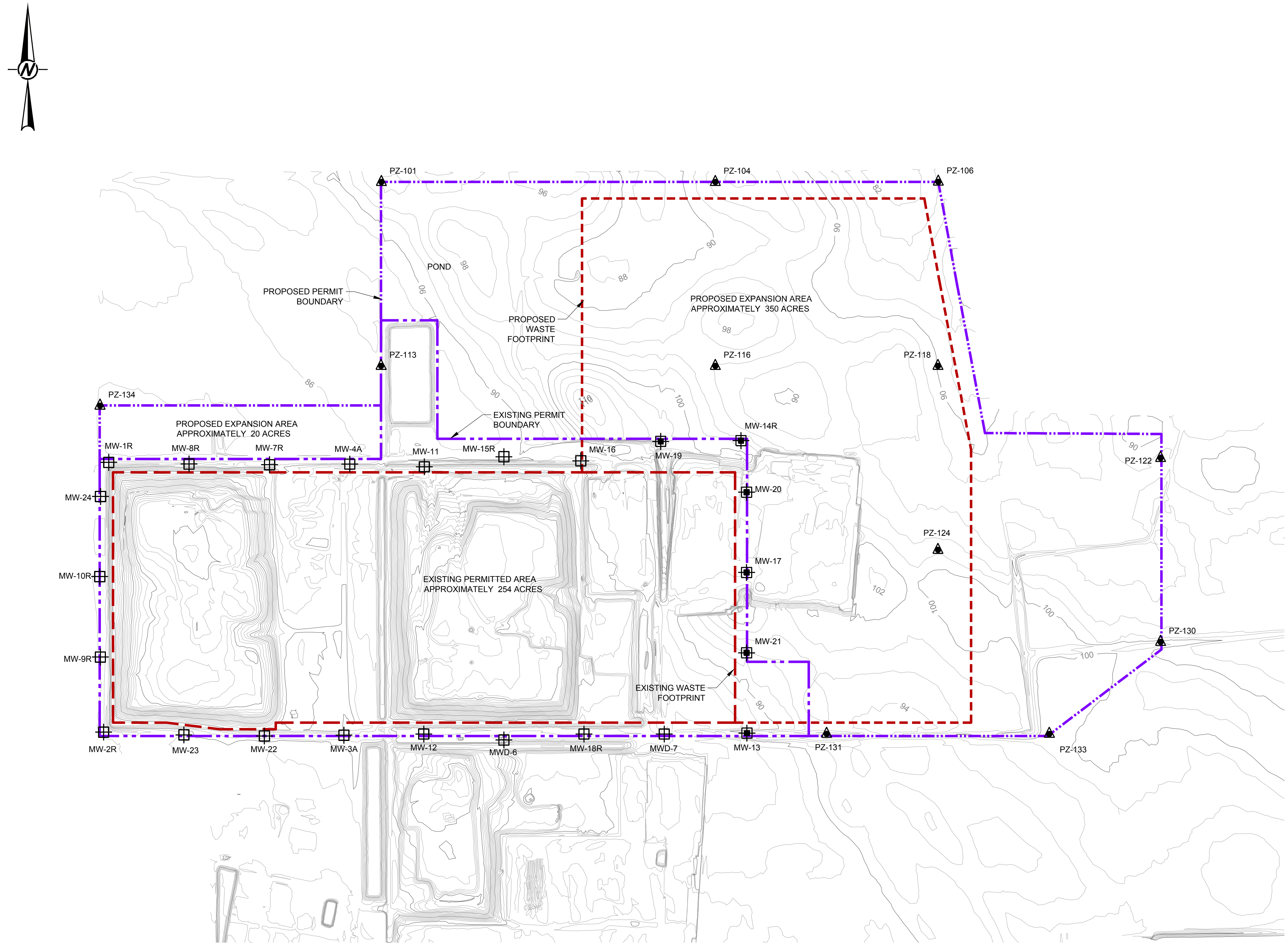

LEGEND

- EXISTING PERMIT BOUNDARY
- PROPOSED PERMIT BOUNDARY
- EXISTING WASTE FOOTPRINT
- PROPOSED WASTE FOOTPRINT
- EXISTING GROUND SURFACE 2 ft CONTOUR
- EXISTING GROUND SURFACE 10 ft CONTOUR
- ▲ PROPOSED PIEZOMETER
- ⌖ EXISTING MONITORING WELL
- ▣ MONITORING WELL TO BE INSTALLED UNDER CURRENT PERMIT

NOTES

1. PROPOSED PIEZOMETER LOCATIONS ARE APPROXIMATE. ACTUAL LOCATIONS MAY VARY BASED ON FIELD CONDITIONS.

REFERENCE

TOPOGRAPHY PROVIDED BY DALLAS AERIAL SURVEY DATED JULY 24, 2014.

ISSUED FOR ATTORNEY REVIEW

0 400 800
SCALE FEET

Rev.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGN	REVIEW	APPROVED
0	2017-07-21	PERMIT AMENDMENT APPLICATION SUBMITTAL	CEI	CEI	JBF	JAW
A	2014-10-02	CLIENT REVIEW	CEI	CEI	MX	JBF

SEAL

Chad E. Ireland
CHAD E. IRELAND
99293
7/21/17

CLIENT
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PROJECT
EDINBURG REGIONAL DISPOSAL FACILITY
PERMIT AMENDMENT APPLICATION TCEQ PERMIT MSW-956C
EDINBURG, HIDALGO COUNTY, TEXAS

TITLE
PIEZOMETER AND MONITORING WELL LOCATIONS

PROJECT No.	APPLICATION SECTION	Rev.		FIGURE
1401491	III4	0	2 of 2	III4A-2

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Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
Zak Covar, *Commissioner*
Richard A. Hyde, P.E., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 5, 2014

Mr. Ramiro L. Gomez Jr.
Director of Solid Waste Management
City of Edinburg
P.O. Box 1079
Edinburg, Texas 78540

Re: City of Edinburg- Hidalgo County
Municipal Solid Waste - Permit No. 956B
Proposed Site Investigation
Tracking No. 18588733; RN102217734/CN600647978

Dear Mr. Gomez:

The Texas Commission on Environmental Quality (TCEQ) received a soil boring plan (SBP) on October 10, 2014 for the proposed expansion of the above-referenced municipal solid waste landfill facility in Hidalgo County. The SBP proposes 35 borings in an approximately 350-acre expansion area. The revised SBP states that 18 of the borings will be drilled to an elevation at least 30 feet deeper than the elevation of the deepest excavation (EDE), which is proposed at 70 feet above sea level, and the remaining 17 borings will be drilled to an elevation at 5 feet deeper than the EDE. Our review of this plan indicates that it complies with the Municipal Solid Waste Regulations and this letter constitutes approval of your plan.

Please be advised that under Section 330.63(e)(4)(B) of Title 30, Texas Administrative Code, the uppermost aquifer and any hydraulically interconnected aquifers below the site must be identified, as well as the underlying confining unit. It is anticipated that this SBP, when implemented, will accurately characterize the in-situ geologic, hydrologic, and engineering properties of the surface and subsurface strata at this site. Although this plan complies with the Municipal Solid Waste Regulations concerning site investigations, additional soil borings and piezometers could be required by the Commission should the data generated by this SBP prove to be inconclusive.

If you should find it necessary to modify this approved plan, another plan detailing any proposed modifications must be submitted to the Commission for approval before implementation of the modifications. If you have questions regarding this letter, please contact me at (512) 239-6234. When addressing written correspondence, please use mail code MC 124.

Sincerely,

Charles Brown

Charles Brown
Municipal Solid Waste Permits Section
Waste Permits Division

CBB/sdm

cc: Mr. Chad E. Ireland, P.E., Golder Associates Inc., Houston

APPENDIX III4B

BORING LOGS

APPENDIX III4B-1

GOLDER BORING LOGS

Chad E. Ireland

STATE OF TEXAS
7/21/17
CHAD E. IRELAND
99293
LICENSED
PROFESSIONAL ENGINEER

GOLDER ASSOCIATES INC.
Professional Engineering Firm
Registration Number F-2578

INTENDED FOR PERMITTING
PURPOSES ONLY

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Fax: (281) 821-6870

KEY TO SYMBOLS

CLIENT City of Edinburg
PROJECT NUMBER 1401491
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT LOCATION Edinburg, TX

LITHOLOGIC SYMBOLS (Unified Soil Classification System)

- ▨ 001 - LEAN CLAY: Lean Clay
- ▨ 002 - SANDY LEAN CLAY: Sandy Lean Clay
- ▥ 004 - SILTY CLAY: Silty Clay
- ▥ 005 - SANDY SILTY CLAY: Sandy Silty Clay
- ▥ 007 - SILT: Silt
- ▨ 010 - FAT CLAY: Fat Clay
- ▨ 011 - SANDY FAT CLAY: Sandy Fat Clay
- ░ 016 - SAND: Sand
- ▨ 017 - CLAYEY SAND: Clayey Sand
- ▥ 018 - SILTY SAND: Silty Sand
- ░ TOPSOIL: Topsoil

SAMPLER SYMBOLS

- ✋ Grab Sample
- ■ Shelby Tube
- ☒ Split Spoon

WELL CONSTRUCTION SYMBOLS

- ▥ Bentonite Seal: 1 pipe group, 1 pipe
- ▯ Capped Riser: 1 pipe group
- ▧ Cement Seal: 1 pipe group, 1 pipe
- ▩ Cement: Bottom of hole
- ▥ Filter Pack: 1 pipe group, 1 pipe
- ▤ Slotted Pipe: 1 pipe group, 1 pipe
- ▦ Slough Backfill: 1 pipe group, 1 pipe

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION
▽ Water Level at Time Drilling, or as Shown
▼ Water Level at End of Drilling, or as Shown

KEY TO SYMBOLS - GINT STD US LAB.GDT - 1/16/17 16:00 - P:_2014 PROJECT FOLDERS\1401491 CITY OF EDINBURG\FIELD DOCUMENTS\SOIL LOGS\1401491.GPJ

Note: These logs should not be used separately from the original report.

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BOREHOLE B-102

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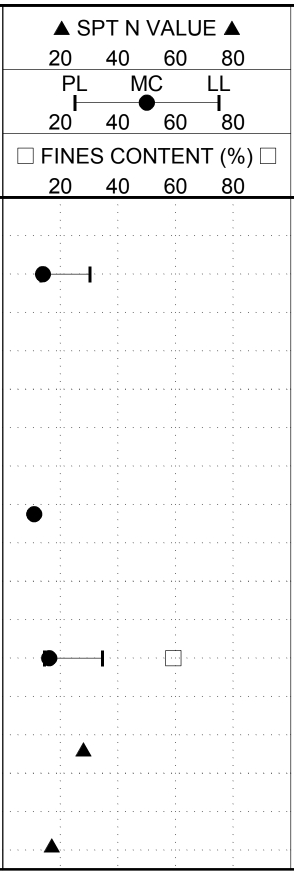
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/20/15 **COMPLETED** 1/20/15
GROUND ELEVATION 95.3 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16672066.31 ft
DRILLING METHOD CME-75
LONGITUDE 1107318.56 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Soft, dark brown, SILT, trace fine sand	GB				No well installed, this is a geotechnical drill hole
	90.3	SH				
	(ML) Soft, white, clayey SILT, trace rounded fine to coarse sand-sized caliche, soft, m~PL	GB				
	85.3	SH				
10	(ML) Firm to stiff, SILT, some clay and white, carbonate/caliche	GB			2.5	
		SH				
	m~PL at 15.0'	GB				
	75.3	SH				
20	(CL) Very stiff to hard, light brown, silty CLAY	GB			4.0	
	70.3	SH				
	(SC) Compact, medium brown, clayey SAND, dry to moist ▽ 67.3	GB				
	(SP) Compact, brown, SAND, moist to wet 65.3	SS	100	7-12-16 (28)		
30	(SC) Compact, brown, clayey SAND, moist to wet 62.3	GB				
	(SP) Compact, brown, SAND, moist to wet 60.3	SS	100	5-7-10 (17)		

Bottom of borehole at 35.0 feet.



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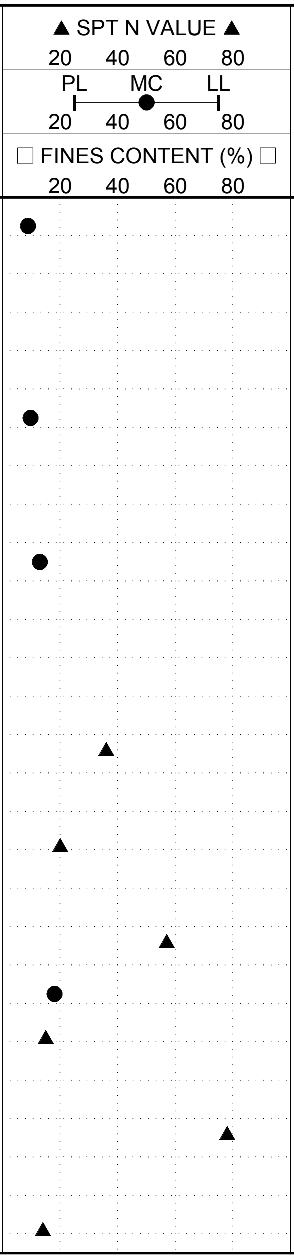
BOREHOLE B-103

PAGE 1 OF 1

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/22/15 **COMPLETED** 1/22/15
GROUND ELEVATION 94.4 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671938.34 ft
DRILLING METHOD CME-75
LONGITUDE 1108124.57 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0		(ML) Soft, dark brown, SILT, some very fine sand and clay	GB				No well installed, this is a geotechnical drill hole
			SH				
		stiff, m~PL at 5.0'	GB				
10		84.4	SH				
		(CL) Soft, reddish brown, silty CLAY	GB				
			SH				
			GB				
20			SH				
			GB				
	▽	69.4	SH				
		(SP) Dense, brown, SAND, moist to wet	GB				
30			SS	100	7-16-20 (36)		
			GB				
		Becomes compact	SS	100	4-6-14 (20)		
			GB				
40		54.4	SS	100	10-20-37 (57)		
		(ML) Stiff, brown, SILT	GB				
			SS	100	10-7-8 (15)		
		some very fine sand at 45.0'	GB				
50		46.4 (SP) Very dense, brown, SAND, moist to wet	SS	100	20-36-42 (78)		
			GB				
		39.4	SS	100	12-8-6 (14)		



Bottom of borehole at 55.0 feet.

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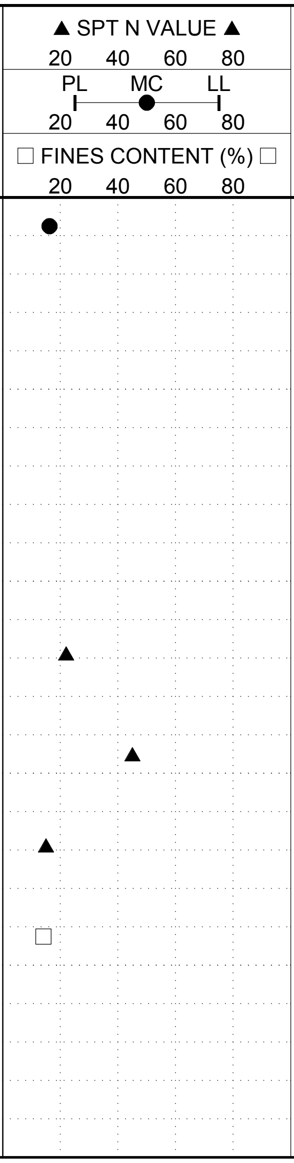
BOREHOLE B-105

PAGE 1 OF 1

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/21/15 **COMPLETED** 1/21/15
GROUND ELEVATION 88.7 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671681.02 ft
DRILLING METHOD CME-75
LONGITUDE 1109781.78 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Very soft, brown, clayey SILT	GB				No well installed, this is a geotechnical drill hole
		SH				
		GB				
	light brown at 6.0'	GB				
		SH				
10		GB				
		SH				
		GB				
	68.7	SH				
20	(ML) Very soft, brown, SILT, some clay, trace white, rounded, poorly graded, caliche, m~PL 65.7	GB				
	(SM) Compact, brown, silty SAND, trace clay, moist to wet	SS	100	8-7-15 (22)		
	60.7	GB				
	(SP) very dense, brown, SAND, wet	SS		15-20-25 (45)		
30		GB				
		SS	100	6-7-8 (15)		
40	very fine at 38.0'	SS	100	40-50		
		SH				
		GB				
50	38.7	SH				



Bottom of borehole at 50.0 feet.

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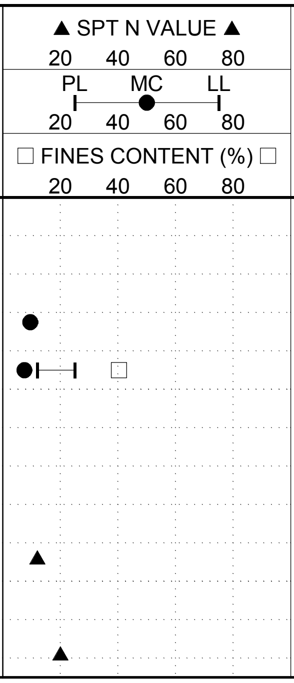
BOREHOLE B-107

PAGE 1 OF 1

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/20/15 **COMPLETED** 1/20/15
GROUND ELEVATION 87.9 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671516.22 ft
DRILLING METHOD CME-75
LONGITUDE 1106392.87 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	SC	(SC) Very loose, dark brown, clayey SAND, with some silt, moist	GB				No well installed, this is a geotechnical drill hole
			SH				
		trace fine sand, trace white carbonate/caliche at 5.0'	GB				
		77.9	SH				
10	CL	(CL) Hard, light brown, silty CLAY	GB			1	
			SH				
		very soft, brown, some sand sized white caliche, m~PL at 15.0' ▽ 69.9	GB				
	SP	(SP) Compact, brown, SAND, moist to wet	SS	100	3-5-7 (12)		
20			GB				
		62.9	SS	100	4-6-14 (20)		



Bottom of borehole at 25.0 feet.

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BOREHOLE B-108

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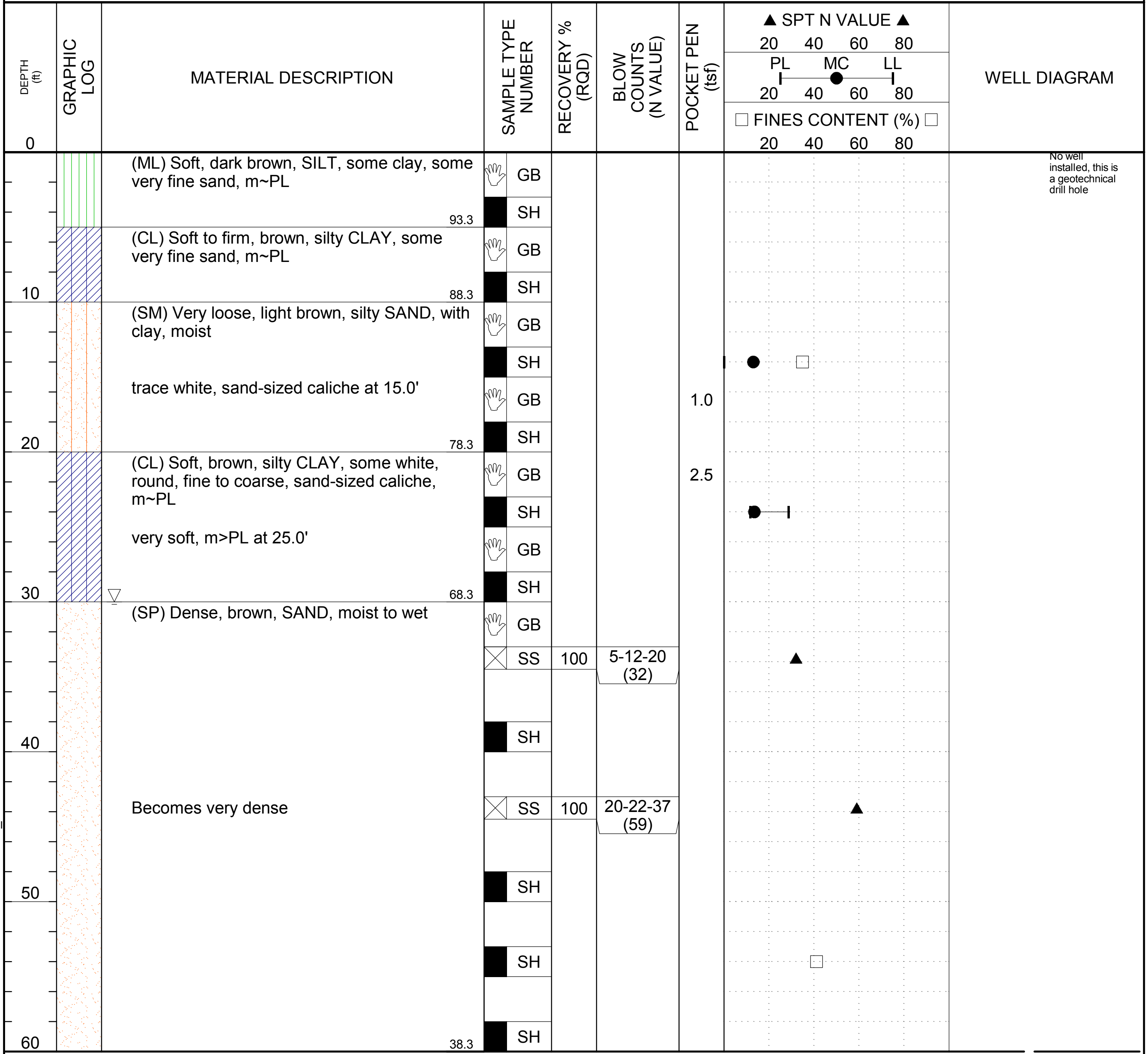
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/20/15 **COMPLETED** 1/20/15
GROUND ELEVATION 98.3 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671377.05 ft
DRILLING METHOD CME-75
LONGITUDE 1107210.46 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(ML) Soft, dark brown, SILT, some clay, some very fine sand, m~PL	GB			
	93.3	SH			
	(CL) Soft to firm, brown, silty CLAY, some very fine sand, m~PL	GB			
10	88.3	SH			
	(SM) Very loose, light brown, silty SAND, with clay, moist	GB			
		SH			
	trace white, sand-sized caliche at 15.0'	GB			1.0
20	78.3	SH			
	(CL) Soft, brown, silty CLAY, some white, round, fine to coarse, sand-sized caliche, m~PL	GB			2.5
		SH			
	very soft, m>PL at 25.0'	GB			
30	68.3	SH			
	(SP) Dense, brown, SAND, moist to wet	GB			
		SS	100	5-12-20 (32)	
40		SH			
	Becomes very dense	SS	100	20-22-37 (59)	
50		SH			
		SH			
60	38.3	SH			

No well installed, this is a geotechnical drill hole

Bottom of borehole at 60.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE B-109

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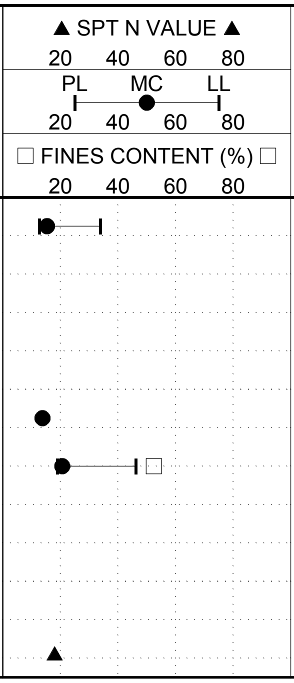
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/20/15 **COMPLETED** 1/20/15
GROUND ELEVATION 87.9 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671251.1 ft
DRILLING METHOD CME-75
LONGITUDE 1108033.9 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(CL) Soft, dark brown to black, silty CLAY, m>PL	GB			0.5	No well installed, this is a geotechnical drill hole
		SH				
	81.9	GB			0.5	
	(CL) Soft, brown, CLAY, with round, white, sand-sized to fine gravel-sized caliche, m>PL	GB			0.25	
		SH				
10	soft to stiff, mottled black and brown at 10.0'	GB			3.5	
		SH				
		GB			4	
20	67.9	SH				
	(CL) Soft, brown, silty CLAY, m>PL ∇ 64.9	GB			0.25	
	(SP) Compact, brown, SAND, moist to wet 62.9	SS	100	3-7-11 (18)		



Bottom of borehole at 25.0 feet.

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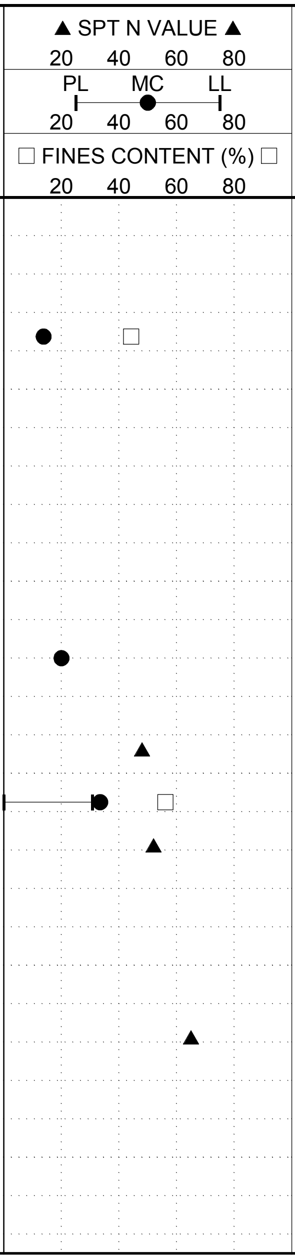
BOREHOLE B-110

PAGE 1 OF 1

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/17/15 **COMPLETED** 1/17/15
GROUND ELEVATION 92.1 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671136.94 ft
DRILLING METHOD CME-75
LONGITUDE 1108850.76 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(CL) Very soft, dark brown, silty CLAY, some very fine sand		GB			
			SH			
		85.6	GB			
	(SC) Loose, brown, clayey SAND		GB			0.75
10		82.1	SH			
	(ML) Soft, brown, SILT, some clay, loose, trace white rounded fine to coarse sand-sized caliche		GB			
			SH			
			GB			
20		72.1	SH			
	(CL) Stiff, brown, CLAY, trace very fine sand and caliche		GB			2.0
			SH			
	soft at 25.0'	64.1	GB			
30	(ML) Hard, brown, SILT, some clay, trace very fine sand, m>PL		SS	100	11-16-32 (48)	1.5
	∇ m>PL at 30.0'	59.1	GB			
	(SP) very dense, light brown, very fine, SAND, some silt, wet		SS	100	12-24-28 (52)	
40			SH	100		
		47.4	SS	100	20-25-40 (65)	3.5
	(SC) Very dense, clayey SAND, moist to wet					
50			SH			
		37.1	SH			



WELL DIAGRAM

No well installed, this is a geotechnical drill hole

Bottom of borehole at 55.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE B-111

PAGE 1 OF 1

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX

DATE STARTED 1/16/15 **COMPLETED** 1/16/15

GROUND ELEVATION 89.1 ft **HOLE SIZE** 6 inches

DRILLING CONTRACTOR Envirotech

LATITUDE 16671002.92 ft

DRILLING METHOD CME-75

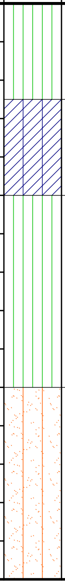
LONGITUDE 1109671.86 ft

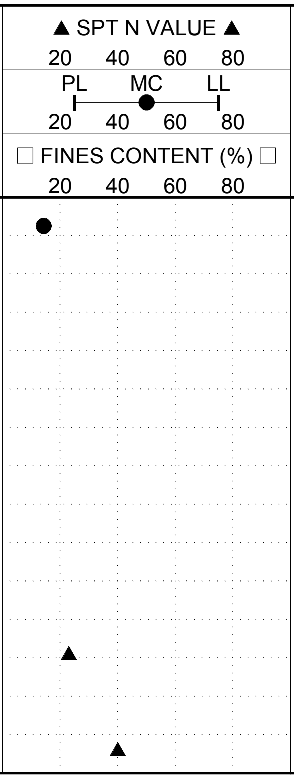
LOGGED BY K. A. Paul **CHECKED BY** VK

NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Soft to very soft, dark brown, SILT, some clay	GB				No well installed, this is a geotechnical drill hole
	84.1	SH				
	(CL) Soft, brown, silty CLAY, m>PL	GB			1.0	
10	79.1	SH				
	(ML) Firm, brown, clayey SILT, m<PL	GB			1.0	
		SH				
	soft to firm, light brown, m<PL at 15.0'	GB			2.5	
20	▽ 69.1	SH				
	(SM) Compact to dense, light brown, silty SAND, moist to wet	GB			1.0	
		SS	100	6-7-16 (23)		
		GB				
30	59.1	SS	100	8-14-26 (40)		

Bottom of borehole at 30.0 feet.





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BOREHOLE B-112

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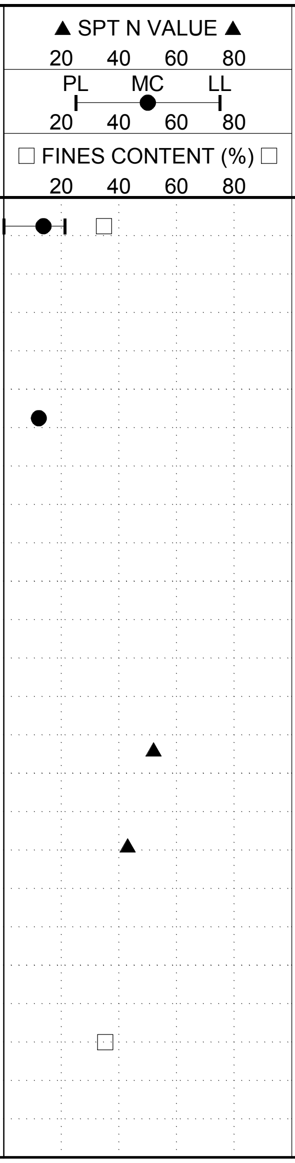
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/19/15 **COMPLETED** 1/19/15
GROUND ELEVATION 86.8 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16670874.68 ft
DRILLING METHOD CME-75
LONGITUDE 1110498.71 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(SM) Very loose, dark brown, silty SAND, some clay, moist	GB			
	81.8	SH			
	(ML) Firm, dark brown, clayey SILT, m~PL 80.3	GB			1.0
	(CL) Firm to stiff, medium brown, silty CLAY, m~PL	GB			0.5
10		SH			
	Becomes trace round, white caliche at 10.0'	GB			
		SH			
	Stiff to hard at 15.0'	GB			1.5
20	66.8	SH			
	(ML) Stiff, medium brown, SILT, with very fine sand, m~PL	GB			
	▽ 61.8	SH			
	(SW) Dense to very dense, brown, very fine, SAND, wet	GB			
30		SS	100	16-20-32 (52)	
		GB			
		SS	100	18-19-24 (43)	
40		SH			
		SH			
50	36.8	SH			



WELL DIAGRAM

No well installed, this is a geotechnical drill hole

Bottom of borehole at 50.0 feet.

TEMPLE (1400336) - GINT STD US LAB.GDT - 1/16/17 15:55 - P:_2014 PROJECT FOLDERS\1401491 CITY OF EDINBURG\FIELD DOCUMENTS\SOIL LOGS\1401491.GPJ

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BOREHOLE B-114

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CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX

DATE STARTED 1/21/15 **COMPLETED** 1/21/15

GROUND ELEVATION 91.6 ft **HOLE SIZE** 6 inches

DRILLING CONTRACTOR Envirotech

LATITUDE 16670703.98 ft

DRILLING METHOD CME-75

LONGITUDE 1107109.34 ft

LOGGED BY K. A. Paul **CHECKED BY** VK

NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 PL MC LL 20 40 60 80 ☐ FINES CONTENT (%) ☐ 20 40 60 80	WELL DIAGRAM
0		(ML) Very soft to soft, dark brown, SILT, some very fine sand, trace clay, m~PL	GB					No well installed, this is a geotechnical drill hole
		86.6	SH					
		(ML) Soft, brown, clayey SILT, some very fine sand, trace coarse sand to fine gravel-sized caliche, m~PL	GB					
10		81.6	SH					
		(ML) Soft, brown, SILT, some clay, trace sand-sized, white, rounded caliche, m~PL	GB					
		76.6	SH					
		(ML) Soft, brown, clayey SILT, trace fine sand to fine gravel-sized, white, rounded caliche, m~PL	GB					
20			SH					
		∇	GB			0.5	●	
		m>PL at 23.0' 66.6	SH					
		(SM) Loose to compact, brown, silty SAND, trace clay, wet	GB					
30		61.6	SS	100	7-5-5 (10)		▲ ☐	

Bottom of borehole at 30.0 feet.

Note: These logs should not be used separately from the original report.

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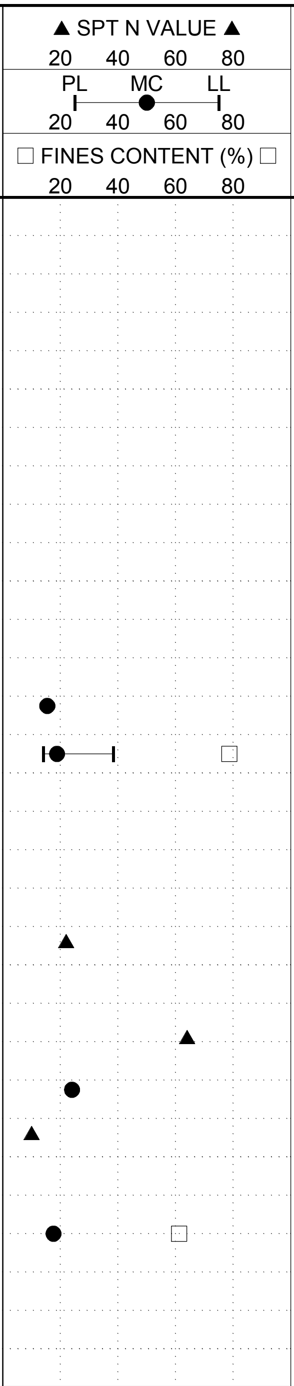
BOREHOLE B-115

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/22/15 **COMPLETED** 1/22/15
GROUND ELEVATION 99.3 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16670592.78 ft
DRILLING METHOD CME-75
LONGITUDE 1107899.67 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Soft, brown, clayey SILT, some very fine sand, trace sand-sized white, rounded caliche, m~PL	GB				No well installed, this is a geotechnical drill hole
	94.3	SH				
	(SM) Very loose, brown, silty SAND, moist	GB				
10	89.3	SH				
	(ML) Very soft, brown, clayey SILT, m~PL	GB				
		SH				
		GB				
20		SH				
		GB				
	74.3	SH				
	(CL) Stiff to very stiff, brown, silty CLAY, trace rounded, buff to white, fine sand to fine gravel sized caliche	GB			3.0	
30	69.3	SH				
	(CL) Very soft, brown, CLAY, m>PL	GB				
	▽ 64.3	SH				
	(SP) Compact, brown, SAND, wet	GB				
40		SS	100	6-8-14 (22)		
		GB				
	54.3	SS	100	12-16-48 (64)		
	(CH) Hard, reddish brown, sandy CLAY, m>PL 51.3	GB			2.5	
50	(SP) Loose to compact, brown, SAND, wet 49.3	SS	67	3-4-6 (10)		
	(CH) Firm to stiff, reddish brown, sandy CLAY, m>PL	GB			0.5	
	44.3	SH				
	(SC) Compact, brown with buff colored clay mottling, clayey SAND, wet	GB			0.5	
60	39.3					
	(SP) Loose, brown, SAND, wet 37.6	SS	100			
	(CL) Hard, gray, orange, and buff mottled, CLAY, m~PL 37.3					

Bottom of borehole at 62.0 feet.



Note: These logs should not be used separately from the original report.

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BOREHOLE B-117

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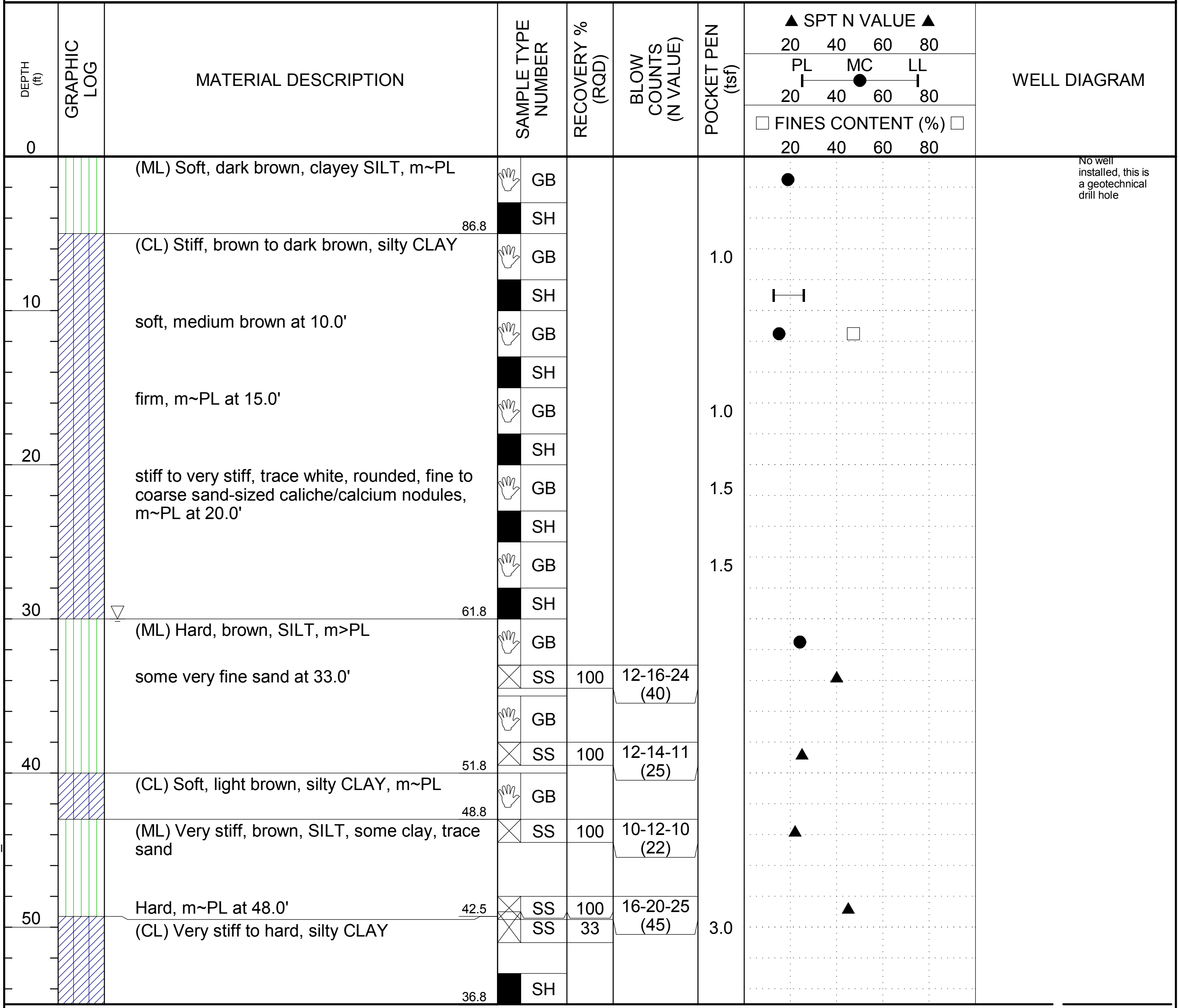
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/15/15 **COMPLETED** 1/16/15
GROUND ELEVATION 91.8 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16670335.07 ft
DRILLING METHOD CME-75
LONGITUDE 1109568.12 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Soft, dark brown, clayey SILT, m~PL	GB				No well installed, this is a geotechnical drill hole
	86.8	SH				
	(CL) Stiff, brown to dark brown, silty CLAY	GB			1.0	
		SH				
10	soft, medium brown at 10.0'	GB				
		SH				
	firm, m~PL at 15.0'	GB			1.0	
		SH				
20	stiff to very stiff, trace white, rounded, fine to coarse sand-sized caliche/calcium nodules, m~PL at 20.0'	GB			1.5	
		SH				
		GB			1.5	
	61.8	SH				
30	(ML) Hard, brown, SILT, m>PL	GB				
	some very fine sand at 33.0'	SS	100	12-16-24 (40)		
		GB				
	51.8	SS	100	12-14-11 (25)		
40	(CL) Soft, light brown, silty CLAY, m~PL	GB				
	48.8					
	(ML) Very stiff, brown, SILT, some clay, trace sand	SS	100	10-12-10 (22)		
	Hard, m~PL at 48.0'	SS	100	16-20-25 (45)		
	42.5					
50	(CL) Very stiff to hard, silty CLAY	SS	33		3.0	
	36.8	SH				

Bottom of borehole at 55.0 feet.

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BOREHOLE B-119

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX

DATE STARTED 1/27/15 **COMPLETED** 1/27/15

GROUND ELEVATION 84.3 ft **HOLE SIZE** 6 inches

DRILLING CONTRACTOR Envirotech

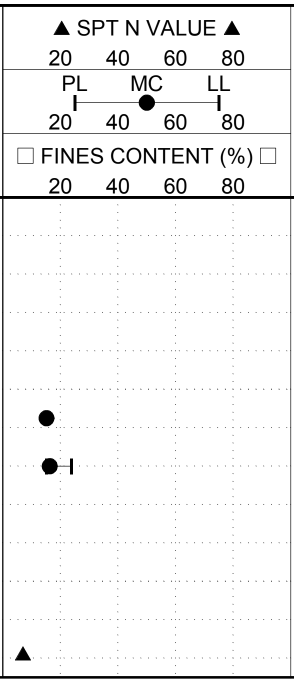
LATITUDE 16669643.34 ft

DRILLING METHOD CME-75

LONGITUDE 1109465.29 ft

LOGGED BY K. A. Paul **CHECKED BY** VK

NOTES



DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0		(CL) Firm to stiff, reddish brown, silty CLAY, some buff rounded calcite nodules, m~PL	GB			0.5	No well installed, this is a geotechnical drill hole
			SH				
			GB			1.5	
			SH				
10		stiff at 10.0'	GB			1.5	
		▽ 69.3	SH				
		(SM) Loose, brown, silty SAND, wet	GB				
20		64.3	SH				
		(SC) Loose, brown, clayey SAND, wet 61.3	GB				
		(SP) Loose, brown, SAND, wet 59.3	SS	100	5-3-4 (7)		

Bottom of borehole at 25.0 feet.

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BOREHOLE B-120

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CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/23/15 **COMPLETED** 1/23/15
GROUND ELEVATION 92.8 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16669515.09 ft
DRILLING METHOD CME-75
LONGITUDE 1110285.15 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 PL MC LL 20 40 60 80 ☐ FINES CONTENT (%) ☐ 20 40 60 80	WELL DIAGRAM
0		(ML) Soft, dark brown, SILT, some very fine sand, trace clay, trace white round caliche, m~PL	GB					No well installed, this is a geotechnical drill hole
			SH					
		light orangish brown, m~PL at 5.0'	GB					
			SH					
10		hard at 10.0'	GB			4.5		
			SH					
			GB			4.5		
			SH					
20			GB				●	
		67.8	SH					
		(CL) Very soft, brown, silty CLAY, m~PL	GB				●	
		62.8	SH					
30	▽	(SP) Loose, brown, very fine, SAND, wet	GB					
		57.8	SS	100				
		(CL) Stiff to hard, light brown, silty CLAY, m>PL 54.8	GB			1.5		
		(CH) Hard, reddish brown, CLAY, m>PL	SS	100	14-18-24 (42)	4.5	▲	
40			GB			4.0		
			SH					
		firm to stiff, buff, some silt at 45.0'	GB			0.5		
			SH					
50			GB			4.5	●	
		37.8	SH					

Bottom of borehole at 55.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE B-121

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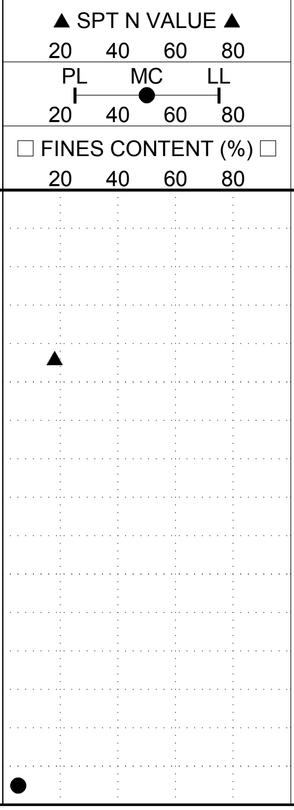
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/28/15 **COMPLETED** 1/28/15
GROUND ELEVATION 94.5 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16669413.56 ft
DRILLING METHOD CME-75
LONGITUDE 1111072.66 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES Groundwater not encountered during drilling.

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Very soft, dark brown, SILT, grass and roots present, m~PL	GB				No well installed, this is a geotechnical drill hole
		SH				
	reddish brown at 5.0'	GB				
10	Very stiff, trace very fine sand, white calcareous clays mottled throughout, m~PL at 8.0'	SS	89	8-10-8 (18)	3.5	
		GB				
		SH				
		GB				
20		SH				
		GB				
		SH				
		GB				
30		SH				
	62.5	SH				

Bottom of borehole at 32.0 feet.



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BOREHOLE B-123

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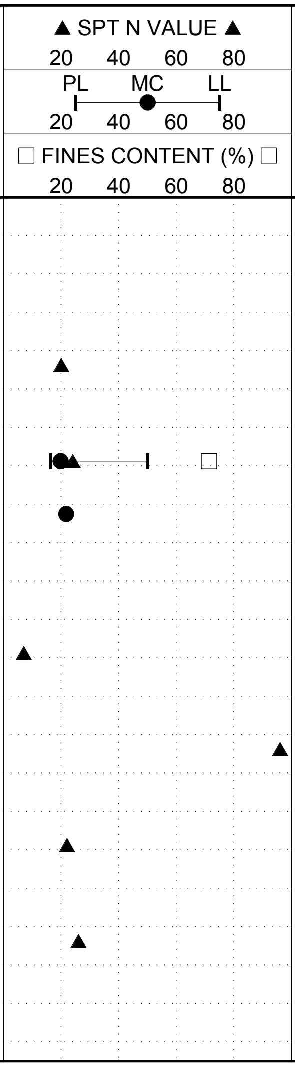
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/27/15 **COMPLETED** 1/27/15
GROUND ELEVATION 83.0 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668982.12 ft
DRILLING METHOD CME-75
LONGITUDE 1109304.96 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(ML) Soft, buff to tan, SILT, m<PL	GB			
	78.0	SH			
	(ML) Very soft to soft, brown, clayey SILT, some fine sand, m~PL 75.0	GB			
10	(SM) Compact, very fine, silty SAND, moist to wet 73.0	SS	100	5-8-12 (20)	
	(CH) Very soft, brown, silty CLAY, some very fine sand, m~PL 70.0	GB			
	▽ (CH) Very stiff, brown, CLAY, moist 68.0	SS	100	6-10-14 (24)	3.5
	(CL) Very soft, brown, silty CLAY, m>PL	GB			
20	63.0	SH			
	(SC) Loose, brown, clayey SAND, some silt, wet	GB			
	58.0	SS	100	3-3-4 (7)	
	(SP) Compact, brown, SAND, wet	GB			
30		SS	100	34-46-50 (96)	
		GB			
		SS	100	11-12-10 (22)	
		GB			
40		SS	100	10-12-14 (26)	
	brown with lenses of gray, moist clay at 40.0'	GB			
	38.0	SH			



WELL DIAGRAM

No well installed, this is a geotechnical drill hole

Bottom of borehole at 45.0 feet.

TEMPLE (1400336) - GINT STD US LAB.GDT - 1/16/17 15:55 - P:_2014 PROJECT FOLDERS\1401491 CITY OF EDINBURG\FIELD DOCUMENTS\SOIL LOGS\1401491.GPJ

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BOREHOLE B-125

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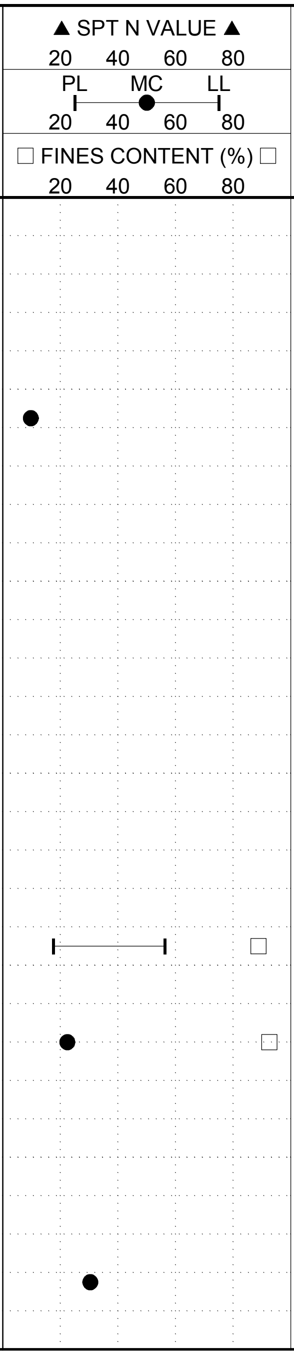
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/28/15 **COMPLETED** 1/28/15
GROUND ELEVATION 94.9 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668708.21 ft
DRILLING METHOD CME-75
LONGITUDE 1111001.47 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Soft, dark brown, clayey SILT, with grass and roots, m~PL	GB				No well installed, this is a geotechnical drill hole
	89.9	SH				
	(CL) Soft, reddish brown, silty CLAY, m~PL	GB				
		SH				
10		GB				
		SH				
		GB				
		SH				
20		GB				
	69.9	SH				
	(CH) Hard, brown, CLAY, m<PL	GB			4.5	
		SH				
30		GB			4.5	
		SH				
	Firm to stiff, m~PL at 35.0'	GB			0.5	
		SH				
40	∇ m>PL at 40.0'	GB			0.5	
		SH				
	very soft, trace silt at 45.0'	GB				
		SH				
50	stiff to very stiff, buff, trace very fine sand at 50.0'	GB			1.0	
		SH				
	hard at 55.0'	GB			4.0	
60	34.9	SH				

Bottom of borehole at 60.0 feet.



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BOREHOLE B-126

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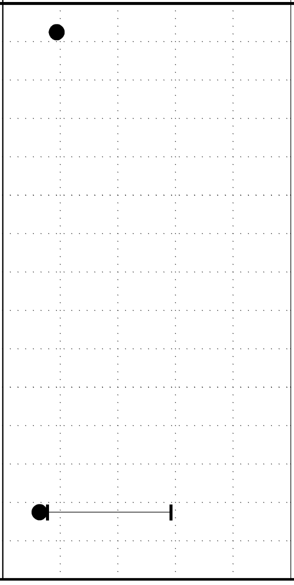
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/29/15 **COMPLETED** 1/29/15
GROUND ELEVATION 93.3 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668443.85 ft
DRILLING METHOD CME-75
LONGITUDE 1111760.57 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES Groundwater not encountered during drilling.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80	WELL DIAGRAM
0		(CH) Very soft, dark brown, CLAY, some sand, m~PL	GB					No well installed, this is a geotechnical drill hole
		88.3	SH					
		(ML) Firm to stiff, reddish brown, SILT, m<PL	GB			0.5		
10		83.3	SH					
		(MH) stiff to very to stiff, light brown, clayey SILT, m<PL	GB			0.5		
		78.3	SH					
		(CL) Hard, very light brown, silty CLAY, m~PL	GB			4.5		
20			SH					
			GB			4.5		
			SH					
		brown to light brown at 25.0'	GB			4.5		
30		63.3	SH					



Bottom of borehole at 30.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE B-127

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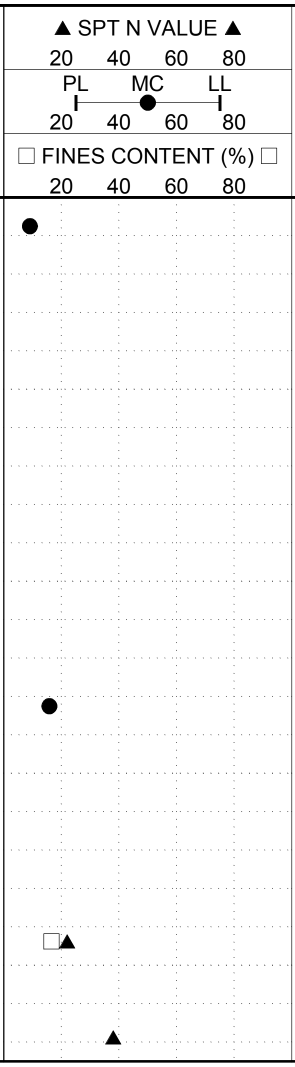
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/15/15 **COMPLETED** 1/15/15
GROUND ELEVATION 94.3 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668290.12 ft
DRILLING METHOD CME-75
LONGITUDE 1109248.44 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(ML) Very soft, brown, clayey SILT, m~PL	GB			
		SH			
		GB			
	84.3	SH			
10	(ML) Soft with some hard clumps, brown to tan, SILT, some clay, trace very fine sand, m~PL	GB			
	79.3	SH			
	(ML) Soft, brown, SILT, m~PL	GB			
	74.3	SH			
20	(CL) Hard, tan and light brown, silty CLAY, trace very fine sand, m<PL	GB			2.5
		SH			
		GB			2.0
		SH			
30	(CL-ML) Hard, brown, silty CLAY to clayey SILT, trace very fine sand, m~PL	GB			3.0
	▽ 59.3	SH			
	(SM) Compact to dense, brown, very fine, silty SAND, some clay, wet	GB			
		SS	100	12-8-14 (22)	
40		GB			
	49.3	SS	100	16-14-24 (38)	

Bottom of borehole at 45.0 feet.



WELL DIAGRAM

No well installed, this is a geotechnical drill hole

Note: These logs should not be used separately from the original report.

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BOREHOLE B-128

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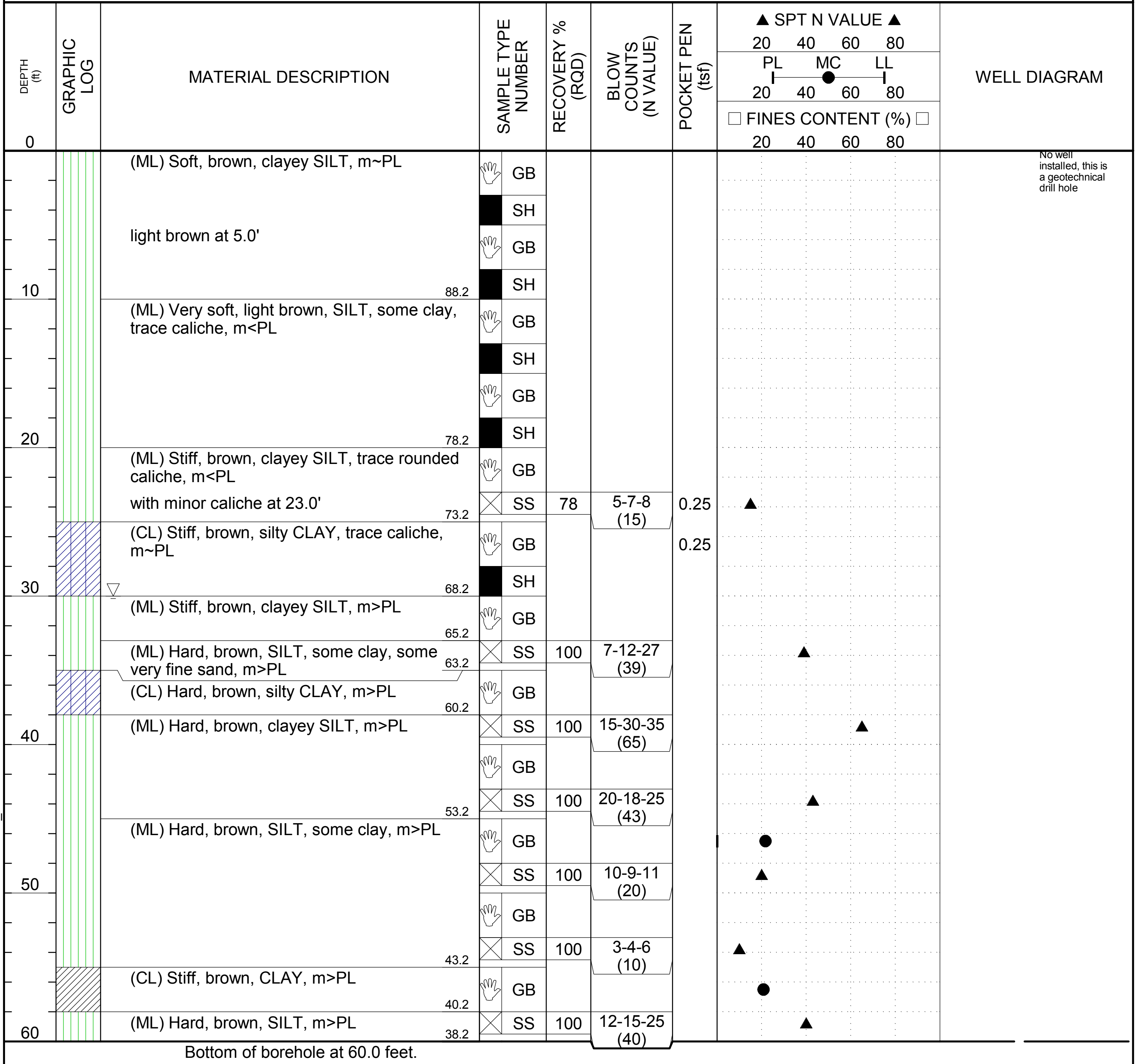
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/14/15 **COMPLETED** 1/14/15
GROUND ELEVATION 98.2 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668168.26 ft
DRILLING METHOD CME-75
LONGITUDE 1110069.45 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(ML) Soft, brown, clayey SILT, m~PL	GB			
		SH			
	light brown at 5.0'	GB			
	88.2	SH			
10	(ML) Very soft, light brown, SILT, some clay, trace caliche, m<PL	GB			
		SH			
		GB			
	78.2	SH			
20	(ML) Stiff, brown, clayey SILT, trace rounded caliche, m<PL	GB			
	with minor caliche at 23.0' 73.2	SS	78	5-7-8 (15)	0.25
	(CL) Stiff, brown, silty CLAY, trace caliche, m~PL	GB			0.25
30	∇ 68.2	SH			
	(ML) Stiff, brown, clayey SILT, m>PL 65.2	GB			
	(ML) Hard, brown, SILT, some clay, some very fine sand, m>PL 63.2	SS	100	7-12-27 (39)	
	(CL) Hard, brown, silty CLAY, m>PL 60.2	GB			
40	(ML) Hard, brown, clayey SILT, m>PL	SS	100	15-30-35 (65)	
		GB			
	53.2	SS	100	20-18-25 (43)	
	(ML) Hard, brown, SILT, some clay, m>PL	GB			
50		SS	100	10-9-11 (20)	
		GB			
	43.2	SS	100	3-4-6 (10)	
	(CL) Stiff, brown, CLAY, m>PL 40.2	GB			
60	(ML) Hard, brown, SILT, m>PL 38.2	SS	100	12-15-25 (40)	

Bottom of borehole at 60.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE B-129

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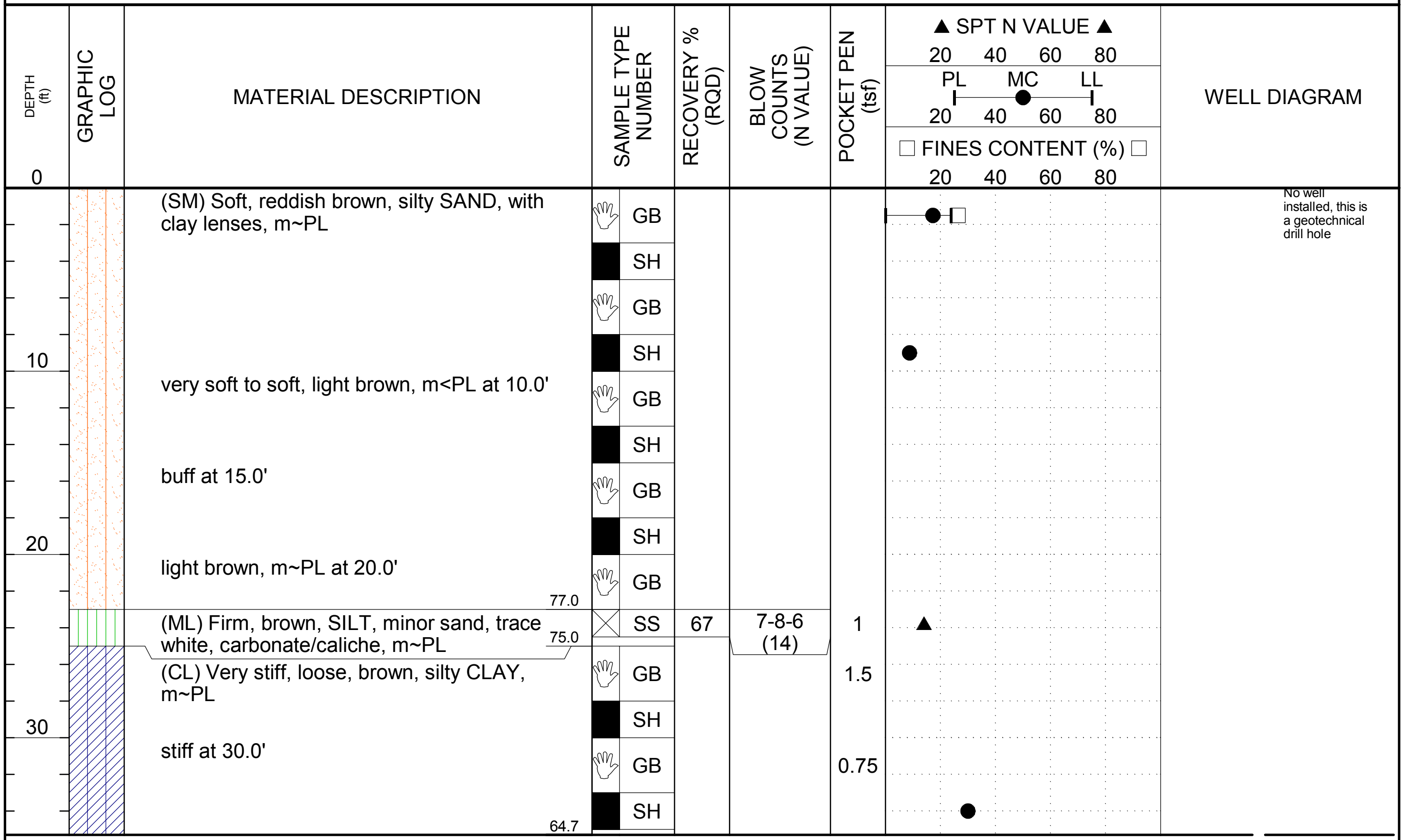
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/14/15 **COMPLETED** 1/15/15
GROUND ELEVATION 100.0 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668024.21 ft
DRILLING METHOD CME-75
LONGITUDE 1110893.17 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES Groundwater not encountered during drilling.



DEPTH (ft)	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(SM) Soft, reddish brown, silty SAND, with clay lenses, m~PL		GB			
			SH			
			GB			
			SH			
10	very soft to soft, light brown, m<PL at 10.0'		GB			
			SH			
	buff at 15.0'		GB			
			SH			
20	light brown, m~PL at 20.0'	77.0	GB			
	(ML) Firm, brown, SILT, minor sand, trace white, carbonate/caliche, m~PL	75.0	SS	67	7-8-6 (14)	1
	(CL) Very stiff, loose, brown, silty CLAY, m~PL		GB			1.5
			SH			
30	stiff at 30.0'		GB			0.75
		64.7	SH			

No well installed, this is a geotechnical drill hole

Bottom of borehole at 35.3 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE B-132

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CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX

DATE STARTED 1/14/15 **COMPLETED** 1/14/15

GROUND ELEVATION 94.9 ft **HOLE SIZE** 6 inches

DRILLING CONTRACTOR Envirotech

LATITUDE 16667493.43 ft

DRILLING METHOD CME-75

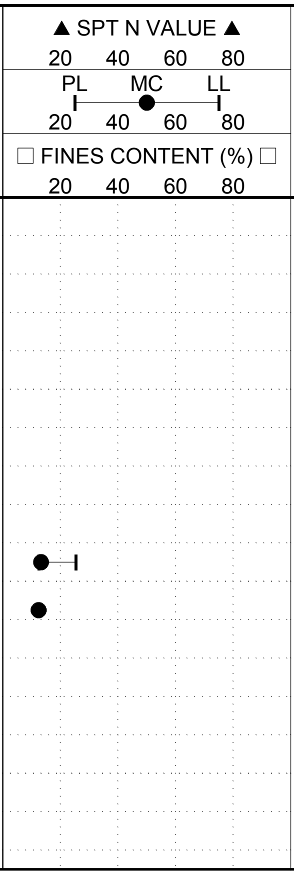
LONGITUDE 1109964.91 ft

LOGGED BY K. A. Paul **CHECKED BY** VK

NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	WELL DIAGRAM
0	(ML) Very soft, brown, SILT, trace very fine sand, trace clay, m~PL	GB				No well installed, this is a geotechnical drill hole
	89.9	SH				
	(CL) Stiff to hard, brown to reddish brown, silty CLAY, m~PL	GB				
		SH				
10	brown, some very fine sand at 10.0'	GB			0.5	
		SH				
	hard, trace white caliche at 15.0'	GB			3.5	
20		SH				
		GB			3.0	
		SH				
		GB			3.0	
30	▽	SH				
	buff to light brown, m>PL at 30.0'	GB			0.5	
	59.9	SH				

Bottom of borehole at 35.0 feet.



Note: These logs should not be used separately from the original report.

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BOREHOLE B-135

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CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/27/15 **COMPLETED** 1/27/15
GROUND ELEVATION 83.1 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16670700.05 ft
DRILLING METHOD CME-75
LONGITUDE 1105208.9 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES Groundwater not encountered during drilling.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 PL MC LL 20 40 60 80 ☐ FINES CONTENT (%) ☐ 20 40 60 80	WELL DIAGRAM
0		(OH) Very soft, brown, organic SILT, trace white, rounded, fine to coarse, sand-sized caliche, m~PL		GB				●	No well installed, this is a geotechnical drill hole
			78.1	SH					
		(CL) Very soft, brown, silty CLAY, m~PL		GB					
10			73.1	SH					
		(CH) Soft, brown, CLAY, very sticky, some to trace silt, m~PL		GB					
				SH					
				GB					
20				SH					
			61.1	SH					

Bottom of borehole at 22.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-101

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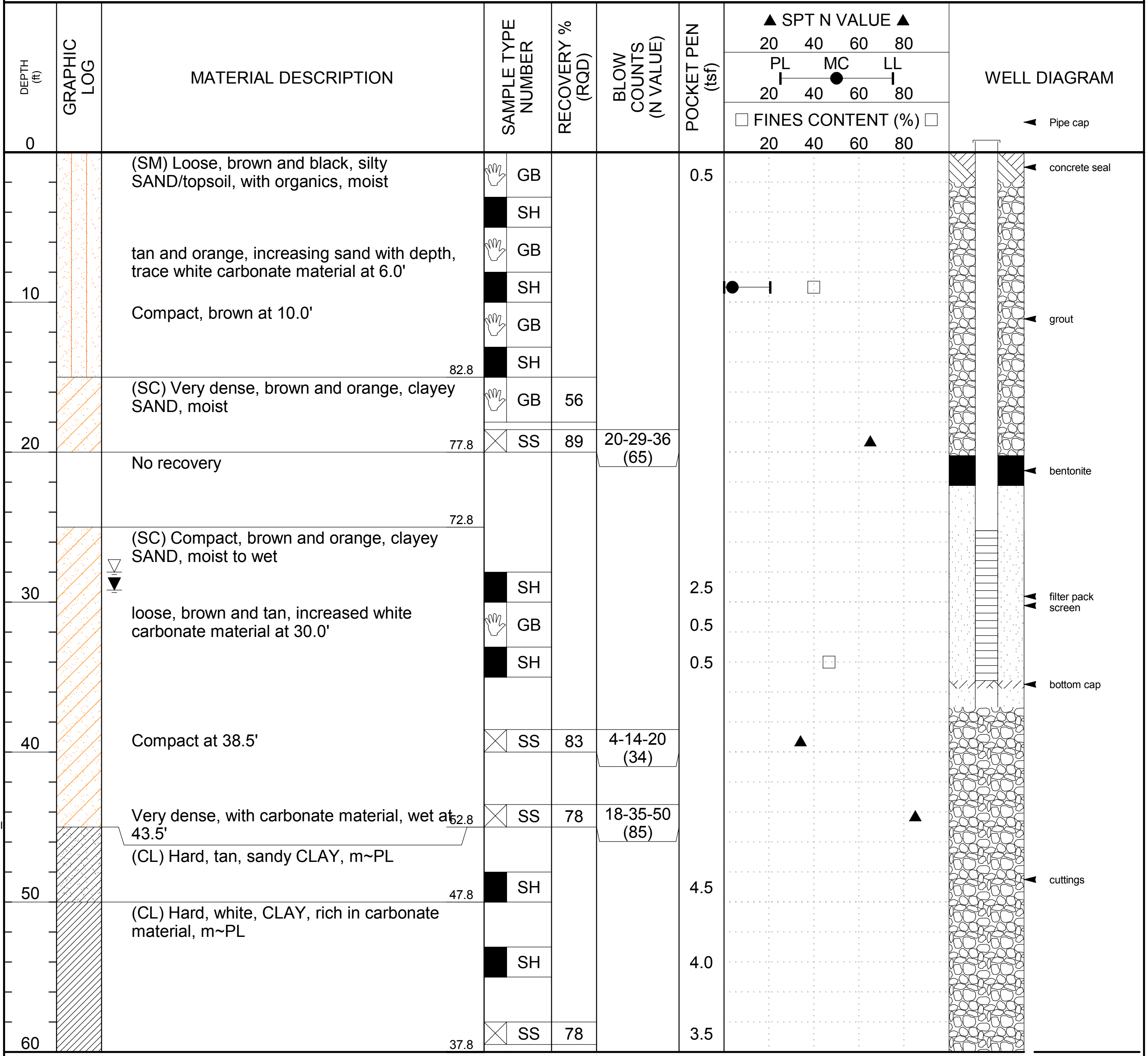
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/17/14 **COMPLETED** 12/17/14
GROUND ELEVATION 97.8 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16672192.55 ft
DRILLING METHOD CME-75
LONGITUDE 1106495.22 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES



MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
(SM) Loose, brown and black, silty SAND/topsoil, with organics, moist	GB			0.5
	SH			
tan and orange, increasing sand with depth, trace white carbonate material at 6.0'	GB			
	SH			
Compact, brown at 10.0'	GB			
82.8	SH			
(SC) Very dense, brown and orange, clayey SAND, moist	GB	56		
77.8	SS	89	20-29-36 (65)	
No recovery 72.8				
(SC) Compact, brown and orange, clayey SAND, moist to wet	SH			2.5
loose, brown and tan, increased white carbonate material at 30.0'	GB			0.5
	SH			0.5
Compact at 38.5'	SS	83	4-14-20 (34)	
Very dense, with carbonate material, wet at 43.5' 62.8	SS	78	18-35-50 (85)	
(CL) Hard, tan, sandy CLAY, m~PL 47.8	SH			4.5
(CL) Hard, white, CLAY, rich in carbonate material, m~PL	SH			4.0
37.8	SS	78		3.5

Bottom of borehole at 60.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-104

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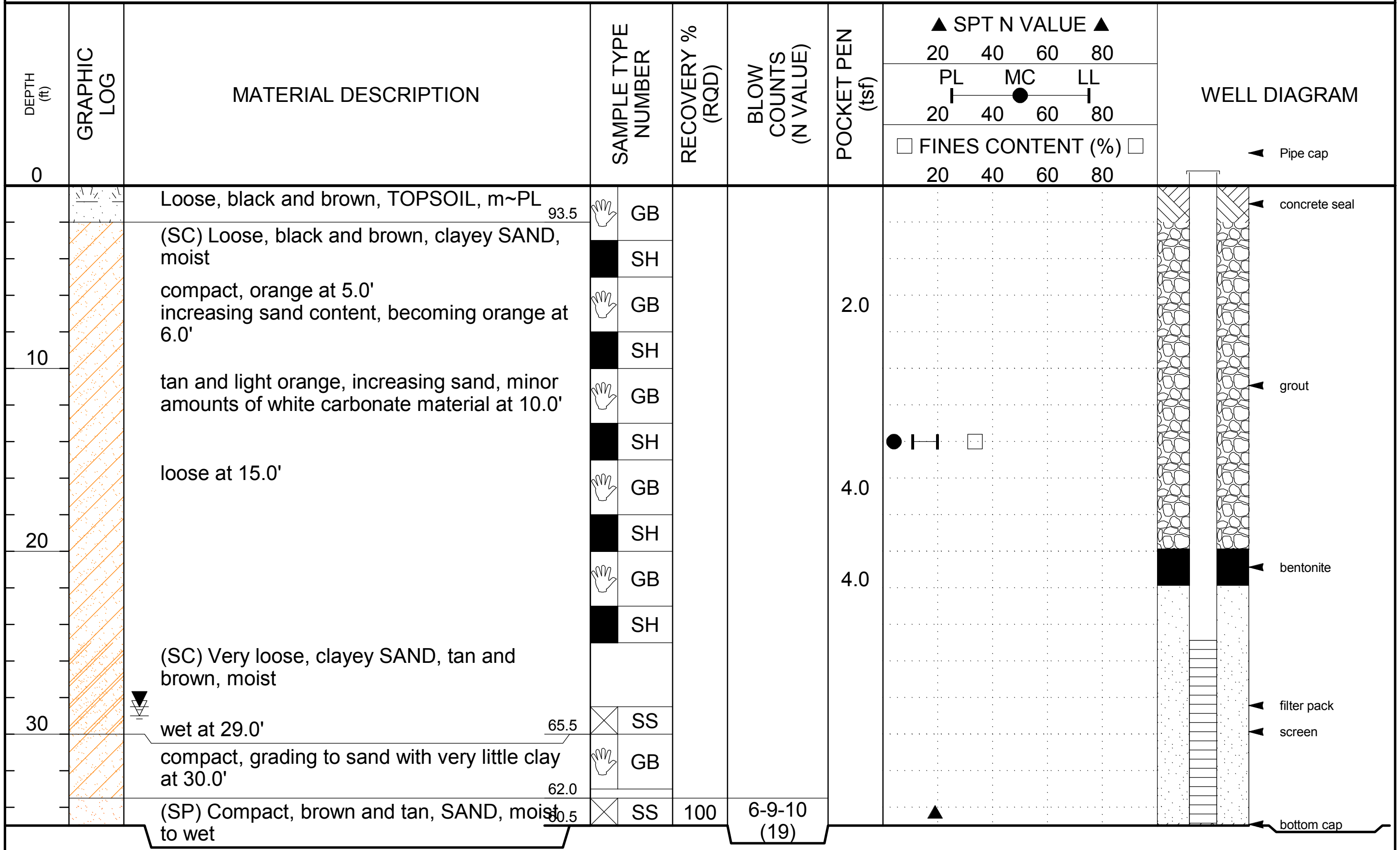
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/16/14 **COMPLETED** 12/16/14
GROUND ELEVATION 95.5 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671821.46 ft
DRILLING METHOD CME-75
LONGITUDE 1108965.02 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	Loose, black and brown, TOPSOIL, m~PL 93.5	GB			
	(SC) Loose, black and brown, clayey SAND, moist	SH			
	compact, orange at 5.0' increasing sand content, becoming orange at 6.0'	GB			2.0
		SH			
10	tan and light orange, increasing sand, minor amounts of white carbonate material at 10.0'	GB			
		SH			
	loose at 15.0'	GB			4.0
		SH			
20		GB			4.0
		SH			
	(SC) Very loose, clayey SAND, tan and brown, moist				
	wet at 29.0' 65.5	SS			
30	compact, grading to sand with very little clay at 30.0' 62.0	GB			
	(SP) Compact, brown and tan, SAND, moist to wet 60.5	SS	100	6-9-10 (19)	

Bottom of borehole at 35.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-106

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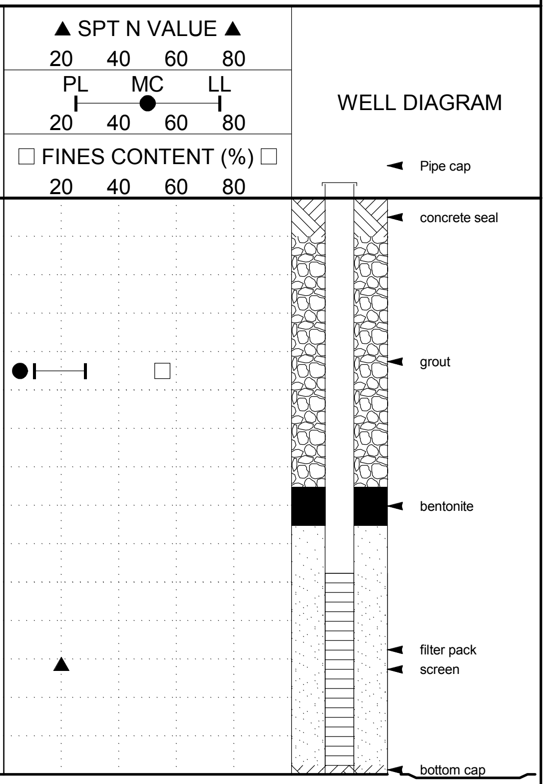
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/18/14 **COMPLETED** 12/18/14
GROUND ELEVATION 84.8 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16671555.69 ft
DRILLING METHOD CME-75
LONGITUDE 1110594.81 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(CL) Soft, black and brown, sandy CLAY/topsoil, with organics, m~PL increasing sand at 1.0' stiff at 3.0' soft, tan and orange, increasing white carbonate material at 5.0'		GB			0.5
			SH			4.0
			GB			0.5
10			SH			
			GB			
			SH			
		68.3	GB			4.0
	(CL) Hard, white, CLAY, m~PL	66.3	SS	100	15-18	
20	(CL) Stiff, brown, sandy CLAY, m~PL	64.8				
	(SC) Compact, brown and tan, clayey SAND, moist	60.3	SS	100	10-11-9 (20)	
	▽ ▼ (SP) Compact, brown, SAND, wet					
30		54.8				

Bottom of borehole at 30.0 feet.



Note: These logs should not be used separately from the original report.

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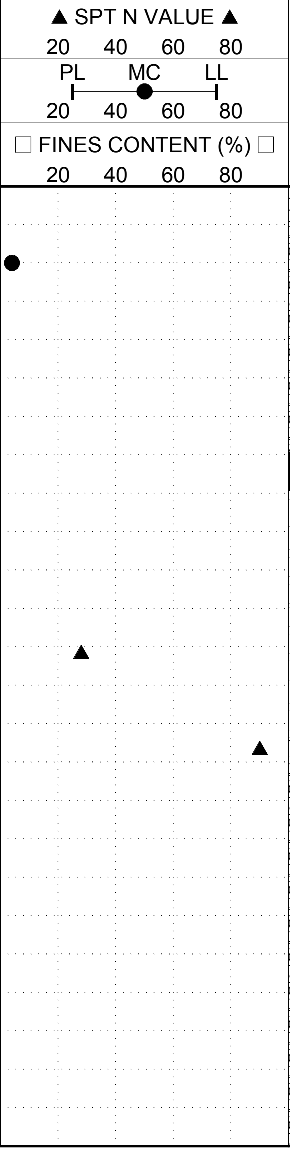
BOREHOLE PZ-113

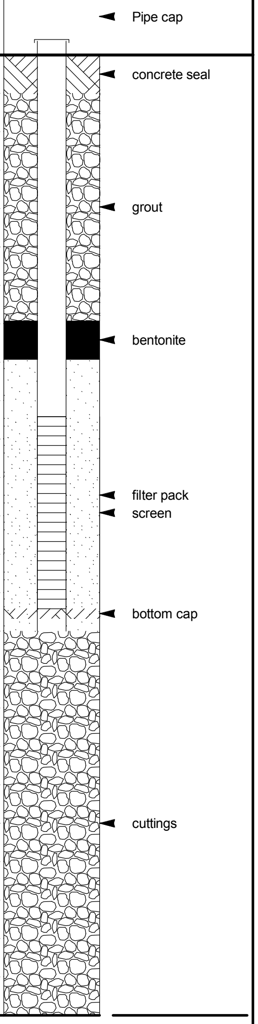
PAGE 1 OF 1

CLIENT	City of Edinburg			**PROJECT NAME**	City of Edinburg / LF Expansion/TX
PROJECT NUMBER	1401491			**PROJECT LOCATION**	Edinburg, TX
DATE STARTED	12/16/14	**COMPLETED**	12/16/14	**GROUND ELEVATION**	85.8 ft
				HOLE SIZE	6 inches
DRILLING CONTRACTOR	Envirotech			**LATITUDE**	16670843.25 ft
DRILLING METHOD	CME-75			**LONGITUDE**	1106277.71 ft
LOGGED BY	DMW	**CHECKED BY**	VK		
NOTES					

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	Soft, black and brown, rich TOPSOIL, organic, some caliche and roots, m~PL	GB			0.5
		SH			
	78.8	GB			0.5
10	(CL) Light brown, sandy CLAY, increased carbonate content	SH			
	soft, small amounts of carbonate material, moist at 10.0	GB			0.5
	70.8	SH			
	(CL) Soft, tan and light brown, clayey silty SAND, increasing sand with depth, m~PL m>PL at 17.5'	GB			0.5
20	65.8	SS			0.5
	(SM) Compact, tan and orange, silty SAND, wet	GB			
	brown and orange, moist to wet at 23.5'	SS	100	7-10-18 (28)	
	very dense, tan, very wet at 25.0'	GB			
30	wet at 28.5' 55.8	SS	100	20-40-50 (90)	
	(CL) Stiff, tan and brown, sandy CLAY, m~PL 52.8	GB			1.5
	(SC) Loose, tan and brown, clayey SAND, moist to wet	SH			0.5
	dense, carbonate material increasing at 35.0'	GB			
40	tan at 39.0' 45.8	SS	100	50	
	(CL) Hard, white and tan, CLAY/caliche, with carbonate material and black metallic spots, m~PL	GB			3.5
		SH	25		
	increasing carbonate material at 46.0'	GB			2.75
50	35.8	SH	100		

Bottom of borehole at 50.0 feet.





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BOREHOLE PZ-116

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CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX

DATE STARTED 12/19/14 **COMPLETED** 12/19/14

GROUND ELEVATION 93.2 ft **HOLE SIZE** 6 inches

DRILLING CONTRACTOR Envirotech

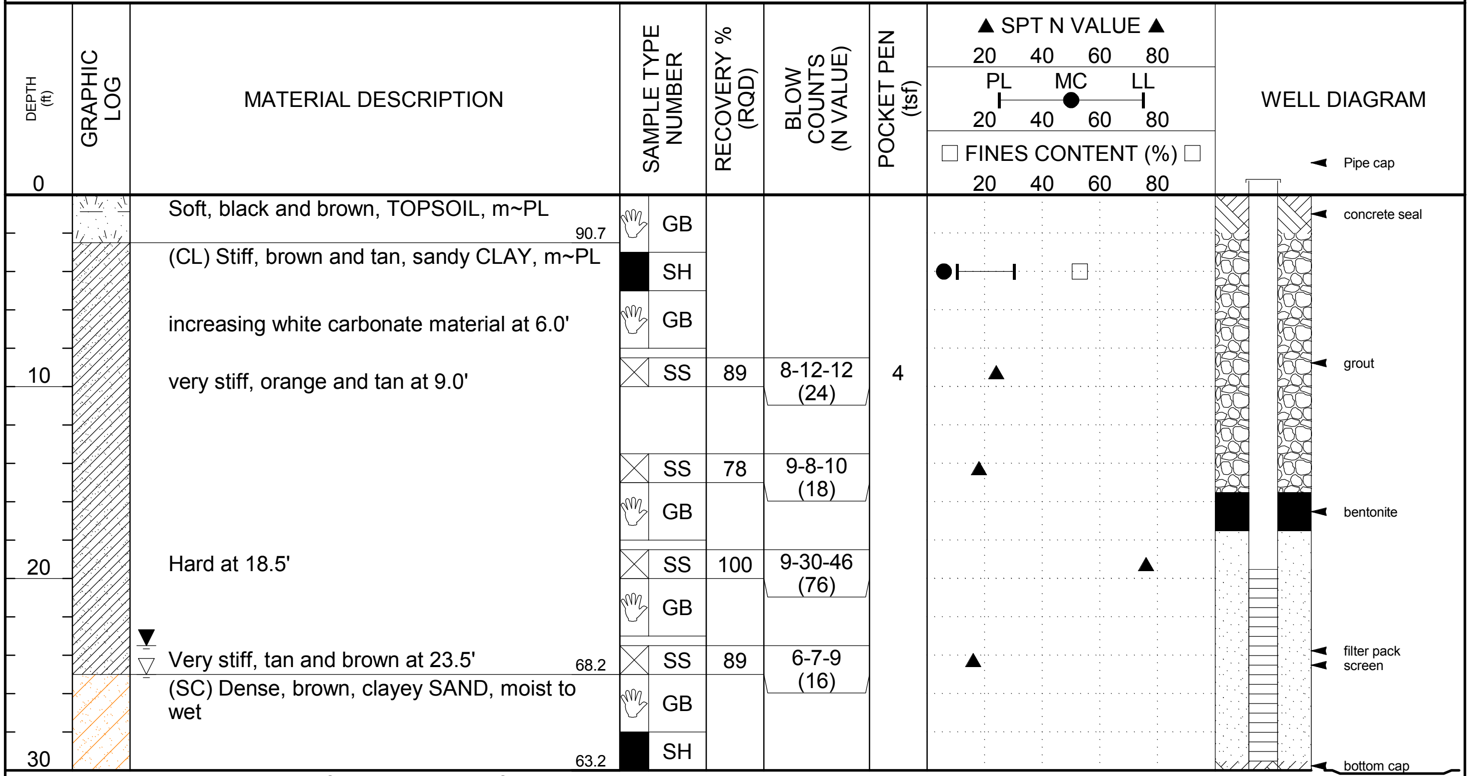
LATITUDE 16670444.83 ft

DRILLING METHOD CME-75

LONGITUDE 1108755.73 ft

LOGGED BY DMW **CHECKED BY** VK

NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	Soft, black and brown, TOPSOIL, m~PL 90.7	GB			
	(CL) Stiff, brown and tan, sandy CLAY, m~PL	SH			
	increasing white carbonate material at 6.0'	GB			
10	very stiff, orange and tan at 9.0'	SS	89	8-12-12 (24)	4
		SS	78	9-8-10 (18)	
		GB			
20	Hard at 18.5'	SS	100	9-30-46 (76)	
		GB			
	Very stiff, tan and brown at 23.5' 68.2	SS	89	6-7-9 (16)	
	(SC) Dense, brown, clayey SAND, moist to wet	GB			
30	63.2	SH			

Bottom of borehole at 30.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-118

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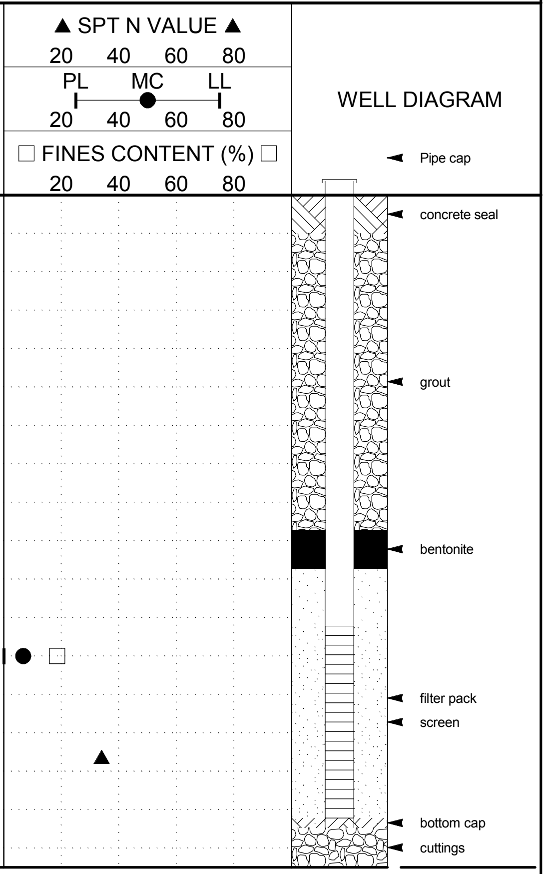
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/19/14 **COMPLETED** 12/19/14
GROUND ELEVATION 89.4 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16670193.76 ft
DRILLING METHOD CME-75
LONGITUDE 1110392.83 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(CL) Soft, dark brown to black, topsoil/sandy CLAY, m~PL increasing sand at 2.0' Stiff, brown at 3.0'	GB			0.5
		SH			
	increasing sand at 7.0'	GB			
		SH			
10	orange and tan, increasing white carbonate material at 10.0'	GB			
		SH			
	very stiff, increased caliche present at 15.0' 70.9	GB			3.0
20	(SM) Very dense, white and gray, silty SAND, moist	SH			4.0
	65.4	GB			4.0
	(SP) Compact, brown, SAND, moist	SH			
	▼ 60.9				
30	▽ (SC) Dense, brown and tan, clayey SAND, moist to wet brown, wet at 30.0'	SS	100	9-16-18 (34)	
	54.4				

Bottom of borehole at 35.0 feet.



Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-122

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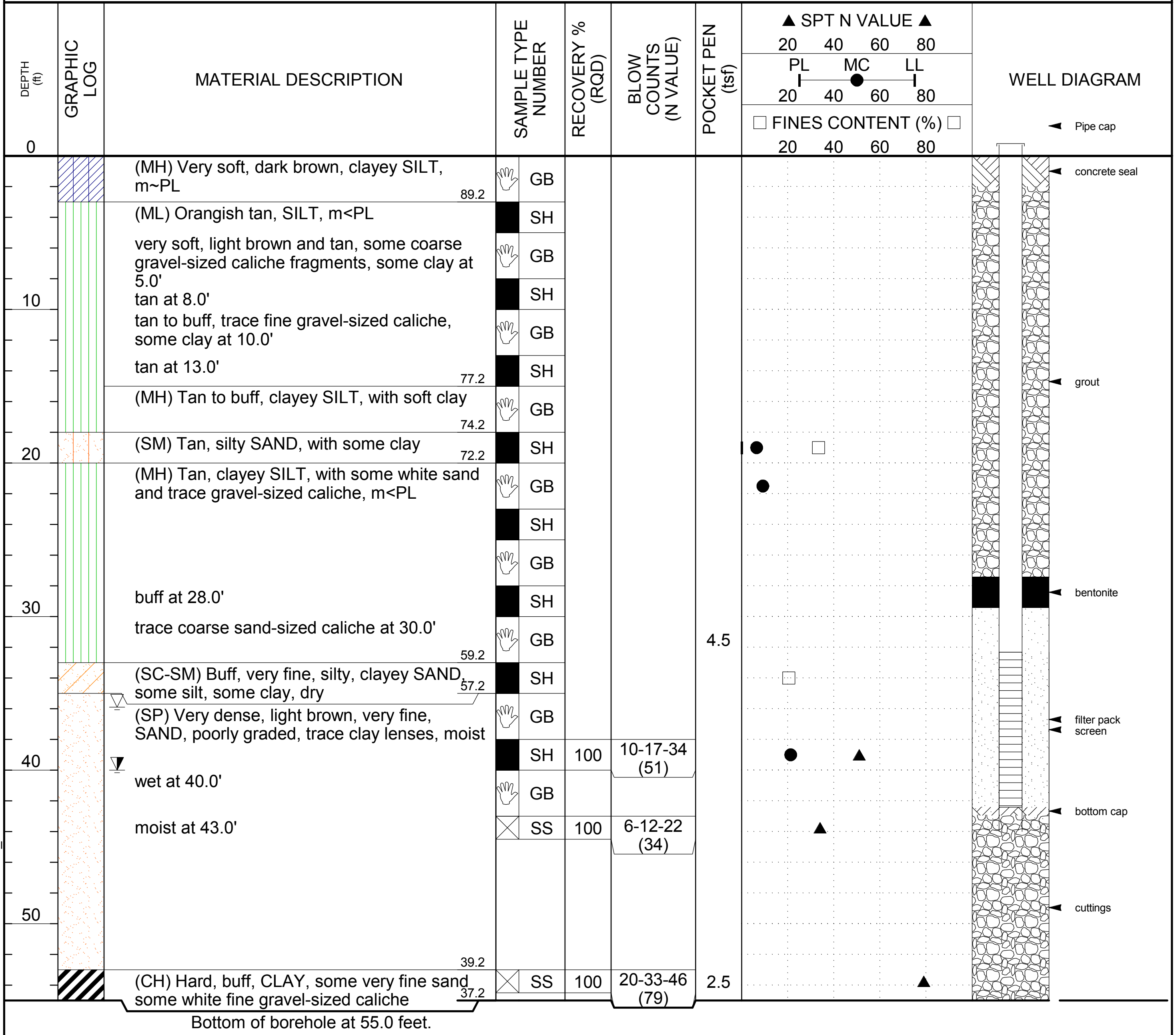
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/5/15 **COMPLETED** 1/6/15
GROUND ELEVATION 92.2 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16669091.56 ft
DRILLING METHOD CME-75
LONGITUDE 1111975.25 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES



MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
(MH) Very soft, dark brown, clayey SILT, m~PL 89.2	GB			
(ML) Orangish tan, SILT, m<PL	SH			
very soft, light brown and tan, some coarse gravel-sized caliche fragments, some clay at 5.0'	GB			
tan at 8.0'	SH			
tan to buff, trace fine gravel-sized caliche, some clay at 10.0'	GB			
tan at 13.0' 77.2	SH			
(MH) Tan to buff, clayey SILT, with soft clay 74.2	GB			
(SM) Tan, silty SAND, with some clay 72.2	SH			
(MH) Tan, clayey SILT, with some white sand and trace gravel-sized caliche, m<PL	GB			
	SH			
	GB			
buff at 28.0'	SH			
trace coarse sand-sized caliche at 30.0' 59.2	GB			4.5
(SC-SM) Buff, very fine, silty, clayey SAND, some silt, some clay, dry 57.2	SH			
(SP) Very dense, light brown, very fine, SAND, poorly graded, trace clay lenses, moist	GB			
	SH	100	10-17-34 (51)	
wet at 40.0'	GB			
moist at 43.0' 39.2	SS	100	6-12-22 (34)	
(CH) Hard, buff, CLAY, some very fine sand some white fine gravel-sized caliche 37.2	SS	100	20-33-46 (79)	2.5

Bottom of borehole at 55.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-124

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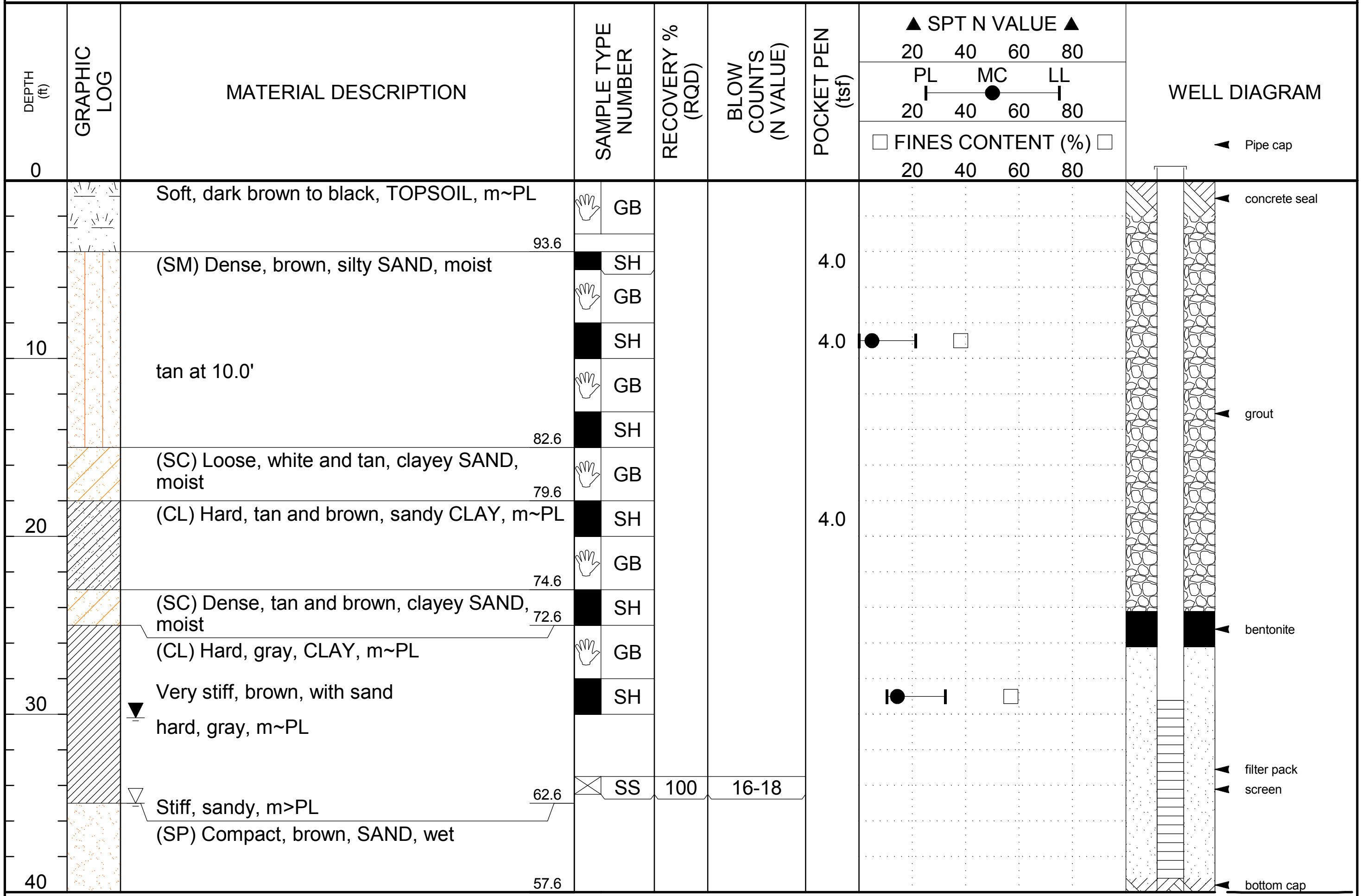
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/19/14 **COMPLETED** 12/19/14
GROUND ELEVATION 97.6 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16668836.59 ft
DRILLING METHOD CME-75
LONGITUDE 1110178.48 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	Elevation
0	Soft, dark brown to black, TOPSOIL, m~PL	93.6
4	(SM) Dense, brown, silty SAND, moist tan at 10.0'	82.6
15	(SC) Loose, white and tan, clayey SAND, moist	79.6
18	(CL) Hard, tan and brown, sandy CLAY, m~PL	74.6
23	(SC) Dense, tan and brown, clayey SAND, moist	72.6
25	(CL) Hard, gray, CLAY, m~PL Very stiff, brown, with sand hard, gray, m~PL Stiff, sandy, m>PL	62.6
35	(SP) Compact, brown, SAND, wet	57.6

SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
GB			
SH			4.0
GB			
SH			4.0
GB			
SH			
GB			
SH			4.0
GB			
SH			
GB			
SH			
SS	100	16-18	

Bottom of borehole at 40.0 feet.

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-130

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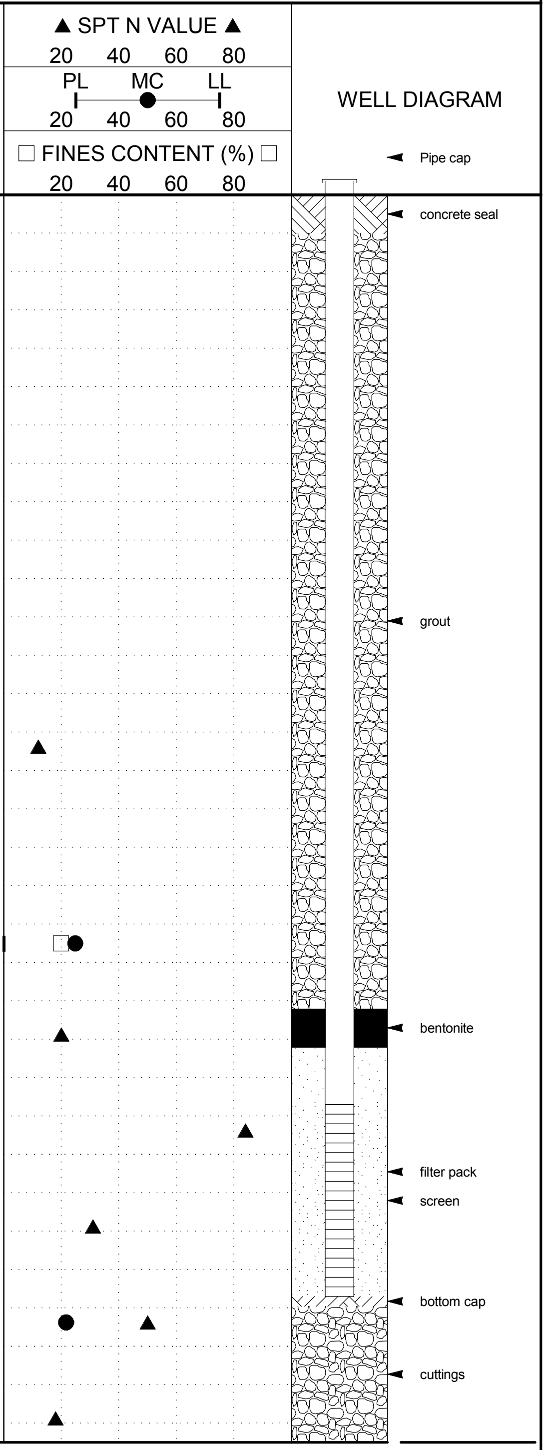
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 1/7/15 **COMPLETED** 1/7/15
GROUND ELEVATION 100.5 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16667916.49 ft
DRILLING METHOD CME-75
LONGITUDE 1111609.19 ft
LOGGED BY K. A. Paul **CHECKED BY** VK
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0		(SP) Very loose, light brown, SAND, some clay, heterogeneous, moist	GB			
			SH			
		becoming orangish brown, with clay lenses at 5.0'	GB			
10		light brown, with significant caliche, dry at 8.0'	SH			
		loose, orangish tan, trace clay, dry to moist	GB			
			SH			
		buff to tan, moist at 15.0'	GB			1.0
20			SH			
		dry to moist at 20.0'	GB			
			SH			
		compact, buff to light brown, with fin gravel-sized, white, calcareous/caliche, moist at 25.0'	GB			
30	▽	Compact, brown to light brown at 28.0' 70.5	SS	100	4-4-8 (12)	
		(SM) Compact, brown, silty SAND, moist	GB			3.5
	▼		SH			
			GB			2.0
40		60.5	SH			
		(SP) Very dense, brown, SAND, moist	GB			
			SS	100	7-6-14 (20)	
			GB			
50		very dense, with clay at 48.0'	SS	100	14-34-50 (84)	0.5
		poorly graded, trace clay lenses at 50.0'	GB			
			SS	100	12-14-17 (31)	
		42.5	GB			
60		(SC) Very dense, brown, clayey SAND, trace clay lenses, moist 40.5	SS	100	15-22-28 (50)	
		(SP-SC) Compact, brown, SAND to clayey SAND, moist 37.5	GB			
		(SC) Compact, brown, clayey SAND, moist 35.5	SS	100	6-8-10 (18)	0.5



Bottom of borehole at 65.0 feet.

TEMPLE (1400336) - GINT STD US LAB.GDT - 1/16/17 15:55 - P:_2014 PROJECT FOLDERS\1401491 CITY OF EDINBURG\FIELD DOCUMENTS\SOIL LOGS\1401491.GPJ

Note: These logs should not be used separately from the original report.

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BOREHOLE PZ-131

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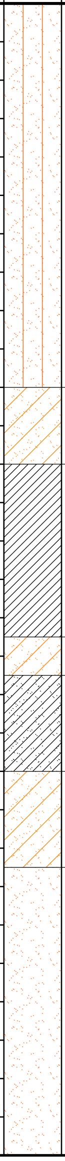
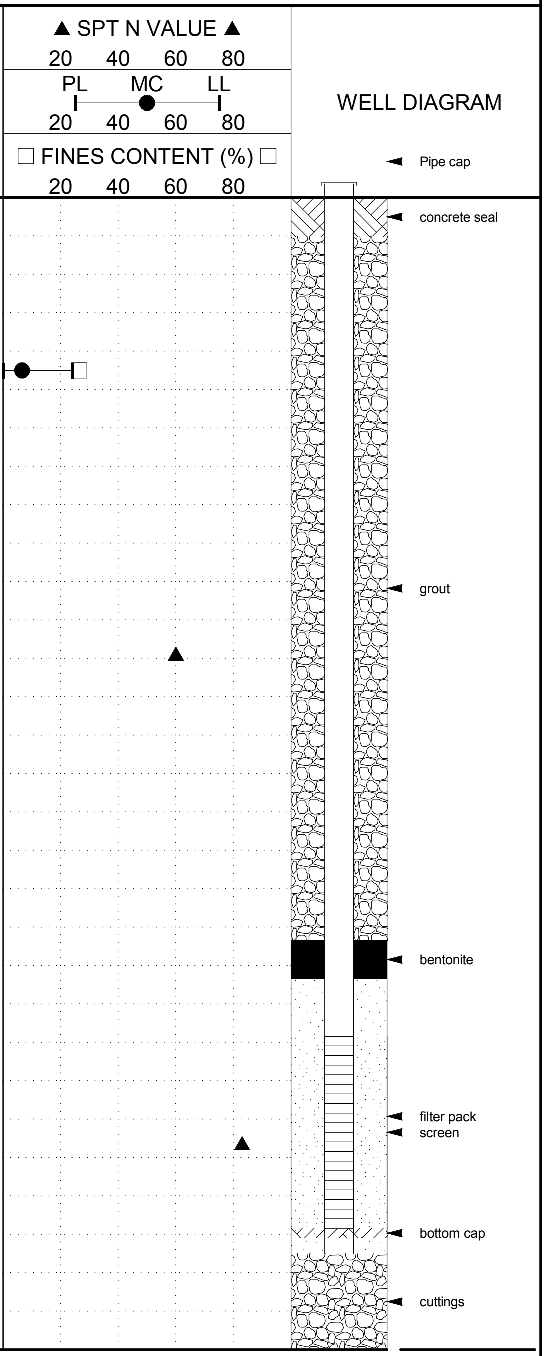
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/20/14 **COMPLETED** 12/21/14
GROUND ELEVATION 96.3 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16667606.9 ft
DRILLING METHOD CME-75
LONGITUDE 1109142.73 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES



DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0		(SM) Loose, dark brown, silty SAND/topsoil, with organics, moist	GB			
			SH			
		red and orange at 5.0'	GB			
10		tan and brown, increased white carbonate at 8.0'	SH			
			SH			
		hard, tan, increasing sand and caliche at 15.0'	GB			
20		76.3	SH			
		(SC) Very dense, tan, clayey SAND, increased caliche, moist	GB			
		72.3	SS	72	10-20-40 (60)	4.0
		(CL) Hard, gray and tan, CLAY	GB			4.0
30			SH			
		m~PL at 30.0' 63.3	GB			
		(SC) Loose, brown, clayey SAND, moist to wet 61.3	SH			0.5
		(CL) Stiff, brown, sandy CLAY, m>PL	SH			1.5
40		56.3	SH			1.5
		(SC) Compact, brown, clayey SAND, moist to wet				
		51.3	SH			1.5
		(SP) Very dense, brown, SAND, wet				
50			SS	100	25-35-48 (83)	
			SH			
60		36.3	SH			

Bottom of borehole at 60.0 feet.



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BOREHOLE PZ-133

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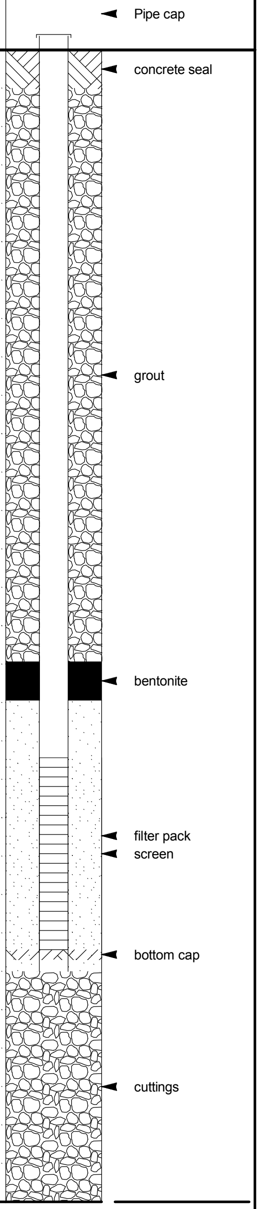
CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX
DATE STARTED 12/22/14 **COMPLETED** 12/22/14
GROUND ELEVATION 98.2 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR Envirotech
LATITUDE 16667399.31 ft
DRILLING METHOD CME-75
LONGITUDE 1110759.32 ft
LOGGED BY DMW **CHECKED BY** VK
NOTES

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(CL) Soft, dark brown, sandy CLAY, and topsoil, m~PL	GB			2.5
	tan at 3.0'	SH			
		GB			
		SH			
10	very stiff, orange and tan at 10.0' increasing sand and caliche at 11.0'	GB			2.5
		SH			
		GB			
20	▼	SH			
		GB			
	compact, tan at 23.0'	SS	78	10-14-15 (29)	
	69.2	GB			
30	(CL) Very stiff, gray and tan, CLAY/caliche with red and brown mottling at 30.0'	SS	100	11-13-15 (28)	
	▽ 64.2	GB			
	(SP) Compact, brown, SAND, wet	SS	100	9-12-10 (22)	
	60.2	GB			
40	(CL) Very stiff, brown and red, CLAY, m>PL	SH			
	55.7	GB			
	(SP) Compact, brown, SAND, moist to wet	SH			
	very dense at 45.0'	GB			
50		SS	89	15-20-30 (50)	
	wet at 50.0' 45.2				
	(CH) Hard, white, CLAY, m~PL	SH			3.5
60	38.2	SH			

▲ SPT N VALUE ▲ 20 40 60 80
PL MC LL 20 40 60 80
☐ FINES CONTENT (%) ☐ 20 40 60 80

Bottom of borehole at 60.0 feet.

WELL DIAGRAM



Note: These logs should not be used separately from the original report.

Golder Associates
500 Century Plaza Drive, Suite 190
Houston, Texas 77073
Telephone: (281) 821-6868
Fax: (281) 821-6870

BOREHOLE PZ-134

PAGE 1 OF 1

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX

DATE STARTED 12/15/14 **COMPLETED** 12/15/14

GROUND ELEVATION 82.4 ft **HOLE SIZE** 6 inches

DRILLING CONTRACTOR Envirotech

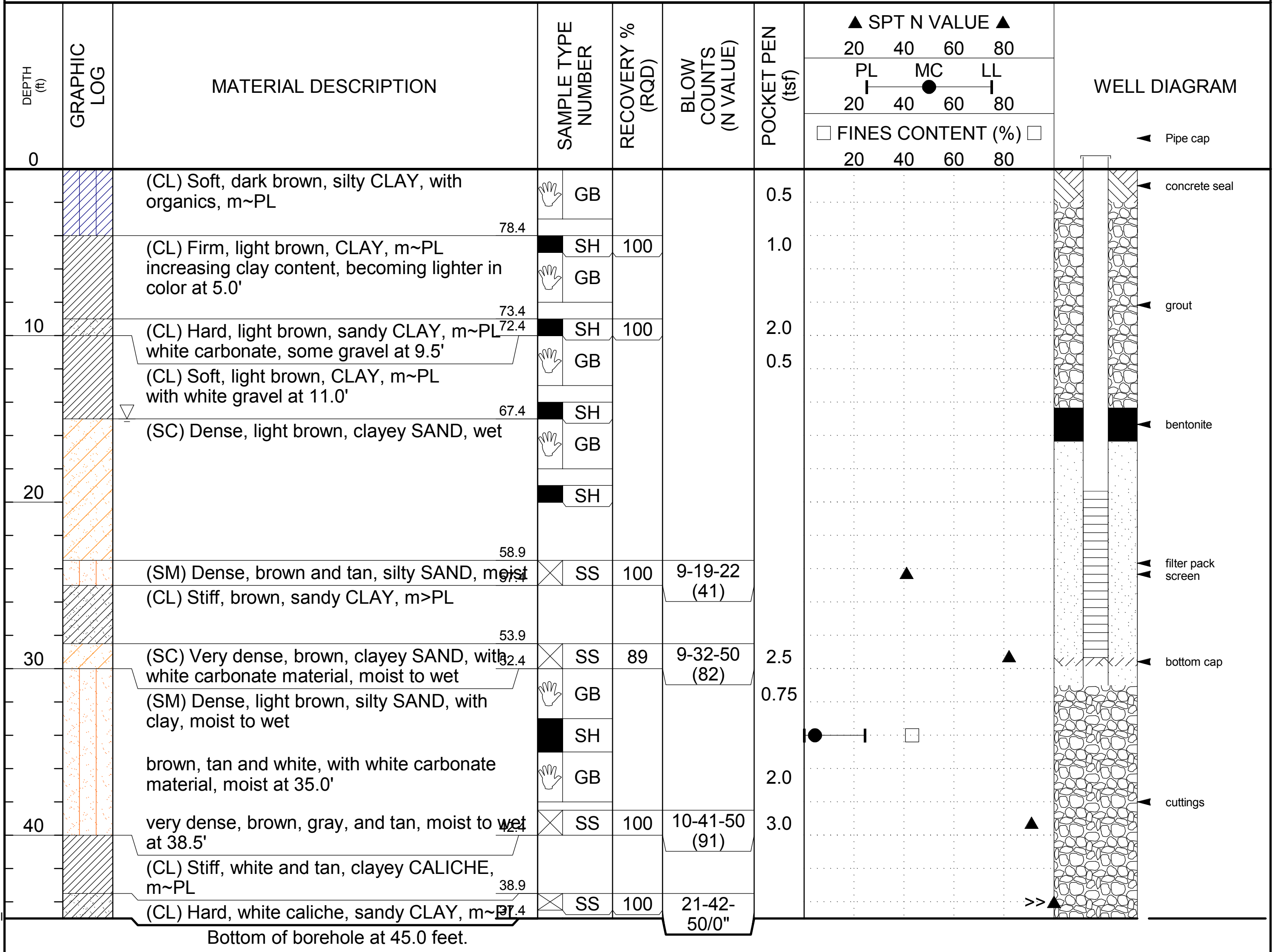
LATITUDE 16670873.39 ft

DRILLING METHOD CME-75

LONGITUDE 1104174.27 ft

LOGGED BY DMW **CHECKED BY** VK

NOTES



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN (tsf)
0	(CL) Soft, dark brown, silty CLAY, with organics, m~PL	GB			0.5
	78.4				
	(CL) Firm, light brown, CLAY, m~PL increasing clay content, becoming lighter in color at 5.0'	SH	100		1.0
		GB			
	73.4				
10	(CL) Hard, light brown, sandy CLAY, m~PL 72.4 white carbonate, some gravel at 9.5'	SH	100		2.0
	(CL) Soft, light brown, CLAY, m~PL with white gravel at 11.0'	GB			0.5
	▽ 67.4	SH			
	(SC) Dense, light brown, clayey SAND, wet	GB			
20		SH			
	58.9				
	(SM) Dense, brown and tan, silty SAND, moist 57.4	SS	100	9-19-22 (41)	
	(CL) Stiff, brown, sandy CLAY, m>PL				
	53.9				
30	(SC) Very dense, brown, clayey SAND, with 52.4 white carbonate material, moist to wet	SS	89	9-32-50 (82)	2.5
	(SM) Dense, light brown, silty SAND, with clay, moist to wet	GB			0.75
		SH			
	brown, tan and white, with white carbonate material, moist at 35.0'	GB			2.0
40	very dense, brown, gray, and tan, moist to wet 42.4 at 38.5'	SS	100	10-41-50 (91)	3.0
	(CL) Stiff, white and tan, clayey CALICHE, m~PL				
	38.9				
	(CL) Hard, white caliche, sandy CLAY, m~PL 37.4	SS	100	21-42-50/0"	

Bottom of borehole at 45.0 feet.

Note: These logs should not be used separately from the original report.

APPENDIX III4B-2

PREVIOUS STUDIES BORING LOGS

Langley Pittman Testing Lab. **LOG OF BORING** No. 1
P. O. Box 736
Rio Hondo, Texas 78583 **PROJECT:** Sanitary Landfill Site

TYPE:

LOCATION:

DEPTH FT.	WATER TABLE	SYMBOL	DESCRIPTION OF MATERIAL SURFACE EL.	Sample	BLOWS PER FOOT	UNCONFINED COM. PRESSIVE STRENGTH TONS - SQ. FT.	UNIT DRY WT. LBS. - CU. FT.	LIQUID LIMIT	PLASTIC INDEX	LINEAR SHRINKAGE	PERCENT MOISTURE	PERCENT PASSING NO 200 SIEVE
		▨	(CL) Tan Silty Clay Moist, Stiff									
5		▨										
10		▨										
15		▨		▨								
	△	▨										
20		⁙	(SM) Tan Silty Sand Saturated (Permeable)									
25		⁙										
30		⁙										
35		⁙										
40			△ Ground Water encountered at 18 feet below existing ground surface.									
45												
50												

COMPLETION DEPTH: 40'
DATE: 3-9-76 A- 7441

DEPTH TO WATER
IN BORING AFTER 24 HRS.

DATE:

PAGE NO.

Langley Pittman Testing Lab. LOG OF BORING No. 2
P. O. Box 736
Rio Hondo, Texas 78583 PROJECT: Sanitary Landfill Site

TYPE:

LOCATION:

DEPTH FT.	WATER TABLE	SYMBOL	DESCRIPTION OF MATERIAL SURFACE EL.	Sample	BLOWS PER FOOT	UNCONFINED COMPRESSIVE STRENGTH TONS - SQ. FT.	UNIT DRY WT. LBS - CU. FT.	LIQUID LIMIT	PLASTIC INDEX	LINEAR SHRINKAGE	PERCENT MOISTURE	PERCENT PASSING NO 200 SIEVE
		▨	(CL) Tan Silty Clay									
5		▨	Moist, Stiff									
10		▨										
15		▨		☐								
20	△	▨										
		⁝	(SM) Tan Silty Sand									
25		⁝	Saturated									
30		⁝	(Permeable)									
35		⁝										
40			△ Ground Water Encountered at 21 feet below existing ground surface									
45												
50												

COMPLETION DEPTH: 40'

DATE: 3-9-76 A- 7442

DEPTH TO WATER IN BORING AFTER 24 HRS.

DATE:

PAGE NO.

Langley Pittman Te. ing Lab. LOG OF BORING No. 3
P. O. Box 736
Rio Hondo, Texas 78583 PROJECT: Sanitary Landfill Site
TYPE:
LOCATION:

DEPTH FT.	WATER TABLE	SYMBOL	DESCRIPTION OF MATERIAL SURFACE EL.	Sample	BLOWS PER FOOT	UNCONFINED COM. PRESSIVE STRENGTH TONS - SQ. FT.	UNIT DRY WT. LBS. - CU. FT.	LIQUID LIMIT	PLASTIC INDEX	LINEAR SHRINKAGE	PERCENT MOISTURE	PERCENT PASSING NO 200 SIEVE
			(CL) Tan Silty Clay									
5			Moist, Stiff									
10												
15												
	△		(SM) Tan Silty Sand									
25			Saturated									
30			(Permeable)									
35												
40			△ Ground Water encountered at 21 feet below existing ground surface.									
45												
50												

COMPLETION DEPTH: 40'
DATE: 3-9-76 A- 7443
DEPTH TO WATER IN BORING AFTER 24 HRS.
DATE:
PAGE NO.

Langley Pittman Testing Lab.
P. O. Box 736
Rio Hondo, Texas 78583

LOG OF BORING ~~No. 1~~
Proposed No. 4

PROJECT: Sanitary Landfill Site

TYPE:

LOCATION: Hiway 281, North of Edinburg

DEPTH FT.	WATER TABLE	SYMBOL	DESCRIPTION OF MATERIAL SURFACE EL:	Sample	BLOWS PER FOOT	UNCONFINED COM-PRESSIVE STRENGTH TONS - SQ. FT.	UNIT DRY WT. LBS. - CU. FT.	LIQUID LIMIT	PLASTIC INDEX	LINEAR SHRINKAGE	PERCENT MOISTURE	PERCENT PASSING NO 200 SIEVE
			(CL) Tan Silty Clay Moist, Firm									
5												
10			(CL) Tan Silty Clay with Caliche Particles Moist, Very Stiff									
15			(ML-SM) Tan Sandy Silt Saturated (Permeable)									
			(CL) Tan Silty Clay Moist, Crumbly									
20	▲		(CL) Tan Silty Sandy Clay Wet, Soft									
25			(SM) Tan Silty Sand Saturated, Loose (Permeable)									
30												
35			(CL) Grey Silty Clay Moist, Stiff									
40			▲Ground Watered Encountred at 19½ feet below Existing Ground Surface.									
45												
50												

COMPLETION DEPTH: 40'

DATE: 6-8-76 A- 7725

DEPTH TO WATER IN BORING AFTER 24 HRS.

DATE:

Langley Pittman Testing Lab.
P. O. Box 736
Rio Hondo, Texas 78583

LOG OF BORING ~~No. 2~~ Proposed No. 5

PROJECT: Sanitary Landfill Site

TYPE:

LOCATION: Hiway 281, North of Edinburg

DEPTH FT.	WATER TABLE	SYMBOL	DESCRIPTION OF MATERIAL SURFACE EL.:	Sample	BLOWS PER FOOT	UNCONFINED COMPRESSIVE STRENGTH TONS - SQ. FT.	UNIT DRY WT. LBS. - CU. FT.	LIQUID LIMIT	PLASTIC INDEX	LINEAR SHRINKAGE	PERCENT MOISTURE	PERCENT PASSING NO 200 SIEVE
		▨	(CL) Tan Silty Clay with Caliche Particles Moist, Very Stiff									
5		▨										
10		▨										
15		▨										
	▲	░	(SM) Tan Silty Sand									
20		░	Saturated (Permeable)									
25		░										
30		░										
35		░										
		▨	(CL) Light Tan Silty Clay Moist, Stiff									
40			▲ Ground Water Encountered at 17 feet below Existing Ground Surface									
45												
50												

COMPLETION DEPTH: 40'

DATE: 6-8-76

A- 7725

DEPTH TO WATER IN BORING AFTER 24 HRS.

DATE:

3

Langley Pittman Testing Lab.
P. O. Box 736
Rio Hondo, Texas 78583

LOG OF BORING ~~No. 3~~ No. 6

PROJECT: Proposed Sanitary Landfill Site

TYPE:

LOCATION: Hiway 281, North of Edinburg

DEPTH FT.	WATER TABLE	SYMBOL	DESCRIPTION OF MATERIAL SURFACE EL.	Sample	BLOWS PER FOOT	UNCONFINED COM-PRESSIVE STRENGTH TONS - SQ. FT.	UNIT DRY WT. LBS. - CU. FT.	LIQUID LIMIT	PLASTIC INDEX	LINEAR SHRINKAGE	PERCENT MOISTURE	PERCENT PASSING NO 200 SIEVE
			(CL) Tan Silty Clay Moist, Stiff									
5												
10												
15												
20	▲		(SM) Tan Silty Sand Saturated, Loose (Permeable)									
25												
30			(CL) Tan Silty Clay Moist, Firm									
35			(SM) Tan Silty Sand Saturated (Permeable)									
40												
45			▲ Ground Water Encountered at 19 feet below Existing Ground Surface									
50												

COMPLETION DEPTH: 40'

DATE: 6-8-76

A- 7725

DEPTH TO WATER IN BORING AFTER 24 HRS.

DATE:

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-1 Page 1

.oject Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE							
SANDY CLAY, with silt, brown, mostly dry, stiff.		SS-1	13		4.5	7.9	
Same as above, (CL).	5	SS-2	16			8.1	-#200=58% LL=27% PI=12
6							
CLAYEY SAND, with calcareous nodules, gravel, some clay, light brown, slightly moist, very dense.		SS-3	26			11.1	
Same as above, (SC).	10	SS-4	55			12.2	-#200=34% LL=32% PI=11
12							
FINE SILT, trace clay, some sand, brown, moist, very stiff.	15	SS-5	22			24.7	-#200=76%
17							
SILTY SAND, some clay, brown, moist, very stiff.	20	SS-6	20		0.5	24.3	-#200=50%
22							
FINE SAND, with silt, brown, wet, hard.	25	SS-7	42		0.5	25.5	-#200=30%
27							
SANDY SILT, trace clay, brown, moist, hard.	30	SS-8	40			24.5	-#200=56%
31							
Continued on Next Page							

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-1 Page 2

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 1							
32							
SANDY CLAY, with calcareous nodules, gray, moist, hard, (CL).	35	SS-9	72		4.5+	20.5	-#200=62% LL=44% PI=26
37							
SILTY CLAY, with sand, trace organics, gray, moist, hard.	40	SS-10	51		4.5+	22.9	
Same as above, (CH).	45	ST-11			4.5	23.9	-#200=79% LL=60% PI=35
50	50	SS-12	32		4.5+	22.7	

Total Depth of Boring = 50 feet.

Groundwater Observations: Groundwater noted on drill rods at 18 feet during drilling operations. Boring dry and caved at 18.7 feet upon completion.

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-2 Page 1

..oject Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080 -

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE							
SANDY CLAY, with calcareous rocks, gray & white, mostly dry, hard, (CL).		SS-1	50		4.5	9.5	LL=27% PI=16
SANDY CLAY, with silt, brown, slightly moist.	5	SS-2	6		4.5	10.5	
Same as above, with calcareous nodules, (CL).		SS-3	6		4.5	13.3	-#200=60% LL=27% PI=15
6							
SILTY SAND, with clay, with calcareous nodules, light brown, slightly moist, medium dense.	10	SS-4	12			13.0	
Same as above, very dense, (SC-SM).		SS-5	45			12.7	-#200=44% LL=24% PI=6
13.5							
CLAYEY SAND, light brown, slightly moist, very dense.	15	SS-6	95			13.1	-#200=42% LL=30% PI=10
18							
SILTY SAND, brown, moist, medium dense.	20	SS-7	14			15.9	-#200=47%
22							
FINE SAND, gray, wet, dense.	25	SS-8	16			23.2	
Same as above, very dense.	30	SS-9	27			21.0	-#200=12%
31							

Continued on Next Page

PROFESSIONAL SERVICE INDUSTRIES, INC.
RECORD OF SUBSURFACE EXPLORATION

Boring: B-2 Page 2

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 1							
FINE SAND, gray, wet, very dense.	35	SS-10	82		4.5	27.7	
37							
CLAYEY SAND, light brown, very moist, very dense, (SC).	40	SS-11	77			23.3	-#200=46% LL=39% PI=19
Same as above.	45	SS-12	50/6"		4.5	27.7	
47							
VERY SILTY CLAY, with sand, gray, moist, hard.	50	SS-13	97			23.3	-#200=66%

Total Depth of Boring = 50 feet.

Groundwater Observations: Groundwater noted on drill rods at 23 feet during drilling operations. Boring dry and caved at 22 feet upon completion.

24 Hour Observations: Boring dry and caved at 20.5 feet.

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-3 Page 1

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE							
CLAYEY SAND, with silt, dark brown, mostly dry, medium dense, (SC).		SS-1	14		4.5	9.2	-#200=44% LL=23% PI=9
Same as above, light brown, dense.	5	SS-2	18		4.25	6.9	
Same as above, medium dense.		,SS-3	10			8.1	
9							
FINE SAND, with silt and clay, tan, slighty moist, dense.	10	SS-4	16			10.6	-#200=29% non-plastic
		SS-5	21			14.0	-#200=27%
12							
VERY SILTY CLAY, with sand, light brown, slightly moist, very stiff, (CL).	15	SS-6	62		4.5	13.5	-#200=67% LL=28% PI=10
18							
SANDY CLAY, with silt, brown, moist, very stiff, (CL).	20	SS-7	19			15.6	-#200=61% LL=27% PI=11
23							
FINE SAND, trace silt, brown, wet, dense.	25	SS-8	21			20.4	-#200=11%
Same as above, very dense.	30	SS-9	36			20.9	

Continued on Next Page

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-3 Page 2

roject Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 1							
FINE SAND, trace silt, brown, moist, very dense.	35	SS-10	70			19.8	-#200=5%
Same as above, some silt.	40	SS-11	50/5"			21.5	-#200=15% non-plastic
43							
VERY SILTY CLAY, with sand and organics, gray, moist, hard.	45	SS-12	81		4.5+	20.8	
Same as above, with calcareous nodules. 50	50	SS-13	86		4.5+	20.2	

Total Depth of Boring = 50 feet.

Groundwater Observations: Boring dry and caved at 24 feet upon completion.

24 Hour Observations: Groundwater measured at 20.5 feet and boring caved at 23.5 feet.

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-4 Page 1

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE							
CLAYEY SAND, with silt, dark brown, mostly dry, slightly compact. 3		SS-1	8			6.9	
SANDY CLAY, light brown, slightly moist, stiff.	5	SS-2	10			9.9	
Same as above, dark brown, slightly moist, (CL).		SS-3	8			9.6	-#200=50% LL=23% PI=9
SANDY CLAY, with silt, light brown, slightly moist, stiff.	10	SS-4	10		4.0	11.9	
Same as above, very silty, firm. 13		SS-5	7		3.5	13.7	-#200=54% non-plastic
SILTY SAND, with clay, light brown, moist, medium dense. 17	15	SS-6	14		3.5	16.3	
Same as above, brown, moist, medium dense. 22	20	SS-7	10			24.0	-#200=42% non-plastic
FINE SAND, trace clay & silt, brown, wet, dense.	25	SS-8	20			22.0	
Same as above, very dense.	30	SS-9	95			20.3	-#200=15%

Continued on Next Page

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-4 Page 2

roject Name: Edinburg Sanitary Landfill

Date of Boring: March 11, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 1							
32							
CLAYEY SAND, some silt, light gray, moist, very dense.	35	SS-10	86			24.0	
40							
CLAYEY SILTY SAND, light gray, very moist, very dense, (SM).	40	SS-11	86		4.25	23.5	-#200=43% LL=25% PI=4
	45	SS-12	90			21.3	
47							
VERY SILTY CLAY, with sand, light gray, very moist, hard, (CL).	50	SS-13	85			25.7	-#200=69% LL=24% PI=8
Total Depth of Boring = 50 feet.							
Groundwater Observations: Groundwater noted on drill rods at 25 feet during drilling operations. Boring wet and caved at 22 feet upon completion.							
24 Hour Observations: Groundwater measured at 21.5 feet and boring caved at 23 feet.							

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-5 Page 1

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 16, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE							
SANDY CLAY, some silt, dark brown, slightly moist, stiff.		SS-1	9		3.5	12.1	
Same as above, very stiff, (CL).		SS-2	19		4.25	14.5	-#200=61% LL=33% PI=10
	5						
SANDY CLAY, with calcareous nodules, brown & white, slightly moist, hard.		SS-3	42		4.5+	11.4	
Same as above, brown, (CL).		SS-4	70		4.5	14.7	-#200=69% LL=26% PI=10
10	10						
VERY SILTY CLAY, with sand, brown, slightly moist, hard.		SS-5	60		4.5+	14.6	-#200=78%
Same as above, moist.		SS-6	32		4.5	18.0	
	15						
VERY SILTY CLAY, some sand, brown, moist, 16 hard.		SS-7	26		3.5	23.4	-#200=86% LL=43% PI=23
	20						
		SS-8	32		1.5	23.4	
	25						
SILTY CLAY, with sand, brown, very moist, 26 hard, (CL).		SS-9	35		0.5	25.4	-#200=71% LL=34% PI=16
	30						
		SS-10	28		1.0	25.7	-#200=73%

Continued on Next Page

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-5 Page 2

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 16, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 1							
SILTY CLAY, with sand, brown, moist, hard. 36 38	35	SS-11	70		3.0	24.1	
CLAYEY SAND, with silt, brown, very moist, very dense, (SC).	40	SS-12	71		1.0	19.9	-#200=35% LL=27% PI=13
Same as above, trace oxidation stains, very moist. 48	45	SS-13	90		1.5	28.0	
SILTY CLAY, with calcareous nodules, gray & white, very moist, hard. 53	50	SS-14	80/11"		2.5	29.3	
SANDY CLAY, with silt & organics, brown, very moist, hard, (CH).	55	SS-15	75/11"		4.5+	35.5	-#200=53% LL=84% PI=40
Same as above, stiff, moist. 61.5	60	SS-16	50/5"		4.5	18.8	
Continued on Next Page							

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-5 Page 3

Project Name: Edinburg Sanitary Landfill

Date of Boring: March 16, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 2							
SANDY CLAY, brown, moist, hard.	65	SS-17	66				No recovery
68							
SILTY CLAY, with sand, brown, moist, hard, (CL).	70	SS-18	91		2.5	24.6	-#200=70% LL=42% PI=22
Same as above, very silty, very moist.	75	SS-19	37		2.0	29.3	
Same as above, moist.	80	SS-20	27		2.5	19.0	
83							
CLAYEY SAND, with silt and oxidation stains, brown, moist, very dense.	85	SS-21	62			21.7	
	90	SS-22	50/3"			17.6	
73.5							
Continued on Next Page							

PROFESSIONAL SERVICE INDUSTRIES, INC.

RECORD OF SUBSURFACE EXPLORATION

Boring: B-5 Page 4

.oject Name: Edinburg Sanitary Landfill

Date of Boring: March 16, 1993

Site: Edinburg, Texas

Project No.: 326-35080

DESCRIPTION	DEPTH	SAMPLE	N	Qu	Qp	Mc	REMARKS
SURFACE Continued from Page 3							
	95						
CLAYEY SAND, with silt, brown, moist, very dense.		SS-23	120/11"		1.5	19.7	-#200=40% non-plastic
FINE SAND, some clay, trace silt, brown, wet, slightly compact.		SS-24	50/5"			23.2	-#200=19%
<u>Total Depth of Boring</u> = 100 feet.	100						
<u>24 Hour Observations</u>: Groundwater measured at 20.8 feet and boring caved at 43.1 feet.							
<u>Note</u>: Wet rotary drilling techniques used.							

REVISED 11/98

LOG OF BORING

~~BORING MW 8~~ 5
BORING MW 5

Raba-Kistner-Brytest
Consultants, Inc.

Project: **Installation of Monitor Wells at the Edinburg Sanitary Landfill**
Location: **East Side**
Date Drilled: 12-11-96
Drill Methods:
Depth to - water ⫧ : 26.0

Elevation: ~~76.73'~~ 86.93'
Caving ➤ :

Job No.: AMB96-033
Scale: 5
Water Detected:
Date Checked:

ELEVATION/ DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	Material Description	DD pcf	MC %	LL %	PL %	PI %	-200 %	Qu tsf	RQD %	PP tsf
		SAND, silty, clayey, dark brown									
		CLAY, sandy, siltly, tan									
		SAND, tan									

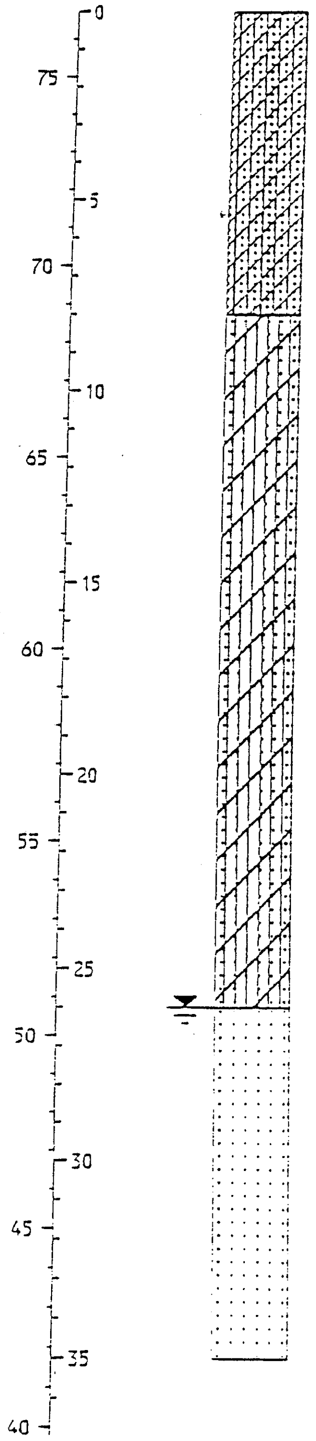


Figure 4

Revised 11/98

~~BORING MW-7~~

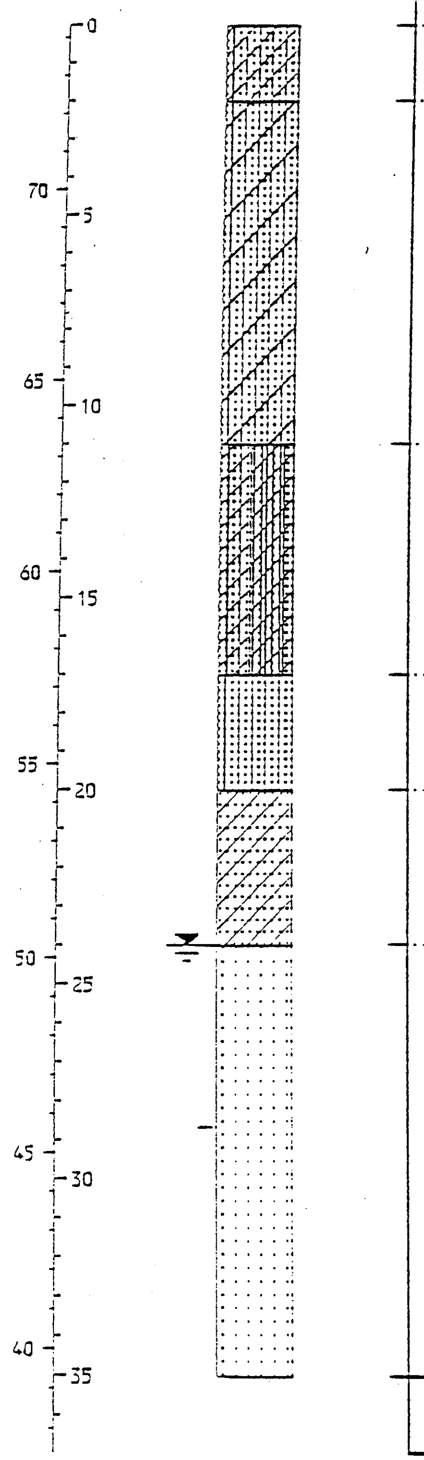
BORING MW 6

Raba-Kistner-Brytest
Consultants, Inc.

Project: **Installation of Monitor Wells at the Edinburg Sanitary Landfill**
Location: **East Side**
Date Drilled: 12-11-96
Drill Methods:
Depth to - water ≡ : 24.0

Elevation: ~~74.33'~~ 84.41'
Caving ➤ :

Job No.: AMB96-033
Scale: 5
Water Detected:
Date Checked:



Material Description	DD pcf	MC %	LL %	PL %	PI %	-200 %	Qu tsf	RQD %	PP tsf
SAND, clayey, silty, dark brown									
CLAY, silty, sandy, light brown									
SILT, sandy, clayey, tan									
SAND, silty, tan									
SAND, silty, clayey, tan									
SAND, f-m, tan									

Figure 3

Revised 11/98

LOG OF BORING

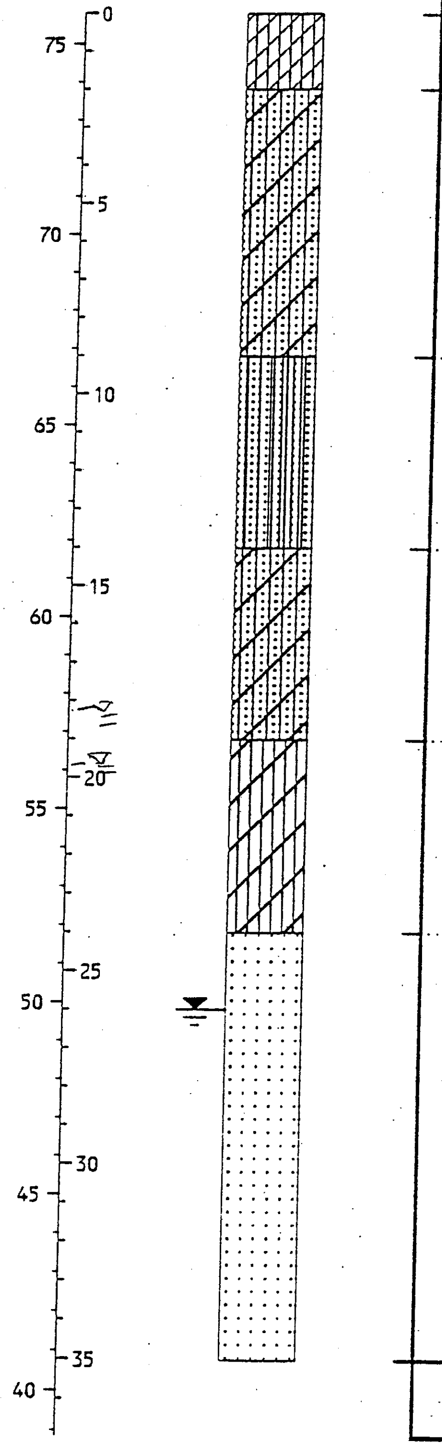
~~BORING MW-6~~ 7
BORING MW7

Raba-Kistner-Brytest
Consultants, Inc.

Project: **Installation of Monitor Wells at the Edinburg Sanitary Landfill**
Location: **north side**
Date Drilled: **12-10-96**
Drill Methods:
Depth to - water ≚ : **26.0**

Elevation: ~~75.81~~' 83.92'
Caving ➧ :

Job No.: **AMB96-033**
Scale: **5**
Water Detected:
Date Checked:



ELEVATION/ DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	Material Description	DD pcf	MC %	LL %	PL %	PI %	-200 %	Qu tsf	RQD %	PP tsf
		SILT, clayey, sandy, dark brown									
		CIAY, silty, sandy, light brown									
		SILT, sandy, tan									
		CLAY, silty, sandy, tan									
		CLAY, silty, tan									
		SAND, silty, f-M									

Figure 2

Revised 11/98

LOG OF BORING

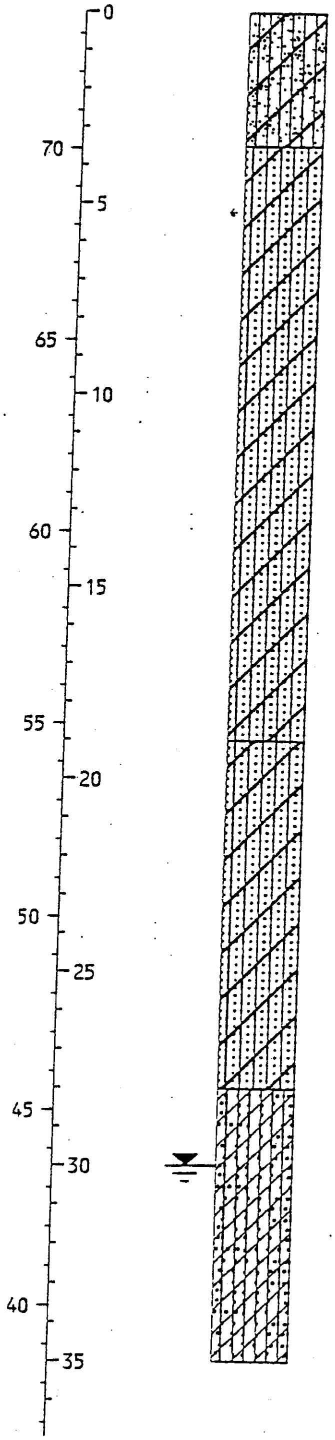
~~BORING MW-5 9~~
Boring MW 8

Raba-Kistner-Brytes
Consultants, In

Project: **Installation of Monitor Wells at the Edinburg Sanitary Landfill**
Location: **north side**
Date Drilled: **12-09-96**
Drill Methods:
Depth to - water ≚ : 30.0'

Elevation: ~~73.58~~ 83.69
Caving ➧ :

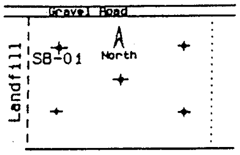
Job No.: AMB96-033
Scale: 5
Water Detected:
Date Checked:



ELEVATION/ DEPTH	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	Material Description	DD pcf	MC %	LL %	PL %	PI %	-200 %	Qu tsf	RQD %	PP tsf
		CIAY, silty, sandy, dark brown									
		CIAY, silty, sandy, light brown									
		CLAY, sandy, silty, beige									
		SAND, silty, clayey, Beige									

SOIL BOREHOLE LOG

NAME AND LOCATION:
Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL
ELEVATION:

DRILLING METHOD: Dry rotary to 26 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-01

Sheet 1 of 2

	INI			STATIC
WATER LEVEL	22.5	22.6	22.6	22.6
TIME	16:10	16:17	16:22	16:27
DATE	3/27/96	3/27/96	3/27/96	3/27/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
15:15	17:39
DATE	DATE
3/27/96	3/27/96

DRILL RIG:
SURFACE CONDITIONS: flat, cultivated cropland
ANGLE: Vertical
BEARING: ---
SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET *(ELEVATION)*	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
1			30		TOPSOIL: Sand, Silty (SM); grayish brown (5Y 3/2), some roots, dry	000	■						
2			30		SILT, Sandy (ML); light brown (5YR 6/4), w/ some white caliche, sand fine-grained, cohesive to friable, dry	002	■						
4 5			30			004	☒						
6 7			25		: as above, dry	006	■						
8 9			37		: as above, dry	008	■						
10 11			30		: as above, damp	010	■						
12 13			40		LAYER 1 SILT, Clayey, Sandy (MC-ML); colors as above, cohesive, homogeneous, dry to damp	012	■						
14 15			30		: some black staining, dry, friable	014	■						
16			25		: as above, no staining, dry	016	■						
18 19 20			20		: as above except slightly moist, friable, clay content decreasing	018	■						

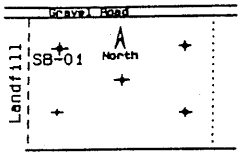
DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

LOGGED BY D. Smith
DATE 3/27/96
CHECKED BY

SOIL BOREHOLE LOG

NAME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 26 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: **SB-01**

Sheet 2 of 2

	INI			STATIC	DRILLING START	 FINISH
WATER LEVEL	22.5	22.6	22.6	22.6	TIME	TIME
TIME	16:10	16:17	16:22	16:27	15:15	17:39
DATE	3/27/96	3/27/96	3/27/96	3/27/96	DATE	DATE
CASING DEPTH					3/27/96	3/27/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	 LIQUID LIMIT %	 PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
21			35		: as above except sand content increasing, slightly moist	020	■						
22	13,19,23	Dense	53		**LAYER 2** SAND, Silty (SM); mod yellowish brown (5YR 5/4), very fine-grained, sub-rounded to rounded, homogeneous, poorly graded, slow dilatancy, wet	022	☒						
24 25	8,11,14	Med. Dense	60		: rapid dilatancy from 24.5 to 24.7 ft.	024	☒						
26 27	13,16,18	Dense	60		: silt content increasing, wet	026	☒						
28 29	18,29,34	V. Dense	66		: wet, w/ rapid dilitancy	028	☒						
30 31	24,27,30	V. Dense	60		: wet, w/ rapid dilitancy, very silty, very fine grained	030	☒						
32 33	18,21,26	Dense	60		: wet, w/ slow dilitancy	032	☒						
34 35	32,26,31	V. Dense	60		: moist	034	☒						
36	18,22,26	Dense	46		: wet, w/ rapid dilitancy	036	☒						
38 39	28,50;4"	V. Dense	40		: wet, w/ slow dilitancy TD @ 40 feet BGS (below ground surface)	038	☒						
40													

DRILLING CONTRACTOR *Van & Sons Drilling Services, Inc.*
Houston, Texas

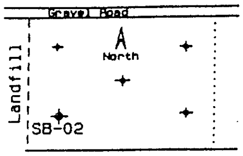
LOGGED BY *D. Smith* CHECKED BY

DATE *3/27/96*

SOIL BOREHOLE LOG

AME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DRILLING METHOD: Dry rotary to 20 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-02

Sheet 1 of 2

	INI			STATIC
WATER LEVEL	16.4	17.2		17.0
TIME	13:20	13:35		13:40
DATE	3/28/96	3/28/96		3/28/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
12:42	15:32
DATE	DATE
3/28/96	3/28/96

DATUM: ft. MSL

ELEVATION:

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET *(ELEVATION)*	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS: WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
1			50		TOPSOIL: Sand, Silty (SM); grayish brown (5Y 3/2)	000	■						
2			50		: iron oxide staining	002	■						
4 5			40		**LAYER 1** CLAY, Silty, w/ sand (CL); med to lt. brown (5YR 5/6) and yellowish gray (5Y 7/2), iron oxide concretions, dry	004	■						
6 7			40		: PP= >4.5, hard, some caliche, dry : secondary mineralization along seam @ 5.6 ft.	006	■						
8 9			55			008	■						
10 11			55		CLAY, (CL); PP= >4.5, hard, lt.brown (5YR 5/6) and yl gray (5Y 7/2) mottled low plasticity, tough dry strength some fine-grained sand	010	■						
12 13			45		: PP= >4.5, minor sand, caliche	012	■						
14 15			60		SILT, Clayey (MC); Mod. yellowish brown (10YR 5/4), homogeneous, moist	014	■						
16			65	▽ ▼	: as above, wet	016	■						
18 19 20	9,14,17	Dense	100		**LAYER 2** SAND, V. Silty (SM); mod. yl brown (10YR 5/4), very fine-grained, homogeneous, wet w/ rapid dilitancy	018	☒						

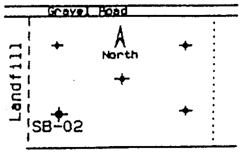
DRILLING CONTRACTOR *Van & Sons Drilling Services, Inc.*
Houston, Texas

LOGGED BY *D. Smith*
CHECKED BY
DATE *3/28/96*

SOIL BOREHOLE LOG

AME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 20 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-02

Sheet 2 of 2

	INI			STATIC
WATER LEVEL	16.4	17.2		17.0
TIME	13:20	13:35		13:40
DATE	3/28/96	3/28/96		3/28/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
12:42	15:32
DATE	DATE
3/28/96	3/28/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET *(ELEVATION)*	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
21			50		SILT, slightly Sandy (ML); color as above w/ dark yl orange (10YR 6/6) staining, homogeneous, moist	020	■						
22													
			30		SAND (SP); w/ some silt, mod. yl brown (10YR 5/4) v. fine to fine-grained, sub-rounded to rounded, wet	022	■						
24					: as above, wet								
25	11,16,21	Dense	66			024	X						
26					: silty clay zone @ 26.4 - 26.7								
27			66		: heavy mineral laminations @ 27 - 27.1 ft.	026	X						
28					: wet, w/ rapid dilitancy								
29	17,27,34	V. Dense	60			028	X						
30					: as above w/ thin (< 1mm) clay laminations through-out sample interval (spacing 0.5 - 1 in.)								
31	26,35,41	V. Dense	60			030	X						
32					: sand, wet w/ rapid dilitancy @ 32.5 - 33.0 ft.								
33	24,32,48	V. Dense	80		: indurated sandstone @ 33 - 33.2 ft.	032	X						
34					: clean sand (SP), wet								
35	28,32,41	V. Dense	46			034	X						
36					: indurated sand layers alternating w/ silt layers								
	33,41,48	V. Dense	66			036	X						
38					: as in 36 - 38 interval w/ dk yl or (10YR 6/6) staining from 38.5 - 39 ft.								
39	41,46,42	V. Dense	65		: wet w/ rapid dilitancy @ 39.1 - 39.6 ft., caliche @ 39.6 to 39.8	038	X						
40					TD @ 40 feet BGS (below ground surface)								

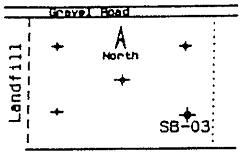
DRILLING CONTRACTOR *Van & Sons Drilling Services, Inc.*
Houston, Texas

LOGGED BY *D. Smith* CHECKED BY
DATE *3/28/96*

SOIL BOREHOLE LOG

AME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 26 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-03

Sheet 1 of 2

	INI			STATIC	DRILLING START	DRILLING FINISH
WATER LEVEL	24	22.8	22.3	20.90	TIME	TIME
TIME	9:40	9:43	9:50	10:20	8:25	11:46
DATE	3/28/96	3/28/96	3/28/96	3/28/96	DATE	DATE
CASING DEPTH					3/28/96	3/28/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET *(ELEVATION)*	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS					
								WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
1 2			75	●	TOPSOIL: Sand, Silty (SM); grayish brown (5Y 3/2), roots homogeneous, dry	000	■						
4			50	●		002	■						
5 6			75	░	SAND, Silty, (SM); lt. brown (5YR 5/6) to mod. yellowish brown (10YR 5/4), friable, dry	004	X						
7 8			35	░	SILT, Sandy, (ML); lt. brown (5YR 5/6) to mod. yellowish brown (10YR 5/4), caliche, dry	006	X						
9 10			30	░		008	X						
11 12			40	░		010	X						
13 14			35	░		012	X						
15 16			40	▨	LAYER 1 CLAY, Silty (CL); lt.brown (5YR 5/6) w/ black staining, low plasticity, low dry strength, low cohesiveness, friable dry	014	X						
18			35	▨	: as above w/ silt content increasing, friable, dry	016	■						
19 20			25	▨	: as above w/ some sand	018	■						

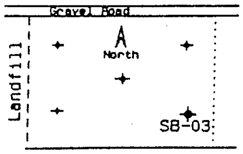
DRILLING CONTRACTOR *Van & Sons Drilling Services, Inc.*
Houston, Texas

LOGGED BY *D. Smith* CHECKED BY
DATE *3/28/96*

SOIL BOREHOLE LOG

AME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 26 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: **SB-03**

Sheet 2 of 2

	INI			STATIC	DRILLING START	DRILLING FINISH
WATER LEVEL	24	22.8	22.3	20.90	TIME	TIME
TIME	9:40	9:43	9:50	10:20	8:25	11:46
DATE	3/28/96	3/28/96	3/28/96	3/28/96	DATE	DATE
CASING DEPTH					3/28/96	3/28/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS: WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
				▨	: homogeneous, w/ silt content increasing, dry		■						
21			50	▨ ▼		020	■						
22				▨			■						
			25	▨		022	■						
24				▨ ∇	: as above, very silty w/ some sand, wet		■						
25			20	▨		024	■						
26				▨			■						
27	12,18,20	Dense	66	░	**LAYER 2** SAND Silty (SM); mod. yl brown (10YR 5/4) and dk yl or (10YR 6/6) interbedded sand and silt (1-inch thick layers) fine to very fine-grained, sub-angular to rounded sand, wet	026	■						
28				░	SAND (SP); w/ some silt, colors as above, homogeneous, wet								
29	21,27,31	V. Dense	60	░		028	☒						
30				░	: clean sand, wet w/ rapid dilitancy								
31	20,28,42	V. Dense	60	░		030	☒						
32				░									
33	22,28,36	V. Dense	53	░	: as above w/ abundant heavy minerals, sand rounded, wet w/ rapid dilitancy	032	☒						
34				░									
35	26,31,40	V. Dense	40	░		034	☒						
36				░									
	18,25,24	Dense	86	░	SILT, Sandy (ML); dk yl orange (10YR 6/6) laminated w/ moderate yl brown (10YR5/4), homogeneous, moist : iron stained wet zone from 37.4 - 37.6	036	☒						
38				▨	SILT, Clayey (MC); V pale orange (10YR 8/2), homogeneous, dry								
39			10	▨	: as above w/ sand & caliche, hard, dry	038	☒						
40				▨	TD @ 40 feet BGS (below ground surface)								

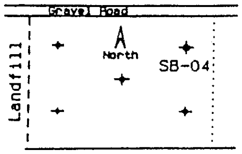
DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

LOGGED BY D. Smith
CHECKED BY
DATE 3/28/96

SOIL BOREHOLE LOG

S[illegible]AME AND LOCATION:

[illegible]dinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft;
Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-04

Sheet 1 of 2

	INI			STATIC
WATER LEVEL	25.2	25.3	25.25	25.15
TIME	10:47	10:54	11:00	13:05
DATE	3/27/96	3/27/96	3/27/96	3/27/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
9:15	14:10
DATE	DATE
3/27/96	3/27/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE		WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
-1			30		TOPSOIL: Sand, Silty (SM); grayish brown (5Y 3/2), roots fine grained, dry	000	■							
-2														
-[illegible]			30			002	■							
-4														
-5			40		SILT, Sandy, (ML); mod. yellowish brown (10YR 5/4) more cohesive, dry	004	■							
-6					: some caliche, cohesive, sand fine-grained, sub-rounded dry									
-7			30			006	■							
-8														
-9			31		SILT (ML); colors as above, homogeneous, dry	008	■							
-10					: some caliche, friable, dry									
-11			30			010	■							
-12					: dry									
-13			20			012	■							
-14					: dry									
-15			25			014	■							
-16					: dry									
-17	,50	V. Dense	60			016	☒							
-18														
-19			40	▨	**LAYER 1** SILT, Clayey (MC); colors as above, w/ black staining trace sand, homogeneous, dry	018	■							
-20														

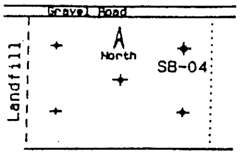
DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

LOGGED BY D. Smith
CHECKED BY
DATE 3/27/96

SOIL BOREHOLE LOG

NAME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL
ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft; Wet Rotary to 40 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-04

Sheet 2 of 2

	INI			STATIC
WATER LEVEL	25.2	25.3	25.25	25.15
TIME	10:47	10:54	11:00	13:05
DATE	3/27/96	3/27/96	3/27/96	3/27/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME 9:15	TIME 14:10
DATE 3/27/96	DATE 3/27/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical
BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET *(ELEVATION)*	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS: WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
21			40		: as above, black staining w/ minor iron oxide staining dry : sand content increasing, dry	020	■						
22			50		**LAYER 2** SILT Sandy (ML); mod. yl brown (10YR 5/4), homogeneous, sand very fine-grained, moist	022	■						
24 25	8,14,23	Dense	86		SAND, Silty (SM); mod. yl brown (10YR 5/4), homogeneous, very fine-grained, sub-angular to sub-rounded, wet, slow dilitancy : 1-inch clay lense @ 25.1 - 25.2	024	☒						
26 27	9,17,26	Dense	100		: wet w/ silt content decreasing	026	☒						
28 29	17,25,30	V. Dense	66		: as above, silt minor, moist	028	☒						
30 31	19,24,28	V. Dense	80		: as above except wet w/ rapid dilitancy	030	☒						
32 33	14,23,28	V. Dense	53		: sub-rounded to rounded grains, moist	032	☒						
34 35	29,50:5"	V. Dense	46		: moist	034	☒						
36	21,33,40	V. Dense	86		SAND Clayey (SC); mod. yl brown (10YR 5/4) homogeneous, stiff moist	036	☒						
39 40	14,21,24	Dense	100		: color change to v. pale orange (10YR 8/2), clay content increasing ,moist TD @ 40 feet BGS (below ground surface)	038	☒						

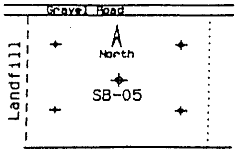
DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

LOGGED BY D. Smith
CHECKED BY
DATE 3/27/96

SOIL BOREHOLE LOG

IAME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft;
Wet Rotary to 100 ft,

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-05

Sheet 1 of 5

	INI			STATIC
WATER LEVEL	26.5	21.1	21.0	21.0
TIME	9:15	9:18	9:23	9:30
DATE	3/26/96	3/26/96	3/26/96	3/26/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
7:43	18:10
DATE	DATE
3/26/96	3/26/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET *(ELEVATION)*	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
1 2			25		TOPSOIL: Sand, Silty (SM); soft, grayish brown (5Y 3/2), very fine grained, homogeneous w/ roots, dry	000	■						
4			30		: as above except moist	002	■						
5 6	5,8,8	Med. Dense	93		SILT, Sandy (ML); light brown (5YR 6/4), w/ some white caliche, homogeneous, dry	004	☒						
7 8	4,5,6	Med. Dense	93		: as above, dry, friable	006	☒						
9 10	6,9,10	Med. Dense	93			008	☒						
11 12	12,18,24	Dense	80		: as above, w/ some brown iron nodules	010	☒						
13 14	5,29,50	V. Dense	80		: as above, w/ some yellowish gray (5Y 7/2), minor dark yellowish orange (10YR 6/6) iron staining	012	☒						
15 16	14,21,40	V. Dense	86		LAYER 1 CLAY, Silty (CL); PP= 4.5, hard, lt.brown (5YR 5/6), cohesive homogeneous, dry	014	☒						
18			35		: PP= 4.5, as above, moist, low plasticity, blocky structure, iron oxide nodules, med. dry strength	016	■						
19 20					: as above w/ some black staining	018	■						

DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

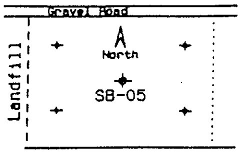
LOGGED BY D. Smith CHECKED BY

DATE 3/26/96

SOIL BOREHOLE LOG

NAME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft;
Wet Rotary to 100 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: **SB-05**

Sheet 2 of 5

	INI			STATIC	DRILLING START	DRILLING FINISH
WATER LEVEL	26.5	21.1	21.0	21.0	TIME	TIME
TIME	9:15	9:18	9:23	9:30	7:43	18:10
DATE	3/26/96	3/26/96	3/26/96	3/26/96	DATE	DATE
CASING DEPTH					3/26/96	3/26/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
21			35	▨ ▼	: silt content increasing, MnO_2 & minor FeO_2 staining some roots, dry	020	■						
22			40	▨	: PP=2.5, silty zone @ 22.0 - 22.5 ft., dark yellowish orange (10YR 6/6), slightly moist	022	■						
24 25			35	▨	: PP= > 4.5, as above except very silty, color change to dk yellowish orange (10YR 6/6) and lt brown (5YR 5/6) mottled.	024	■						
26 27			50	▽	**LAYER 2** SAND, V. Silty (SM); lt. brown (5YR 5/4), fine to very fine-grained, sub-angular to sub-rounded, homogeneous, wet	026	■						
28 29	24,38,40	V. Dense	100		: clay lense @ 29.4 - 30 ft.	028	☒						
30 31	18,30,42	V. Dense	100		SILT, (ML); lt brown (5YR 5/4) w/ dk yellowish orange (10YR 6/6) mottling and staining along bedding planes, homogeneous, moist	030	☒						
32 33	17,34,40	V. Dense	25		: as above, no staining, lt. brown (5YR 5/4), moist	032	☒						
34 35	17,22,24	V. Dense	100		SAND (SP); mod. yellowish brown (10YR 5/4), v. fine-grained sub-rounded to rounded, homogeneous, wet	034	☒						
36	22,28,36	V. Dense	80		: as above except moist	036	☒						
38 39 40	26,29,32	V. Dense	60			038	☒						

DRILLING CONTRACTOR *Van & Sons Drilling Services, Inc.*
Houston, Texas

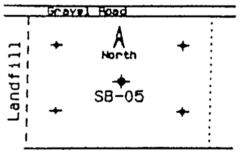
LOGGED BY *D. Smith* CHECKED BY ____

DATE *3/26/96*

SOIL BOREHOLE LOG

SITE NAME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL

ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft; Wet Rotary to 100 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: **SB-05**

Sheet 3 of 5

	INI			STATIC
WATER LEVEL	26.5	21.1	21.0	21.0
TIME	9:15	9:18	9:23	9:30
DATE	3/26/96	3/26/96	3/26/96	3/26/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
7:43	18:10
DATE	DATE
3/26/96	3/26/96

DRILL RIG:

SURFACE CONDITIONS: flat, cultivated cropland

ANGLE: Vertical

BEARING: ---

SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
41	27,31,44	V. Dense	66		: moist	040	☒						
42	37,50;4"	V. Dense	46		: as above except grain size increases to fine, moist	042	☒						
44 45	50;6"	V. Dense	26			044	☒						
46 47	30,40,50	V. Dense	66			046	☒						
48 49	50;5"	V. Dense	26		Indurated fine gravel size clay size particles in sand matrix clay is dk yl or (10YR 6/6), yellowish gray (5Y 7/2) and v. pale orange (10YR 8/2), moist	048	☒						
50 51	35,50;4"	V. Dense	60			050	☒						
52 53	44,50;2"	V. Dense	46		: as above w/ some dk yl orange staining, clay content increasing	052	☒						
54 55	50;5"	V. Dense	26		: as above w/ particle size 2 - 4 mm	054	☒						
56 57	41,50;5.5"	V. Dense	53		**LAYER 3** CLAY, Silty (CL); PP= >4.5, very hard, yellowish gray (5Y 7/2), dk yl or (10YR 6/6), and v. pale orange (10YR 8/2) mottled, some 2 - 6 mm size particles	056	■						
59 60			5		: as above except no dk yellowish orange	058	■						

DRILLING CONTRACTOR *Van & Sons Drilling Services, Inc.*
Houston, Texas

LOGGED BY *D. Smith*

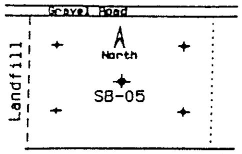
CHECKED BY

DATE *3/26/96*

SOIL BOREHOLE LOG

SITE NAME AND LOCATION:

Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL
ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft;
Wet Rotary to 100 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: **SB-05**

Sheet 4 of 5

	INI			STATIC
WATER LEVEL	26.5	21.1	21.0	21.0
TIME	9:15	9:18	9:23	9:30
DATE	3/26/96	3/26/96	3/26/96	3/26/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME 7:43	TIME 18:10
DATE 3/26/96	DATE 3/26/96

DRILL RIG:
SURFACE CONDITIONS: flat, cultivated cropland
ANGLE: Vertical
BEARING: ---
SAMPLE HAMMER TORQUE: ft.-lbs.

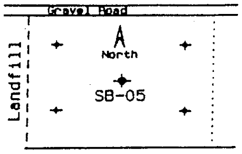
DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
61			10	▨	CLAY (CL); PP= >4.5, v. hard, yellowish gray (5Y 7/2), minor dk yl orange staining, cohesive, low plasticity, dry	060	■						
62			15	▨	: PP= > 4.5, yl gray (5Y 7/2) and lt. brown (5YR 5/6) mottled w/ some black staining, calche, slickensided cleavage planes,	062	■						
64 65			20	▨		064	■						
66 67			25	▨	: PP= > 4.5, v. hard	066	■						
68 69			25	▨	: PP= > 4.5, v. hard	068	■						
70 71			30	▨	: as above, increase in lt. brown (5YR 5/6)	070	■						
72 73			40	▨	: PP= > 4.5, v. hard, plasticity increasing	072	■						
74 75			35	▨	CLAY (CH); PP= >4.5, v. hard, lt brown (5YR 5/6) w/ minor yl gray (5Y 7/2), black staining, homogeneous, med. plasticity, cohesive, dry : PP= >4.5, v. hard	074	■						
76 77			30	▨		076	■						
79 80			25	▨	: PP= >4.5, as above w/ some caliche & mineralization	078	■						

DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

LOGGED BY D. Smith
DATE 3/26/96
CHECKED BY

SOIL BOREHOLE LOG

SITE NAME AND LOCATION:
Edinburg Sanitary Landfill
Edinburg, Texas
Geotechnical Investigation
Rust Project Number 68632.200



DATUM: ft. MSL
ELEVATION:

DRILLING METHOD: Dry rotary to 28 ft;
Wet Rotary to 100 ft.

SAMPLING METHOD: Continuous Shelby Tube (solid) and
Split Spoon (X) 2-ft samplers (2.8 inch ID.)

BORING NUMBER: SB-05

Sheet 5 of 5

	INI			STATIC
WATER LEVEL	26.5	21.1	21.0	21.0
TIME	9:15	9:18	9:23	9:30
DATE	3/26/96	3/26/96	3/26/96	3/26/96
CASING DEPTH				

DRILLING	
START	FINISH
TIME	TIME
7:43	18:10
DATE	DATE
3/26/96	3/26/96

DRILL RIG:
SURFACE CONDITIONS: flat, cultivated cropland
ANGLE: Vertical
BEARING: ---
SAMPLE HAMMER TORQUE: ft.-lbs.

DEPTH IN FEET (ELEVATION)	SS-BLOWS/6"	SS-Description	RECOVERY %	SYMBOL	FIELD DESCRIPTION OF MATERIAL (ASTM 2488)	SAMPLE NUMBER	SAMPLE TYPE	TEST RESULTS WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %		ATTERBERG LIMITS	FALLING HEAD PERM.
81			35			080							
82					: PP= > 4.5, v. hard, no mineralization								
			35			082							
84					: PP= >4.5, v. hard								
85			35			084							
86					: PP= >4.5, v. hard								
87			30			086							
88					CLAY, Silty (CL) PP= >4.5 v. hard, colors as above, med. plasticity, cohesive,homogeneous								
89			35			088							
90					: PP= >4.5, v. hard								
91			35			090							
92					: PP= >4.5, v. hard, trace caliche, minor yl gray color								
93			30			092							
94					: PP= >4.5, v. hard, silt content slightly lower								
95			35			094							
96					: PP= >4.5, v. hard								
97			35			096							
					CLAY (CH); PP= >4.5, v. hard, lt brown (5YR 5/6) w/ black staining								
99						098							
100					TD @ 100 feet BGS (below ground surface)								

DRILLING CONTRACTOR Van & Sons Drilling Services, Inc.
Houston, Texas

LOGGED BY D. Smith
DATE 3/26/96
CHECKED BY

Golder Associates Houston, Texas

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
HIDALGO COUNTY, TEXAS

LEGEND

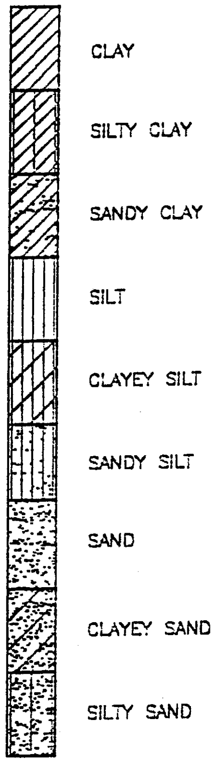


TABLE 3 Criteria for Describing Moisture Condition

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

TABLE 5 Criteria for Describing Consistency

Description	Criteria
Very soft	Thumb will penetrate soil more than 1 in. (25 mm)
Soft	Thumb will penetrate soil about 1 in. (25 mm)
Firm	Thumb will indent soil about ¼ in. (6 mm)
Hard	Thumb will not indent soil but readily indented with thumbnail
Very hard	Thumbnail will not indent soil

TABLE 7 Criteria for Describing Structure

Description	Criteria
Stratified	Alternating layers of varying material or color with layers at least 6 mm thick; note thickness
Laminated	Alternating layers of varying material or color with the layers less than 6 mm thick; note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

TABLES REFERENCE: ASTM D-2488

FOR ADDITIONAL SOIL TYPE DESCRIPTION AND CHARACTERIZATION
SEE ASTM D-2487 & ASTM D-2488

STATE OF TEXAS
G. M. HUDGINS
73845
REGISTERED PROFESSIONAL ENGINEER

12/1/01
Rev. 1
1 Page

Consistency/ Relative Density based on "N" Value (SPT count per foot)

Sands (Fairly Reliable)		Clays (Rather Unreliable)	
Number of Blows Per Foot N	Relative Density	Number of Blows Per Foot N	Consistency
		Below 2	Very soft
0-4	Very loose	2-4	Soft
4-10	Loose	4-8	Medium
10-30	Medium	8-15	Stiff
30-50	Dense	15-30	Very stiff
Over 50	Very dense	Over 30	Hard

Liu. C. and Evett, J.B, 1981, Soils and Foundations, Prentice Hall, Englewood Cliffs, New Jersey, pg. 48.

Golder Associates Houston, Texas

SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Flat – Inactive Cropland	BORING NO. G-1
			SHEET PAGE 1 OF 2
NORTHING:	2026	GENERAL NOTES	DRILLING
EASTING:	2420	Borehole offset 10' to South of Proposed well location.	START / FINISH
ELEVATION:	86.5	Elev: @ Boring approximately 4" lower than well	
LOGGED BY:	A. KLOTZ		TIME 17:30 / TIME 11:10
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		DATE 10/12/99 / DATE 10/13/99
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
			S-1	Loose, dry, Brown Clayey SAND (SC) Homogeneous.	G							
5	3/5/6 N=11	☒	S-2	Compact, dry, Brown Clayey fine SAND (SC) Homogeneous, but with few 5 mm white stain lenses and calcareous deposits.	SS	12/18		10.1	27 13 14	42.0		
	11/13/20 N=33	☒	S-3		SS	12/18						
10	19/28/34 N=62	☒	S-4	11.0 Hard, dry, Brown Silty Sandy CLAY (CL) some sand Homogeneous, but with few 5 mm white stain lenses.	SS	12/18						
	22/39/50-5" N>89	☒	S-5		SS	12/17						
15	20/32/50-4" N>82	☒	S-6		SS	16/16	4.5+	13.9	33 18 15	73.6		
	7/12/16 N=28	☒	S-7	16.0 Sandy SILT, with few white stains Compact, moist, Brown Silty fine SAND (SM) Homogeneous, but with few 5 mm white stain lenses in upper 6 inches.	SS	18/18						
	11/12/11 N=23	☒	S-8	–wet at 20'	SS	18/18		20.8	23 21 2	38.9		
20	6/15/22 N=37	☒	S-9	20.5	SS	18/18						
	8/13/15 N=28	☒	S-10	▼ Dense, wet, yellowish Brown Silty fine SAND (SM) Homogeneous.	SS	18/18						
25	12/14/19 N=33	☒	S-11		SS	18/18						
	11/20/26 N=46	☒	S-12		SS	18/18				27.8		
	13/20/33 N=53	☒	S-13		SS	18/18						
30	21/35/42 N=77	☒	S-14		SS	18/18						
	4/10/27 N=37	☒	S-15		SS	18/18						
35	20/50/50-2" N>100	☒	S-16		SS	14/14						

Golder Associates Houston, Texas

SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ON:

NORTHING: 2026	GENERAL NOTES		BORING NO. G-1
EASTING: 2420	Borehole offset 10' to South of Proposed well location.		SHEET PAGE 2 OF 2
ELEVATION: 86.5	Elev: @ Boring approximately 4" lower than well		DRILLING
LOGGED BY: A. KLOTZ		START TIME 17:30	FINISH TIME 11:10
DRILLING CONTRACTOR: PSI		DATE 10/12/99	DATE 10/13/99
B.O.P. GEOLOGIST: N/A			
DRILL RIG: CME 75 HSA			

SURFACE CONDITIONS Flat – Inactive Cropland

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
40	56/50-3" N>50	☒	S-17	Very Dense, wet, yellowish Brown Silty fine SAND (SM) Homogeneous.	SS	9/9						
	22/45/50-4" N>95	☒	S-18	42.0 Hard, moist, light Gray CLAY, silghtly sandy (CH) Homogeneous, but lensed w/ few 5mm calcareous deposits (Caliche).	SS	16/16	4.5+	16.1	64 22 42	76.5		
50	15/42/50-3" N>92	☒	S-19	TD 50.0	SS	15/15	4.5+					
55												
60												
65												
70												

Golder Associates Houston, Texas

SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Flat to Slightly Rolling Fallow Cropland	BORING NO. G-2
			SHEET PAGE 1 OF 2
NORTHING:	1870	GENERAL NOTES	
EASTING:	3188		DRILLING
ELEVATION:	87.72		START / FINISH
LOGGED BY:	A. KLOTZ		TIME 07:26 / TIME 09:15
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		DATE 10/12/99 / DATE 10/12/99
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
		☐	S-1	Loose, dry, Brown, Clayey SAND (SC)	G							
5	3/5/6 N=11	☒	S-2		SS	6/18						
10		■	S-3	Compact, dry, Brown Clayey SAND (SC) Homogeneous, but w/ few 5mm calcareous deposits.	ST	18/24	4.5+	9.7	25 14 11	46.5		103.5
15	16/26/50-5" N>76	☒	S-4	Hard, dry, light reddish Brown Silty Clayey SAND (SC) Homogeneous, but w/ few 5mm calcareous deposits.	SS	17/17						
20	6/7/9 N=16	☒	S-5	Compact, moist ,light reddish Brown Clayey SAND (SC) Lensed w/ 8mm Sandy Silt seams. 20.0	SS	18/18						
25	7/11/13 N=24	☒	S-6	▼ Compact to dense, wet, Brown Silty fine SAND (SM) Homogeneous.	SS	18/18				18.9		
30	12/15/22 N=37	☒	S-7	same, w/ few 8mm Sandy Silt lenses @ 30'.	SS	18/18						
35	12/20/30 N=50	☒	S-8	33.0 Hard, moist, reddish Brown CLAY, with sand (CH) Homogeneous.	SS	18/18		18.7	50 18 32			

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Flat to Slightly Rolling Fallow Cropland	BORING NO. G-2
			SHEET PAGE 2 OF 2
NORTHING:	1870	GENERAL NOTES	DRILLING
EASTING:	3188		START / FINISH
ELEVATION:	87.72		
LOGGED BY:	A. KLOTZ		START TIME 07:26 / FINISH TIME 09:15
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		START DATE 10/12/99 / FINISH DATE 10/12/99
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL		SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
40		■	S-9	▨	Hard, moist, light Brown CLAY, with sand (CH) Homogeneous, but w/ few cemented nodules.	ST	8/24	4.5+					
5	16/38/50-5" N>88	☒	S-10	▨	Hard, moist, light Gray CLAY, with sand (CH) Homogeneous, but w/ few slightly cemented nodules	SS	17/17		24.6	68 24 44			
50	29/50-1" N>50	☒	S-11	▨	same, Jointed and Slightly Cemented w/ Black Stains below 48'	SS	7/7						
					water @ 23.5' at 0928 after completion								

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ION:

SURFACE CONDITIONS	Flat to Slightly Rolling Fallow Cropland		BORING NO.	G-3	
	Located in a recessed portion of a generally elevated area.		SHEET	PAGE 1 OF 2	
NORTHING:	1857	GENERAL NOTES	DRILLING		
EASTING:	4118	Borehole relocated 12' West and 8' South of stake due to		START	FINISH
ELEVATION:	96.0	inaccessability.			
LOGGED BY:	A. KLOTZ		TIME	11:05	14:15
DRILLING CONTRACTOR:	PSI				
B.O.P. GEOLOGIST:	N/A		DATE	10-12-99	10-12-9
DRILL RIG:	CME 75 HSA				

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
			S-1	Loose, dry, yellowish Brown Silty fine SAND (SM) Homogeneous.	G	n/a						
				2.0								
5	3/5/7 N=12	☒	S-2	Compact, dry, light Brown Slightly Clayey fine SAND (SC) Homogeneous, but w/ few 5mm white stained lenses.	SS	18/18						
10	6/7/9 N=16	☒	S-3	Compact, dry, Brown Clayey SAND (SC) Homogeneous, but w/ few cemented nodules.	SS	14/18		12.9	26 13 13	48.6		
				12.0								
15	9/10/12 N=22	☒	S-4	Compact, dry, yellowish Brown Silty fine SAND (SM) Homogeneous, but w/ few 5mm white stained lenses. Sandy CLAY lenses at 16'–17'	SS	10/18						
20	7/8/12 N=20	☒	S-5		SS	18/18						
				21.0								
25	16/22/41 N=63	☒	S-6	Hard, dry, Brown CLAY, Slightly Sandy (CL) Homogeneous, but w/ few 5mm calcareous deposits.	SS	18/18	4.5+					
0		■	S-7	Hard, moist, Brown Silty CLAY (CL)	ST	24/24	4.5+	18.3	36 16 20			
				33.0								
35		■	S-8	Compact, moist, Brown Sandy SILT (ML) Lensed w/ iron stains and Silty Clay Seams ▼	ST	24/24						

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
[illegible]O COUNTY, TEXAS
L[illegible]ON:

NORTHING: 1857
EASTING: 4118
ELEVATION: 96.0
LOGGED BY: A. KLOTZ
DRILLING CONTRACTOR: PSI
B.O.P. GEOLOGIST: N/A
DRILL RIG: CME 75 HSA

SURFACE CONDITIONS Flat to Slightly Rolling Fallow Cropland
Located in a recessed portion of a generally elevated area.

GENERAL NOTES
Borehole relocated 12' West and 8' South of stake due to inaccessability.

BORING NO. G-3
SHEET PAGE 2 OF 2

DRILLING	
START	FINISH
TIME 11:05	TIME 14:15
DATE 10-12-99	DATE 10-12-99

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
40	16/36/33 N=69	☒	S-9	Very dense, wet, Brown Silty fine SAND (SM) Homogeneous.	SS	18/18						
	9/16/22 N=38	☒	S-10	43.5 Hard, moist, reddish Brown CLAY (CL) Homogeneous.	SS	18/18	4.5+					
50		■	S-11	47.5 Very stiif, moist, light Brown Clayey SAND w/Silt (SC) Homogeneous, but w/ few cemented nodules.	ST	18/24	3.5	16.4	31 15 16	41.2	4.14	112.2
55	16/36/50 N=86	☒	S-12	52.0 Hard, moist, light Gray CLAY, Slightly Sandy (CH) Slickensided and Slightly Cemented	SS	18/18						
		☒	S-13	same, sand increases.	SS	18/18		22.1	89 27 62			
				TD-58.0								
60												
65												
70												

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS C OF EDINBURG, O COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS	Gently Rolling – Cultivated Cropland	BORING NO.	G-4
				SHEET	PAGE 1 OF 2
NORTHING:	2036	GENERAL NOTES		DRILLING	
EASTING:	4833			START	FINISH
ELEVATION:	100.37			TIME	TIME
LOGGED BY:	A. KLOTZ			11:45	15:38
DRILLING CONTRACTOR:	PSI			DATE	DATE
B.O.P. GEOLOGIST:	N/A			10-14-99	10-14-99
DRILL RIG:	CME 75 HSA				

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
			S-1	Loose, dry, Silty fine SAND, slightly clayey (SM) Homogeneous.	G							
				2.0								
5	7/7/10 N=17		S-2	Compact, dry, yellowish Brown Clayey SAND (SC) Homogeneous.	SS	12/18						
10	8/8/7 N=15		S-3	Compact, dry, light Brown Clayey SAND (SC) Homogeneous, but w/few white stained lenses at 10'-12'.	SS	12/18						
	7/9/9 N=18		S-4		SS	12/18	4.5+			47.8		
				12.0								
	5/6/6 N=12		S-5	Compact, dry, yellowish Brown Sandy SILT, slightly Clayey (ML) Homogeneous.	SS	12/18						
15	5/5/3 N=8		S-6	Compact, dry, yellowish Brown Sandy SILT, slightly Clayey (ML) Homogeneous.	SS	12/18						
	6/7/7 N=14		S-7	-Clayey 16'-18'	SS	18/18						
20	5/5/7 N=12		S-8	Compact, dry, yellowish Brown silty fine SAND (SM) Homogeneous.	SS	18/18				38.7		
	7/10/11 N=21		S-9	Compact, dry, yellowish Brown Sandy SILT, slightly Clayey (ML) Homogeneous.	SS	12/18						
	6/6/6 N=12		S-10		SS	18/18						
25	5/7/9 N=16		S-11		SS	18/18						
				25.0								
	22/32/50-4" N>82		S-12	Hard, dry, Brown Silty CLAY, slightly Sandy (CL) Homogeneous, but w/ few 5mm calcareous deposits.	SS	16/16		12.7	29 16 13			
0	26/50-6" N>50		S-13		SS	12/12						
				32.0								
35	7/10/8 N=18		S-14	Compact, moist, light Brown Silty fine SAND (SM) Homogeneous.	SS	18/18						
	8/7/12		S-15		SS	18/18				48.9		

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, CO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Gently Rolling – Cultivated Cropland	BORING NO. G-4
NORTHING:	2036	GENERAL NOTES	SHEET PAGE 2 OF 2
EASTING:	4833		DRILLING
ELEVATION:	100.37		START / FINISH
LOGGED BY:	A. KLOTZ		TIME 11:45 / TIME 15:38
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		DATE 10-14-99 / DATE 10-14-99
DRILL RIG:	CME 75 HSA		

								TEST RESULTS				
DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
	10/13/17 N=30	☒	S-16	Compact, wet, light Brown Silty fine SAND (SM) Homogeneous.	SS	18/18						
40	12/17/26 43	☒	S-17		SS	18/18						
	16/42/50-5" N>92	☒	S-18	same, dense to very dense	SS	17/17				26.4		
5	21/32/50-5" N>82	☒	S-19		SS	17/17						
50	10/21/50-4" N>71	☒	S-20		SS	16/16						
				52.0 Hard, moist, Brown CLAY (CH)								
55		■	S-21	53.0 Dense, wet, light Brown Silty fine SAND (SM) Lensed w/ few 8-15mm Clay seams.	ST	12/24						
60	50/50-2" N>50	☒	S-22	same, very dense	SS	6/8						
		■	S-23	60.5 Hard, moist, reddish Brown CLAY, Slightly Silty (CH)	ST	4/4						
	50-4" N>50	☒	S-24	Hard, moist, light Brown CLAY (CH) Lensed w/ few 5mm sand and calcium deposits.	SS	4/4		25.7	81 27 54			
				TD 62.5								
65												
70												

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS [illegible] OF EDINBURG, [illegible]O COUNTY, TEXAS [illegible]ON:	993-4450	SURFACE CONDITIONS Flat – Grass	BORING NO. G-5
			SHEET PAGE 1 OF 1
NORTHING:	1521	GENERAL NOTES	
EASTING:	3198		DRILLING
ELEVATION:	87.76		START / FINISH
LOGGED BY:	A. KLOTZ		TIME 08:30 / TIME 09:45
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		DATE 10-11-99 / DATE 10-11-9
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	TEST RESULTS: ATTERBERG (LL/PL/PI)	TEST RESULTS: % FINES (Pass #200)	TEST RESULTS: SHEAR STRENGTH (ksf)	TEST RESULTS: UNIT WEIGHT (pcf)
			S-1	Loose, dry, Brown Silty fine SAND (SM) Homogeneous. 3.0	G							
5	3/3/4 N=7	☒	S-2	Firm, dry, light Brown Sandy CLAY (CL) Homogeneous. 8.0	SS	18/18						
10	11/14/14 N=28	☒	S-3	Compact, dry, light Brown Clayey SAND (SC) Slightly Silty Homogeneous. 12.5	SS	18/18						
	20/28/42 N=70	☒	S-4	Hard, moist, Brown Sandy CLAY (CL) Homogeneous, but w/ few 8mm gravel particles.	SS	18/18		27.1	36 16 20			
15	12/19/24 N=43	☒	S-5	Very stiff, moist, Brown CLAY (CL) Homogeneous, but w/ few 5mm calcareous deposits.	SS	18/18						
		■	S-6	17.5	ST	24/24						
	7/8/9 N=17	☒	S-7	Compact, moist, Brown Clayey SILT (ML) Homogeneous. 20.0	SS	18/18						
20	5/6/7 N=13	☒	S-8	Compact, wet, Brown Sandy SILT (ML) ▼ Homogeneous.	SS	18/18				62.9		
25	4/6/7 N=13	☒	S-9		SS	18/18						
				TD 25.0								
30												
35												

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS OF EDINBURG, O COUNTY, TEXAS ON:	993–4450	SURFACE CONDITIONS Rolling – Cultivated Cropland	BORING NO. G–6	
			SHEET PAGE 1 OF 2	
NORTHING:	1504	GENERAL NOTES		
EASTING:	4737	Offset 8' to East.	DRILLING	
ELEVATION:	106.4		START	FINISH
LOGGED BY:	A. KLOTZ		TIME 13:15	TIME 17:45
DRILLING CONTRACTOR:	PSI			
B.O.P. GEOLOGIST:	N/A		DATE 10–19–99	DATE 10–19–99
DRILL RIG:	CME 75 HSA			

DEPTH IN FEET	SPT BLOW COUNTS	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
		S–1	Loose, dry, Brown Silty fine SAND (SM) Homogeneous.	G							
			2.0								
5	6/7/7 N=14	S–2	Compact, dry, yellowish Brown Clayey SAND (SC) Homogeneous.	SS	18/18						
10	5/7/6 N=13	S–3	Compact, dry, light Brown Silty–Clayey fine SAND (SM–SC) Homogeneous.	SS	18/18						
15	7/8/10 N=18	S–4	Compact, dry, light Brown Clayey SAND, Slightly Silty (SC) Homogeneous, but w/ few white stained lenses. –Dry 18'–30'	SS	18/18						
20	7/9/9 N=18	S–5	–Dry to 30'	SS	12/18						
25	9/12/14 N=26	S–6		SS	12/18						
0	10/16/19 N=35	S–7	30.0	SS	18/18						
		S–8	Hard, moist, reddish Brown CLAY, slightly sandy(CL) Homogeneous, but w/few 5mm calcareous deposits.	ST	12/12	4.5+	14.2	38 12 26	57.5		123.
35	13/21/28 N=49	S–9		SS	18/18	4.5+					

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993–4450
EDINBURG, TEXAS
C OF EDINBURG,
O COUNTY, TEXAS
L N:

NORTHING:	1504	SURFACE CONDITIONS Rolling – Cultivated Cropland	BORING NO.	G–6
EASTING:	4737	GENERAL NOTES	SHEET	PAGE 2 OF 2
ELEVATION:	106.4	Offset 8' to East.	DRILLING	
LOGGED BY:	A. KLOTZ		START	FINISH
DRILLING CONTRACTOR:	PSI		TIME 13:15	TIME 17:45
B.O.P. GEOLOGIST:	N/A		DATE 10–19–99	DATE 10–19–99
DRILL RIG:	CME 75 HSA			

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
40		■	S–10	Dense, moist, light Brown Sandy SILT (ML) 38.0 Homogeneous.	ST	15/24						
	12/15/18 N=33	☒	S–11	▼ 43.0 Dense, wet, light Brown Silty fine SAND (SP–SM) Homogeneous.	SS	18/18						
50	6/21/50–5" N>71	☒	S–12		SS	17/17						
55	50/50–3" N>50	☒	S–13	Very dense, wet, light Brown fine SAND, Slightly Silty (SP–SM) Homogeneous.	SS	8/9				9.2		
60	50–4.5" N>50	☒	S–14		SS	5/5						
65	23/50–5" N>50	☒	S–15	64.0 Hard moist, light Gray Sandy CLAY (CL) Homogeneous.	SS	6/11						
	50–5" N>50	☒	S–16		SS	5/5						
70				TD 68.5								

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ION:

NORTHING:	1110	GENERAL NOTES	SURFACE CONDITIONS Flat – Fallow Cropland	BORING NO. G–7
EASTING:	2366			SHEET PAGE 1 OF 2
ELEVATION:	82.7			DRILLING
LOGGED BY:	A. KLOTZ			START TIME 9:30 / FINISH TIME 11:35
DRILLING CONTRACTOR:	PSI			
B.O.P. GEOLOGIST:	N/A			START DATE 10–21–99 / FINISH DATE 10–21–9
DRILL RIG:	CME 75 HSA			

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
			S–1	Loose, dry, dark Brown Clayey SAND (SC) Homogeneous.	G	n/a	n/a					
5	12/20/18 N=38	☒	S–2	2.5 Hard, dry, light Brown Sandy CLAY (CL) Homogeneous, but w/ few 5mm calcareous deposits.	SS	8/18	4.5+					
10	14/20/34 N=54	☒	S–3	8.0 Hard, dry, reddish Brown CLAY, little sand (CL) Homogeneous.	SS	18/18		15.9	51 15 36	82.1		
15		■	S–4		ST	24/24	4.5+					
20		■	S–5	Hard, moist, reddish Brown Silty CLAY (CL) Homogeneous. ▼ 19.7	ST	24/24	4.5+					
25		■	S–6	Dense, wet, light Brown Sandy SILT (ML) Lensed w/Silty Clay and Clayey Silt seams. –wet @ 23'	ST	12/24						
30	15/25/28 N=53	☒	S–7	Dense, wet, light Brown Sandy SILT, trace Clay (ML) Homogeneous. 29.0 Very dense, wet, yellowish Brown Silty fine SAND (SM) Homogeneous, but w/Silty Clay 8–12mm lenses @ 34'.	SS	18/18						
35	15/20/39 N=59	☒	S–8		SS	18/18						

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ON:

SURFACE CONDITIONS	Flat – Fallow Cropland		BORING NO.	G-7
			SHEET	PAGE 2 OF 2
NORTHING:	1110	GENERAL NOTES	DRILLING	
EASTING:	2366		START	FINISH
ELEVATION:	82.7		TIME	TIME
LOGGED BY:	A. KLOTZ		9:30	11:35
DRILLING CONTRACTOR:	PSI		DATE	DATE
B.O.P. GEOLOGIST:	N/A		10-21-99	10-21-99
DRILL RIG:	CME 75 HSA			

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS				
								WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
40	27/50-5.5" N>50	☒	S-9	Very dense, wet, yellowish Brown Silty fine SAND (SM) Homogeneous..	SS	11/11						
5	27/50-5" N>50	☒	S-10	Very dense, wet, yellowish Brown Silty fine SAND (SM)	SS	11/11						
				TD 45.0								
50												
55												
60												
65												
70												

Golder Associates Houston, Texas

SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993–4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ON:

NORTHING:	1110
EASTING:	3957
ELEVATION:	87.39
LOGGED BY:	A. KLOTZ
DRILLING CONTRACTOR:	PSI
B.O.P. GEOLOGIST:	N/A
DRILL RIG:	CME 75 HSA

SURFACE CONDITIONS Flat to Slightly Rolling Fallow Cropland

GENERAL NOTES

Completed as piezometer P–1

BORING NO. G–8

SHEET PAGE 1 OF 2

DRILLING	
START	FINISH
TIME 13:45	TIME 17:20
DATE 10–13–99	DATE 10–13–9

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
		☐	S–1	Loose, dry, Brown Silty fine SAND (SM) Homogeneous. 2.0	G							
5	6/6/8 N=14		S–2	Compact, dry, Brown Clayey fine SAND, with silt (SC) Homogeneous.	SS	7/18		9.3	25 13 12	44.4		
10	6/6/7 N=13	☒	S–3	Compact, dry, light Brown Clayey fine SAND, with silt (SC) Homogeneous, but w/. few .5mm. calcareous deposits	SS	7/18		10.0	23 13 10	49.0		
15	42/50–3" N>50	☒	S–4	12.0 Very dense, dry, light Brown Silty–Clayey fine SAND (SM–SC) Homogeneous, but w/ partially cemented nodules (Siltstone) Moist below 17'	SS	7/9		11.5	24 19 5	44.6		
	10/21/28 N=49	☒	S–5	18.0	SS	8/18						
20	10/11/16 N=27	☒	S–6	Compact, wet, Brown Sandy SILT (ML) Homogeneous.	SS	10/18		27.0	26 24 2	64.4		
		■	S–7	Very stiff, wet, Brown Silty CLAY, Slightly Sandy (CL) ▼ Homogeneous.	ST	10/18						
25	8/12/16 N=28	☒	S–8	24.0 Compact, wet, light Brown Silty fine SAND (SM) Homogeneous.	SS	18/18		25.0	24 21 3	43.2		
0	21/48/50–5" N>98	☒	S–9	Very dense, wet, light Brown Silty–Clayey fine SAND (SM–SC)	SS	18/18		23.0	24 19 5	48.4		
		■	S–10	Homogeneous.	ST	17/17						
35	29/50–5.5" N>50	☒	S–11	33.0 Very dense, wet, light Brown fine SAND, slightly silty (SP) Homogeneous.	SS	11/11						

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993–4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ION:

SURFACE CONDITIONS Flat to Slightly Rolling Fallow Cropland

BORING NO. G–8

SHEET PAGE 2 OF 2

NORTHING: 1110
EASTING: 3957
ELEVATION: 87.39
LOGGED BY: A. KLOTZ
DRILLING CONTRACTOR: PSI
B.O.P. GEOLOGIST: N/A
DRILL RIG: CME 75 HSA

GENERAL NOTES

Completed as piezometer P–1

DRILLING

	START	FINISH
TIME	13:45	17:20
DATE	10–13–99	10–13–99

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
	17/27/42 N=69	☒	S–12	39.0	SS	18/18						
40				Hard, dry, light Brown Sandy CLAY (CH) Homogeneous.								
		■	S–13	Hard, moist, light Gray CLAY, Slightly Silty and Sandy (CH) Homogeneous, but w/ partially cemented nodules	ST	8/18		23.1	60 25 35	77.2		98.
45												
		■	S–14	Hard, moist, light Gray CLAY, Slightly Silty and Sandy (CH)	ST	6/18						
50				TD 50.0								
55												

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Flat – Fallow cropland	BORING NO. G-9
			SHEET PAGE 1 OF 2
NORTHING:	539	GENERAL NOTES Completed as piezometer P-2	
EASTING:	3203		DRILLING
ELEVATION:	82.8		START / FINISH
LOGGED BY:	A. KLOTZ		TIME 1455 / TIME 1805
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		DATE 10-20-99 / DATE 10-20-99
DRILL RIG:	CME 75 HSA		

								TEST RESULTS				
DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
			S-1	Loose, dry, dark Brown Clayey fine SAND (SC) Homogeneous.	G							
				2.5								
5	9/20/28 N=48	☒	S-2	Hard, dry, light Brown Sandy CLAY (CL) Homogeneous, but w/ few 5mm calcareous deposits.	SS	8/18	4.5+					
10	15/31/50-5.5" N>81	☒	S-3	Hard, dry, yellowish Brown, Sandy CLAY (CL) Homogeneous. Moist Below 12'	SS	18/18		13.9	40 16 24			
		■	S-4		ST	24/24	4.5+					
15		■	S-5		ST	24/24						
				16.5 Compact, moist, Brown Sandy SILT (ML) Lensed w/ 8-12mm Silty Clay seams at 17-20'.								
	5/11/11 N=22	☒	S-6			18/18						
20	7/9/9 N=18	☒	S-7	▼		18/18				61.7		
				20.5 Compact, wet, yellowish Brown Silty fine SAND (SM) Stratified w/ 8-25mm Silty Clay and Sandy Clay layers between 22 and 26'.								
	7/14/21 N=35	☒	S-8			18/18						
25		■	S-9			12/12						
	17/38/50-5" N>88	☒	S-10			17/17						
	7/14/50 N=64	☒	S-11	Very dense, wet, light Brown Silty fine SAND (SM) Homogeneous, but w/occ. white colored 5-12 mm laminatations between 27'-34'		18/18				19.9		
	38/50-4" N>50	☒	S-12			9/10						
35	10/44/50-2" N>94	☒	S-13	34.0 Hard, moist, White CLAY (CH) Homogeneous, cemented Caliche.		2/14	4.5+					

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Flat – Fallow cropland	BORING NO.	G-9
			SHEET	PAGE 2 OF 2
NORTHING:	539	GENERAL NOTES Completed as piezometer P-2	DRILLING	
EASTING:	3203		START	FINISH
ELEVATION:	82.8		TIME	TIME
LOGGED BY:	A. KLOTZ		1455	1805
DRILLING CONTRACTOR:	PSI		DATE	DATE
B.O.P. GEOLOGIST:	N/A			
DRILL RIG:	CME 75 HSA		10-20-99	10-20-9

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	TEST RESULTS: ATTERBERG (LL/PL/PI)	TEST RESULTS: % FINES (Pass #200)	TEST RESULTS: SHEAR STRENGTH (ksf)	TEST RESULTS: UNIT WEIGHT
40	50–4.5" N>50	☒	S-14	Hard, moist, light Gray CLAY (CH) Laminated w 2–5mm dark stains below 39'		4.5 4.5	4.5+	19.6	84 26 58			
5	38/50–4.5" N>50	☒	S-15			10.5 10.5	4.5+					
				TD 45.0								

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ON:

SURFACE CONDITIONS Gently Rolling – Cultivated Cropland

BORING NO. G-10

SHEET PAGE 1 OF 2

NORTHING: 808

EASTING: 4729

ELEVATION: 97.8'

LOGGED BY: A. KLOTZ

DRILLING CONTRACTOR: PSI

B.O.P. GEOLOGIST: N/A

DRILL RIG: CME 75 HSA

GENERAL NOTES. Borehole offset 6' to North of stake.

DRILLING	
START	FINISH
TIME	TIME
07:20	09:30
DATE	DATE
10-20-99	10-20-99

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS				
								WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
			S-1	Loose, dry, Brown Silty fine SAND (SM) Homogeneous.	G							
				3.0								
5	9/9/9 N=18		S-2	Compact, dry, yellowish Brown Clayey fine SAND (SC) Homogeneous.	SS	18/18						
				Same light Brown, 7'-12'								
10	5/5/6 N=11		S-3		SS	18/18						
15	8/10/12 N=22		S-4	Compact, dry, light Brown Clayey fine SAND (SC) Homogeneous.	SS	18/18		8.0	23 15 8			
20	12/14/16 N=30		S-5	Compact, dry, light Brown Clayey fine SAND (SC) Homogeneous.	SS	18/18				42.6		
25	10/12/14 N=26		S-6		SS	18/18						
				27.0								
			S-7	Hard, moist, reddish Brown Sandy CLAY (CL) Homogeneous, but w/few 5mm calcareous deposits.		24/24	4.5+	18.4	46 22 24		7.27	
30												
35			S-8			24/24						
				36.0								

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ION:

SURFACE CONDITIONS	Gently Rolling – Cultivated Cropland	BORING NO.	G-10
NORTHING:	808	SHEET	PAGE 2 OF 2
GENERAL NOTES	Borehole offset 6' to North of stake.		
EASTING:	4729	DRILLING	
ELEVATION:	97.8'	START	FINISH
LOGGED BY:	A. KLOTZ	TIME 07:20	TIME 09:30
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A	DATE 10-20-99	DATE 10-20-9
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
40	8/18/15 N=33	☒	S-9	▼ Dense, wet, light Brown Silty fine SAND (SM) Homogeneous.		18/18				40.6		
5	21/33/50-5" N>83	☒	S-10			17/17						
50	20/30/50-4" N>80	☒	S-11	Very dense, wet, light Brown Silty SAND (SM) Homogeneous, but cemented structure @ 50'.		16/16						
55	30/50-5.5" N>50	☒	S-12	53.0 Hard, dry, light Gray Sandy CLAY (CL) Homogeneous.		11.5/11.5		13.2	26 14 12			
60		■	S-13	–structure becomes cemented		3/24						
				TD 60.0								

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Flat Cultivated Croplands	BORING NO. G-11
			SHEET PAGE 1 OF 2
NORTHING:	539	GENERAL NOTES Boring Offset 5' E of Stake.	
EASTING:	4337		DRILLING
ELEVATION:	86.4		START / FINISH
LOGGED BY:	A. KLOTZ		TIME: 10:30 / TIME: 13:10
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		DATE: 10-20-99 / DATE: 10-20-9
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
			S-1	Loose, dry, Brown Silty fine SAND (SM) Homogeneous, but w/org. vegetation particles.	G							
5	7/7/5 N=12		S-2	3.0 Compact, dry, light Brown Clayey SAND, slightly silty (SC) Lensed w/ 5-12mm white stains and Sandy Clay seams.	SS	18/18						
10	4/11/20 N=31		S-3		SS	18/18						
15	19/34/50 N=84		S-4	Hard, moist, light Brown Sandy CLAY, with silt (CL) Homogeneous, but w/ few calcareous deposits.	SS	18/18		16.0	36 23 13			
20			S-5	20.0 Compact, moist, light Brown Silty fine SAND (SM) Homogeneous. - wet @ 23' ▼	ST	24/24	4.5+					
25	17/13/16 N=29		S-6		SS	18/18						
0	18/35/50-4" N>85		S-7	Very dense, wet, light Brown Silty fine SAND (SM) Homogeneous.	SS	16/16						
35	35/50-5" N>50		S-8	Very dense, wet, light Brown Silty fine SAND (SM) Homogeneous.	SS	11/11				16.3		

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ION:

NORTHING:	539	SURFACE CONDITIONS	Flat Cultivated Croplands
EASTING:	4337	GENERAL NOTES	Boring Offset 5' E of Stake.
ELEVATION:	86.4		
LOGGED BY:	A. KLOTZ		
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		
DRILL RIG:	CME 75 HSA		

BORING NO. G-11

SHEET PAGE 2 OF 2

DRILLING	
START	FINISH
TIME 10:30	TIME 13:10
DATE 10-20-99	DATE 10-20-9

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
				38.0								
	12/27/45 N=72	☒	S-9	Hard, moist, light Gray CLAY, slightly sandy (CH) Homogeneous.	SS	18/18						
40												
		■	S-10	Hard, moist, light Gray CLAY, slighty silty (CH) Homogeneous.	ST	4/24	4.5+					
5												
	50-3" N>50	☒	S-11	same, but w/ slightly cemented structure. Laminated w/ 2-4mm black stains below 47.5'	SS	3/24	4.5+	31.6	100 40 60			
				TD 48.5								
50												

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993-4450	SURFACE CONDITIONS Gently Rolling – Fallow Cropland	BORING NO. G-12
			SHEET PAGE 1 OF 2
NORTHING:	35	GENERAL NOTES Offset 10' to West and 10' to South	
EASTING:	2410		DRILLING
ELEVATION:	87.9		START / FINISH
LOGGED BY:	A. KLOTZ		TIME / TIME
DRILLING CONTRACTOR:	PSI		09:00 / 11:40
B.O.P. GEOLOGIST:	N/A		DATE / DATE
DRILL RIG:	CME 75 HSA		10-15-99 / 10-15-99

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS: WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
		☐	S-1	Loose, dry, Brown Silty fine SAND (SM) Homogeneous. 2.5	G							
5	10/19/22 N=41	☒	S-2	Hard, dry, light Brown Sandy CLAY (CL) Homogeneous, but w/ few 5mm calcareous deposits to 8'.	SS	12/18	4.5+					
10	19/50-4" N>50	☒	S-3	Hard, dry, light Brown Sandy CLAY (CL) Homogeneous.	SS	8/10	4.5+	13.7	31 18 13			
15	15/21/35 N=56	☒	S-4	 16.0	SS	18/18	4.5+					
		■	S-5	Hard, moist, reddish Brown CLAY (CL) slightly sandy and silty	ST	12/24	4.5+	17.2	43 20 23	87.8	6.87	112.
20		■	S-6	Homogeneous.	ST	24/24						
				–wet below 22' ▼21.5								
	8/20/24 N=44	☒	S-7	Dense, wet, light Brown Silty fine SAND (SM) Homogeneous.	SS	18/18						
25	10/25/32 N=57	☒	S-8		SS	18/18						
	17/36/50 N=86	☒	S-9	Very dense, wet, Brown Silty fine SAND (SM) Homogeneous.	SS	18/18				14.8		
0	17/26/32 N=58	☒	S-10		SS	18/18						
	8/20/50-5" N>70	☒	S-11		SS	17/17						
	17/33/50-4" N>83	☒	S-12	32.5 Very dense, wet, light Brown Clayey fine SAND (SM-SC)	SS	16/16				34.6		
35		■	S-13	34.0 Very dense, wet, light Brown Silty fine SAND (SM) Homogeneous.	ST	24/24						

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ION:

SURFACE CONDITIONS Gently Rolling – Fallow Cropland

GENERAL NOTES Offset 10' to West and 10' to South

BORING NO. G-12

SHEET PAGE 2 OF 2

NORTHING:	35
EASTING:	2410
ELEVATION:	87.9
LOGGED BY:	A. KLOTZ
DRILLING CONTRACTOR:	PSI
B.O.P. GEOLOGIST:	N/A
DRILL RIG:	CME 75 HSA

DRILLING	
START	FINISH
TIME	TIME
09:00	11:40
DATE	DATE
10-15-99	10-15-9

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
	16/32/50-5" N>82	☒	S-14	Very dense, wet, light Brown Silty fine SAND (SM) Homogeneous, but w/ few 5-15mm clay lenses w/ iron stains.	SS	17/17	4.2					
40												
				42.0								
		■	S-15	Hard, moist, light Brown CLAY (CH) Homogeneous w/ slightly cemented structure.	ST	6/24	4.5+	22.5	83 28 55			
5												
		☒	S-16		SS	18/18	4.5+					
50				TD 50.0								
55												
60												
65												
70												

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993–4450
EDINBURG, TEXAS
CITY OF EDINBURG,
[illegible]GO COUNTY, TEXAS
[illegible]ON:

NORTHING:	142	GENERAL NOTES	
EASTING:	3554		
ELEVATION:	84.23		
LOGGED BY:	A. KLOTZ		
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		
DRILL RIG:	CME 75 HSA		

SURFACE CONDITIONS Flat to Gently Rolling – Fallow Cropland

BORING NO. G–13

SHEET PAGE 1 OF 2

DRILLING	
START	FINISH
TIME	TIME
14:30	15:00
DATE	DATE
10–15–99	10–18–99

DEPTH IN FEET	SPT BLOW COUNTS	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
		S–1	Loose, dry, Brown Clayey fine SAND (SC) Homogeneous.	G							
5	7/8/8 N=16	S–2	–Yellowish Brown @ 3'	SS	18/18						
7.0		S–3	Compact, dry, light Brown Sandy Silty CLAY (CL) Homogeneous, but w/ few 5–8mm calcareous deposits.	ST	8/24				51.9		
10			Hard, dry, Brown Sandy CLAY, Slightly Silty (CL) Homogeneous.								
15	22/32/50 N=82	S–4		SS	12/18						
		S–5	Hard, moist, Reddish Brown Sandy CLAY (CL) Homogeneous.	ST	24/24		17.3	27 16 11			
19.5 ▼			Dense, wet, Brown Silty fine SAND (SM) Homogeneous.								
25	10/21/25 N=46	S–6	Same, w/ more Silt and few 8mm cemented nodules @ 25'.	SS	18/18						
30	27/50–5" N>50	S–7	Very dense, wet, Brown fine SAND, trace silt(SP–SM) Homogeneous.	SS	10/11				9.3		
33.0	26/50–4.5" N>50	S–8	Very dense, wet, Clayey SAND (SC) Homogeneous, but w/ few 8mm slightly cemented nodules.	SS	10.5/10.5						
35											
36.0											

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL EDINBURG, TEXAS CITY OF EDINBURG, GO COUNTY, TEXAS ON:	993–4450	SURFACE CONDITIONS Flat to Gently Rolling – Fallow Cropland	BORING NO. G–13 SHEET PAGE 2 OF 2
NORTHING:	142	GENERAL NOTES	
EASTING:	3554		DRILLING
ELEVATION:	84.23		START TIME 14:30 / FINISH TIME 15:00
LOGGED BY:	A. KLOTZ		
DRILLING CONTRACTOR:	PSI		
B.O.P. GEOLOGIST:	N/A		START DATE 10–15–99 / FINISH DATE 10–18–9
DRILL RIG:	CME 75 HSA		

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL		SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
40	50–4.5" N>50	☒	S–9	▨	Hard, dry, light Gray CLAY (CH) Homogeneous, w/ cementation and black stains.	SS	4.5/4.5						
	50–5" N>50	☒	S–10	▨	Same, increasing sand below 42'.	SS	5/5		23.8	73 27 46			
5		■	S–11	▨		ST	4/24	4.5+					
					TD 46.5								
50													

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SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993–4450
EDINBURG, TEXAS
CITY OF EDINBURG,
GO COUNTY, TEXAS
ON:

NORTHING:	37	GENERAL NOTES Offset 12' to North of Stake.	BORING NO.	G–14
EASTING:	4833	SURFACE CONDITIONS Gently Rolling Cultivated Cropland	SHEET	PAGE 1 OF 2
ELEVATION:	86.6		DRILLING START	DRILLING FINISH
LOGGED BY:	A. KLOTZ		TIME 14:15	TIME 17:00
DRILLING CONTRACTOR:	PSI		DATE 10–21–99	DATE 10–21–99
B.O.P. GEOLOGIST:	N/A			
DRILL RIG:	CME 75 HSA			

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT (pcf)
			S–1	Loose, dry, dark Brown Silty fine SAND (SM) Homogeneous.	G							
5	9/11/10 N=21	☒	S–2	3.0 Very stiff, dry, yellowish Brown Sandy CLAY (CL) Homogeneous, but w/ few 5–8mm calcareous deposits.	SS	18/18						
10		■	S–3	Hard, dry, light yellowish Brown Sandy Silty CLAY (CL) Homogeneous, but w/ numerous 5–8mm calcareous deposits.	ST	12/24	4.5+					
	20/32/50–5.5" N>82	☒	S–4		SS	$\frac{16}{17.5}$	4.5+					
15	19/32/50–5" N>82	☒	S–5		SS	16/17	4.5+	16.1	37 22 15	63.9		
	16/34/50–3" N>84	☒	S–6	17.5 –same, moist, sandier, no calcareous deposits 17.5–19'	SS	15/15						
20	17/50–6" N>50	☒	S–7	–same reddish Brown, 21.5'–23'	SS	12/12						
	50–4" N>50	☒	S–8	–sample wet @ 23' ▼	SS	4/4						
25	25/39/50–4" N>89	☒	S–9	24.0	SS	16/16						
	7/9/8 N=17	☒	S–10	Compact to very dense, wet, lLight Brown SILT (ML) Homogeneous.	SS	18/18						
	12/22/50–2" N>72	☒	S–11		SS	14/14						
0	13/45/50–5" N>95	☒	S–12	29.5 Hard, moist, reddish Brown CLAY (CL) Homogeneous.	SS	17/17						
35	9/24/50–5.5" N>74	☒	S–13	33.0 Very dense, wet, yellowish Brown Silty fine SAND (SM) Homogeneous, but w/ few 5–12mm cemented fragments.	SS	$\frac{17}{17.5}$						

Golder Associates Houston, Texas

SOIL BOREHOLE LOG

EDINBURG SANITARY LANDFILL 993-4450
EDINBURG, TEXAS
CITY OF EDINBURG,
LGO COUNTY, TEXAS
TION:

SURFACE CONDITIONS Gently Rolling Cultivated Cropland

BORING NO. G-14

SHEET PAGE 2 OF 2

NORTHING:	37	GENERAL NOTES Offset 12' to North of Stake.
EASTING:	4833	
ELEVATION:	86.6	
LOGGED BY:	A. KLOTZ	
DRILLING CONTRACTOR:	PSI	
B.O.P. GEOLOGIST:	N/A	
DRILL RIG:	CME 75 HSA	

DRILLING

START	FINISH
TIME	TIME
14:15	17:00
DATE	DATE
10-21-99	10-21-99

DEPTH IN FEET	SPT BLOW COUNTS	SYMBOL	SAMPLE INTERVAL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLE TYPE	RECOVERY	POCKET PENETR. (tsf)	TEST RESULTS				
								WATER CONTENT %	ATTERBERG (LL/PL/PI)	% FINES (Pass #200)	SHEAR STRENGTH (ksf)	UNIT WEIGHT
	42/50-2" N>50	☒	S-14	Very dense, wet, yellowish Brown Silty fine SAND (SM)	SS	7/8						
40												
				42.5								
	17/30/50-4" N>80	☒	S-15	Hard, dry, Light Gray CLAY, slightly sandy (CH) Homogeneous, but w/ few 8mm calcareous deposits and occ Dark stains to 47'.	SS	16/16	4.5+	23.1	68 27 41	83.8		
5												
				—same light Yellowish Brown Below 47'								
	10/19/27 N=46	☒	S-16		SS	12/18	4.5+					
50				TD 50.0								

RECORD OF BOREHOLE MW-1R

SHEET 1 OF 1

PROJECT: Edinburg Regional Landfill

BORING DATE: 10/21/03

DATUM: GEODETIC
NORTHING
EASTING

LOCATION:

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION Well offsets MW-1 approximately 9' to the north	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY FT/FT	DYNAMIC PENETRATION RESISTANCE, BLOWS/ft (20 40 60 80) SOIL SHEAR STRENGTH Cu, psf P.P. ⊕ Q - ● PMT ◇ (1000 2000 3000 4000)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) WATER CONTENT PERCENT PL ⊢—○W—⊣ LL (10 20 30 40)	ADDITIONAL LAB. TESTING	INSTALLATION AND GROUNDWATER OBSERVATIONS
		Level grass area									
0	dry Auger	Brown, silty SAND, damp, with roots and organic material	0.0	1	SH		4/ 24				
				2	SH		18/ 24				
5		Tan, sandy CLAY, with calcareous nodules, damp	5.0								
				3	SH		4/ 24				
10		turning hard									
		brittle, dry, tan, silty clay layer									
		Tan, silty SAND, damp	14.0								
15				4	SS		18/ 18				
				5	SS		12/ 18				
20		turning wet									
				6	SS		15/ 18				
25											
				7	SS		15/ 18				
		TOTAL DEPTH 29.5'	29.5								
30											
35											
40											

HOU_SO GINT.GPJ GLDR_HOU.GDT 12/11/03 DATA INPUT: KRA

DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: MER
CHECKED: JAW

RECORD OF BOREHOLE MW-2R

SHEET 1 OF 1

PROJECT: Edinburg Regional Landfill

BORING DATE: 10/20/03

DATUM: GEODETIC
NORTHING
EASTING

LOCATION:

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION Well offsets MW-2 approximately 13' to the southwest	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.5 FT	RECOVERY FT/FT	DYNAMIC PENETRATION RESISTANCE, BLOWS/ft (20 40 60 80) SOIL SHEAR STRENGTH Cu, psf P.P.⊕ Q - ● PMT -◇ (1000 2000 3000 4000)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) WATER CONTENT PERCENT PL ⊢—○W—⊣ LL (10 20 30 40)	ADDITIONAL LAB. TESTING	INSTALLATION AND GROUNDWATER OBSERVATIONS
0		Level grass area										
		Brown, silty fine SAND, moist with roots, increase of clay		0.0	1	SH		12/24				
					2	SH		10/24				
5		Tan, fine sandy CLAY, moist, with calcareous nodules		5.5								
					3	SH		14/24				
10												
					4	SH		5/24				
15	dry Auger	turning hard and dry with calcareous seam										
		Tan, SAND, wet		19.0	5	SS		18/18				
20												
					6	SS		16/18				
25												
					7	SH		18/18				
30												
		TOTAL DEPTH 31.5'		31.5								
35												
40												

DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: MER
CHECKED: JAW

HOU_SOIL INT.GPJ GLDR_HOU.GDT 12/11/03 DATA INPUT: KRA

RECORD OF BOREHOLE MW-3R

SHEET 1 OF 1

PROJECT: Edinburg Regional Landfill

BORING DATE: 10/20/03

DATUM: GEODETIC

NORTHING
EASTING

LOCATION:

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION Well offsets MW-3 approximately 25' to the southeast	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY FT/FT	DYNAMIC PENETRATION RESISTANCE, BLOWS/ft 20 40 60 80 SOIL SHEAR STRENGTH P.P.⊕ Q - ● PMT -◇ Cu, psf 1000 2000 3000 4000	HYDRAULIC CONDUCTIVITY, k, cm/s 10^{-6} 10^{-5} 10^{-4} 10^{-3} WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION AND GROUNDWATER OBSERVATIONS
		Level grass area										
0	dry Auger	Brown, silty sandy CLAY, damp, with roots		0.0	1	SH		8/24				
		Brown, silty SAND, damp		2.0	2	SH		6/24				
5												
		Tan, fine, sandy CLAY, damp, with calcareous nodules		8.0	3	SH		12/24				
10												
15		turning hard and dry with calcareous seams			4	SS		16/18				
					5	SS		18/18				
20												
		Tan, SAND with some silt, moist		23.0	6	SS		18/18				
25												
					7	SS		18/18				
30		turning wet										
					8	SS		18/18				
35												
		TOTAL DEPTH 37'		37.0								
40												

DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: MER
CHECKED: JAW

RECORD OF BOREHOLE MW-3RA

SHEET 1 OF 1

PROJECT: Edinburg Regional Landfill

BORING DATE: 01/13/04

DATUM: GEODETIC
NORTHING
EASTING

LOCATION:

SOIL PROFILE — Well offsets MW-3R approximately 4' to the southwest

DEPTH SCALE FEET	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY FT/FT
		Level grass area						
0	Dry Auger	Brown, silty sandy CLAY, damp, with roots	▨	0.0				
		Brown, silty SAND, damp		2.0				
5								
		Tan, fine, sandy CLAY, damp, with calcareous nodules	▨	8.0				
10		0' - 20' DESCRIPTIONS ARE BASED ON DRILL CUTTINGS AND MW-3R SOIL BORING						
15		turning hard and dry with calcareous seams						
20					1	SS		10 / 18
		Tan, SAND, with some silt, moist		23.0				
25					2	SS		4 / 18
30		turning wet			3	SS		6 / 18
35					4	SS		10 / 18
		TOTAL DEPTH 38'		38.0				
40								

DYNAMIC PENETRATION RESISTANCE, BLOWS/ft: 20 40 60 80

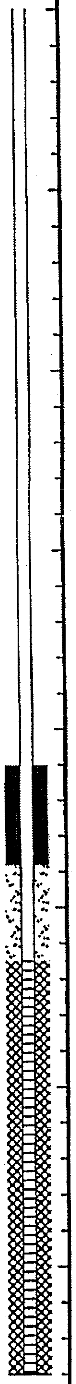
SOIL SHEAR STRENGTH Cu, psf: P.P. ⊕ Q - ● PMT ◇ 1000 2000 3000 4000

HYDRAULIC CONDUCTIVITY, k, cm/s: 10^{-6} 10^{-5} 10^{-4} 10^{-3}

WATER CONTENT PERCENT: PL ⊢—○W—⊣ LL 10 20 30 40

ADDITIONAL LAB. TESTING

INSTALLATION AND GROUNDWATER OBSERVATIONS



DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: JEP
CHECKED:

SOIL BORING LOG

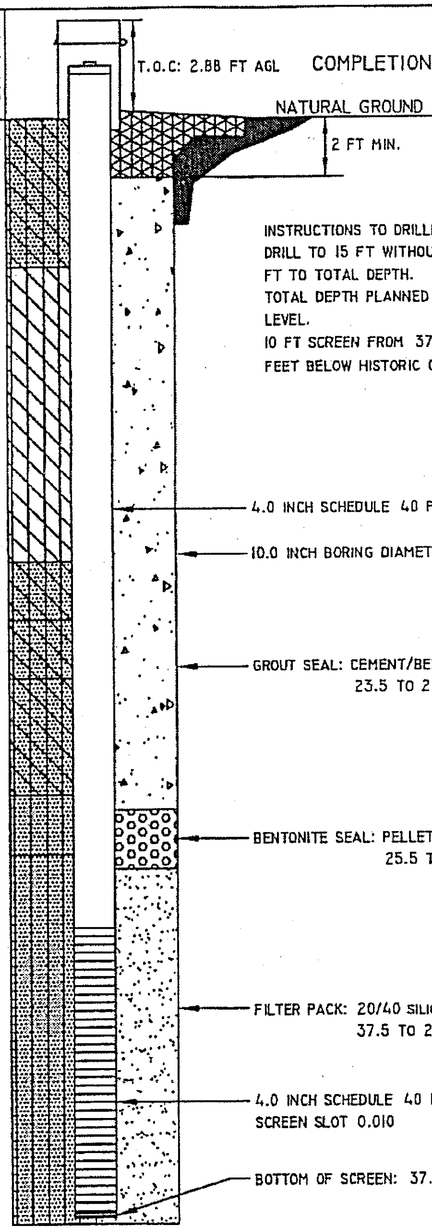
PROJECT NO.: 4042
BORING/WELL ID: MW-4R
DATE: 3/17/2003
PROJECT: EDINBERG LANDFILL, 956B
DRILLER: ENVIROCORE (MARK MONROE)
DRILLING METHOD: DRY AUGER
BOREHOLE DIA: 10.0 INCH
DEPTH(BGS): 37.5 FEET
SATURATED AT: 23.0 FT
LOGGED BY: TOM FREUND
STATIC WATER AT: 23.0 FT (REF: T.O.C)

MONITORING WELL DATA

CASING DIA. 4.0 INCH
SCH. 40 PVC
SCREEN SLOT: .010

DEPTH (FT)	DESCRIPTION	SAMPLE LOCATION
0–5	CLAYEY FINE SAND AND SILT (SC), LIGHT BROWN	
5–15	CLAYEY SILT, CALCAREOUS (ML), TAN TO LIGHT BROWN, NODULES 1 TO 8 MM	
15	CLAYEY, CALCAREOUS SILT (ML), SOME SAND, YELLOW NO RETURN	SS
	SILTY, SANDY CLAY (CL), YELLOW BROWN	
20	THIS INTERVAL OMITTED FOR CORING DUE TO DIFFICULTY PUSHING SPLIT SPOON.	
W:23.0 FT ∇	FINE TO MEDIUM GRAINED SILTY SAND (SM), MEDIUM LIGHT GRAY TO YELLOW-BROWN	
25	MEDIUM GRAINED SILTY SAND (SM), SATURATED MEDIUM LIGHT GRAY	
37.5	TOTAL DEPTH: 37.5 FT	

COMPLETION DETAILS



INSTRUCTIONS TO DRILLER:
DRILL TO 15 FT WITHOUT CORE, CONTINUOUS FROM 15 FT TO TOTAL DEPTH.
TOTAL DEPTH PLANNED AT 37.5 FT BELOW GROUND LEVEL.
10 FT SCREEN FROM 37.5 FT TO 27.5 FT (ABOUT 2 FEET BELOW HISTORIC GROUNDWATER LEVEL)

4.0 INCH SCHEDULE 40 PVC

10.0 INCH BORING DIAMETER

GROUT SEAL: CEMENT/BENTONITE 23.5 TO 2.0 FT

BENTONITE SEAL: PELLETS 25.5 TO 23.5 FT

FILTER PACK: 20/40 SILICA 37.5 TO 25.5 FT

4.0 INCH SCHEDULE 40 PVC SCREEN SLOT 0.010

BOTTOM OF SCREEN: 37.2 FT

W= WATER LEVEL SS= SOIL SAMPLE POINT

RECORD OF BOREHOLE MW-15

SHEET 1 OF 2

PROJECT: EDINBURG REGIONAL LANDFILL

LOCATION:

BORING STARTED: 09/14/2005

BORING FINISHED: 09/15/2005

DRILLING EQUIPMENT: CME 75

DRILLING OPERATOR: ENVIROCORE, INC.

DATUM: GEODETIC
NORTHING (ft):
EASTING (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION LAT 26 23' 50.85785N LONG 98 07' 26.90360W	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%)	UNDRAINED SHEAR STRENGTH, Cu tsf UC - ● UU - ◇ P.P. ⊕ TORV - ▲ 10 20 30 40	WATER CONTENT PERCENT PL ├──○W──┤ LL 20 40 60 80	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		FLAT, DRY, SANDY SURFACE		91.2								
0		Brown, silty SAND, some clay		0.0		SS		100				
				88.2								
		Tan, sand, with clay		3.0		SS		100				
5												
				83.2								
		Tan, silty SAND		8.0		SS		100				
10												
				78.2								
		Tan and red, SAND, with calcareous nodules		13.0		SS		100				
15												
						SS		100				
20	Dry Auger											
		wet at 22.5' - 23'										
						SS		100				
25												
						SS		100				
30				60.2								
		clay layer		31.0								
				59.2								
		Tan, SAND, wet		32.0								
						SS		100				
35												
				53.2								
		Tan, silty SAND, wet		38.0		SS		100				
40												

— CONTINUED NEXT PAGE —

DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: MER
CHECKED: SEP

RECORD OF BOREHOLE MW-15

SHEET 2 OF 2

PROJECT: EDINBURG REGIONAL LANDFILL
LOCATION:

BORING STARTED: 09/14/2005
BORING FINISHED: 09/15/2005

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: ENVIROCORE, INC.

DATUM: GEODETIC
NORTHING (ft):
EASTING (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE			SAMPLES			RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu tsf UC - ● P.P. ⊕ UU - ◇ TORV - ▲ 10 20 30 40	WATER CONTENT PERCENT PL ├──○W──┤ LL 20 40 60 80	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	NUMBER	TYPE	BLOWS/0.5 FT					
		— CONTINUED FROM PREVIOUS PAGE —										
40	Dry Auger	Tan, silty SAND, wet	⁙	49.2 42.0								
		Gray and brown, silty CLAY, with calcareous nodules, dry	▨	46.2 45.0		SS		100				
45		TOTAL DEPTH 45'										
50												
55												
60												
65												
70												
75												
80												

DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: MER
CHECKED: JCY

RECORD OF BOREHOLE MW-18

SHEET 1 OF 1

PROJECT: EDINBURG REGIONAL LANDFILL
LOCATION:

BORING STARTED: 09/15/2005
BORING FINISHED: 09/15/2005

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: ENVIROCORE, INC.

DATUM: GEODETIC
NORTHING (ft):
EASTING (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION LAT 26 23' 30 37070 N LONG 98 07' 27 79697W	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. / DEPTH (ft)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.5 FT.	RECOVERY (%)	UNDRAINED SHEAR STRENGTH. Cu tsf UC - ● P.P ⊕ UU - ◇ TORV - ▲ 10 20 30 40	WATER CONTENT PERCENT PL ├──○W──┤ LL 20 40 60 80	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		BERM AREA		88.3								
0	Dry Auger	Tan, sandy, silty CLAY	▨	0.0								
5			▨			SS		100				
10		tan and brown, silty CLAY	▨			SS		100				
15			▨			SS		100				
20		grading to a fine, sand	▨			SS		100				
		Layers of CLAY, with fine sand, and silt, moist to wet	▨	66.3 22.0								
25			▨			SS		100				
						SS		100				
		Brown, fine, SAND, some silt, saturated	░	59.3 29.0								
30			░									
		Gray, sandy, CLAY, dry to moist	▨	54.3 34.0								
35			▨			SS		100				
		TOTAL DEPTH 36.5'		51.8 36.5								
40												

SECURITY 4833GINT.GPJ GLDR_HOU.GDT 12/19/05 DATAINPUT

DEPTH SCALE
1 inch to 5.1 feet

Golder Associates

LOGGED: JEP
CHECKED: JEP

RECORD OF BOREHOLE MW-3A

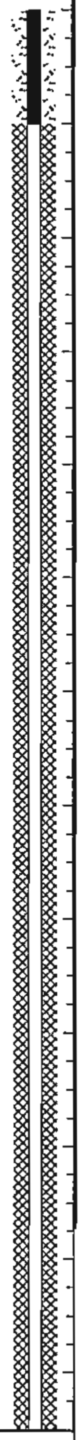
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/29/09
BORING FINISHED: 04/29/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

SHEET 1 OF 2
DATUM: GEODETIC
NORTHING (ft): 6.29
EASTING (ft): 1825.47

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%)	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├ ○W ┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		GROUND SURFACE		95.7								
0		Loose, light brown, fine, silty SAND, dry		0.0								Concrete
		Loose, gray, fine, SAND, dry		92.7 3.0								
6						SS		100				
8		Stiff, light brown, clayey SAND, moist		87.7 8.0								
10		trace calcareous nodules at 10.0'										
						SS		100				
12		hard drilling for 1' at 12.0'										
		Loose, light brown, silty SAND, with calcareous nodules, dry to moist		82.7 13.0								Grout
16						SS		100				
18		hard, brown at 18.0'										
						SS		100				
		Hard, light brown, sandy CLAY, with calcareous nodules, moist		72.7 23.0								
24				70.7								▼ 24.54'



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DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

EDINBURG 94350GINT.GPJ GLDR HOU.GDT 6/24/09

RECORD OF BOREHOLE MW-3A

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/29/09
BORING FINISHED: 04/29/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 6.29
EASTING (ft): 1825.47

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%)	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├ ⊖W ┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
		Hard, brown, CLAY, trace fine sand, dry		25.0								Grout
26		Dense, brown, fine, silty SAND, wet		69.7 26.0		SS		50				Bentonite
28												Sugar Sand
30												20/40 Graded Sand
31		Dense, light brown, fine, SAND, saturated		64.7 31.0		SS		100				
36						SS		100				40 PVC Well Screen
41						SS		100				Sump/Botton Cap
42.5		BORING TERMINATED AT 42.5'		53.2 42.5								

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBP

RECORD OF BOREHOLE MW-4A

SHEET 1 OF 2
DATUM: GEODETIC

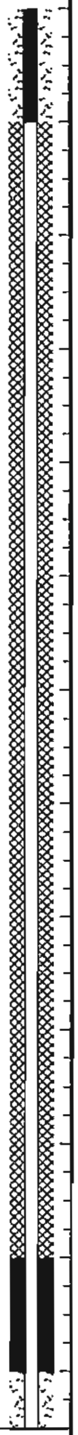
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/22/09
BORING FINISHED: 04/23/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2031.81
EASTING (ft): 1869.75

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		87.3								
		Loose, light brown, fine, silty SAND, homogeneous, dry		0.0								Concrete
2				84.3								
		Loose, dark brown, sandy CLAY, trace calcareous nodules, homogeneous, dry		3.0								
4				82.3								
		Loose, light brown, silty SAND, with calcareous nodules, homogeneous, moist		5.0								
6				80.3		SS		70				
		Stiff, brown, CLAY, with fine sand, with calcareous nodules, homogeneous, moist		7.0								
8				77.3								
10		Loose, light brown, fine, silty SAND, trace calcareous nodules, homogeneous, moist		10.0		SS		100				
				75.8								
		Stiff, brown, sandy CLAY, trace calcareous nodules, homogeneous, moist		11.5								
12												Grout
14				72.3								
		Loose, brown, clayey SAND, trace gravel, homogeneous, moist		15.0								
16						SS		50				
18												▼ 17.74'
				67.3								
20		Dense, brown, fine, silty SAND, trace gravel, homogeneous, wet		20.0								
						SS		100				
22												Bentonite
24												Sugar Sand
				62.3								



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DEPTH SCALE
1 inch to 3.2 feet

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-4A

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/22/09
BORING FINISHED: 04/23/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2031.81
EASTING (ft): 1889.75

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— *CONTINUED FROM PREVIOUS PAGE* —										
		saturated at 25.0'		25.0								
26						SS		100				20/40 Graded Sand
28												
				57.3								
30		Dense, light brown, medium to fine, SAND, trace gravel, homogeneous, wet		30.0								
						SS		100 .				
32												40 PVC Well Screen
34												
36						SS		100				
												Sump/Botton Cap
				49.3								
38		BORING TERMINATED AT 38.0'		38.0		SS		100				
40												
42												
44												
46												
48												
50												

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBC

RECORD OF BOREHOLE MW-7R

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/23/09
BORING FINISHED: 04/23/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2027.46
EASTING (ft): 1270.23

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	ELEV. DEPTH (ft)	NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY (%)	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING
0		GROUND SURFACE	86.4							
0		Loose, dark brown, fine, silty SAND, homogeneous, dry	0.0							
4		Stiff, dark brown, medium to fine, clayey SAND, homogeneous, moist with calcareous deposits at 5.0'	82.4 4.0							
6					SS		75			
11					SH		100			
16		Hard, brown, silty CLAY, some dark brown staining, trace sand, moist	70.4 16.0		SH		100			
21					SS		100			
25			61.4							

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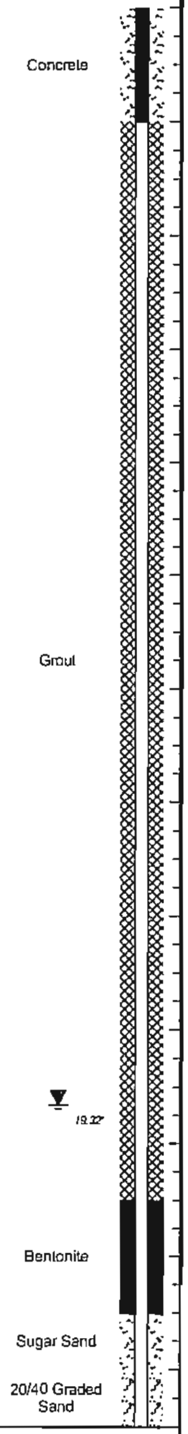


DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-7R

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/23/09
BORING FINISHED: 04/23/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2027.46
EASTING (ft): 1270.23

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
				25.0								20/40 Graded Sand
26		Dense, yellowish brown, fine, silty SAND, homogeneous, some gravel, wet		60.4 26.0		SS		100				
28												
30												
						SS		100				40 PVC Well Screen
32												
34												
36						SS		100				Sump/Botton Cap
				49.4								
		BORING TERMINATED AT 37.0'		37.0								
38												
40												
42												
44												
46												
48												
50												

EDINBURG 94350GINT.GPJ GLDR_HOU.GDT 6/24/09

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-8R

SHEET 1 OF 2
DATUM: GEODETIC

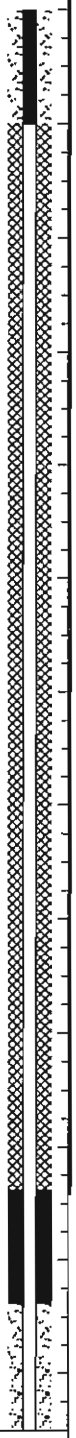
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/24/09
BORING FINISHED: 04/24/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2032.86
EASTING (ft): 668.13

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		GROUND SURFACE		85.1								
0		Loose, light brown, fine, silty SAND, homogeneous, dry		0.0								Concrete
2		yellowish brown, trace gravel at 2.0'										
		Stiff, dark brown, fine, clayey SAND, trace calcareous nodules, homogeneous, moist		81.6 3.5								
4												4.06'
6		Stiff, light brown, sandy CLAY, trace calcareous nodules, homogenous, saturated		79.1 6.0		SS		50				
8												
10		trace gravel, moist at 10.0'										
						SS		100				Grout
12												
14												
16						SH		100				
18												
		Dense, brown, fine, silty SAND, trace calcareous nodules, homogeneous, wet		66.1 19.0								
20												
						SH		100				
22												Bentonite
												Sugar Sand
24												20/40 Graded Sand
				60.1								



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DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBr

RECORD OF BOREHOLE MW-8R

SHEET 2 OF 2
DATUM: GEODETIC

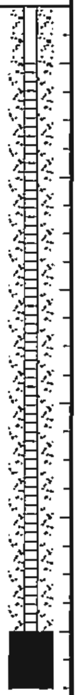
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/24/09
BORING FINISHED: 04/24/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2032.86
EASTING (ft): 668.13

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├─ ⊖W ─┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
26		Dense, light brown, SILT, with sand, homogeneous, wet		25.0		SS		100				20/40 Graded Sand
28		Hard, light brown, cemented SAND, with medium to fine sand, some silty clay, fractured, moist		57.1 28.0								
30 32						SS		100				40 PVC Well Screen
34		Dense, light brown, silty SAND, homogeneous, moist		51.6 33.5		SS		100				
36						SS		100				Sump/Botton Cap
		BORING TERMINATED AT 37.0'		48.1 37.0								
38 40 42 44 46 48 50												



EDINBURG 94350GINT.GPJ GLDR_HOU.GDT 6/24/09

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-9R

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/26/09
BORING FINISHED: 04/26/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 590.26
EASTING (ft): 5.68

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%)	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		86.8								
		Loose, light brown, fine, silty SAND, homogeneous, dry		0.0								Concrete
2												
4		Stiff, brown, clayey SAND, trace calcareous nodules, homogeneous, moist		82.8 4.0								
6		Stiff, brown, sandy CLAY, with calcareous nodules, homogeneous, moist		80.8 6.0		SS		60				
8												
		light brown, some brown staining, friable at 9.0'										
10												
		Hard, yellowish brown, CLAY, with fine sand, homogeneous, moist		75.8 11.0		SH		50				Grout
12												
		Loose, yellowish brown, silty SAND, homogeneous, wet		73.8 13.0								
14												
16						SS		100				16.58'
18												
		with small clay lenses at 19.0'										
20												
						SS		100				
22												Bentonite
24												Sugar Sand
				61.8								

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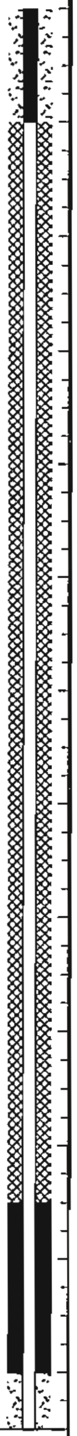


DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: BF

EDINBURG 94350GINT.GPJ GLDR HOU.GDT 6/24/09

RECORD OF BOREHOLE MW-9R

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/26/09
BORING FINISHED: 04/26/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ll): 580.26
EASTING (ll): 5.68

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✧ P.P. ⊖ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— *CONTINUED FROM PREVIOUS PAGE* —										
		saturated at 25.0'		25.0								
26						SS		100				20/40 Graded Sand
28												
30												
						SS		100				
		Hard, reddish brown, CLAY, some calcareous nodules, homogeneous, moist		55.3 31.5								
32												40 PVC Well Screen
34		Dense, light brown, silty SAND, homogeneous, wet		52.8 34.0								
36						SS		100				
												Sump/Bottom Cap
38		BORING TERMINATED AT 38.0'		48.8 38.0								
40												
42												
44												
46												
48												
50												

EDINBURG 94350GINT.GPJ GLDR HOU.GDT 6/24/09

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-10R

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/25/09
BORING FINISHED: 04/26/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

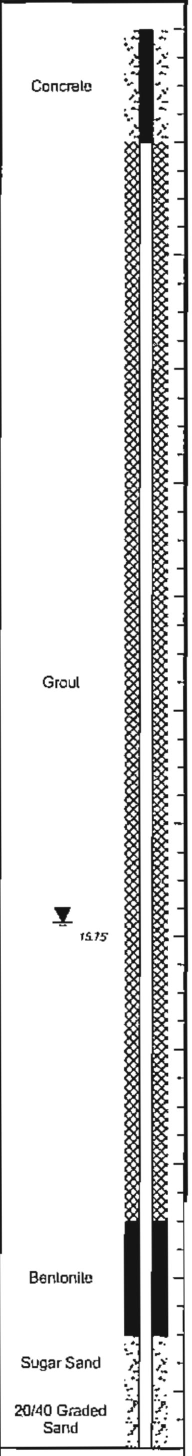
NORTHING (ft): 1191.37
EASTING (ft): 0.91

UNDRAINED SHEAR STRENGTH, Cu psf: UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ (25, 50, 75, 100)

WATER CONTENT PERCENT: PL ├──○W──┤ LL (5, 10, 15, 20)

DEPTH SCALE FEET	SOIL PROFILE DESCRIPTION	ELEV. / DEPTH (ft)
0	GROUND SURFACE	88.2
0	Loose, light brown, fine, silty SAND, with roots, dry	0.0
8.5	Stiff, brown, clayey SAND, some calcareous nodules, moist	79.7 8.5
10	Stiff, light brown, sandy CLAY, with calcareous nodules, some brown staining, friable, moist	78.2 10.0
12	Hard, yellowish brown, CLAY, with fine sand, trace gravel, homogeneous, moist	76.2 12.0
14	Loose, yellowish brown, fine, silty SAND, homogeneous, wet	74.2 14.0
25		63.2

DEPTH SCALE FEET	SAMPLES TYPE	RECOVERY (%)
6	SH	50
11	SH	100
16	SS	100
21	SS	100



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DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-10R

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/25/09
BORING FINISHED: 04/26/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 1191.37
EASTING (ft): 0.91

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├─○W─┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— *CONTINUED FROM PREVIOUS PAGE* —										
		dense at 25.0'		25.0								20/40 Graded Sand
26						SS		*100*				
28												
30												
						SS		*100*				40 PVC Well Screen
32												
34												
36		Dense, light brown, clayey SAND, trace calcareous nodules, homogeneous, moist		52.2 36.0		SS		*100*				Sump/Botton Cap
38						SS						
		BORING TERMINATED AT 39.0'		49.2 39.0								
40												
42												
44												
46												
48												
50												

EDINBURG 94350GINT.GPJ GLDR HOU.GDT 6/24/09

DEPTH SCALE
1 inch to 3.2 foot

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-15R

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/27/09
BORING FINISHED: 04/27/09

DRILLING EQUIPMENT: MOBILE 857
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2087.13
EASTING (ft): 3021.16

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		GROUND SURFACE	88.3								
0		Loose, light brown, silty SAND, dry	0.0								Concrete
2											
		Loose, brown, clayey SAND, moist	85.3 3.0								
4											
		Stiff, reddish brown, sandy CLAY, trace calcareous nodules, moist	83.3 5.0								
6					SS		100				
8											
10		Loose, light brown, silty SAND, with calcareous nodules, moist	78.3 10.0								
					SS		100				
12											Grout
		Stiff, light brown, sandy CLAY, with calcareous nodules, moist	75.3 13.0								
14											
		brown at 15.0'									
16					SS		100				
											▼ 17.12'
18		Stiff, brown, CLAY, with fine sand, moist	70.3 18.0								
20											
		Dense, brown, fine, silty SAND, wet	67.8 20.5		SS		100				
22											Bentonite
24											Sugar Sand 20/40 Graded
			63.3								

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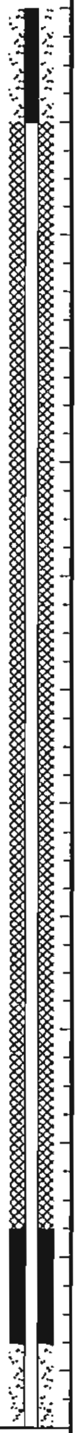


DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBr

RECORD OF BOREHOLE MW-15R

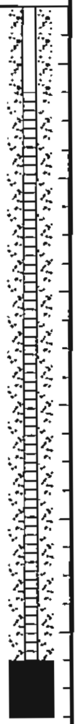
PROJECT: City of Edinburg
LOCATION:

BORING STARTED. 04/27/09
BORING FINISHED: 04/27/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

SHEET 2 OF 2
DATUM. GEODETIC
NORTHING (ft): 2087.13
EASTING (ft): 3021.16

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —									
		saturated at 25.0'	25.0								Sand
26					SS		100				20/40 Graded Sand
28											
30											
			57.1		SS		100				
		Dense, brown, yellow mottling, medium to fine, SAND, wet	31.2								40 PVC Well Screen
32											
34											
		very dense, brown, fine, trace gravel at 35.0'									
36					SS		100				
			51.8								
		Dense, brown, silty SAND, with calcareous nodules, moist	36.5								Sump/Botton Cap
			50.8								
		BORING TERMINATED AT 37.5'	37.5								
38											
40											
42											
44											
46											
48											
50											



EDINBURG 94350GINT.GPJ GLDR_HOU.GDT 6/24/09

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-16

SHEET 1 OF 2
DATUM: GEODETIC

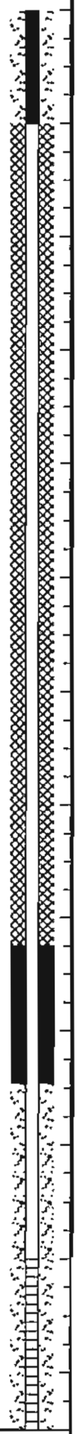
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/22/09
BORING FINISHED: 04/22/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2056.47
EASTING (ft): 3595.78

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✚ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		85.8								
		Loose, light brown, medium to fine, SAND, homogeneous, dry		0.0								Concrete
2		Loose, pale red, clayey SILT, and fine sand, trace gravel, moist		83.3 2.5								
4		Hard, reddish brown, silty CLAY, and fine sand, with calcareous nodules, homogeneous, moist		80.8 5.0								
6						SS		70				
		Hard, light brown, fine, clayey SAND, trace gravel, homogeneous, moist		79.0 6.8								
8												
10		brown at 10.5'				SS		100				Grout
12												
14												
16						SS		100				16.2'
18												Bentonite
												Sugar Sand
20		Dense, brown, fine, silty SAND, trace gravel, homogeneous, saturated		65.8 20.0		SH		100				20/40 Graded Sand
22												
24				60.8								40 PVC Well Screen
		— CONTINUED NEXT PAGE —										



DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-16

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/22/09
BORING FINISHED: 04/22/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 2056.47
EASTING (ft): 3595.78

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE			SAMPLES			RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	NUMBER	TYPE	BLOWS/0.5 FT					
		— CONTINUED FROM PREVIOUS PAGE —										
				25.0								
26						SS		*100*				
28												40 PVC Well Screen
30												
						SS		*100*				
				53.8								
32		Hard, brown, silty CLAY, homogeneous, moist		32.0								Sump/Bottom Cap
						SS		*100*				
34				51.8								
		BORING TERMINATED AT 34.0'		34.0								
36												
38												
40												
42												
44												
46												
48												
50												

EDINBURG 94350GINT.GPJ GLDR_HOU.GDT 6/24/09

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED. RS
CHECKED: JBF

RECORD OF BOREHOLE MW-18R

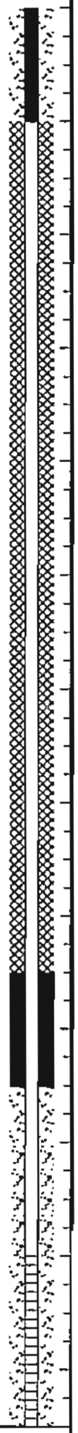
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/27/09
BORING FINISHED: 04/28/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

SHEET 1 OF 2
DATUM: GEODETIC
NORTHING (ft): 14.85
EASTING (ft): 3619.88

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%)	UNDRAINED SHEAR STRENGTH, Cu psf (UC - ● UU - ✪ P.P ⊕ TORV. - ▲) 25 50 75 100	WATER CONTENT PERCENT (PL ⊢ ⊖W ⊣ LL) 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		GROUND SURFACE	85.3								
0		Loose, brown, fine, silty SAND, homogeneous, dry	0.0								Concrete
6		Stiff, brown, fine, clayey SAND, trace calcareous nodules, homogeneous, moist	79.3 6.0		SS		100				Grout
10		Loose, light brown, fine, silty SAND, homogeneous, wet	74.7 10.6		SS						
15		trace calcareous nodules, moist at 15.0'			SS		100				▼ 14.98'
17.5		Stiff, brown, sandy CLAY, with calcareous nodules, homogeneous, moist	67.8 17.5								Bentonite
											Sugar Sand
20		Dense, brown, fine, silty SAND, homogeneous, wet	65.3 20.0		SH		80				20/40 Graded Sand
											40 PVC Well Screen
			60.3								



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DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-18R

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/27/09
BORING FINISHED: 04/28/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

SHEET 2 OF 2
DATUM: GEODETIC
NORTHING (ft): 14.85
EASTING (ft): 3619.88

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
		saturated at 25.0'		25.0								
26						SS		*100*				
28												40 PVC Well Screen
30		Very dense, light brown, SAND, homogeneous, wet		55.3 30.0		SS		*80*				
32		Hard, yellowish brown, CLAY, with fine sand, homogeneous, moist	▨	53.5 31.8								Sump/Botton Cap
		BORING TERMINATED AT 33.0'		52.3 33.0								
34												
36												
38												
40												
42												
44												
46												
48												
50												

DEPTH SCALE
1 Inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-22

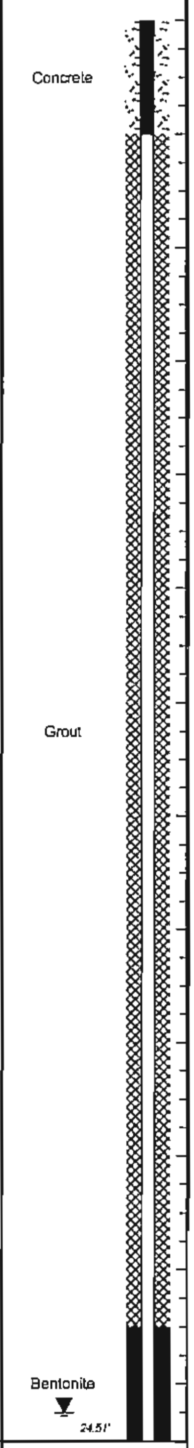
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/28/09
BORING FINISHED: 04/28/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

SHEET 1 OF 2
DATUM: GEODETIC
NORTHING (ft): 0.52
EASTING (ft): 1231.48

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✤ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢ ⊖W ⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		93.0								
		Loose, light brown, silty SAND, homogeneous, dry		0.0								Concrete
2												
4												
		Loose, gray, fine, SAND, homogeneous, dry		88.0 5.0								
6						SS		100				
8												
10		Loose, light brown, clayey SAND, trace calcareous nodules, homogeneous, moist		82.6 10.4		SS		100				
12												Grout
14												
		Loose, light brown, silty SAND, trace calcareous nodules, homogeneous, moist		78.0 15.0								
16						SS		100				
18		Stiff, light brown, sandy CLAY, with calcareous nodules, homogeneous, moist		75.0 18.0								
20		hard, brown, dry at 20.0'										
						SS		100				
22												
24												Bentonite
				68.5 24.5								
				68.0								



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DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: (BF

RECORD OF BOREHOLE MW-22

SHEET 2 OF 2
DATUM: GEODETIC

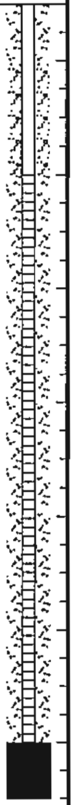
PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/28/09
BORING FINISHED: 04/28/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 0.52
EASTING (ft): 1231.48

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psi UC - ● UU - ✪ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
		Dense, brown, silty SAND, homogeneous, wet		25.0								Sugar Sand
26						SS		100				20/40 Graded Sand
28				65.0								
		Dense, light brown, fine, SAND, homogeneous, saturated		28.0								
30												
						SS		100				
32												
												40 PVC Well Screen
34												
		wet at 35.0'										
36						SS		100				
38												Sump/Botton Cap
				54.0								
		BORING TERMINATED AT 39.0'		39.0								
40												
42												
44												
46												
48												
50												



DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JRS

RECORD OF BOREHOLE MW-23

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/28/09
BORING FINISHED: 04/28/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

SHEET 1 OF 2
DATUM: GEODETIC
NORTHING (ft): 8.57
EASTING (ft): 629.83

DEPTH SCALE FEET	SOIL PROFILE DESCRIPTION	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOWS/0.5 FT	RECOVERY (%)	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0	GROUND SURFACE	87.9					
	Loose, light brown, silty SAND, homogeneous, dry	0.0					Concrete
	with calcareous nodules at 5.0'			SS		100	Grout
	Stiff, brown, sandy CLAY, with calcareous nodules, trace shells, homogeneous, moist	79.4 8.5					
10	Dense, brown, silty SAND, homogeneous, moist to wet	77.9 10.0		SS		100	Bentonite
14	Hard, brown, sandy CLAY, with calcareous nodules, some dark brown staining, moist	73.9 14.0		SS		100	Sugar Sand 20/40 Graded Sand
	Dense, brown, fine, SAND, homogeneous, wet	71.1 16.8					▼ 17.11'
20	Dense, light brown, fine, silty SAND, trace calcareous nodules, homogeneous, wet	67.6 20.3		SS		100	40 PVC Well Screen
24	Dense, light brown, fine, SAND, homogeneous, saturated	63.9 24.0					
		62.9					

UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100

WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20

ADDITIONAL LAB. TESTING

— CONTINUED NEXT PAGE —

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBC

RECORD OF BOREHOLE MW-23

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/28/09
BORING FINISHED: 04/28/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 8.57
EASTING (ft): 629.83

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✪ P.P. ⊕ TORV - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ├──○W──┤ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- *CONTINUED FROM PREVIOUS PAGE* --										
				25.0								
26						SS		100				40 PVC Well Screen
												Sump/Bottom Cap
28				59.9 28.0								
		BORING TERMINATED AT 28.0'										
30												
32												
34												
36												
38												
40												
42												
44												
46												
48												
50												

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBF

RECORD OF BOREHOLE MW-24

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/25/09
BORING FINISHED: 04/25/09

DRILLING EQUIPMENT: MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 1789.99
EASTING (ft): 6.64

UNDRAINED SHEAR STRENGTH, Cu psf: UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ (25, 50, 75, 100)

WATER CONTENT PERCENT: PL ├──○W──┤ LL (5, 10, 15, 20)

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY (%)	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		GROUND SURFACE	87.2						
0		Loose, light brown, fine, silty SAND, with roots and organic material, homogeneous, dry	0.0						Concrete
6					SS		80		
8		Stiff, brown, fine, clayey SAND, trace calcareous nodules, homogeneous, moist	79.2 8.0						
10		Stiff, brown, sandy CLAY, with calcareous nodules, some brown staining, friable, moist	77.2 10.0		SH		75		Grout
13		Hard, yellowish brown, CLAY, with fine sand, trace gravel, homogeneous, moist	74.2 13.0						
16		Loose, yellowish brown, fine, silty SAND, homogeneous, wet	71.4 15.8		SH		100		▼ 16.6'
20		dense, saturated at 20.0'							
21					SS		100		Bentonite
22									Sugar Sand
24			62.2						20/40 Graded Sand

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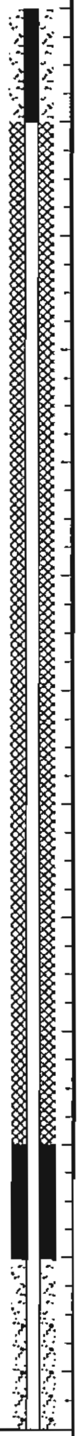

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: RS
CHECKED: JBr

RECORD OF BOREHOLE MW-24

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: City of Edinburg
LOCATION:

BORING STARTED: 04/25/09
BORING FINISHED: 04/25/09

DRILLING EQUIPMENT. MOBILE B57
DRILLING OPERATOR: LEWIS ENVIRONMENTAL

NORTHING (ft): 1789.99
EASTING (ft): 6.64

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY (%) %	UNDRAINED SHEAR STRENGTH, Cu psf UC - ● UU - ✿ P.P. ⊕ TORV. - ▲ 25 50 75 100	WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 5 10 15 20	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
		wet at 25.0'		25 0								
26						SS		60				
28												
30												40 PVC Well Screen
						SS		60				
32												
34												
												Sump/Bottom Cap
36		Dense, light brown, fine, clayey SAND, homogeneous, moist		51.2 36.0		SS		100				
				50 2 37.0								
		BORING TERMINATED AT 37.0'										
38												
40												
42												
44												
46												
48												
50												

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED. RS
CHECKED: JBF

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Fax: (281) 821-6870

BOREHOLE MWD-7

PAGE 1 OF 1

CLIENT Edinburg Landfill

PROJECT NAME Installation of Monitoring Well (MWD-7) and Gas Probes (GPD-5, GPD-6, GP-38)

PROJECT NUMBER 123-94123

PROJECT LOCATION Edinburg Landfill

DATE STARTED 3/5/13 **COMPLETED** 3/5/13

GROUND ELEVATION

HOLE SIZE inches

DRILLING CONTRACTOR ENVIROCORE, INC.

GROUND WATER LEVELS:

DRILLING METHOD Hollow Stem Auger

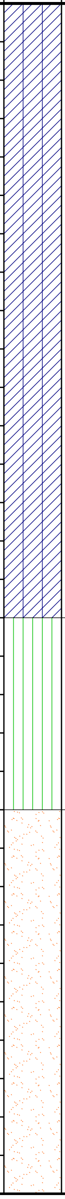
▽ **AT TIME OF DRILLING**

LOGGED BY JSX **CHECKED BY**

AT END OF DRILLING

NOTES

AFTER DRILLING



DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	PID READINGS (ppm)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0	Brown, silty CLAY, moist	SS 1	100				
5		SS 2	100				
10		SS 3	100				
15		SS 4	100				
	▽ Brown, SILT, moist						
	wet at 19.0'						
20		SS 5	100				
	Brown, fine, SAND, poorly graded						
25		SS 6	100				
30		SS 7	100				

Bottom of borehole at 31.0 feet.

APPENDIX III4C

LABORATORY SOIL TESTING DATA

Golder Associates
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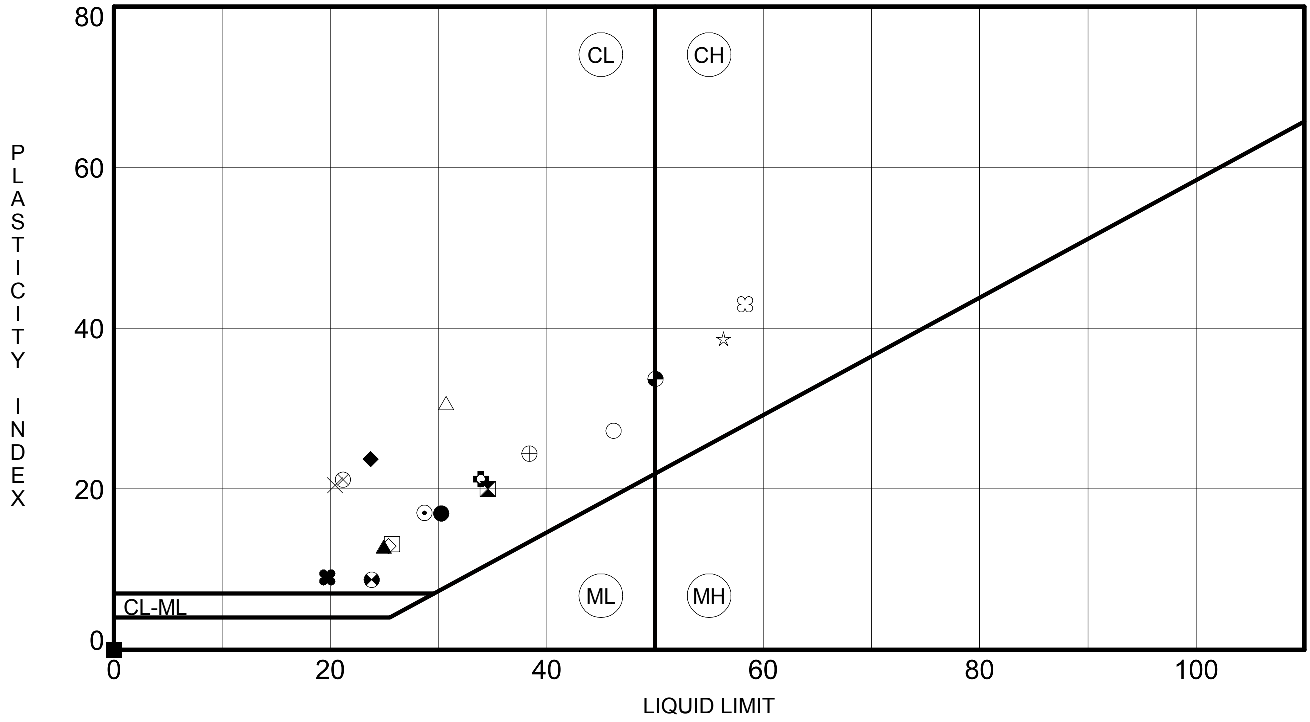
Fax: (281) 821-6870

ATTERBERG LIMITS RESULTS

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-102**	**3.00**	**30**	**13**	**17**		
⧗	**B-102**	**23.00**	**35**	**15**	**20**	**59**	**SANDY LEAN CLAY (CL)**
▲	**B-107**	**8.00**	**25**	**12**	**13**	**40**	**CLAYEY SAND (SC)**
★	**B-108**	**13.00**	**NP**	**NP**	**NP**	**35**	**SILTY SAND (SM)**
⊙	**B-108**	**23.00**	**29**	**12**	**17**		
✿	**B-109**	**0.00**	**34**	**13**	**21**		
○	**B-109**	**13.00**	**46**	**19**	**27**	**52**	**SANDY LEAN CLAY (CL)**
△	**B-110**	**30.00**	**31**	**NP**	**NP**	**56**	**SANDY SILT (ML)**
⊗	**B-112**	**0.00**	**21**	**NP**	**NP**	**35**	**SILTY SAND (SM)**
⊕	**B-115**	**28.00**	**38**	**14**	**24**	**79**	**LEAN CLAY with SAND (CL)**
□	**B-117**	**0.00**	**26**	**13**	**13**		
⊗	**B-119**	**13.00**	**24**	**15**	**9**		
◕	**B-123**	**13.00**	**50**	**16**	**34**	**71**	**FAT CLAY with SAND (CH)**
☆	**B-125**	**38.00**	**56**	**18**	**38**	**89**	**FAT CLAY (CH)**
✤	**B-126**	**25.00**	**58**	**15**	**43**		
■	**B-128**	**45.00**	**NP**	**NP**	**NP**		
◆	**B-129**	**0.00**	**24**	**NP**	**NP**	**26**	**SILTY SAND (SM)**
◇	**B-132**	**18.00**	**25**	**12**	**13**		
×	**PZ-101**	**8.00**	**20**	**NP**	**NP**	**40**	**SILTY SAND (SM)**
✖	**PZ-104**	**13.00**	**20**	**11**	**9**	**34**	**CLAYEY SAND (SC)**

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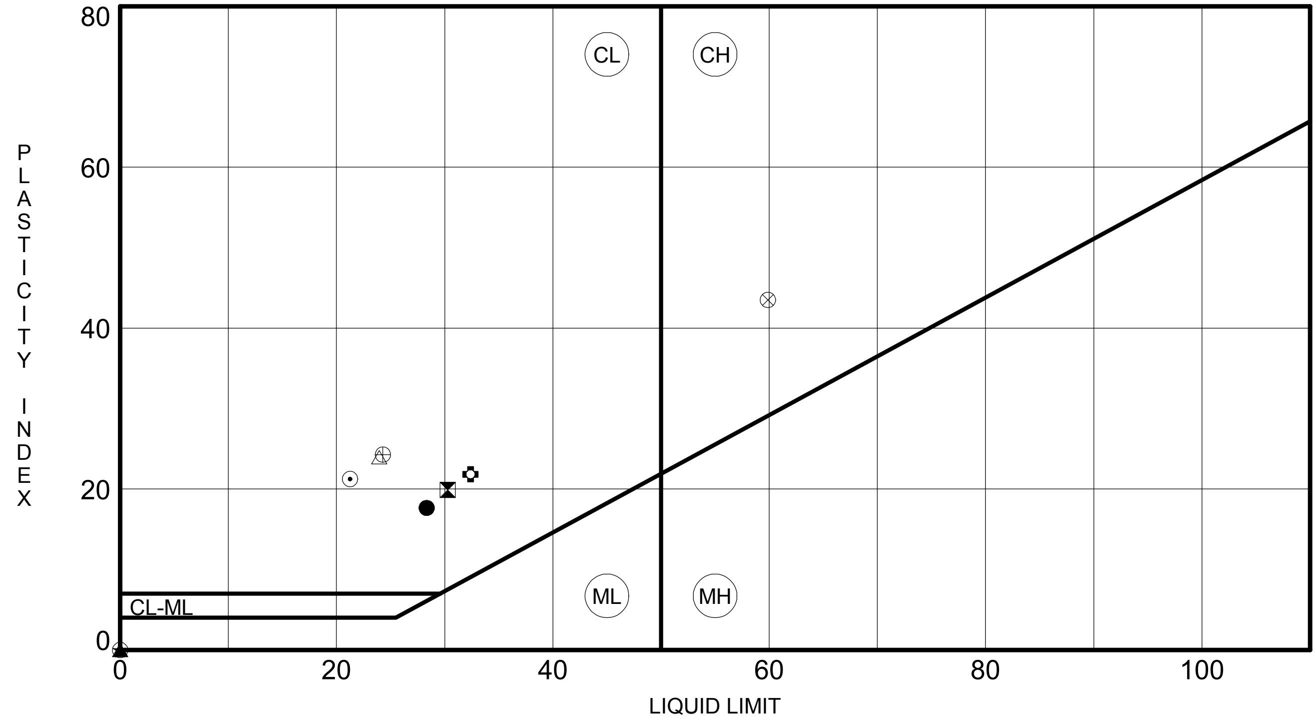
Fax: (281) 821-6870

ATTERBERG LIMITS RESULTS

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**PZ-106**	**8.00**	**28**	**11**	**17**	**55**	**SANDY LEAN CLAY (CL)**
⧗	**PZ-116**	**3.00**	**30**	**10**	**20**	**53**	**SANDY LEAN CLAY (CL)**
▲	**PZ-118**	**23.00**	**NP**	**NP**	**NP**	**19**	**SILTY SAND (SM)**
★	**PZ-122**	**18.00**	**NP**	**NP**	**NP**	**33**	**SILTY SAND (SM)**
⊙	**PZ-124**	**8.00**	**21**	**NP**	**NP**	**38**	**SILTY SAND (SM)**
✿	**PZ-124**	**28.00**	**32**	**11**	**21**	**57**	**SANDY LEAN CLAY (CL)**
○	**PZ-130**	**38.00**	**NP**	**NP**	**NP**	**20**	**SILTY SAND (SM)**
△	**PZ-131**	**8.00**	**24**	**NP**	**NP**	**26**	**SILTY SAND (SM)**
⊗	**PZ-133**	**58.00**	**60**	**16**	**44**	**52**	**SANDY FAT CLAY (CH)**
⊕	**PZ-134**	**33.00**	**24**	**NP**	**NP**	**43**	**SILTY SAND (SM)**

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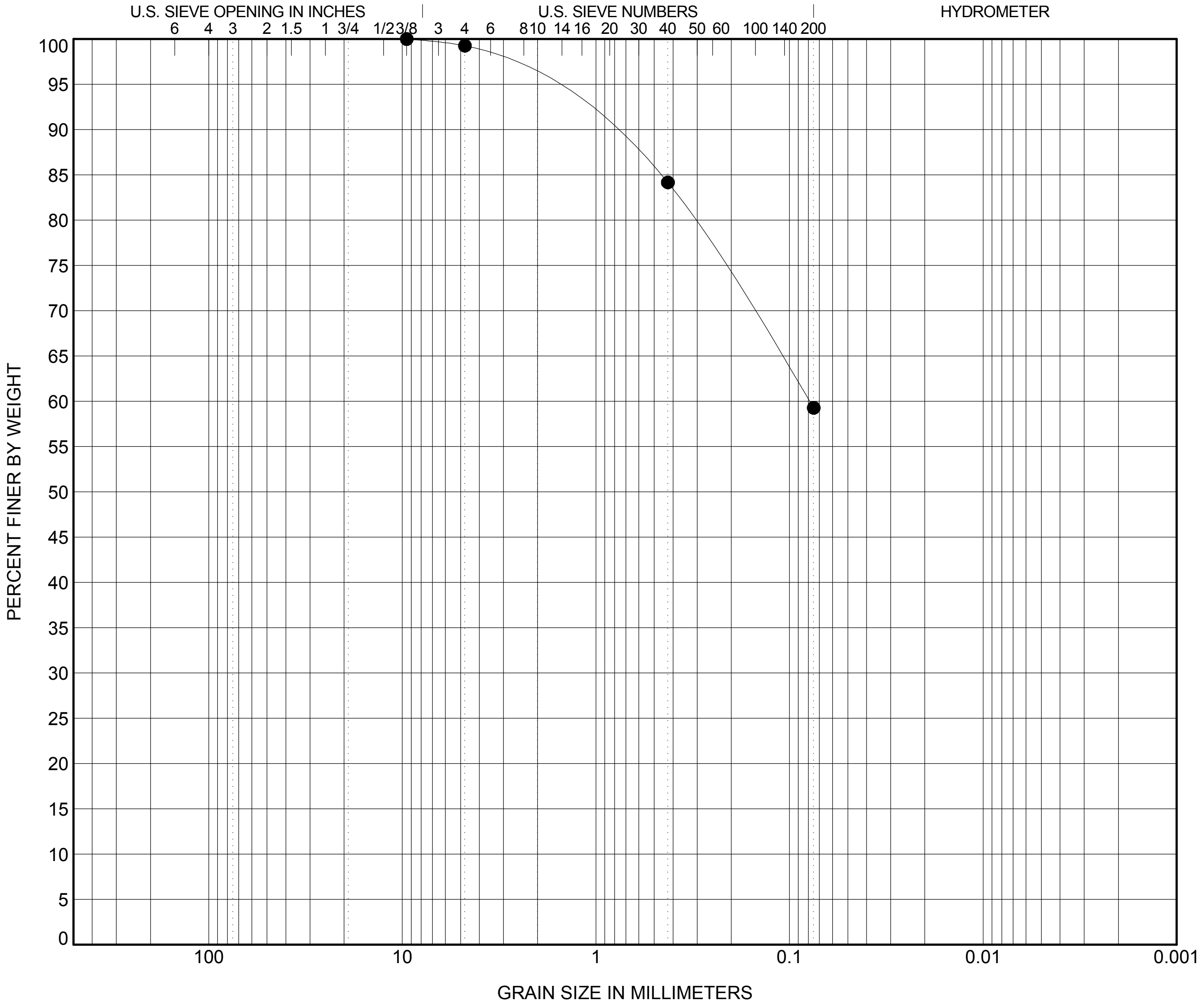
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-102	23.00	SANDY LEAN CLAY (CL)	35	15	20		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-102	23.00	9.5	0.079			0.7	40.0	59.3	

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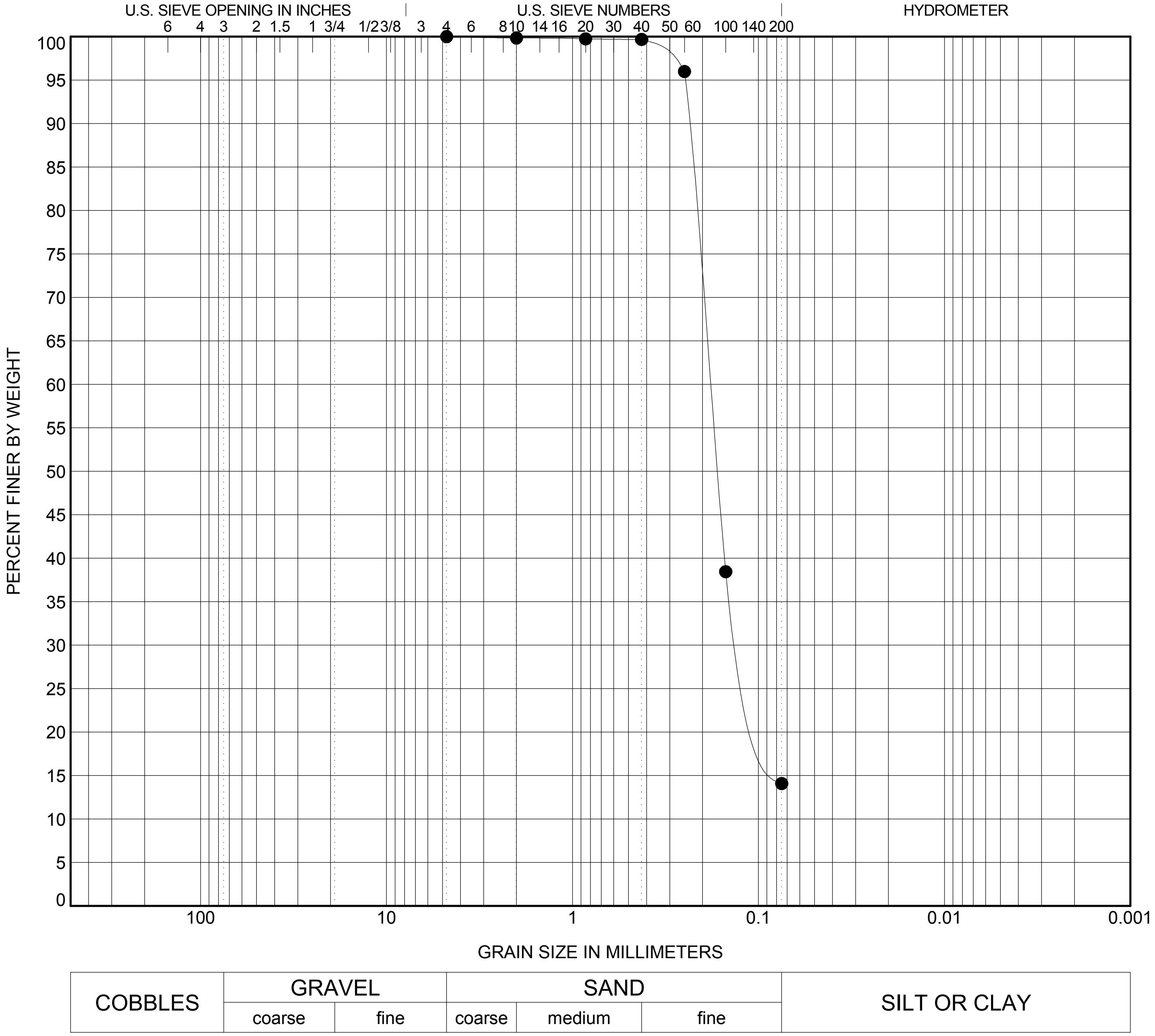
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX



BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-105	38.00						

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-105	38.00	4.75	0.182	0.118		0.0	85.9	14.1	

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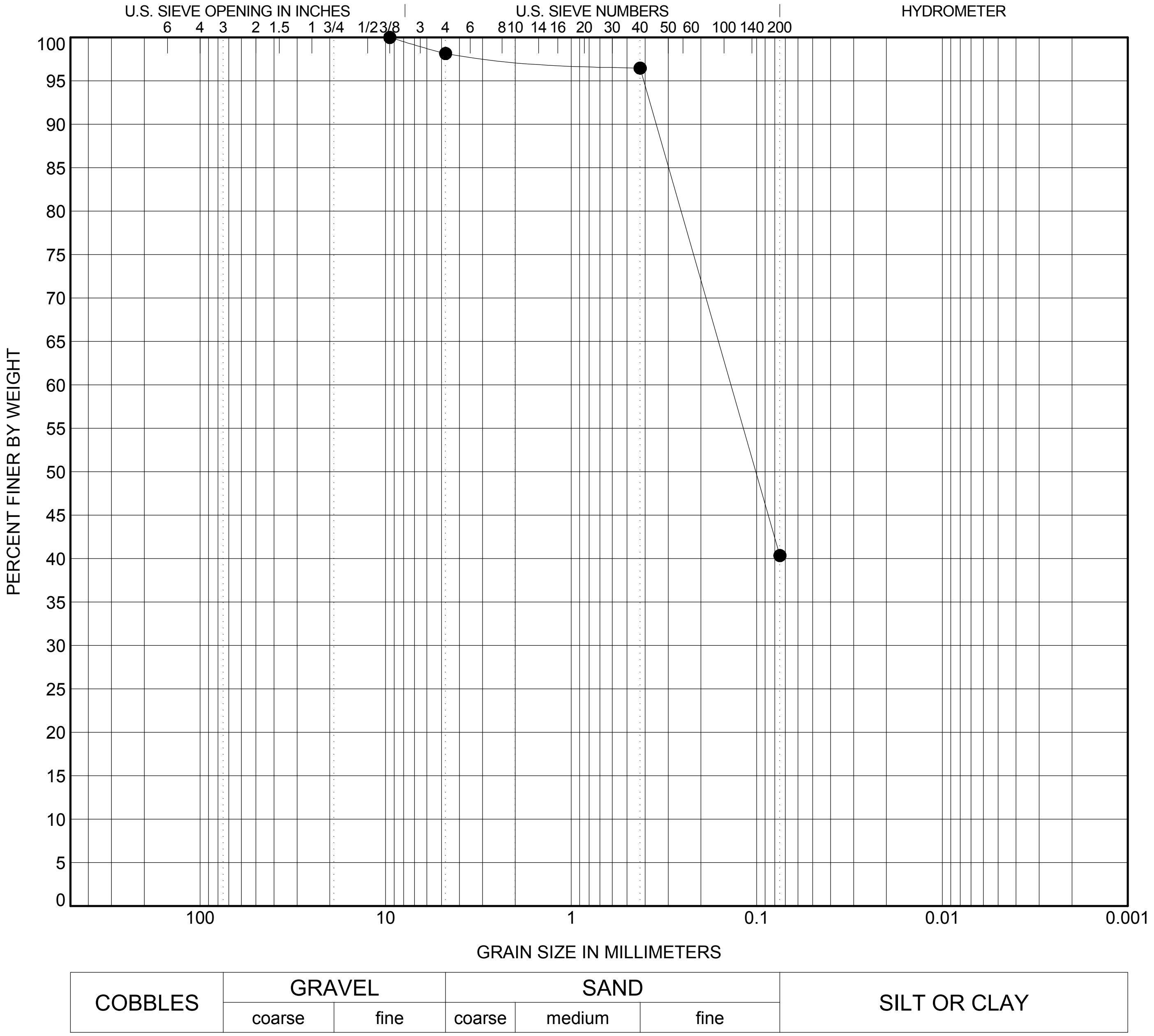
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● B-107	8.00	CLAYEY SAND (SC)	25	12	13		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-107	8.00	9.5	0.138			1.9	57.8	40.3	

Golder Associates
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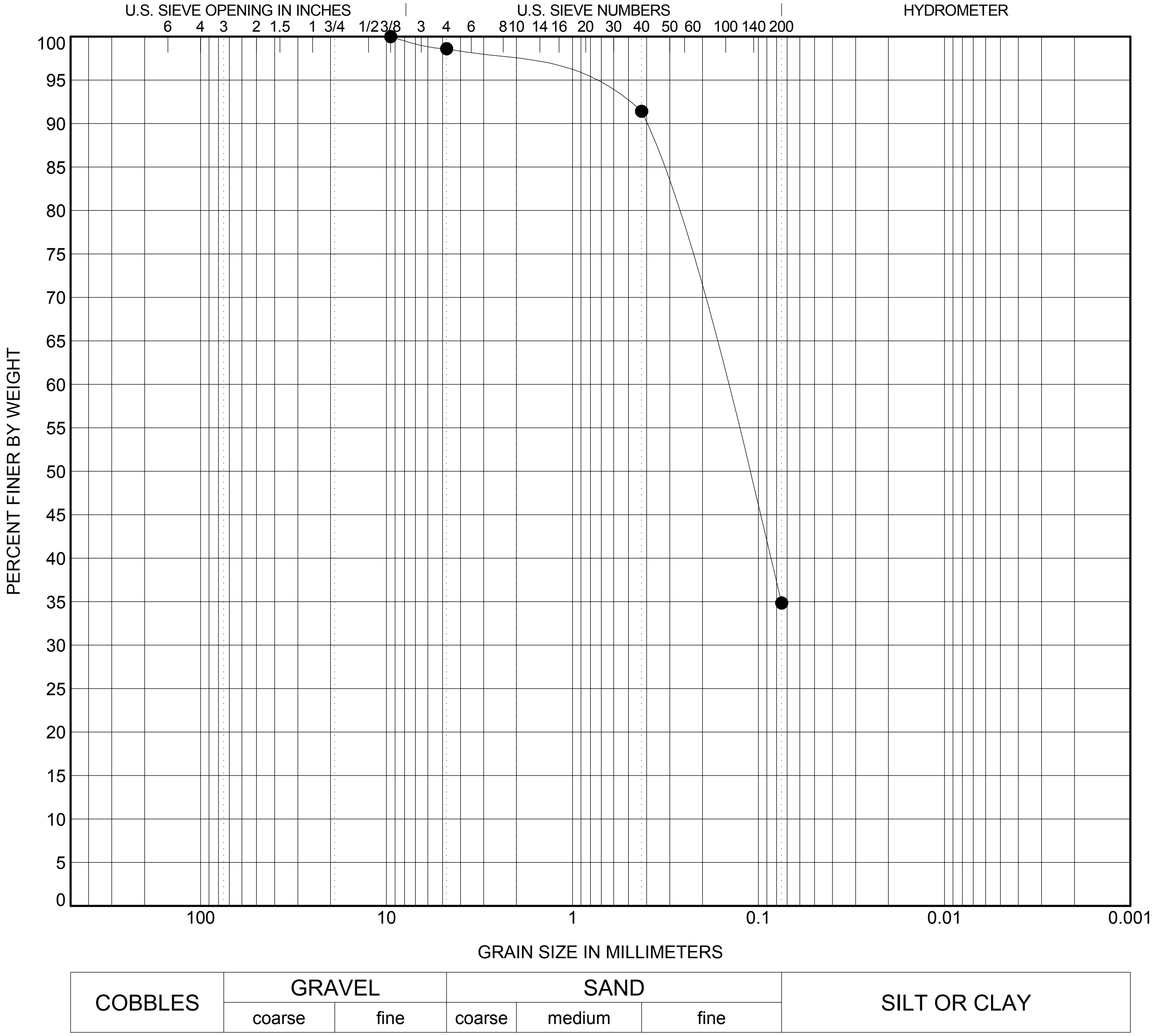
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **B-108**	**13.00**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **B-108**	**13.00**	**9.5**	**0.162**			**1.4**	**63.8**	**34.8**	

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GRAIN SIZE DISTRIBUTION

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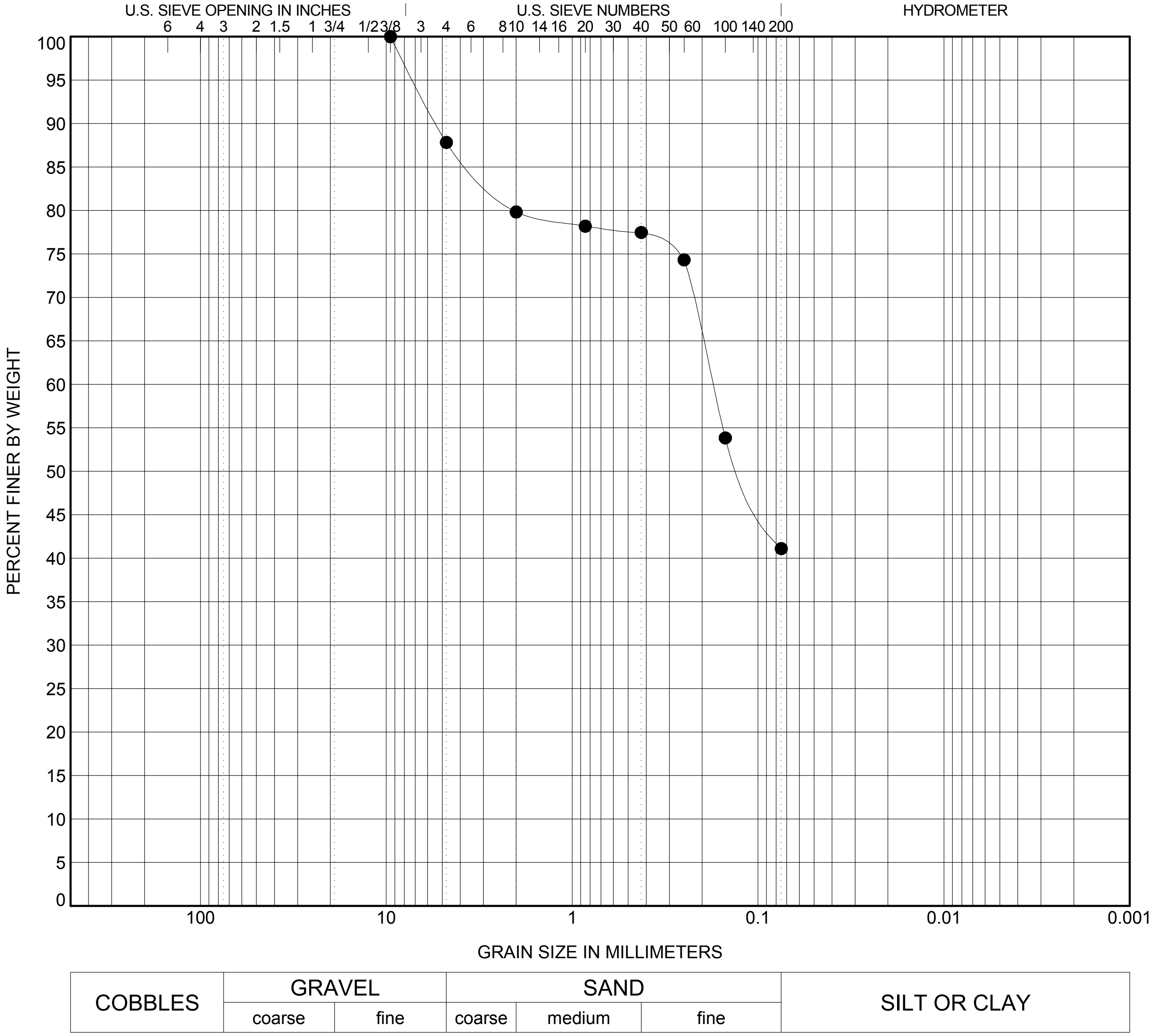
PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-108	53.00						

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-108	53.00	9.5	0.175			12.2	46.7	41.1	

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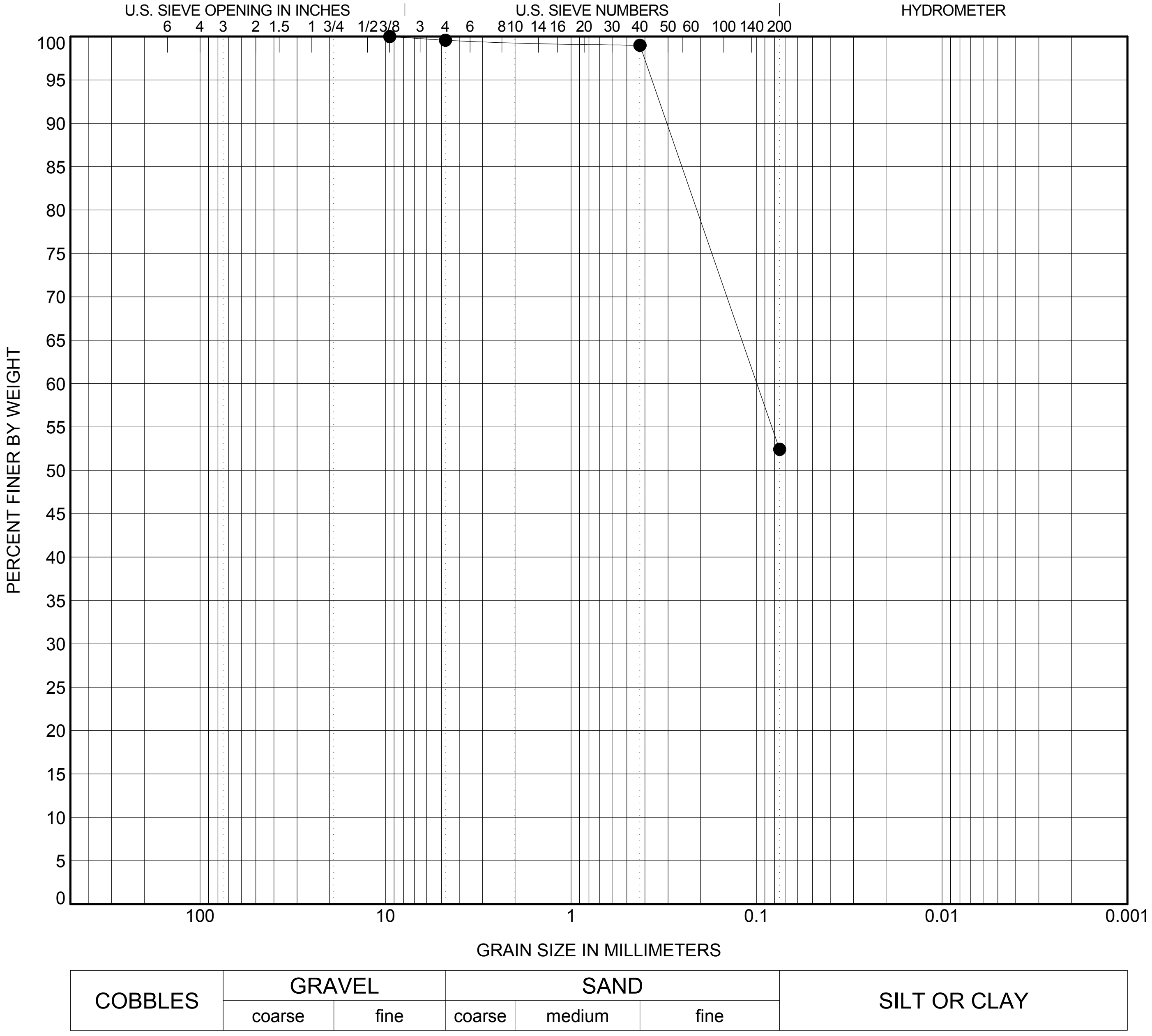

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-109	13.00	SANDY LEAN CLAY (CL)	46	19	27		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-109	13.00	9.5	0.099			0.4	47.2	52.4	

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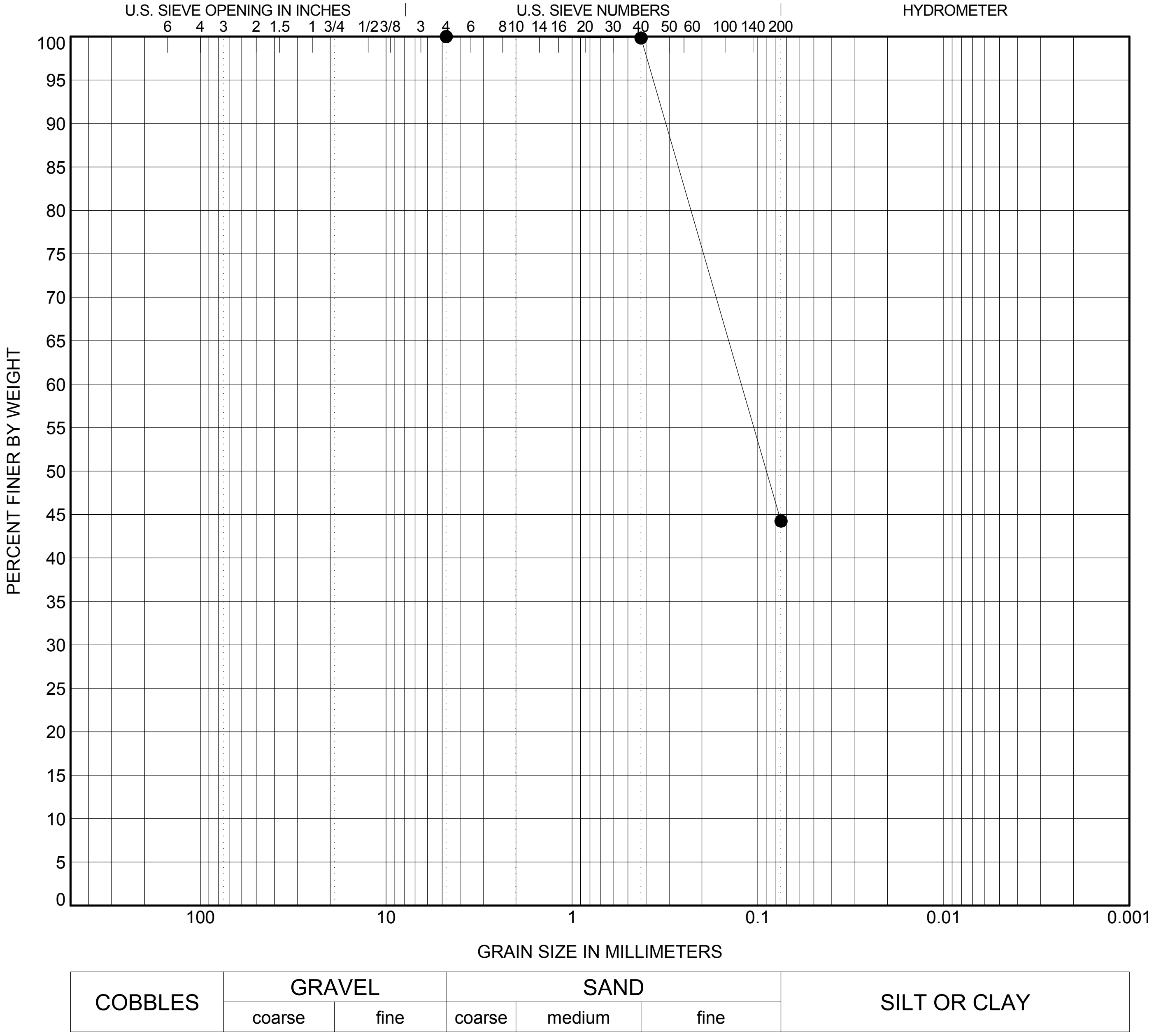

BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-110	6.50						

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-110	6.50	4.75	0.123			0.0	55.8	44.2	

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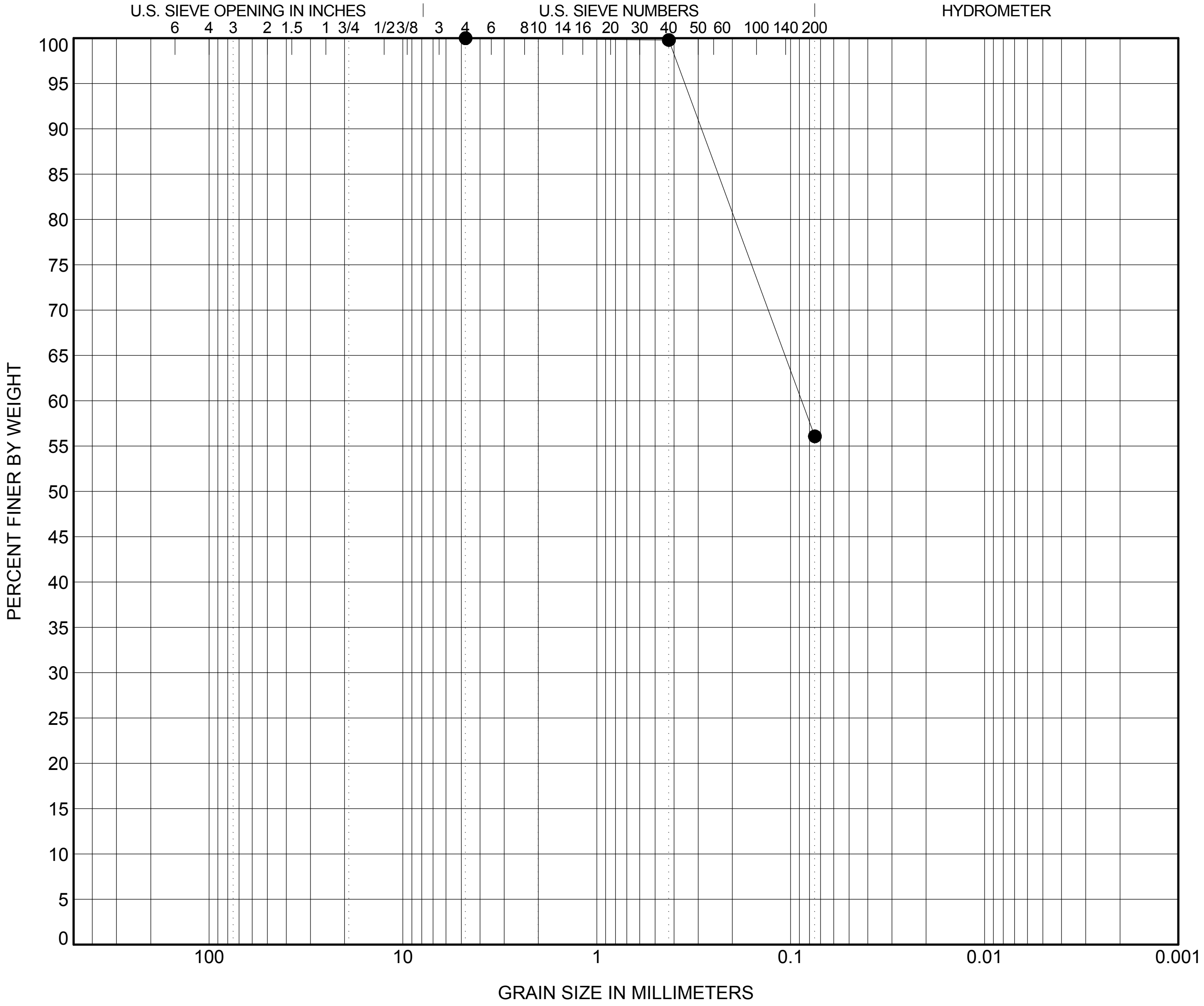

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-110	**30.00**	**SANDY SILT (ML)**	**31**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-110	**30.00**	**4.75**	**0.088**			**0.0**	**43.9**	**56.1**	

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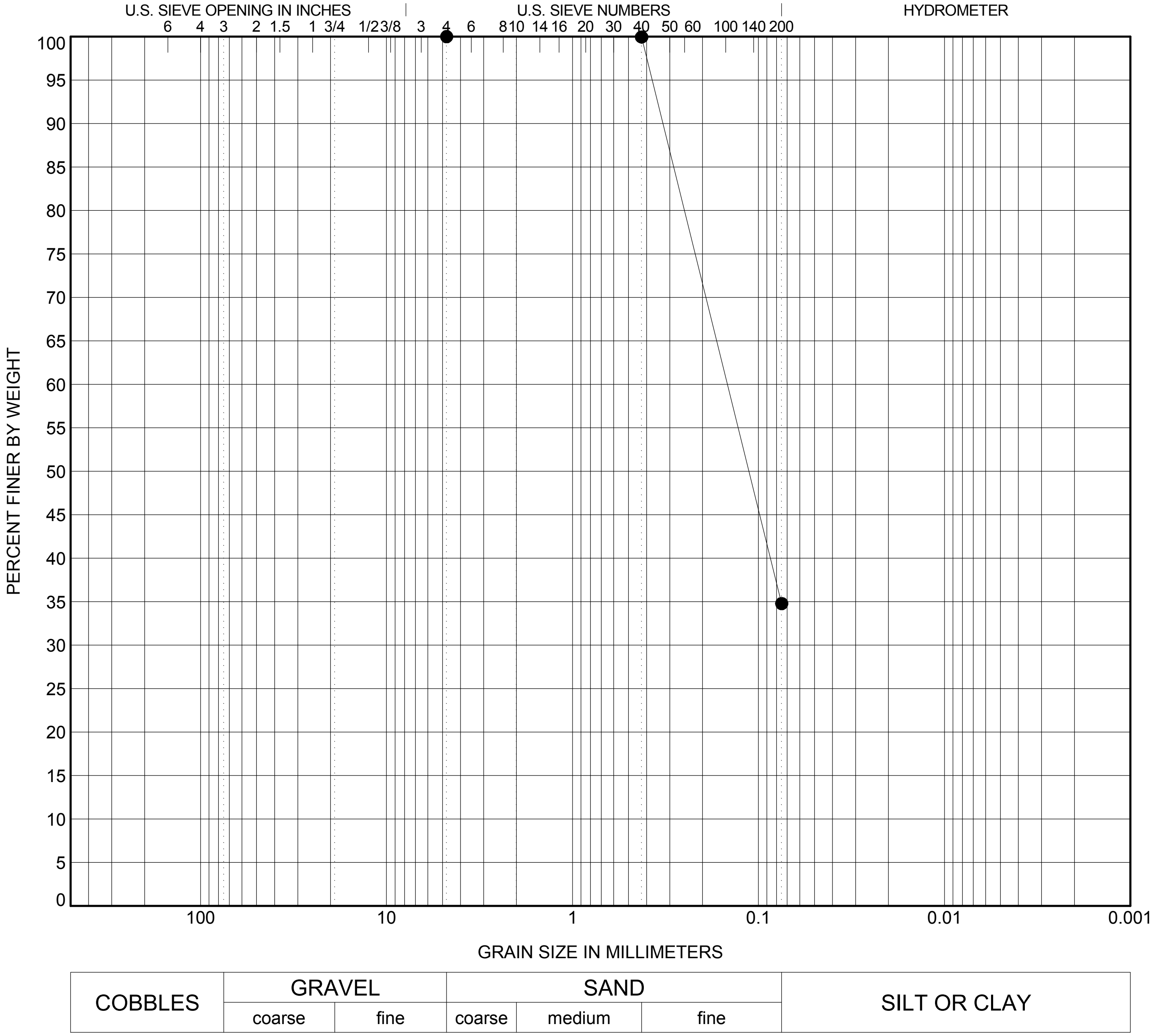

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-112**	**0.00**	**SILTY SAND (SM)**	**21**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-112**	**0.00**	**4.75**	**0.147**			**0.0**	**65.2**	**34.8**	

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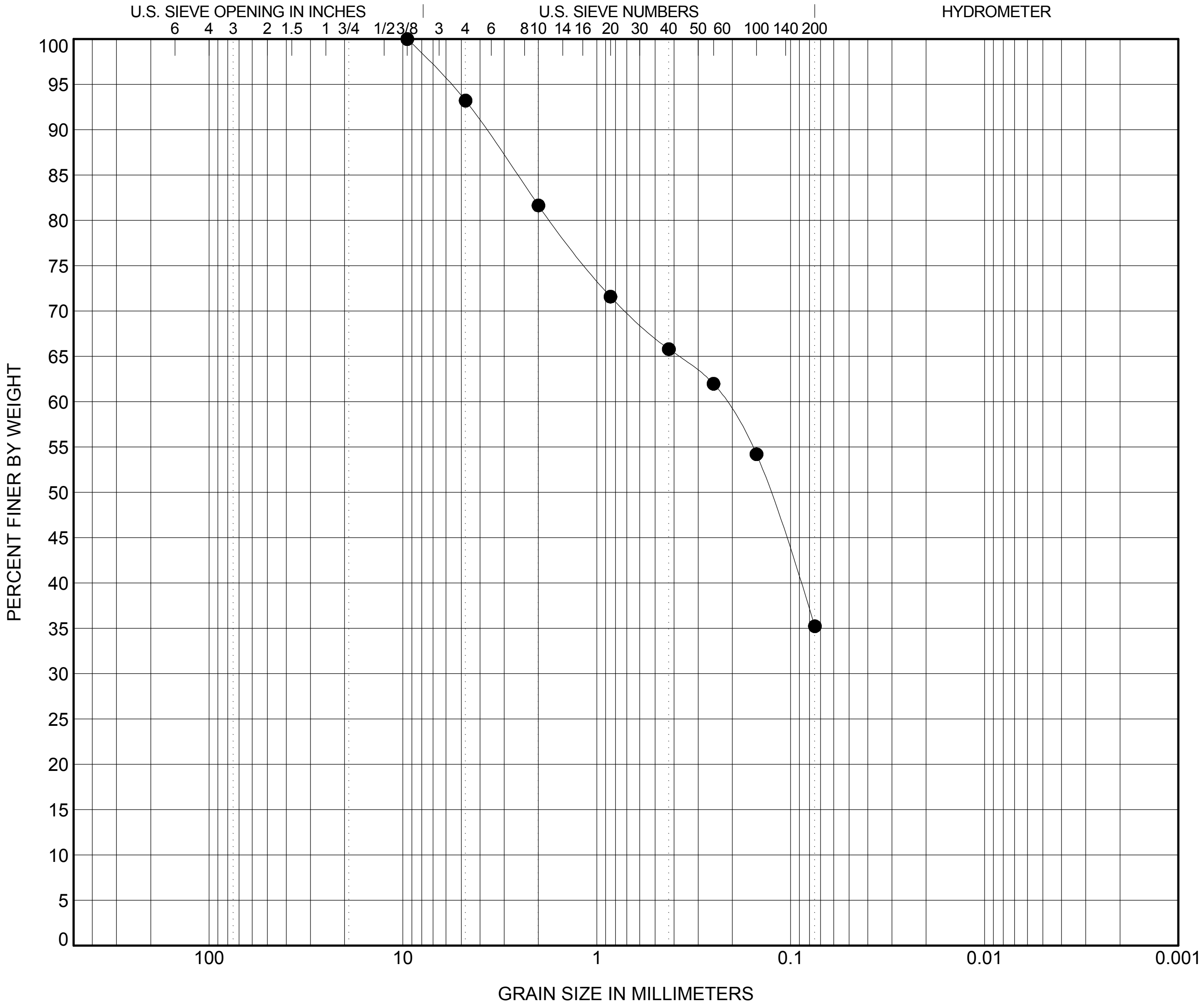

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-112	43.00						

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-112	43.00	9.5	0.22			6.8	58.0	35.2	

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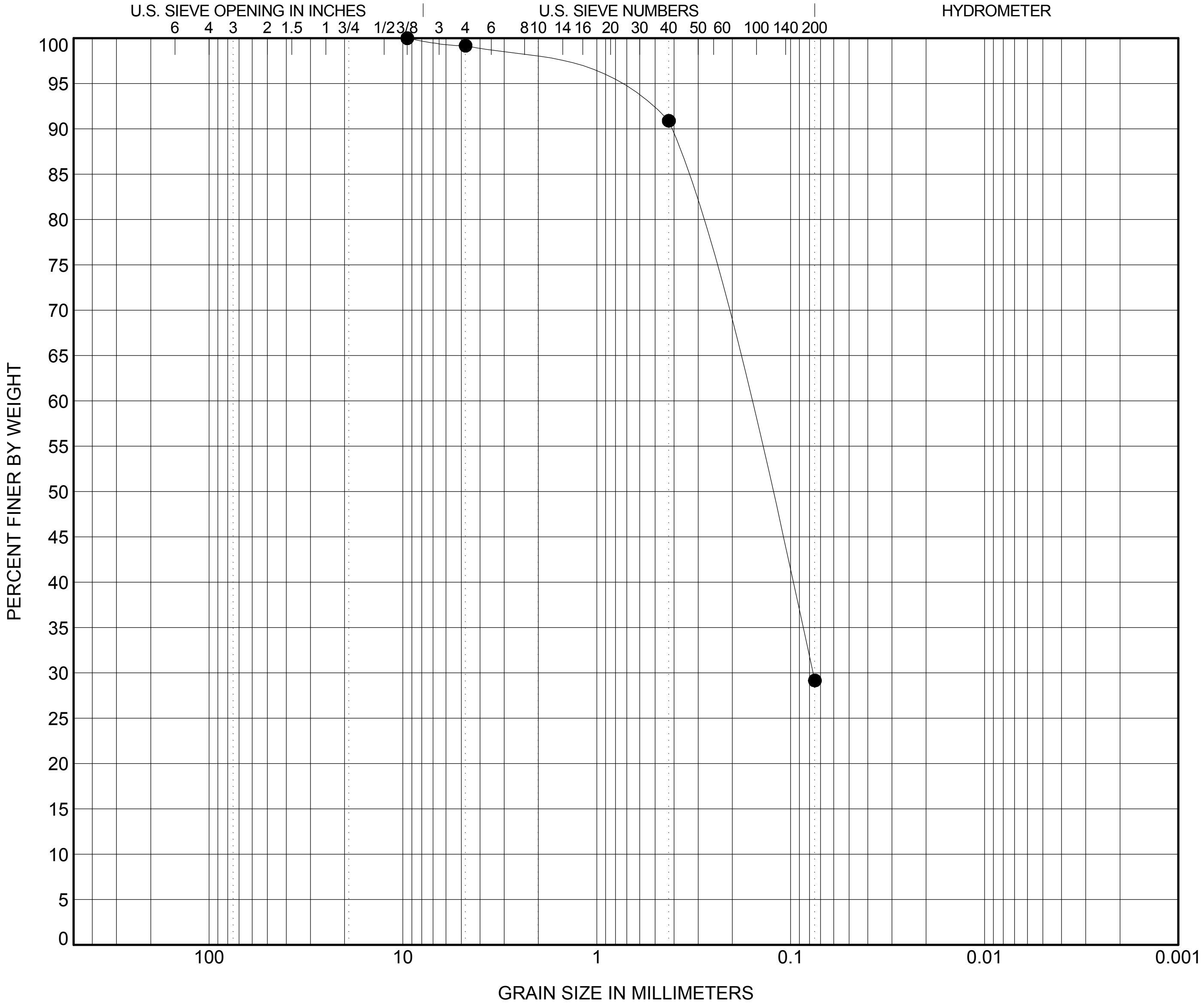

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-114	28.00						

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-114	28.00	9.5	0.178	0.077		0.8	70.0	29.2	

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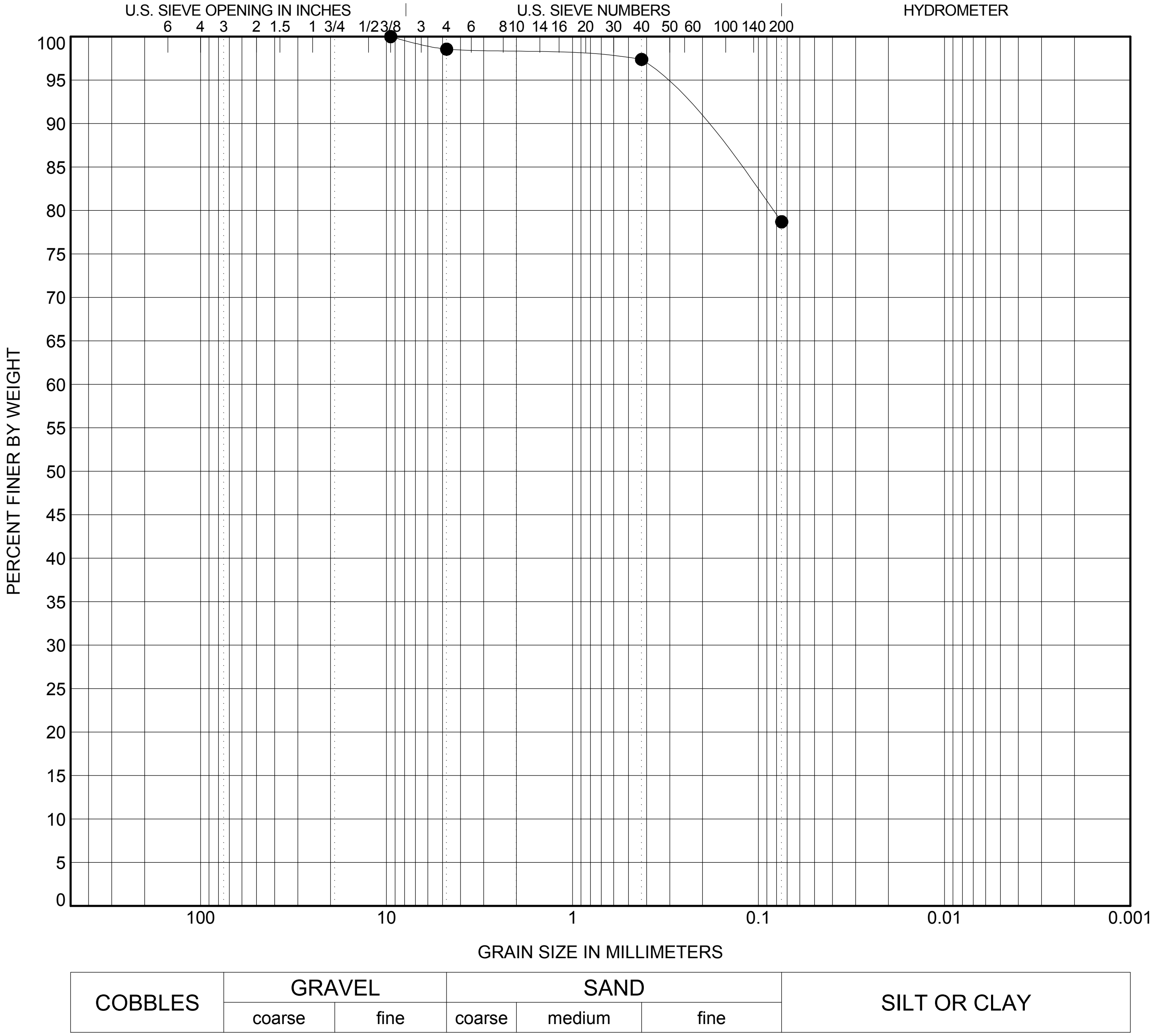

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-115	28.00	LEAN CLAY with SAND (CL)	38	14	24		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-115	28.00	9.5				1.4	19.9	78.7	

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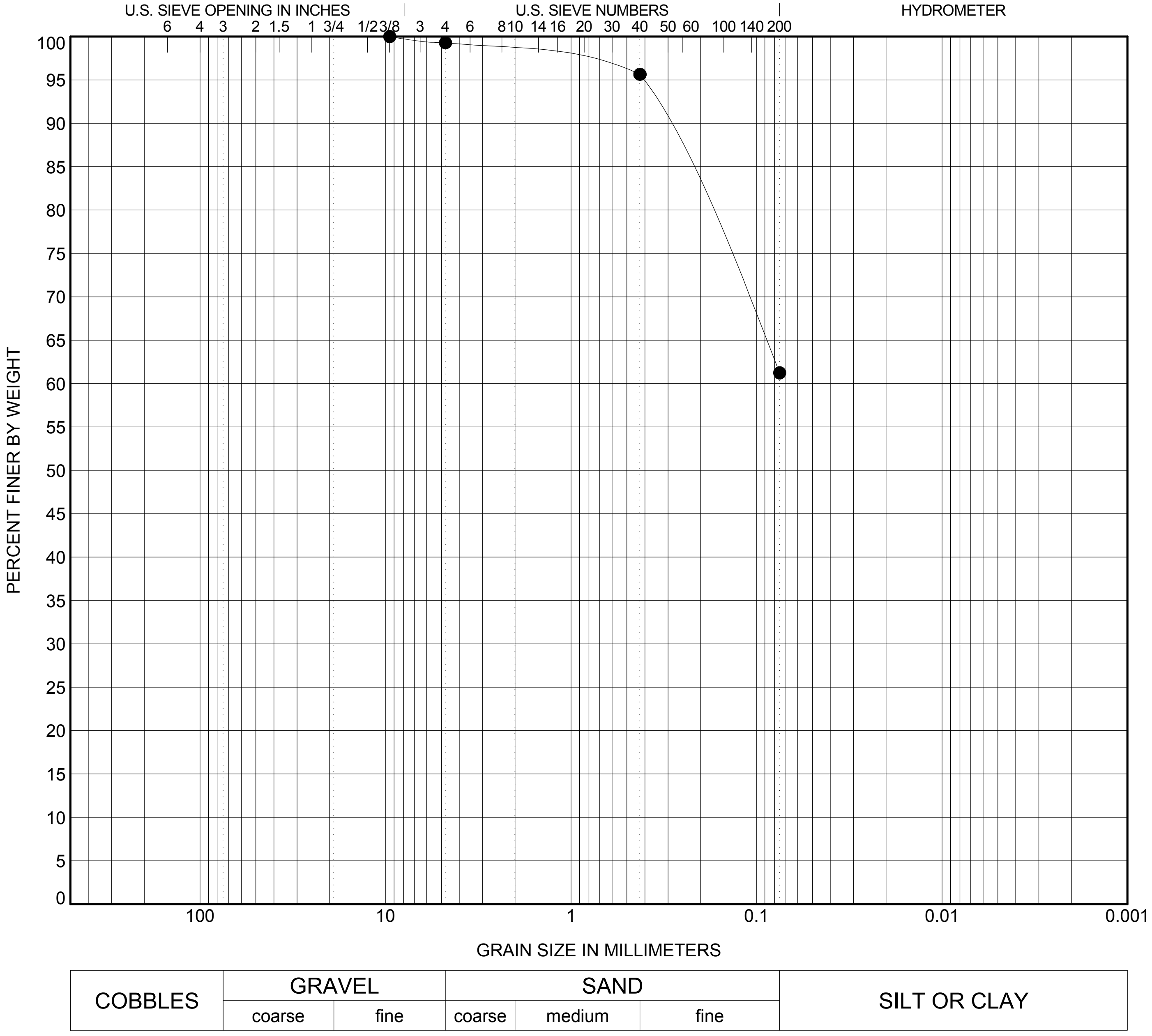

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-115	53.00						

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-115	53.00	9.5				0.7	38.0	61.2	

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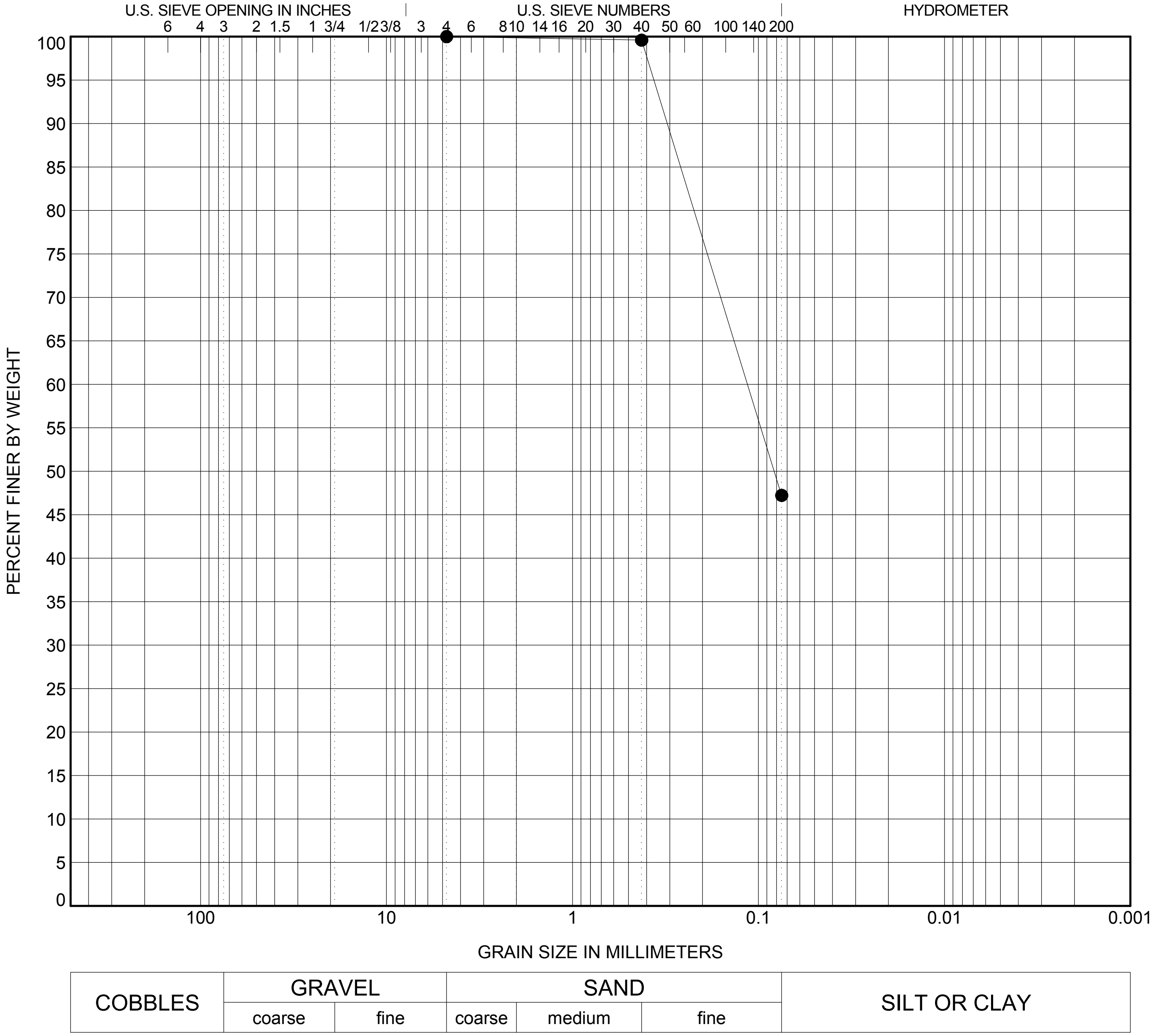

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-117	8.00						

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-117	8.00	4.75	0.115			0.0	52.8	47.2	

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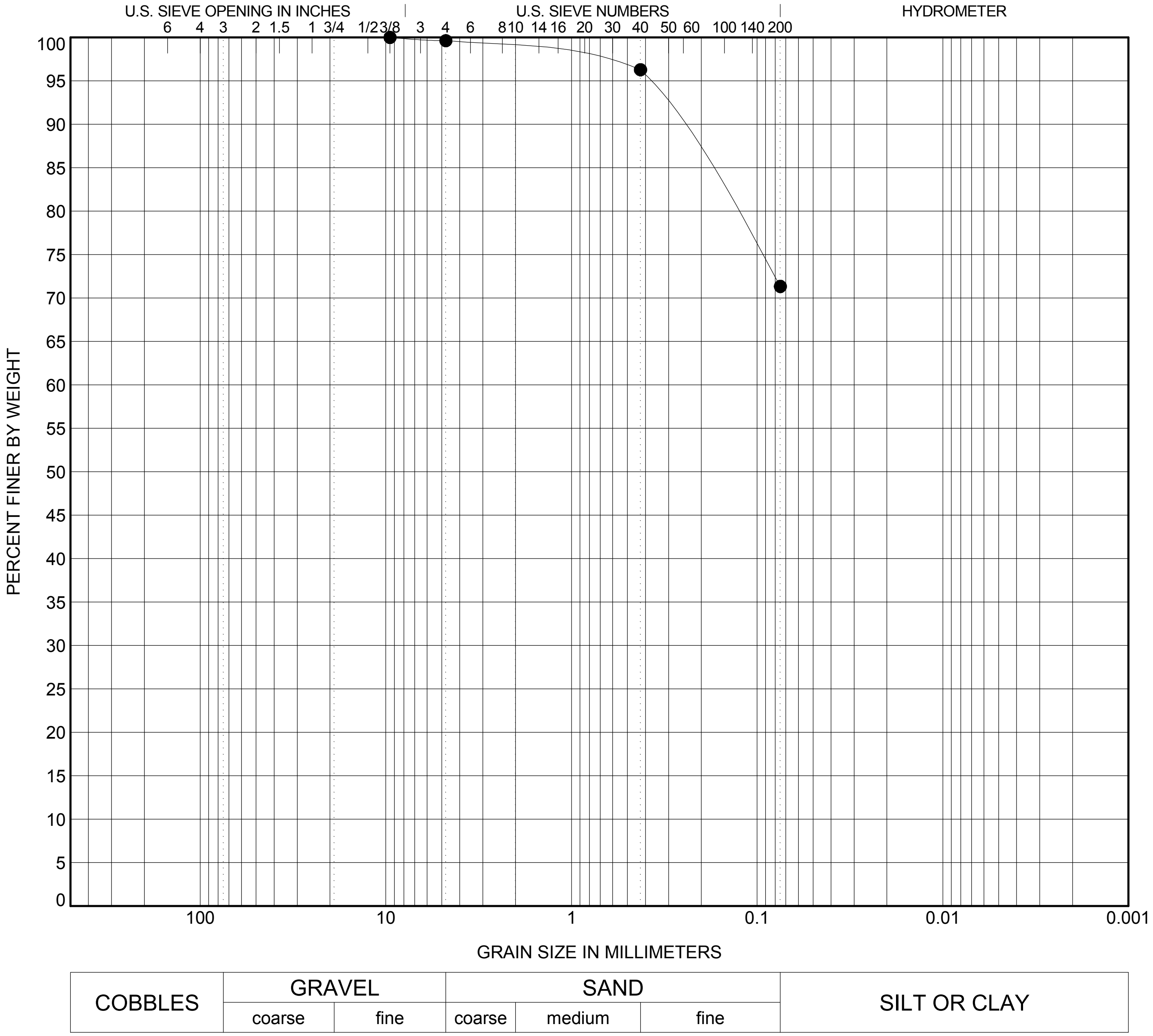

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-123**	**13.00**	**FAT CLAY with SAND (CH)**	**50**	**16**	**34**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-123**	**13.00**	**9.5**				**0.4**	**28.3**	**71.3**	

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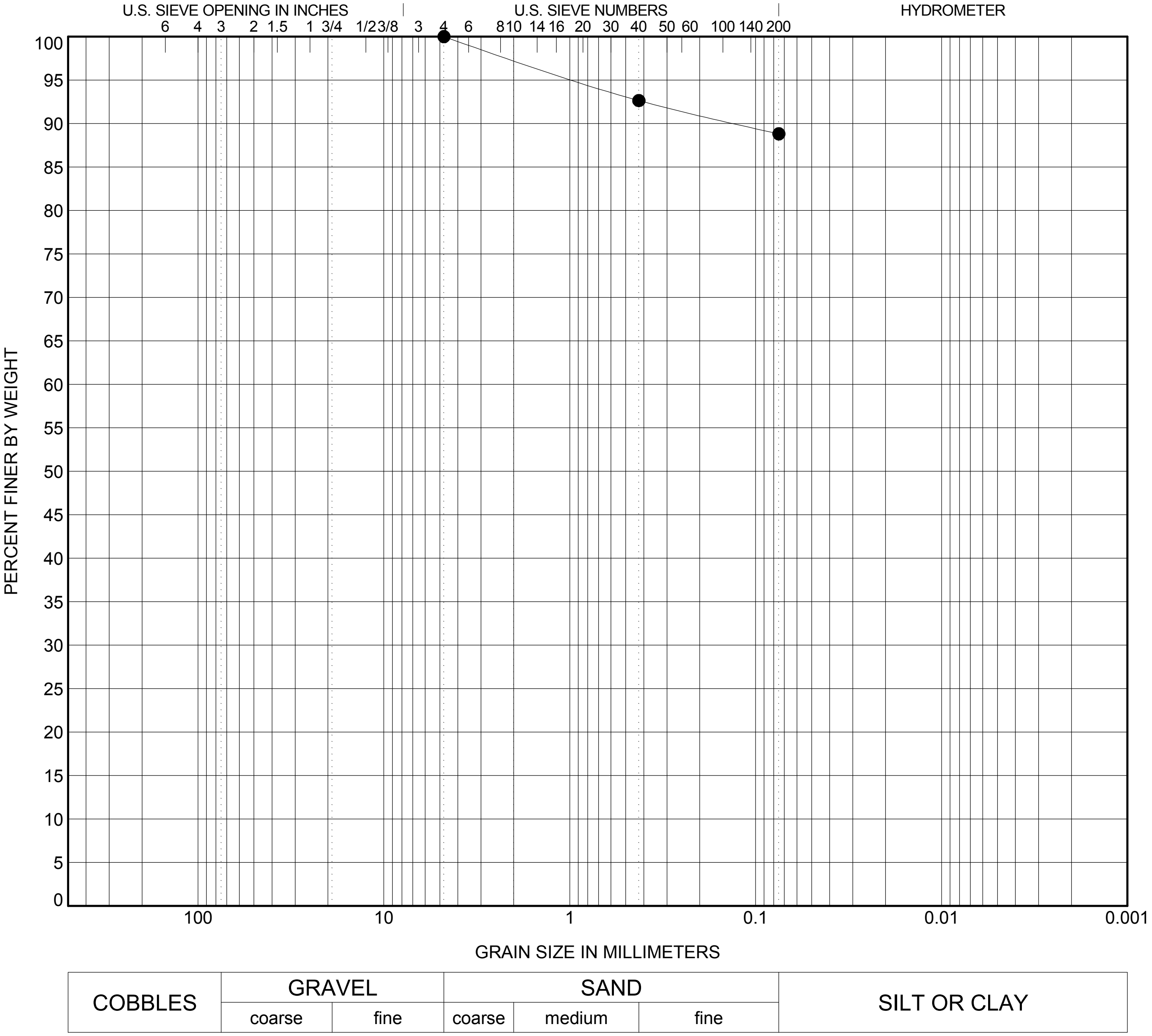

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-125**	**38.00**	**FAT CLAY (CH)**	**56**	**18**	**38**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-125**	**38.00**	**4.75**				**0.0**	**11.2**	**88.8**	

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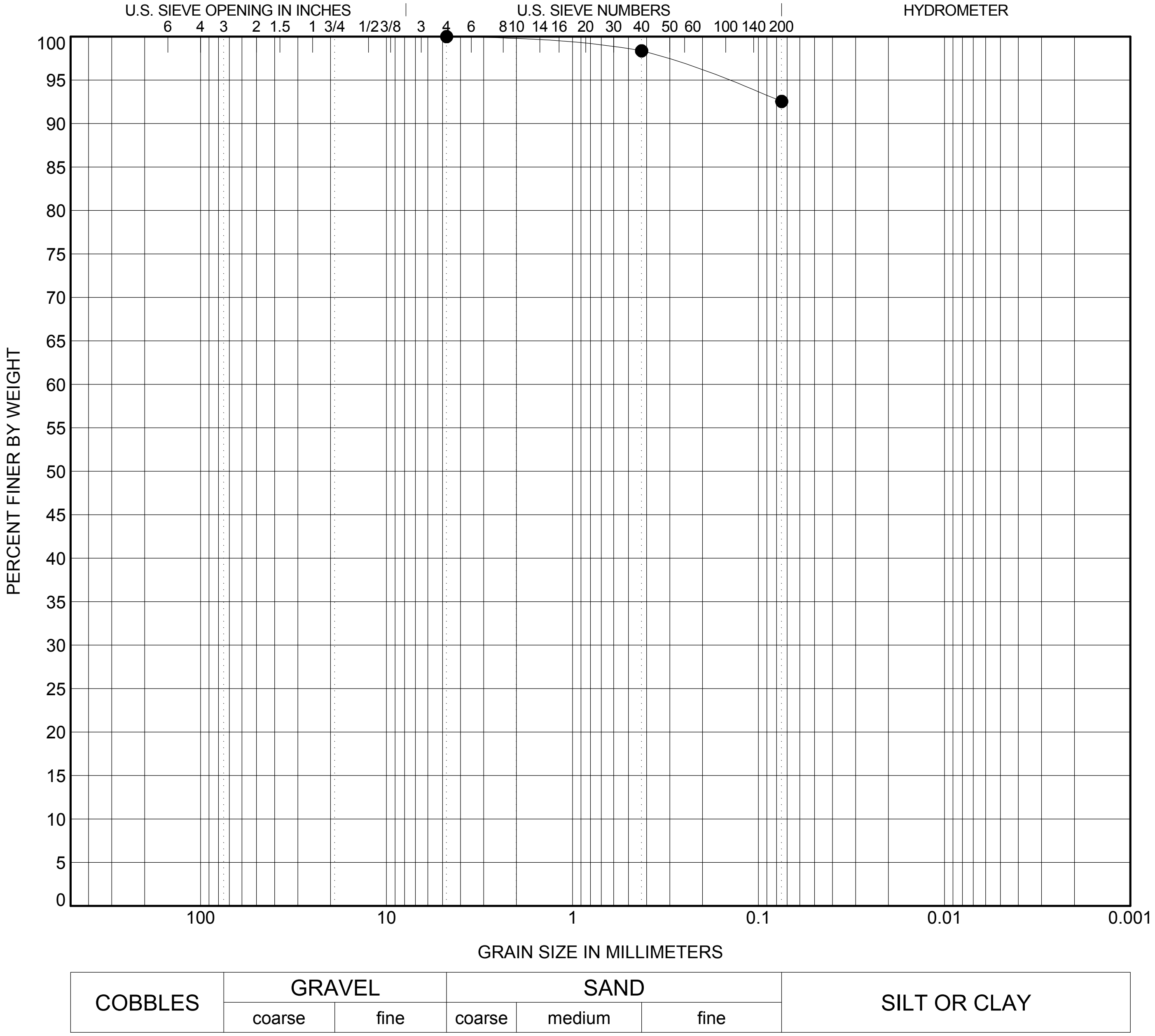

BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-125	43.00						

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-125	43.00	4.75				0.0	7.5	92.5	

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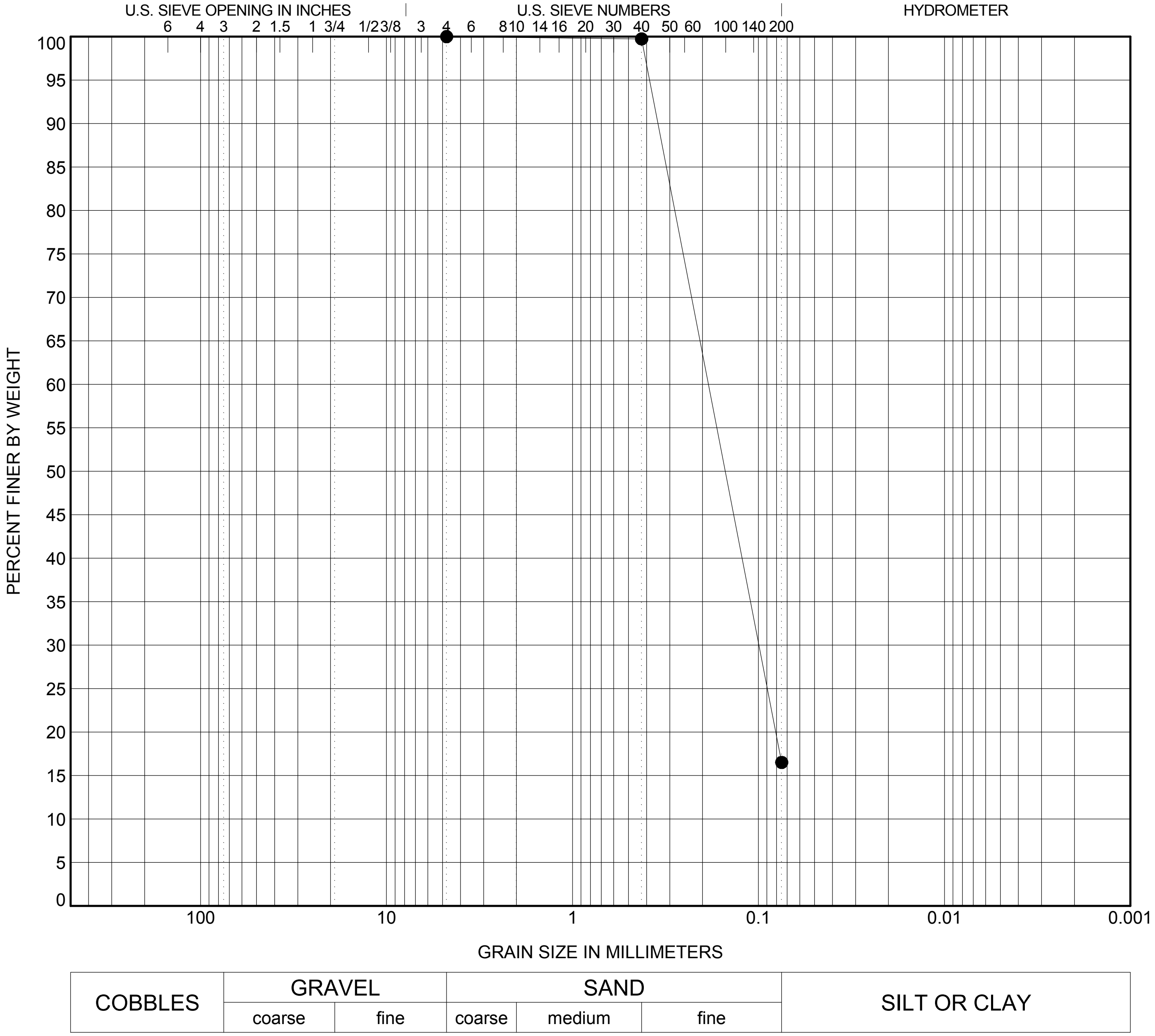

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-127	38.00						

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-127	38.00	4.75	0.186	0.099		0.0	83.5	16.5	

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GRAIN SIZE DISTRIBUTION

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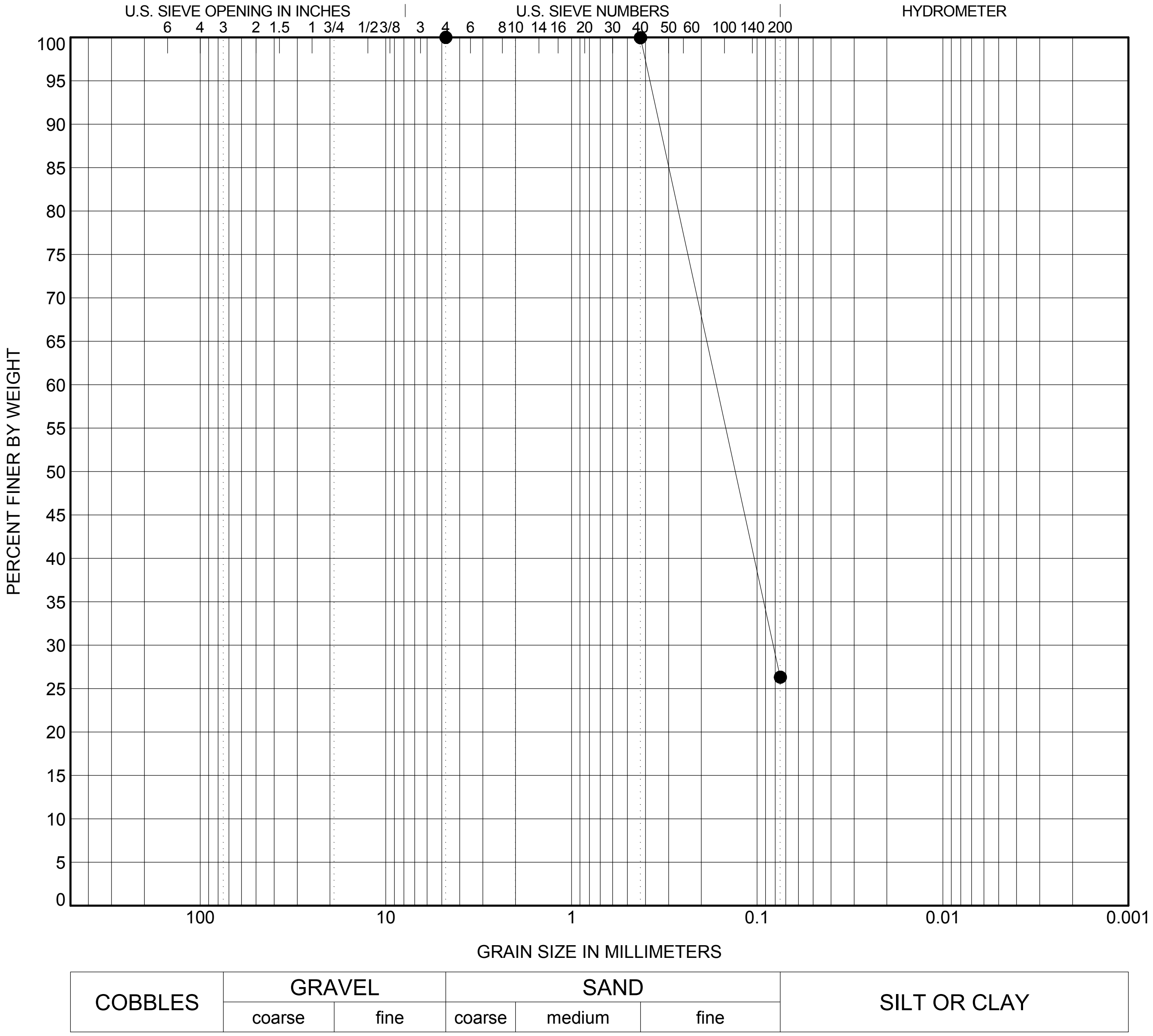

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-129	0.00	**SILTY SAND (SM)**	24	NP	NP		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-129	0.00	4.75	0.166	0.082		0.0	73.7	26.3	

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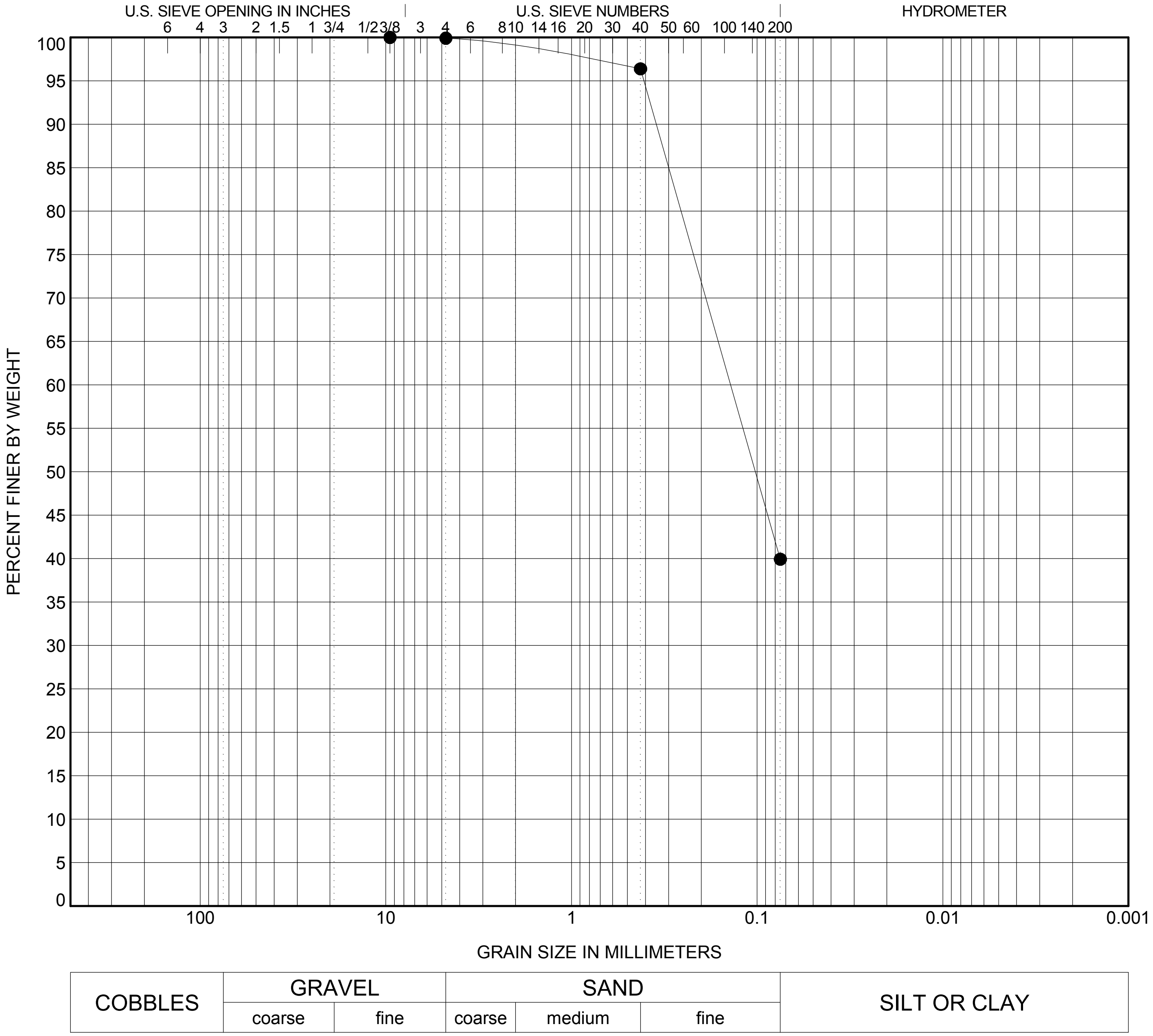

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **PZ-101**	**8.00**	**SILTY SAND (SM)**	**20**	**NP**	**NP**		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **PZ-101**	**8.00**	**9.5**	**0.139**			**0.1**	**60.0**	**39.9**	

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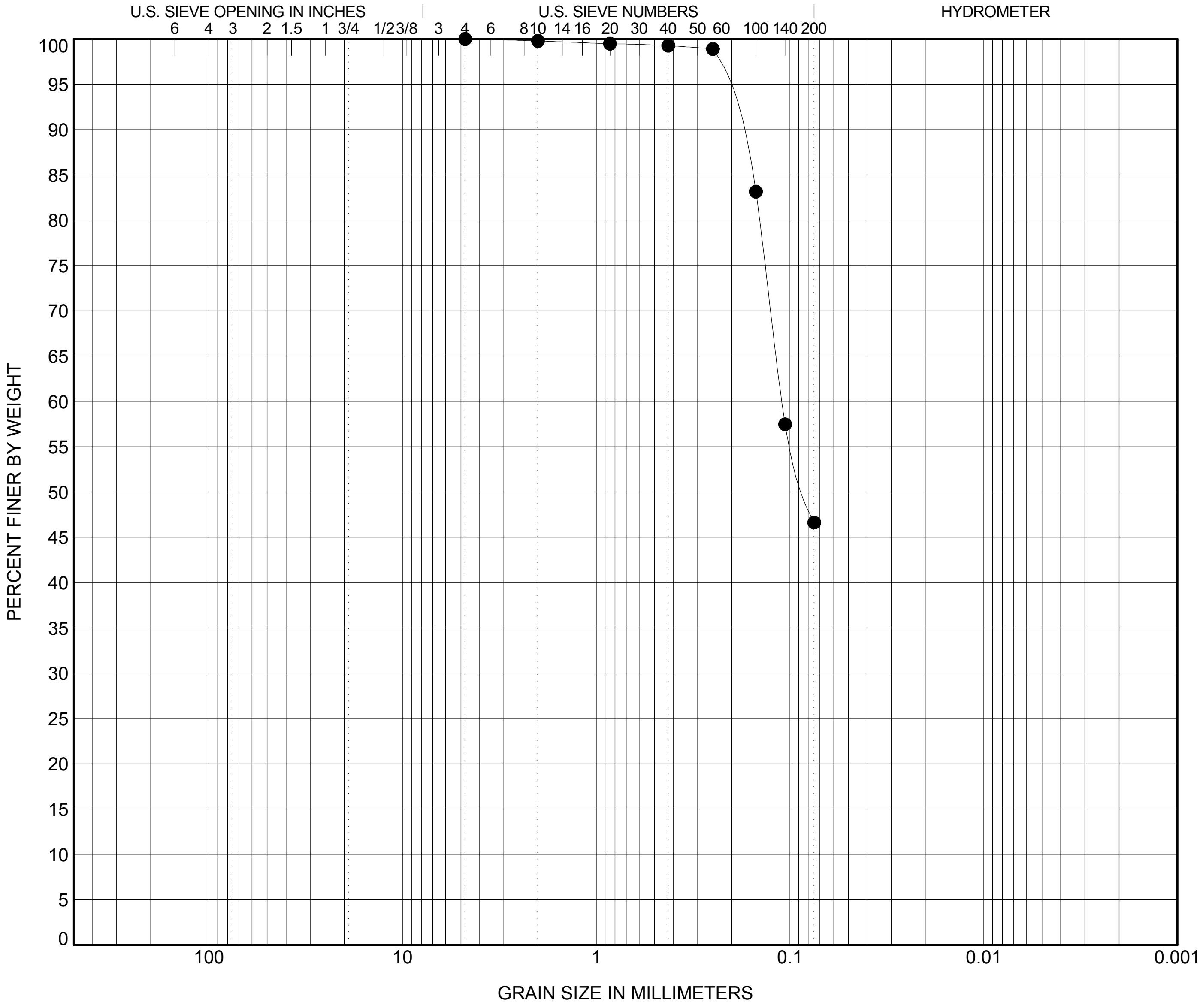

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **PZ-101**	**33.00**						

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **PZ-101**	**33.00**	**4.75**	**0.11**			**0.0**	**53.4**	**46.6**	

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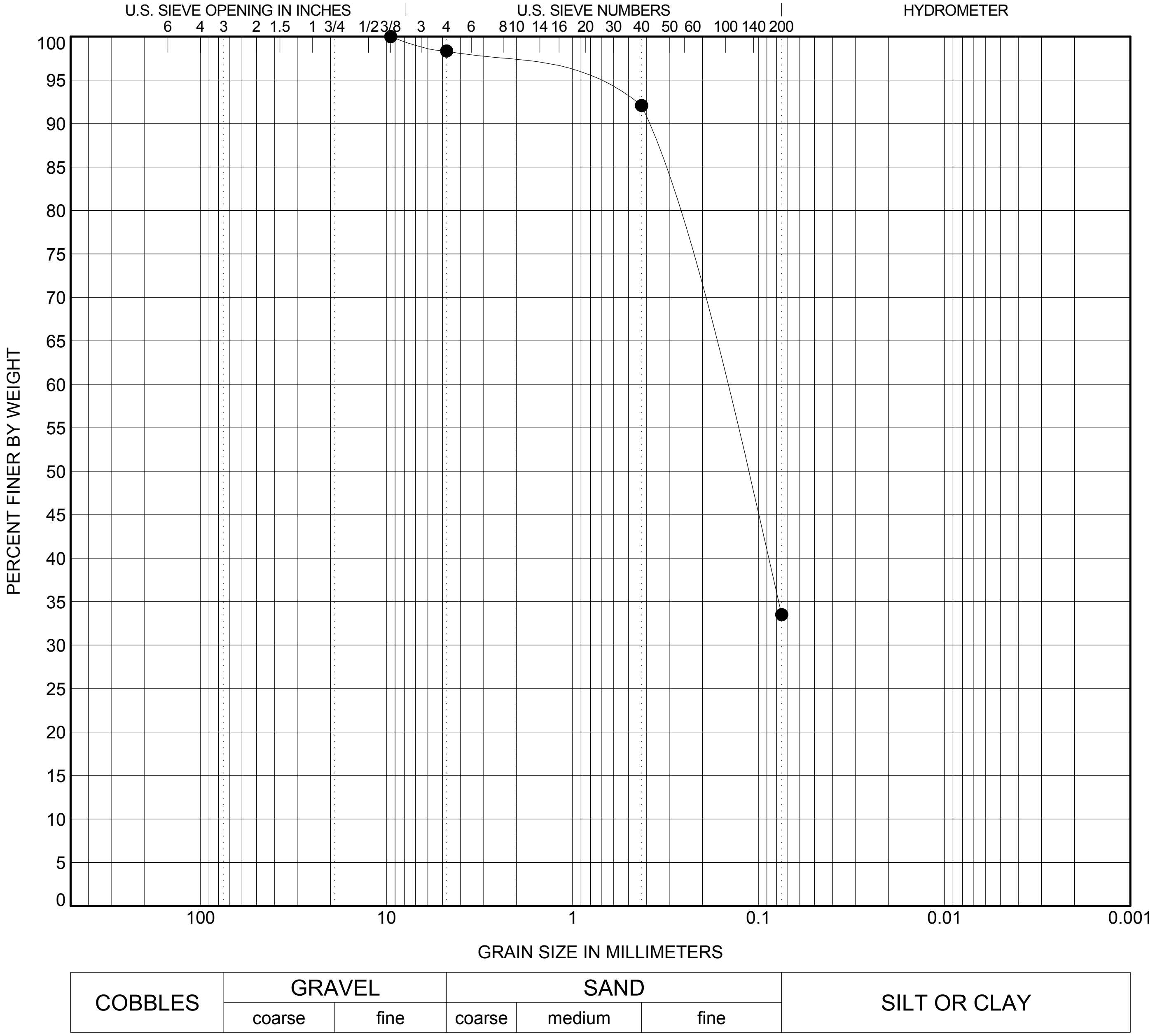

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	PZ-104	13.00	CLAYEY SAND (SC)	20	11	9		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PZ-104	13.00	9.5	0.164			1.7	64.8	33.5	

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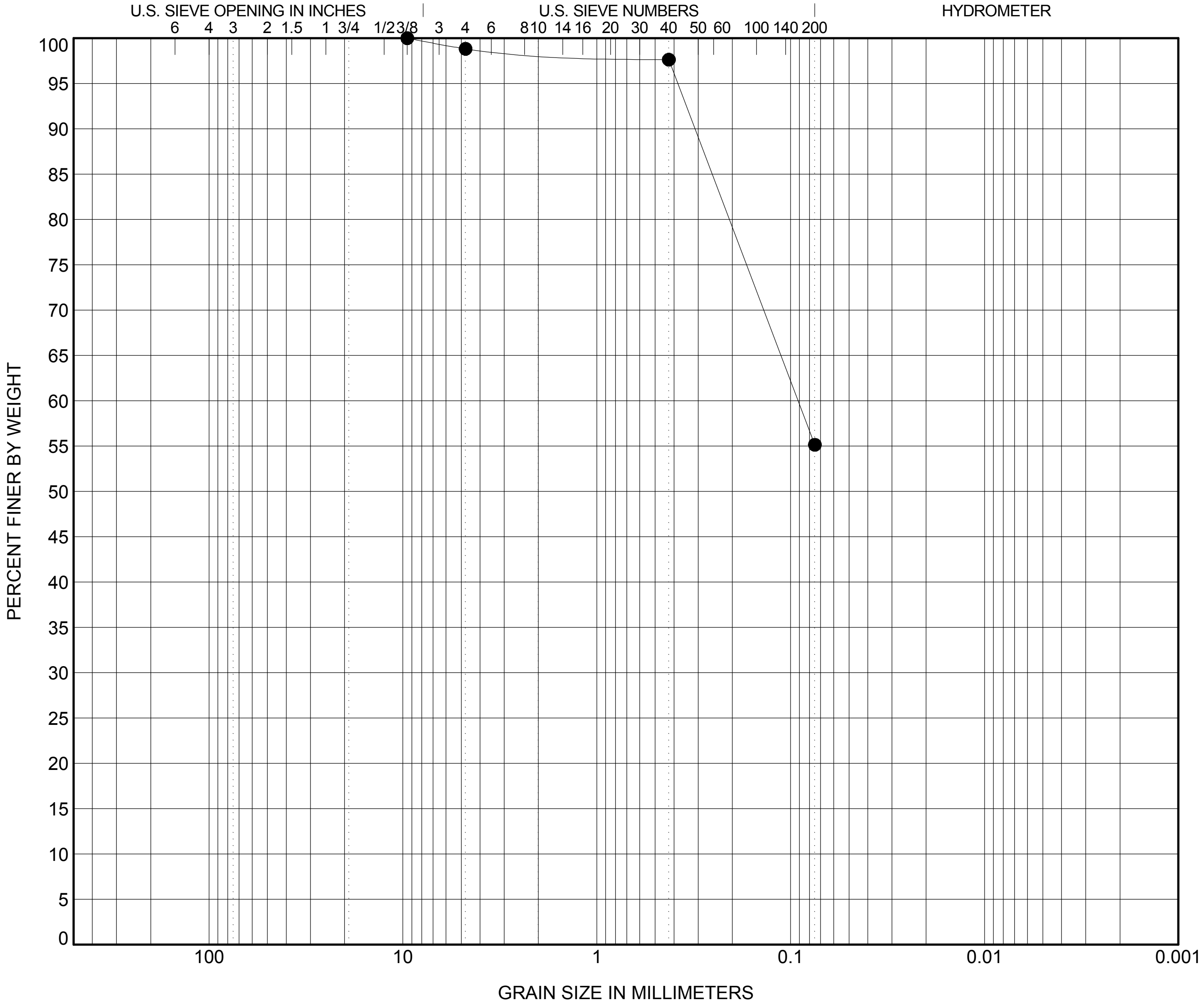

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	PZ-106	8.00	SANDY LEAN CLAY (CL)	28	11	17		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PZ-106	8.00	9.5	0.091			1.2	43.7	55.1	

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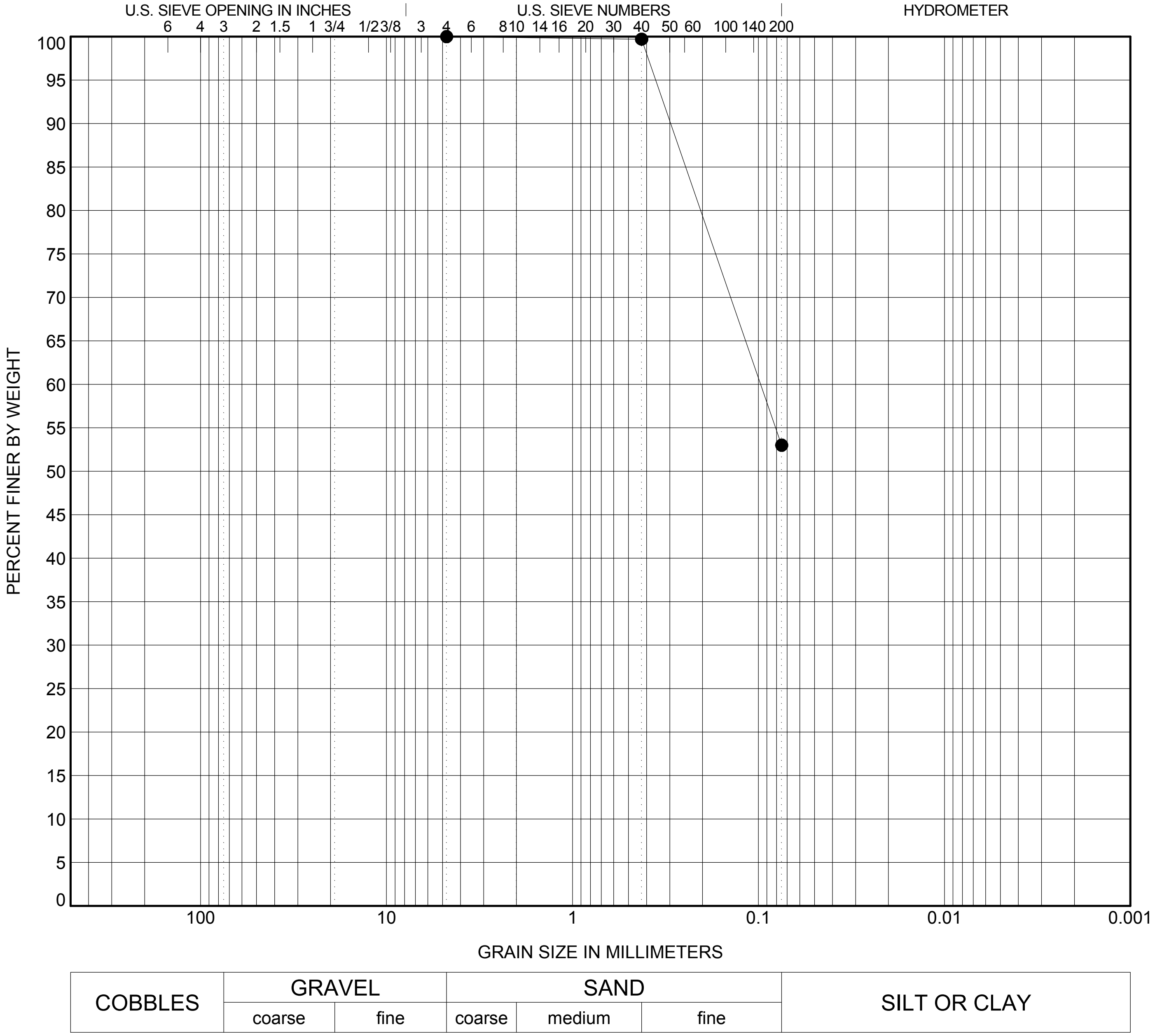

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	PZ-116	3.00	SANDY LEAN CLAY (CL)	30	10	20		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PZ-116	3.00	4.75	0.097			0.0	47.0	53.0	

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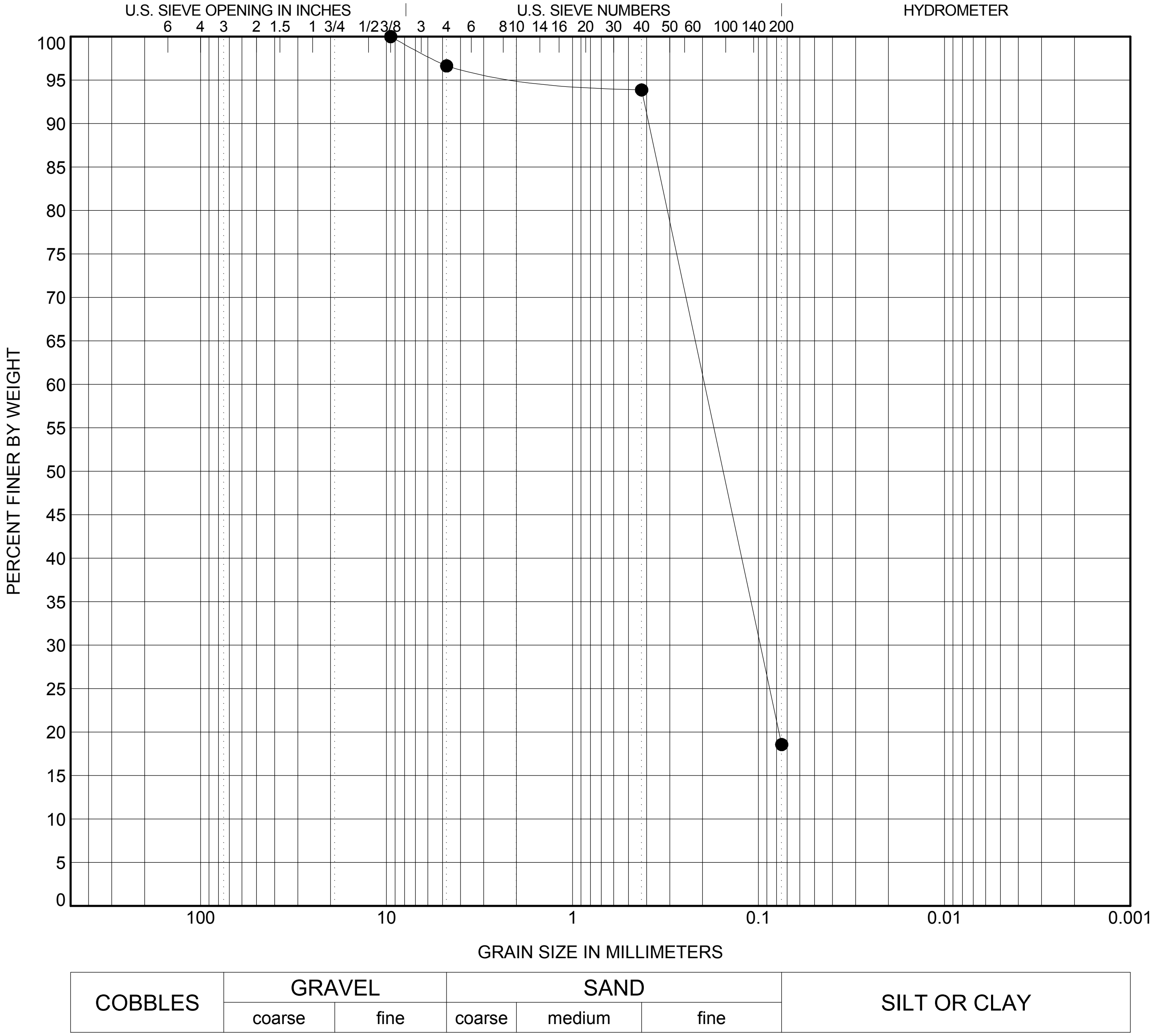

BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**PZ-118**	**23.00**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**		

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**PZ-118**	**23.00**	**9.5**	**0.195**	**0.098**		**3.4**	**78.1**	**18.6**	

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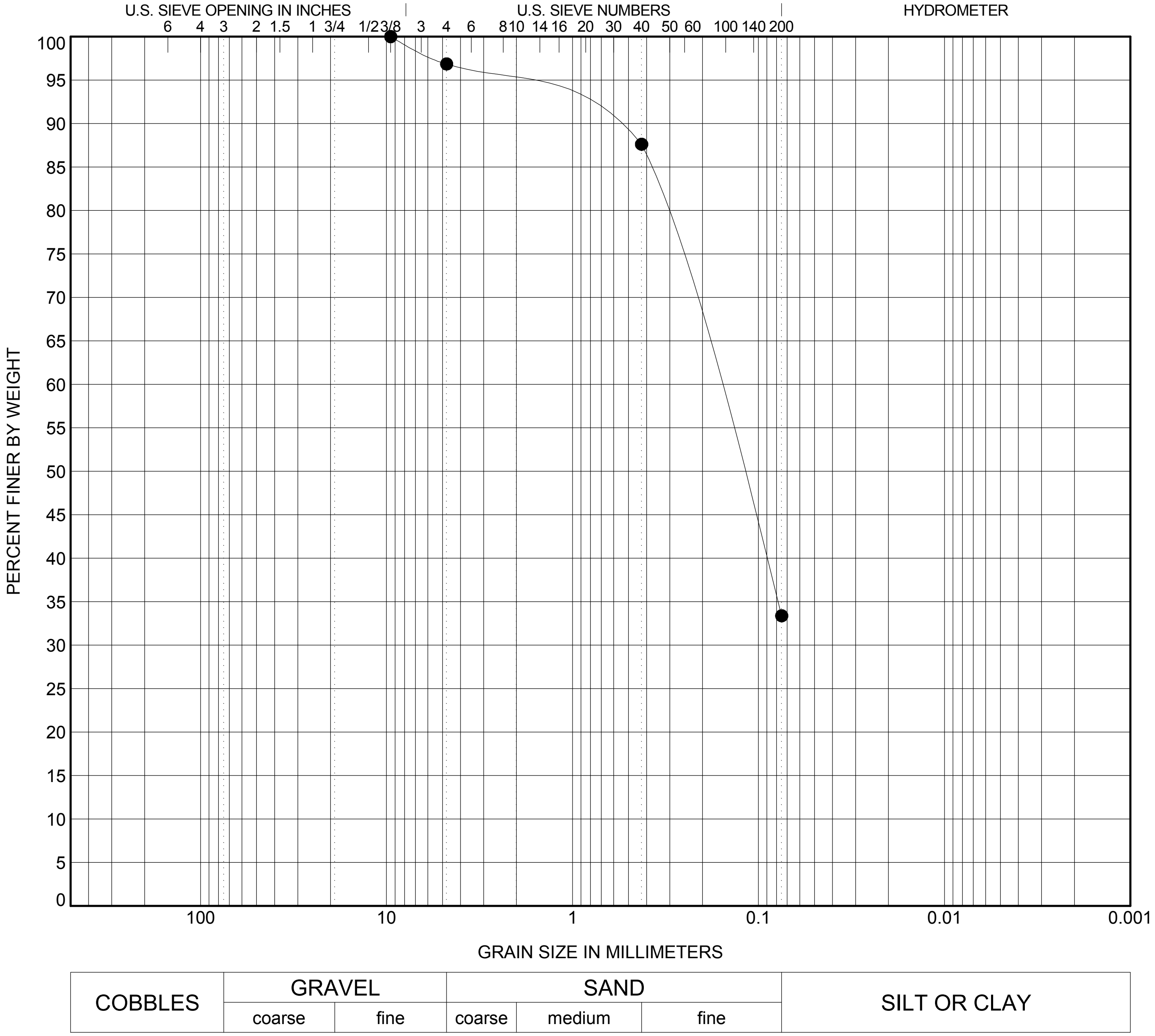

BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	PZ-122	18.00	SILTY SAND (SM)	NP	NP	NP		

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PZ-122	18.00	9.5	0.176			3.1	63.5	33.4	

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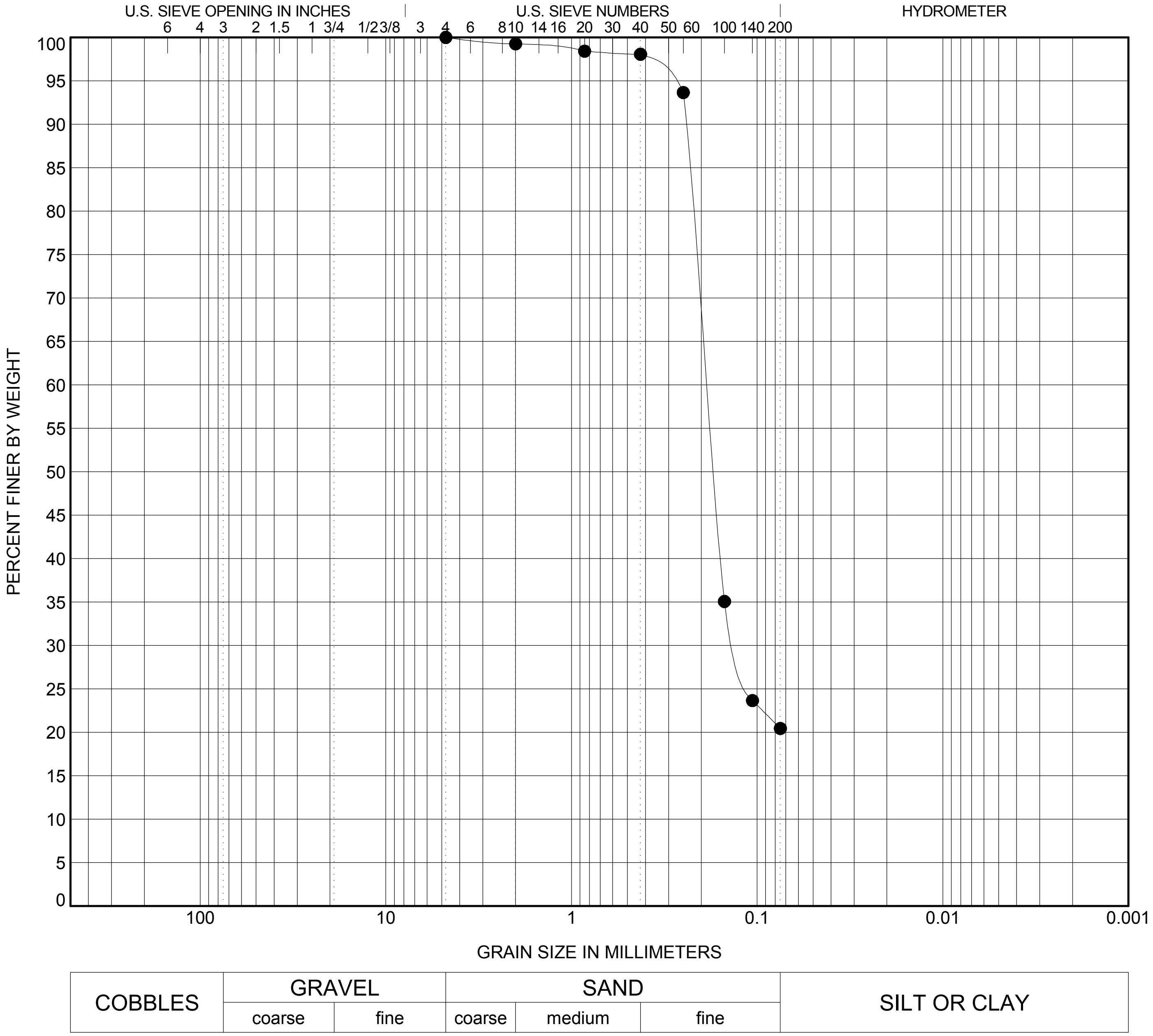

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **PZ-122**	**33.00**						

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **PZ-122**	**33.00**	**4.75**	**0.186**	**0.129**		**0.0**	**79.6**	**20.4**	

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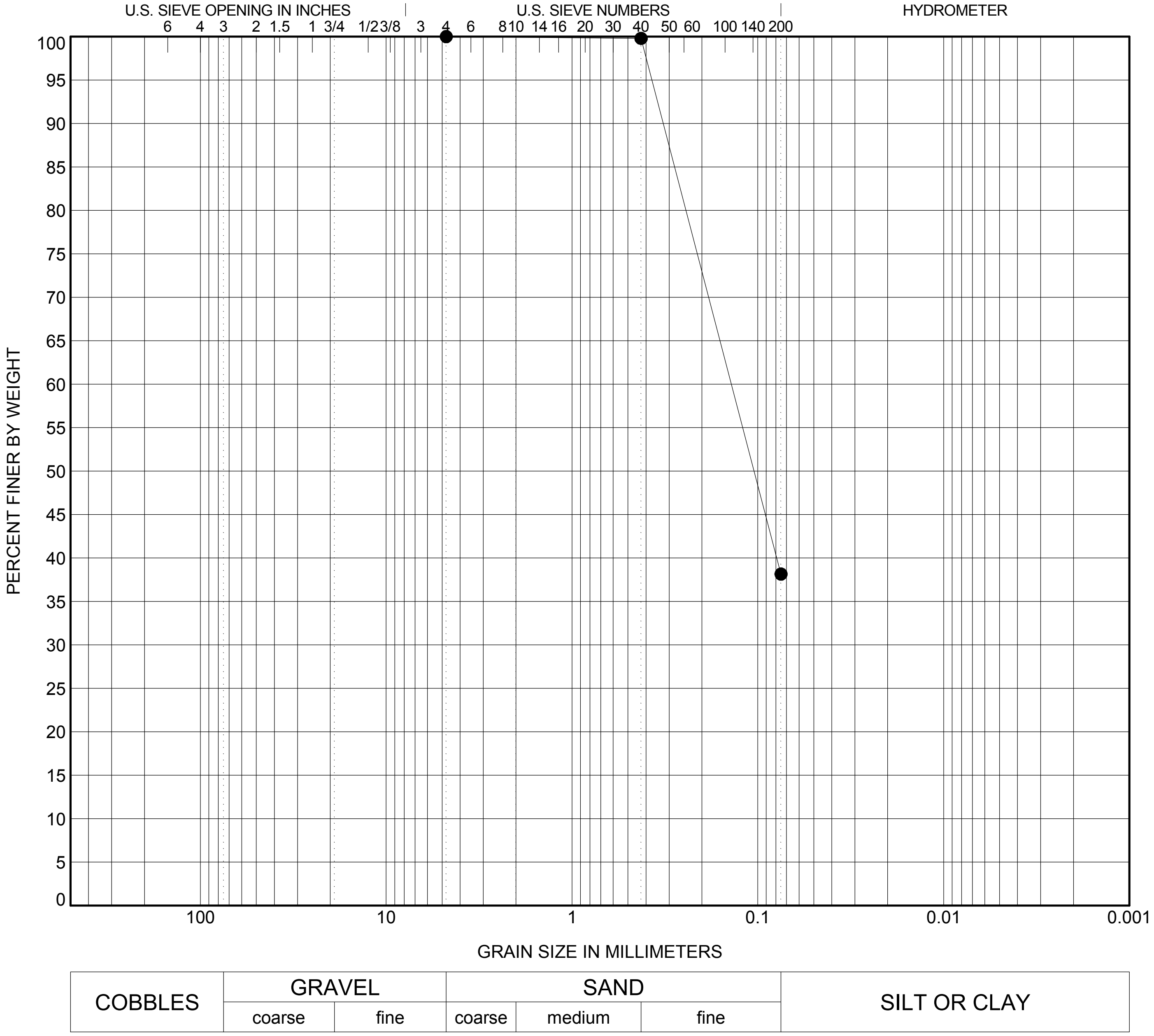
Fax: (281) 821-6870

GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX



	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**PZ-124**	**8.00**	**SILTY SAND (SM)**	**21**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**PZ-124**	**8.00**	**4.75**	**0.139**			**0.0**	**61.9**	**38.1**	

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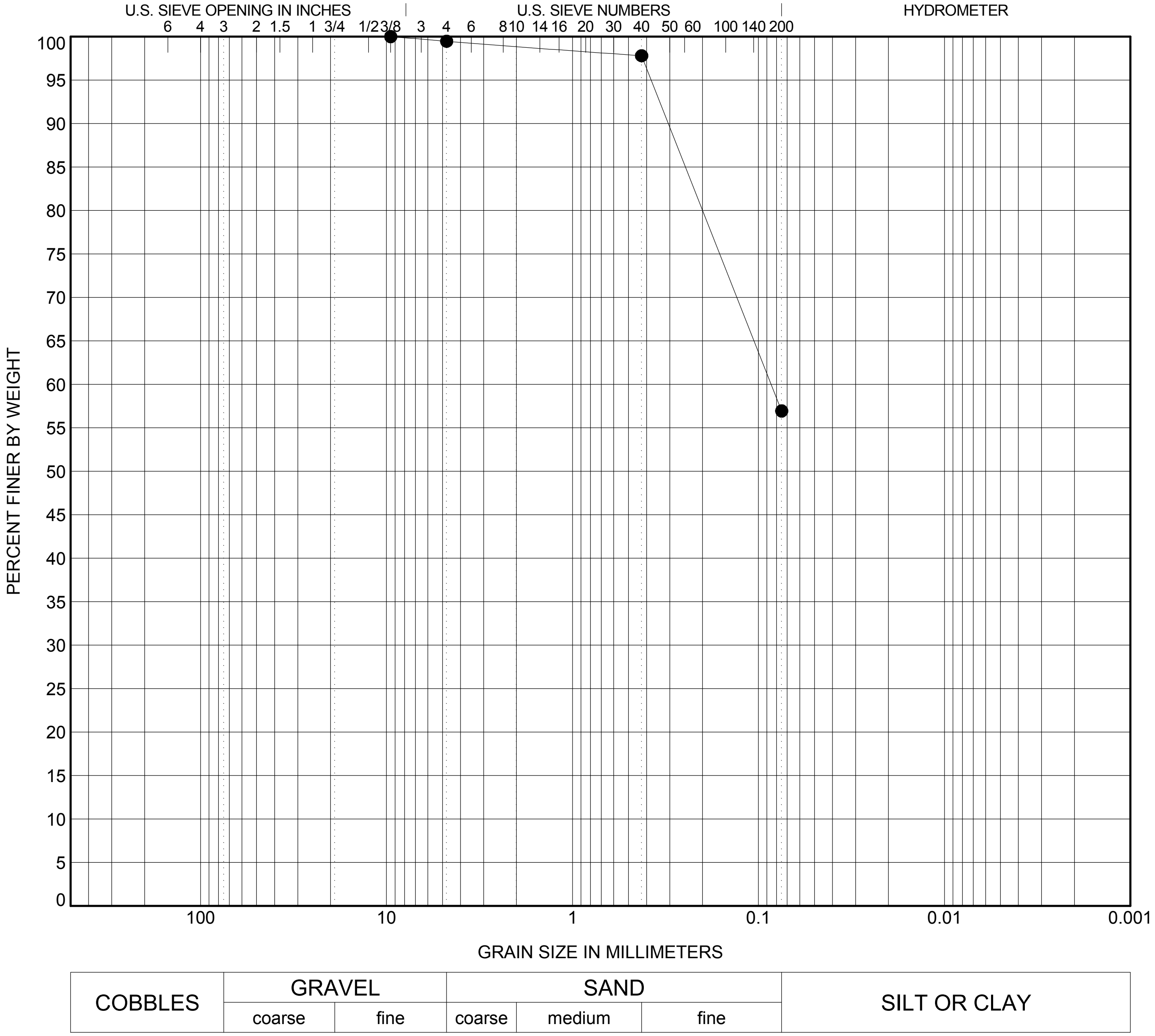
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX



BOREHOLE		DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**PZ-124**	**28.00**	**SANDY LEAN CLAY (CL)**	**32**	**11**	**21**		

BOREHOLE		DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**PZ-124**	**28.00**	**9.5**	**0.085**			**0.5**	**42.5**	**56.9**	

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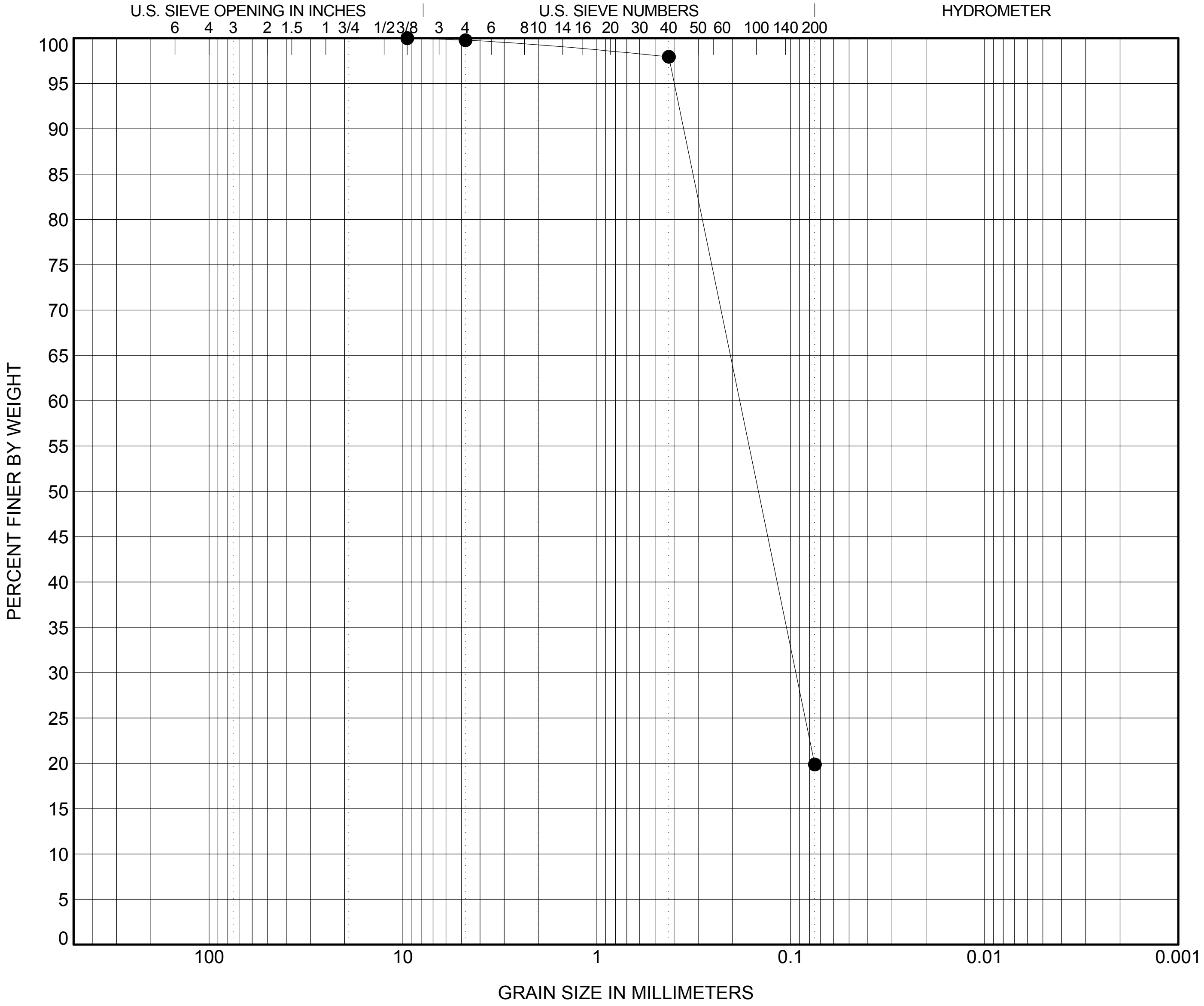
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● PZ-130	**38.00**	**SILTY SAND (SM)**	**NP**	**NP**	**NP**		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● PZ-130	**38.00**	**9.5**	**0.183**	**0.094**		**0.2**	**79.9**	**19.9**	

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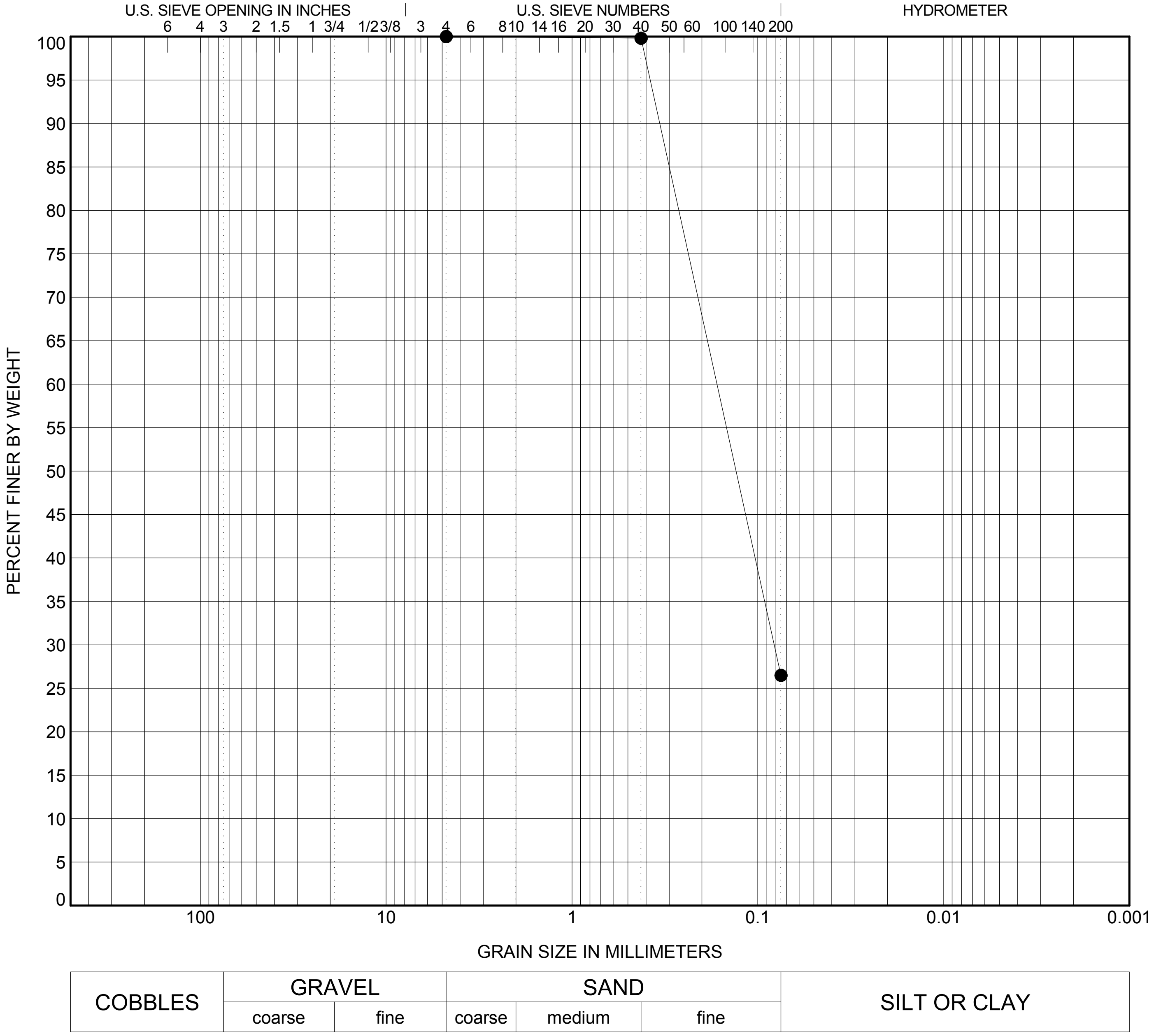
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	PZ-131	8.00	SILTY SAND (SM)	24	NP	NP		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PZ-131	8.00	4.75	0.166	0.081		0.0	73.5	26.5	

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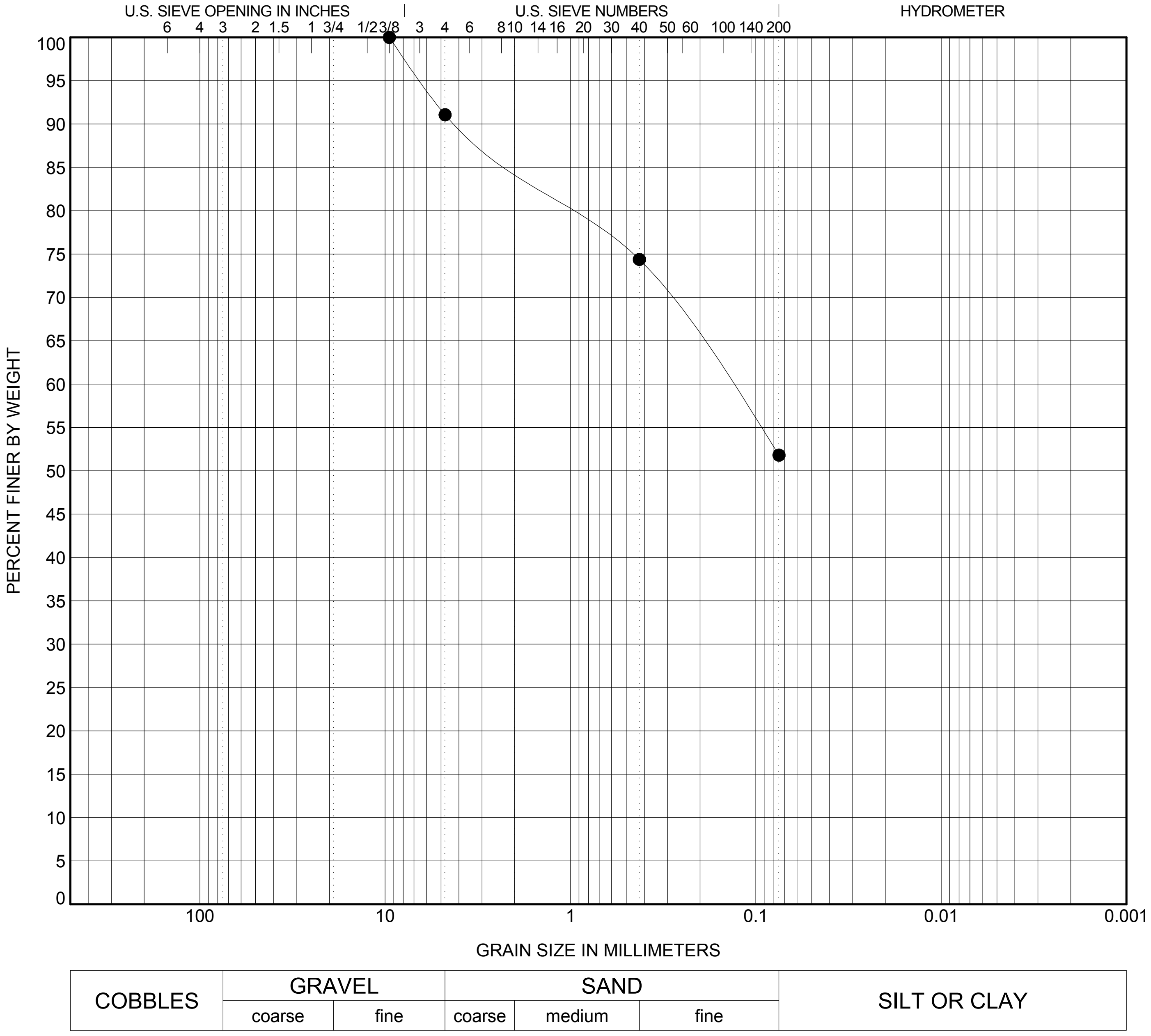
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg
PROJECT NAME City of Edinburg / LF Expansion/TX
PROJECT NUMBER 1401491
PROJECT LOCATION Edinburg, TX



BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● PZ-133	58.00	SANDY FAT CLAY (CH)	60	16	44		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● PZ-133	58.00	9.5	0.141			8.9	39.3	51.8	

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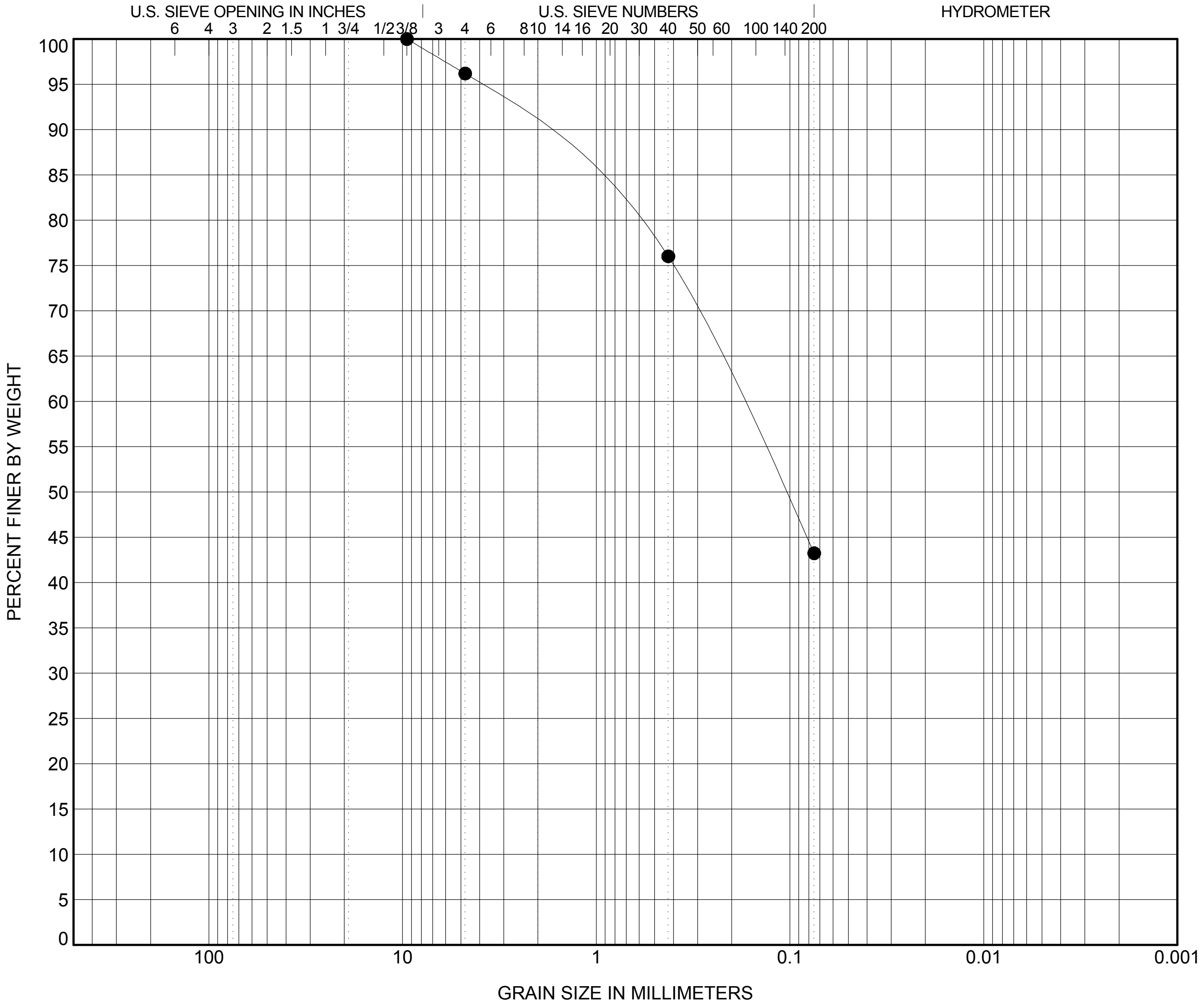
GRAIN SIZE DISTRIBUTION

CLIENT City of Edinburg

PROJECT NAME City of Edinburg / LF Expansion/TX

PROJECT NUMBER 1401491

PROJECT LOCATION Edinburg, TX



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**PZ-134**	**33.00**	**SILTY SAND (SM)**	**24**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**PZ-134**	**33.00**	**9.5**	**0.182**			**3.8**	**52.9**	**43.2**	

FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Vertical

PROJECT TITLE:	Edinburg	Cell Pressure =	80	psi
PROJECT NUMBER:	1401491	Backwater Pressure =	70	psi
SAMPLE ID:	B-109	Run Number =	1	
LIFT NUMBER:	13'-15'	Permeant Used=	De-Aired Water	

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	4.045	10.27	Height, in	4.041	10.26
Top Diameter, mm	72.120		Top Diameter, mm	71.98	
Middle Diameter, mm	72.070		Middle Diameter, mm	72.02	
Bottom Diameter, mm	72.050		Bottom Diameter, mm	72.09	
Average Diameter, cm	7.208		Average Diameter, cm	7.203	
Area, cm^2	40.81		Area, cm^2	40.75	
Volume, cm^3	419.25		Volume, cm^3	418.25	
Wet Mass, g	868.1		Wet Mass, g	876.6	
Wt. tare, gm	8.3		Wt. tare, gm	8.3	
Wt. wet soil + tare, gm	228.50		Wt. wet soil + tare, gm	884.1	
Wt. dry soil + tare, gm	189.71		Wt. dry soil + tare, gm	739.2	
Moisture Content, %	21.4%		Moisture Content, %	19.8%	
Dry Density, pcf	106.4		Dry Density, pcf	109.1	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.55		Void Ratio	0.52	
Saturation, %	102%		Saturation, %	102%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2

$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 25.1
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. °C	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20°C
0	0	0	25.1	0.85		29.64		23	0.931	
3	0	180	24.1	0.89	1.745E-04	27.76	1.54E-07	23	0.931	1.44E-07
10	0	420	22.9	0.94	8.976E-05	26.10	8.44E-08	23	0.931	7.86E-08
17	0	420	22.0	0.98	6.732E-05	25.15	6.57E-08	23	0.931	6.12E-08
24	0	420	21.2	1.01	5.984E-05	24.19	6.07E-08	23	0.931	5.65E-08
31	0	420	20.4	1.04	5.984E-05	23.17	6.34E-08	23	0.931	5.90E-08

HYDRAULIC CONDUCTIVITY REPORTED AS **6.38E-08** **cm/sec**

TECH:	MR	CHECKED:	VK
DATE:	10/15/2015	DATE:	10/20/2015

GEOTECHNICAL TESTING LABORATORY
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HOUSTON, TEXAS

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FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Horizontal

PROJECT TITLE: Edinburg
PROJECT NUMBER: 1401491
SAMPLE ID: B-110
LIFT NUMBER: 23'-25'

Cell Pressure = 80 psi
Backwater Pressure = 70 psi
Run Number = 1

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	2.349	5.97	Height, in	2.311	5.87
Top Diameter, mm	36.470		Top Diameter, mm	38.450	
Middle Diameter, mm	38.100		Middle Diameter, mm	38.580	
Bottom Diameter, mm	37.030		Bottom Diameter, mm	37.310	
Average Diameter, cm	3.720		Average Diameter, cm	3.811	
Area, cm^2	10.87		Area, cm^2	11.41	
Volume, cm^3	64.85		Volume, cm^3	66.97	
Wet Mass, g	131.1		Wet Mass, g	131.9	
Wt. tare, gm	8.4		Wt. tare, gm	8.1	
Wt. wet soil + tare, gm	161.50		Wt. wet soil + tare, gm	140	
Wt. dry soil + tare, gm	135.98		Wt. dry soil + tare, gm	113.86	
Moisture Content, %	20.0%		Moisture Content, %	24.7%	
Dry Density, pcf	105.1		Dry Density, pcf	98.5	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.57		Void Ratio	0.68	
Saturation, %	93%		Saturation, %	97%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 15.0
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. °C	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20°C
0	0	0	15.0	0.85		29.79		23	0.931	
0	33	33	14.7	0.86	2.856E-04	29.27	8.98E-07	23	0.931	8.36E-07
1	42	69	14.1	0.89	2.732E-04	27.60	9.11E-07	23	0.931	8.48E-07
2	43	61	13.6	0.91	2.575E-04	26.60	8.91E-07	23	0.931	8.29E-07
3	25	42	13.3	0.92	2.244E-04	26.15	7.89E-07	23	0.931	7.35E-07
4	16	51	12.9	0.94	2.464E-04	25.15	9.01E-07	23	0.931	8.39E-07
5	20	64	12.5	0.95	1.964E-04	24.26	7.45E-07	23	0.931	6.93E-07
6	13	53	12.1	0.97	2.371E-04	23.37	9.33E-07	23	0.931	8.69E-07
7	19	66	11.7	0.99	1.904E-04	22.48	7.79E-07	23	0.931	7.26E-07
10	58	219	10.5	1.03	1.721E-04	18.89	8.39E-07	23	0.931	7.81E-07
12	36	98	10.0	1.05	1.603E-04	18.58	7.94E-07	23	0.931	7.39E-07
14	43	127	9.4	1.08	1.484E-04	17.13	7.97E-07	23	0.931	7.42E-07

HYDRAULIC CONDUCTIVITY REPORTED AS **7.47E-07** **cm/sec**

TECH: PN
DATE: 3/25/2015

CHECKED: JBF
DATE: 3/30/2015

GEOTECHNICAL TESTING LABORATORY
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HOUSTON, TEXAS

FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Vertical

PROJECT TITLE: Edinburg
PROJECT NUMBER: 1401491
SAMPLE ID: B-112
LIFT NUMBER: 43'-45'

Cell Pressure = 90 psi
Backwater Pressure = 80 psi
Run Number = 1
Permeant Used= De-Aired Water

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	2.778	7.06	Height, in	2.74	6.96
Top Diameter, mm	71.310		Top Diameter, mm	72.01	
Middle Diameter, mm	71.220		Middle Diameter, mm	71.97	
Bottom Diameter, mm	71.250		Bottom Diameter, mm	72.06	
Average Diameter, cm	7.126		Average Diameter, cm	7.201	
Area, cm^2	39.88		Area, cm^2	40.73	
Volume, cm^3	281.41		Volume, cm^3	283.47	
Wet Mass, g	489.4		Wet Mass, g	526.3	
Wt. tare, gm	8.39		Wt. tare, gm	8.7	
Wt. wet soil + tare, gm	178.63		Wt. wet soil + tare, gm	534.8	
Wt. dry soil + tare, gm	158.12		Wt. dry soil + tare, gm	428.82	
Moisture Content, %	13.7%		Moisture Content, %	25.2%	
Dry Density, pcf	95.4		Dry Density, pcf	92.5	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.73		Void Ratio	0.79	
Saturation, %	50%		Saturation, %	85%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 28.5
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. ^{o}C	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20^{o}C
0	0	0	28.5	0.85		49.22		23	0.931	
0	0.44	0.44	23.8	1.04	3.356E-01	36.48	2.26E-04	23	0.931	2.10E-04
0	0.97	0.53	20.4	1.18	2.015E-01	31.38	1.58E-04	23	0.931	1.47E-04
0	1.53	0.56	17.0	1.32	1.907E-01	24.97	1.88E-04	23	0.931	1.75E-04
0	1.9	0.37	14.4	1.43	2.208E-01	20.87	2.60E-04	23	0.931	2.42E-04
0	2.4	0.5	12.1	1.52	1.445E-01	16.84	2.11E-04	23	0.931	1.96E-04
0	2.9	0.5	10.8	1.57	8.168E-02	15.40	1.30E-04	23	0.931	1.21E-04
0	3.49	0.59	8.9	1.65	1.012E-01	11.20	2.22E-04	23	0.931	2.07E-04

HYDRAULIC CONDUCTIVITY REPORTED AS 1.91E-04 cm/sec

TECH: PN/MR
DATE: 10/16/2015

CHECKED: VK
DATE: 10/27/2015

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FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Horizontal

PROJECT TITLE: Edinburg
PROJECT NUMBER: 1401491
SAMPLE ID: B-115
LIFT NUMBER: 53'-55'

Cell Pressure = 80 psi
Backwater Pressure = 70 psi
Run Number = 1

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	2.536	6.44	Height, in	2.483	6.31
Top Diameter, mm	37.820		Top Diameter, mm	38.350	
Middle Diameter, mm	36.650		Middle Diameter, mm	37.820	
Bottom Diameter, mm	36.490		Bottom Diameter, mm	37.790	
Average Diameter, cm	3.699		Average Diameter, cm	3.799	
Area, cm^2	10.74		Area, cm^2	11.33	
Volume, cm^3	69.21		Volume, cm^3	71.48	
Wet Mass, g	116.4		Wet Mass, g	120.2	
Wt. tare, gm	6.8		Wt. tare, gm	8.4	
Wt. wet soil + tare, gm	202.60		Wt. wet soil + tare, gm	128.5	
Wt. dry soil + tare, gm	173.98		Wt. dry soil + tare, gm	107.57	
Moisture Content, %	17.1%		Moisture Content, %	21.1%	
Dry Density, pcf	89.6		Dry Density, pcf	86.6	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.85		Void Ratio	0.91	
Saturation, %	54%		Saturation, %	62%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 16.0
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. ^oC	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20^{o}C
0	0	0	16.0	0.85		29.54		23	0.931	
0	42	42	15.4	0.87	4.488E-04	28.30	1.48E-06	23	0.931	1.37E-06
1	7	25	15.0	0.89	5.027E-04	27.68	1.69E-06	23	0.931	1.57E-06
1	44	37	14.5	0.91	4.245E-04	26.54	1.49E-06	23	0.931	1.39E-06
2	7	23	14.2	0.92	4.098E-04	26.13	1.46E-06	23	0.931	1.36E-06
2	30	23	13.9	0.94	4.098E-04	25.51	1.50E-06	23	0.931	1.39E-06
3	2	32	13.5	0.95	3.927E-04	24.57	1.49E-06	23	0.931	1.39E-06
3	27	25	13.2	0.96	3.770E-04	24.05	1.46E-06	23	0.931	1.36E-06
3	49	22	12.9	0.98	4.284E-04	23.43	1.70E-06	23	0.931	1.58E-06
4	26	37	12.5	0.99	3.396E-04	22.50	1.41E-06	23	0.931	1.31E-06
4	55	29	12.2	1.01	3.250E-04	21.98	1.38E-06	23	0.931	1.28E-06

HYDRAULIC CONDUCTIVITY REPORTED AS **1.38E-06** **cm/sec**

TECH: PN
DATE: 3/26/2015

CHECKED: JBF
DATE: 4/2/2015

GEOTECHNICAL TESTING LABORATORY
GOLDER ASSOCIATES
HOUSTON, TEXAS

FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Vertical

PROJECT TITLE: Edinburg
PROJECT NUMBER: 1401491
SAMPLE ID: B-117
LIFT NUMBER: 53'-55'

Cell Pressure = 90 psi
Backwater Pressure = 80 psi
Run Number = 1

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	3.301	8.38	Height, in	3.282	8.34
Top Diameter, mm	73.550		Top Diameter, mm	74.210	
Middle Diameter, mm	73.480		Middle Diameter, mm	74.320	
Bottom Diameter, mm	73.500		Bottom Diameter, mm	74.240	
Average Diameter, cm	7.351		Average Diameter, cm	7.426	
Area, cm^2	42.44		Area, cm^2	43.31	
Volume, cm^3	355.85		Volume, cm^3	361.02	
Wet Mass, g	676.8		Wet Mass, g	700	
Wt. tare, gm	8.4		Wt. tare, gm	9	
Wt. wet soil + tare, gm	248.90		Wt. wet soil + tare, gm	709	
Wt. dry soil + tare, gm	211.17		Wt. dry soil + tare, gm	566.33	
Moisture Content, %	18.6%		Moisture Content, %	25.6%	
Dry Density, pcf	100.1		Dry Density, pcf	96.3	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.65		Void Ratio	0.72	
Saturation, %	76%		Saturation, %	95%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 20.5
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. ^oC	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20^oC
0	0	0	20.5	0.85		29.44		23	0.931	
0	1.41	1.41	19.4	0.90	2.451E-02	27.01	2.14E-05	23	0.931	1.99E-05
0	2.23	0.82	17.5	0.97	7.279E-02	23.38	7.34E-05	23	0.931	6.83E-05
0	3.08	0.85	15.6	1.05	7.022E-02	20.39	8.11E-05	23	0.931	7.55E-05
0	3.86	0.78	14.3	1.10	5.236E-02	18.84	6.55E-05	23	0.931	6.10E-05
0	4.54	0.68	13.3	1.14	4.620E-02	17.52	6.21E-05	23	0.931	5.79E-05
0	5.32	0.78	12.0	1.20	5.236E-02	15.23	8.10E-05	23	0.931	7.54E-05
0	6.26	0.94	10.6	1.26	4.679E-02	12.95	8.51E-05	23	0.931	7.93E-05

HYDRAULIC CONDUCTIVITY REPORTED AS 6.84E-05 cm/sec

TECH: PN
DATE: 3/26/2015

CHECKED: JBF
DATE: 3/27/2015

GEOTECHNICAL TESTING LABORATORY
GOLDER ASSOCIATES
HOUSTON, TEXAS

FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Vertical

PROJECT TITLE: Edinburg
PROJECT NUMBER: 1401491
SAMPLE ID: B-125
LIFT NUMBER: 38'-40'

Cell Pressure = 80 psi
Backwater Pressure = 70 psi
Run Number = 1

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	3.235	8.22	Height, in	3.258	8.28
Top Diameter, mm	72.600		Top Diameter, mm	72.510	
Middle Diameter, mm	72.640		Middle Diameter, mm	72.550	
Bottom Diameter, mm	72.650		Bottom Diameter, mm	72.570	
Average Diameter, cm	7.263		Average Diameter, cm	7.254	
Area, cm^2	41.43		Area, cm^2	41.33	
Volume, cm^3	340.43		Volume, cm^3	342.03	
Wet Mass, g	669.6		Wet Mass, g	680	
Wt. tare, gm	8.5		Wt. tare, gm	8.2	
Wt. wet soil + tare, gm	149.80		Wt. wet soil + tare, gm	688.2	
Wt. dry soil + tare, gm	128.79		Wt. dry soil + tare, gm	541.46	
Moisture Content, %	17.5%		Moisture Content, %	27.5%	
Dry Density, pcf	104.5		Dry Density, pcf	97.3	
Specific Gravity	2.70	Assumed	Specific Gravity	2.7	
Void Ratio	0.61		Void Ratio	0.73	
Saturation, %	77%		Saturation, %	102%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 20.1
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. ^{o}C	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20^{o}C
0	0	0	20.1	0.85		29.42		23	0.931	
1	29	89	20.0	0.85	3.530E-05	28.98	2.94E-08	23	0.931	2.74E-08
5	58	269	19.8	0.86	2.336E-05	28.58	1.97E-08	23	0.931	1.84E-08
10	6	248	19.7	0.87	1.267E-05	28.51	1.07E-08	23	0.931	9.99E-09
15	10	304	19.6	0.87	1.033E-05	28.35	8.80E-09	23	0.931	8.19E-09
24	51	581	19.4	0.88	1.081E-05	27.95	9.34E-09	23	0.931	8.70E-09
34	53	602	19.2	0.89	1.044E-05	27.64	9.12E-09	23	0.931	8.49E-09

HYDRAULIC CONDUCTIVITY REPORTED AS 8.84E-09 cm/sec

TECH: PN
DATE: 3/27/2015

CHECKED: JBF
DATE: 4/2/2015

GEOTECHNICAL TESTING LABORATORY
GOLDER ASSOCIATES
HOUSTON, TEXAS

FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Horizontal

PROJECT TITLE:	Edinburg	Cell Pressure =	80	psi
PROJECT NUMBER:	1401491	Backwater Pressure =	70	psi
SAMPLE ID:	B-125	Run Number =	1	
LIFT NUMBER:	43'-45'			

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	2.105	5.35	Height, in	2.142	5.44
Top Diameter, mm	48.810		Top Diameter, mm	49.800	
Middle Diameter, mm	49.700		Middle Diameter, mm	50.010	
Bottom Diameter, mm	49.040		Bottom Diameter, mm	50.190	
Average Diameter, cm	4.918		Average Diameter, cm	5.000	
Area, cm^2	19.00		Area, cm^2	19.63	
Volume, cm^3	101.58		Volume, cm^3	106.83	
Wet Mass, g	213.6		Wet Mass, g	218.1	
Wt. tare, gm	9		Wt. tare, gm	8.4	
Wt. wet soil + tare, gm	166.30		Wt. wet soil + tare, gm	226.5	
Wt. dry soil + tare, gm	139.45		Wt. dry soil + tare, gm	186.67	
Moisture Content, %	20.6%		Moisture Content, %	22.3%	
Dry Density, pcf	108.8		Dry Density, pcf	104.1	
Specific Gravity	2.75	Assumed	Specific Gravity	2.75	
Void Ratio	0.58		Void Ratio	0.65	
Saturation, %	98%		Saturation, %	95%	
Effective Stress, psi	10				

Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2

$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 13.6
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. ^oC	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20^oC
0	0	0	13.6	0.85		29.95		23	0.931	
2	21	141	13.5	0.85	2.228E-05	29.07	4.03E-08	23	0.931	3.76E-08
5	56	215	13.4	0.86	1.461E-05	28.83	2.67E-08	23	0.931	2.48E-08
9	16	200	13.3	0.86	1.571E-05	28.59	2.89E-08	23	0.931	2.69E-08
13	43	267	13.2	0.87	1.177E-05	28.35	2.18E-08	23	0.931	2.03E-08
18	24	281	13.1	0.87	1.118E-05	28.11	2.09E-08	23	0.931	1.95E-08
28	13	589	12.9	0.88	1.067E-05	27.51	2.04E-08	23	0.931	1.90E-08
33	28	315	12.8	0.88	9.973E-06	27.39	1.92E-08	23	0.931	1.78E-08

HYDRAULIC CONDUCTIVITY REPORTED AS **1.92E-08** **cm/sec**

TECH:	PN	CHECKED:	JBF
DATE:	3/26/2015	DATE:	3/27/2015

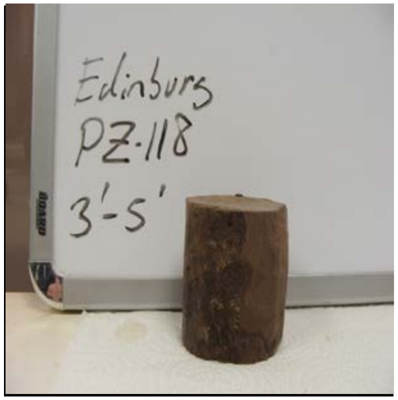
GEOTECHNICAL TESTING LABORATORY
GOLDER ASSOCIATES
HOUSTON, TEXAS

FLEXIBLE WALL TRIAXIAL PERMEABILITY

ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Vertical

PROJECT TITLE:	Edinburg	Cell Pressure =	80	psi
PROJECT NUMBER:	1401491	Backwater Pressure =	70	psi
SAMPLE ID:	PZ-118	Run Number =	1	
LIFT NUMBER:	3'-5'	Permeant Used=	De-Aired Water	

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	2.06	5.23	Height, in	2.062	5.24
Top Diameter, mm	50.030		Top Diameter, mm	50.21	
Middle Diameter, mm	50.770		Middle Diameter, mm	50.82	
Bottom Diameter, mm	50.820		Bottom Diameter, mm	50.9	
Average Diameter, cm	5.054		Average Diameter, cm	5.064	
Area, cm^2	20.06		Area, cm^2	20.14	
Volume, cm^3	104.97		Volume, cm^3	105.50	
Wet Mass, g	216.6		Wet Mass, g	221.7	
Wt. tare, gm	8.2		Wt. tare, gm	8.3	
Wt. wet soil + tare, gm	132.00		Wt. wet soil + tare, gm	230	
Wt. dry soil + tare, gm	117.88		Wt. dry soil + tare, gm	199.48	
Moisture Content, %	12.9%		Moisture Content, %	16.0%	
Dry Density, pcf	114.1		Dry Density, pcf	113.1	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.45		Void Ratio	0.46	
Saturation, %	76%		Saturation, %	91%	
Effective Stress, psi	10				



Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 26.0
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. ^oC	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20^oC
0	0	0	26.0	0.85		60.37		22	0.953	
0	5	5	25.0	0.89	6.283E-03	56.56	5.52E-06	22	0.953	5.26E-06
0	9	4	24.0	0.93	7.854E-03	54.06	7.21E-06	22	0.953	6.88E-06
0	15	6	23.0	0.97	5.236E-03	51.57	5.04E-06	22	0.953	4.81E-06
0	20	5	22.0	1.01	6.283E-03	49.07	6.36E-06	22	0.953	6.06E-06
0	26	6	21.0	1.05	5.236E-03	46.57	5.58E-06	22	0.953	5.32E-06
0	32	6	20.0	1.10	5.236E-03	44.07	5.90E-06	22	0.953	5.62E-06
0	39	7	19.0	1.14	4.488E-03	41.58	5.36E-06	22	0.953	5.11E-06
0	46	7	18.0	1.18	4.488E-03	39.08	5.70E-06	22	0.953	5.43E-06
0	54	8	17.0	1.22	3.927E-03	36.58	5.33E-06	22	0.953	5.08E-06
1	2	8	16.0	1.26	3.927E-03	34.09	5.72E-06	22	0.953	5.45E-06
1	11	9	15.0	1.30	3.491E-03	31.59	5.49E-06	22	0.953	5.23E-06

HYDRAULIC CONDUCTIVITY REPORTED AS **5.30E-06** **cm/sec**

TECH:	PN	CHECKED:	VK
DATE:	2/10/2016	DATE:	2/11/2016

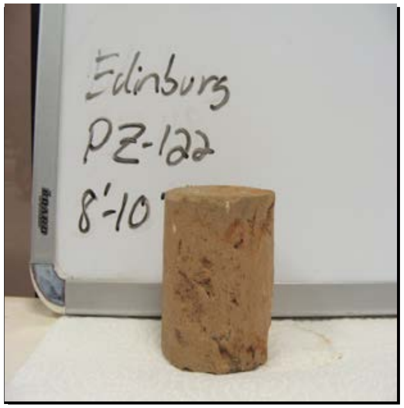
GEOTECHNICAL TESTING LABORATORY
GOLDER ASSOCIATES
HOUSTON, TEXAS

FLEXIBLE WALL TRIAXIAL PERMEABILITY
ASTM D 5084 METHOD F, CONSTANT VOLUME - FALLING HEAD
Sample Orientation: Horizontal

PROJECT TITLE: Edinburg
PROJECT NUMBER: 1401491
SAMPLE ID: PZ-122
LIFT NUMBER: 8'-10'

Cell Pressure = 80 psi
Backwater Pressure = 70 psi
Run Number = 1
Permeant Used= De-Aired Water

Sample Data, Initial		centimeters	**Sample Data, Final**		centimeters
Height, in	2.161	5.49	Height, in	2.156	5.48
Top Diameter, mm	47.620		Top Diameter, mm	47.98	
Middle Diameter, mm	47.900		Middle Diameter, mm	48.1	
Bottom Diameter, mm	48.050		Bottom Diameter, mm	48.23	
Average Diameter, cm	4.786		Average Diameter, cm	4.810	
Area, cm^2	17.99		Area, cm^2	18.17	
Volume, cm^3	98.73		Volume, cm^3	99.52	
Wet Mass, g	208.0		Wet Mass, g	213.2	
Wt. tare, gm	8.5		Wt. tare, gm	8.4	
Wt. wet soil + tare, gm	185.60		Wt. wet soil + tare, gm	221.6	
Wt. dry soil + tare, gm	163.63		Wt. dry soil + tare, gm	189.2	
Moisture Content, %	14.2%		Moisture Content, %	17.9%	
Dry Density, pcf	115.1		Dry Density, pcf	113.4	
Specific Gravity	2.65	Assumed	Specific Gravity	2.65	
Void Ratio	0.44		Void Ratio	0.46	
Saturation, %	86%		Saturation, %	104%	
Effective Stress, psi	10				



Manometer Constants:

$a_{annulus}$ = 0.76712 cm^2
$a_{center\ pipette}$ = 0.03142 cm^3

Initial Manometer Readings

Pipette = 27.0
Annulus = 0.85

Minutes	Seconds	Δt (sec)	Pipette (cm)	Annulus (cm)	Flowrate (cm^3/s)	Gradient (i)	Hydraulic Conductivity (cm/sec)	Temp. °C	rt temp. corr.	Hydraulic Conductivity (cm/sec) @20°C
0	0	0	27.0	0.85		59.84		22	0.953	
0	20	20	26.5	0.87	7.854E-04	58.18	7.43E-07	22	0.953	7.08E-07
0	43	23	26.0	0.89	6.830E-04	56.99	6.59E-07	22	0.953	6.29E-07
1	7	24	25.5	0.91	6.545E-04	55.80	6.45E-07	22	0.953	6.15E-07
1	32	25	25.0	0.93	6.283E-04	54.60	6.33E-07	22	0.953	6.04E-07
1	58	26	24.5	0.95	6.042E-04	53.41	6.22E-07	22	0.953	5.93E-07
2	25	27	24.0	0.97	5.818E-04	52.21	6.13E-07	22	0.953	5.84E-07
2	53	28	23.5	0.99	5.610E-04	51.02	6.05E-07	22	0.953	5.77E-07
3	21	28	23.0	1.01	5.610E-04	49.83	6.20E-07	22	0.953	5.91E-07
3	50	29	22.5	1.03	5.417E-04	48.63	6.13E-07	22	0.953	5.84E-07
4	21	31	22.0	1.05	5.067E-04	47.44	5.88E-07	22	0.953	5.60E-07
						HYDRAULIC CONDUCTIVITY REPORTED AS				**5.78E-07 cm/sec**

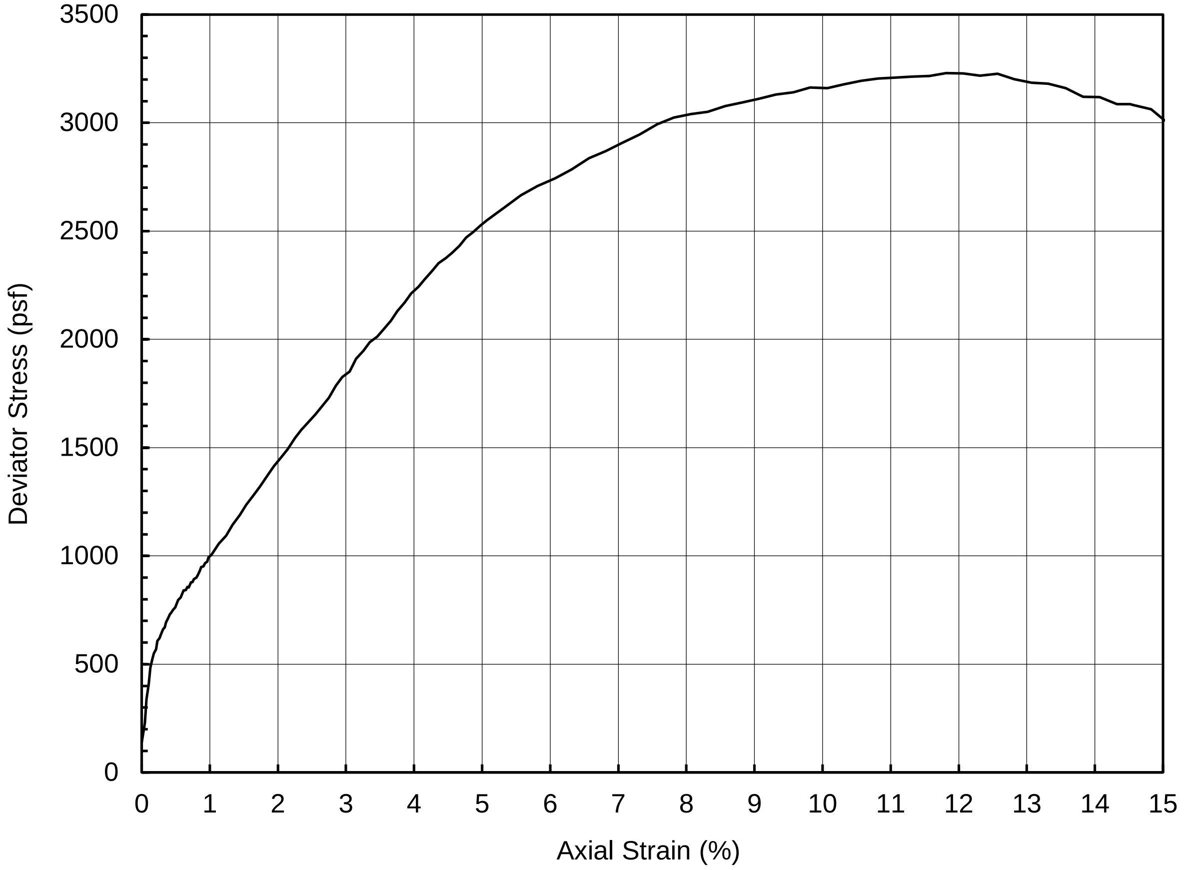
TECH: PN
DATE: 2/10/2016

CHECKED: VK
DATE: 2/11/2016

GEOTECHNICAL TESTING LABORATORY
GOLDER ASSOCIATES
HOUSTON, TEXAS

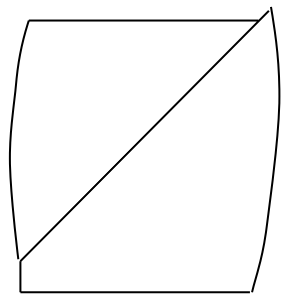
Golder Associates

UNCONSOLIDATED / UNDRAINED COMPRESSIVE STRENGTH
ASTM D 2850



Specimen Description		Brown Clay					
LL	56	PI	18	LI	-0.8	USCS	MH or OH

Depth (ft)	23.0	Confining Pressure (psf)	1165
Specimen Height (inch)	4.9	Strain Rate (%/min)	1.0
Specimen Diameter (inch)	2.8	Peak Deviator Stress (psf)	3229
Initial Specimen Weight (g)	1184.1	Axial Strain at Peak Stress (%)	11.8
Moist Unit Weight (pcf)	152.6		
Initial Water Content (%)	23		
Initial Dry Unit Weight (pcf)	123.7		



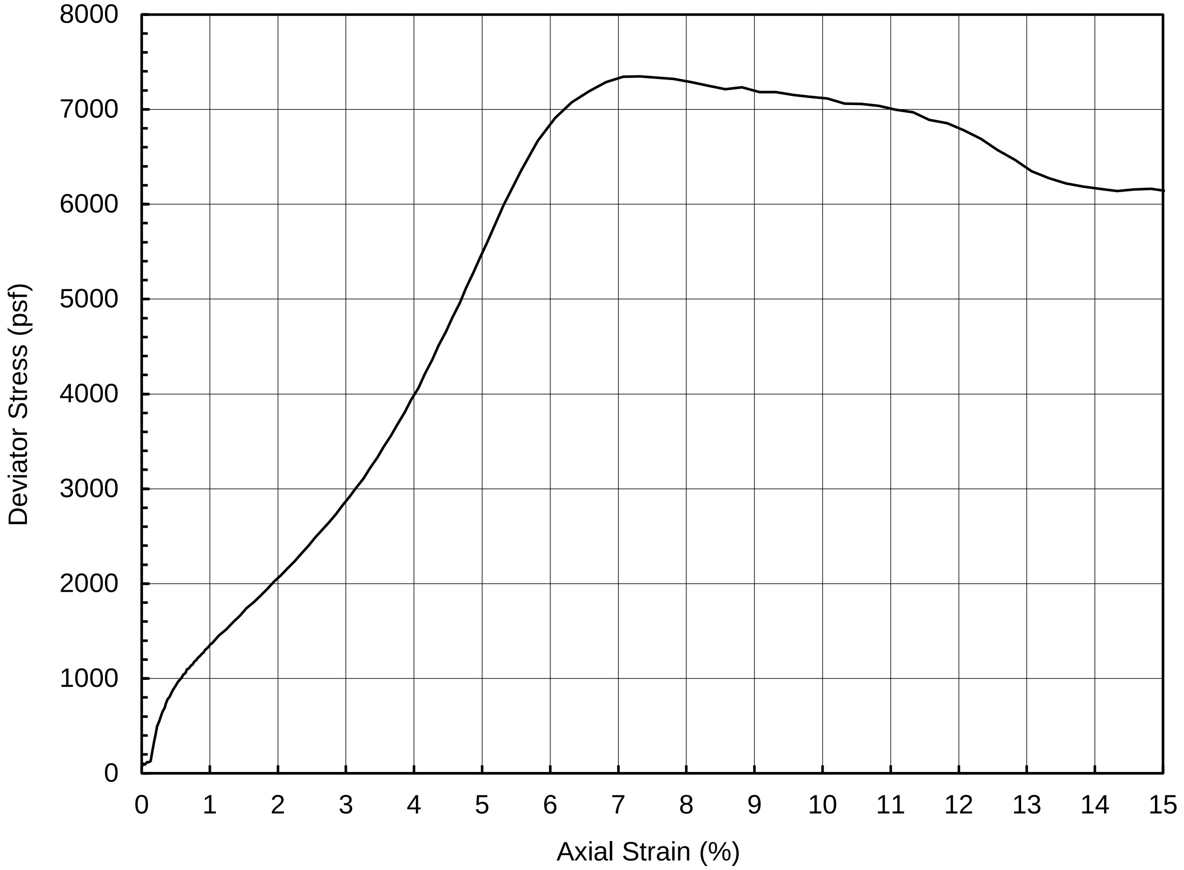
Failure Sketch

Project Title	Edinburgh Expansion
Project Number	1401491
Sample Type	Shelby Tube
Sample ID	B-102 Depth (ft) 23.0
Comments	

Golder Associates

Performed by	**PN**
Date	**23-Mar-15**
Check	**VK**
Review	**JBF**

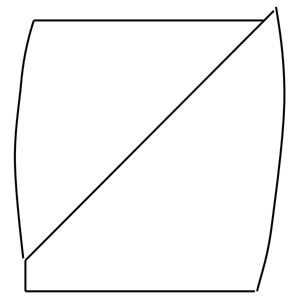
UNCONSOLIDATED / UNDRAINED COMPRESSIVE STRENGTH
ASTM D 2850



Specimen Description	Brown Clay						
LL	29	PI	12	LI	-0.1	USCS	CL

Depth (ft)	23.0	Confining Pressure (psf)	1157
Specimen Height (inch)	5.6	Strain Rate (%/min)	1.0
Specimen Diameter (inch)	2.8	Peak Deviator Stress (psf)	7347
Initial Specimen Weight (g)	1135.8	Axial Strain at Peak Stress (%)	7.3
Moist Unit Weight (pcf)	123.9		
Initial Water Content (%)	16		
Initial Dry Unit Weight (pcf)	107.1		

Project Title	Edinburgh Expansion
Project Number	1401491
Sample Type	Shelby Tube
Sample ID	B-108 Depth (ft) 23.0
Comments	

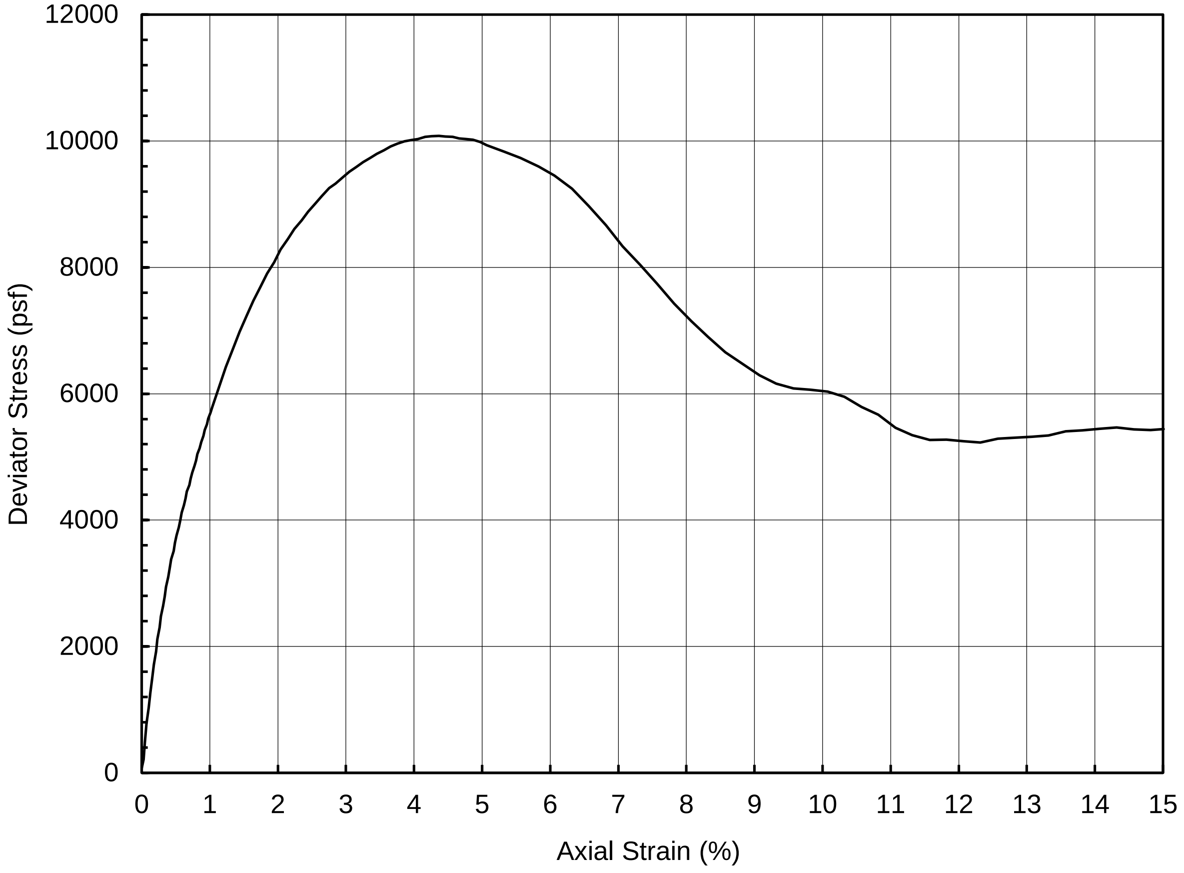


Failure Sketch

Performed by	**PN**
Date	**23-Mar-15**
Check	**VK**
Review	**JBF**

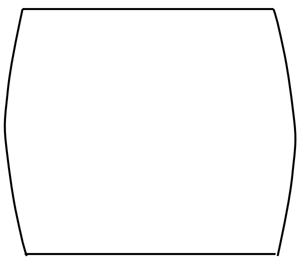
Golder Associates

UNCONSOLIDATED / UNDRAINED COMPRESSIVE STRENGTH
ASTM D 2850



Specimen Description	Brown Clay						
LL	35	PI	15	LI	-0.2	USCS	CL

Depth (ft)	38.0	Confining Pressure (psf)	1862
Specimen Height (inch)	5.6	Strain Rate (%/min)	1.0
Specimen Diameter (inch)	2.8	Peak Deviator Stress (psf)	10079
Initial Specimen Weight (g)	971.5	Axial Strain at Peak Stress (%)	4.4
Moist Unit Weight (pcf)	104.7		
Initial Water Content (%)	17		
Initial Dry Unit Weight (pcf)	89.7		



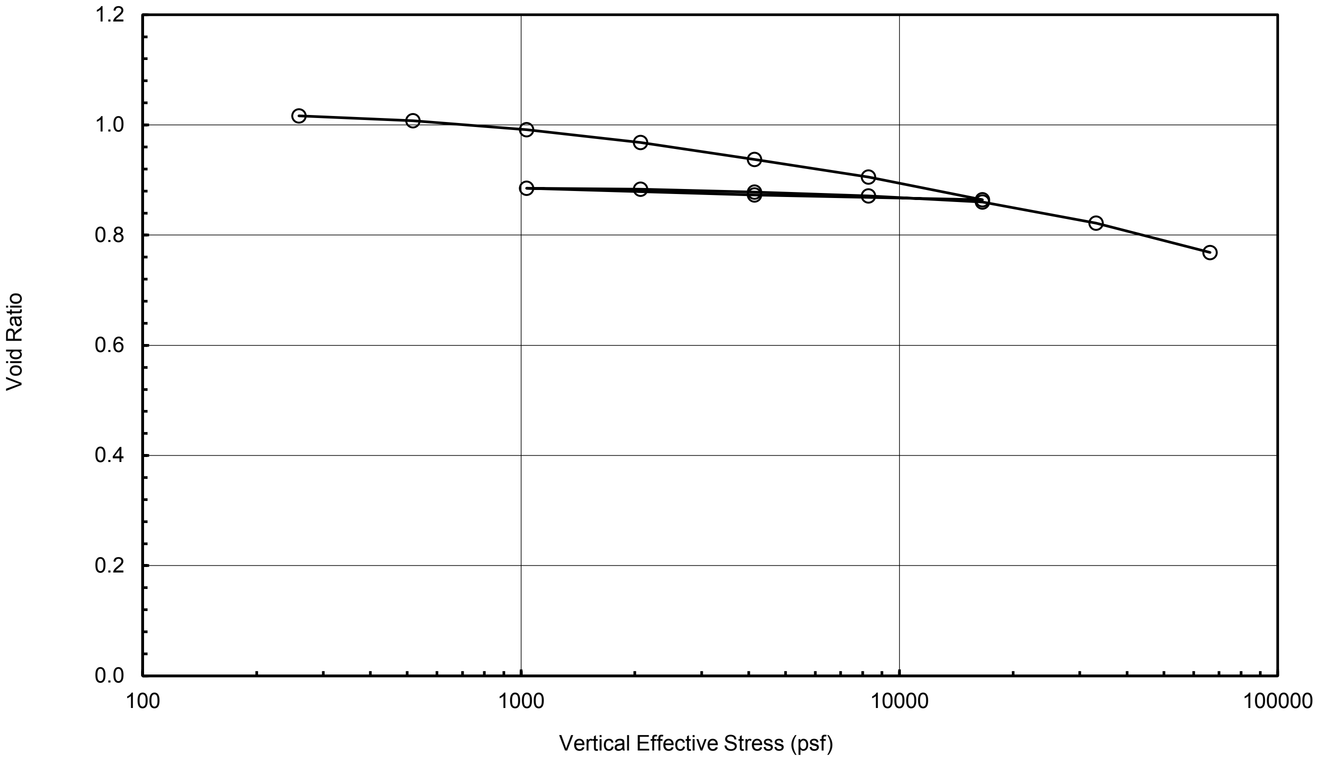
Failure Sketch

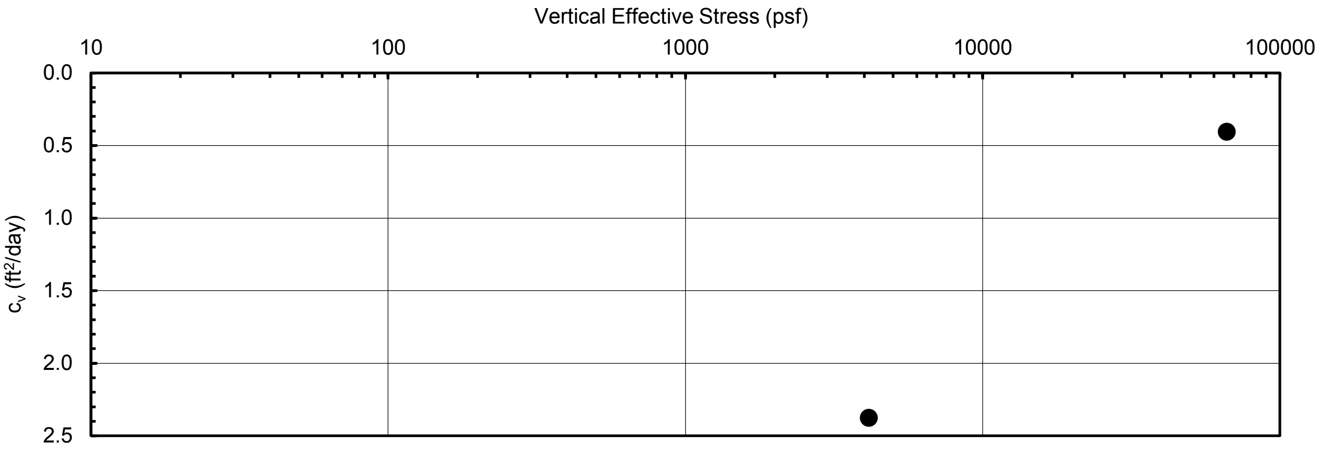
Project Title	Edinburgh Expansion
Project Number	1401491
Sample Type	Shelby Tube
Sample ID	B-125 Depth (ft) 38.0
Comments	

Golder Associates

Performed by	**PN**
Date	**23-Mar-15**
Check	**VK**
Review	**JBF**

One Dimensional Consolidation of Soils
ASTM D-2435





Boring Number	B-111	G_s	2.70	assumed
Sample Number	18'-20'	C_C	0.15	
Sample Depth (ft)	18'-20'	C_R	0.02	
		σ'_P	22,000	psf

	Initial	Final
Dry Unit Weight (pcf)	83.2	95.3
Wet Unit Weight (pcf)	98.4	111.5
Moisture Content (%)	18.3	17.0
Void Ratio	1.03	0.77
Degree of Saturation (%)	48	60

Specimen Height (inch) 1.00
Specimen Diameter (inch) 2.50

DESCRIPTION Brown Sandy Clay

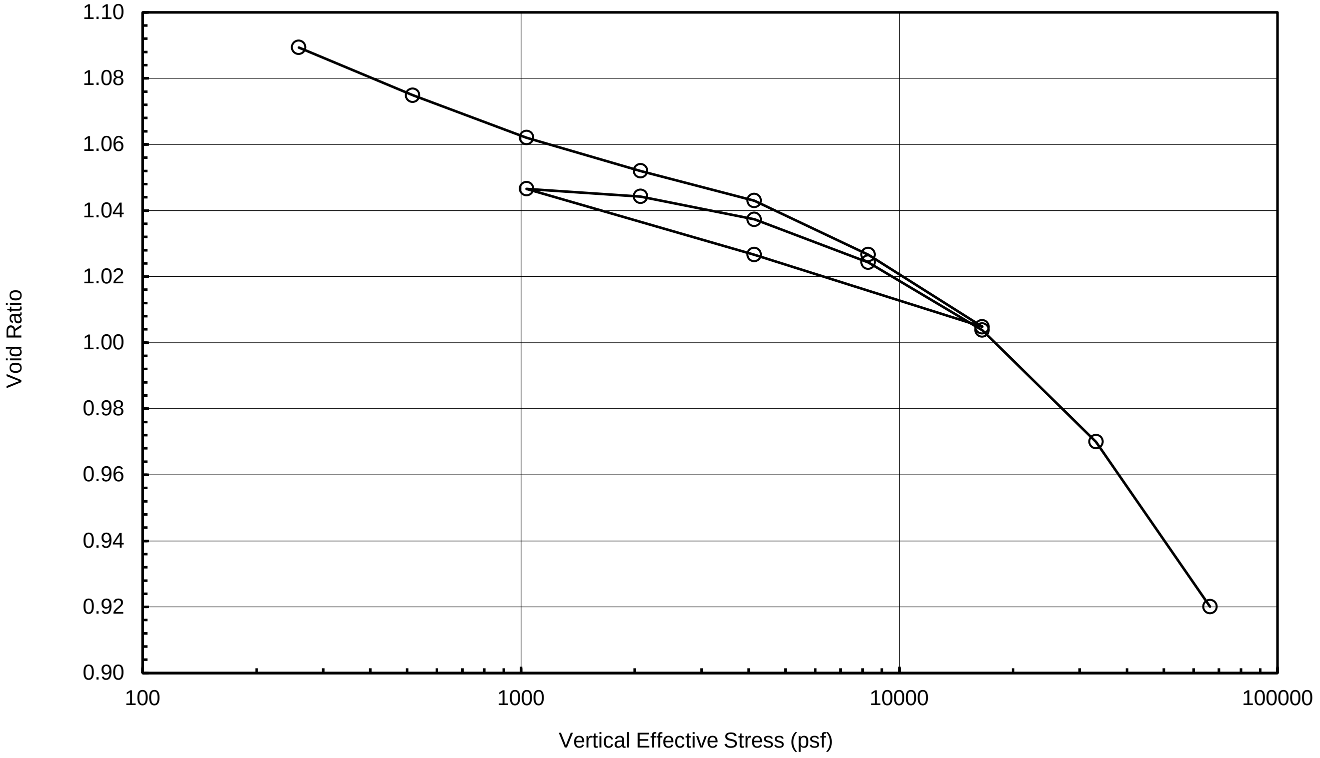
LL - PI - USCS -

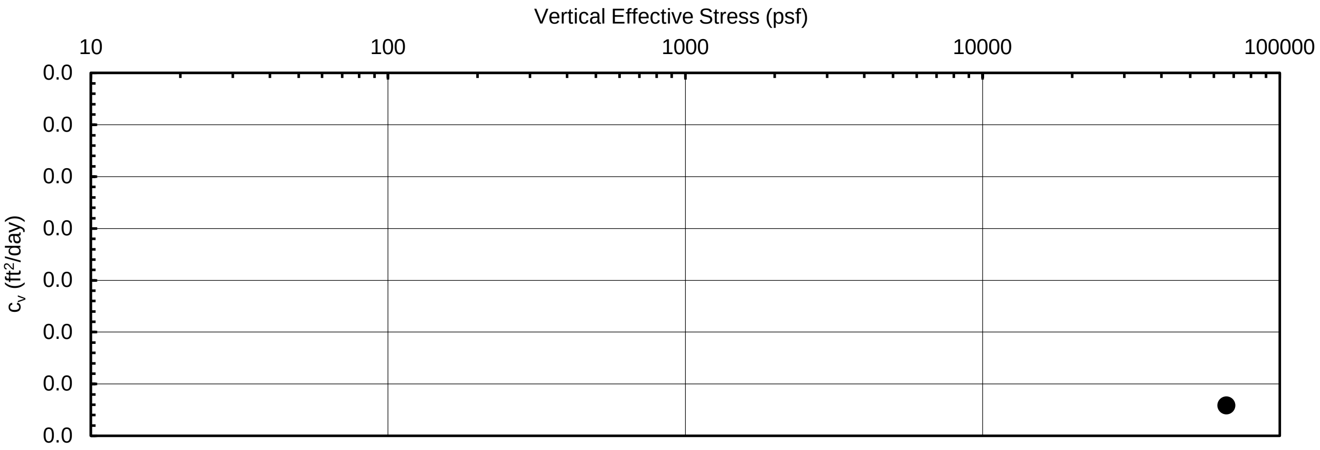
Golder Associates

Project: Edingburg Expansion Permit
Project Number: 1401491

Date	23-Mar-15
Tech	PN
Check	MR
Review	VK

One Dimensional Consolidation of Soils
ASTM D-2435





Boring Number	B-125	G_s	2.70	assumed
Sample Number	43'-45'	C_C	0.16	
Sample Depth (ft)	43'-45'	C_R	0.03	
		σ'_P	20,000	psf

Specimen Height (inch)	1.00
Specimen Diameter (inch)	2.50

	Initial	Final
Dry Unit Weight (pcf)	80.3	87.7
Wet Unit Weight (pcf)	96.2	108.0
Moisture Content (%)	19.7	23.1
Void Ratio	1.10	0.92
Degree of Saturation (%)	49	68

DESCRIPTION Brown Clay

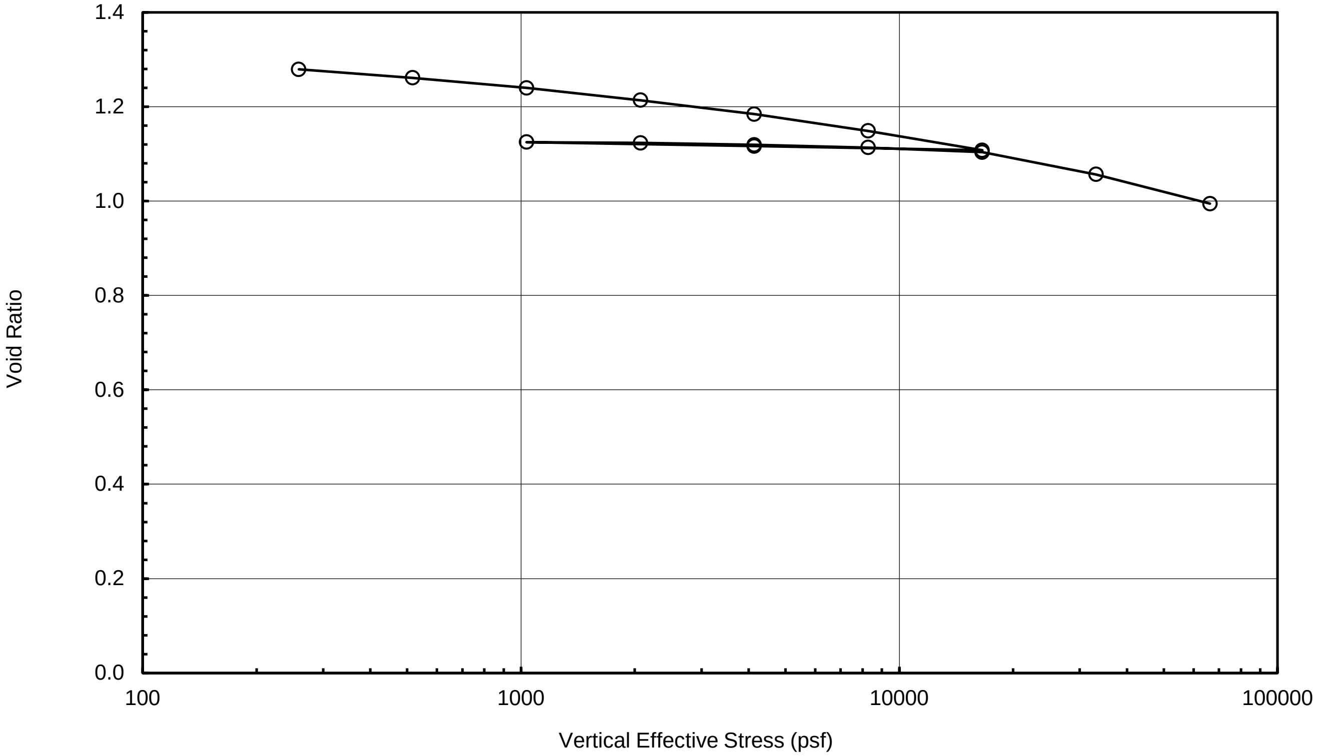
LL	-	PI	-	USCS	-

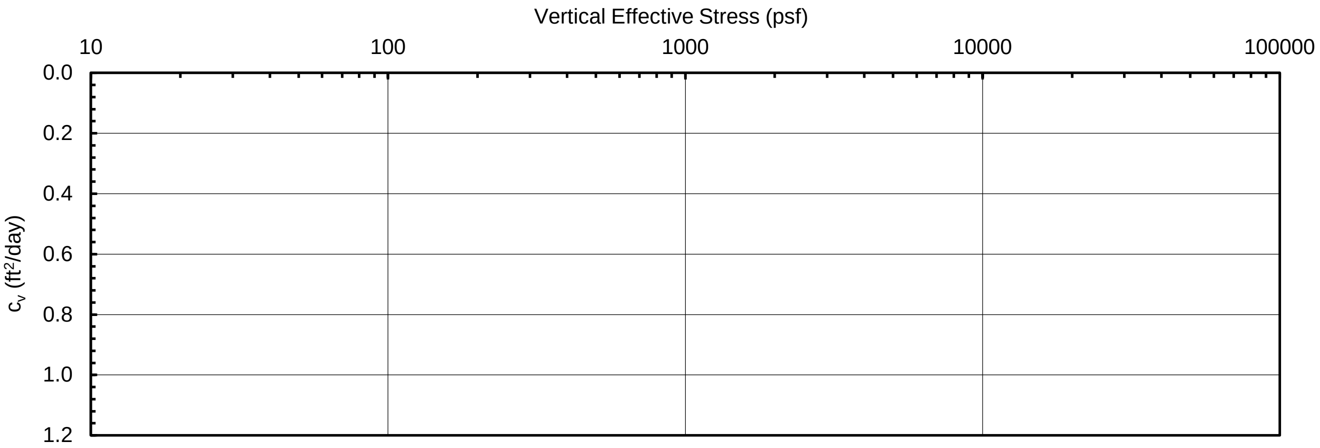
Golder Associates

Project: Edinburg Expansion Permit
Project Number: 1401491

Date	23-Mar-15
Tech	PN
Check	MR
Review	VK

One Dimensional Consolidation of Soils
ASTM D-2435





Boring Number	B-129	G_s	2.70	assumed	
Sample Number	33'-35'	C_C	0.18		
Sample Depth (ft)	33'-35'	C_R	0.02		
		σ'_P	22000	psf	

	Initial	Final
Dry Unit Weight (pcf)	73.2	84.5
Wet Unit Weight (pcf)	94.7	104.3
Moisture Content (%)	29.3	23.5
Void Ratio	1.30	0.99
Degree of Saturation (%)	61	64

Specimen Height (inch) 1.00
Specimen Diameter (inch) 2.50

DESCRIPTION Brown Clayey Sand

LL - PI - USCS -

Project: Edinburg Expansion Permit
Project Number: 1401491

Date	23-Mar-15
Tech	PN
Check	MR
Review	VK

APPENDIX III4D

PREVIOUS GEOTECHNICAL TESTING DATA

T P L
PITTMAN TESTING LABORATORIES

1458 WEST EXPRESSWAY
SAN BENITO, TEXAS 78586
512 - 399-5610

March 9, 1976

GENERAL REPORT FORM

For: Melden & Hunt Inc.
Edinburg, Texas

Project: Sanitary Landfill Site, North of Edinburg

Sample of : Tan Silty Clay

Boring No. : 1 Depth 14' - 16'

Type of Test: Permeability

Coefficient of Permeability 0.91×10^{-7} CM/Sec

ITTMAN TESTING LABORATORIES

Jesse W. Gotthardt

Lab. No. A- 7425

TPL

PITTMAN TESTING LABORATORIES

1458 WEST EXPRESSWAY
SAN BENITO, TEXAS 78586
512 - 399-5610

March 9, 1976

GENERAL REPORT FORM

To: Melden & Hunt Inc.
Edinburg, Texas

Project: Sanitary Landfill Site, North of Edinburg

Sample of: Tan Silty Clay

Boring No: 2 Depth 14' - 16'

Type of Test: Permeability

Coefficient of Permeability $0.94x10^{-7}$ CM/Sec

ITMAN TESTING LABORATORIES

Jesse W. Gotthardt

Jesse W. Gotthardt

Lab. No. A- 7424

T P L
PITTMAN TESTING LABORATORIES

1458 WEST EXPRESSWAY
SAN BENITO, TEXAS 78586
512 - 399-5610

March 9, 1976

GENERAL REPORT FORM

To: Melden & Hunt Inc.
Edinburg, Texas

Project: Sanitary Landfill, North of Edinburg

Sample of: Tan Silty Clay

Boring No: 3 Depth : 14' - 16'

Type of Test: Permeability

Coefficient of Permeability 0.98x10-7 CM/Sec

ITTMAN TESTING LABORATORIES

Jesse W. Gotthardt

Lab. No. A- 7426

P
L T
L

LANGLEY - PITTMAN TESTING LABORATORIES

P. O. BOX 736
RIO HONDO, TEXAS 78583
512 - 399-5610

June 8, 1976

GENERAL REPORT FORM

To:
Melden & Hunt Inc.
Edinburg, Texas

Project: Sanitary Landfill Site, Hiway 281, North of Edinburg, Texas

Sample of: Tan Silty Clay, with caliche particles

Boring No. 1 (Shown on Plan as Boring No. 4) Depth 10' - 11'

Type of Test: Permeability

Coefficient of Permeability: 1.04 x 10-7 CM/Sec

IGLEY - PITTMAN TESTING LABORATORIES

Jack Langley

Jack Langley

Lab. No. A- 7725

LANGLEY - PITTMAN TESTING LABORATORIES

P. O. BOX 736
RIO HONDO, TEXAS 78583
512 - 399-5610

June 8, 1976

To:
Melden & Hunt Inc.
Edinburg, Texas

GENERAL REPORT FORM

Project: Sanitary Landfill Site, Hiway 281, North of Edinburg, Texas

Sample of: Tan Silty Clay with Caliche Particles

Boring No. 2 (Shown on Plan as Boring No. 5) Depth 14' - 15'

Type of Test: Permeability

Coefficient of Permeability: 0.87 x 10^{-7} CM/Sec

NGLEY - PITTMAN TESTING LABORATORIES

Jack Langley

Jack Langley

Lab. No. A- 7725

LANGLEY - PITTMAN TESTING LABORATORIES

P. O. BOX 736
RIO HONDO, TEXAS 78583
512 - 399-5610

June 8, 1976

GENERAL REPORT FORM

To:
Melden & Hunt Inc.
Edinburg, Texas

Proposed: Sanitary Landfill Site, Hiway 281, North of Edinburg, Texas

Sample of: Tan Silty Clay

Boring No. 3 (Shown on Plan as Boring No. 6) Depth 14' - 15'

Type of Test: Permeability

Coefficient of Permeability: 0.72 x 10^{-7} CM/Sec

NGLEY - PITTMAN TESTING LABORATORIES

Jack Langley

Jack Langley

Lab. No. A- 7725

Expansion Area Investigation
Soil Test Data Summary

Bore Hole Number	Sample Number	Sampler	Depth (ft)		Description	SPT N	Pocket Penitrometer (tsf)	Grain Size Analysis %	Atterberg Limits	Moisture w, %	Consolidation	UU	Specific Gravity	Permeability	Dry Density
			Top	Bottom		Blows/ft		% Pass 200 Sieve	LL PL PI			(ksf)			
G-1	2	SS	3	5	clayey sand (SC)	11		42.0	27 13 14	10.1					
G-1	6	SS	14	16	sandy clay (CL)	>82	4.5+	73.6	33 18 15	13.9					
G-1	8	SS	18	20	sandy silt (ML)	23		38.9	23 21 02	20.8					
G-1	12	SS	26	28	silty sand (SM)	46		27.8*							
G-1	18	SS	43	45	sandy clay (CH)	>95	4.5+	76.5	64 22 42	16.1					
G-2	3	ST	8	10	clayey sand (SC)		4.5+	46.5	25 14 11	9.7				$8.3x10^{-8}$	103.5
G-2	6	SS	23	25	silty sand (SM)	24		18.9							
G-2	8	SS	33	35	sandy clay (CL)	50			50 18 32	18.7					
G-2	9	ST	38	40	sandy clay (CL)		4.5+								
G-2	10	SS	43	45	sandy clay (CH)	>88			68 24 44	24.6					
G-3	3	SS	8	10	clayey sand (SC)	16		48.6*	26 13 13	12.9					
G-3	6	SS	23	25	clay (CH)	53	4.5+								
G-3	7	ST	28	30	sandy clay (CL)		4.5+		36 16 20	18.3					
G-3	10	SS	43	45	clay (CH)		4.5+								
G-3	11	ST	48	50	clayey sand (SC)		3.5+	41.2	31 15 16	16.4	*	8.27*		$1.9x10^{-8}$	112.2
G-3	13	SS	56	58	silty clay (CH)				89 27 62	22.1					
G-4	4	SS	10	12	clayey sand (SC)	18		47.8							
G-4	8	SS	18	20	silty sand (SM)	12		38.7							
G-4	12	SS	26	28	silty clay (CL)	>82			29 16 13	12.7					
G-4	15	SS	35	37	silty sand (SM)	19		48.9							
G-4	18	SS	41	43	silty fine sand (SM)	>92		26.4*							
G-4	24	SS	61	63	clay (CH)	>100			81 27 54	25.7					
G-5	4	SS	12	14	sandy clay (CL)	70			36 16 20	27.1					
G-5	8	SS	20	22	sandy silt (CL)	13		62.9							
G-6	8	ST	30	32	clay (CL)		4.5+	57.5	38 12 26	14.2				$4.1x10^{-8}$	123.6
G-6	9	ST	33	35	clay (CL)		4.5+								
G-6	13	SS	53	55	silty fine sand (SP-SM)	>100		9.2							
G-7	2	SS	3	5	sandy clay (CH)	38	4.5+								
G-7	3	SS	8	10	clay (CH)	54		82.1	51 15 36	15.9					
G-8	2	SS	3	5	clayey sand (SC)	14		44.4	25 13 12	9.3					
G-8	3	SS	8	10	clayey sand (SC)	13		49.0	23 13 10	10.0					
G-8	4	SS	13	15	clayey silt (SM-SC)	>100		44.6	24 19 05	11.5					
G-8	6	SS	20	22	silt (ML)	27		64.4	26 24 02	27.0					
G-8	8	SS	24	26	silty sand (SM)	28		43.2	24 21 03	25.0					
G-8	9	SS	28	30	clayey, silty sand (SM-SC)	>98		48.4	24 19 05	23.0					
G-8	13	ST	43	45	silty clay (CH)			77.2	60 25 35	23.1				$2.0x10^{-8}$	98.1

Expansion Area Investigation
Soil Test Data Summary

Bore Hole Number	Sample Number	Sampler	Depth (ft)		Description	SPT N	Pocket Penitrometer (tsf)	Grain Size Analysis %	Atterberg Limits	Moisture w, %	Consolidation	UU	Specific Gravity	Permeability	Dry Density
			Top	Bottom		Blows/ft		% Pass 200 Sieve	LL PL PI			(ksf)			
G-9	2	SS	3	5	sandy clay (CL)	43	4.5+								
G-9	3	SS	8	10	sandy clay (CL)	>81			40 16 24	13.9					
G-9	4	ST	13	15	sandy clay (CL)		4.5+								
G-9	7	SS	19	21	sandy silt (ML)	18		61.7							
G-9	11	SS	27	29	silty sand (SM)	64		19.9							
G-9	13	SS	33	35	clay (CH)	>100	4.5+								
G-9	14	SS	38	40	clay (CH)	>100	4.5+		84 26 58	19.6					
G-10	4	SS	13	15	clayey sand (SC)	22			23 15 08	8.0					
G-10	5	SS	18	20	clayey sand (SC)	30		42.8							
G-10	7	ST	28	30	clay (CL)		4.5+		46 22 24	18.4		14.54*			
G-10	9	SS	38	40	silty sand (SM)	33		40.6							
G-10	12	SS	53	55	sandy clay (CL)	>100			26 14 12	13.2					
G-11	4	SS	13	15	sandy clay (CL)	84			36 23 13	16.0					
G-11	5	ST	18	20	sandy clay (CL)		4.5+								
G-11	8	SS	33	35	silty sand (SM)	>85		16.3							
G-11	10	ST	43	45	clay (CH)		4.5+								
G-11	11	SS	48	48.5	clay (CH)	>100	4.5+		100 40 60	31.6					
G-12	2	SS	3	5	silty clay (SC)	41	4.5+								
G-12	3	SS	8	10	clayey sand (SC)	>100	4.5+		31 18 13	13.7					
G-12	4	SS	13	15	clayey sand (SC)	56	4.5+								
G-12	5	ST	18	20	clay (CL)		4.5+	87.8	43 20 23	17.2		13.74*		$5.8x10^{-7}$	112.3
G-12	9	SS	26	28	silty fine sand (SM)	86		14.8							
G-12	12	SS	32	34	silty clayey sand (SM-SC)	>83		34.6							
G-12	14	SS	38	40	silty clayey sand (SM-SC)	>100	4.2+								
G-12	15	ST	43	45	clay (CH)		4.5+		83 28 55	22.5	*				
G-12	16	SS	48	50	clay (CH)		4.5+								
G-13	3	ST	8	10	silty clay (CL)			51.9							
G-13	5	ST	18	20	sandy clay (SC)				27 16 11	17.3					
G-13	7	SS	28	30	silty fine sand (SP-SM)	>100		9.3							
G-13	10	SS	43	45	clay (CH)	>100			73 27 46	23.8					
G-13	11	ST	44	46	clay (CH)		4.5+								

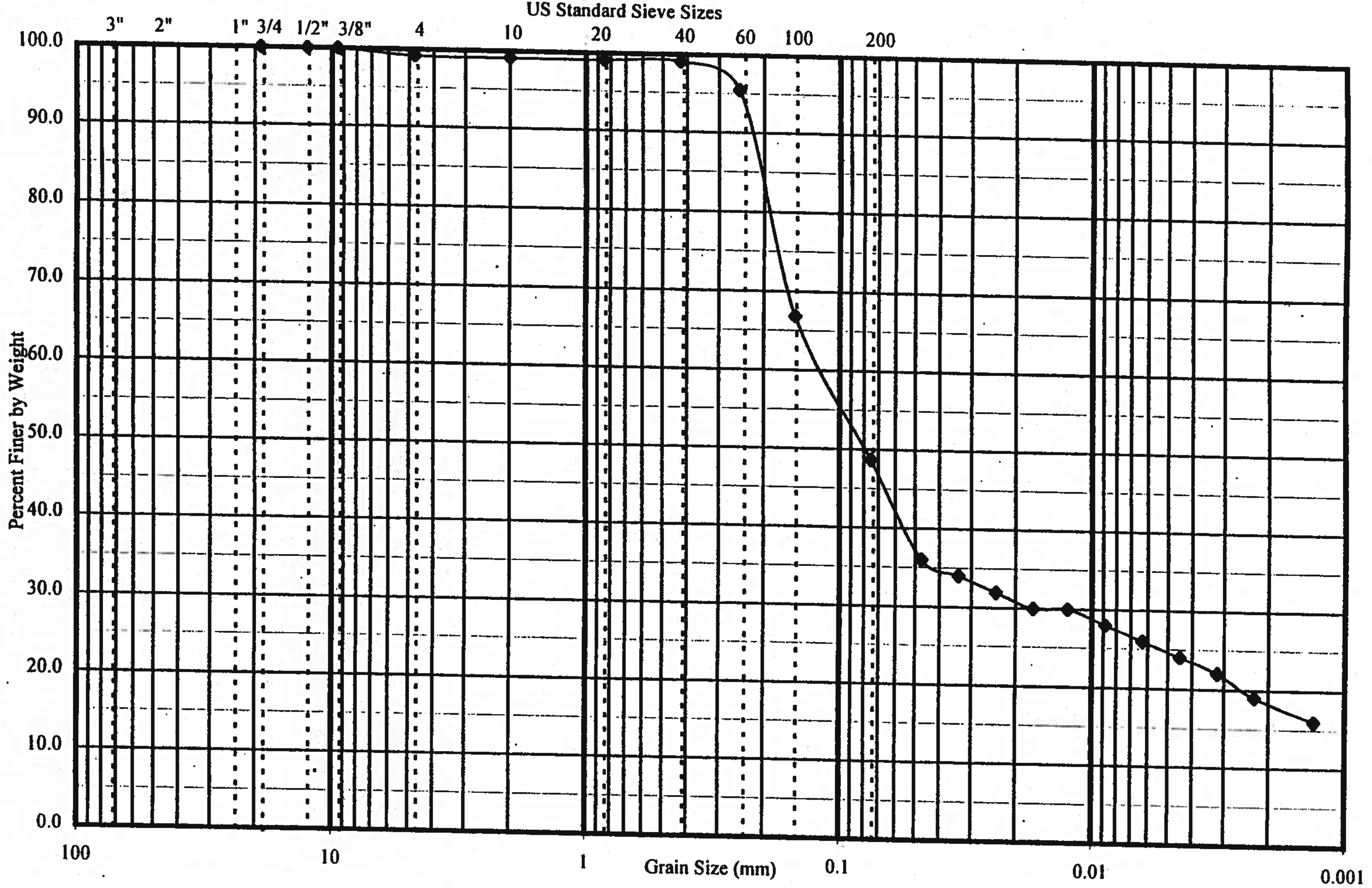
Expansion Area Investigation
Soil Test Data Summary

Bore Hole Number	Sample Number	Sampler	Depth (ft)		Description	SPT N	Pocket Penitrometer (tsf)	Grain Size Analysis %	Atterberg Limits	Moisture w, %	Consolidation	UU	Specific Gravity	Permeability	Dry Density
			Top	Bottom		Blows/ft		% Pass 200 Sieve	LL PL PI			(ksf)			
G-14	3	ST	8	10	silty clay (CL)		4.5+								
G-14	4	SS	13	15	silty clay (CL)	>100	4.5+								
G-14	5	SS	15	17	sandy clay (CL)	>82	4.5+	63.9	37 22 15	16.1					
G-14	15	SS	43	45	clay (CH)	>80	4.5+	83.8	68 27 41	23.1					
G-14	16	SS	48	50	clay (CH)	46	4.5+								

SS = Split Spoon
ST =
LL = Liquid Limit
* data includes graphs

PL = Plastic Limit
PI = Plasticity Index

GRAIN SIZE DISTRIBUTION



Gravel		Sand			Fines
Coarse	Fine	Coarse	Medium	Fine	Silt or Clay

Boring	Sample	Depth, ft	W_n	W_L	W_p	I_p	Description or Classification
G-3	G-03-03	8.5'-10'					Brown CLAYEY SAND, trace calc nodules

PROJECT N0.: 993-4450

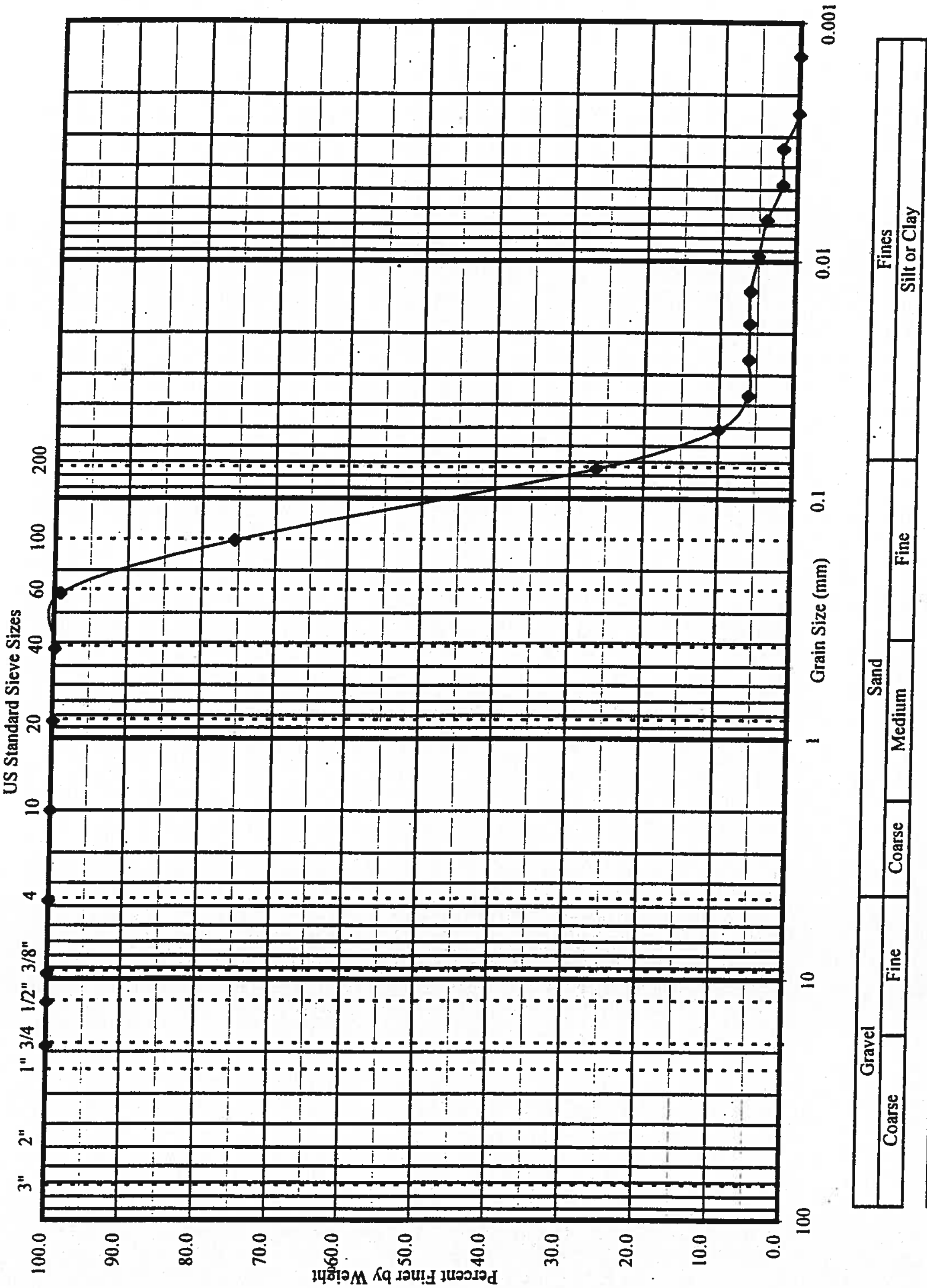
PROJECT NAME: CITY OF EDINBERG

GOLDER ASSOCIATES, INC.

Checked By:________

Date:________

GRAIN SIZE DISTRIBUTION



Boring	Sample	Depth, ft	W_n	W_L	W_p	I_p	Description or Classification
G-4	G-04-18	41.5'-43'					Brown Silty Fine SAND

PROJECT NAME: CITY OF EDINBERG

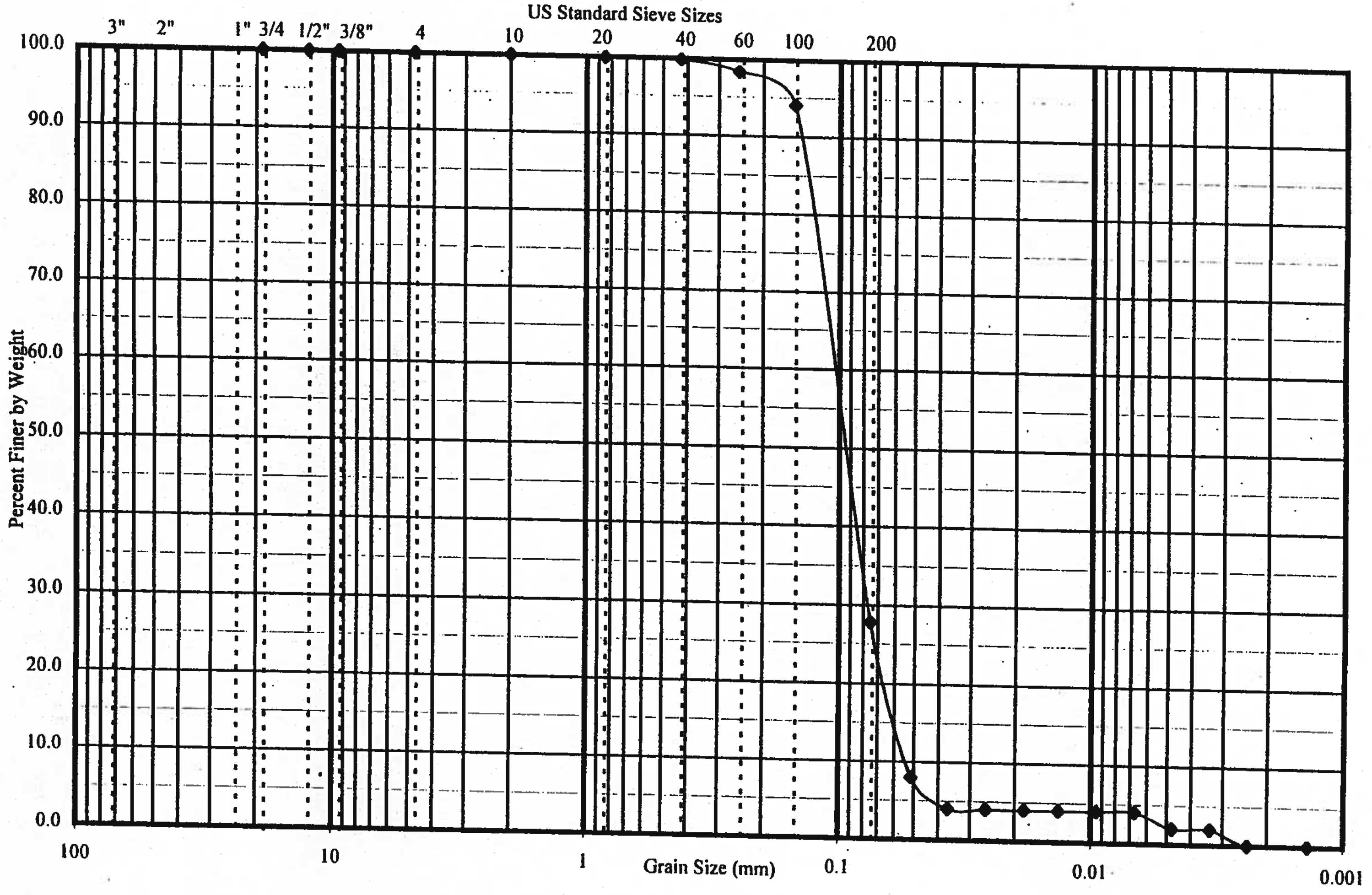
PROJECT NO.: 993-4450

GOLDER ASSOCIATES, INC.

Checked By:________________

Date:________________

GRAIN SIZE DISTRIBUTION



Gravel		Sand			Fines
Coarse	Fine	Coarse	Medium	Fine	Silt or Clay

Boring	Sample	Depth, ft	W_n	W_L	W_p	I_p	Description or Classification
G-1	G-01-12	28'-30'					Brown Silty Fine SAND

PROJECT NO.: 993-4450

PROJECT NAME: CITY OF EDINBERG

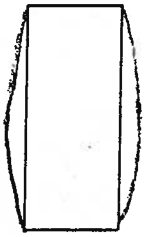
GOLDER ASSOCIATES, INC.

Checked By:________

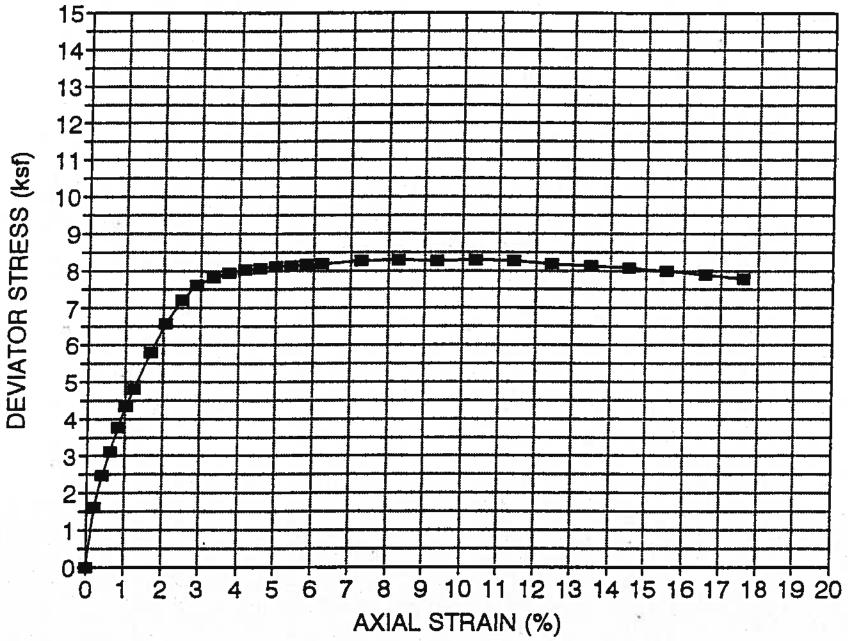
Date:________

GOLDER ASSOCIATES, INC.

Boring Number	G-3	Sample
Sample Number	11	Failure
Depth (ft.)	48-50	Diagram



Sample Diameter (in.)	2.83
Sample Height (in.)	4.825
Dry Density (pcf)	108.2
Initial Moisture Content (%)	17.13
Strain Rate (in./min)	0.045
Undrained Compressive Strength (ksf)	8.27
Confining Pressure (psi)	42.5

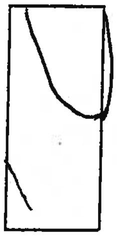


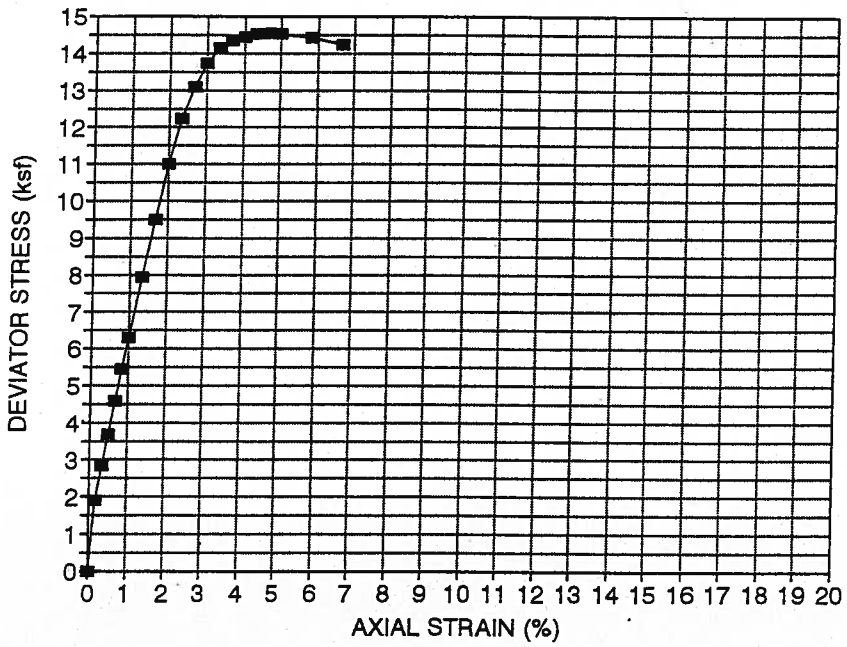
GOLDER ASSOCIATES INC.			DESCRIPTION
UNCONSOLIDATED-UNDRAINED TRIAX. TEST			
BORING NUMBER G-3	DEPTH 48-50		Light Brown CLAYEY SAND AND SANDY CLAY
SAMPLE NUMBER 11	USCS		
DRAWN	CHECKED		
REVIEWED	DATE 10/28/99	JOB # 993-4450	FIGURE

GOLDER ASSOCIATES, INC.

Boring Number	G-10
Sample Number	7
Depth (ft.)	28-30
Sample Diameter (in.)	2.855
Sample Height (in.)	6
Dry Density (pcf)	107.5
Initial Moisture Content (%)	17.65
Strain Rate (in./min)	0.045
Undrained Compressive Strength (ksf)	14.54
Confining Pressure (psi)	26

Sample
Failure
Diagram



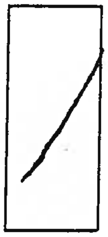


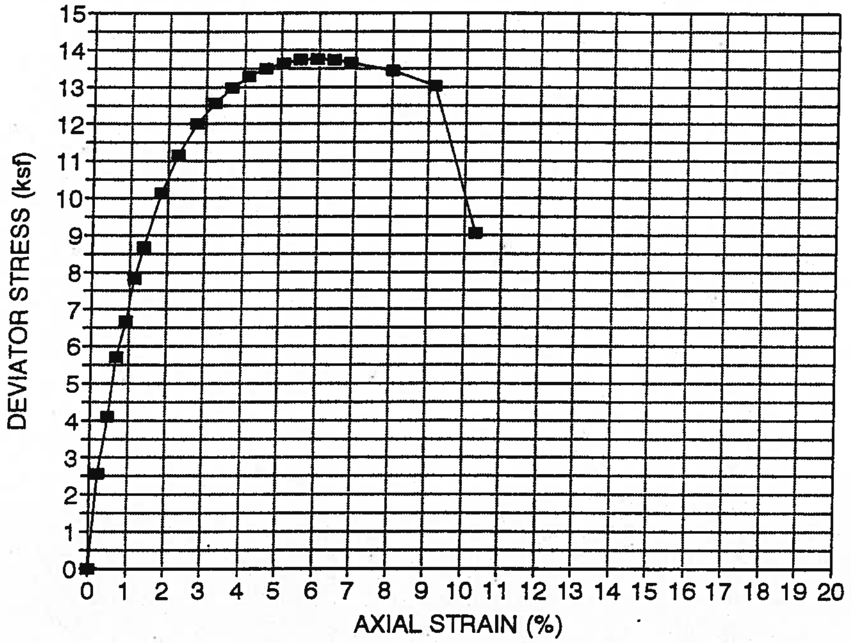
GOLDER ASSOCIATES INC.				DESCRIPTION		
UNCONSOLIDATED-UNDRAINED TRIAX. TEST				Brownish Red CLAY, slightly sandy and silty		
BORING NUMBER	G-10	DEPTH	28-30			
SAMPLE NUMBER	7	USCS				
DRAWN		CHECKED				
REVIEWED		DATE	10/28/99	JOB #	993-4450	FIGURE

GOLDER ASSOCIATES, INC.

Boring Number	G-12
Sample Number	5
Depth (ft.)	18-20
Sample Diameter (in.)	2.845
Sample Height (in.)	4.365
Dry Density (pcf)	110.6
Initial Moisture Content (%)	18.55
Strain Rate (in./min)	0.045
Undrained Compressive Strength (ksf)	13.74
Confining Pressure (psi)	17

Sample Failure Diagram





GOLDER ASSOCIATES INC.
UNCONSOLIDATED-UNDRAINED TRIAX. TEST

BORING NUMBER	G-12	DEPTH	18-20
SAMPLE NUMBER	5	USCS	
DRAWN		CHECKED	
REVIEWED		DATE	10/28/99

DESCRIPTION

Reddish Brown CLAY, slightly sandy

JOB # 993-4450

FIGURE

FLEXIBLE WALL TRIAXIAL PERMEABILITY
ASTM D 5084
METHOD C, FALLING HEAD WITH INCREASING TAIL WATER PRESSURE
CONSTANT VOLUME

PROJECT	CITY OF EDINBERG LANDFILL/TX	SAMPLE #	G-02-03	TECH	AK
PROJECT NUMBER	993-4450	DEPTH	8'-10'	CALCULATED	AK
BOREHOLE NO.	G-02	CELL #	--	DATE	11/02/99

	Initial Sample Data	Final Sample Data
Height, (cm)	7.53	7.40
Diameter, (cm)	7.15	7.16
Area, (cm ^2)	40.2	40.3
Volume, (cm ^3)	302.4	298.4
Mass, (g)	552.9	605.1
Moisture Content, (%)	10.3%	20.6%
Dry Density, (pcf)	103.5	105.0
Spec. Gravity (est.)	2.70	2.70
Volume Solids, (cm ^3)	185.7	185.9
Volume Voids, (cm ^3)	116.7	112.5
Void Ratio	0.63	0.61
Saturation, (%)	44.2%	91.8%

Test Pressures & Apparatus	
B Value	0.95
Cell Pressure, (psi)	90
Back Pressure, (psi)	80
Ain, (cm ^2)	0.767
Aout, (cm ^2)	0.031
Specific Gravity of Hg	13.56
Specific Gravity of H2	1.00

Moisture Contents

	Initial	Final
Tare Number	EX	21
Wt Wet Soil+Tare, (g)	561.4	612.7
Wt Dry Soil+Tare, (g)	509.8	509.6
Wt. Tare, (g)	8.5	8.3
Water Content, (%)	10.3%	20.6%

TRIAL NO.	TEST TIME	DELTA TIME	PIPETTE	ANNULUS	Z	K	TEMP	R-t	K-20
		(sec)	(cm)	(cm)	(cm)	(cm/sec)	(Celcius)		(cm/sec)
1	09:00:00	0	23.00	0.80	22.2	0.00E+00	23	0.931	0.0E+00
1	09:00:01	1	19.00	0.96	18.0	9.36E-05	23	0.931	8.7E-05
1	09:00:02	1	15.00	1.13	13.9	1.18E-04	23	0.931	1.1E-04
1	09:00:04	2	11.00	1.29	9.7	8.04E-05	23	0.931	7.5E-05
1	09:00:06	2	8.00	1.41	6.6	8.75E-05	23	0.931	8.1E-05
1	09:00:16	10	3.00	1.62	1.4	7.04E-05	23	0.931	6.6E-05

AVERAGE PERMEABILITY	8.3E-05 cm/sec

FLEXIBLE WALL TRIAXIAL PERMEABILITY
ASTM D 5084
METHOD C, FALLING HEAD WITH INCREASING TAIL WATER PRESSURE
CONSTANT VOLUME

PROJECT	CITY OF EDINBERG LANDFILL/TX	SAMPLE #	G-03-11	TECH	AK/PN
PROJECT NUMBER	993-4450	DEPTH	48'-50'	CALCULATED	PN
BOREHOLE NO.	G-03	CELL #	--	DATE	10/29/99

	Initial Sample Data	Final Sample Data
Height, (cm)	7.04	7.02
Diameter, (cm)	7.21	7.24
Area, (cm ^ 2)	40.9	41.2
Volume, (cm ^ 3)	287.5	289.1
Mass, (g)	597.7	608.6
Moisture Content, (%)	15.7%	18.2%
Dry Density, (pcf)	112.2	111.1
Spec. Gravity (est.)	2.70	2.70
Volume Solids, (cm ^ 3)	191.4	190.7
Volume Voids, (cm ^ 3)	96.2	98.4
Void Ratio	0.50	0.52
Saturation, (%)	84.2%	95.3%

Test Pressures & Apparatus	
B Value	0.96
Cell Pressure, (psi)	80
Back Pressure, (psi)	70
Ain, (cm ^ 2)	0.767
Aout, (cm ^ 2)	0.031
Specific Gravity of Hg	13.56
Specific Gravity of H2	1.00

Moisture Contents	Initial	Final
Tare Number	PN9	T01
Wt Wet Soil+Tare, (g)	56.2	616.5
Wt Dry Soil+Tare, (g)	49.7	522.8
Wt. Tare, (g)	8.0	8.1
Water Content, (%)	15.7%	18.2%

TRIAL NO.	TEST TIME	DELTA TIME	PIPETTE	ANNULUS	Z	K	TEMP	R-T	K-20
		(sec)	(cm)	(cm)	(cm)	(cm/sec)	(Celcius)		(cm/sec)
1	09:00:00	0	25.00	1.00	24.0	0.00E+00	24	0.907	0.0E+00
1	09:00:01	1	23.00	1.08	21.9	3.75E-05	24	0.907	3.4E-05
1	09:00:03	2	21.00	1.16	19.8	2.06E-05	24	0.907	1.9E-05
1	09:00:06	3	19.00	1.25	17.8	1.53E-05	24	0.907	1.4E-05
1	09:00:08	2	17.00	1.33	15.7	2.58E-05	24	0.907	2.3E-05
1	09:00:11	3	15.00	1.41	13.6	1.97E-05	24	0.907	1.8E-05
1	09:00:14	3	13.00	1.49	11.5	2.29E-05	24	0.907	2.1E-05
1	09:00:16	2	12.00	1.53	10.5	1.96E-05	24	0.907	1.8E-05
1	09:00:18	2	11.00	1.57	9.4	2.17E-05	24	0.907	2.0E-05
1	09:00:23	5	9.00	1.66	7.3	2.06E-05	24	0.907	1.9E-05

AVERAGE PERMEABILITY	1.9E-05 cm/sec

FLEXIBLE WALL TRIAXIAL PERMEABILITY
ASTM D 5084
METHOD C, FALLING HEAD WITH INCREASING TAIL WATER PRESSURE
CONSTANT VOLUME

PROJECT	CITY OF EDINBERG LANDFILL/TX	SAMPLE #	G-06-08	TECH	AK/PN
PROJECT NUMBER	993-4450	DEPTH	30'-32'	CALCULATED	PN
BOREHOLE NO.	G-06	CELL #	--	DATE	10/29/99

	Initial Sample Data	Final Sample Data
Height, (cm)	8.05	8.20
Diameter, (cm)	7.21	7.35
Area, (cm ^ 2)	40.8	42.5
Volume, (cm ^ 3)	328.9	348.4
Mass, (g)	724.9	746.9
Moisture Content, (%)	11.3%	15.7%
Dry Density, (pcf)	123.6	115.6
Spec. Gravity (est.)	2.70	2.70
Volume Solids, (cm ^ 3)	241.2	239.1
Volume Voids, (cm ^ 3)	87.7	109.3
Void Ratio	0.36	0.46
Saturation, (%)	84.0%	92.6%

Test Pressures & Apparatus	
B Value	0.98
Cell Pressure, (psi)	80
Back Pressure, (psi)	70
Ain, (cm ^ 2)	0.767
Aout, (cm ^ 2)	0.031
Specific Gravity of Hg	13.56
Specific Gravity of H2	1.00

Moisture Contents

	Initial	Final
Tare Number	PN20	M2
Wt Wet Soil+Tare, (g)	156.7	754.6
Wt Dry Soil+Tare, (g)	141.6	653.4
Wt. Tare, (g)	8.2	7.9
Water Content, (%)	11.3%	15.7%

TRIAL NO.	TEST TIME	DELTA TIME	PIPETTE	ANNULUS	Z	K	TEMP	R-t	K-20
		(sec)	(cm)	(cm)	(cm)	(cm/sec)	(Celcius)		(cm/sec)
1	09:00:00	0	27.50	0.35	27.2	0.00E+00	23	0.931	0.0E+00
1	09:02:15	135	26.20	0.40	25.8	1.79E-07	23	0.931	1.7E-07
1	09:04:10	115	25.60	0.43	25.2	1.01E-07	23	0.931	9.4E-08
1	09:06:53	163	24.90	0.46	24.4	8.54E-08	23	0.931	8.0E-08
1	09:11:31	278	23.90	0.50	23.4	7.42E-08	23	0.931	6.9E-08
1	09:15:58	267	23.10	0.53	22.6	6.43E-08	23	0.931	6.0E-08
1	09:22:23	385	22.10	0.57	21.5	5.81E-08	23	0.931	5.4E-08
1	09:38:40	977	20.00	0.66	19.3	5.19E-08	23	0.931	4.8E-08
1	09:50:39	719	18.70	0.71	18.0	4.78E-08	23	0.931	4.5E-08
1	10:05:43	904	17.30	0.77	16.5	4.43E-08	23	0.931	4.1E-08
1	10:29:01	1398	15.50	0.84	14.7	4.08E-08	23	0.931	3.8E-08
1	10:35:39	398	15.00	0.86	14.1	4.31E-08	23	0.931	4.0E-08

AVERAGE PERMEABILITY	4.1E-08 cm/sec

FLEXIBLE WALL TRIAXIAL PERMEABILITY
ASTM D 5084
METHOD C, FALLING HEAD WITH INCREASING TAIL WATER PRESSURE
CONSTANT VOLUME

PROJECT	CITY OF EDINBERG LANDFILL/TX	SAMPLE #	G-08-13	TECH	PN/AK
PROJECT NUMBER	993-4450	DEPTH	43.5'-45'	CALCULATED	PN
BOREHOLE NO.	G-08	CELL #	--	DATE	10/27/99

	Initial Sample Data	Final Sample Data
Height, (cm)	11.42	11.42
Diameter, (cm)	7.24	7.31
Area, (cm^2)	41.2	41.9
Volume, (cm^3)	469.9	478.5
Mass, (g)	921.3	935.7
Moisture Content, (%)	24.8%	27.3%
Dry Density, (pcf)	98.1	95.9
Spec. Gravity (est.)	2.70	2.70
Volume Solids, (cm^3)	273.4	272.3
Volume Voids, (cm^3)	196.5	206.3
Void Ratio	0.72	0.76
Saturation, (%)	93.2%	97.3%

Test Pressures & Apparatus	
B Value	0.96
Cell Pressure, (psi)	80
Back Pressure, (psi)	70
Ain, (cm^2)	0.767
Aout, (cm^2)	0.031
Specific Gravity of Hg	13.56
Specific Gravity of H2	1.00

Moisture Contents	Initial	Final
Tare Number	M36	T95
Wt Wet Soil+Tare, (g)	235.7	945.4
Wt Dry Soil+Tare, (g)	190.4	744.8
Wt. Tare, (g)	7.8	9.8
Water Content, (%)	24.8%	27.3%

TRIAL NO.	TEST TIME	DELTA TIME	PIPETTE	ANNULUS	Z	K	TEMP	Rt	K-20
		(sec)	(cm)	(cm)	(cm)	(cm/sec)	(Celcius)		(cm/sec)
1	09:00:00	0	22.00	1.15	20.9	0.00E+00	23	0.931	0.0E+00
1	09:00:03	3	20.00	1.23	18.8	2.34E-05	23	0.931	2.2E-05
1	09:00:06	3	18.00	1.31	16.7	2.61E-05	23	0.931	2.4E-05
1	09:00:10	4	16.00	1.40	14.6	2.22E-05	23	0.931	2.1E-05
1	09:00:15	5	14.00	1.48	12.5	2.05E-05	23	0.931	1.9E-05
1	09:00:20	5	12.00	1.56	10.4	2.42E-05	23	0.931	2.3E-05
1	09:00:23	3	11.00	1.60	9.4	2.33E-05	23	0.931	2.2E-05
1	09:00:27	4	10.00	1.64	8.4	1.96E-05	23	0.931	1.8E-05
1	09:00:31	4	9.00	1.68	7.3	2.22E-05	23	0.931	2.1E-05
1	09:00:35	4	8.00	1.72	6.3	2.56E-05	23	0.931	2.4E-05
1	09:00:41	6	7.00	1.76	5.2	2.01E-05	23	0.931	1.9E-05

AVERAGE PERMEABILITY	2.0E-05 cm/sec

FLEXIBLE WALL TRIAXIAL PERMEABILITY
ASTM D 5084
METHOD C, FALLING HEAD WITH INCREASING TAIL WATER PRESSURE
CONSTANT VOLUME

PROJECT	CITY OF EDINBERG LANDFILL/TX	SAMPLE #	G-12-05	TECH	AK/PN
PROJECT NUMBER	993-4450	DEPTH	18'-20'	CALCULATED	PN
BOREHOLE NO.	G-12	CELL #	--	DATE	10/29/99

	Initial Sample Data	Final Sample Data
Height, (cm)	6.22	6.24
Diameter, (cm)	7.25	7.20
Area, (cm ^2)	41.3	40.7
Volume, (cm ^3)	257.0	253.6
Mass, (g)	542.1	550.7
Moisture Content, (%)	17.2%	19.8%
Dry Density, (pcf)	112.3	113.1
Spec. Gravity (est.)	2.70	2.70
Volume Solids, (cm ^3)	171.3	170.3
Volume Voids, (cm ^3)	85.7	83.3
Void Ratio	0.50	0.49
Saturation, (%)	92.8%	109.1%

Test Pressures & Apparatus	
B Value	0.97
Cell Pressure, (psi)	80
Back Pressure, (psi)	70
Ain, (cm ^2)	0.767
Aout, (cm ^2)	0.031
Specific Gravity of Hg	13.56
Specific Gravity of H2	1.00

Moisture Contents	Initial	Final
Tare Number	JW1	AT2
Wt Wet Soil+Tare, (g)	131.1	558.5
Wt Dry Soil+Tare, (g)	113.1	467.6
Wt. Tare, (g)	8.1	7.9
Water Content, (%)	17.2%	19.8%

TRIAL NO.	TEST TIME	DELTA TIME	PIPETTE	ANNULUS	Z	K	TEMP	Rt	K-20
		(sec)	(cm)	(cm)	(cm)	(cm/sec)	(Celcius)		(cm/sec)
1	09:00:00	0	27.00	0.90	26.1	0.00E+00	23	0.931	0.0E+00
1	09:02:27	147	21.00	1.15	19.9	6.74E-07	23	0.931	6.3E-07
1	09:02:57	30	20.00	1.19	18.8	6.50E-07	23	0.931	6.1E-07
1	09:03:29	32	19.00	1.23	17.8	6.44E-07	23	0.931	6.0E-07
1	09:04:04	35	18.00	1.27	16.7	6.24E-07	23	0.931	5.8E-07
1	09:04:41	37	17.00	1.31	15.7	6.29E-07	23	0.931	5.9E-07
1	09:05:22	41	16.00	1.35	14.6	6.06E-07	23	0.931	5.6E-07
1	09:06:05	43	15.00	1.39	13.6	6.21E-07	23	0.931	5.8E-07
1	09:06:52	47	14.00	1.43	12.6	6.13E-07	23	0.931	5.7E-07
1	09:07:42	50	13.00	1.47	11.5	6.26E-07	23	0.931	5.8E-07
1	09:08:37	55	12.00	1.51	10.5	6.23E-07	23	0.931	5.8E-07

AVERAGE PERMEABILITY	5.8E-07 cm/sec

TEST REPORT

Report No.: 0401-1193
Material: Soil Samples
Client: Golder and Associates
Project: 993-4450
Sampled By: Golder and Associates
Attention: Mr. Alan Klotz

Date: December 6, 1999
Page 1 of 19

INCREMENTAL CONSOLIDATION RESULTS
ASTM D 2435

Sample Identification	Sample Description	Initial Moisture Content (%)	Dry Unit Weight (pcf)
G-3, S 11	Silty Clay, brown	15.9	112.5
G-12, S-15, 43.0-45.0	Silty Clay, red	20.3	96.5

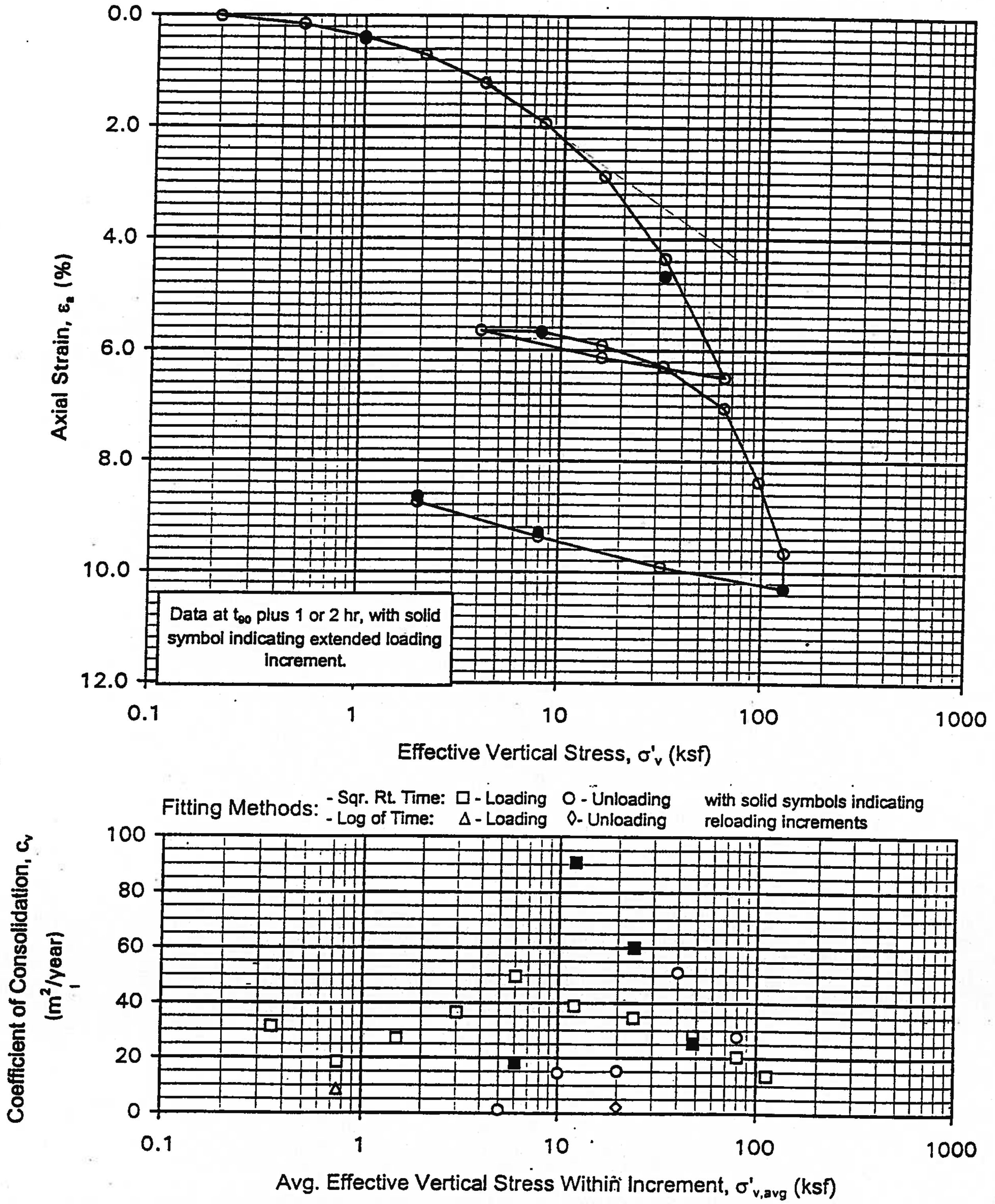
Please see attached sheets for more information.

FUGRO SOUTH, INC.

Maurice Morvant

Maurice Morvant
Geotechnical Laboratory Professional

mnm



INCREMENTAL CONSOLIDATION TEST

Sample No. 11 - Penetration: (not specifed) ft
Boring: G3

ONE - DIMENSIONAL CONSOLIDATION TEST: Specimen Setup / Take Down

Project Number: 0401-1193 Test Station No.: 8 File Name: G3_11
Task No.: NA Specific Gravity, G_s: 2.700 ☐ Meas. ; ☒ Assumed Ring No.: 5
Project Name: Ring Area, A_r (cm^2) = 31.609
Assig. Remarks: ONE DIMENSIONAL CONSOL W/ AN INTERMEDIATE REBOUND STAGE Ring Height (mm) =
TEST TYPE: ☒ Incremental (D 2435); ☐ CRS (D 4186); ☐ Swell / Settlement (D 4546); ☐ Collapse (D 5333); ☐ Other 5
Dial No.: DG 005 DT No.: DT 005 Calib. Factor (mm/V/V): 6.0561 Excit. Volt. (V): 9.043 Ch. No.: 5

☒ Tube ☐ Field Extruded ☐ Liner ☐ Remolded ☐ Tamping ☐ Constant Effort: Blows/Tamps per Layer =
Boring No.: G3 ☐ Reconstituted ☐ Impact/Rammer Rammer Wgt.(lbf)= No. Layers =
Sample No.: 11 Composite No.: NA ☐ Pluviated: Tamper Force (lbf)= Drop (in.) =
Depth (ft): (not specifed) Specimen No.: ☐ Kneading ☐ Undercompaction: U_{nl} (%) = Dia. (in.) =
☒ Spec. Selection by X-ray; ☐ Geomarine Sample ☐ Ref. Effort = % Comp. = ± Opt. =

Water Content (W);	Initial - Trimming Location			Final, W_{at}
	Top (W1)	Bottom (W2)	Sides (W3)	(see below)
Container No.	747	1153	609	601
Mass Moist Soil + Container (g)	116.42	170.30	136.62	64.17
Mass Dry Soil + Container (g)	104.90	151.42	122.66	60.06
Mass Container (g)	31.53	33.02	31.65	31.95
WATER CONTENT (%)	15.70	15.95	15.34	14.62
Avg. Initial Water Content, W4 (%)	15.66	Final W_{at}:	☒ Slice ;	☐ Whole Spec.

☐ See attached data sheet(s) for additional water contents

Soil and Ring Masses	Initial	Final
Mass Moist Soil + Ring (g)	200.26	198.73
Mass Ring (g)	73.76	
Mass Moist Soil, $M_{t,o}$ or $M_{t,at}$ (g)	126.50	124.97

EXCESS DRY SOIL (soil not incl. in final mass above)	
Container No.	138
Mass Dry Soil + Container (g)	29.91
Mass Container (g)	29.91
Mass Excess Dry Soil, $M_{d,es}$ (g)	0.00

Soil Height: Measurements (mm)			
Initial		Final	
with Spec.	without Spec.	with Spec.	without Spec.
19.170	0.000	18.910	0.360
19.210	0.000	18.990	0.370
19.140	0.000	18.390	0.860
19.110	0.000	18.420	0.790
19.170	0.000	18.710	0.540
☐ Yes ;	☒ No	☐ Yes ;	☒ No
☐ Yes ;	☒ No	☒ Yes ;	☐ No

Require H_{gb} & d_{gb} (1)
Filter Paper Included:

(1) Req. block ht. to set bench comparator so the final soil ht. can be determined directly by the diff. between the reading with and without spec. : ~ 12.7 mm; CRS ~ 25 mm
Enter value of H_{gb} & d_{gb} only when that value has to be included in the determination of the soil height.

Soil Height: Calculations, (mm)	Initial	Final
Height of Gauge Block, H_{gb} (1)	0.000	0.000
Reading on Gauge Block, d_{gb}	0.000	0.000
Avg. Reading on Soil, d_{soil}	19.160	18.684
Avg. Reading on Apparatus without Specimen, d_{app}	0.000	0.584
Soil Height, $H = d_{soil} - d_{app} + H_{gb} - d_{gb}$	19.160	18.100

Soil Height: Final by Dial Change During Test (mm)	
Initial Height, H_o	19.160
Final (end of test) Corr. Total Spec. Deformation, $\Delta H_{c,f}$	1.043
Final Calculated Height, $H_{f,c} = H_o - \Delta H_{c,f}$	18.117
Final Soil Height Measurement, $H_{f,m}$	18.100
Normalized Difference in %, $(H_{f,c} - H_{f,m})/H_o$	0.09

Estimated Initial Unit Weight

Total, $\gamma_{t,o}$ (pcf)= 130.40 Dry, $\gamma_{d,o}$ (pcf)= 112.74
Filter Paper Used: ☒ Whatman No. 54; ☐ Other
Incremental Test Top & Bottom: ☒ Yes ; ☐ No
CRS Test Top Only: ☐ Yes ; ☐ No

Soil Extruded During Loading	
Container No.	706
Mass Dry Soil + Cont. (g)	31.84
Mass Cont. (g)	31.74
Dry Mass - Soil Extruded During Loading, $M_{d,et}$ (g)	0.10

Sketch of Specimen

Photo taken of Sliced Test Specimen: ☐ Yes ; ☒ No
Final Visual Description: Silty Clay, brown with sand pockets, carbonate nodules and ferrous stains
Trimming/Etc. Remarks: 3" QUART SAMPLE: SOIL EXTRUSIONS DURING LOSDING OCCURRED

Method of trimming periphery: ☒ "Casagrande" Lathe ; ☐ Cutting Shoe ; ☐ Wire Saw; ☐ Other
Method of trimming ends: ☐ Wire Saw & Sharp (knife) Straight Edge; ☒ Wire Saw & Straight Edge; ☐ Wire Saw

Trim./Recon. By: GP Setup By: GP Prelim. Calc. By: GP Take Down By: GP
Date: 11/01/1999 Date: 11/01/1999 Final Calc. By: GP Date: 11/09/1999
Reviewed By: Spot Checked By: Checked By:

Note: NA - Not Applicable

ONE - DIMENSIONAL CONSOLIDATION TEST:
INCREMENTAL LOADING SUMMARY (Data Input by Hand)

Project Number: 0401-1193
Task No.: NA
Project Name: ______
Test Station No.: 8
Date; Start: 11/01/1999
Completed: 11/09/1999
☒ Undisturbed or ;
☐ Reconstituted - Specimen.
File Name: G3_11
Dial / DT No.: DG 005
Channel No.: 5
DT Factor (mm/V/V): 6.0561
Nominal Excit. Voltage (V_E): 9.043
Initial Height, H_o (mm): 19.16

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Final Deformation Reading		Incremental App. Flex. Correction $\Delta d_{afc,n}$ (mm)		Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)		Corr. Total Specimen Deformation $\Delta H_{c,n}$ (2) (mm)	Axial (Volumetric) Strain, $\varepsilon_{a,n}$ ($\varepsilon_{v,n}$) $\Delta H_{c,n} / H_o$ (%)	Duration of Stress (Load) Increment (hr)
		DT $DT_{rf,n}$ (volts)	Dial or Cal. Value, $d_{arf,n}$ (2) (mm)							
	0.00		8.000	0.000		8.000	(3)	0.000	0.00	0.000
w	0.20		7.982	0.014	(4)	7.986	(6)	0.004	0.02	0.667
s	0.50		7.942	0.014	(5)	7.972	"	0.030	0.16	0.683
	1.00		7.878	0.020	"	7.952	"	0.074	0.39	1.333
	1.00		7.871	0.020	"	7.952	"	0.081	0.42	14.283
	2.00		7.786	0.031	"	7.921	"	0.135	0.70	1.017
	4.00		7.650	0.039	"	7.882	"	0.232	1.21	4.750
	8.00		7.462	0.049	"	7.833	"	0.371	1.94	1.100
	16.00		7.227	0.054	"	7.779	"	0.552	2.88	1.017
	32.00		6.891	0.053	"	7.726	"	0.835	4.36	1.017
	32.00		6.830	0.053	"	7.726	"	0.896	4.68	15.550
	64.00		6.429	0.053	"	7.673	"	1.244	6.49	1.017
	16.00		6.562	-0.064	"	7.737	"	1.175	6.13	1.050
	4.00		6.717	-0.064	"	7.801	"	1.084	5.66	5.633
	8.00		6.680	0.034	"	7.767	"	1.087	5.67	2.367
	8.00		6.678	0.034	"	7.767	"	1.089	5.68	15.533
	16.00		6.616	0.018	"	7.749	"	1.133	5.91	1.017
	32.00		6.512	0.032	"	7.717	"	1.205	6.29	1.600
	64.00		6.324	0.044	"	7.673	"	1.349	7.04	1.450
	96.00		6.027	0.041	"	7.632	"	1.605	8.38	1.017
	128.00		5.749	0.034	"	7.598	"	1.849	9.65	1.017

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.

(2) Increasing deformation reading indicates: ☐ compression; or ☒ swell.

(3) Equals reading at seating stress

(4) "Incr. App. Flex. Corr." for first stress (load) increment equals the 0 % primary consol. value determined by the square root fitting method.

(5) "Incr. App. Flex. Corr." equals the incremental values obtained during the apparatus calibration for simular stress (load) increments..

(6) "Total Def. Corr." equals the seating stress reading plus the sum of the incr. app. flex.corrections up to and including the given (nth) loading increment.

Loading Data By: ______ , ______ , ______ , ______
Remarks: ______

Reviewed By: ______
Spot Checked By: ______
Checked By: ______

ONE - DIMENSIONAL CONSOLIDATION TEST: Specimen Calculations & Summary

Project Number: 0401-1193 Test Station No.: 8 File Name: G3_11
Task No.: NA Specific Gravity, G_s: 2.700 ☐ Measured ; ☒ Assumed.
Calculations Corrected for Salt (dissolved solids): ☒ No or, ☐ Yes, with Concentration = ________ g/kg

Cal.-Routine	ITEM		Water Content, (%)	Mass Dry Soil, (g)	Degree of Saturation, S in %		
					Height Initial	Final Height	
						Meas.	Dial
1	Initial,	Top, W1	15.70	109.33	86.0	94.1	93.8
2	"	Bottom, W2	15.95	109.10	86.8	95.0	94.7
3	"	Sides, W3	15.34	109.68	84.8	92.8	92.5
4	"	Average, W4	15.66	109.37	85.9	94.0	93.7
5	"	Back Calculated (1)	15.92	109.13 (3)	86.7	94.9	94.6
6	Final		14.62	109.03 (2)	87.0	95.3	95.0

Calculated Specific Gravity for Final Saturation = 100%:

Used Cal. Routine No. 5 to obtain the mass of dry soil
and final height by: ☒ Measurement; ☐ Dial Change.
Back Cal. G_s = 2.644
Avg. G_s (measured/assumed) & Back Cal. G_s = 2.672

Calculation Constant, K
= (unit conversion) / $G_s \times \rho_w \times A_r$

Estimated, K_e	0.11738
Final Selected, K_f	0.11738

Calculated Mass Dry Soil for Final Saturation = 100%: using measured/assumed G_s

and final height by: ☒ Measurement; ☐ Dial Change.
Back Cal. Mass Dry Soil, (g) = 107.78
Avg. Back Calculated and Measured Mass Dry Soil (g) = 108.40

Summary of Specimen Physical Propeties

Specific Gravity G_s = 2.700 ☒ Assumed ☐ To make S_f = 100% at end of test.
☐ Measured ☐ Avg. of measured/assumed G_s and G_s to make S_f = 100%

Mass Dry Soil, (g) Initial: 109.13 ☒ From Cal. Routine No. 5 Note: Routine #5 is based on final measurements.
Final (4): 109.03 ☐ Make S_f = 100%, or; ☐ Avg. of measured & make S_f = 100%

Initial Height (mm) = 19.16 ☒ Measured ; ☐ Back Calculated Back-cal. Sat. (%) = NA
Final Height (mm) = 18.10 ☒ Measured ; ☐ Initial H_o & dial change during loading

	Water Content, w (%)	Void Ratio, e	Degree of Saturation, S (%)	Total Unit Weight, γ_t (pcf)	Dry Unit Weight, γ_d (pcf)	Height of Solids, H_s (2,4) (mm)	Extruded soil loss proportioned in increasing loading increments (5)	
							From	To (ksf)
Initial	15.9	0.496	86.7	130.4	112.5	12.810		
Final	14.6	0.414	95.3	136.4	119.0	12.798	64.00	128.00

NA - Indicates not applicable

Notes:

(1) Back Calculated based on final mass of oven-dry soil (corrected for dry mass of any excess and extruded soil).
(2) Corrected for any excess dry soil (soil stuck to ring, filter paper, etc.).
(3) This value is only different from the final value if there is soil extrusion during loading.
(4) Final is only different from the initial value if there is soil extrusion during loading.
(5) There should not be any soil loss in a CRS test, unless stress increments are applied.

Calculated By: KG Reviewed By: ________ Spot Checked By: ________ Checked By: ________
Date: ________

ONE - DIMENSIONAL CONSOLIDATION TEST:
INCREMENTAL LOADING SUMMARY (Data Input by Hand)

Project Number: 0401-1193
Task No.: NA
Project Name: ____________

Test Station No.: 8
Date; Start: 11/01/1999
Completed: 11/09/1999
☒ Undisturbed or ;
☐ Reconstituted - Specimen.

File Name: G3_11
Dial / DT No.: DG 005
Channel No.: 5
DT Factor (mm/V/V): 6.0561
Nominal Excit. Voltage (V_E): 9.043
Initial Height, H_o (mm): 19.16

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Final Deformation Reading		Incremental App. Flex. Correction $\Delta d_{afc,n}$ (mm)		Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)		Corr. Total Specimen Deformation $\Delta H_{c,n}$ (2) (mm)	Axial (Volumetric) Strain, $\varepsilon_{a,n}$ ($\varepsilon_{v,n}$) $\Delta H_{c,n} / H_o$ (%)	Duration of Stress (Load) Increment (hr)
		DT $DT_{rf,n}$ (volts)	Dial or Cal. Value, $d_{arf,n}$ (2) (mm)							
	128.00		5.749	0.034		7.598	(3)	1.849	9.65	1.017
	128.00		5.625	0.034	(4)	7.598	(6)	1.973	10.30	41.550
	32.00		5.779	-0.080	(5)	7.678	"	1.899	9.91	1.017
	8.00		5.952	-0.070	"	7.748	"	1.796	9.37	1.583
	8.00		5.968	-0.070	"	7.748	"	1.780	9.29	31.683
	2.00		6.155	-0.084	"	7.832	"	1.677	8.75	2.517
	2.00		6.175	-0.084	"	7.832	"	1.657	8.65	14.617
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.
(2) Increasing deformation reading indicates: ☐ compression; or ☒ swell.
(3) Equals reading at seating stress
(4) "Incr. App. Flex. Corr." for first stress (load) increment equals the 0 % primary consol. value determined by the square root fitting method.
(5) "Incr. App. Flex. Corr." equals the incremental values obtained during the apparatus calibration for simular stress (load) increments..
(6) "Total Def. Corr." equals the seating stress reading plus the sum of the incr. app. flex.corrections up to and including the given (nth) loading increment.

Loading Data By: ________ , ________ , ________ , ________
Remarks: ____________

Reviewed By:
Spot Checked By: ________
Checked By: ________

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING DATA (Input: Deformation & Fitting Data)

Project Number: 0401-1193
Task No.: NA
Project Name:

Test Station No.: 8
Data; Start: 11/01/1999
Completed: 11/09/1999
Initial Height, H_o (mm): 19.16

Dial / DT No.: DG 005
Channel No.: 5
DT Factor (mm/V/V): 6.0561
Excitation Voltage,V: 9.043

File Name: G3_11

Fitting Method — Deformation Fitting Data Corrected for Total App. Flexibility Corr.: ☐ Yes; ☒ No

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Volumetric (Axial) Strain, $\varepsilon_{v,n}$ ($\varepsilon_{a,n}$) $\Delta H_{c,n} / H_o$ (%)	Void Ratio e_n	Duration of Stress (Load) Increment (hr)	Final Deformation Reading, $d_{rf,n}$ (2) (mm)	Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)	Square Root of Time t_{90} (min)	Square Root of Time d_o (mm)	Square Root of Time d_{90} (mm)	Log of Time t_{50} (min)	Log of Time d_o (mm)	Log of Time d_{100} (mm)	Estimated Dry Mass of Soil Extruded During Incr. $\Delta M_{d,et}$ (g)	Cumm. Dry Mass of Soil Extr. During Incr(s). $\Sigma\Delta M_{d,et}$ (g)	Slope of Secondary Comp. Line (mm / Δlog t)
	0.00	0.00	0.496	0.000	8.000	8.000	Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.								
W	0.20	0.02	0.495	0.667	7.982	7.986									
S	0.50	0.16	0.493	0.683	7.942	7.972	1.3	7.965	7.957						
	1.00	0.39	0.490	1.333	7.878	7.952	2.2	7.912	7.899	1.1	7.911	7.892			
	1.00	0.42	0.489	14.283	7.871	7.952									
	2.00	0.70	0.485	1.017	7.786	7.921	1.5	7.837	7.818						
	4.00	1.21	0.478	4.750	7.650	7.882	1.1	7.733	7.689						
	8.00	1.94	0.467	1.100	7.462	7.833	0.8	7.581	7.520						
	16.00	2.88	0.453	1.017	7.227	7.779	1.0	7.338	7.289						
	32.00	4.36	0.431	1.017	6.891	7.726	1.1	7.088	6.987						
	32.00	4.68	0.426	15.550	6.830	7.726									
	64.00	6.49	0.399	1.017	6.429	7.673	1.3	6.661	6.543						
	16.00	6.13	0.404	1.050	6.562	7.737	0.7	6.365	6.554						
	4.00	5.66	0.411	5.633	6.717	7.801	2.5	6.652	6.685						
	8.00	5.67	0.411	2.367	6.680	7.767	2.0	6.690	6.686						
	8.00	5.68	0.411	15.533	6.678	7.767									
	16.00	5.91	0.407	1.017	6.616	7.749	0.4	6.637	6.629						
	32.00	6.29	0.402	1.600	6.512	7.717	0.6	6.549	6.532						
	64.00	7.04	0.390	1.450	6.324	7.673	1.4	6.400	6.371						
	96.00	8.38	0.370	1.017	6.027	7.632	1.7	6.202	6.128						
	128.00	9.65	0.351	1.017	5.749	7.598	2.5	5.961	5.878						

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.
(2) Increasing deformation reading or fitting value indicates: ☐ compression; or ☒ swell.
(3) Value in brackets indicates, it is an assumed value.

Summary Data Inputted By: ______, ______, ______ Reviewed By: YMM Spot Checked By: ______ Checked By: ______

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING DATA (Input: Deformation & Fitting Data)

Project Number: 0401-1193
Task No.: NA
Project Name:

Test Station No.: 8
Data; Start: 11/01/1999
Completed: 11/09/1999
Initial Height, H_o (mm): 19.16

Dial / DT No.: DG 005
Channel No.: 5
DT Factor (mm/V/V): 6.0561
Excitation Voltage,V: 9.043

File Name: G3_11

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Volumetric (Axial) Strain, $\varepsilon_{v,n}$ ($\varepsilon_{a,n}$) $\Delta H_{c,n} / H_o$ (%)	Void Ratio e_n	Duration of Stress (Load) Increment (hr)	Final Deformation Reading, $d_{rf,n}$ (2) (mm)	Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)	Fitting Method Deformation Fitting Data Corrected for Total App. Flexibility Corr.: ☐ Yes; ☒ No Square Root of Time t_{90} (min)	 Square Root of Time d_o (mm)	 Square Root of Time d_{90} (mm)	 Log of Time t_{50} (min)	 Log of Time d_o (mm)	 Log of Time d_{100} (mm)	Estimated Dry Mass of Soil Extruded During Incr. $\Delta M_{d,et}$ (g)	Cumm. Dry Mass of Soil Extr. During Incr(s). $\Sigma\Delta M_{d,et}$ (g)	Slope of Secondary Comp. Line (mm / Δlog t)
	128.00	9.65	0.351	1.017	5.749	7.598	Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.								
	128.00	10.30	0.342	41.550	5.625	7.598									
	32.00	9.91	0.347	1.017	5.779	7.678	1.2	5.738	5.767						
	8.00	9.37	0.356	1.583	5.952	7.748	2.2	5.892	5.920	3.5	5.894	5.959			
	8.00	9.29	0.357	31.683	5.968	7.748									
	2.00	8.75	0.365	2.517	6.155	7.832	30.7	6.031	6.110						
	2.00	8.65	0.366	14.617	6.175	7.832									

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.
(2) Increasing deformation reading or fitting value indicates: ☐ compression; or ☒ swell.
(3) Value in brackets indicates, it is an assumed value.

Summary Data Inputted By: ______, ______, ______ Reviewed By: Spot Checked By: ______ Checked By: ______

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING RESULTS (Load & Time - Deformation Properties)

Project Number: 0401-1193
Task No.: NA
Project Name: ____________

Boring No.: G3
Sample No.: 11
Penetration (ft): (not specifed)

Test Station No.: 8
Date; Start: 11/01/1999
Completed: 11/09/1999

File Name: G3_11

☒ Undisturbed or ; ☐ Reconstituted - Specimen.

Final Description of Specimen: stiff sicl br/w. w/ sa incl/ ptg. Casbonte deposits/ nods. Grave; and fe stains.

Ring No.: 5
Area (cm²): 31.61
Solids Ht., $H_{s,o}$ (mm): 12.810
Specific Gravity, G_s = 2.700

Initial: Height: (mm) H_o: 19.16 Water Content (%): 15.9 Void Ratio: 0.496 Deg. of Sat. (%): 86.7 Total Unit Weight (pcf): 130.4 Dry Unit Weight (pcf): 112.5

Final: H_f: 18.10 Water Content (%): 14.6 Void Ratio: 0.414 Deg. of Sat. (%): 95.3 Total Unit Weight (pcf): 136.4 Dry Unit Weight (pcf): 119.0

(1)	Final Applied Effective Stress, $\sigma'_{v,f}$ (ksf)	Average Applied Effective Stress, $\sigma'_{v,avg}$ (ksf)	Corr. Vol. Axial Strain $\varepsilon_{v,n}$ ($\varepsilon_{ac,n}$) $\Delta H_{c,n} / H_o$ (%)	Void Ratio, e_n	Rate of Sec. Comp., C_α $\frac{\Delta d_{a,sc} / H_o}{\Delta \log t}$ x 10^{-4}	Based on Square Root of Time Fitting Method						Based on Log of Time Fitting Method						Average	
						Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$ (ᶜ(m²/year)	Vol. Strain at 100% Consol. 100 (ᶜ (m/year)	Coef. of Consol. c_v (m²/year)	Hydraulic Conductivity k @ 20°C (m/year)	Primary Compression Ratio, r_p (%)	Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$ (ᶜ(m²/year)	Vol. Strain at 100% Consol. 100 (ᶜ (m/year)	Coef. of Consol. c_v (m²/year)	Hydraulic Conductivity k @ 20°C (m/ye (m²/year)	Primary Compression Ratio, r_p (%) (m/year)	Coef. of Consol. c_v (m²/year)	Hydraulic Conductivity k (m/year)
	0.00	0.00	0.00	0.50	NA	Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.													
W	0.20	0.10	0.02	0.50															
S	0.50	0.35	0.16	0.49		0.495	0.06	0.08	31.45	9.95E-03	34.2								
	1.00	0.75	0.39	0.49		0.492	0.25	0.28	18.51	5.71E-03	32.8	0.492	0.26	0.31	8.60	3.49E-03	43.2	13.5561	4.60E-03
	1.00	0.75	0.42	0.49							28.3						37.3		
	2.00	1.50	0.70	0.49		0.488	0.49	0.55	27.02	6.09E-03	39.1								
	4.00	3.00	1.21	0.48		0.482	0.91	1.03	36.54	9.53E-03	50.4								
	8.00	6.00	1.94	0.47		0.473	1.49	1.67	49.65	8.98E-03	48.8								
	16.00	12.00	2.88	0.45		0.459	2.44	2.59	38.96	2.83E-03	30.1								
	32.00	24.00	4.36	0.43		0.442	3.62	3.92	34.56	2.59E-03	39.7								
	32.00	24.00	4.68	0.43							32.6								
	64.00	48.00	6.49	0.40		0.412	5.62	5.97	28.04	1.23E-03	37.7								
	16.00	40.00	6.13	0.40		0.397	6.61	6.06	51.00	2.38E-03	304.3								
	4.00	10.00	5.66	0.41		0.407	5.90	5.81	14.50	4.73E-04	40.3								
	8.00	6.00	5.67	0.41		0.411	5.63	5.64	18.23	2.16E-04	148.1								
	8.00	6.00	5.68	0.41							88.9								
	16.00	12.00	5.91	0.41		0.409	5.83	5.85	90.75	1.08E-03	20.2								
	32.00	24.00	6.29	0.40		0.404	6.15	6.19	60.09	7.57E-04	26.2								
	64.00	48.00	7.04	0.39		0.395	6.73	6.81	25.44	2.73E-04	22.4								
	96.00	80.00	8.38	0.37		0.381	7.68	7.89	20.52	5.63E-04	32.1								
	128.00	112.00	9.65	0.35		0.364	8.78	9.03	13.62	4.19E-04	37.8								

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.

Summary Data Inputed By: ________
Calculations By: KG
Reviewed By: ________
Spot Checked By: ________
Checked By: ________

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING RESULTS (Load & Time - Deformation Properties)

Project Number: 0401-1193
Task No.: NA
Project Name:

Boring No.: G3
Sample No.: 11
Penetration (ft): (not specifed)

Test Station No.: 8
Date; Start: 11/01/1999
Completed: 11/09/1999

File Name: G3_11

☒ Undisturbed or ; ☐ Reconstituted - Specimen.

Final Description of Specimen: stiff sicl br/w. w/ sa incl/ ptg. Casbonte deposits/ nods. Grave; and fe stains.

Ring No.: 5
Area (cm^2): 31.61
Solids Ht., $H_{s,o}$ (mm): 12.810
Specific Gravity, G_s = 2.700

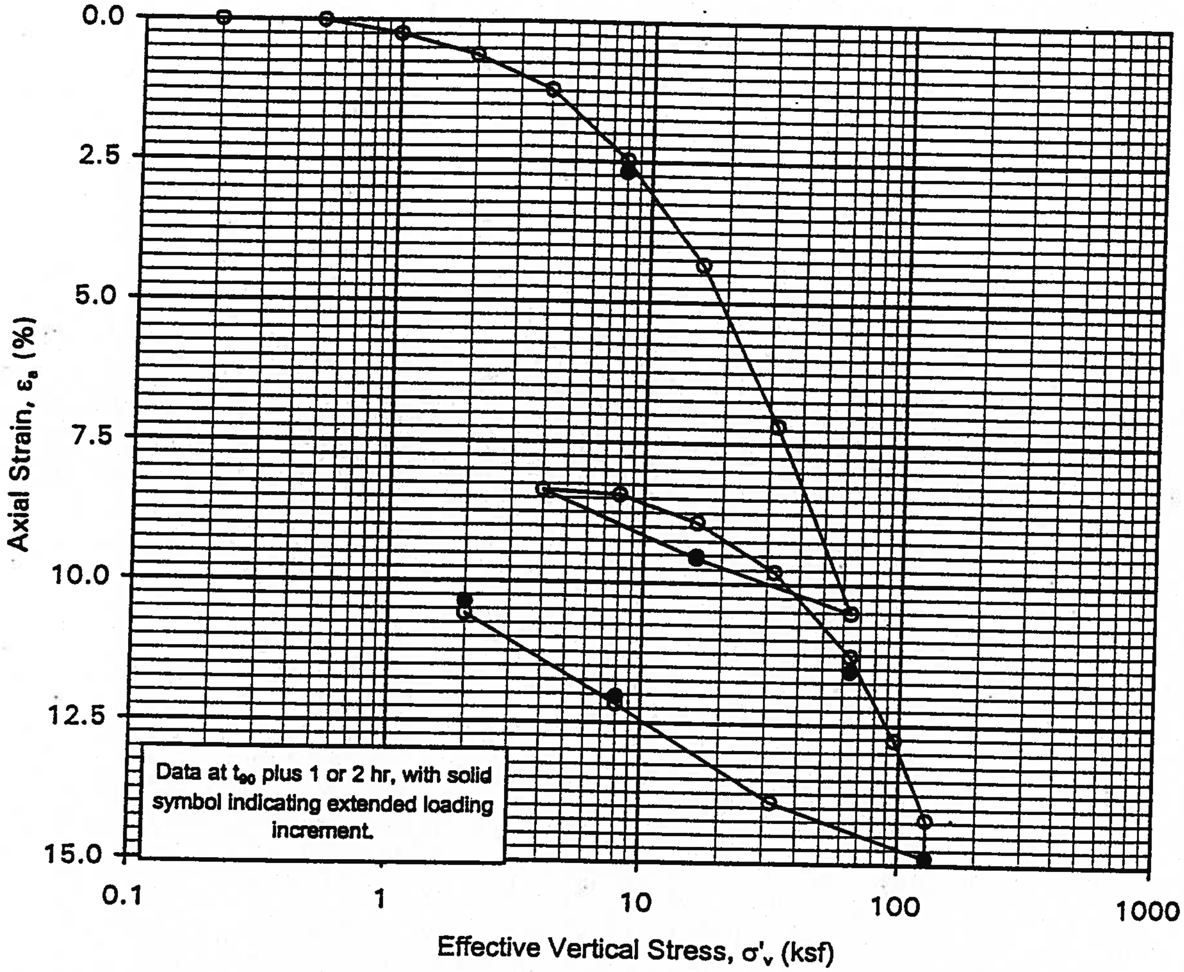
Initial: Height: H_o: 19.16 Water 15.9 Void 0.496 Deg. of 86.7 Total Unit 130.4 Dry Unit 112.5

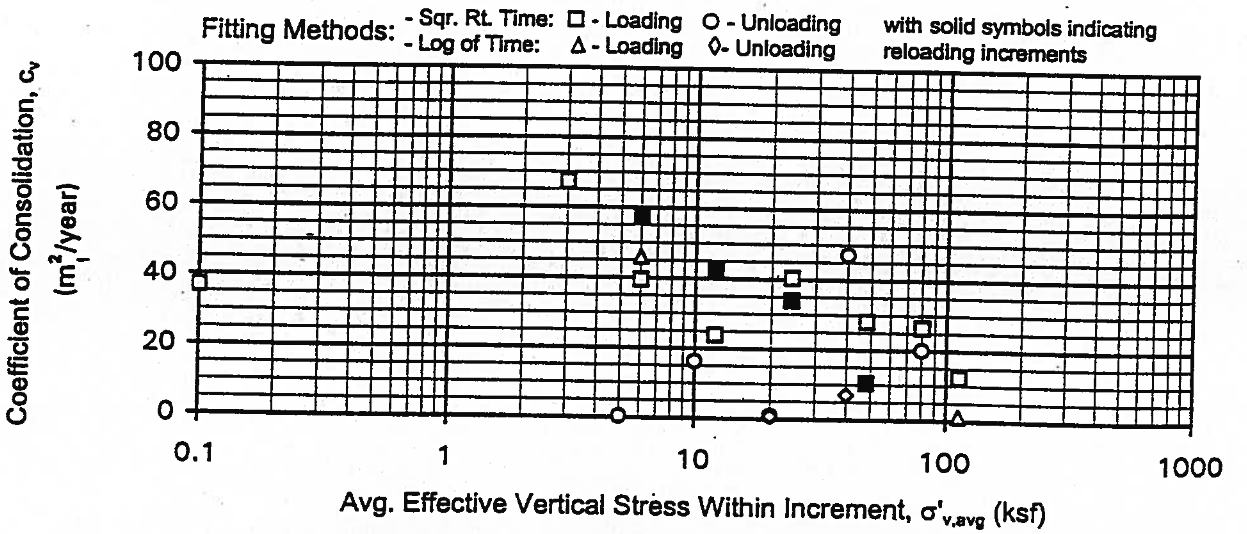
Final: (mm) H_f: 18.10 Content (%): 14.6 Ratio: 0.414 Sat. (%): 95.3 Weight (pcf): 136.4 Weight (pcf): 119.0

						Based on Square Root of Time Fitting Method						Based on Log of Time Fitting Method						Average	
(1)	Final Applied Effective Stress, $\sigma'_{v,f}$ (ksf)	Average Applied Effective Stress, $\sigma'_{v,avg}$ (ksf)	Corr. Vol. Axial Strain $\varepsilon_{v,a}$ ($\varepsilon_{ac,a}$) $\Delta H_{c,a}/H_o$ (%)	Void Ratio, e_a	Rate of Sec. Comp., c_α $\Delta d_{a,sc}/H_o$ / Δ Log t x 10^{-4}	Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$ (^{c}(m^2/year)	Vol. Strain at 100% Consol. $\varepsilon_{v,100}$ (%)	Coef. of Consol. c_v (m^2/year)	Hydraulic Conductivity k @ 20°C (m/year)	Primary Compression Ratio, r (%)	Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$ (^{c}(m^2/year)	Vol. Strain at 100% Consol. $\varepsilon_{v,100}$ (%)	Coef. of Consol. c_v (m^2/year)	Hydraulic Conductivity k @ 20°C (m/yea(m^2/year)	Primary Compression Ratio, r (%)	Coef. of Consol. c_v (m^2/year)	Hydraulic Conductivity k (m/year)
	128.00	112.00	9.65	0.35		Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.													
	128.00	112.00	10.30	0.34							25.1								
	32.00	80.00	9.91	0.35		0.346	10.04	9.96	27.60	9.89E-05	43.5								
	8.00	20.00	9.37	0.36		0.352	9.61	9.52	15.20	2.10E-04	30.2	0.354	9.51	9.34	2.22	6.43E-05	63.1	8.7137	1.37E-04
	8.00	20.00	9.29	0.36							26.1						54.6		
	2.00	5.00	8.75	0.36		0.359	9.17	8.94	1.10	1.72E-04	42.6								
	2.00	5.00	8.65	0.37							71.4								

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.

Summary Data Inputed By: ______ Calculations By: KG Reviewed By: Spot Checked By: ______ Checked By: ______





INCREMENTAL CONSOLIDATION TEST

Sample No. 15 - Penetration: 43.0-45.0 ft
Boring: G12

ONE - DIMENSIONAL CONSOLIDATION TEST: Specimen Setup / Take Down

Project Number: 0401-1193
Test Station No.: 9
Task No.: NA
Specific Gravity, G_s: 2.750 ☐ Meas. ; ☒ Assumed
File Name: G12_15
Project Name:
Ring No.: 9
Ring Area, A_r (cm^2) = 31.570
Assig. Remarks: ONE DIMENSIONAL CONSOL W/ AN INTERMEDIATE REBOUND STAGE
Ring Height (mm) = 19.03
TEST TYPE: ☒ Incremental (D 2435); ☐ CRS (D 4186); ☐ Swell / Settlement (D 4546); ☐ Collapse (D 5333); ☐ Other
Dial No.: DG 004
DT No.: DT 004
Calib. Factor (mm/V/V): 6.1565
Excit. Volt, (V): 9.043
Ch. No.: 4

☒ Tube ☐ Field Extruded ☐ Liner ☐ Remolded ☐ Reconstituted
Boring No.: G12
Sample No.: 15
Depth (ft): 43.0-45.0
Composite No.: NA
Specimen No.:
☒ Spec. Selection by X-ray; ☐ Geomarine Sample

☐ Tamping
☐ Impact/Rammer
☐ Pluviated:
☐ Kneading

☐ Constant Effort:
Rammer Wgt.(lbf)=
Tamper Force (lbf)=
☐ Undercompaction: U_{ni} (%) =
Ref. Effort =
% Comp. =
Blows/Tamps per Layer =
No. Layers =
Drop (in.) =
Dia. (in.) =
± Opt. =

Water Content (W);	Initial - Trimming Location			Final, W_{st}
	Top (W1)	Bottom (W2)	Sides (W3)	(see below)
Container No.	921	531	535	969
Mass Moist Soil + Container (g)	114.81	112.69	126.84	65.78
Mass Dry Soil + Container (g)	102.18	99.11	111.22	58.87
Mass Container (g)	32.02	31.77	31.47	31.88
WATER CONTENT (%)	18.00	20.17	19.59	25.60
Avg. Initial Water Content, W4 (%)	19.25	Final W_{st}:	☒ Slice ;	☐ Whole Spec.

☐ See attached data sheet(s) for additional water contents

Soil and Ring Masses	Initial	Final
Mass Moist Soil + Ring (g)	187.71	192.62
Mass Ring (g)	75.01	
Mass Moist Soil, $M_{t,o}$ or $M_{t,st}$ (g)	112.70	117.61

EXCESS DRY SOIL (soil not incl. in final mass above)	
Container No.	804
Mass Dry Soil + Container (g)	32.02
Mass Container (g)	32.01
Mass Excess Dry Soil, $M_{d,es}$ (g)	0.01

Soil Height: Measurements (mm)			
Initial		Final	
with Spec.	without Spec.	with Spec.	without Spec.
19.250	0.000	19.000	0.340
19.210	0.000	19.380	0.300
19.170	0.000	18.560	0.300
19.170	0.000	18.350	0.310
19.250	0.000	18.940	0.320
☐ Yes ;	☒ No	☐ Yes ;	☒ No	Require H_{gb} & d_{gb} (1)
☐ Yes ;	☒ No	☒ Yes ;	☐ No	Filter Paper Included:

(1) Req. block ht. to set bench comparator so the final soil ht. can be determined directly by the diff. between the reading with and without spec. : ~ 12.7 mm; CRS ~ 25 mm
Enter value of H_{gb} & d_{gb} only when that value has to be included in the determination of the soil height.

Soil Height: Calculations, (mm)	Initial	Final
Height of Gauge Block, H_{gb} (1)	0.000	0.000
Reading on Gauge Block, d_{gb}	0.000	0.000
Avg. Reading on Soil, d_{soil}	19.210	18.846
Avg. Reading on Apparatus without Specimen, d_{app}	0.000	0.314
Soil Height, $H = d_{soil} - d_{app} + H_{gb} - d_{gb}$	19.210	18.532

Soil Height: Final by Dial Change During Test (mm)	
Initial Height, H_o	19.210
Final (end of test) Corr. Total Spec. Deformation, $\Delta H_{c,f}$	1.084
Final Calculated Height, $H_{f,c} = H_o - \Delta H_{c,f}$	18.126
Final Soil Height Measurement, $H_{f,m}$	18.532
Normalized Difference in %, $(H_{f,c} - H_{f,m})/H_o$	-2.11

Estimated Initial Unit Weight

Total, $\gamma_{t,o}$ (pcf)= 116.01
Dry, $\gamma_{d,o}$ (pcf)= 97.28

Filter Paper Used: ☒ Whatman No. 54; - Other
Incremental Test: Top & Bottom: ☒ Yes ; ☐ No
CRS Test: Top Only: ☐ Yes ; ☐ No

Soil Extruded During Loading	
Container No.	780
Mass Dry Soil + Cont. (g)	31.89
Mass Cont. (g)	31.82
Dry Mass - Soil Extruded During Loading, $M_{d,et}$ (g)	0.07

Sketch of Specimen

Photo taken of Sliced Test Specimen: ☐ Yes ; ☒ No
Final Visual Description: Silty Clay, red with carbonate deposits and ferrous deposits

Trimming/Etc. Remarks: 3" QUART SAMPLE: SOIL EXTRUSIONS DURING LOADING OCCURRED @

Method of trimming periphery: ☒ "Casagrande" Lathe ; ☐ Cutting Shoe ; ☐ Wire Saw; ☐ Other
Method of trimming ends: ☐ Wire Saw & Sharp (knife) Straight Edge; ☒ Wire Saw & Straight Edge; ☐ Wire Saw

Trim./Recon. By: GP
Date: 11/01/1999
Setup By: GP
Date: 11/01/1999
Reviewed By:
Prelim. Calc. By: GP
Final Calc. By: GP
Spot Checked By:
Take Down By: GP
Date: 11/09/1999
Checked By:

Note: NA - Not Applicable

ONE - DIMENSIONAL CONSOLIDATION TEST:
INCREMENTAL LOADING SUMMARY (Data Input by Hand)

Project Number: 0401-1193

Task No.: NA

Project Name:

Test Station No.: 9

Date; Start: 11/01/1999

Completed: 11/09/1999

☒ Undisturbed or ;

☐ Reconstituted - Specimen.

File Name: G12_15

Dial / DT No.: DG 004

Channel No.: 4

DT Factor (mm/V/V): 6.1565

Nominal Excit. Voltage (V_E): 9.043

Initial Height, H_o (mm): 19.21

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Final Deformation Reading DT $DT_{rf,n}$ (volts)	Final Deformation Reading Dial or Cal. Value, $d_{arf,n}$ (2) (mm)	Incremental App. Flex. Correction $\Delta d_{afc,n}$ (mm)		Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)		Corr. Total Specimen Deformation $\Delta H_{c,n}$ (2) (mm)	Axial (Volumetric) Strain, $\varepsilon_{a,n}$ ($\varepsilon_{v,n}$) $\Delta H_{c,n}$ / H_o (%)	Duration of Stress (Load) Increment (hr)
	128.00		4.933	0.034		7.661	(3)	2.728	14.20	1.700
	128.00		4.801	0.034	(4)	7.661	(6)	2.860	14.89	46.200
	32.00		5.069	-0.080	(5)	7.741	"	2.672	13.91	1.033
	8.00		5.473	-0.070	"	7.811	"	2.338	12.17	1.483
	8.00		5.499	-0.070	"	7.811	"	2.312	12.04	31.633
	2.00		5.862	-0.084	"	7.895	"	2.033	10.58	4.150
	2.00		5.903	-0.084	"	7.895	"	1.992	10.37	14.667
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			
					"		"			

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.

(2) Increasing deformation reading indicates: ☐ compression; or ☒ swell.

(3) Equals reading at seating stress

(4) "Incr. App. Flex. Corr." for first stress (load) increment equals the 0 % primary consol. value determined by the square root fitting method.

(5) "Incr. App. Flex. Corr." equals the incremental values obtained during the apparatus calibration for simular stress (load) increments..

(6) . "Total Def. Corr." equals the seating stress reading plus the sum of the incr. app. flex.corrections up to and including the given (nth) loading increment.

Loading Data By: ________, ________, ________, ________

Remarks:

Reviewed By:

Spot Checked By:

Checked By:

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING DATA (Input: Deformation & Fitting Data)

Project Number: 0401-1193
Task No.: NA
Project Name:

Test Station No.: 9
Data; Start: 11/01/1999
Completed: 11/09/1999
Initial Height, H_o (mm): 19.21

Dial / DT No.: DG 004
Channel No.: 4
DT Factor (mm/V/V): 6.1565
Excitation Voltage,V: 9.043

File Name: G12_15

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Volumetric (Axial) Strain, $\varepsilon_{v,n}$ ($\varepsilon_{a,n}$) $\Delta H_{c,n} / H_o$ (%)	Void Ratio e_n	Duration of Stress (Load) Increment (hr)	Final Deformation Reading, $d_{rf,n}$ (2) (mm)	Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)	Fitting Method Deformation Fitting Data Corrected for Total App. Flexibility Corr.: ☐ Yes; ☒ No Square Root of Time t_{90} (min)	 Square Root of Time d_o (mm)	 Square Root of Time d_{90} (mm)	 Log of Time t_{50} (min)	 Log of Time d_o (mm)	 Log of Time d_{100} (mm)	Estimated Dry Mass of Soil Extruded During Incr. $\Delta M_{d,et}$ (g)	Cumm. Dry Mass of Soil Extr. During Incr(s). $\Sigma\Delta M_{d,et}$ (g)	Slope of Secondary Comp. Line (mm / Δlog t)
	0.00	0.00	0.776	0.000	8.000	8.000	Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.								
W	0.20	0.00	0.776	0.033	8.040	8.040	1.1	7.906	7.886						
S	0.50	0.01	0.776	0.050	8.033	8.035									
	1.00	0.24	0.772	0.050	7.968	8.015									
	2.00	0.62	0.765	0.483	7.865	7.984									
	4.00	1.23	0.755	1.033	7.709	7.945	0.6	7.797	7.754						
	8.00	2.48	0.732	1.067	7.420	7.896	1.0	7.548	7.487	0.2	7.527	7.531			
	8.00	2.68	0.729	14.283	7.381	7.896									
	16.00	4.33	0.699	1.017	7.010	7.842	1.6	7.216	7.105						
	32.00	7.18	0.649	4.750	6.409	7.789	0.9	6.763	6.565						
	64.00	10.50	0.590	1.200	5.718	7.736	1.2	6.064	5.872						
	16.00	9.56	0.607	1.017	5.964	7.800	0.7	5.597	5.932	1.1	5.906	5.968			
	16.00	9.52	0.607	16.467	5.972	7.800									
	4.00	8.36	0.628	1.617	6.258	7.864	2.1	6.087	6.161						
	8.00	8.43	0.627	1.633	6.210	7.830	0.6	6.239	6.223						
	16.00	8.92	0.618	5.200	6.099	7.812	0.8	6.164	6.119						
	32.00	9.79	0.603	1.100	5.900	7.780	1.0	6.187	5.928						
	64.00	11.28	0.576	1.250	5.569	7.736	3.1	5.693	5.634						
	64.00	11.55	0.571	15.400	5.518	7.736									
	96.00	12.77	0.550	1.017	5.242	7.695	1.2	5.428	5.357						
	128.00	14.20	0.524	1.700	4.933	7.661	2.5	5.165	5.079	6.1	5.158	4.950			

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.
(2) Increasing deformation reading or fitting value indicates: ☐ compression; or ☒ swell.
(3) Value in brackets indicates, it is an assumed value.

Summary Data Inputted By: ________, ________, ________ Reviewed By: ________ Spot Checked By: ________ Checked By: ________

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING DATA (Input: Deformation & Fitting Data)

Project Number: 0401-1193
Task No.: NA
Project Name:

Test Station No.: 9
Data; Start: 11/01/1999
Completed: 11/09/1999
Initial Height, H_o (mm): 19.21

Dial / DT No.: DG 004
Channel No.: 4
DT Factor (mm/V/V): 6.1565
Excitation Voltage,V: 9.043

File Name: G12_15

(1)	Final Applied Effective Stress, $\sigma'_{v,c}$ (ksf)	Volumetric (Axial) Strain, $\varepsilon_{v,n}$ ($\varepsilon_{a,n}$) $\Delta H_{c,n} / H_o$ (%)	Void Ratio e_n	Duration of Stress (Load) Increment (hr)	Final Deformation Reading, $d_{rf,n}$ (2) (mm)	Total App. Flexibility Correction $\Sigma\Delta d_{afc,n}$ (2) (mm)	Fitting Method Deformation Fitting Data Corrected for Total App. Flexibility Corr.: ☐ Yes; ☒ No Square Root of Time t_{90} (min)	 Square Root of Time d_o (mm)	 Square Root of Time d_{90} (mm)	 Log of Time t_{50} (min)	 Log of Time d_o (mm)	 Log of Time d_{100} (mm)	Estimated Dry Mass of Soil Extruded During Incr. $\Delta M_{d,et}$ (g)	Cumm. Dry Mass of Soil Extr. During Incr(s). $\Sigma\Delta M_{d,et}$ (g)	Slope of Secondary Comp. Line (mm / Δlog t)
	128.00	14.20	0.524	1.700	4.933	7.661	Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.								
	128.00	14.89	0.512	46.200	4.801	7.661									
	32.00	13.91	0.529	1.033	5.069	7.741	1.5	4.914	5.002						
	8.00	12.17	0.560	1.483	5.473	7.811	33.6	5.199	5.399	11.6	5.180	5.489			
	8.00	12.04	0.563	31.633	5.499	7.811									
	2.00	10.58	0.588	4.150	5.862	7.895	128.5	5.558	5.822						
	2.00	10.37	0.592	14.667	5.903	7.895									

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.
(2) Increasing deformation reading or fitting value indicates: ☐ compression; or ☒ swell.
(3) Value in brackets indicates, it is an assumed value.

Summary Data Inputted By: ______, ______, ______
Reviewed By:
Spot Checked By: ______
Checked By: ______

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING RESULTS (Load & Time - Deformation Properties)

Project Number: 0401-1193
Task No.: NA
Project Name:
Boring No.: G12
Sample No.: 15
Penetration (ft): 43.0-45.0
Test Station No.: 9
Date; Start: 11/01/1999
Completed: 11/09/1999
File Name: G12_15

☒ Undisturbed or ; ☐ Reconstituted - Specimen.

Final Description of Specimen: Silty Clay, red with carbonate deposits and ferrous deposits

	Ring No.:	9	Area (cm^2):	31.57		Solids Ht., $H_{s,o}$ (mm):	10.814		Specific Gravity, G_s =	2.750				
Initial:	Height:	H_o : 19.21	Water	20.3	Void	0.776	Deg. of	71.7	Total Unit	116.0	Dry Unit	96.5		
Final:	(mm)	H_f : 18.53	Content (%):	25.6	Ratio:	0.715	Sat. (%):	98.4	Weight (pcf):	125.5	Weight (pcf):	99.9		

(1)	Final Applied Effective Stress, $\sigma'_{v,f}$ (ksf)	Average Applied Effective Stress, $\sigma'_{v,avg}$ (ksf)	Corr. Vol. Axial Strain $\varepsilon_{v,a}$ ($\varepsilon_{ac,a}$) $\Delta H_{c,a}/H_o$ (%)	Void Ratio, e_a	Rate of Sec. Comp., c_α $\Delta d_{a,sc}/H_o$ / Δ Log t x 10^{-4}	Based on Square Root of Time Fitting Method: Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$	Vol. Strain at 100% Consol. $\varepsilon_{v,100}$	Coef. of Consol. c_v (m^2/year)	Hydraulic Conductivity k @ 20°C (m/year)	Primary Compression Ratio, r_p (%)	Based on Log of Time Fitting Method: Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$	Vol. Strain at 100% Consol. $\varepsilon_{v,100}$	Coef. of Consol. c_v (m^2/year)	Hydraulic Conductivity k @ 20°C (m/year)	Primary Compression Ratio, r_p (%)	Average Coef. of Consol. c_v (m^2/year)	Average Hydraulic Conductivity k (m/year)
	0.00	0.00	0.00	0.78	NA	Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.													
w	0.20	0.10	0.00	0.78		0.763	0.76	0.81	36.84	4.36E-02	#DIV/0!								
s	0.50	0.35	0.01	0.78															
	1.00	0.75	0.24	0.77															
	2.00	1.50	0.62	0.77															
	4.00	3.00	1.23	0.75		0.760	0.89	1.02	67.36	1.71E-02	40.8								
	8.00	6.00	2.48	0.73		0.741	1.99	2.16	39.53	7.13E-03	28.2	0.742	1.91	1.90	45.98	-4.89E-04	-1.7	42.7533	3.32E-03
	8.00	6.00	2.68	0.73							24.3						-1.4		
	16.00	12.00	4.33	0.70		0.713	3.58	3.90	23.91	3.92E-03	38.9								
	32.00	24.00	7.18	0.65		0.671	5.91	6.49	40.47	5.92E-03	40.1								
	64.00	48.00	10.50	0.59		0.612	9.26	9.81	28.23	2.00E-03	33.4								
	16.00	40.00	9.56	0.61		0.590	10.50	9.53	47.09	3.89E-03	204.5	0.604	9.70	9.54	7.09	9.74E-05	34.1	27.0853	1.99E-03
	16.00	40.00	9.52	0.61							195.9						32.6		
	4.00	10.00	8.36	0.63		0.616	9.04	8.82	16.21	1.18E-03	37.0								
	8.00	6.00	8.43	0.63		0.628	8.33	8.37	57.63	2.73E-03	127.0								
	16.00	12.00	8.92	0.62		0.622	8.71	8.84	42.86	2.85E-03	53.8								
	32.00	24.00	9.79	0.60		0.616	9.04	9.79	34.04	6.52E-03	172.3								
	64.00	48.00	11.28	0.58		0.584	10.81	10.98	10.56	2.30E-04	22.8								
	64.00	48.00	11.55	0.57						•	19.4								
	96.00	80.00	12.77	0.55		0.563	12.01	12.21	26.55	6.97E-04	33.6								
	128.00	112.00	14.20	0.52		0.541	13.24	13.49	12.39	3.94E-04	34.7	0.535	13.57	14.11	1.17	8.10E-05	75.6	6.7793	2.37E-04

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.

Summary Data Inputed By: ________ Calculations By: KG Reviewed By: MMM Spot Checked By: ________ Checked By: ________

ONE - DIMENSIONAL CONSOLIDATION TEST: INCREMENTAL LOADING RESULTS (Load & Time - Deformation Properties)

Project Number: 0401-1193
Task No.: NA
Project Name:

Boring No.: G12
Sample No.: 15
Penetration (ft): 43.0-45.0
☒ Undisturbed or ; ☐ Reconstituted - Specimen.

Test Station No.: 9
Date; Start: 11/01/1999
Completed: 11/09/1999
File Name: G12_15

Final Description of Specimen: Silty Clay, red with carbonate deposits and ferrous deposits

	Ring No.: 9	Area (cm²):	31.57	Solids Ht., $H_{s,0}$ (mm):	10.814		Specific Gravity, G_s =	2.750				
Initial:	Height: H_0: 19.21	Water	20.3	Void	0.776	Deg. of	71.7	Total Unit	116.0	Dry Unit	96.5
Final:	(mm) H_f: 18.53	Content (%):	25.6	Ratio:	0.715	Sat. (%):	98.4	Weight (pcf):	125.5	Weight (pcf):	99.9

(1)	Final Applied Effective Stress, $\sigma'_{v,f}$ (ksf)	Average Applied Effective Stress, $\sigma'_{v,avg}$ (ksf)	Corr. Vol. Axial Strain $\varepsilon_{v,n}$ ($\varepsilon_{ac,n}$) $\Delta H_{c,n}/H_o$ (%)	Void Ratio, e_n	Rate of Sec. Comp., C_α $\frac{\Delta d_{s,sc}/H_o}{\Delta \text{Log } t}$ x 10^{-4}	Based on Square Root of Time Fitting Method						Based on Log of Time Fitting Method						Average	
						Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$ (%)	Vol. Strain at 100% Consol. $\varepsilon_{v,100}$ (%)	Coef. of Consol. c_v (m²/year)	Hydraulic Conductivity k @ 20°C (m/year)	Primary Compression Ratio, r (%)	Void Ratio at 50% Consol. e_{50}	Vol. Strain at 50% Consol. $\varepsilon_{v,50}$ (%)	Vol. Strain at 100% Consol. $\varepsilon_{v,100}$ (%)	Coef. of Consol. c_v (m²/year)	Hydraulic Conductivity k @ 20°C (m/year)	Primary Compression Ratio, r (%)	Coef. of Consol. c_v (m²/year)	Hydraulic Conductivity k (m/year)
	128.00	112.00	14.20	0.52		Data summarized below applies to the stress (load) increment associated with the final applied eff. stress on that line.													
	128.00	112.00	14.89	0.51							23.5						51.1		
	32.00	80.00	13.91	0.53		0.519	14.46	14.21	20.07	2.18E-04	52.0								
	8.00	20.00	12.17	0.56		0.545	13.02	12.44	0.93	9.13E-05	66.5	0.547	12.89	12.09	0.63	8.57E-05	92.5	0.7758	8.85E-05
	8.00	20.00	12.04	0.56							61.7						85.8		
	2.00	5.00	10.58	0.59		0.574	11.40	10.64	0.25	1.31E-04	52.6								
	2.00	5.00	10.37	0.59							91.7								

(1) W - water added, S - stress level applied to prevent swelling, P - indicates that the extended loading data point will be part of the consolidation curve.

Summary Data Inputed By: ________ Calculations By: KG Reviewed By: MM Spot Checked By: ________ Checked By: ________

APPENDIX III4E

HISTORIC GROUNDWATER ELEVATIONS

TABLE III4E1
HISTORICAL GROUNDWATER ELEVATIONS (FT MSL)
Type I Monitoring Wells
CITY OF EDINBURG LANDFILL
EDINBURG, TEXAS

Top of Casing Elevations, 10/26/00, (ft msl)	87.58	87.54	89.41	89.36	92.73	94.57	98.38	90.46	91.34	89.99	90.04	87.49	93.49	89.19	89.22	87.73	86.74	88.33	90.10	89.81	91.48	90.99	91.07	92.33	93.20	91.32	88.38	91.35	88.06	95.15	90.72	90.35	
Date	**MW -1**	**MW-1R**	**MW-2**	**MW-2R**	**MW-3**	**MW-3RA**	**MW-3A**	**MW-4**	**MW-4R**	**MW-4A**	**MW-5**	**MW-6**	**MWD-6**	**MW-7**	**MW-7R**	**MWD-7**	**MW-8**	**MW-8R**	**MW-9**	**MW-9R**	**MW-10**	**MW-10R**	**MW-11**	**MW-12**	**MW-15**	**MW-15R**	**MW-16**	**MW-18**	**MW-18R**	**MW-22**	**MW-23**	**MW-24**	**Sampled By**
04/28/93	64.91	--	65.64	--	65.48	--	--	64.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	RUST
04/30/93	64.90	--	65.69	--	65.47	--	--	64.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	RUST
05/13/93	64.86	--	65.64	--	65.40	--	--	64.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	RUST
06/23/93	65.80	--	65.46	--	65.39	--	--	64.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	RUST
07/15/93	65.33	--	66.82	--	66.18	--	--	65.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	RUST
08/12/93	65.13	--	66.69	--	66.38	--	--	65.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	RUST
10/16/97	63.48	--	64.21	--	64.93	--	--	66.56	--	--	65.14	67.99	--	65.39	--	--	66.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ANALABS
02/11/98	63.93	--	64.76	--	65.68	--	--	64.96	--	--	65.46	65.30	--	64.75	--	--	64.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
02/16/98	64.01	--	64.75	--	65.72	--	--	64.84	--	--	65.62	65.49	--	65.03	--	--	64.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
05/07/98	63.18	--	63.91	--	66.23	--	--	65.06	--	--	65.94	65.59	--	64.69	--	--	63.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ANALABS
06/16/98	62.80	--	63.25	--	65.92	--	--	64.66	--	--	65.57	65.25	--	64.22	--	--	62.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
06/25/98	62.77	--	63.13	--	65.82	--	--	64.60	--	--	65.48	65.17	--	64.22	--	--	62.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
12/04/98	63.67	--	63.48	--	66.90	--	--	65.63	--	--	66.55	66.21	--	65.76	--	--	66.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
01/13/99	63.68	--	63.49	--	66.75	--	--	65.54	--	--	66.40	66.09	--	65.50	--	--	65.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
03/22/99	63.91	--	63.55	--	66.33	--	--	65.31	--	--	66.06	65.80	--	65.14	--	--	64.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
07/21/99	63.74	--	63.83	--	66.08	--	--	65.13	--	--	65.76	65.52	--	65.00	--	--	64.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
10/26/99	63.70	--	64.21	--	65.93	--	--	64.76	--	--	65.56	65.24	--	65.10	--	--	64.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
01/27/00	63.66	--	64.49	--	65.52	--	--	64.60	--	--	65.16	64.96	--	65.54	--	--	64.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SEM
05/02/00	63.68	--	64.46	--	65.15	--	--	64.36	--	--	64.77	64.60	--	64.39	--	--	64.79	--	63.67	--	63.99	--	--	--	--	--	--	--	--	--	--	--	SEM
06/30/00	63.88	--	64.49	--	65.32	--	--	64.31	--	--	64.65	64.46	--	64.38	--	--	65.48	--	64.19	--	65.17	--	--	--	--	--	--	--	--	--	--	--	SEM
09/06/00	63.46	--	64.12	--	64.18	--	--	63.88	--	--	63.79	63.69	--	63.93	--	--	64.31	--	63.92	--	66.19	--	--	--	--	--	--	--	--	--	--	--	SEM
10/25/00	63.35	--	63.65	--	63.99	--	--	63.64	--	--	63.68	63.55	--	63.87	--	--	64.12	--	63.56	--	63.87	--	--	--	--	--	--	--	--	--	--	--	SEM
01/15/01	63.17	--	63.31	--	63.88	--	--	63.45	--	--	63.62	63.56	--	63.36	--	--	63.54	--	63.27	--	63.39	--	--	--	--	--	--	--	--	--	--	--	SEM
07/17/01	64.73	--	63.67	--	64.43	--	--	63.42	--	--	64.11	63.84	--	63.82	--	--	67.79	--	64.05	--	66.47	--	--	--	--	--	--	--	--	--	--	--	SEM
08/20/01	64.35	--	63.32	--	--	--	--	63.23	--	--	--	63.50	--	63.63	--	--	66.23	--	63.72	--	65.31	--	--	--	--	--	--	--	--	--	--	--	SEM
10/29/01	64.02	--	63.06	--	63.64	--	--	63.11	--	--	63.40	63.29	--	63.29	--	--	65.38	--	63.40	--	65.15	--	--	--	--	--	--	--	--	--	--	--	SEM
12/18/01	64.71	--	63.24	--	64.01	--	--	--	--	--	--	--	--	--	--	--	66.35	--	63.49	--	65.82	--	--	--	--	--	--	--	--	--	--	--	SEM
01/24/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	63.56	--	65.03	--	--	--	--	--	--	--	--	--	--	--	SEM
03/15/02	64.18	--	63.44	--	63.96	--	--	63.22	--	--	63.77	63.49	--	63.51	--	--	65.68	--	63.53	--	64.59	--	--	--	--	--	--	--	--	--	--	--	SEM
04/23/02	63.89	--	63.36	--	63.74	--	--	63.16	--	--	63.51	63.39	--	63.34	--	--	65.34	--	63.32	--	64.36	--	--	--	--	--	--	--	--	--	--	--	SEM
10/14-15/02	64.49	--	62.92	--	64.27	--	--	63.43	--	--	64.12	63.71	--	63.59	--	--	69.69	--	63.40	--	64.13	--	--	--	--	--	--	--	--	--	--	--	SEM
04/16-17/03	65.51	--	64.38	--	65.92	--	--	--	64.01	--	65.50	65.31	--	65.37	--	--	68.77	--	64.22	--	64.08	--	--	--	--	--	--	--	--	--	--	--	SEM
10/29-30/03	--	71.13	--	66.41	--	66.96	--	--	64.23	--	66.99	66.30	--	66.71	--	--	78.83	--	66.65	--	66.61	--	65.29	66.88	--	--	--	--	--	--	--	--	GAI
01/14/04	--	69.23	--	68.16	--	68.20	--	--	65.91	--	--	--	--	67.65	--	--	74.55	--	66.79	--	67.25	--	66.20	68.13	--	--	--	--	--	--	--	--	GAI
01/21/04	--	68.97	--	68.03	--	68.13	--	--	65.81	--	--	--	--	67.44	--	--	73.98	--	66.75	--	67.20	--	66.26	68.16	--	--	--	--	--	--	--	--	GAI
5/19-20/04	--	69.16	--	69.46	--	69.02	--	--	66.25	--	--	--	--	68.30	--	--	72.33	--	68.14	--	67.44	--	66.75	68.99	--	--	--	--	--	--	--	--	GAI
7/14-15/2004	--	70.56	--	70.30	--	69.59	--	--	68.12	--	--	--	--	68.83	--	--	73.10	--	69.30	--	67.86	--	67.18	69.58	--	--	--	--	--	--	--	--	GAI
11/11-12/2004	--	69.79	--	71.44	--	70.59	--	--	69.64	--	--	--	--	70.54	--	--	74.10	--	70.15	--	68.92	--	69.05	70.18	--	--	--	--	--	--	--	--	GAI
2/15-16/2005	--	69.92	--	70.49		70.40	--		69.19	--			--	62.62	--	--	72.56	--	69.85	--	69.46	--	68.77	70.11	--	--	--	--	--	--	--	--	GAI
5/17-18/2005	--	69.92	--	70.46	--	70.21	--	--	68.87	--	--	--	--	69.42	--	--	72.84	--	69.96	--	69.72	--	68.73	69.99	--	--	--	--	--	--	--	--	GAI
9/13-15/2005	--	67.93	--	68.58	--	69.49	--	--	67.44	--	--	--	--	--	--	--	--	--	--	--	--	--	68.15	70.53	--	--	--	--	--	--	--	--	GAI
11/30/05	--	67.69	--	67.46	--	68.16	--	--	67.97	--	--	--	--	68.00	--	--	70.11	--	67.51	--	67.87	--	67.53	68.21	--	--	--	--	--	--	--	--	GAI
5/30-31/2006	--	67.21	--	66.68	--	66.78	--	--	66.48	--	--	--	--	66.72	--	--	68.95	--	66.90	--	66.82	--	66.37	66.82	67.57	--	--	67.71	--	--	--	--	GAI
09/29/06	--	75.28	--	70.18	--	70.43	--	--	70.35	--	--	--	--	71.04	--	--	78.09	--	70.12	--	70.03	--	71.55	70.39	71.13	--	--	69.90	--	--	--	--	GAI
10/30-31/2006	--	75.94	--	73.34	--	71.92	--	--	72.98	--	--	--	--	73.35	--	--	79.02	--	73.31	--	71.31	--	73.09	72.14	73.15	--	--	72.56	--	--	--	--	GAI
12/18-19/2006	--	73.32	--	72.41	--	72.27	--	--	72.59	--	--	--	--	72.87	--	--	75.30	--	71.87	--	71.93	--	72.40	72.33	72.45	--	--	72.71	--	--	--	--	GAI
3/21-22/2007	--	73.92	--	72.68	--	72.36	--	--	71.56	--	--	--	--	72.89	--	--	75.79	--	71.06	--	71.15	--	71.42	72.31	72.42	--	--	73.20	--	--	--	--	GAI
5/22-23/2007	--	72.61	--	72.56	--	71.94	--	--	72.53	--	--	--	--	71.91	--	--	73.18	--	72.53	--	72.79	--	71.02	71.74	72.03	--	--	72.04	--	--	--	--	GAI
08/02/07	--	--	--	73.68	--	72.38	--	--	72.72	--	--	--	--	72.53	--	--	77.33	--	--	--	--	--	73.42	72.64	--	--	--	--	--	--	--	--	GAI
09/05/07	--	74.14	--	75.87	--	74.96	--	--	74.88	--	--	--	--	75.03	--	--	76.17	--	75.16	--	75.23	--	74.17	74.83	--	--	--	--	--	--	--	--	GAI
12/18-19/2007	--	74.45	--	73.54	--	72.67	--	--	72.36	--	--	--	--	72.85	--	--	75.63	--	73.62	--	73.84	--	71.87	71.87	--	--	--	--	--	--	--	--	GAI
2/6-7/2008	--	73.72	--	72.91	--	72.08	--	--	71.95	--	--	--	--	72.28	--	--	74.63	--	73.05	--	73.32	--	71.49	71.98	--	--	--	--	--	--	--	--	GAI
6/18-19/2008	--	71.29	--	71.01	--	70.84	--	--	70.78	--	--	--	--	70.82	--	--	72.41	--	71.19	--	71.51	--	70.40	70.60	--	--	--	--	--	--	--	--	GAI
08/15/08	--	--	--	77.56	--	74.35	--	--	74.42	--	--	--	--	--	--	--	78.96	--	--	--	--	--	74.59	74.08	--	--	--	--	--	--	--	--	GAI
5/12-13/2009	--	74.23	--	74.79	--	74.09	--	--	73.35	--	--	--	--	74.37	--	--	--	--	74.95	--	75.27	--	73.98	73.66	75.18	--	--	74.52	--	--	--	--	GAI
06/4-06/5/2009	--	75.52	--	74.49	--	--	74.02	--	--	74.05	--	--	72.99	--	74.44	--	--	75.61	--	74.66	--	75.12	73.82	73.53	--	74.04	74.07	--	73.20	74.12	74.35	75.42	GAI
09/14-09/15/2009	--	74.69	--	74.03	--	--	72.91	--	--	73.28	--	--	72.16	--	74.02	--	--	75.08	--	73.84	--	74.11	72.90	72.62	--	73.07	73.10	--	72.27	73.02	73.31	74.75	GAI
09/30/09	--	--	--	73.82	--	72.87	--	--	--	--	--	--	--	73.59	--	--	75.23	--	74.16	--	--	--	73.04	72.75	--	--	--	--	--	--	--	--	GAI
12/14/09-12/15/09	--	74.60	--	73.76	--	--	73.20	--	--	73.42	--	--	73.19	--	73.65	--	--	75.62	--	74.04	--	74.43	73.09	73.03	--	73.83	74.20	--	73.31	73.15	73.37	74.87	GAI

TABLE III4E1
HISTORICAL GROUNDWATER ELEVATIONS (FT MSL)
Type I Monitoring Wells
CITY OF EDINBURG LANDFILL
EDINBURG, TEXAS

Top of Casing Elevations, 10/26/00, (ft msl)	87.58	87.54	89.41	89.36	92.73	94.57	98.38	90.46	91.34	89.99	90.04	87.49	93.49	89.19	89.22	87.73	86.74	88.33	90.10	89.81	91.48	90.99	91.07	92.33	93.20	91.32	88.38	91.35	88.06	95.15	90.72	90.35	
Date	**MW -1**	**MW-1R**	**MW-2**	**MW-2R**	**MW-3**	**MW-3RA**	**MW-3A**	**MW-4**	**MW-4R**	**MW-4A**	**MW-5**	**MW-6**	**MWD-6**	**MW-7**	**MW-7R**	**MWD-7**	**MW-8**	**MW-8R**	**MW-9**	**MW-9R**	**MW-10**	**MW-10R**	**MW-11**	**MW-12**	**MW-15**	**MW-15R**	**MW-16**	**MW-18**	**MW-18R**	**MW-22**	**MW-23**	**MW-24**	**Sampled By**
02/23/10-02/24/10	--	76.89	--	75.61	--	74.37	--	--	74.57	--	--	--	--	75.08	--	--	77.62	--	75.26	--	75.26	--	74.40	74.30	75.86	--	--	76.17	--	--	--	--	GAI
4/6-4/7/2010	--	76.19	--	75.41	--	74.52	74.76	--	74.64	74.87	--	--	74.49	--	75.57	--	--	77.02	--	75.50	--	76.12	74.02	74.69	--	74.27	74.17	76.25	75.47	74.75	75.05	76.39	GAI
7/20-7/21/2010	--	79.79	--	77.91	--	--	75.88	--	--	76.37	--	--	75.54	--	78.32	--	--	80.11	--	78.26	--	76.84	--	75.93	--	76.52	76.73	--	77.16	75.85	76.52	77.70	GAI
11/9-11/11/2010	--	79.19	--	78.33	--	76.90	77.18	--	77.74	77.89	--	--	75.44	77.99	78.52	--	79.05	79.18	77.83	78.36	77.58	78.64	77.12	77.18	77.85	76.87	76.58	78.40	77.81	77.20	77.72	79.16	GAI
12/13/10	--	--	--	78.11	--	76.52	--	--	77.19	--	--	--	--	77.45	--	--	--	--	--	--	--	--	--	76.50	--	--	--	--	--	--	--	--	GAI
2/22-2/24/2011	--	77.58	--	76.74	--	--	76.33	--	--	76.93	--	--	75.46	--	77.30	--	--	77.99	--	76.94	--	77.38	76.54	76.01	--	76.07	75.46	--	76.38	76.26	76.40	77.71	GAI
6/21-6/22/2011	--	73.51	--	73.38	--	--	74.86	--	--	74.68	--	--	73.32	--	74.64	--	--	74.20	--	73.73	--	73.97	75.49	74.24	--	74.53	73.78	--	72.76	74.63	74.00	74.01	GAI
12/12-12/13/2011	--	71.34	--	69.88	--	--	72.06	--	--	72.80	--	--	71.79	--	72.78	--	--	72.54	--	70.73	--	71.00	73.05	72.29	--	73.07	72.53	--	71.20	71.67	70.94	71.33	GAI
01/19/12	--	--	--	69.62	--	--	--	--	72.78	72.38	--	--	71.71	--	--	--	--	--	--	70.22	--	--	--	--	--	--	--	--	70.65	71.51	70.51		GAI
6/27-6/28/2012	--	69.86	--	68.57	--	--	70.41	--	--	70.48	--	--	69.69	--	70.15	--	--	71.03	--	68.05	--	69.44	71.40	70.69	--	71.98	72.18	--	70.55	69.83	69.09	69.87	GAI
07/25/12	--	69.08	--	--	--	--	--	--	69.93	69.15	--	--	--	--	--	--	--	--	--	68.55	--	--	--	--	--	--	--	--	--	--	--	69.19	GAI
12/10-12/11/2012	--	67.78	--	66.43	--	--	68.23	--	--	68.59	--	--	68.94	--	68.45	--	--	68.74	--	66.90	--	67.46	68.87	68.59	--	69.73	70.06	--	69.65	67.69	67.01	67.70	GAI
01/07/13	--	67.42	--	66.28	--	--	68.30	--	68.50	71.71	--	--	68.65	--	--	--	--	--	--	--	--	--	--	--	--	--	69.11	--	--	--	--	67.53	GAI
03/27/13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	GAI
06/12 - 06/13/13	--	66.68	--	65.49	--	--	72.70	--	--	66.88	--	--	67.40	--	67.13	67.82	--	67.33	--	65.86	--	66.35	67.27	67.26	--	67.32	67.60	--	67.55	66.21	65.70	66.60	GAI
07/19/13	--	--	--	66.46	--	--	67.33	--	--	66.90	--	--	71.71	--	--	--	--	--	--	66.29	--	--	--	--	--	--	70.65	--	68.42	--	--	67.24	GAI
09/25/13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	70.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	GAI
12/13 - 12/14/13	--	71.07	--	67.79	--	--	69.25	--	--	69.64	--	--	70.33	--	71.68	70.73	--	72.13	--	68.09	--	68.99	69.72	69.92	--	69.88	70.14	--	70.86	68.49	67.97	70.97	GAI
02/04/14	--	71.63	--	68.40	--	--	69.43	--	--	70.12	--	--	70.53	--	--	--	--	--	--	68.60	--	--	--	70.02	--	--	70.43	--	--	--	--	71.21	GAI
03/21/14	--	71.82	--	68.77	--	--	69.49	--	--	70.43	--	--	70.49	--	72.18	70.95	--	73.24	--	69.10	--	69.93	70.26	69.94	--	70.52	70.84	--	70.82	69.04	68.69	71.61	GAI
6/21 - 6/22/14	--	69.65	--	67.97	--	--	69.39	--	--	69.34	--	--	69.98	--	69.59	69.72	--	70.70	--	68.48	--	69.28	69.95	69.78	--	70.34	70.31	--	70.09	68.87	68.35	69.94	GAI
07/25/14	--	68.95	--	65.68	--	--	--	--	--	66.82	--	--	69.78	--	--	--	--	69.23	--	68.02	--	67.31	--	68.21	--	--	71.04	--	--	--	--	67.92	GAI
09/05/14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	69.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	GAI
12/10 - 12/11/14	--	71.80	--	69.17	--	--	70.43	--	--	70.20	--	--	71.16	--	72.15	71.96	--	72.95	--	69.31	--	69.77	70.63	70.72	--	74.19	72.51	--	71.64	69.91	69.15	71.29	GAI
01/13/15	--	73.22	--	69.96	--	--	--	--	--	--	--	--	71.63	--	73.39	--	--	--	--	69.79	--	70.50	--	--	--	--	74.45	--	72.33	--	--	72.84	GAI
2/24 - 2/25/15	--	72.95	--	70.26	--	--	71.10	--	--	71.77	--	--	71.86	--	73.12	72.02	--	75.23	--	70.52	--	71.31	71.88	71.61	--	72.98	73.42	--	72.21	70.71	70.33	72.67	GAI
03/25/15	--	73.14	--	70.41	--	--	71.38	--	--	72.09	--	--	75.99	--	73.72	72.03	--	75.23	--	70.71	--	71.59	72.37	71.68	--	73.42	73.88	--	72.21	71.05	70.52	72.90	GAI
04/20 - 4/21/15	--	79.24	--	72.69	--	--	72.00	--	--	73.82	--	--	72.28	--	75.59	73.41	--	79.07	--	72.74	--	72.57	73.33	72.21	--	74.01	73.89	--	73.73	71.81	71.97	75.58	GAI
05/28/15	--	81.73	--	74.63	--	--	73.84	--	--	76.34	--	--	73.34	--	78.27	75.27	--	81.65	--	75.89	--	79.16	75.25	73.55	--	74.97	75.27	--	73.60	74.27	74.07	79.36	GAI
06/22 - 06/26/15	--	82.62	--	76.01	--	--	74.91	--	--	76.66	--	--	74.26	--	79.47	76.90	--	82.51	--	76.19	--	76.02	77.19	75.46	--	77.62	76.81	--	74.57	74.91	75.04	83.89	GAI
7/27- 7/30/2015	--	78.97	--	75.06	--	--	76.03	--	--	77.21	--	--	75.54	--	78.02	76.09	--	79.63	--	75.26	--	76.13	77.39	75.99	--	77.20	77.17	--	75.66	75.71	75.10	77.45	GAI
8/20-21/2015	--	77.49	--	74.66	--	--	75.75	--	--	76.51	--	--	75.63	--	76.78	75.31	--	77.94	--	74.96	--	75.72	76.88	75.76	--	76.75	77.07	--	75.61	75.36	74.62	77.32	GAI
9/28-29/2015	--	76.65	--	74.51	--	--	75.64	--	--	76.02	--	--	75.95	--	76.15	75.24	--	77.00	--	74.77	--	75.50	76.45	75.86	--	76.74	77.05	--	75.95	75.18	74.56	77.32	GAI
10/19/15	--	76.43	--	74.41	--	--	75.51	--	--	75.85	--	--	75.99	--	76.02	75.13	--	76.80	--	74.66	--	75.40	76.30	75.77	--	76.59	77.03	--	76.07	75.06	74.46	76.36	GAI
11/16/15	--	77.64	--	75.63	--	--	76.34	--	--	76.84	--	--	76.39	--	77.30	75.97	--	78.41	--	75.77	--	76.55	77.05	76.50	--	77.30	76.81	--	76.54	75.72	75.22	77.64	GAI
12/7-10/2015	--	77.17	--	75.40	--	--	76.11	--	--	76.69	--	--	76.02	--	76.95	75.70	--	77.81	--	75.65	--	76.41	76.82	76.19	--	77.10	77.08	--	76.17	75.70	75.29	77.19	GAI
1/25-26/2016	--	76.73	--	75.12	--	--	75.93	--	--	76.47	--	--	75.78	--	76.70	75.25	--	77.28	--	75.30	--	75.96	77.73	76.02	--	76.97	77.05	--	75.79	75.58	75.11	75.68	GAI
02/15/16	--	76.55	--	74.96	--	--	75.87	--	--	76.31	--	--	75.70	--	76.49	75.13	--	77.02	--	75.31	--	75.92	76.59	75.89	--	76.91	76.98	--	75.73	75.51	74.09	76.57	GAI
03/28/16	--	76.08	--	74.61	--	--	75.47	--	--	75.86	--	--	75.29	--	76.01	74.50	--	76.46	--	74.92	--	75.51	76.16	75.40	--	76.48	76.51	--	75.28	75.16	74.69	76.08	GAI
6/27-29/2016	--	74.86	--	73.32	--	--	75.49	--	--	75.61	--	--	75.54	--	76.12	74.50	--	77.47	--	73.70	--	73.90	75.99	74.78	--	76.29	76.64	--	75.54	74.93	73.97	74.91	GAI
9/7-8/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	73.14	--	--	--	72.48	--	72.67	75.07	--	--	75.20	75.46	--	73.82	--	--	74.44	GAI
11/30 - 12/1 2016	--	73.10	--	70.23	--	--	73.31	--	--	74.11	--	--	73.34	--	74.16	71.45	--	74.56	--	71.73	--	72.25	74.47	73.40	--	74.79	74.94	--	72.56	72.80	71.73	72.94	GAI
HISTORIC HIGH	65.80	82.62	66.82	78.33	66.90	76.90	77.18	66.56	77.74	77.89	66.99	67.99	76.39	77.99	79.47	76.90	79.05	82.51	77.83	78.36	77.58	79.16	77.73	77.18	77.85	77.62	77.17	78.40	77.81	77.20	77.72	83.89	
HISTORIC LOW	62.77	66.68	62.92	65.49	63.64	66.78	67.33	63.11	64.01	66.82	63.40	63.29	67.40	62.62	67.13	67.82	62.44	67.33	63.27	65.86	63.39	66.35	65.29	66.82	67.57	67.32	67.60	67.71	67.55	66.21	65.70	66.60	

Top of casing elevations were surveyed by J.E. Saenz & Associates, Inc. 12-22-97.
Locations were surveyed and top of casing verified by Govind Engineers & Consultants 10/26/00.
Some groundwater elevation data has been corrected based on surveyed and verified top of casing elevations.
-- Water level not measured

All water level data are in feet relative to mean sea level (msl).

TABLE III4E2
HISTORICAL GROUNDWATER ELEVATIONS
PIEZOMETERS
CITY OF EDINBURG LANDFILL
EDINBURG, TEXAS

		Date																
		Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Jun-16	Dec-16
Piezometer	**Top of Casing Elevation (ft)**	**Groundwater Elevation (ft)**																	
PZ-101	101.73	68.61	69.79	70.58	71.23	71.77	-	74.13	74.65	74.39	74.24	74.07	74.49	74.63	74.74	74.75	74.63	73.78	72.52
PZ-104	99.02	66.98	67.36	67.95	68.42	69.63	-	74.18	75.41	75.13	74.56	74.14	74.34	74.27	74.08	73.97	73.75	73.20	71.97
PZ-106	88.17	58.98	59.24	59.55	59.77	60.30	-	68.00	65.75	64.25	63.39	63.05	64.17	63.90	63.79	63.75	63.40	62.97	61.47
PZ-113	89.79	70.37	71.03	72.15	72.49	75.49	78.4	80.79	78.07	76.71	75.96	75.75	76.75	76.74	76.70	76.61	76.25	75.49	74.22
PZ-116	96.56	69.7	70.22	70.80	71.21	72.45	-	76.20	76.98	76.84	76.36	76.03	76.27	76.28	76.07	75.94	75.57	75.06	73.65
PZ-118	93.22	62.03	62.24	62.59	62.82	63.51	76.54	66.59	66.68	66.52	68.34	66.04	66.40	66.47	66.71	66.71	66.54	66.17	64.89
PZ-122	96.14	-	56.26	56.55	56.44	57.01	-	-	57.34	-	56.68	56.64	57.19	57.50	57.87	57.96	58.10	58.04	57.14
PZ-124	101.67	67.41	67.68	67.72	67.77	68.11	-	70.60	71.54	71.28	71.45	71.16	71.88	71.73	71.76	71.63	71.36	71.44	70.13
PZ-130	104.39	-	66.36	66.74	67.09	67.29	-	68.44	68.74	68.65	69.16	69.11	69.84	69.84	70.30	70.39	70.14	70.03	69.26
PZ-131	100.09	70.4	68.2	71.44	71.49	72.34	86.47	75.59	76.48	75.77	75.36	75.10	75.70	75.51	75.41	75.31	74.81	74.49	72.92
PZ-133	101.96	78.34	68.8	68.91	69.06	69.44	-	71.54	72.36	72.54	72.74	72.71	73.10	73.10	73.28	73.28	73.18	73.08	72.31
PZ-134	86.11	71.98	72.49	73.02	73.11	80.68	82.66	83.04	78.96	77.31	76.66	76.45	77.39	76.91	76.58	76.40	75.98	74.36	73.06

APPENDIX III4F

HISTORIC GROUNDWATER QUALITY TESTING DATA

MW-1R	40 CFR Part 258, Appendix I Constituents	CAS RN	MSW-PQL µg/L	9/13/05	5/30/06	10/30/06	5/23/07	12/18/07	6/19/08	5/13/09	6/4/09	9/14/09
Inorganic Constituents												
(1)	Antimony	Total	5							ND	ND	0.714
(2)	Arsenic	Total	5	24.2	62.7	33.8	38	57.1	53.7	50.9	44.1	48.1
(3)	Barium	Total	10	ND	ND	77.8	77.9	ND	70.5	82.5	67.5	67.8
(4)	Beryllium	Total	4							ND	ND	0.476
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	0.728
(6)	Chromium	Total	20	ND	ND	1.3	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5							ND	ND	ND
(8)	Copper	Total	10							ND	ND	0.543
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	0.57
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	ND	ND	2.6	ND	15.7	ND	ND	ND	ND
(12)	Silver	Total	10							ND	ND	ND
(13)	Thallium	Total	1							ND	ND	0.855
(14)	Vanadium	Total	10							422	348	367
(15)	Zinc	Total	100							2.09	ND	ND
Volatile Organics												
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND

(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-1R	*40 CFR Part 258, Appendix I Constituents*	**12/15/09**	**4/6/10**	**7/20/10**	**11/9/10**	**2/23/11**	**6/21/11**	**12/12/11**	**6/27/12**	**12/10/12**	**6/12/13**	**12/13/13**
Inorganic Constituents												
(1)	Antimony	0.748	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	53.8	49.6	53.5	48.2	54.2	46.6	49.8	15.1	45	52	26.3
(3)	Barium	73.6	76.3	65.9	75	74	90.1	75.8	83.6	97	84	145
(4)	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	ND	0.964	ND	ND	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	0.602	0.866	ND	ND	ND	ND	ND	ND	ND	ND	ND
(9)	Lead	ND	ND	0.503	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	3.97	ND	ND	ND	ND	ND	ND	7.54	ND	ND	ND
(12)	Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND
(14)	Vanadium	442	415	408	365	414	377	382	109	357	398	276
(15)	Zinc	6.15	ND	ND	ND	ND	ND	ND	ND	5	ND	6.89
Volatile Organics												
(16)	Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

(47)	Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	ND	ND	ND	96.2	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-1R	*40 CFR Part 258, Appendix I Constituents*	**6/21/14**	**12/10/14**	**6/23/15**	**12/8/15**	**6/28/16**	**12/1/16**
Inorganic Constituents							
(1)	Antimony	ND	ND	ND	ND	ND	ND
(2)	Arsenic	21.8	31	23	31.1	35	40.1
(3)	Barium	155	94	112	96.8	72	85.5
(4)	Beryllium	ND	ND	ND	ND	ND	ND
(5)	Cadmium	ND	ND	ND	ND	ND	ND
(6)	Chromium	ND	ND	ND	ND	0.717	ND
(7)	Cobalt	ND	ND	ND	ND	ND	ND
(8)	Copper	ND	ND	3	ND	1.51	ND
(9)	Lead	ND	ND	ND	ND	ND	ND
(10)	Nickel	ND	ND	ND	ND	ND	ND
(11)	Selenium	3.49	ND	ND	ND	2.18	ND
(12)	Silver	ND	ND	ND	ND	ND	ND
(13)	Thallium	ND	ND	ND	ND	ND	ND
(14)	Vanadium	242	319	300	321	295	344
(15)	Zinc	ND	5	12.2	ND	6.37	ND
Volatile Organics							
(16)	Acetone	ND	ND	ND	ND	29	ND
(17)	Acrylonitrile	ND	ND	ND	ND	ND	ND
(18)	Benzene	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND

(47)	Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
(50)	Styrene	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
(54)	Toluene	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	ND	ND	ND	ND	ND	ND
(62)	Xylene	ND	ND	ND	ND	ND	ND

MW-2R	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**9/14/05**	**5/31/06**	**10/31/06**	**5/22/07**	**12/18/07**	**6/18/08**	**5/12/09**	**6/5/09**	**9/14/09**	**12/15/09**	**4/7/10**	**7/20/10**	**11/9/10**	**2/22/11**	**6/21/11**	**12/12/11**	**6/27/12**	**12/11/12**	**6/13/13**	**12/14/13**
Inorganic Constituents																							
(1)	Antimony	Total	5							ND	0.667	0.952	1.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	16.3	14.6	20.4	27.2	39	35.6	64.2	68.9	64.4	71.5	83.7	81.6	90.7	88.2	87.6	86.7	88.4	94	83	62.1
(3)	Barium	Total	10	ND	ND	40.5	39.5	ND	44.7	48	43.8	45.2	53.5	51.4	46.5	44.3	51.3	54.5	50.4	53.6	62	69	74
(4)	Beryllium	Total	4							ND	ND	0.421	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	0.622	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	2.6	ND	ND	2.38	ND	1.56	1.11	1.16	1.24	1.06	0.672	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5							ND	0.94	1.06	0.785	0.772	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10							ND	1.39	0.934	1.04	3.51	0.572	ND	ND	ND	ND	ND	ND	ND	ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	0.521	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND	2.82	ND	ND	ND	1.47	ND	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	5.08	ND	ND	12.1	23.4	7.79	5.59	5.34	2.6	4.53	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(12)	Silver	Total	10							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1							ND	ND	ND	ND	0.991	ND	ND	2	ND	9.1	ND	ND	ND	ND
(14)	Vanadium	Total	10							306	315	284	325	385	376	408	402	400	404	450	455	400	311
(15)	Zinc	Total	100							ND	ND	ND	4.18	5.03	2.57	ND	ND	ND	ND	ND	ND	9	5.39
Volatile Organics																							
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	104	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-2R	*40 CFR Part 258, Appendix I Constituents*	6/21/14	12/10/14	6/24/15	12/8/15	6/30/16	12/1/16
Inorganic Constituents							
(1)	Antimony	ND	ND	ND	ND	ND	ND
(2)	Arsenic	52.9	37	27	23.5	24.8	20
(3)	Barium	70.1	63	69	57.1	52.4	60.7
(4)	Beryllium	ND	ND	ND	ND	ND	ND
(5)	Cadmium	ND	ND	ND	ND	ND	ND
(6)	Chromium	ND	ND	ND	ND	1.05	ND
(7)	Cobalt	ND	ND	ND	ND	0.212	ND
(8)	Copper	ND	ND	ND	ND	ND	ND
(9)	Lead	ND	ND	ND	ND	ND	ND
(10)	Nickel	ND	ND	ND	ND	ND	ND
(11)	Selenium	ND	ND	ND	ND	1.17	ND
(12)	Silver	ND	ND	ND	ND	ND	ND
(13)	Thallium	ND	ND	ND	ND	ND	ND
(14)	Vanadium	272	209	179	155	138	105
(15)	Zinc	ND	ND	36	5.04	4.02	ND
Volatile Organics							
(16)	Acetone	ND	ND	ND	ND	41	ND
(17)	Acrylonitrile	ND	ND	ND	ND	ND	ND
(18)	Benzene	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
(50)	Styrene	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
(54)	Toluene	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	ND	ND	ND	ND	ND	ND
(62)	Xylene	ND	ND	ND	ND	ND	ND

MW-3RA	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**9/13/05**	**5/31/06**	**10/31/06**	**5/22/07**	**12/18/07**	**6/18/08**	**5/12/09**
Inorganic Constituents										
(1)	Antimony	Total	5							ND
(2)	Arsenic	Total	5	11.8	ND	ND	13.1	15.4	10	10.7
(3)	Barium	Total	10	ND	ND	53.3	46.3	ND	39.8	35.3
(4)	Beryllium	Total	4							ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	1.3	ND	ND	2.96	ND
(7)	Cobalt	Total	5							ND
(8)	Copper	Total	10							ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	2.81	2.02
(11)	Selenium	Total	50	10.3	ND	7.1	25.9	36.7	22.6	24.2
(12)	Silver	Total	10							2.88
(13)	Thallium	Total	1							ND
(14)	Vanadium	Total	10							114
(15)	Zinc	Total	100							ND
Volatile Organics										
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND

MW-3A	40 CFR Part 258, Appendix I Constituents	CAS RN	MSW-PQL µg/L	6/5/09	9/14/09	12/14/09	4/7/10	7/20/10	11/10/10	2/22/11	6/21/11	12/12/11	6/28/12	12/11/12	6/13/13	12/13/13	6/22/14	12/11/14	6/23/15	12/10/15	6/29/16	12/1/16
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	1.34	1.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	12.3	12.6	15.1	14.8	14.8	15.5	15.8	16	16	13.9	15	16	15.1	13	8	14.8	14	13.1	11.5
(3)	Barium	Total	10	75.1	43.4	39.4	35.8	30.7	30.2	31.8	30.6	25.1	25.6	28	35	30.8	31.8	31	37.1	29	23.7	25.9
(4)	Beryllium	Total	4	ND	0.6	ND	ND	ND	0.325	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.776	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	1.65	1.79	0.703	0.785	1.01	ND	ND	ND	ND	ND	ND	ND	7.1	ND	ND	ND	ND	0.769	ND
(7)	Cobalt	Total	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.508	ND
(8)	Copper	Total	10	1.83	1.55	1.41	0.976	0.806	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND
(9)	Lead	Total	15	ND	0.737	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	2.18	2.61	1.83	2.63	4.2	1.48	ND	ND	ND	ND	ND	ND	ND	2.1	ND	ND	2	1.75	ND
(11)	Selenium	Total	50	9.75	10.3	12.8	9.37	12	12	14.7	12.4	13.3	8.14	ND	ND	ND	ND	ND	5.54	6	5.88	ND
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	1.74	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	101	128	166	176	170	175	176	178	185	184	209	205	196	179	179	200	185	165	161
(15)	Zinc	Total	100	ND	2.92	ND	4	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.03	ND	ND	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-3A *40 CFR Part 258, Appendix II Constituents*	CAS RN	12/10/15
Acenaphthene	83-32-9	ND
Acenaphthylene	208-96-8	ND
Acetonitrile; Methyl cyanide	75-05-8	ND
Acetophenone	98-86-2	ND
2-Acetylaminofluorene; 2-AAF	53-96-3	ND
Acrolein	107-02-8	ND
Aldrin	309-00-2	ND
Allyl chloride	107-05-1	ND
4-Aminobiphenyl	92-67-1	ND
Anthracene	120-12-7	ND
Benzo[a]anthracene; Benzanthracene	56-55-3	ND
Benzo[b]fluoranthene	205-99-2	ND
Benzo[k]fluoranthene	207-08-9	ND
Benzo[ghi]perylene	191-24-2	ND
Benzo[a]pyrene	50-32-8	ND
Benzyl alcohol	100-51-6	ND
alpha-BHC	319-84-6	ND
beta-BHC	319-85-7	ND
delta-BHC	319-86-8	ND
gamma-BHC; Lindane	58-89-9	ND
Bis(2-chloroethoxy)methane	111-91-1	ND
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	ND
Bis(2-chloro-1-methylethyl) ether; 2,2′-Dichlorodiisopropyl ether; DCIP	108-60-1	ND
Bis(2-ethylhexyl) phthalate	117-81-7	ND
4-Bromophenyl phenyl ether	101-55-3	ND
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	ND
alpha-chlordane	5103-71-9	ND
gamma-chlordane	5566-34-7	ND
p-Chloroaniline	106-47-8	ND
Chlorobenzilate	510-15-6	ND
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	ND
2-Chloronaphthalene	91-58-7	ND
2-Chlorophenol	95-57-8	ND
4-Chlorophenyl phenyl ether	7005-72-3	ND
Chrysene	218-01-9	ND
m-Cresol; 3-Methylphenol	108-39-4	ND
o-Cresol; 2-Methylphenol	95-48-7	ND
Cyanide	57-12-5	ND
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	ND
4,4′-DDD	72-54-8	ND
4,4′-DDE	72-55-9	ND
4,4′-DDT	50-29-3	ND
Diallate	2303-16-4	ND
Dibenz[a,h]anthracene	53-70-3	ND
Dibenzofuran	132-64-9	ND
Di-n-butyl phthalate	84-74-2	ND
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	ND
3,3′-Dichlorobenzidine	91-94-1	ND
Dichlorodifluoromethane; CFC 12	75-71-8	ND
2,4-Dichlorophenol	120-83-2	ND
2,6-Dichlorophenol	87-65-0	ND
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	ND

	CAS RN	12/10/15
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	ND
1,1-Dichloropropene	563-58-6	ND
Dieldrin	60-57-1	ND
Diethyl phthalate	84-66-2	ND
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	ND
Dimethoate	60-51-5	ND
7,12-Dimethylbenz[a]anthracene	57-97-6	ND
3,3′-Dimethylbenzidine	119-93-7	ND
alpha, alpha-Dimethylphenethylamine	122-09-8	ND
2,4-Dimethylphenol; m-Xylenol	105-67-9	ND
Dimethyl phthalate	131-11-3	ND
m-Dinitrobenzene	99-65-0	ND
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	534-52-1	ND
2,4-Dinitrophenol	51-28-5	ND
2,4-Dinitrotoluene	121-14-2	ND
2,6-Dinitrotoluene	606-20-2	ND
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	ND
Di-n-octyl phthalate	117-84-0	ND
Diphenylamine	122-39-4	ND
Disulfoton	298-04-4	ND
Endosulfan I	959-98-8	ND
Endosulfan II	33213-65-9	ND
Endosulfan sulfate	1031-07-8	ND
Endrin	72-20-8	ND
Endrin aldehyde	7421-93-4	ND
Ethyl methacrylate	97-63-2	ND
Ethyl methanesulfonate	62-50-0	ND
Famphur	52-85-7	ND
Fluoranthene	206-44-0	ND
Fluorene	86-73-7	ND
Heptachlor	76-44-8	ND
Heptachlor epoxide	1024-57-3	ND
Hexachlorobenzene	118-74-1	ND
Hexachlorobutadiene	87-68-3	ND
Hexachlorocyclopentadiene	77-47-4	ND
Hexachloroethane	67-72-1	ND
Hexachloropropene	1888-71-7	ND
Indeno(1,2,3-cd)pyrene	193-39-5	ND
Isobutyl alcohol	78-83-1	ND
Isodrin	465-73-6	ND
Isophorone	78-59-1	ND
Isosafrole	120-58-1	ND
Kepone	143-50-0	ND
Mercury	(Total)	ND
Methacrylonitrile	126-98-7	ND
Methapyrilene	91-80-5	ND
Methoxychlor	72-43-5	ND
3-Methylcholanthrene	56-49-5	ND
Methyl methacrylate	80-62-6	ND
Methyl methanesulfonate	66-27-3	ND
2-Methylnaphthalene	91-57-6	ND
Methyl parathion; Parathion methyl	298-00-0	ND

	CAS RN	12/10/15
Naphthalene	91-20-3	ND
1,4-Naphthoquinone	130-15-4	ND
1-Naphthylamine	134-32-7	ND
2-Naphthylamine	91-59-8	ND
o-Nitroaniline; 2-Nitroaniline	88-74-4	ND
m-Nitroaniline; 3-Nitroaniline	99-09-2	ND
p-Nitroaniline; 4-Nitroaniline	100-01-6	ND
Nitrobenzene	98-95-3	ND
o-Nitrophenol; 2-Nitrophenol	88-75-5	ND
p-Nitrophenol; 4-Nitrophenol	100-02-7	ND
N-Nitrosodi-n-butylamine	924-16-3	ND
N-Nitrosodiethylamine	55-18-5	ND
N-Nitrosodimethylamine	62-75-9	ND
N-Nitrosodiphenylamine	86-30-6	ND
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	ND
N-Nitrosomethylethalamine	10595-95-6	ND
N-Nitrosopiperidine	100-75-4	ND
N-Nitrosopyrrolidine	930-55-2	ND
5-Nitro-o-toluidine	99-55-8	ND
Parathion	56-38-2	ND
Pentachlorobenzene	608-93-5	ND
Pentachloronitrobenzene	82-68-8	ND
Pentachlorophenol	87-86-5	ND
Phenacetin	62-44-2	ND
Phenanthrene	85-01-8	ND
Phenol	108-95-2	ND
p-Phenylenediamine	106-50-3	ND
Phorate	298-02-2	ND
Polychlorinated biphenyls; PCBs	1336-36-3	ND
Aroclor-1016	12674-11-2	ND
Aroclor-1221	11104-28-2	ND
Aroclor-1232	11141-16-5	ND
Aroclor-1242	53469-21-9	ND
Aroclor-1248	12672-29-6	ND
Aroclor-1254	11097-69-1	ND
Aroclor-1260	11096-82-5	ND
Pronamide	23950-58-5	ND
Propionitrile; Ethyl cyanide	107-12-0	ND
Pyrene	129-00-0	ND
Safrole	94-59-7	ND
Silvex; 2,4,5-TP	93-72-1	ND
Sulfide	18496-25-8	ND
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	ND
2,3,4,6-Tetrachlorophenol	58-90-2	ND
o-Toluidine	95-53-4	ND
Toxaphene	8001-35-2	ND
1,2,4-Trichlorobenzene	120-82-1	ND
2,4,5-Trichlorophenol	95-95-4	ND
2,4,6-Trichlorophenol	88-06-2	ND
O,O,O-Triethyl phosphorothioate	126-68-1	ND
sym-Trinitrobenzene	99-35-4	ND

MW-4R	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**9/13/05**	**5/30/06**	**10/30/06**	**5/22/07**	**12/19/07**	**6/19/08**	**5/13/09**
Inorganic Constituents										
(1)	Antimony	Total	5							ND
(2)	Arsenic	Total	5	ND	ND	ND	11.2	ND	9.6	8.86
(3)	Barium	Total	10	ND	ND	26.9	29.2	ND	31.4	41.2
(4)	Beryllium	Total	4							ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	1.3	ND	ND	2.45	ND
(7)	Cobalt	Total	5							ND
(8)	Copper	Total	10							2.83
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	2.71
(11)	Selenium	Total	50	14.9	ND	17.6	34.8	66.1	45	48.1
(12)	Silver	Total	10							499
(13)	Thallium	Total	1							ND
(14)	Vanadium	Total	10							76
(15)	Zinc	Total	100							6.9
Volatile Organics										
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND

MW-4A	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	6/4/09	9/14/09	12/17/09	4/6/10	7/21/10	11/10/10	2/23/11	6/21/11	12/13/11	6/27/12	12/10/12	6/12/13	12/14/13	3/21/14	6/21/14	12/9/14	6/24/15	12/10/15	6/30/16	12/1/16
Inorganic Constituents																							
(1)	Antimony	Total	5	ND	0.568	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	6.36	8.63	7.35	6.74	9.18	ND	7.19	7.44	8.48	7.23	8	8.1	7.86	8.81	8.43	7	5.75	5	9.85	8.18
(3)	Barium	Total	10	53.4	44.5	42.8	45.2	29.3	37.1	36.4	34.6	33.1	29.2	29	26	25.2	26.8	25.2	27	21.6	26	23.5	25.1
(4)	Beryllium	Total	4	0.401	0.465	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.699	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.13	ND
(7)	Cobalt	Total	5	3.23	2.18	2.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.05	ND
(8)	Copper	Total	10	3.02	1.71	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.15	ND
(9)	Lead	Total	15	ND	0.56	ND	ND	2.84	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	8.59	6.19	4.45	ND	12.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	2.49	4	4.46	ND
(11)	Selenium	Total	50	37.2	44.8	42.8	49.3	39.9	45.7	44.6	42.4	54.9	53.1	48	62	48.6	54	47.9	45	42.9	34	35.7	72.2
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	40	51.9	62.7	66.5	60	63.3	62.1	59.1	59.2	64.1	68	57	65.9	68.2	67.2	65	69.8	71	71.6	61.3
(15)	Zinc	Total	100	ND	5.85	8.96	ND	ND	ND	ND	ND	ND	5.08	ND	ND	ND	ND	ND	ND	ND	5	ND	ND
Volatile Organics																							
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.05	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.35	ND	3.89	3.32	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	0.63	ND	ND	0.75	ND	ND	ND	ND	ND	ND	ND	ND	1.06	ND	1.23	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	0.71	ND	ND	ND	ND	5.9	ND	ND	8.8	5.35	ND	9.5	4.04	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.42	ND	3.97	2.5	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	97.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	1.1	ND	ND	ND	6	11	ND	5.2	12	9.46	1.83	15.2	7.13	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.7	1.48	ND	2.69	1.88	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-4A *40 CFR Part 258, Appendix II Constituents*	CAS RN	3/21/14
Acenaphthene	83-32-9	ND
Acenaphthylene	208-96-8	ND
Acetone	67-64-1	ND
Acetonitrile; Methyl cyanide	75-05-8	ND
Acetophenone	98-86-2	ND
2-Acetylaminofluorene; 2-AAF	53-96-3	ND
Aldrin	309-00-2	ND
Allyl chloride	107-05-1	ND
4-Aminobiphenyl	92-67-1	ND
Anthracene	120-12-7	ND
Benzo[a]anthracene; Benzanthracene	56-55-3	ND
Benzo[b]fluoranthene	205-99-2	ND
Benzo[k]fluoranthene	207-08-9	ND
Benzo[ghi]perylene	191-24-2	ND
Benzo[a]pyrene	50-32-8	ND
Benzyl alcohol	100-51-6	ND
alpha-BHC	319-84-6	ND
beta-BHC	319-85-7	ND
delta-BHC	319-86-8	ND
gamma-BHC; Lindane	58-89-9	ND
Bis(2-chloroethoxy)methane	111-91-1	ND
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	ND
Bis(2-chloro-1-methylethyl) ether; 2,2′-Dichlorodiisopropyl ether; DCIP	108-60-1	ND
Bis(2-ethylhexyl) phthalate	117-81-7	ND
4-Bromophenyl phenyl ether	101-55-3	ND
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	ND
alpha-chlordane	5103-71-9	ND
beta-chlordane	5103-74-2	ND
gamma-chlordane	5566-34-7	ND
p-Chloroaniline	106-47-8	ND
Chlorobenzilate	510-15-6	ND
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	ND
2-Chloronaphthalene	91-58-7	ND
2-Chlorophenol	95-57-8	ND
4-Chlorophenyl phenyl ether	7005-72-3	ND
Chloroprene	126-99-8	ND
Chrysene	218-01-9	ND
m-Cresol; 3-Methylphenol	108-39-4	ND
o-Cresol; 2-Methylphenol	95-48-7	ND
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	ND
4,4′-DDD	72-54-8	ND
4,4′-DDE	72-55-9	ND
4,4′-DDT	50-29-3	ND
Dibenz[a,h]anthracene	53-70-3	ND
Dibenzofuran	132-64-9	ND
Di-n-butyl phthalate	84-74-2	ND
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	ND
3,3′-Dichlorobenzidine	91-94-1	ND
2,4-Dichlorophenol	120-83-2	ND
2,6-Dichlorophenol	87-65-0	ND
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	ND

	CAS RN	3/21/14
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	ND
1,1-Dichloropropene	563-58-6	ND
Dieldrin	60-57-1	ND
Diethyl phthalate	84-66-2	ND
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	ND
Dimethoate	60-51-5	ND
p-(Dimethylamino)azobenzene	60-11-7	ND
7,12-Dimethylbenz[a]anthracene	57-97-6	ND
3,3′-Dimethylbenzidine	119-93-7	ND
alpha, alpha-Dimethylphenethylamine	122-09-8	ND
2,4-Dimethylphenol; m-Xylenol	105-67-9	ND
Dimethyl phthalate	131-11-3	ND
m-Dinitrobenzene	99-65-0	ND
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	534-52-1	ND
2,4-Dinitrophenol	51-28-5	ND
2,4-Dinitrotoluene	121-14-2	ND
2,6-Dinitrotoluene	606-20-2	ND
Di-n-octyl phthalate	117-84-0	ND
Diphenylamine	122-39-4	ND
Endosulfan I	959-98-8	ND
Endosulfan II	33213-65-9	ND
Endosulfan sulfate	1031-07-8	ND
Endrin	72-20-8	ND
Endrin aldehyde	7421-93-4	ND
Ethyl methacrylate	97-63-2	ND
Ethyl methanesulfonate	62-50-0	ND
Famphur	52-85-7	ND
Fluoranthene	206-44-0	ND
Fluorene	86-73-7	ND
Heptachlor	76-44-8	ND
Heptachlor epoxide	1024-57-3	ND
Hexachlorobenzene	118-74-1	ND
Hexachlorobutadiene	87-68-3	ND
Hexachlorocyclopentadiene	77-47-4	ND
Hexachloroethane	67-72-1	ND
Indeno(1,2,3-cd)pyrene	193-39-5	ND
Isobutyl alcohol	78-83-1	ND
Isodrin	465-73-6	ND
Isophorone	78-59-1	ND
Isosafrole	120-58-1	ND
Kepone	143-50-0	ND
Mercury	(Total)	ND
Methacrylonitrile	126-98-7	ND
Methapyrilene	91-80-5	ND
Methoxychlor	72-43-5	ND
3-Methylcholanthrene	56-49-5	ND
Methyl methacrylate	80-62-6	ND
Methyl methanesulfonate	66-27-3	ND
2-Methylnaphthalene	91-57-6	ND
Methyl parathion; Parathion methyl	298-00-0	ND
Naphthalene	91-20-3	ND

	CAS RN	3/21/14
1,4-Naphthoquinone	130-15-4	ND
1-Naphthylamine	134-32-7	ND
2-Naphthylamine	91-59-8	ND
o-Nitroaniline; 2-Nitroaniline	88-74-4	ND
m-Nitroaniline; 3-Nitroaniline	99-09-2	ND
p-Nitroaniline; 4-Nitroaniline	100-01-6	ND
Nitrobenzene	98-95-3	ND
o-Nitrophenol; 2-Nitrophenol	88-75-5	ND
p-Nitrophenol; 4-Nitrophenol	100-02-7	ND
N-Nitrosodi-n-butylamine	924-16-3	ND
N-Nitrosodiethylamine	55-18-5	ND
N-Nitrosodimethylamine	62-75-9	ND
N-Nitrosodiphenylamine	86-30-6	ND
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	ND
N-Nitrosomethylethalamine	10595-95-6	ND
N-Nitrosopiperidine	100-75-4	ND
N-Nitrosopyrrolidine	930-55-2	ND
5-Nitro-o-toluidine	99-55-8	ND
Parathion	56-38-2	ND
Pentachlorobenzene	608-93-5	ND
Pentachloronitrobenzene	82-68-8	ND
Pentachlorophenol	87-86-5	ND
Phenacetin	62-44-2	ND
Phenanthrene	85-01-8	ND
Phenol	108-95-2	ND
p-Phenylenediamine	106-50-3	ND
Phorate	298-02-2	ND
Aroclor-1016	12674-11-2	ND
Aroclor-1221	11104-28-2	ND
Aroclor-1232	11141-16-5	ND
Aroclor-1242	53469-21-9	ND
Aroclor-1248	12672-29-6	ND
Aroclor-1254	11097-69-1	ND
Aroclor-1260	11096-82-5	ND
Pronamide	23950-58-5	ND
Propionitrile; Ethyl cyanide	107-12-0	ND
Pyrene	129-00-0	ND
Safrole	94-59-7	ND
Silvex; 2,4,5-TP	93-72-1	ND
Sulfide	18496-25-8	ND
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	ND
2,3,4,6-Tetrachlorophenol	58-90-2	ND
o-Toluidine	95-53-4	ND
Toxaphene	8001-35-2	ND
1,2,4-Trichlorobenzene	120-82-1	ND
2,4,5-Trichlorophenol	95-95-4	ND
2,4,6-Trichlorophenol	88-06-2	ND
O,O,O-Triethyl phosphorothioate	126-68-1	ND
sym-Trinitrobenzene	99-35-4	ND

MWD-6	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	6/5/09	9/15/09	12/17/09	4/7/10	7/20/10	11/10/10	2/24/11	6/22/11	12/13/11	6/28/12	12/11/12	6/13/13	12/13/13	6/22/14	12/11/14	6/22/15	12/9/15	6/27/16	11/30/16
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	ND	0.565	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.51	ND	ND
(2)	Arsenic	Total	5	ND	6.06	4.99	4.76	5.02	ND	5.84	ND	5.2	ND	ND	4.65	ND	5.1	ND	6.3	3.23	5.32	5.42
(3)	Barium	Total	10	144	66	58.4	67.7	60.2	62.2	58.8	61.4	60.4	50.5	48	48.7	54.4	60	49	51.6	67.5	40.3	43
(4)	Beryllium	Total	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	31.8	1.16	2.05	2.77	3.31	ND	ND	ND	ND	ND	ND	ND	ND	2.46	ND	ND	ND	1.58	ND
(7)	Cobalt	Total	5	7.68	0.921	0.713	1.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.686	ND
(8)	Copper	Total	10	10.8	2.82	3.76	1.43	4.12	ND	ND	ND	ND	ND	ND	ND	ND	3.75	4	12.7	34.7	3.94	2.88
(9)	Lead	Total	15	0.818	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	114	9.07	6.85	11.1	24	ND	5.43	ND	5.06	ND	6	ND	ND	4.93	3	3.42	7.41	3.57	ND
(11)	Selenium	Total	50	20.6	22.8	19	18.7	17.8	ND	21.4	18.5	21.9	23.1	30	27.9	26.1	22.3	18	21.4	22.5	21.5	27.8
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	1.59	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	4.92	35.5	36.2	35.5	36.3	36	34.7	33.8	33.4	34.5	36	36.7	40	39.4	45	44.8	48.5	34.5	37
(15)	Zinc	Total	100	5.14	ND	2.69	7.3	17.5	ND	ND	ND	ND	ND	ND	7.4	6.28	8.03	6	24.1	22.3	9.23	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	96.4	ND	ND	ND	ND	ND	ND	ND	ND	1.41	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-7	40 CFR Part 258, Appendix I Constituents	CAS RN	MSW-PQL µg/L	11/30/05	5/30/06	10/30/06	5/22/07	12/19/07	6/19/08	5/13/09
Inorganic Constituents										
(1)	Antimony	Total	5							ND
(2)	Arsenic	Total	5	ND	17.1	16.3	19.4	19.3	17	17.2
(3)	Barium	Total	10	ND	ND	21.7	27.9	ND	30.6	32.4
(4)	Beryllium	Total	4							ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	1.1	ND	ND	ND	ND
(7)	Cobalt	Total	5							ND
(8)	Copper	Total	10							ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	14.1	ND	11.5	32.2	30.1	14.9	13.9
(12)	Silver	Total	10							12
(13)	Thallium	Total	1							ND
(14)	Vanadium	Total	10							132
(15)	Zinc	Total	100							ND
Volatile Organics										
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	10.4
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND

MW-7R	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	6/4/09	9/14/09	12/15/09	4/6/10	7/21/10	11/10/10	2/23/11	6/21/11	12/13/11	6/27/12	12/10/12	6/12/13	12/14/13	3/21/14	6/21/14	12/9/14	6/24/15	12/8/15	6/27/16	11/30/16
Inorganic Constituents																							
(1)	Antimony	Total	5	ND	0.559	0.528	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	16.3	17.8	19.5	19.3	20	22.2	20.2	19.4	20.5	18.2	17	16	20.9	22.9	22.9	23	18	21.3	21.6	22.5
(3)	Barium	Total	10	50.1	43.6	44.3	39.5	38.3	42.3	43.5	33.8	47.4	35.6	48	53	51.5	48.6	47.7	53	49	45.8	43.7	45.5
(4)	Beryllium	Total	4	0.319	0.441	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.619	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	0.645	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.616	ND
(7)	Cobalt	Total	5	1.08	1.1	0.604	0.646	ND	0.571	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	ND	ND	0.57	0.76	2.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.05	ND
(9)	Lead	Total	15	ND	0.604	ND	ND	0.801	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	2.08	2.36	ND	2.07	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	5.68	5.9	7.53	11.4	8.68	9.13	8.07	11.7	10.8	13.1	14	14	8.49	8.16	7.56	6	6	7.5	8.33	9.98
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	ND	1.06	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	108	111	130	125	120	129	121	123	115	133	118	109	129	139	137	150	146	140	117	119
(15)	Zinc	Total	100	ND	ND	ND	2.59	ND	ND	ND	ND	ND	ND	ND	ND	5.78	ND	ND	ND	ND	ND	2.1	ND
Volatile Organics																							
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	97.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-7R *40 CFR Part 258, Appendix II Constituents*	CAS RN	3/21/14
Acenaphthene	83-32-9	ND
Acenaphthylene	208-96-8	ND
Acetone	67-64-1	ND
Acetonitrile; Methyl cyanide	75-05-8	ND
Acetophenone	98-86-2	ND
2-Acetylaminofluorene; 2-AAF	53-96-3	ND
Aldrin	309-00-2	ND
Allyl chloride	107-05-1	ND
4-Aminobiphenyl	92-67-1	ND
Anthracene	120-12-7	ND
Benzo[a]anthracene; Benzanthracene	56-55-3	ND
Benzo[b]fluoranthene	205-99-2	ND
Benzo[k]fluoranthene	207-08-9	ND
Benzo[ghi]perylene	191-24-2	ND
Benzo[a]pyrene	50-32-8	ND
Benzyl alcohol	100-51-6	ND
alpha-BHC	319-84-6	ND
beta-BHC	319-85-7	ND
delta-BHC	319-86-8	ND
gamma-BHC; Lindane	58-89-9	ND
Bis(2-chloroethoxy)methane	111-91-1	ND
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	ND
Bis(2-chloro-1-methylethyl) ether; 2,2′-Dichlorodiisopropyl ether; DCIP	108-60-1	ND
Bis(2-ethylhexyl) phthalate	117-81-7	ND
4-Bromophenyl phenyl ether	101-55-3	ND
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	ND
alpha-chlordane	5103-71-9	ND
beta-chlordane	5103-74-2	ND
gamma-chlordane	5566-34-7	ND
p-Chloroaniline	106-47-8	ND
Chlorobenzilate	510-15-6	ND
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	ND
2-Chloronaphthalene	91-58-7	ND
2-Chlorophenol	95-57-8	ND
4-Chlorophenyl phenyl ether	7005-72-3	ND
Chloroprene	126-99-8	ND
Chrysene	218-01-9	ND
m-Cresol; 3-Methylphenol	108-39-4	ND
o-Cresol; 2-Methylphenol	95-48-7	ND
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	ND
4,4′-DDD	72-54-8	ND
4,4′-DDE	72-55-9	ND
4,4′-DDT	50-29-3	ND
Dibenz[a,h]anthracene	53-70-3	ND
Dibenzofuran	132-64-9	ND
Di-n-butyl phthalate	84-74-2	ND
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	ND
3,3′-Dichlorobenzidine	91-94-1	ND
2,4-Dichlorophenol	120-83-2	ND
2,6-Dichlorophenol	87-65-0	ND
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	ND
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	ND
1,1-Dichloropropene	563-58-6	ND
Dieldrin	60-57-1	ND
Diethyl phthalate	84-66-2	ND
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	ND
Dimethoate	60-51-5	ND
p-(Dimethylamino)azobenzene	60-11-7	ND
7,12-Dimethylbenz[a]anthracene	57-97-6	ND
3,3′-Dimethylbenzidine	119-93-7	ND
alpha, alpha-Dimethylphenethylamine	122-09-8	ND
2,4-Dimethylphenol; m-Xylenol	105-67-9	ND
Dimethyl phthalate	131-11-3	ND
m-Dinitrobenzene	99-65-0	ND
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	534-52-1	ND
2,4-Dinitrophenol	51-28-5	ND
2,4-Dinitrotoluene	121-14-2	ND
2,6-Dinitrotoluene	606-20-2	ND
Di-n-octyl phthalate	117-84-0	ND
Diphenylamine	122-39-4	ND
Endosulfan I	959-98-8	ND
Endosulfan II	33213-65-9	ND
Endosulfan sulfate	1031-07-8	ND
Endrin	72-20-8	ND
Endrin aldehyde	7421-93-4	ND
Ethyl methacrylate	97-63-2	ND
Ethyl methanesulfonate	62-50-0	ND
Famphur	52-85-7	ND
Fluoranthene	206-44-0	ND
Fluorene	86-73-7	ND
Heptachlor	76-44-8	ND
Heptachlor epoxide	1024-57-3	ND
Hexachlorobenzene	118-74-1	ND
Hexachlorobutadiene	87-68-3	ND
Hexachlorocyclopentadiene	77-47-4	ND
Hexachloroethane	67-72-1	ND
Indeno(1,2,3-cd)pyrene	193-39-5	ND
Isobutyl alcohol	78-83-1	ND
Isodrin	465-73-6	ND
Isophorone	78-59-1	ND
Isosafrole	120-58-1	ND
Kepone	143-50-0	ND
Mercury	(Total)	ND
Methacrylonitrile	126-98-7	ND
Methapyrilene	91-80-5	ND
Methoxychlor	72-43-5	ND
3-Methylcholanthrene	56-49-5	ND
Methyl methacrylate	80-62-6	ND
Methyl methanesulfonate	66-27-3	ND
2-Methylnaphthalene	91-57-6	ND
Methyl parathion; Parathion methyl	298-00-0	ND
Naphthalene	91-20-3	ND
1,4-Naphthoquinone	130-15-4	ND
1-Naphthylamine	134-32-7	ND
2-Naphthylamine	91-59-8	ND
o-Nitroaniline; 2-Nitroaniline	88-74-4	ND
m-Nitroaniline; 3-Nitroaniline	99-09-2	ND
p-Nitroaniline; 4-Nitroaniline	100-01-6	ND
Nitrobenzene	98-95-3	ND
o-Nitrophenol; 2-Nitrophenol	88-75-5	ND
p-Nitrophenol; 4-Nitrophenol	100-02-7	ND
N-Nitrosodi-n-butylamine	924-16-3	ND
N-Nitrosodiethylamine	55-18-5	ND
N-Nitrosodimethylamine	62-75-9	ND
N-Nitrosodiphenylamine	86-30-6	ND
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	ND
N-Nitrosomethylethalamine	10595-95-6	ND
N-Nitrosopiperidine	100-75-4	ND
N-Nitrosopyrrolidine	930-55-2	ND
5-Nitro-o-toluidine	99-55-8	ND
Parathion	56-38-2	ND
Pentachlorobenzene	608-93-5	ND
Pentachloronitrobenzene	82-68-8	ND
Pentachlorophenol	87-86-5	ND
Phenacetin	62-44-2	ND
Phenanthrene	85-01-8	ND
Phenol	108-95-2	ND
p-Phenylenediamine	106-50-3	ND
Phorate	298-02-2	ND
Aroclor-1016	12674-11-2	ND
Aroclor-1221	11104-28-2	ND
Aroclor-1232	11141-16-5	ND
Aroclor-1242	53469-21-9	ND
Aroclor-1248	12672-29-6	ND
Aroclor-1254	11097-69-1	ND
Aroclor-1260	11096-82-5	ND
Pronamide	23950-58-5	ND
Propionitrile; Ethyl cyanide	107-12-0	ND
Pyrene	129-00-0	ND
Safrole	94-59-7	ND
Silvex; 2,4,5-TP	93-72-1	ND
Sulfide	18496-25-8	ND
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	ND
2,3,4,6-Tetrachlorophenol	58-90-2	ND
o-Toluidine	95-53-4	ND
Toxaphene	8001-35-2	ND
1,2,4-Trichlorobenzene	120-82-1	ND
2,4,5-Trichlorophenol	95-95-4	ND
2,4,6-Trichlorophenol	88-06-2	ND
O,O,O-Triethyl phosphorothioate	126-68-1	ND
sym-Trinitrobenzene	99-35-4	ND

MWD-7	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**3/27/13**	**6/11/13**	**9/25/13**	**12/13/13**	**3/20/14**	**6/20/14**	**9/5/14**	**12/9/14**	**6/22/15**	**12/9/15**	**6/27/16**	**11/30/16**
Inorganic Constituents															
(1)	Antimony	Total	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	26	27	29.1	24.3	29.4	22	12	23	14.2	15.8	6.6	7.96
(3)	Barium	Total	10	59	64	59.1	66.4	61.8	75	215	71	145	103	127	146
(4)	Beryllium	Total	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	2.74	5.26	ND	ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.77	ND
(11)	Selenium	Total	50	ND	ND	ND	ND	ND	ND	3	ND	ND	ND	8.94	6.33
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	92	97	109	91.3	109	87	45	91	59.1	65.3	26.4	33.3
(15)	Zinc	Total	100	ND	6	ND	5.87	ND	ND	ND	6	45.8	179	ND	ND
Volatile Organics															
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-8	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	11/30/05	5/30/06	10/30/06	5/23/07	12/19/07	6/19/08	5/13/09
Inorganic Constituents										
(1)	Antimony	Total	5							ND
(2)	Arsenic	Total	5	ND	25.6	17.3	25.7	33.9	30.6	33.6
(3)	Barium	Total	10	ND	ND	19	24	ND	18	21.3
(4)	Beryllium	Total	4							ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5							ND
(8)	Copper	Total	10							ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	ND	ND	2.1	ND	32.9	4.23	4.81
(12)	Silver	Total	10							ND
(13)	Thallium	Total	1							ND
(14)	Vanadium	Total	10							167
(15)	Zinc	Total	100							ND
Volatile Organics										
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND

MW-8R	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**6/4/09**	**9/15/09**	**12/15/09**	**4/6/10**	**7/21/10**	**11/10/10**	**2/23/11**	**6/21/11**	**12/13/11**	**6/27/12**	**12/10/12**	**6/12/13**	**12/13/13**	**6/21/14**	**12/9/14**	**6/24/15**	**12/8/15**	**6/28/16**	**11/30/16**
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	0.822	0.735	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	24.6	28.8	30.9	29.6	30.2	18.2	20	17.5	25.1	19.6	17	18	29.6	22.8	30	30.4	27	17.6	15.6
(3)	Barium	Total	10	57.8	44.9	51.2	48	50	40.6	35.2	35.4	37.6	34.4	38	40	35.6	41.1	37	32.4	36.3	34.8	38.5
(4)	Beryllium	Total	4	ND	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.668	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	0.777	1.8	1.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.738 J	ND
(7)	Cobalt	Total	5	0.93	1.04	ND	0.537	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	ND	ND	0.713	0.956	ND	0.802	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.53 J	ND
(9)	Lead	Total	15	ND	0.725	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	1.42	1.65	ND	1.42	1.63	1.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	3.91	7.03	9.22	7.3	5.77	7.5	6.63	8.67	7.95	8.81	8	10	7.08	8.25	6	4.83	5.02	5.22	ND
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	0.896	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	146	155	172	168	155	115	118	107	132	119	101	107	168	133	177	180	165	100	90.4
(15)	Zinc	Total	100	3.05	4.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.23	ND	12.8	5.46	2.2 J	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-9	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	11/30/05	5/31/06	10/31/06	5/22/07	12/18/07	6/19/08	5/12/09
Inorganic Constituents										
(1)	Antimony	Total	5							ND
(2)	Arsenic	Total	5	ND	27	17.8	25.5	34.6	25.9	43
(3)	Barium	Total	10	ND	ND	94.9	118	ND	121	89.6
(4)	Beryllium	Total	4							ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	6.3	ND	ND	ND	ND
(7)	Cobalt	Total	5							ND
(8)	Copper	Total	10							ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	ND	ND	ND	10.3	25.3	2.95	ND
(12)	Silver	Total	10							ND
(13)	Thallium	Total	1							ND
(14)	Vanadium	Total	10							286
(15)	Zinc	Total	100							ND
Volatile Organics										
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND

MW-9R	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**6/5/09**	**9/14/09**	**12/15/09**	**4/6/10**	**7/20/10**	**11/10/10**	**2/23/11**	**6/21/11**	**12/12/11**	**6/27/12**	**12/11/12**	**6/13/13**	**12/14/13**	**6/21/14**	**12/10/14**	**6/24/15**	**12/8/15**	**6/30/16**	**12/1/16**
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	0.678	0.992	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	17.6	18.8	26.6	25.5	27.3	28.1	28	27.4	28.8	34.2	39	32	30.4	32.2	30	22	32.9	32.3	30.4
(3)	Barium	Total	10	113	68.4	59.7	54.7	39.1	46.6	46.1	62.1	53.6	65.2	59	76	103	99.3	75	96	109	63	82.4
(4)	Beryllium	Total	4	0.45	0.429	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.614	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	0.746	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.851	ND
(7)	Cobalt	Total	5	1.6	2.06	1.12	1.56	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	1.94	2.27	4.52	5.64	1.69	1.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	30.9	ND
(9)	Lead	Total	15	ND	0.564	ND	ND	ND	0.647	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	5.12	4.59	4.79	6.14	3.94	1.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.878	ND
(11)	Selenium	Total	50	6.43	5.68	2.85	7.21	3.89	3.45	ND	ND	5.32	ND	ND	ND	ND	2.43	ND	ND	ND	1.89	ND
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	1.09	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	177	204	287	283	260	264	258	256	257	304	328	293	286	294	302	314	293	282	281
(15)	Zinc	Total	100	ND	3.7	2.56	3.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.1	ND	5.8	5.28	ND	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	0.85	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-10	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**11/30/05**	**5/31/06**	**10/31/06**	**5/22/07**	**12/18/07**	**6/19/08**	**5/12/09**
Inorganic Constituents										
(1)	Antimony	Total	5							ND
(2)	Arsenic	Total	5	ND	ND	ND	ND	10.1	4.73	5.72
(3)	Barium	Total	10	ND	ND	24.8	28.4	ND	33.4	41.4
(4)	Beryllium	Total	4							ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	ND	2.27	ND
(7)	Cobalt	Total	5							ND
(8)	Copper	Total	10							2.89
(9)	Lead	Total	15	ND	7.71	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	4.2	4.15
(11)	Selenium	Total	50	51.6	ND	109	54.3	75.4	76.3	72.7
(12)	Silver	Total	10							3.26
(13)	Thallium	Total	1							ND
(14)	Vanadium	Total	10							42
(15)	Zinc	Total	100							ND
Volatile Organics										
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND

MW-10R	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	6/5/09	9/14/09	12/15/09	4/6/10	7/20/10	11/10/10	2/23/11	6/21/11	12/12/11	6/27/12	12/11/12	6/13/13	12/14/13	6/21/14	12/10/14	6/24/15	12/8/15	6/28/16	12/1/16
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	0.555	1.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	6.91	8.54	7.74	4.9	6.4	6.94	5.92	6.99	6.45	6.12	8	8	6.35	4.97	3	ND	3.03	6.21	5.88
(3)	Barium	Total	10	127	87.2	81.4	58.7	44.1	46.3	44.5	50.2	40.4	41	43	56	57.7	68.1	67	80	64.3	37.8	45.9
(4)	Beryllium	Total	4	ND	0.487	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	0.952	ND	0.925	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.52	ND
(7)	Cobalt	Total	5	3.49	3.2	3.18	2.37	2	1.99	ND	ND	ND	ND	ND	ND	ND	2.49	2	2	2.2	1.92	ND
(8)	Copper	Total	10	3.99	2.63	2.78	ND	2.52	1.81	ND	ND	ND	ND	ND	ND	ND	2.82	2	2	ND	2.25	ND
(9)	Lead	Total	15	ND	0.553	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	8.6	9.8	8.02	9.82	15.9	5.36	5.09	ND	ND	ND	5	5	ND	5.53	5	4	3.67	4.43	5.32
(11)	Selenium	Total	50	8.22	9.82	10.2	10.5	13.9	15.3	16.5	14.4	14.6	7.19	10	8	11.5	17.5	23	37.3	37.6	40.9	46.7
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	41.4	53.6	64.8	47.3	53.5	56	46.8	53.1	50	53.9	57	57	49.2	39.3	36	39.7	38.3	32.3	35.8
(15)	Zinc	Total	100	ND	3.29	6.43	6.83	4.96	ND	ND	6.47	ND	ND	ND	11	ND	5.84	ND	ND	ND	2.55	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-11	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	9/14/05	5/30/06	10/31/06	5/22/07	12/19/07	6/19/08	5/13/09	6/4/09	9/14/09	12/17/09	4/7/10	7/20/10	11/9/10	2/23/11	6/22/11	12/13/11	6/27/12	12/10/12	6/12/13
Inorganic Constituents																						
(1)	Antimony	Total	5							ND	ND	0.543	0.662	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	ND	ND	ND	ND	12.7	5.74	5.42	7.42	8.46	6.72	5.92	6.18	ND	6.65	5.77	ND	6.3	8	ND
(3)	Barium	Total	10	ND	ND	29	25.8	ND	28.4	34.3	33.6	39	36.5	36.5	36.6	27	31.3	34.4	34.8	31.1	36	35
(4)	Beryllium	Total	4							ND	0.302	0.451	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	1.6	ND	ND	2.93	ND	ND	1.49	0.998	1.14	ND	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5							ND	ND	1.91	0.873	0.594	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10							2.07	4.63	0.513	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.25	2.36	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	4.86	5.66	ND	10.8	6.48	8.68	7.07	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	7.5	ND	11.3	11.6	17.9	2.86	5.25	ND	9.54	4.8	9	ND	ND	7.93	6.33	ND	ND	20	ND
(12)	Silver	Total	10							729	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1							ND	ND	ND	ND	ND	5	ND	10	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10							42.7	43.6	40.5	52.7	48.1	34.5	48.7	46.2	42.7	47.3	49	51	40
(15)	Zinc	Total	100							4.84	ND	ND	8.93	ND	ND	ND	ND	ND	ND	9.8	ND	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	10.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-11	*40 CFR Part 258, Appendix I Constituents*	**12/13/13**	**3/21/14**	**6/21/14**	**12/10/14**	**6/25/15**	**12/9/15**	**6/29/16**	**11/30/16**
Inorganic Constituents									
(1)	Antimony	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	ND	7.95	7.68	6	5.49	5.84	12.8	7.2
(3)	Barium	36.2	37.6	40.4	39	36.7	41.6	38.1	41.6
(4)	Beryllium	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	ND	ND	ND	ND	ND	ND	6.48	ND
(7)	Cobalt	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	ND	ND	ND	2	ND	ND	ND	ND
(9)	Lead	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	ND	ND	2.87	3	3.44	2.6	2.46	ND
(11)	Selenium	ND	11	8.51	9	7.22	15.3	21.1	16.7
(12)	Silver	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	54.7	52.8	52.7	57	54.5	54.3	83.3	46.7
(15)	Zinc	ND	7.28	ND	ND	21.7	7.33	ND	ND
Volatile Organics									
(16)	Acetone	ND	ND	ND	ND	ND	ND	170	ND
(17)	Acrylonitrile	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	ND	ND	ND	ND	ND	ND	ND	ND

MW-11 *40 CFR Part 258, Appendix II Constituents*	CAS RN	3/21/14
Acenaphthene	83-32-9	ND
Acenaphthylene	208-96-8	ND
Acetone	67-64-1	ND
Acetonitrile; Methyl cyanide	75-05-8	ND
Acetophenone	98-86-2	ND
2-Acetylaminofluorene; 2-AAF	53-96-3	ND
Aldrin	309-00-2	ND
Allyl chloride	107-05-1	ND
4-Aminobiphenyl	92-67-1	ND
Anthracene	120-12-7	ND
Benzo[a]anthracene; Benzanthracene	56-55-3	ND
Benzo[b]fluoranthene	205-99-2	ND
Benzo[k]fluoranthene	207-08-9	ND
Benzo[ghi]perylene	191-24-2	ND
Benzo[a]pyrene	50-32-8	ND
Benzyl alcohol	100-51-6	ND
alpha-BHC	319-84-6	ND
beta-BHC	319-85-7	ND
delta-BHC	319-86-8	ND
gamma-BHC; Lindane	58-89-9	ND
Bis(2-chloroethoxy)methane	111-91-1	ND
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	ND
Bis(2-chloro-1-methylethyl) ether; 2,2′-Dichlorodiisopropyl ether; DCIP	108-60-1	ND
Bis(2-ethylhexyl) phthalate	117-81-7	ND
4-Bromophenyl phenyl ether	101-55-3	ND
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	ND
alpha-chlordane	5103-71-9	ND
beta-chlordane	5103-74-2	ND
gamma-chlordane	5566-34-7	ND
p-Chloroaniline	106-47-8	ND
Chlorobenzilate	510-15-6	ND
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	ND
2-Chloronaphthalene	91-58-7	ND
2-Chlorophenol	95-57-8	ND
4-Chlorophenyl phenyl ether	7005-72-3	ND
Chloroprene	126-99-8	ND
Chrysene	218-01-9	ND
m-Cresol; 3-Methylphenol	108-39-4	ND
o-Cresol; 2-Methylphenol	95-48-7	ND
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	ND
4,4′-DDD	72-54-8	ND
4,4′-DDE	72-55-9	ND
4,4′-DDT	50-29-3	ND
Dibenz[a,h]anthracene	53-70-3	ND
Dibenzofuran	132-64-9	ND
Di-n-butyl phthalate	84-74-2	ND
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	ND
3,3′-Dichlorobenzidine	91-94-1	ND
2,4-Dichlorophenol	120-83-2	ND
2,6-Dichlorophenol	87-65-0	ND
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	ND
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	ND
1,1-Dichloropropene	563-58-6	ND
Dieldrin	60-57-1	ND
Diethyl phthalate	84-66-2	ND
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	ND
Dimethoate	60-51-5	ND
p-(Dimethylamino)azobenzene	60-11-7	ND
7,12-Dimethylbenz[a]anthracene	57-97-6	ND
3,3′-Dimethylbenzidine	119-93-7	ND
alpha, alpha-Dimethylphenethylamine	122-09-8	ND
2,4-Dimethylphenol; m-Xylenol	105-67-9	ND
Dimethyl phthalate	131-11-3	ND
m-Dinitrobenzene	99-65-0	ND
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	534-52-1	ND
2,4-Dinitrophenol	51-28-5	ND
2,4-Dinitrotoluene	121-14-2	ND
2,6-Dinitrotoluene	606-20-2	ND
Di-n-octyl phthalate	117-84-0	ND
Diphenylamine	122-39-4	ND
Endosulfan I	959-98-8	ND
Endosulfan II	33213-65-9	ND
Endosulfan sulfate	1031-07-8	ND
Endrin	72-20-8	ND
Endrin aldehyde	7421-93-4	ND
Ethyl methacrylate	97-63-2	ND
Ethyl methanesulfonate	62-50-0	ND
Famphur	52-85-7	ND
Fluoranthene	206-44-0	ND
Fluorene	86-73-7	ND
Heptachlor	76-44-8	ND
Heptachlor epoxide	1024-57-3	ND
Hexachlorobenzene	118-74-1	ND
Hexachlorobutadiene	87-68-3	ND
Hexachlorocyclopentadiene	77-47-4	ND
Hexachloroethane	67-72-1	ND
Indeno(1,2,3-cd)pyrene	193-39-5	ND
Isobutyl alcohol	78-83-1	ND
Isodrin	465-73-6	ND
Isophorone	78-59-1	ND
Isosafrole	120-58-1	ND
Kepone	143-50-0	ND
Mercury	(Total)	ND
Methacrylonitrile	126-98-7	ND
Methapyrilene	91-80-5	ND
Methoxychlor	72-43-5	ND
3-Methylcholanthrene	56-49-5	ND
Methyl methacrylate	80-62-6	ND
Methyl methanesulfonate	66-27-3	ND
2-Methylnaphthalene	91-57-6	ND
Methyl parathion; Parathion methyl	298-00-0	ND
Naphthalene	91-20-3	ND
1,4-Naphthoquinone	130-15-4	ND
1-Naphthylamine	134-32-7	ND
2-Naphthylamine	91-59-8	ND
o-Nitroaniline; 2-Nitroaniline	88-74-4	ND
m-Nitroaniline; 3-Nitroaniline	99-09-2	ND
p-Nitroaniline; 4-Nitroaniline	100-01-6	ND
Nitrobenzene	98-95-3	ND
o-Nitrophenol; 2-Nitrophenol	88-75-5	ND
p-Nitrophenol; 4-Nitrophenol	100-02-7	ND
N-Nitrosodi-n-butylamine	924-16-3	ND
N-Nitrosodiethylamine	55-18-5	ND
N-Nitrosodimethylamine	62-75-9	ND
N-Nitrosodiphenylamine	86-30-6	ND
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	ND
N-Nitrosomethylethalamine	10595-95-6	ND
N-Nitrosopiperidine	100-75-4	ND
N-Nitrosopyrrolidine	930-55-2	ND
5-Nitro-o-toluidine	99-55-8	ND
Parathion	56-38-2	ND
Pentachlorobenzene	608-93-5	ND
Pentachloronitrobenzene	82-68-8	ND
Pentachlorophenol	87-86-5	ND
Phenacetin	62-44-2	ND
Phenanthrene	85-01-8	ND
Phenol	108-95-2	ND
p-Phenylenediamine	106-50-3	ND
Phorate	298-02-2	ND
Aroclor-1016	12674-11-2	ND
Aroclor-1221	11104-28-2	ND
Aroclor-1232	11141-16-5	ND
Aroclor-1242	53469-21-9	ND
Aroclor-1248	12672-29-6	ND
Aroclor-1254	11097-69-1	ND
Aroclor-1260	11096-82-5	ND
Pronamide	23950-58-5	ND
Propionitrile; Ethyl cyanide	107-12-0	ND
Pyrene	129-00-0	ND
Safrole	94-59-7	ND
Silvex; 2,4,5-TP	93-72-1	ND
Sulfide	18496-25-8	ND
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	ND
2,3,4,6-Tetrachlorophenol	58-90-2	ND
o-Toluidine	95-53-4	ND
Toxaphene	8001-35-2	ND
1,2,4-Trichlorobenzene	120-82-1	ND
2,4,5-Trichlorophenol	95-95-4	ND
2,4,6-Trichlorophenol	88-06-2	ND
O,O,O-Triethyl phosphorothioate	126-68-1	ND
sym-Trinitrobenzene	99-35-4	ND

MW-12	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**9/13/05**	**5/31/06**	**10/31/06**	**5/22/07**	**12/19/07**	**6/18/08**	**5/12/09**	**6/5/09**	**9/15/09**	**12/17/09**	**4/6/10**	**7/21/10**	**11/9/10**	**2/22/11**	**6/22/11**	**12/12/11**	**6/28/12**	**12/11/12**	**6/12/13**	**12/13/13**
Inorganic Constituents																							
(1)	Antimony	Total	5							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	15	ND	ND	ND	13.2	8.69	8.41	8.96	9.68	9.02	9.18	9.51	10.1	9.26	8.87	8.8	8.51	10	10	10.7
(3)	Barium	Total	10	ND	ND	39.7	46.8	ND	43.9	42.3	34	40.2	39.1	34.8	45	32.3	36.7	42.9	42.5	37.3	40	43	37
(4)	Beryllium	Total	4							ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	3.6	ND	ND	3.05	ND	0.885	0.908	1.58	1.64	2.5	0.88	ND	ND	ND	ND	ND	ND	36.3
(7)	Cobalt	Total	5							ND	0.713	0.829	ND	0.799	0.779	0.522	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10							2.78	1.34	1.03	0.985	98	1.28	0.737	ND	ND	ND	ND	ND	ND	ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	3.48	4.24	3.64	5	5.1	13	4.27	3.59	ND	ND	ND	ND	ND	ND	12.5
(11)	Selenium	Total	50	22.4	ND	18.2	39.1	57.9	29.6	32.1	31.7	34.1	40.7	37.4	38.4	47.3	48.7	39.9	31	31	34	36	33.3
(12)	Silver	Total	10							40.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1							ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10							87.2	90.1	85.4	97.6	93	81.5	91.4	85.4	84.5	74.7	83.7	94	90	95.9
(15)	Zinc	Total	100							5.99	ND	2.71	295	ND	ND	ND	ND	ND	5.09	ND	ND	ND	ND
Volatile Organics																							
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-12	*40 CFR Part 258, Appendix I Constituents*	**6/22/14**	**12/11/14**	**6/24/15**	**12/9/15**	**6/29/16**	**12/1/16**
Inorganic Constituents							
(1)	Antimony	ND	ND	ND	ND	ND	ND
(2)	Arsenic	11.5	7	7.57	8.3	11.9	11
(3)	Barium	38.8	36	30.5	28.1	26.7	30.2
(4)	Beryllium	ND	ND	ND	ND	ND	ND
(5)	Cadmium	ND	ND	ND	ND	ND	ND
(6)	Chromium	ND	2	ND	ND	1.42	ND
(7)	Cobalt	ND	ND	ND	ND	0.787	ND
(8)	Copper	ND	2	ND	ND	ND	ND
(9)	Lead	ND	ND	ND	ND	ND	ND
(10)	Nickel	2.12	2	2.73	ND	2.76	ND
(11)	Selenium	33.7	30	33.7	38.2	34	42.6
(12)	Silver	ND	ND	ND	ND	ND	ND
(13)	Thallium	ND	ND	ND	ND	ND	ND
(14)	Vanadium	98.6	90	97.1	109	99.8	96.4
(15)	Zinc	ND	ND	ND	5.21	4.91	ND
Volatile Organics							
(16)	Acetone	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	ND	ND	ND	ND	ND	ND
(18)	Benzene	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	ND	ND	ND	ND	ND	ND
(50)	Styrene	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	ND	ND	ND	ND	ND	ND
(54)	Toluene	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	ND	ND	ND	ND	ND	ND
(62)	Xylene	ND	ND	ND	ND	ND	ND

MW-15	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**11/30/05**	**3/15/06**	**5/30/06**	**12/18/06**	**3/21/07**	**5/22/07**	**9/5/07**	**6/19/08**	**5/13/09**
Inorganic Constituents												
(1)	Antimony	Total	5									ND
(2)	Arsenic	Total	5	ND	20	ND	ND	ND	11.4	12.2	9.37	8.75
(3)	Barium	Total	10	ND	ND	ND	37.2	131	34.5	ND	35.5	36.2
(4)	Beryllium	Total	4									ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	ND	ND	ND	2.89	ND
(7)	Cobalt	Total	5									ND
(8)	Copper	Total	10									ND
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND	3.03	3.21
(11)	Selenium	Total	50	21.6	62.6	ND	41.3	34.6	ND	33.2	9.27	11
(12)	Silver	Total	10									23.3
(13)	Thallium	Total	1									ND
(14)	Vanadium	Total	10									48.4
(15)	Zinc	Total	100									3.5
Volatile Organics												
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-15R	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	6/4/09	9/15/09	12/17/09	4/7/10	7/21/10	11/10/10	2/23/11	6/22/11	12/13/11	6/27/12	12/10/12	6/12/13	12/14/13	6/21/14	12/9/14	6/25/15	12/8/15	6/29/16	11/30/16
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	0.588	0.753	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND
(2)	Arsenic	Total	5	8.83	8.07	6.99	5.44	8	ND	5.74	6.5	ND	6.05	6	ND	6.17	6.38	9	3.89	ND	12	5.51
(3)	Barium	Total	10	70.8	51	65.5	58	52.7	49	38.2	38.3	43.5	41.8	45	45	47.3	52.8	44	46.8	46.1	39.2	39.9
(4)	Beryllium	Total	4	0.804	0.493	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.633	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	0.616	0.688	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.09	ND
(7)	Cobalt	Total	5	2.08	1.05	1.13	0.943	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	ND	0.651	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.7	2	2.13	ND	ND	ND
(9)	Lead	Total	15	ND	ND	ND	ND	2.82	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	10.4	7.76	5.97	8.32	20.9	ND	ND	ND	ND	ND	ND	ND	ND	2.86	3	3.05	ND	4.33	ND
(11)	Selenium	Total	50	13.3	8.49	16	11.5	ND	ND	9.98	11.7	ND	ND	13	ND	11.5	9.59	7	7.52	7.32	16	9.23
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	5.39	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	39.9	46.3	54.8	43.4	52.6	54.3	51.3	57.1	60.4	55.9	45	45	43	48.1	54	36	48.9	70.9	37.3
(15)	Zinc	Total	100	7.05	3.75	5.37	8.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.05	6	ND	5.89	ND	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	33	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-16	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**6/4/09**	**9/15/09**	**12/17/09**	**4/6/10**	**7/21/10**	**11/10/10**	**2/23/11**	**6/22/11**	**12/13/11**	**6/27/12**	**12/10/12**	**6/12/13**	**12/14/13**	**6/21/14**	**12/9/14**	**6/25/15**	**12/8/15**	**6/29/16**	**11/30/16**
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	ND	1.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.462	ND
(2)	Arsenic	Total	5	10.6	13.7	13.4	16	12	13	15.6	19.5	16.9	16.1	13	ND	22	39.3	105	148	141	98.8	128
(3)	Barium	Total	10	131	121	108	89	102	146	130	102	95.4	84.3	100	98	77.6	72.9	67	62	85	101	67.9
(4)	Beryllium	Total	4	0.346	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	1.17	2.05	1.58	5.03	3.51	3.55	ND	ND	ND	ND	ND	ND	ND	2.48	3	ND	ND	2.37	ND
(7)	Cobalt	Total	5	ND	ND	0.687	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	ND	0.738	0.782	1.19	0.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.44	ND
(9)	Lead	Total	15	ND	ND	ND	ND	1.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	2.69	1.4	1.69	ND	6.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(11)	Selenium	Total	50	8.26	6.14	6.09	6.88	10	10.1	9.17	8.87	7.62	8.35	13	19.3	6.54	4.35	ND	ND	ND	1.64	ND
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	58.4	75.6	89.7	105	79.7	90	102	127	105	114	96	82	142	216	458	559	523	392	512
(15)	Zinc	Total	100	6.04	ND	2.68	ND	4.07	ND	ND	ND	ND	ND	7	ND	ND	ND	ND	ND	5.21	4.68	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-18	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	11/30/05	3/15/06	5/31/06	12/18/06	3/21/07	5/22/07	9/5/07	6/18/08	5/12/09
Inorganic Constituents												
(1)	Antimony	Total	5									ND
(2)	Arsenic	Total	5	ND	ND	ND	ND	ND	11.4	ND	4.66	4.69
(3)	Barium	Total	10	ND	ND	ND	66.1	62.4	68.6	ND	75.9	88.5
(4)	Beryllium	Total	4									ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5									ND
(8)	Copper	Total	10									2.55
(9)	Lead	Total	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	ND	ND	ND	ND	ND	ND	ND	8.08	9.55
(11)	Selenium	Total	50	31	57.8	ND	84.5	55.5	27.7	48.9	30.3	27.6
(12)	Silver	Total	10									148
(13)	Thallium	Total	1									ND
(14)	Vanadium	Total	10									29.3
(15)	Zinc	Total	100									4.55
Volatile Organics												
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	149	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	27.7	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-18R	40 CFR Part 258, Appendix I Constituents	CAS RN	MSW-PQL µg/L	6/5/09	9/15/09	12/17/09	4/6/10	7/21/10	11/10/10	2/24/11	6/22/11	12/12/11	6/28/12	12/11/12	6/12/13	12/13/13	6/22/14	12/11/14	6/24/15	12/9/15	6/29/16	11/30/16
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	ND	0.513	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	7.52	9.2	7.11	7.67	7.86	9.16	8.5	8.23	ND	7.36	9	ND	ND	8.27	6	6.05	6.88	11.6	8.98
(3)	Barium	Total	10	112	67.8	48.9	57.7	46	43.9	50.4	45.5	51.5	45.2	49	46	36	47.5	36	31.2	31.4	31.3	43.7
(4)	Beryllium	Total	4	0.776	ND	ND	ND	1.59	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	0.616	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5	10.6	10.3	9.87	11.5	8.16	6.08	8.35	5.66	ND	6.52	7	ND	ND	7.26	5	3.93	3.97	2.88	ND
(8)	Copper	Total	10	3.21	1.42	1.45	1.49	ND	ND	ND	ND	ND	ND	6	ND	ND	3.82	13	ND	ND	ND	ND
(9)	Lead	Total	15	ND	0.997	ND	ND	2.88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	38.7	29.1	24.3	32	26.2	ND	20	14.5	ND	14.4	18	ND	ND	16.9	15	11.5	12.6	11.1	7.72
(11)	Selenium	Total	50	17.2	18	15.2	13.9	21	ND	19.6	17.1	ND	19.2	22	ND	ND	20.1	18	17.6	23.3	25.3	19.5
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	ND	3.07	ND	9.99	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	34.9	52	51.4	50	43.2	57.5	51.1	59.5	72.2	58.5	68	70	65.2	54.7	61	58.8	55.6	75.9	ND
(15)	Zinc	Total	100	ND	13.4	3.8	ND	ND	ND	ND	ND	ND	ND	8	ND	ND	6.95	8	ND	5.83	ND	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	33	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-22	*40 CFR Part 258, Appendix I Constituents*	CAS RN	MSW-PQL µg/L	6/5/09	9/14/09	12/14/09	4/6/10	7/20/10	11/10/10	2/22/11	6/21/11	12/12/11	6/28/12	12/11/12	6/13/13	12/14/13	6/22/14	12/10/14	6/23/15	12/10/15	6/30/16	12/1/16
Inorganic Constituents																						
(1)	Antimony	Total	5	0.539	1.34	1.34	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	9.18	8.65	8.95	8.5	8.98	8.76	8.64	8.73	8.82	7.89	9	9	8.57	7.98	6	7.72	6	9.81 J	9.35
(3)	Barium	Total	10	65.3	36.3	38.1	35.5	36.5	30	32.5	32.6	29.2	27.9	34	32	28.8	32.9	30	28.4	32	25	31.6
(4)	Beryllium	Total	4	ND	0.535	ND	ND	ND	0.384	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.692	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	0.932	ND	0.603	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.918	ND
(7)	Cobalt	Total	5	0.674	0.78	0.742	0.859	0.691	0.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.487	ND
(8)	Copper	Total	10	2.94	1.75	1.9	1.82	1.57	1.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.14	ND
(9)	Lead	Total	15	ND	0.593	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	3.52	3.38	2.08	3.73	6.84	ND	ND	ND	ND	ND	ND	ND	ND	2.08	ND	2.1	3	2.41	ND
(11)	Selenium	Total	50	23.5	26.1	31	25.5	22.6	22.2	25	20.6	35	17	14	15	19.6	16.5	17	10.1	12	11.6	12.1
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	0.994	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	73.9	95.5	113	101	94.6	93.9	100	100	97.7	94.8	110	116	104	112	108	105	113	106	114
(15)	Zinc	Total	100	ND	4.78	3.94	5.54	3.35	ND	ND	ND	ND	6.61	7	ND	ND	ND	ND	19.5	6	5.68	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.51	1.1
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.54	4.44	17	62
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-22 *40 CFR Part 258, Appendix II Constituents*	CAS RN	12/10/15
Acenaphthene	83-32-9	ND
Acenaphthylene	208-96-8	ND
Acetonitrile; Methyl cyanide	75-05-8	ND
Acetophenone	98-86-2	ND
2-Acetylaminofluorene; 2-AAF	53-96-3	ND
Acrolein	107-02-8	ND
Aldrin	309-00-2	ND
Allyl chloride	107-05-1	ND
4-Aminobiphenyl	92-67-1	ND
Anthracene	120-12-7	ND
Benzo[a]anthracene; Benzanthracene	56-55-3	ND
Benzo[b]fluoranthene	205-99-2	ND
Benzo[k]fluoranthene	207-08-9	ND
Benzo[ghi]perylene	191-24-2	ND
Benzo[a]pyrene	50-32-8	ND
Benzyl alcohol	100-51-6	ND
alpha-BHC	319-84-6	ND
beta-BHC	319-85-7	ND
delta-BHC	319-86-8	ND
gamma-BHC; Lindane	58-89-9	ND
Bis(2-chloroethoxy)methane	111-91-1	ND
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	ND
Bis(2-chloro-1-methylethyl) ether; 2,2′-Dichlorodiisopropyl ether; DCIP	108-60-1	ND
Bis(2-ethylhexyl) phthalate	117-81-7	ND
4-Bromophenyl phenyl ether	101-55-3	ND
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	ND
alpha-chlordane	5103-71-9	ND
gamma-chlordane	5566-34-7	ND
p-Chloroaniline	106-47-8	ND
Chlorobenzilate	510-15-6	ND
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	ND
2-Chloronaphthalene	91-58-7	ND
2-Chlorophenol	95-57-8	ND
4-Chlorophenyl phenyl ether	7005-72-3	ND
Chrysene	218-01-9	ND
m-Cresol; 3-Methylphenol	108-39-4	ND
o-Cresol; 2-Methylphenol	95-48-7	ND
Cyanide	57-12-5	ND
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	ND
4,4′-DDD	72-54-8	ND
4,4′-DDE	72-55-9	ND
4,4′-DDT	50-29-3	ND
Diallate	2303-16-4	ND
Dibenz[a,h]anthracene	53-70-3	ND
Dibenzofuran	132-64-9	ND
Di-n-butyl phthalate	84-74-2	ND
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	ND
3,3′-Dichlorobenzidine	91-94-1	ND
Dichlorodifluoromethane; CFC 12	75-71-8	ND
2,4-Dichlorophenol	120-83-2	ND
2,6-Dichlorophenol	87-65-0	ND
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	ND

	CAS RN	12/10/15
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	ND
1,1-Dichloropropene	563-58-6	ND
Dieldrin	60-57-1	ND
Diethyl phthalate	84-66-2	ND
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	ND
Dimethoate	60-51-5	ND
7,12-Dimethylbenz[a]anthracene	57-97-6	ND
3,3′-Dimethylbenzidine	119-93-7	ND
alpha, alpha-Dimethylphenethylamine	122-09-8	ND
2,4-Dimethylphenol; m-Xylenol	105-67-9	ND
Dimethyl phthalate	131-11-3	ND
m-Dinitrobenzene	99-65-0	ND
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	534-52-1	ND
2,4-Dinitrophenol	51-28-5	ND
2,4-Dinitrotoluene	121-14-2	ND
2,6-Dinitrotoluene	606-20-2	ND
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	ND
Di-n-octyl phthalate	117-84-0	ND
Diphenylamine	122-39-4	ND
Disulfoton	298-04-4	ND
Endosulfan I	959-98-8	ND
Endosulfan II	33213-65-9	ND
Endosulfan sulfate	1031-07-8	ND
Endrin	72-20-8	ND
Endrin aldehyde	7421-93-4	ND
Ethyl methacrylate	97-63-2	ND
Ethyl methanesulfonate	62-50-0	ND
Famphur	52-85-7	ND
Fluoranthene	206-44-0	ND
Fluorene	86-73-7	ND
Heptachlor	76-44-8	ND
Heptachlor epoxide	1024-57-3	ND
Hexachlorobenzene	118-74-1	ND
Hexachlorobutadiene	87-68-3	ND
Hexachlorocyclopentadiene	77-47-4	ND
Hexachloroethane	67-72-1	ND
Hexachloropropene	1888-71-7	ND
Indeno(1,2,3-cd)pyrene	193-39-5	ND
Isobutyl alcohol	78-83-1	ND
Isodrin	465-73-6	ND
Isophorone	78-59-1	ND
Isosafrole	120-58-1	ND
Kepone	143-50-0	ND
Mercury	(Total)	ND
Methacrylonitrile	126-98-7	ND
Methapyrilene	91-80-5	ND
Methoxychlor	72-43-5	ND
3-Methylcholanthrene	56-49-5	ND
Methyl methacrylate	80-62-6	ND
Methyl methanesulfonate	66-27-3	ND
2-Methylnaphthalene	91-57-6	ND
Methyl parathion; Parathion methyl	298-00-0	ND

	CAS RN	12/10/15
Naphthalene	91-20-3	ND
1,4-Naphthoquinone	130-15-4	ND
1-Naphthylamine	134-32-7	ND
2-Naphthylamine	91-59-8	ND
o-Nitroaniline; 2-Nitroaniline	88-74-4	ND
m-Nitroaniline; 3-Nitroaniline	99-09-2	ND
p-Nitroaniline; 4-Nitroaniline	100-01-6	ND
Nitrobenzene	98-95-3	ND
o-Nitrophenol; 2-Nitrophenol	88-75-5	ND
p-Nitrophenol; 4-Nitrophenol	100-02-7	ND
N-Nitrosodi-n-butylamine	924-16-3	ND
N-Nitrosodiethylamine	55-18-5	ND
N-Nitrosodimethylamine	62-75-9	ND
N-Nitrosodiphenylamine	86-30-6	ND
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	ND
N-Nitrosomethylethalamine	10595-95-6	ND
N-Nitrosopiperidine	100-75-4	ND
N-Nitrosopyrrolidine	930-55-2	ND
5-Nitro-o-toluidine	99-55-8	ND
Parathion	56-38-2	ND
Pentachlorobenzene	608-93-5	ND
Pentachloronitrobenzene	82-68-8	ND
Pentachlorophenol	87-86-5	ND
Phenacetin	62-44-2	ND
Phenanthrene	85-01-8	ND
Phenol	108-95-2	ND
p-Phenylenediamine	106-50-3	ND
Phorate	298-02-2	ND
Polychlorinated biphenyls; PCBs	1336-36-3	ND
Aroclor-1016	12674-11-2	ND
Aroclor-1221	11104-28-2	ND
Aroclor-1232	11141-16-5	ND
Aroclor-1242	53469-21-9	ND
Aroclor-1248	12672-29-6	ND
Aroclor-1254	11097-69-1	ND
Aroclor-1260	11096-82-5	ND
Pronamide	23950-58-5	ND
Propionitrile; Ethyl cyanide	107-12-0	ND
Pyrene	129-00-0	ND
Safrole	94-59-7	ND
Silvex; 2,4,5-TP	93-72-1	ND
Sulfide	18496-25-8	27
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	ND
2,3,4,6-Tetrachlorophenol	58-90-2	ND
o-Toluidine	95-53-4	ND
Toxaphene	8001-35-2	ND
1,2,4-Trichlorobenzene	120-82-1	ND
2,4,5-Trichlorophenol	95-95-4	ND
2,4,6-Trichlorophenol	88-06-2	ND
O,O,O-Triethyl phosphorothioate	126-68-1	ND
sym-Trinitrobenzene	99-35-4	ND

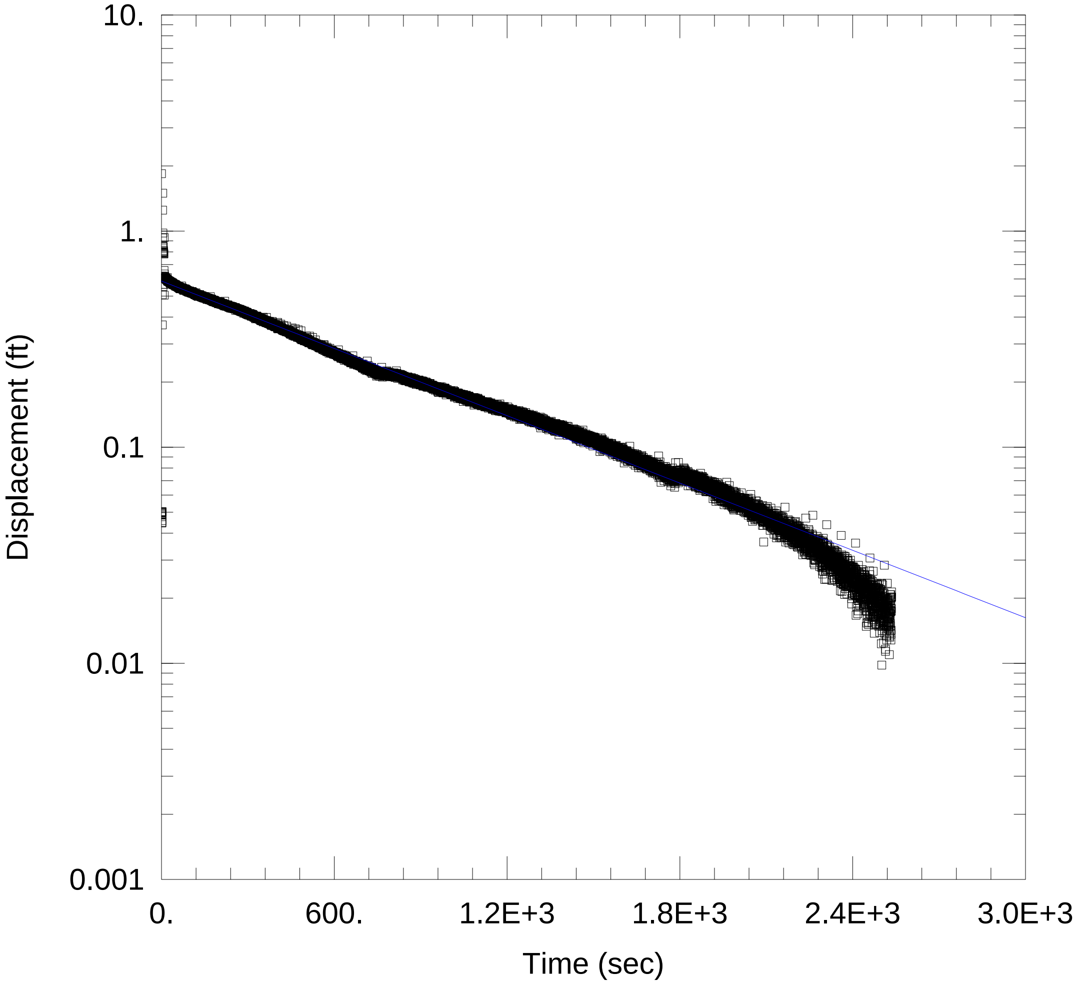
MW-23	40 CFR Part 258, Appendix I Constituents	CAS RN	MSW-PQL µg/L	6/5/09	9/14/09	12/15/09	4/6/10	7/20/10	11/10/10	2/22/11	6/21/11	12/12/11	6/27/12	12/11/12	6/13/13	12/14/13	6/22/14	12/10/14	6/24/15	12/10/15	6/30/16	12/1/16
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	1.21	2.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	7.98	8.56	7.64	9.18	8.28	9.15	9.72	8.57	7.77	6.59	6	6	7.62	8.07	5	23.1	6	9.36	7.3
(3)	Barium	Total	10	54.8	33.1	33.1	38.2	26.4	19.8	20.2	24.9	23.9	21.5	24	24	26.8	27.4	28	48.9	48	28.2	36.4
(4)	Beryllium	Total	4	ND	0.518	ND	1.93	ND	0.406	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.678	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	0.64	ND	ND	0.684	0.995	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(7)	Cobalt	Total	5	2.85	2.05	1.76	1.03	ND	0.509	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	4.56	4.59	4.04	4.53	4.72	4.16	5.37	ND	ND	ND	ND	ND	ND	2.83	3	ND	3	3.35	ND
(9)	Lead	Total	15	ND	0.565	ND	0.768	2.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	7.33	7.06	6.08	9.17	10.7	3.61	5.59	ND	ND	ND	ND	ND	ND	ND	2	ND	3	2.6	ND
(11)	Selenium	Total	50	19.9	23.2	27	50.6	51.6	35.1	39.3	91.5	36.5	25.8	48	64	43.8	33.8	53	2.13	25	27.1	34.1
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	0.926	ND	0.868	ND	0.801	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	51.2	61.1	74.8	77.3	72.1	78.7	86.1	70.1	73.9	72.7	68	63	78.3	75	72	260	93	84.2	72.7
(15)	Zinc	Total	100	ND	4.76	5.18	6.74	ND	ND	20.3	ND	ND	ND	ND	ND	5.38	7.33	ND	ND	11	12.4	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-23 *40 CFR Part 258, Appendix II Constituents*	CAS RN	12/10/15
Acenaphthene	83-32-9	ND
Acenaphthylene	208-96-8	ND
Acetonitrile; Methyl cyanide	75-05-8	ND
Acetophenone	98-86-2	ND
2-Acetylaminofluorene; 2-AAF	53-96-3	ND
Acrolein	107-02-8	ND
Aldrin	309-00-2	ND
Allyl chloride	107-05-1	ND
4-Aminobiphenyl	92-67-1	ND
Anthracene	120-12-7	ND
Benzo[a]anthracene; Benzanthracene	56-55-3	ND
Benzo[b]fluoranthene	205-99-2	ND
Benzo[k]fluoranthene	207-08-9	ND
Benzo[ghi]perylene	191-24-2	ND
Benzo[a]pyrene	50-32-8	ND
Benzyl alcohol	100-51-6	ND
alpha-BHC	319-84-6	ND
beta-BHC	319-85-7	ND
delta-BHC	319-86-8	ND
gamma-BHC; Lindane	58-89-9	ND
Bis(2-chloroethoxy)methane	111-91-1	ND
Bis(2-chloroethyl)ether; Dichloroethyl ether	111-44-4	ND
Bis(2-chloro-1-methylethyl) ether; 2,2′-Dichlorodiisopropyl ether; DCIP	108-60-1	ND
Bis(2-ethylhexyl) phthalate	117-81-7	ND
4-Bromophenyl phenyl ether	101-55-3	ND
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	ND
alpha-chlordane	5103-71-9	ND
gamma-chlordane	5566-34-7	ND
p-Chloroaniline	106-47-8	ND
Chlorobenzilate	510-15-6	ND
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	ND
2-Chloronaphthalene	91-58-7	ND
2-Chlorophenol	95-57-8	ND
4-Chlorophenyl phenyl ether	7005-72-3	ND
Chrysene	218-01-9	ND
m-Cresol; 3-Methylphenol	108-39-4	ND
o-Cresol; 2-Methylphenol	95-48-7	ND
Cyanide	57-12-5	ND
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	ND
4,4′-DDD	72-54-8	ND
4,4′-DDE	72-55-9	ND
4,4′-DDT	50-29-3	ND
Diallate	2303-16-4	ND
Dibenz[a,h]anthracene	53-70-3	ND
Dibenzofuran	132-64-9	ND
Di-n-butyl phthalate	84-74-2	ND
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	ND
3,3′-Dichlorobenzidine	91-94-1	ND
Dichlorodifluoromethane; CFC 12	75-71-8	ND
2,4-Dichlorophenol	120-83-2	ND
2,6-Dichlorophenol	87-65-0	ND
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	ND
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	ND
1,1-Dichloropropene	563-58-6	ND
Dieldrin	60-57-1	ND
Diethyl phthalate	84-66-2	ND
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	ND
Dimethoate	60-51-5	ND
7,12-Dimethylbenz[a]anthracene	57-97-6	ND
3,3′-Dimethylbenzidine	119-93-7	ND
alpha, alpha-Dimethylphenethylamine	122-09-8	ND
2,4-Dimethylphenol; m-Xylenol	105-67-9	ND
Dimethyl phthalate	131-11-3	ND
m-Dinitrobenzene	99-65-0	ND
4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol	534-52-1	ND
2,4-Dinitrophenol	51-28-5	ND
2,4-Dinitrotoluene	121-14-2	ND
2,6-Dinitrotoluene	606-20-2	ND
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	ND
Di-n-octyl phthalate	117-84-0	ND
Diphenylamine	122-39-4	ND
Disulfoton	298-04-4	ND
Endosulfan I	959-98-8	ND
Endosulfan II	33213-65-9	ND
Endosulfan sulfate	1031-07-8	ND
Endrin	72-20-8	ND
Endrin aldehyde	7421-93-4	ND
Ethyl methacrylate	97-63-2	ND
Ethyl methanesulfonate	62-50-0	ND
Famphur	52-85-7	ND
Fluoranthene	206-44-0	ND
Fluorene	86-73-7	ND
Heptachlor	76-44-8	ND
Heptachlor epoxide	1024-57-3	ND
Hexachlorobenzene	118-74-1	ND
Hexachlorobutadiene	87-68-3	ND
Hexachlorocyclopentadiene	77-47-4	ND
Hexachloroethane	67-72-1	ND
Hexachloropropene	1888-71-7	ND
Indeno(1,2,3-cd)pyrene	193-39-5	ND
Isobutyl alcohol	78-83-1	ND
Isodrin	465-73-6	ND
Isophorone	78-59-1	ND
Isosafrole	120-58-1	ND
Kepone	143-50-0	ND
Mercury	(Total)	ND
Methacrylonitrile	126-98-7	ND
Methapyrilene	91-80-5	ND
Methoxychlor	72-43-5	ND
3-Methylcholanthrene	56-49-5	ND
Methyl methacrylate	80-62-6	ND
Methyl methanesulfonate	66-27-3	ND
2-Methylnaphthalene	91-57-6	ND
Methyl parathion; Parathion methyl	298-00-0	ND
Naphthalene	91-20-3	ND
1,4-Naphthoquinone	130-15-4	ND
1-Naphthylamine	134-32-7	ND
2-Naphthylamine	91-59-8	ND
o-Nitroaniline; 2-Nitroaniline	88-74-4	ND
m-Nitroaniline; 3-Nitroaniline	99-09-2	ND
p-Nitroaniline; 4-Nitroaniline	100-01-6	ND
Nitrobenzene	98-95-3	ND
o-Nitrophenol; 2-Nitrophenol	88-75-5	ND
p-Nitrophenol; 4-Nitrophenol	100-02-7	ND
N-Nitrosodi-n-butylamine	924-16-3	ND
N-Nitrosodiethylamine	55-18-5	ND
N-Nitrosodimethylamine	62-75-9	ND
N-Nitrosodiphenylamine	86-30-6	ND
N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine	621-64-7	ND
N-Nitrosomethylethalamine	10595-95-6	ND
N-Nitrosopiperidine	100-75-4	ND
N-Nitrosopyrrolidine	930-55-2	ND
5-Nitro-o-toluidine	99-55-8	ND
Parathion	56-38-2	ND
Pentachlorobenzene	608-93-5	ND
Pentachloronitrobenzene	82-68-8	ND
Pentachlorophenol	87-86-5	ND
Phenacetin	62-44-2	ND
Phenanthrene	85-01-8	ND
Phenol	108-95-2	ND
p-Phenylenediamine	106-50-3	ND
Phorate	298-02-2	ND
Polychlorinated biphenyls; PCBs	1336-36-3	ND
Aroclor-1016	12674-11-2	ND
Aroclor-1221	11104-28-2	ND
Aroclor-1232	11141-16-5	ND
Aroclor-1242	53469-21-9	ND
Aroclor-1248	12672-29-6	ND
Aroclor-1254	11097-69-1	ND
Aroclor-1260	11096-82-5	ND
Pronamide	23950-58-5	ND
Propionitrile; Ethyl cyanide	107-12-0	ND
Pyrene	129-00-0	ND
Safrole	94-59-7	ND
Silvex; 2,4,5-TP	93-72-1	ND
Sulfide	18496-25-8	ND
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	ND
2,3,4,6-Tetrachlorophenol	58-90-2	ND
o-Toluidine	95-53-4	ND
Toxaphene	8001-35-2	ND
1,2,4-Trichlorobenzene	120-82-1	ND
2,4,5-Trichlorophenol	95-95-4	ND
2,4,6-Trichlorophenol	88-06-2	ND
O,O,O-Triethyl phosphorothioate	126-68-1	ND
sym-Trinitrobenzene	99-35-4	ND

MW-24	*40 CFR Part 258, Appendix I Constituents*	**CAS RN**	**MSW-PQL µg/L**	**6/4/09**	**9/14/09**	**12/15/09**	**4/6/10**	**7/20/10**	**11/10/10**	**2/23/11**	**6/21/11**	**12/12/11**	**6/27/12**	**12/11/12**	**6/13/13**	**12/13/13**	**6/21/14**	**12/10/14**	**6/23/15**	**12/8/15**	**6/28/16**	**12/1/16**
Inorganic Constituents																						
(1)	Antimony	Total	5	ND	0.614	1.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(2)	Arsenic	Total	5	12.1	12.7	12.9	12	11.1	11.8	11.8	11.8	13.4	13.6	16	16	22.1	21.3	24	29	41.2	40.7	36.1
(3)	Barium	Total	10	116	78.7	91	84	57.6	42.9	43.2	45.1	38.9	35	37	36	30.4	35.5	31	48	43	36.3	61
(4)	Beryllium	Total	4	0.311	0.568	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(5)	Cadmium	Total	2	ND	0.793	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(6)	Chromium	Total	20	ND	ND	ND	0.856	ND	1.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.984	ND
(7)	Cobalt	Total	5	1.8	1.92	1.91	2.68	1.1	1.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(8)	Copper	Total	10	0.521	1.5	1.83	1.77	1.14	1.72	ND	ND	ND	ND	ND	ND	ND	3.62	2	ND	ND	2.7	ND
(9)	Lead	Total	15	ND	0.699	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(10)	Nickel	Total	20	7.02	5.52	4.97	6.73	8	3.56	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND
(11)	Selenium	Total	50	27.4	25.2	26.4	24.9	25.8	22.5	21.6	26.8	21.4	28.9	35	38	28.4	27.7	9	2.58	2.91	4.84	5.52
(12)	Silver	Total	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(13)	Thallium	Total	1	ND	1.74	ND	2.45	ND	ND	4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(14)	Vanadium	Total	10	75.9	88.7	101	97.6	93.2	97.1	92.9	89.6	99	112	121	128	163	160	183	233	247	226	217
(15)	Zinc	Total	100	3.26	2.62	5.52	5.26	ND	ND	ND	ND	ND	ND	ND	ND	5.48	5.05	ND	40.1	5.48	2.9	ND
Volatile Organics																						
(16)	Acetone	67-64-1	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(17)	Acrylonitrile	107-13-1	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(18)	Benzene	71-43-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(19)	Bromochloromethane	74-97-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(20)	Bromodichloromethane	75-27-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(21)	Bromoform; Tribromomethane	75-25-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(22)	Carbon disulfide	75-15-0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(23)	Carbon tetrachloride	56-23-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(24)	Chlorobenzene	108-90-7	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(25)	Chloroethane; Ethyl chloride	75-00-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(26)	Chloroform; Trichloromethane	67-66-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(27)	Dibromochloromethane; Chlorodibromomethane	124-48-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(28)	1,2-Dibromo-3-chloropropane; DBCP	96-12-8	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(29)	1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(30)	o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(31)	p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(32)	trans-1, 4-Dichloro-2-butene	110-57-6	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(33)	1,1-Dichlorethane; Ethylidene chloride	75-34-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(34)	1,2-Dichlorethane; Ethylene dichloride	107-06-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(35)	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(36)	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(37)	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(38)	1,2-Dichloropropane; Propylene dichloride	78-87-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(39)	cis-1,3-Dichloropropene	10061-01-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(40)	trans-1,3-Dichloropropene	10061-02-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(41)	Ethylbenzene	100-41-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(42)	2-Hexanone; Methyl butyl ketone	591-78-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(43)	Methyl bromide; Bromomethane	74-83-9	10		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(44)	Methyl chloride; Chloromethane	74-87-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(45)	Methylene bromide; Dibromomethane	74-95-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(46)	Methylene chloride; Dichloromethane	75-09-2	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(47)	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(48)	Methyl iodide; Idomethane	74-88-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(49)	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(50)	Styrene	100-42-5	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(51)	1,1,1,2-Tetrachloroethane	630-20-6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(52)	1,1,2,2-Tetrachloroethane	79-34-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(53)	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(54)	Toluene	108-88-3	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(55)	1,1,1-Trichloroethane; Methylchloroform	71-55-6	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(56)	1,1,2-Trichloroethane	79-00-5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(57)	Trichloroethylene; Trichloroethene	79-01-6	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(58)	Trichlorofluoromethane; CFC-11	75-69-4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(59)	1,2,3-Trichloropropane	96-18-4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(60)	Vinyl acetate	108-05-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(61)	Vinyl chloride	75-01-4	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
(62)	Xylene	1330-20-7	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX III4G

SLUG TESTS



WELL TEST ANALYSIS

Data Set: \...\PZ-101 Falling.aqt
Date: 02/12/16 Time: 11:29:07

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-101
Test Date: 1/22/2015

AQUIFER DATA

Saturated Thickness: 7.27 ft
Anisotropy Ratio (Kz/Kr): 1.

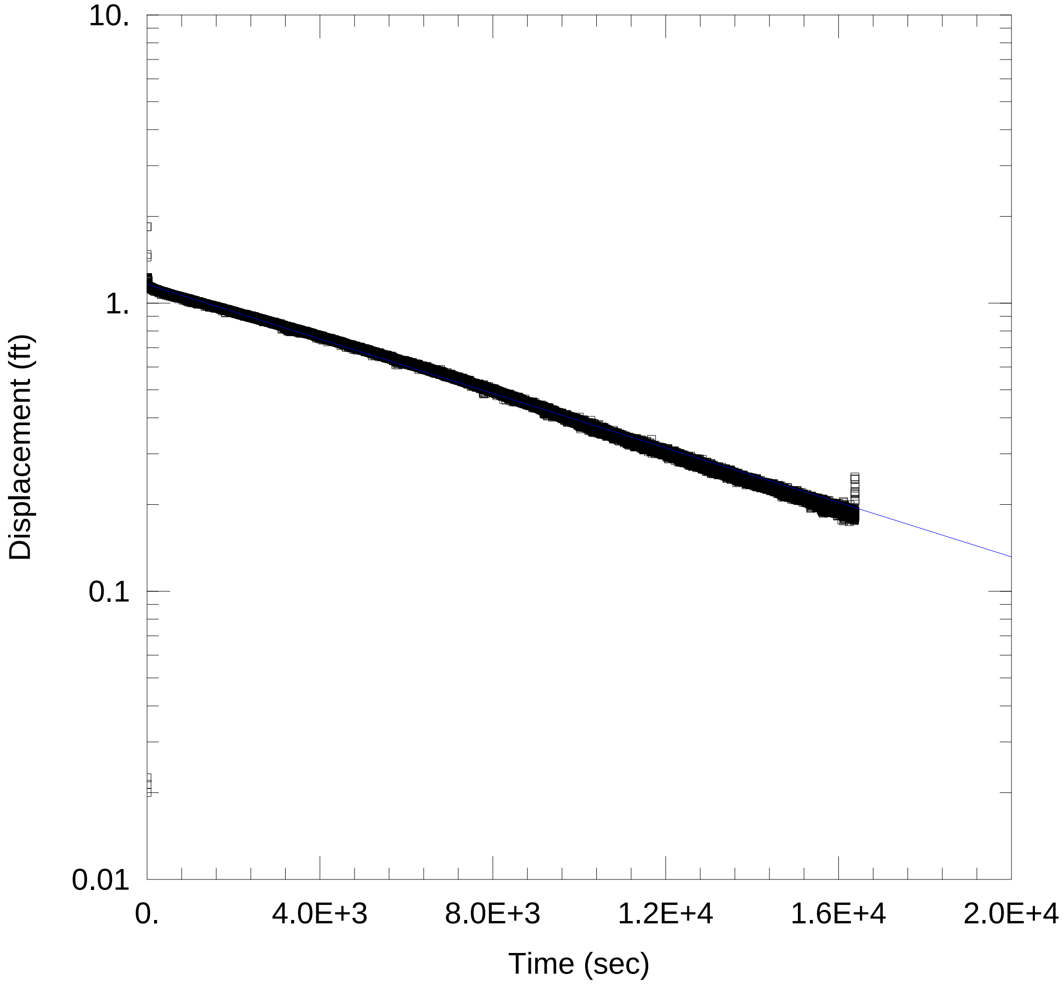
WELL DATA (PZ-101)

Initial Displacement: 1.844 ft
Static Water Column Height: 7.27 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 4.622E-5 cm/sec
y0 = 0.5868 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-101 Rising.aqt
Date: 02/12/16 Time: 11:31:19

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-101
Test Date: 1/22/2015

AQUIFER DATA

Saturated Thickness: 7.27 ft
Anisotropy Ratio (Kz/Kr): 1.

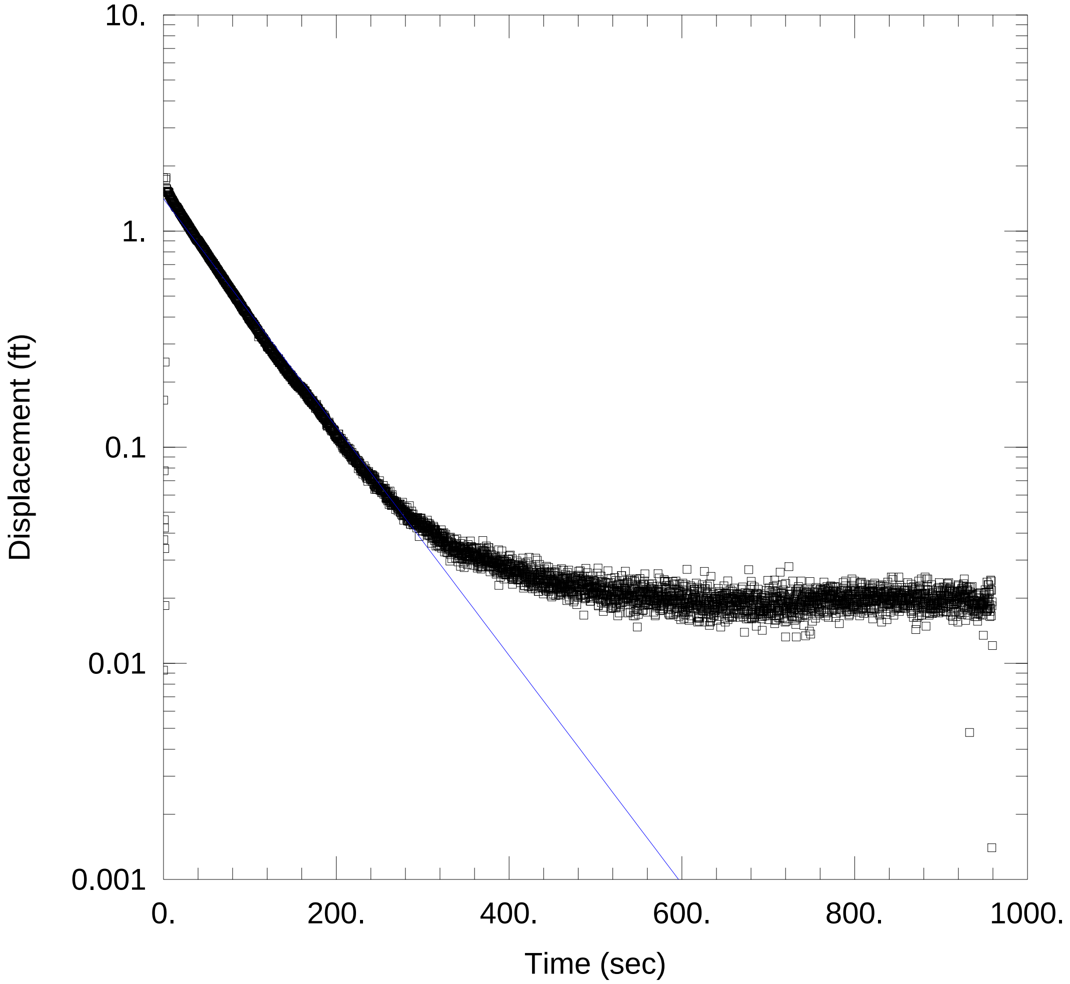
WELL DATA (PZ-101)

Initial Displacement: 1.84 ft
Static Water Column Height: 7.27 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 4.209E-6 cm/sec
y0 = 1.16 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-104 Rising.aqt
Date: 02/12/16 Time: 11:33:26

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-104
Test Date: 1/20/2015

AQUIFER DATA

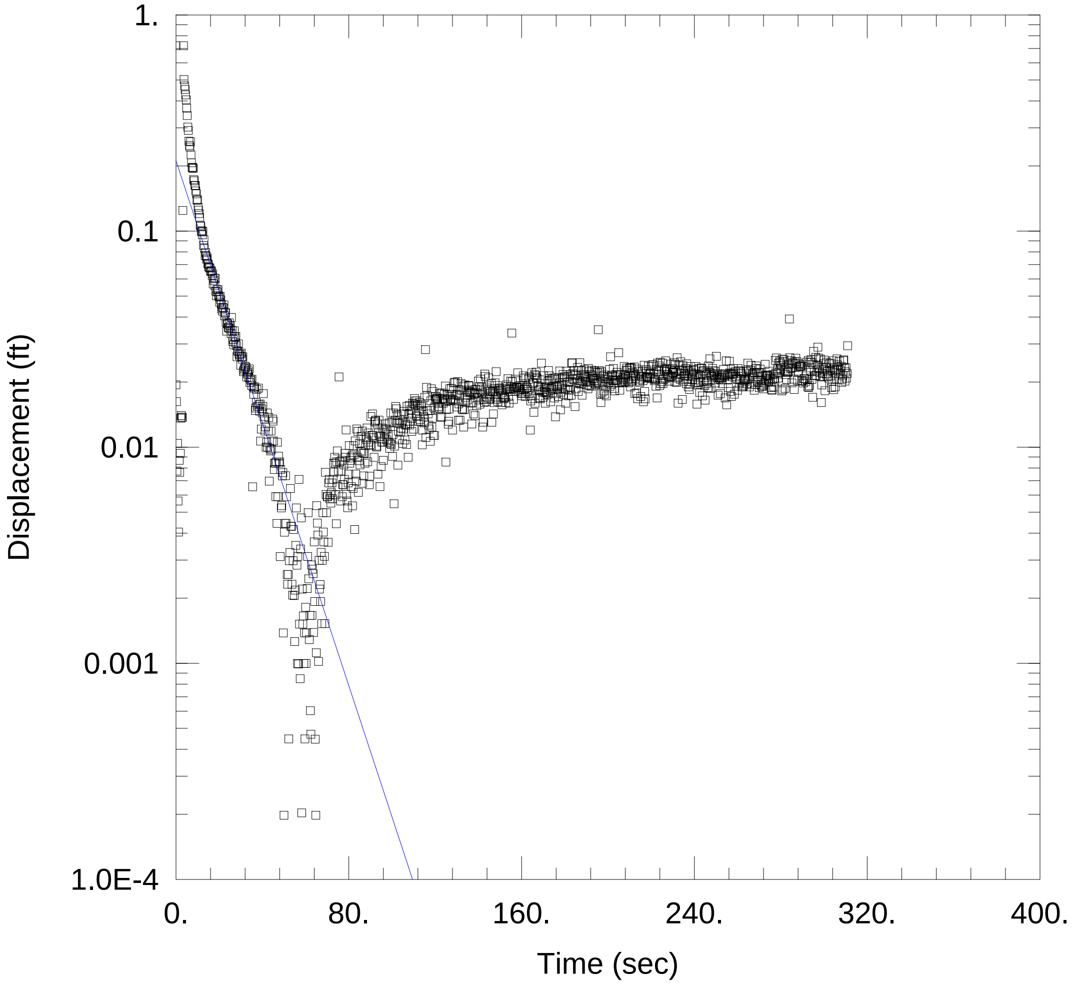
Saturated Thickness: 6.77 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-104)

Initial Displacement: 1.767 ft
Static Water Column Height: 6.77 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0005052 cm/sec
y0 = 1.411 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-106 Rising.aqt
Date: 02/12/16 Time: 11:35:33

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-106
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 4.47 ft
Anisotropy Ratio (Kz/Kr): 1.

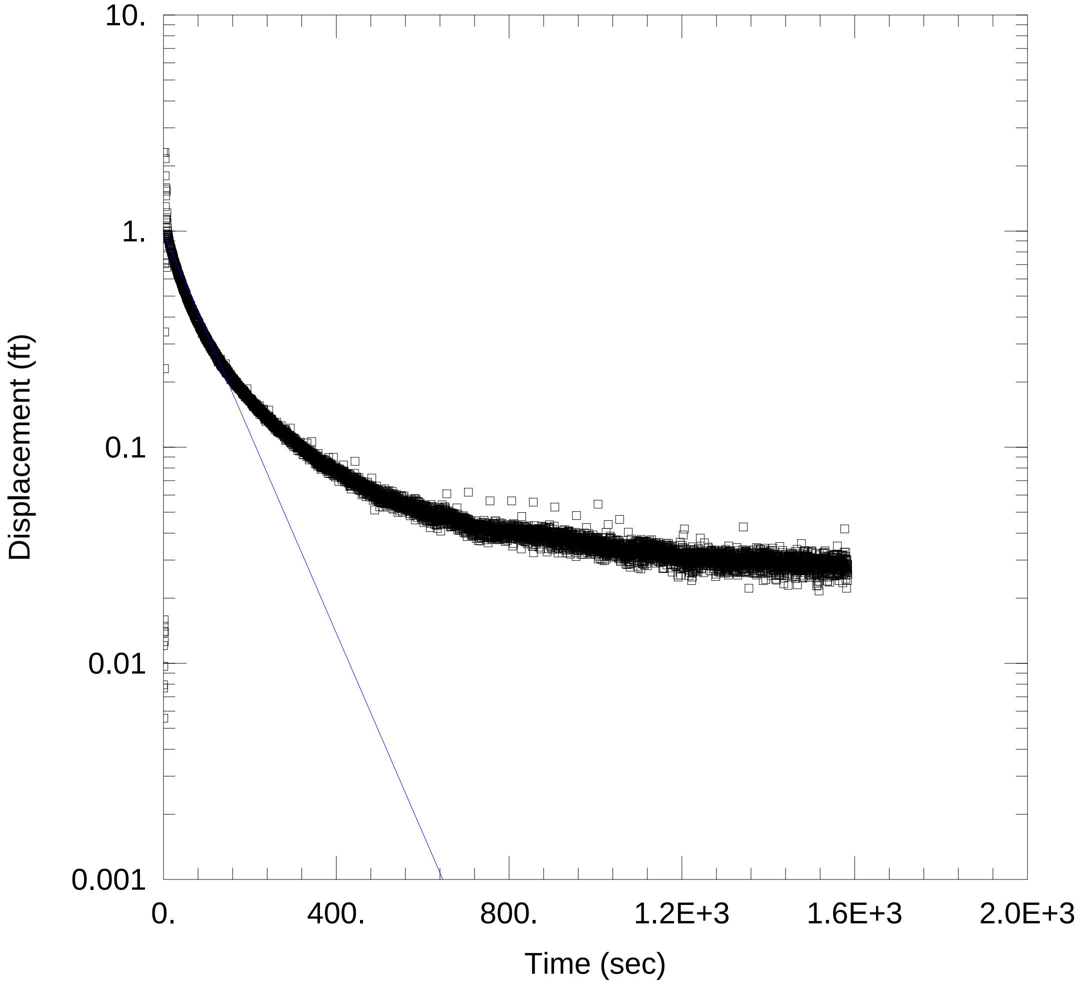
WELL DATA (PZ-106)

Initial Displacement: 0.7197 ft
Static Water Column Height: 4.47 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.004397 cm/sec
y0 = 0.2117 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-113 Falling.aqt
Date: 02/12/16 Time: 11:37:29

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-113
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 14.08 ft Anisotropy Ratio (Kz/Kr): 1.

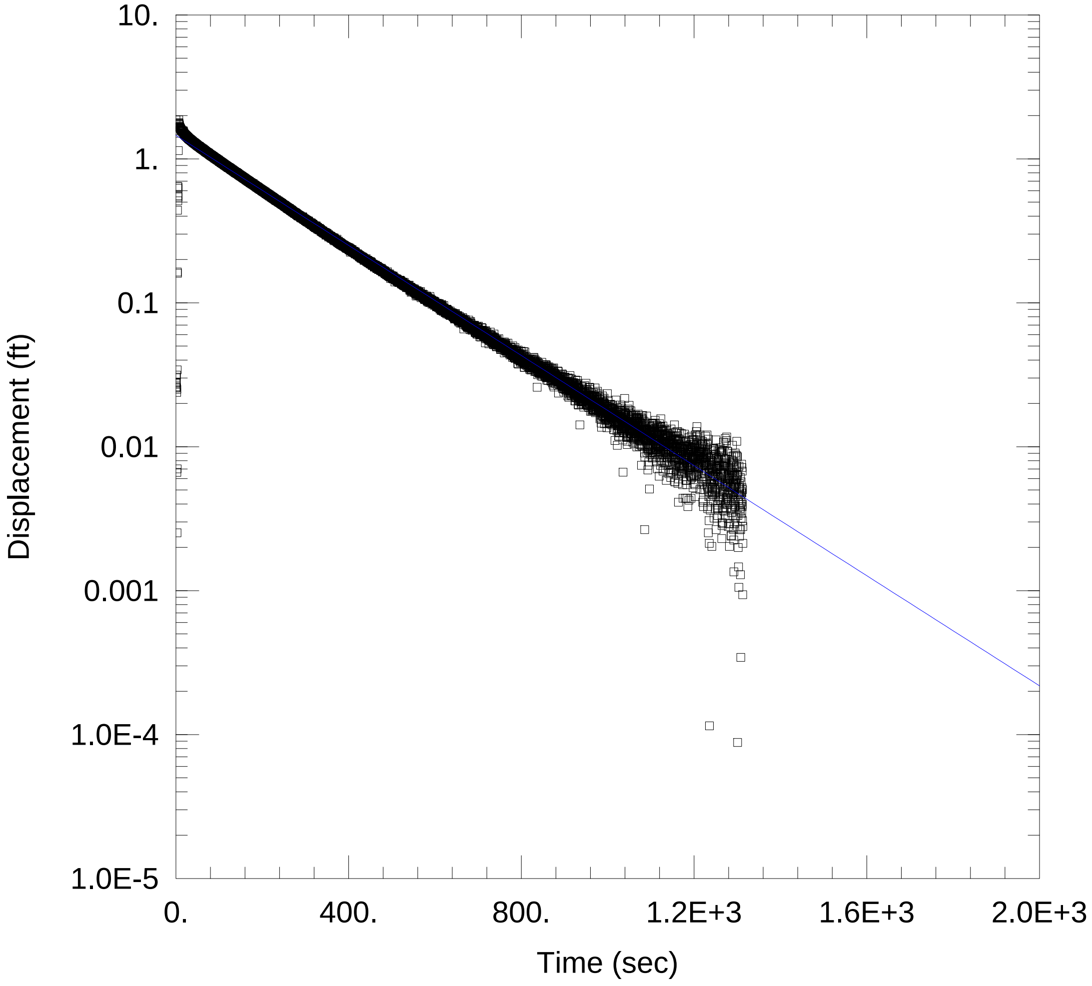
WELL DATA (PZ-113)

Initial Displacement: 2.311 ft
Total Well Penetration Depth: 14.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 14.08 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 0.0002476 cm/sec y0 = 0.9761 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-113 Rising.aqt
Date: 02/12/16 Time: 11:39:03

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-113
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 14.08 ft
Anisotropy Ratio (Kz/Kr): 1.

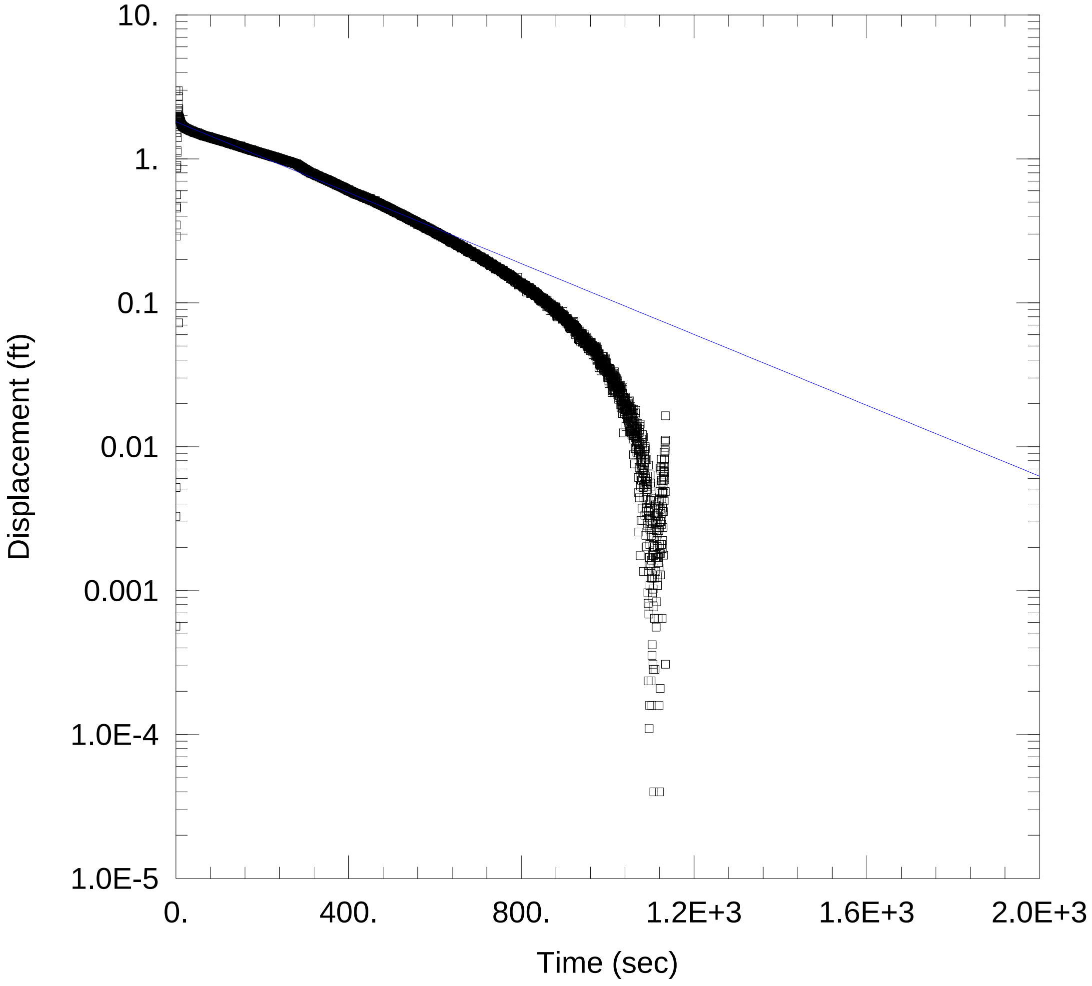
WELL DATA (PZ-113)

Initial Displacement: 1.865 ft
Static Water Column Height: 14.08 ft
Total Well Penetration Depth: 14.08 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0001024 cm/sec
y0 = 1.458 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-116 Falling.aqt
Date: 02/12/16
Time: 11:40:55

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-116
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 7.51 ft
Anisotropy Ratio (Kz/Kr): 1.

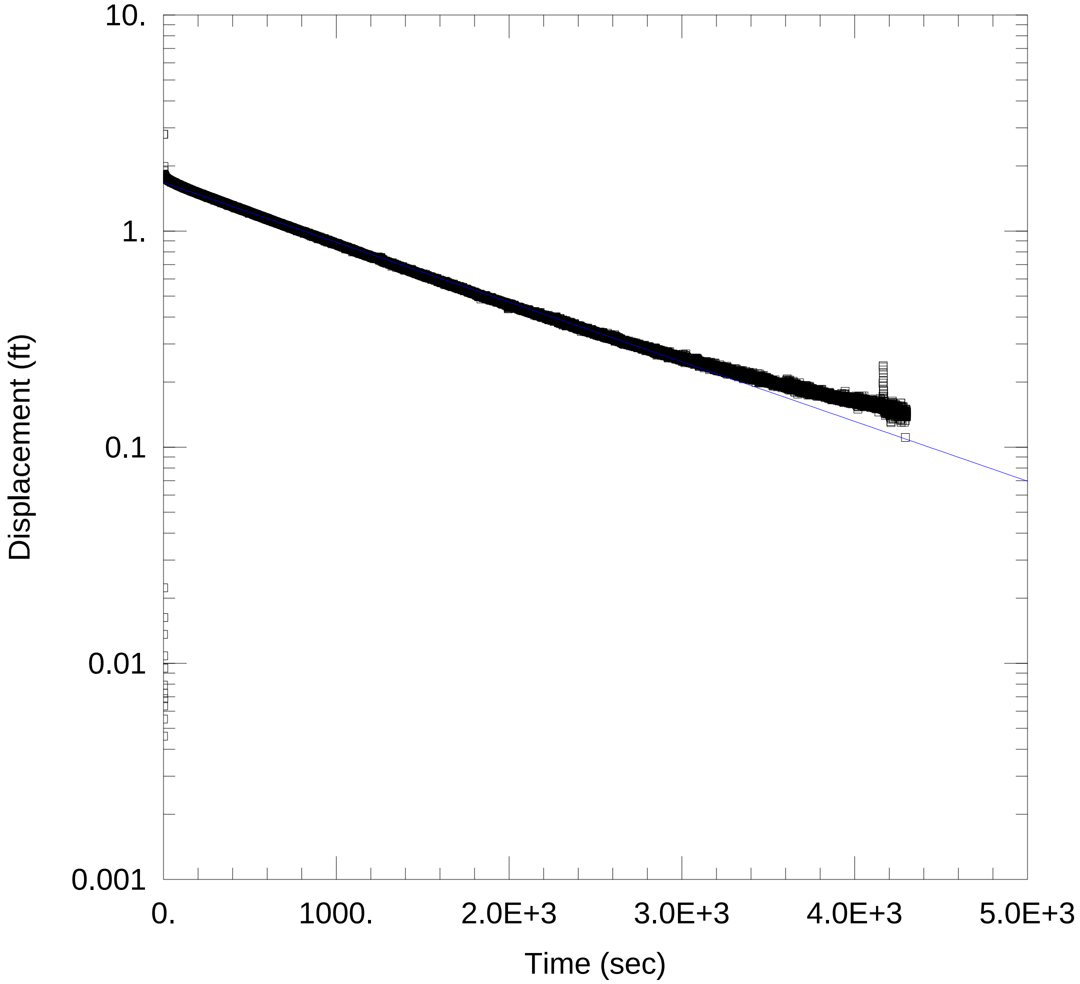
WELL DATA (PZ-116)

Initial Displacement: 2.974 ft
Static Water Column Height: 7.51 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0001061 cm/sec
y0 = 1.807 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-116 Rising.aqt
Date: 02/12/16 Time: 11:42:23

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-116
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 7.51 ft
Anisotropy Ratio (Kz/Kr): 1.

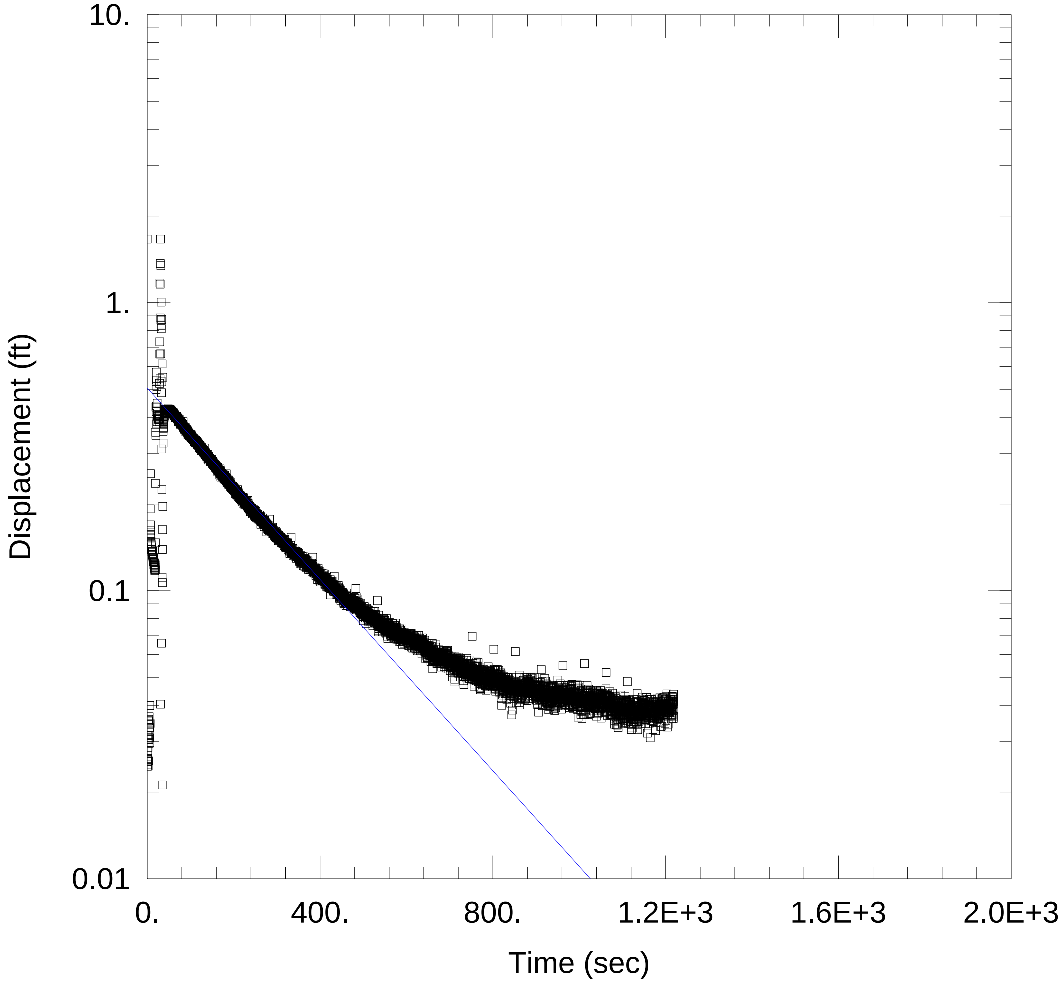
WELL DATA (PZ-116)

Initial Displacement: 2.803 ft
Static Water Column Height: 7.51 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 2.383E-5 cm/sec
y0 = 1.678 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-118 Falling.aqt
Date: 02/12/16 Time: 11:44:42

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-118
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 5.32 ft
Anisotropy Ratio (Kz/Kr): 1.

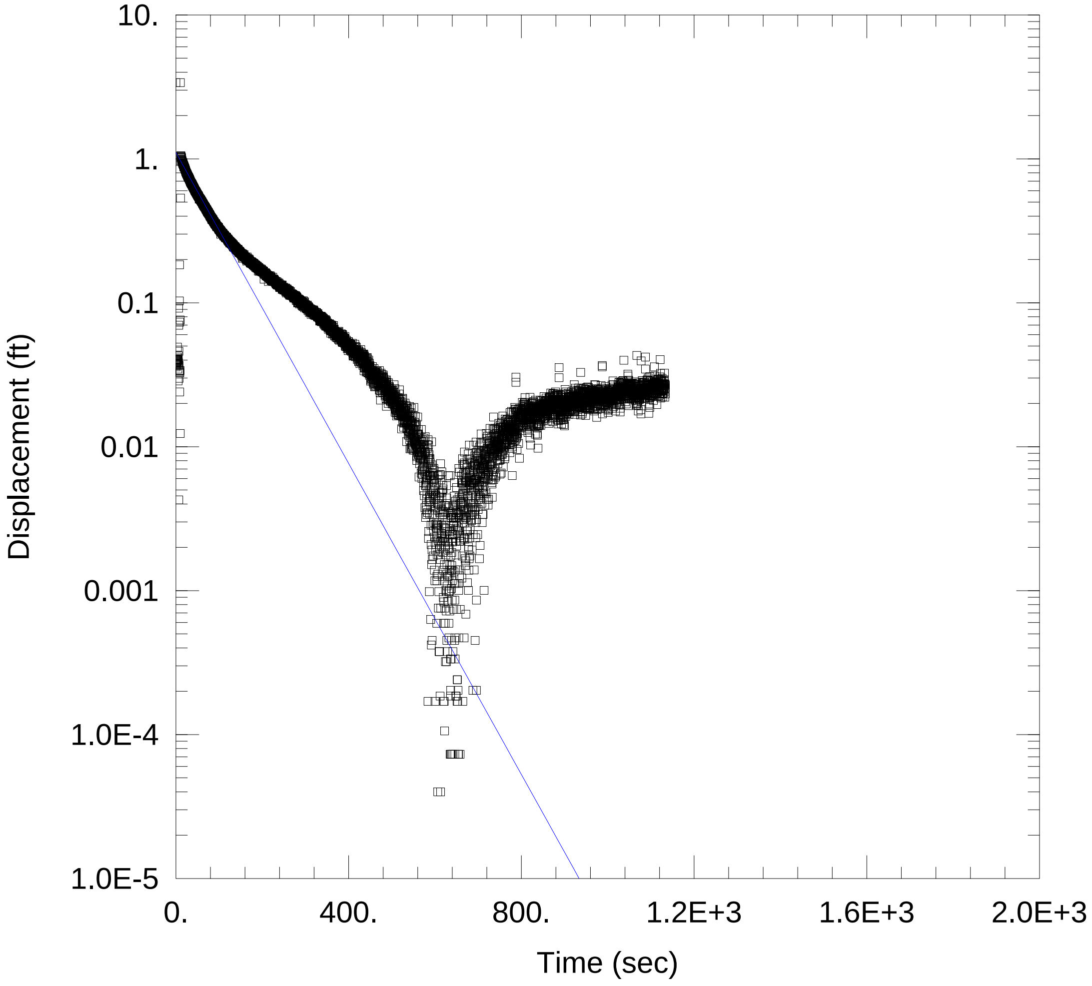
WELL DATA (PZ-118)

Initial Displacement: 1.663 ft
Static Water Column Height: 5.32 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0002021 cm/sec
y0 = 0.5053 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-118 Rising.aqt
Date: 02/12/16
Time: 11:46:41

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-118
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 5.32 ft
Anisotropy Ratio (Kz/Kr): 1.

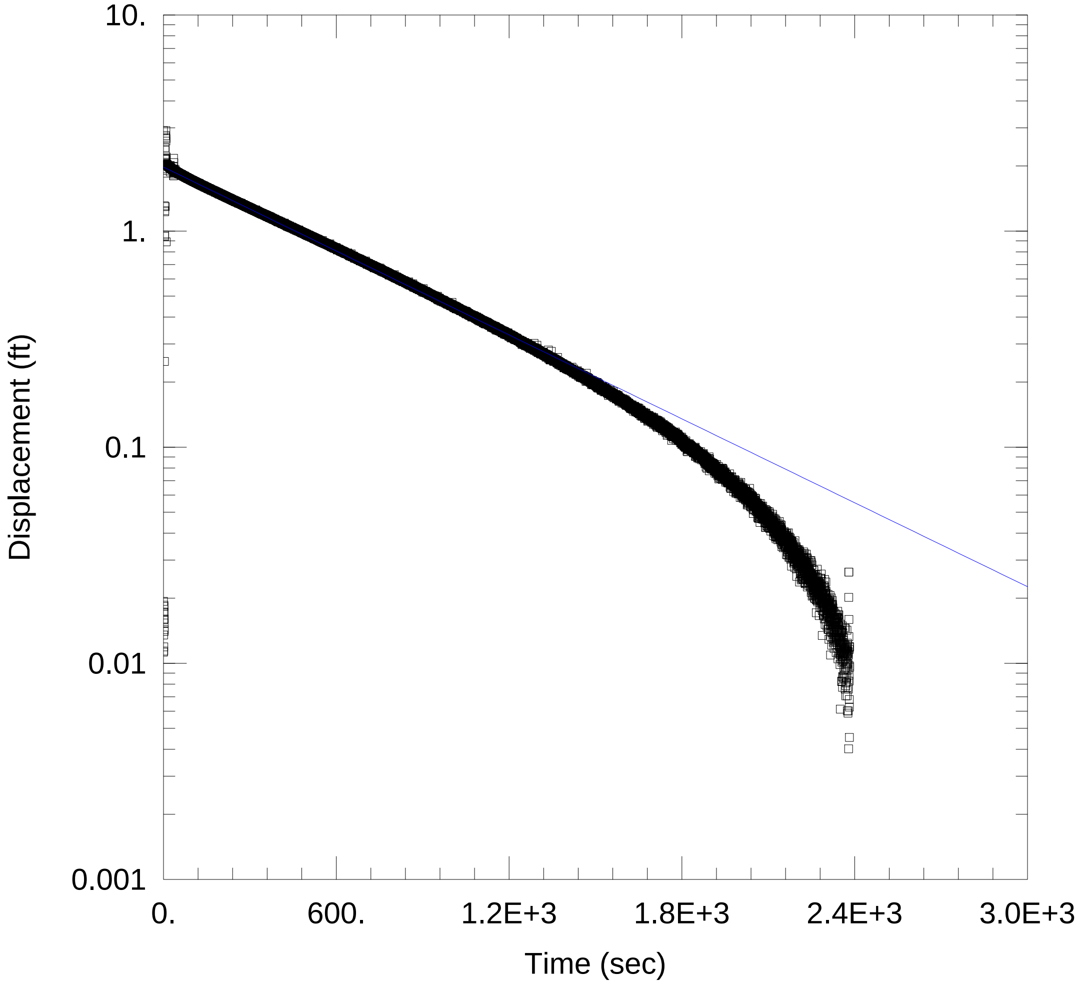
WELL DATA (PZ-118)

Initial Displacement: 3.387 ft
Static Water Column Height: 5.32 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0006571 cm/sec
y0 = 1.106 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-122 Falling.aqt
Date: 02/12/16
Time: 11:50:59

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-122
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 6.43 ft
Anisotropy Ratio (Kz/Kr): 1.

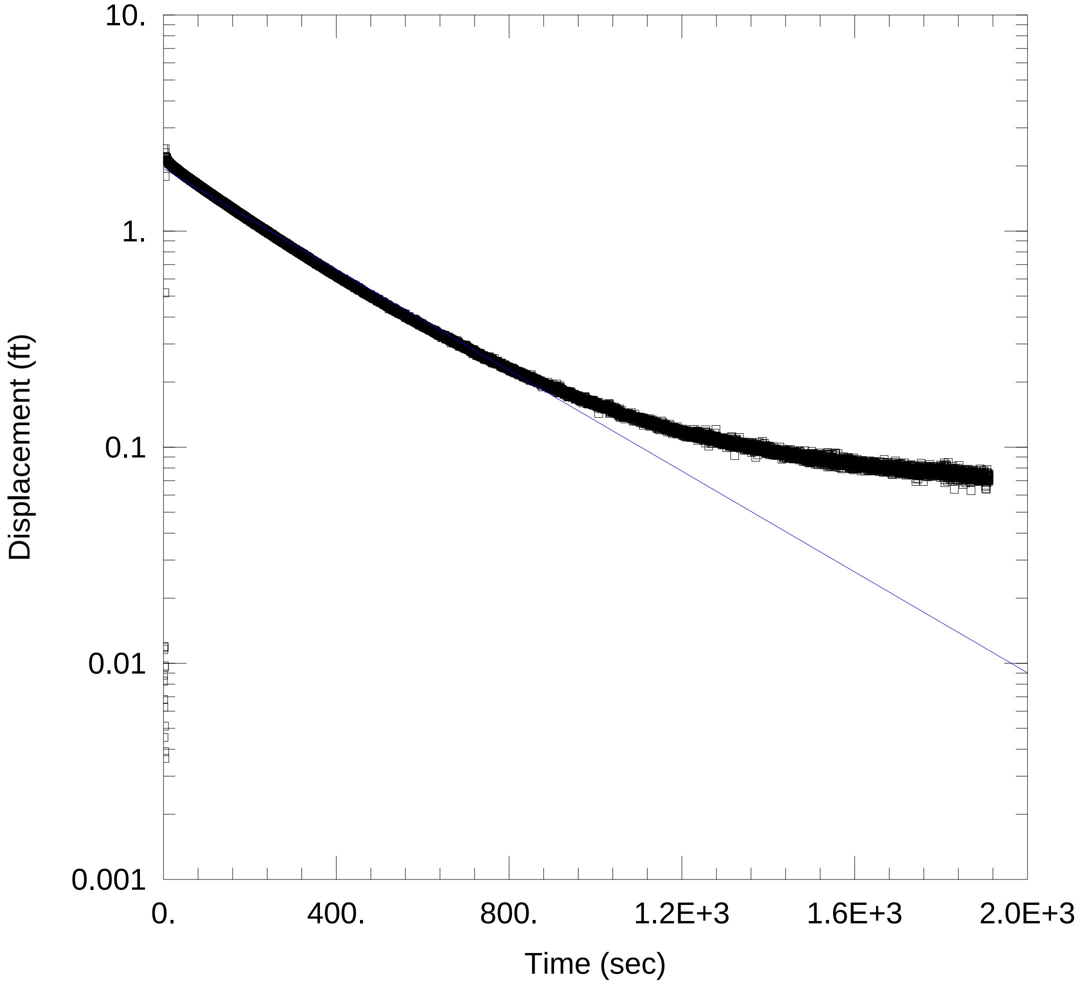
WELL DATA (PZ-122)

Initial Displacement: 2.917 ft
Static Water Column Height: 6.43 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 6.516E-5 cm/sec
y0 = 1.977 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-122 Rising.aqt
Date: 02/12/16 Time: 11:52:41

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-122
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 6.43 ft Anisotropy Ratio (Kz/Kr): 1.

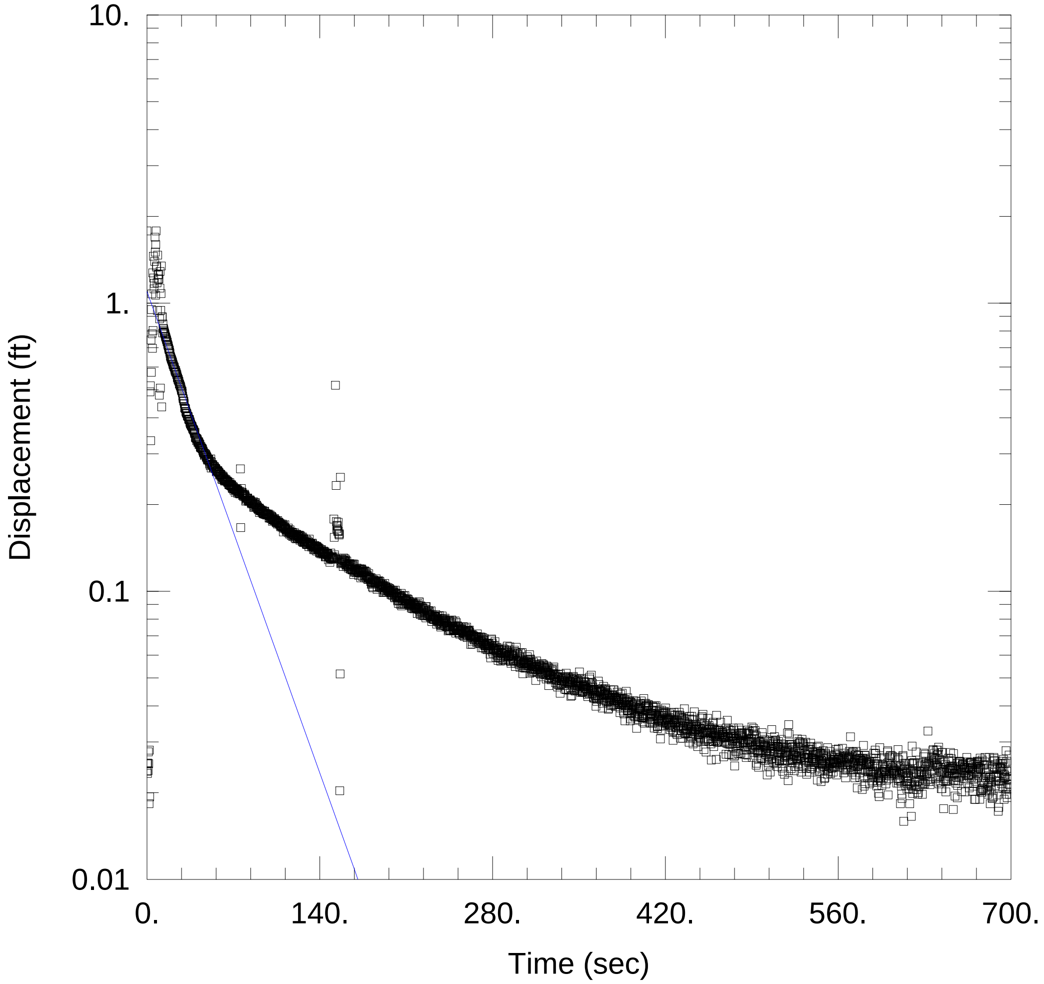
WELL DATA (PZ-122)

Initial Displacement: 2.401 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 6.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 0.0001174 cm/sec y0 = 1.944 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-124 Falling.aqt
Date: 02/12/16
Time: 11:54:40

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-124
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 9.26 ft
Anisotropy Ratio (Kz/Kr): 1.

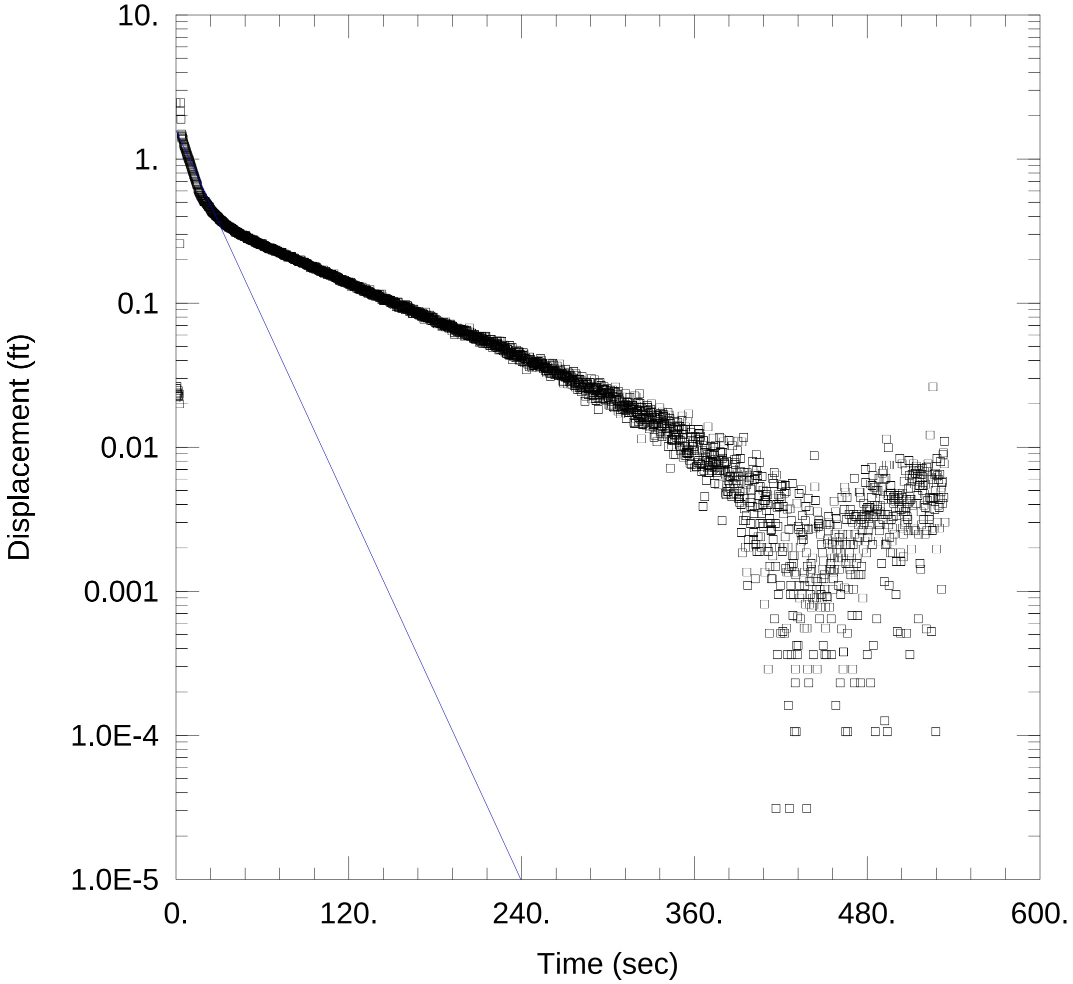
WELL DATA (PZ-124)

Initial Displacement: 1.78 ft
Static Water Column Height: 9.26 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0008342 cm/sec
y0 = 1.096 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-124 Rising.aqt

Date: 02/12/16 Time: 11:58:29

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-124
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 9.26 ft Anisotropy Ratio (Kz/Kr): 1.

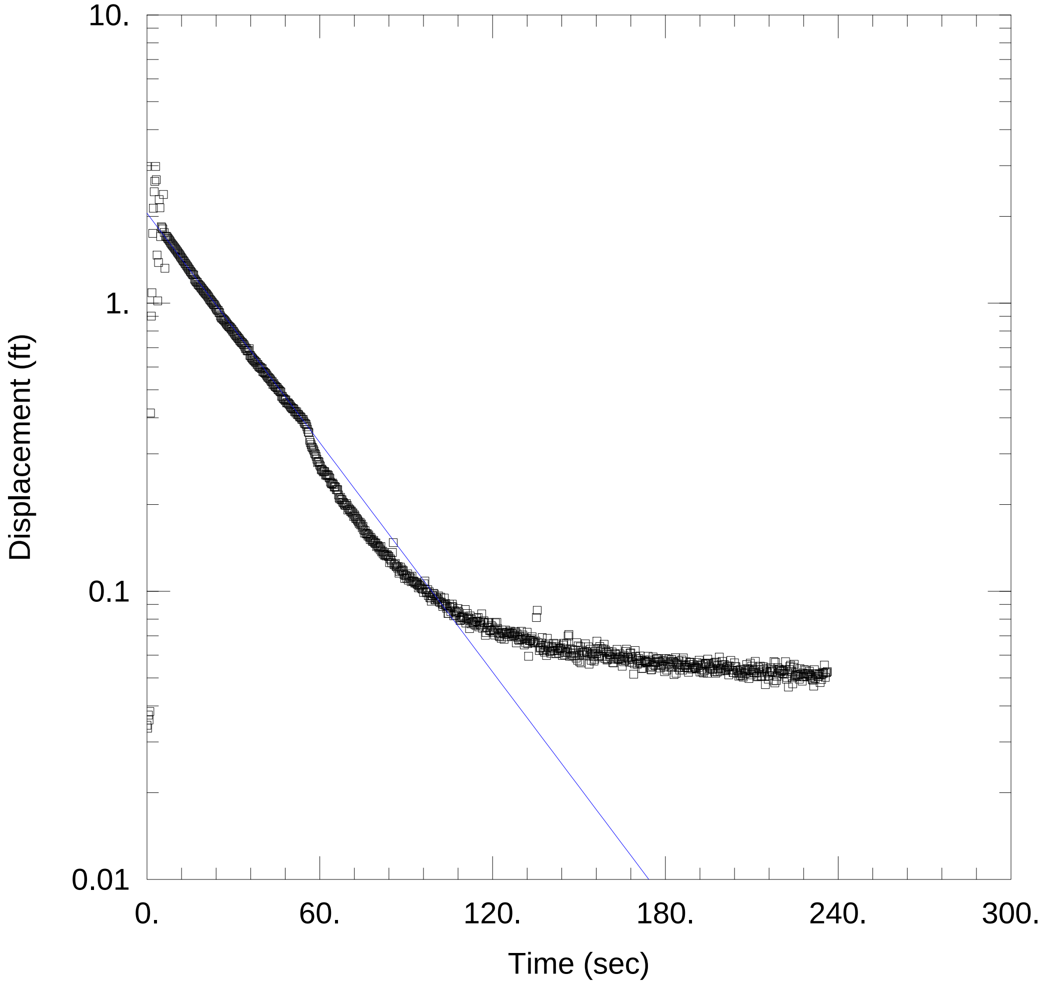
WELL DATA (PZ-124)

Initial Displacement: 2.455 ft
Static Water Column Height: 9.26 ft
Total Well Penetration Depth: 10. ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 0.001518 cm/sec y0 = 1.585 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-130 Falling.aqt

Date: 02/12/16 Time: 12:01:18

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-130
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 23.27 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-130)

Initial Displacement: 2.979 ft
Total Well Penetration Depth: 23.27 ft
Casing Radius: 0.0833 ft

Static Water Column Height: 23.27 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

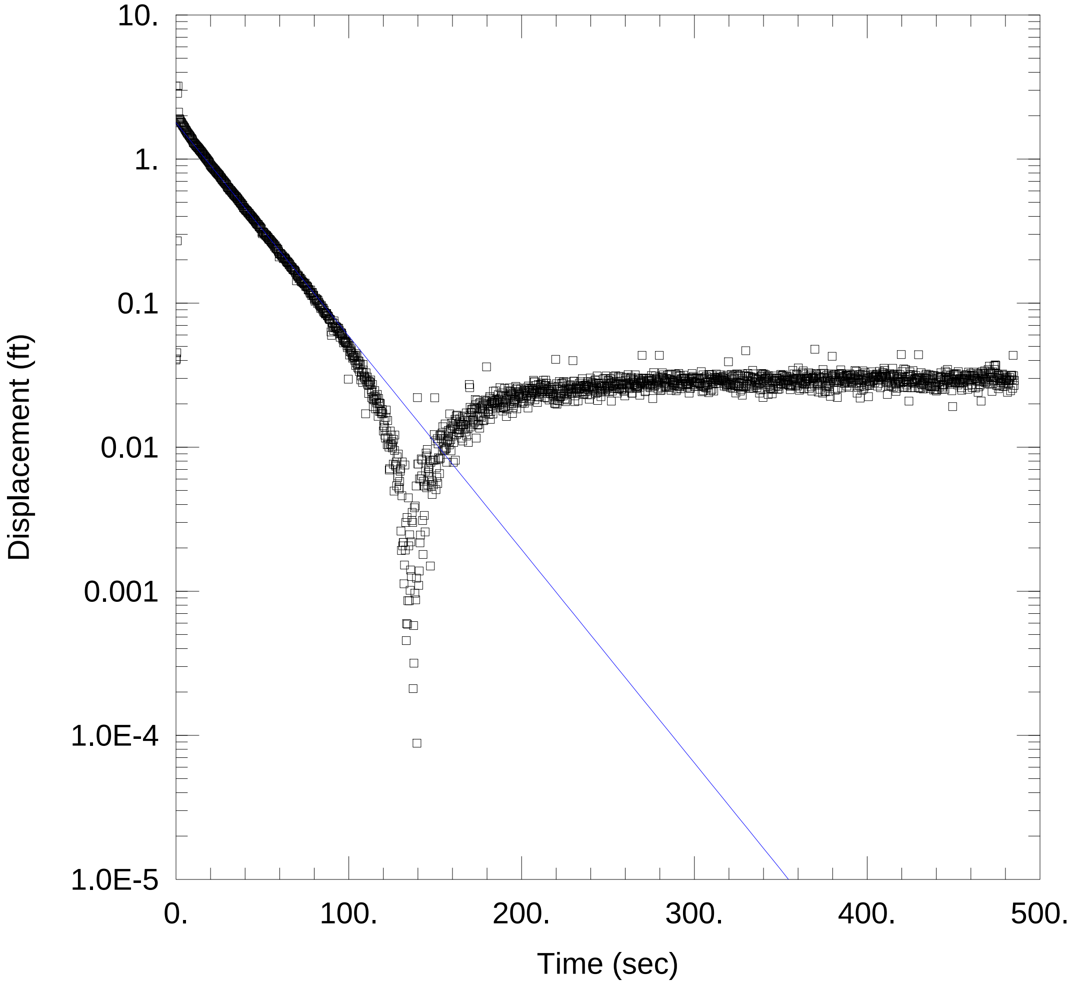
SOLUTION

Aquifer Model: Confined

Solution Method: Hvorslev

K = 0.0007103 cm/sec

y0 = 2.051 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-130 Rising.aqt
Date: 02/12/16 Time: 12:02:38

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-130
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 23.27 ft
Anisotropy Ratio (Kz/Kr): 1.

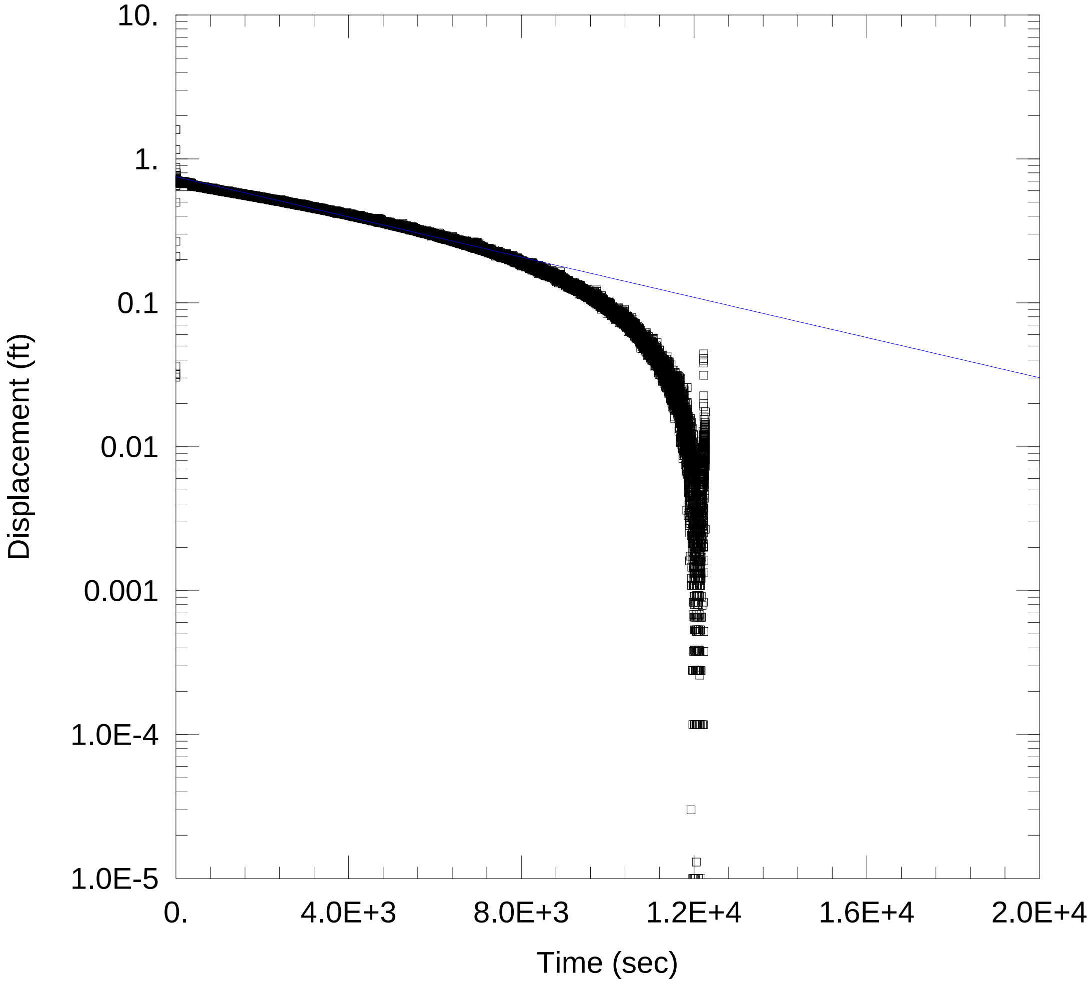
WELL DATA (PZ-130)

Initial Displacement: 3.203 ft
Static Water Column Height: 23.27 ft
Total Well Penetration Depth: 23.27 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.000793 cm/sec
y0 = 1.785 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-131 Rising.aqt
Date: 02/12/16
Time: 12:05:08

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-131
Test Date: 1/21/2015

AQUIFER DATA

Saturated Thickness: 27.54 ft
Anisotropy Ratio (Kz/Kr): 1.

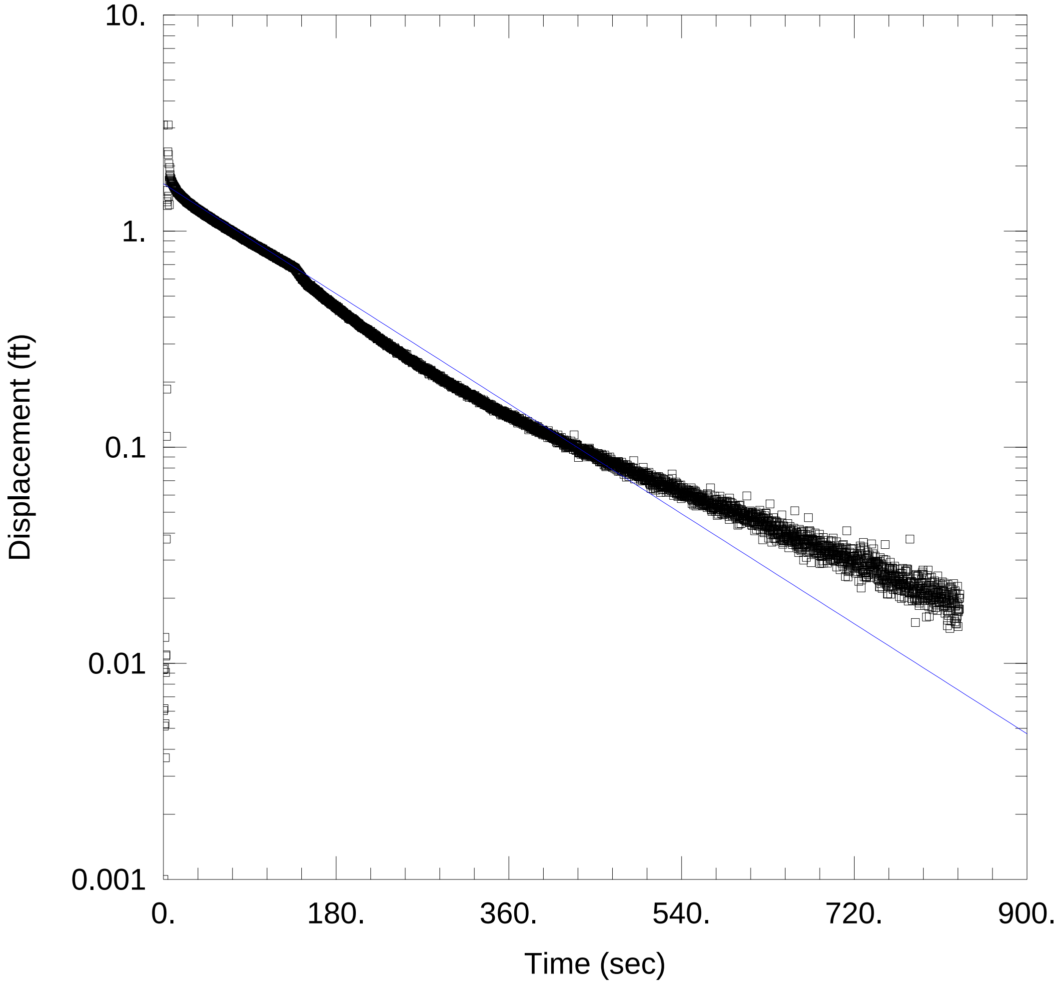
WELL DATA (PZ-131)

Initial Displacement: 1.593 ft
Static Water Column Height: 27.54 ft
Total Well Penetration Depth: 27.54 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 3.738E-6 cm/sec
y0 = 0.7507 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-133 Falling.aqt
Date: 02/12/16 Time: 12:06:37

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-133
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 17.48 ft
Anisotropy Ratio (Kz/Kr): 1.

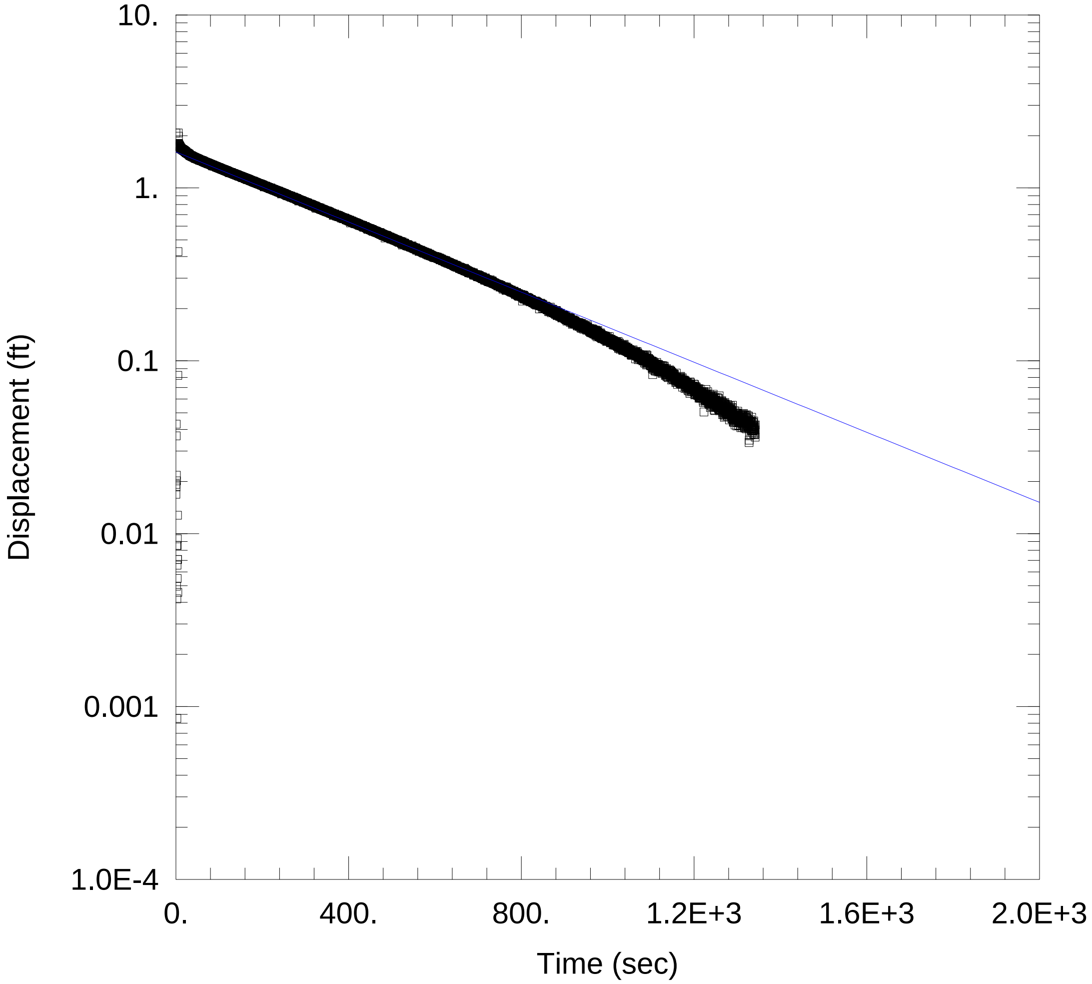
WELL DATA (PZ-133)

Initial Displacement: 3.097 ft
Static Water Column Height: 17.48 ft
Total Well Penetration Depth: 17.48 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0001514 cm/sec
y0 = 1.656 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-133 Rising.aqt
Date: 02/12/16
Time: 12:08:16

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-133
Test Date: 1/20/2015

AQUIFER DATA

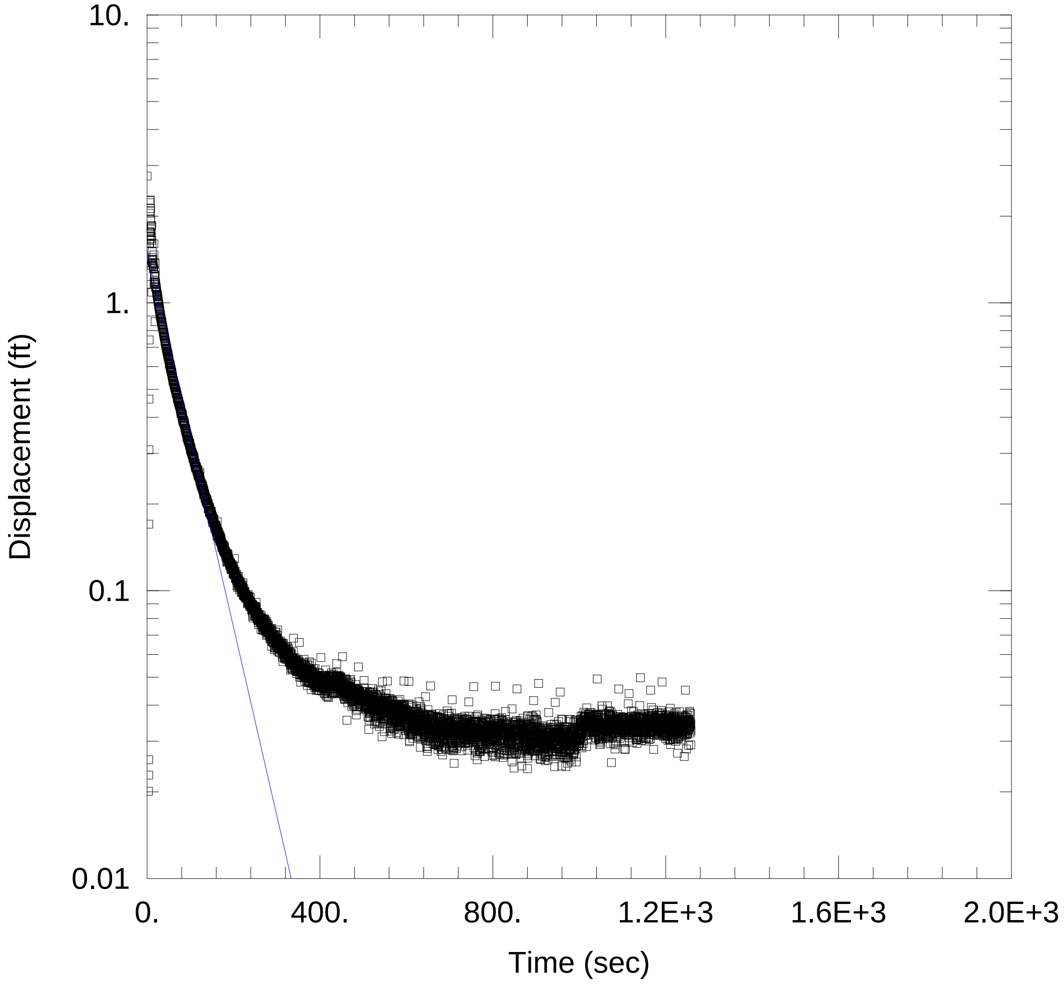
Saturated Thickness: 17.48 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-133)

Initial Displacement: 2.075 ft
Static Water Column Height: 17.48 ft
Total Well Penetration Depth: 17.48 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 5.425E-5 cm/sec
y0 = 1.612 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-134 Falling.aqt
Date: 02/12/16 Time: 12:09:50

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-134
Test Date: 1/20/2015

AQUIFER DATA

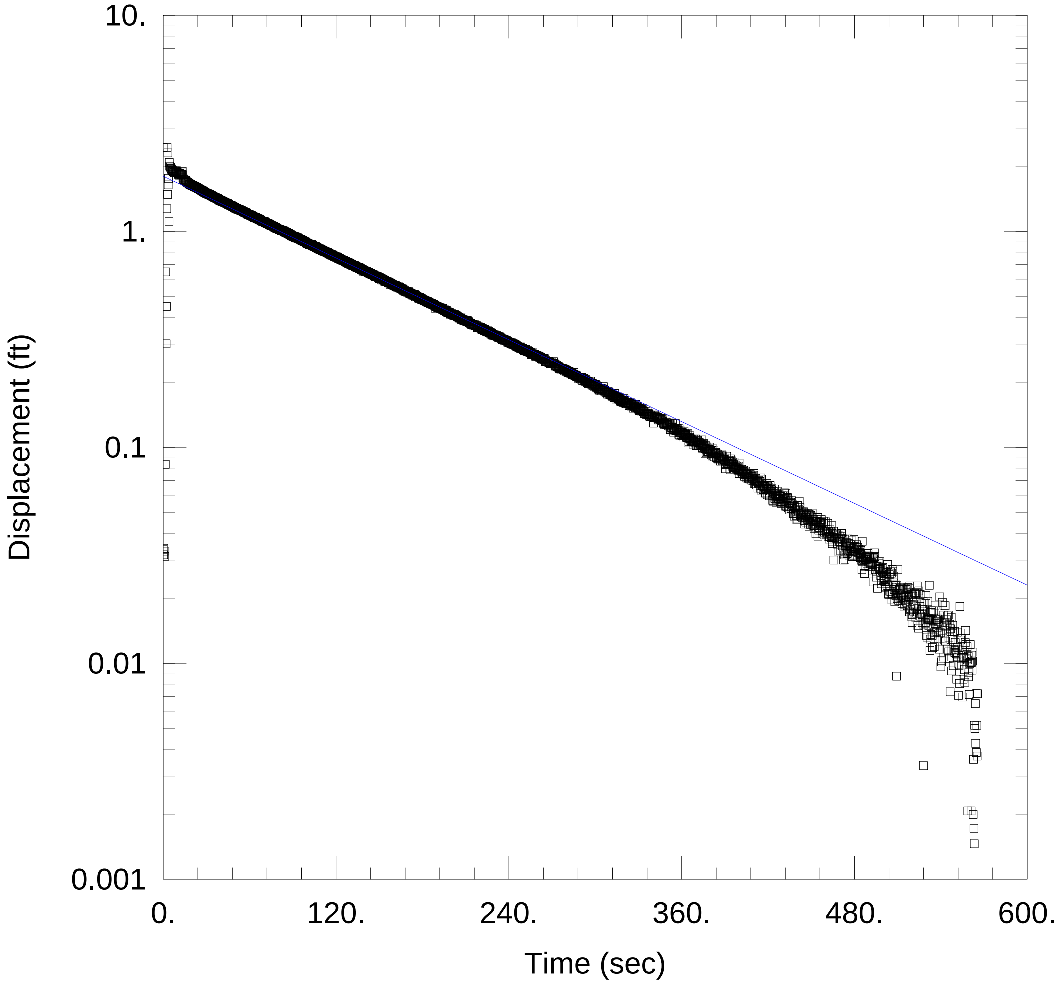
Saturated Thickness: 19.42 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-134)

Initial Displacement: 2.756 ft
Static Water Column Height: 19.42 ft
Total Well Penetration Depth: 19.42 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 0.0003499 cm/sec
y0 = 1.514 ft



WELL TEST ANALYSIS

Data Set: \...\PZ-134 Rising.aqt
Date: 02/12/16 Time: 12:11:25

PROJECT INFORMATION

Company: Golder Associates Inc.
Client: City of Edinburg
Project: 1401491
Location: Edinburg, TX
Test Well: PZ-134
Test Date: 1/20/2015

AQUIFER DATA

Saturated Thickness: 19.42 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-134)

Initial Displacement: 2.44 ft
Static Water Column Height: 19.42 ft
Total Well Penetration Depth: 19.42 ft
Screen Length: 10. ft
Casing Radius: 0.0833 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev

K = 0.0001689 cm/sec
y0 = 1.797 ft