



HYDROMETRICS INC.
 Consulting Scientists and Engineers
 Tucson, Arizona

Soil Boring Log

Hole Name: SSIA4-29

Date Hole Started: 10/30/97 Date Hole Finished: 10/30/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Recorded By: HDK
 Drilling Company:
 Driller: Jorge
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 2.5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3726.2
 MP Elevation (ft):

Remarks:

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA4-29A	GRAB		0.0 - 0.2'			0.0 - 0.3'
	SSIA4-29A2	GRAB		0.0 - 0.2'			GRAVEL grey to black ballast 0.3 - 2.5'
							Gravelly SAND with Silt Fine to medium grained, Silty, Gravelly, moderate yellowish brown 10yr 5/4, dry dense cobbles
	SSIA4-29B	SS		1.5 - 3.0'			

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HYDROMETRICS INC.
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 Tucson, Arizona

Soil Boring Log

Hole Name: SSIA4-30

Date Hole Started: 10/30/97 Date Hole Finished: 10/30/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
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Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		

DEVELOPMENT/SAMPLING

Well Developed?	N
Water Samples Taken?	N
Boring Samples Taken?	N

Recorded By: HDK

Drilling Company: Layne Christensen Co.

Driller: Jorge

Drilling Method: Hollow Stem Auger

Drilling Fluids Used: None

Purpose of Hole: Soil Samples

Target Aquifer: NA

Hole Diameter (In): 6-Inch

Total Depth Drilled (ft): 2.5

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3725.8

MP Elevation (ft):

Remarks:

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA4-30A	GRAB		0.0 - 0.2'			0.0 - 2.5' Gravelly SAND with Silt Fine to Medium grained, Silty, moderate yellowish brown, 10yr 5/4 dry, dense, gravelly with cobbles
	SSIA4-30B	GRAB		1.5 - 3.0'			

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Soil Boring Log

Hole Name: SSIA5-1

Date Hole Started: 7/7/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3720.76
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-1A	G			0.0 - 0.2'		0.0 - 5.0' Silty SAND with some Gravel Brown, fine-grained to medium-grained, dry.
	SSIA5-1B	SS			1.5 - 2.5'		
	SSIA5-1C	SS			3.0 - 4.0'		
	SSIA5-1D	SS			4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: SSI A5-2

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3722.15
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-2A				0.0 - 0.2'		0.0 - 0.2' Silty SAND Brown, fine to medium, dry with gravel and debris from past demolition/ 0.2 - 5.0' SAND Brown, fine to medium, poorly graded, dry with occasional gravel, no H2O TD 5'
	SSIA5-2B				1.5 - 2.5'		
	SSIA5-2C				3.0 - 4.0'		
	SSIA5-2D				4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: **SSIA5-3**

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3721.95
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-3A	G			0.0 - 0.2'		0.0 - 5.0' SAND Brown, fine to medium, poorly graded, dry with occasional fine gravel w/some cobbles at surface, moist at 5 ft, no H2O TD 5'.
	SSIA5-3B	SS			1.5 - 2.5'		
	SSIA5-3C	SS			3.0 - 4.0'		
	SSIA5-3D	SS			4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: SSIA5-4

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3718.60
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0 - 0.2'	SSIA5-4A	G					0.0 - 0.2' GRAVEL Coarse 0.2 - 4.0' SAND Brown, fine to medium, poorly graded, dry, with red brick and lumber debris interbedded.
1.5 - 2.5'	SSIA5-4B	SS					
3.0 - 4.0'	SSIA5-4C	SS					
4.0 - 5.0'	SSIA5-4D	SS					4.0 - 5.0' Sandy CLAY Brown, wet.

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Soil Boring Log

Hole Name: **SSIA5-5**

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3717.91
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-5A	G			0.0 - 0.2'		0.0 - 2.5' Gravelly SAND Brown to black, fine to medium, poorly graded, dry.
	SSIA5-5B	SS			1.5 - 2.5'		2.5 - 4.0' Clayey SAND Brown, fine to clayey, moist.
	SSIA5-5C	SS			3.0 - 4.0'		4.0 - 5.0' CLAY Brown moist, TD 5', no H2O.
5							

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 Tucson, Arizona

Soil Boring Log

Hole Name: SSI A5-6

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3718.14
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-6A	G			0.0 - 0.2'		0.0 - 4.0' Silty SAND Brown, fine, dry.
	SSIA5-6B	SS			1.5 - 2.5'		
	SSIA5-6C	SS			3.0 - 4.0'		
	SSIA5-6D	SS			4.0 - 5.0'		4.0 - 5.0' Sandy CLAY Brown, dry with some red brick debris, TD 5', no H2O.

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Tucson, Arizona

Soil Boring Log
Hole Name: SSIA5-7
Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.
Project: Asarco El Paso Agreed Order RI
County: El Paso State: Texas
Property Owner: ASARCO, Inc. Property
Legal Description: Asarco Plant
Descriptive Location:

Recorded By: HDK
Drilling Company: Layne Christensen Co.
Driller: Dave Hogan
Drilling Method: Hollow Stem Auger
Drilling Fluids Used: None
Purpose of Hole: Soil Samples
Target Aquifer: NA
Hole Diameter (in): 6-inch
Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA Surface Casing Height (ft):
Date: NA Riser Height (ft):
MP Description: Ground Surface Ground Surface Elevation (ft): 3719.36
MP Height Above or Below Ground (ft): 0 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-7A	G			0.0 - 0.2'		0.0 - 1.0' ASPHALT
							1.0 - 3.0' SAND Brown, fine to medium, dry, hydrocarbon stained and wet at 2'.
	SSIA5-7B	SS			1.5 - 2.5'		
							3.0 - 5.0' Sandy CLAY Black, wet, with interbedded calcareous nodules.
	SSIA5-7C	SS			3.0 - 4.0'		
	SSIA5-7D	SS			4.0 - 5.0'		
5							

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 Tucson, Arizona

Soil Boring Log

Hole Name: SSIA5-8

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3720.28
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-8A	G			0.0 - 0.2'		0.0 - 3.0' SAND Brown, fine to medium, poorly graded, dry, perched H2O.
	SSIA5-8B	SS			1.5 - 2.5'		
	SSIA5-8C	SS			3.0 - 4.0'		3.0 - 5.0' Sandy CLAY Brown, moist, hydrocarbon odor w/black staining at 4.5-5, TD 5, no H2O
	SSIA5-8D	SS			4.0 - 5.0'		
5							

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HYDROMETRICS INC.
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 Tucson, Arizona

Soil Boring Log

Hole Name: SSI A5-9

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA Surface Casing Height (ft):
 Date: NA Riser Height (ft):
 MP Description: Ground Surface Ground Surface Elevation (ft): 3723.40
 MP Height Above or Below Ground (ft): 0 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-9A	G			0.0 - 0.2'		0.0 - 2.0' Gravelly SAND Brown, fine to medium, poorly graded, dry with occasional cobbles close to the surface.
	SSIA5-9B	SS			1.5 - 2.5'		2.0 - 5.0' SAND Brown to black, fine to medium, poorly graded, dry, slight hydrocarbon odor at 4.75 to 5, TD 5, No H2O.
	SSIA5-9C	SS			3.0 - 4.0'		
	SSIA5-9D	SS			4.0 - 5.0'		

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HYDROMETRICS INC.
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 Tucson, Arizona

Soil Boring Log

Hole Name: **SSIA5-10**

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3721.37
 MP Elevation (ft):

Remarks:

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-10A	G			0.0 - 0.2'	5	0.0 - 5.0' SAND with some Gravel Brown, fine to medium, poorly graded, dry with some fine gravel closest to the surface, moist below 4, slight hydrocarbon odor at tip of 5 sample (D), TD 5', no H2O.
	SSIA5-10B	SS		1.5 - 2.5'			
	SSIA5-10C	SS		3.0 - 4.0'			
	SSIA5-10D	SS		4.0 - 5.0'			
5							

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HYDROMETRICS INC.
 Consulting Scientists and Engineers
 Tucson, Arizona

Soil Boring Log

Hole Name: SSI A5-11

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3718.46
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-11A	G			0.0 - 0.2'		0.0 - 3.0' SAND Brown, fine-grained to medium-grained, poorly graded, dry.
	SSIA5-11B	SS			1.5 - 2.5'		
	SSIA5-11C	SS			3.0 - 4.0'		3.0 - 4.0' Clayey SAND Brown, fine-grained to medium-grained, moist.
	SSIA5-11D	SS			4.0 - 5.0'		4.0 - 5.0' Sandy CLAY Brown, moist, TD 5, no H2O.

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 Tucson, Arizona

Soil Boring Log

Hole Name: **SSIA5-12**

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3719.67
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-12A	G			0.0 - 0.2'		0.0 - 2.5' SAND Brown to black, fine to medium, poorly graded, dry, 4" thick organic layer at 18".
	SSIA5-12B	SS			1.5 - 2.5'		
	SSIA5-12C	SS			3.0 - 4.0'		2.5 - 5.0' Sandy CLAY Brown, moist, TD 5, H2O.
	SSIA5-12D	SS			4.0 - 5.0'		

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 Tucson, Arizona

Soil Boring Log

Hole Name: SSIA5-13

Date Hole Started: 7/8/97 Date Hole Finished: 7/8/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3721.84
 MP Elevation (ft):

Remarks:

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-13A	G			0.0 - 0.2'		0.0 - 4.0' SAND Brown, fine to medium, poorly graded, brown, dry to moist.
	SSIA5-13B	SS			1.5 - 2.5'		
	SSIA5-13C	SS			3.0 - 4.0'		
	SSIA5-13D	SS			4.0 - 5.0'		4.0 - 5.0' Clayey SAND Brown, moist, TD 5, no H2O.
5							

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Soil Boring Log

Hole Name: **SSIA5-14**

Date Hole Started: 7/6/97 Date Hole Finished: 7/9/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 4

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3724.63
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-14A	G			0.0 - 0.2'		0.0 - 0.2' SAND Reddish brown, fine-grained, poorly graded, dry.
							0.2 - 5.0' Gravelly SAND Brown, fine to medium, poorly graded, dry, TD 5', no H2O.
	SSIA5-14B	SS			1.5 - 2.5'		
	SSIA5-14C	SS			3.0 - 4.0'		
	SSIA5-14D	SS			4.0 - 5.0'		

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Soil Boring Log

Hole Name: SSI A5-15

Date Hole Started: 7/14/97 Date Hole Finished: 7/14/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: LJ
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3725.48
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A5-15A	G			0.0 - 0.2'		0.0 - 1.0' Gravelly SAND Pale yellow brown (10YR 6/2), fine to coarse, gap graded, medium dense, mix, landscape, gravel. [Fill]
							1.0 - 4.0' SAND Moderate yellow brown (10 YR 5/4), fine to coarse, gap graded, loose.
	SSI A5-15B	SS	8/1.5	1.50	1.5 - 3.0'		
	SSI A5-15C	SS	10/1	1.00	3.0 - 4.0'		
	SSI A5-15D	SS	8/1	1.00	4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: **SSIA5-16**

Date Hole Started: 7/14/97 Date Hole Finished: 7/14/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: LJ
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3721.78
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-16A	G			0.0 - 0.1'		0.0 - 3.0' Gravelly SAND Pale yellow brown (10 YR 6/7), fine to coarse, loose.
	SSIA5-16B	SS	15/1.5	1.50	1.5 - 3.0'		
	SSIA5-16C	SS	3/1	1.00	3.0 - 4.0'		3.0 - 4.0' SAND Moderate yellow brown (10 YR 6/2), fine to medium, med. dense, uniform, moist.
	SSIA5-16D	SS	6/1	1.00	4.0 - 5.0'		4.0 - 5.0' Clayey SILT Moderate yellow brown, (10 YR 6/2), moderate plasticity, firm, moist.
5							

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Soil Boring Log

Hole Name: SSI A5-17

Date Hole Started: 7/14/97 Date Hole Finished: 7/14/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: LJ
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

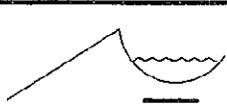
WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3725.09
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A5-17A	G					0.0 - 3.5' Gravelly SAND Pale yellow, brown (10YR 6/2), fine to coarse, medium dense, gap graded, brick @ 20".
	SSI A5-17B	SS	41/1.5	7.50	1.5 - 3.0'		
	SSI A5-17C	SS	12/1	1.00	3.0 - 4.0'		
	SSI A5-17D	SS	35/7	0.70	4.0 - 5.0'		3.5 - 5.0' SAND Pale yellow brown (10 YR 6/2), fine to medium, loose, uniform, dry.
5							

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Soil Boring Log

Hole Name: **SSIA5-18**

Date Hole Started: 7/14/97 Date Hole Finished: 7/14/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: LJ
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF

5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3722.53
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-18A	G			0.0 - 0.2'		0.0 - 5.0' SAND Pale yellow brown (10 YR 6/2), fine to coarse, uniform, loose, dry, moist @ 4.5'
	SSIA5-18B	SS	12/1.5	1.50	1.5 - 3.0'		
	SSIA5-18C	SS	5/1	1.00	3.0 - 4.0'		
	SSIA5-18D	SS	8/1	1.00	4.0 - 5.0'		
5							

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Soil Boring Log
Hole Name: SSI A5-19
 Date Hole Started: 7/14/97 Date Hole Finished: 7/14/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:
 Recorded By: LJ
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3722.15
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA5-19A	G			0.0 - 0.2'		0.0 - 5.0' Gravelly SAND Pale yellow brown (10 YR 6/2), loose concrete, slag, limestone, gap graded, wet @ 4.8'.
	SSIA5-19B	SS	18/1.5	1.50	1.5 - 3.0'		
	SSIA5-19C	SS	14/1	1.00	3.0 - 4.0'		
	SSIA5-19D	SS	32/1	1.00	4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: SSIAB-1

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Paok?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

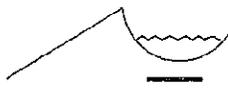
Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 3

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3775.62
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIAB-1A	G			0.0 - 0.2'		0.0 - 0.3' CONCRETE
							0.3 - 2.0' Clayey Gravelly SAND Brown, fine to medium.
	SSIAB-1B	SS			1.5 - 2.5'		2.0 - 2.2' SLAG Refusal at 1.5', no water, TD 1.5'.
	SSIAB-1C	SS			2.5 - 3.0'		

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Soil Boring Log

Hole Name: SSI A8-2

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3775.47
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-2A	G			0.0 - 0.2'		0.0 - 0.3' ASPHALT
							0.3 - 2.5' Clayey Gravelly SAND Brown, fine to medium, with some fine gravel (andesite), and slag.
	SSI A8-2B	SS			1.5 - 2.5'		
							2.5 - 5.0' SLAG
	SSI A8-2C	G			3.0 - 4.0'		
	SSI A8-2D	G			4.0 - 5.0'		

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 Tucson, Arizona

Soil Boring Log

Hole Name: **SSIA8-3**

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3774.87
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-3A	G			0.0 - 0.2'		0.0 - 0.3' ASPHALT
							0.3 - 4.0' Clayey Gravelly SAND Brown, fine to medium, moist, with some fine gravel, red brick, debris at 3.5 ft., dark staining with some slag below 3 ft.
	SSIA8-3B	SS			1.5 - 2.5'		
	SSIA8-3C	SS			3.0 - 4.0'		
	SSIA8-3D	SS			4.0 - 5.0'		4.0 - 5.0' SAND Brown, fine to medium, dry, with construction debris at tip of spoon, black stained, red brick.
5							

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 Tucson, Arizona

Soil Boring Log

Hole Name: SSIA8-4

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF 5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3775.21

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIAB-4A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 2.0' Clayey Gravelly SAND Brown, fine to medium, moist with some fine gravel.
	SSIAB-4B	SS			1.5 - 2.5'		
							2.0 - 5.0' SLAG With copper residue, blue green, light material cinderlike, light brown sand with red brick debris at top of sampler, TD 5' no H2O.
	SSIAB-4C	SS			3.0 - 4.0'		
	SSIAB-4D	SS			4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: **SSIA8-5**

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.

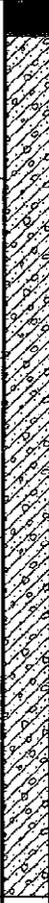
Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3775.44
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-5A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 5.0' Clayey Gravelly SAND Brown, fine to medium, moist, with some fine gravel.
	SSIA8-5B	SS			1.5 - 2.5'		
	SSIA8-5C	SS			3.0 - 4.0'		
	SSIA8-5D	SS			4.0 - 5.0'		

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Soil Boring Log

Hole Name: **SSIA8-6**

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-Inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

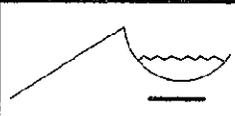
Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3775.96
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-6A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 4.0' Silty Gravelly SAND Brown, fine to medium, dry, with some fine gravel.
	SSIA8-6B	SS			1.5 - 2.5'		
	SSIA8-6C	SS			3.0 - 4.0'		
	SSIA8-6D	SS			4.0 - 5.0'		4.0 - 5.0' Gravelly Silty SAND Brown, fine to coarse, dry, with some cobbles, TD 5', no H2O.
5							

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Soil Boring Log
Hole Name: SSIA8-7
Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.
Project: Asarco El Paso Agreed Order RI
County: El Paso State: Texas
Property Owner: ASARCO, Inc. Property
Legal Description: Asarco Plant
Descriptive Location:

Recorded By: HDK
Drilling Company: Layne Christensen Co.
Driller: Dave Hogan
Drilling Method: Hollow Stem Auger
Drilling Fluids Used: None
Purpose of Hole: Soil Samples
Target Aquifer: NA
Hole Diameter (in): 6-inch
Total Depth Drilled (ft): 5

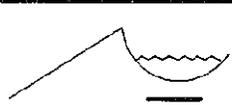
WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
Date: NA
MP Description: Ground Surface
MP Height Above or Below Ground (ft): 0
Surface Casing Height (ft):
Riser Height (ft):
Ground Surface Elevation (ft): 3776.77
MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-7A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 3.0' Clayey Gravelly SAND Brown, fine to medium, dry, with some fino gravel.
	SSIA8-7B	SS			1.5 - 2.5'		
	SSIA8-7C	SS			3.0 - 4.0'		3.0 - 5.0' Silty Gravelly SAND Brown, fine to medium, dry with some fine gravel, TD 5', no H2O.
	SSIA8-7D	SS			4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: SSIA8-8

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3777.89
 MP Elevation (ft):

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-8A	G		0.0 - 0.2'			0.0 - 0.2' ASPHALT
							0.2 - 5.0' Silty Gravelly SAND Brown to reddish-brown, fine to medium, dry, with some fine gravel.
	SSIA8-8B	SS		1.5 - 2.5'			
	SSIA8-8C	SS		3.0 - 4.0'			
	SSIA8-8D	SS		4.0 - 5.0'			

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Soil Boring Log

Hole Name: SSI A8-9

Date Hole Started: 7/16/97 Date Hole Finished: 7/16/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF

5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3778.18
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0 - 0.2'	SSIA8-9A	G					0.0 - 0.2' SLAG
0.2 - 0.2'							0.2 - 0.2' Silty SAND Brown, fine to medium, dry.
0.2 - 5.0'							0.2 - 5.0' Clayey SAND Brown, fine to medium, moist.
1.5 - 2.5'	SSIA8-9B	SS					
3.0 - 4.0'	SSIA8-9C	SS					
4.0 - 5.0'	SSIA8-9D	SS					

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Soil Boring Log

Hole Name: SSI A8-10

Date Hole Started: 7/17/97 Date Hole Finished: 7/17/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF

5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3776.96

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-10A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COARSE (Fill)
							0.5 - 5.0' Clayey Gravelly SAND Brown, fine to medium, moist with some fine gravel and inter slag gravel
	SSIA8-10B	SS			1.5 - 2.5'		
	SSIA8-10C	SS			3.0 - 4.0'		
	SSIA8-10D	SS			4.0 - 5.0'		

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Soil Boring Log

Hole Name: SSI A8-11

Date Hole Started: 7/17/97 Date Hole Finished: 7/17/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3776.58
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-11A	G			0.0 - 0.2'		0.0 - 1.0' SAND Tan to black, fine to coarse, slightly silty, dry (chat)
	SSI A8-11B	SS			1.5 - 2.5'		1.0 - 5.0' Silty SAND Reddish-brown, fine to medium, dry, TD 5', no H2O.
	SSI A8-11C	SS			3.0 - 4.0'		
	SSI A8-11D	SS			4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: **SSIA8-12**

Date Hole Started: 7/17/97 Date Hole Finished: 7/17/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3776.48
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-12A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COURSE
							0.5 - 2.5' Gravelly Silty SAND Brown to black, fine to medium, dry.
	SSIA8-12B	SS			1.5 - 2.5'		
							2.5 - 5.0' Gravelly SAND Brown (mottled), fine to coarse, dry, with some fine gravel.
	SSIA8-12C	SS			3.0' - 4.0'		
	SSIA8-12D	SS			4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: SSIA8-13

Date Hole Started: 7/17/97 Date Hole Finished: 7/17/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agraed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3775.86
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-13A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COARSE
							0.5 - 4.0' Clayey Gravelly SAND Brown to black, fine to medium, clayey, moist with some fine gravel.
	SSIA8-13B	G			1.5 - 2.5'		
	SSIA8-13C	SS			3.0 - 4.0'		
	SSIA8-13D	SS			4.0 - 5.0'		4.0 - 5.0' Silty SAND Brown, fine to medium, dry, TD 5, No H2O.
5							

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 Tucson, Arizona

Soil Boring Log

Hole Name: SSI A8-14

Date Hole Started: 7/17/97 Date Hole Finished: 7/17/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 4

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3777.01
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-14A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 1.0' Silty SAND Brown, fine to medium, dry with some fine gravel
	SSI A8-14B	G			1.5 - 2.5'		1.0 - 4.0' SLAG Refusal
	SSI A8-14C	G			3.0 - 4.0'		
	SSI A8-14D	G			4.0 - 5.0'		

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Soil Boring Log

Hole Name: SSI A8-15

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3778.84
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-15A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 2.5' Clayey Gravelly SAND Brown, fine to medium, moist with some fine gravel.
	SSI A8-15B	SS			1.5 - 2.5'		2.5 - 4.5' Gravelly Clayey SAND Brown, fine to medium, moist.
	SSI A8-15C	G			3.0 - 4.0'		
	SSI A8-15D	G			4.0 - 5.0'		4.5 - 5.0' SLAG
5							

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Soil Boring Log

Hole Name: SSI A8-16

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3777.40
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-16A	G			0.0 - 0.2'		0.0 - 0.4' SLAG Aggregate, some sand fine to coarse, dry.
							0.4 - 1.2' Gravelly SAND Light brown (5YR 5/6), fine to coarse, loose gap graded, dry.
	SSIA8-16E	SS	18/1.5	1.00	1.5 - 2.5'		1.2 - 3.8' SAND Light brown (5YR 5/6), fine to medium, uniform, med. dense, dry.
	SSIA8-16C	SS	12/1	0.80	3.0 - 4.0'		
	SSIA8-16D	SS	8/1	0.80	4.0 - 5.0'		3.8 - 4.1' SLAG
5							

GEOTECH 073491.GPJ HYD-TUC.GDT 7/18/98



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Soil Boring Log

Hole Name: SSI A8-17

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 3

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3779.85
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-17A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 5.0' Clayey Gravelly SAND Brown, fine to medium, with some fine gravel and intermixed slag, 4" thick layer at slag at 36".
	SSI A8-17B	SS			1.5 - 2.5'		
	SSI A8-17C	G			3.0 - 4.0'		

GEOTECH 0734R1R1GJ HYD-TUC.GDT 7/18/98



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Soil Boring Log

Hole Name: SSIAB-18

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

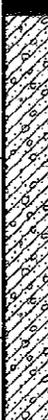
Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 3

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3776.98
 MP Elevation (ft):

Remarks:

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIAB-18A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 2.5' Clayey Gravelly SAND Brown, fine to medium, moist with some fine gravel.
	SSIAB-18B	SS			1.5 - 2.5'		
							2.5 - 3.0' SLAG Refusal
	SSIAB-18C				3.0 - 4.0'		
	SSIAB-18D				4.0 - 5.0'		

GEOTECH 0734RI.GPJ HYD.TUC.GDT 7/18/98



HYDROMETRICS INC.
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Soil Boring Log

Hole Name: SSIA8-19

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3780.51
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-19A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 4.5' Clayey Gravelly SAND Brown, fine to medium, moist with some gravel.
	SSIA8-19B	SS			1.5 - 2.6'		
	SSIA8-19C	SS			3.0 - 4.0'		
	SSIA8-19D				4.0 - 5.0'		
							4.5 - 5.0' SLAG

GEO TECH 073491.GPJ HYD-TUC.CDT 7/18/98



HYDROMETRICS INC.
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Soil Boring Log

Hole Name: **SSIA8-20**

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order R1
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 2

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3776.36
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-20A	G		0.0 - 0.2'			0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COARSE
							0.5 - 1.5' Silty SAND Brown, medium to fine.
	SSIA8-20B	G		1.5 - 2.5'			1.5 - 2.0' SLAG Refusal

GEOTECH_0734R1.GPJ HYD-TUC.GDT 7/16/98



HYDROMETRICS INC.
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Soil Boring Log

Hole Name: SSIAB-21

Date Hole Started: 7/13/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF

5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

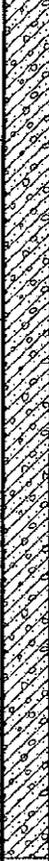
Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3777.82

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIAB-21A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 5.0' Clayey Gravelly SAND Brown to black, fine to medium, moist, with some fine gravel and slag.
	SSIAB-21B	SS			1.5 - 2.5'		
	SSIAB-21C	G			3.0 - 4.0'		
	SSIAB-21D	G			4.0 - 5.0'		
5							

GEOTECH 0734FL.GPJ HYD-TUC.GDT 7/16/98



HYDROMETRICS INC.
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Soil Boring Log

Hole Name: SSI A8-22

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3774.56
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-22A	G			0.0 - 0.2'		0.0 - 0.5' SLAG
							0.5 - 5.0' SAND Moderate yellowish-brown (10YR 5/4) to light brown (5YR 5/6), fine to medium, medium dense, uniform, dry.
	SSI A8-22B	SS			1.5 - 2.5'		
	SSI A8-22C	SS			3.0 - 4.0'		
	SSI A8-22D	SS			4.0 - 5.0'		

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Soil Boring Log

Hole Name: **SSIA8-23**

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3781.38

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-23A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COARSE
							0.5 - 5.0' Clayey Gravelly SAND Brown, fine to medium, moist with some fine gravel, no H2O.
	SSIA8-23B	SS			1.5 - 2.5'		
	SSIA8-23C	G			3.0 - 4.0'		
	SSIA8-23D				4.0 - 5.0'		

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Soil Boring Log

Hole Name: SSI A8-24

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 2

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3776.77
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSI A8-24A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COARSE
							0.5 - 1.5' Gravelly Silty SAND Brown, medium to fine, moist, with some fine gravels.
	SSI A8-24B	G			1.5 - 2.5'		1.5 - 2.0' SLAG Refusal

GEOTECH 0734RIGSJ HYD-TUC.GDT 7/16/98



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 Tucson, Arizona

Soil Boring Log

Hole Name: SSI A8-25

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF

5 foot intervals

Recorded By: HDK

Drilling Company: Layne Christensen Co.

Driller: Dave Hogan

Drilling Method: Hollow Stem Auger

Drilling Fluids Used: None

Purpose of Hole: Soil Samples

Target Aquifer: NA

Hole Diameter (in): 6-inch

Total Depth Drilled (ft): 1.9

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3772.02

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-25A	G			0.0 - 0.2'		0.0 - 1.9' SLAG Dusky yellowish-brown (10YR 2/2), fines, RR track ballast; generally SLAG, moist, some white staining.
	SSIA8-25B	G			1.5 - 2.5'		
	SSIA8-25C				3.0 - 4.0'		
	SSIA8-25D				4.0 - 5.0'		
5							

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Soil Boring Log

Hole Name: SSI A8-26

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 1.5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3776.50
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-26A	G			0.0 - 0.2'		0.0 - 1.5' SLAG Gravel-sized, coarse, sandy (RR track ballast), auger would not advance past 18".
	SSIA8-26B	G			1.5 - 2.5'		

GEOTECH 0734RIGPJ HYD-TUC.GDT 7/18/98



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 Tucson, Arizona

Soil Boring Log

Hole Name: **SSIA8-27**

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 4

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N
 Surface Casing Used? N
 Screen/Perforations? N
 Sand Pack? N
 Annular Seal? N
 Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N
 Water Samples Taken? N
 Boring Samples Taken? Y XRF

5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3779.55

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-27A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 0.5' BASE COARSE
							0.5 - 4.0' Gravelly SAND Fine to coarse, clayey, brown to black, moist, with some fine gravel. Auger refusal at 4' on s'ag.
	SSIA8-27B	G			1.5 - 2.5'		
	SSIA8-27C	SS			3.0 - 4.0'		

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HYDROMETRICS INC.
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Soil Boring Log

Hole Name: SSIA8-28

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/99

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas

Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant

Descriptive Location:

Recorded By: HDK

Drilling Company: Layne Christensen Co.

Driller: Dave Hogan

Drilling Method: Hollow Stem Auger

Drilling Fluids Used: None

Purpose of Hole: Soil Samples

Target Aquifer: NA

Hole Diameter (in): 6-inch

Total Depth Drilled (ft): 5

WELL COMPLETION Y/N DESCRIPTION INTERVAL

Well Installed? N

Surface Casing Used? N

Screen/Perforations? N

Sand Pack? N

Annular Seal? N

Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N

Water Samples Taken? N

Boring Samples Taken? Y XRF 5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3772.02

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-28A	G		0.0 - 0.2'			0.0 - 0.8' FILL Crushed landscape rock, aggregate, very pale orange, some slag.
							0.8 - 3.5' SAND Dusky yellowish-brown (10 YR 2/2), fine to coarse, loose, uniform, dry.
	SSIA8-28B	G		1.5 - 2.5'			
	SSIA8-28C	SS		3.0 - 4.0'			
	SSIA8-28D	SS		4.0 - 5.0'			3.5 - 5.0' Gravelly SAND Pale yellowish-brown, (10 YR 6/2), fine to coarse, loose, gap graded, gravel of limestone, dry, downward-fining.

GEOTECH 0734RIGPJ HYD-TUC.GDT 7/18/98



HYDROMETRICS INC.
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Soil Boring Log

Hole Name: SSIAB-29

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas

Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK

Drilling Company: Layne Christensen Co.

Driller: Dave Hogan

Drilling Method: Hollow Stem Auger

Drilling Fluids Used: None

Purpose of Hole: Soil Samples

Target Aquifer: NA

Hole Diameter (in): 6-inch

Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

Ground Surface Elevation (ft): 3777.17

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIAB-29A	G			0.0 - 0.2'		0.0 - 3.5' Gravelly SAND Black with interbedded slag layers, auger refusal at 3.5 feet in slag.
	SSIAB-29B	G			1.5 - 2.5'		

GEOTECH 07/34/RI/GPJ HYD-TUC.GDT 7/18/98



HYDROMETRICS INC.
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Soil Boring Log
Hole Name: SSIA8-30
 Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:
 Recorded By: HDK
 Drilling Company: Layne Christensen Co.
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Soil Samples
 Target Aquifer: NA
 Hole Diameter (in): 6-inch
 Total Depth Drilled (ft): 1.5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: NA
 Date: NA
 MP Description: Ground Surface
 MP Height Above or Below Ground (ft): 0
 Surface Casing Height (ft):
 Riser Height (ft):
 Ground Surface Elevation (ft): 3774.82
 MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-30A	G			0.0 - 0.2'		0.0 - 1.0' Gravelly SAND Dark yellow brown w/ green (10 YR 4/2), fine to coarse, gap graded, medium dense, dry, fines appear to be concentrate.
							1.0 - 1.5' SLAG

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 Tucson, Arizona

Soil Boring Log

Hole Name: **SSIA8-31**

Date Hole Started: 7/18/97 Date Hole Finished: 7/18/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas

Property Owner: ASARCO, Inc. Property
 Legal Description: Asarco Plant
 Descriptive Location:

Recorded By: HDK

Drilling Company: Layne Christensen Co.

Driller: Dave Hogan

Drilling Method: Hollow Stem Auger

Drilling Fluids Used: None

Purpose of Hole: Soil Samples

Target Aquifer: NA

Hole Diameter (in): 6-inch

Total Depth Drilled (ft): 4

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	N		
Annular Seal?	N		
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Well Installed? N

Surface Casing Used? N

Screen/Perforations? N

Sand Pack? N

Annular Seal? N

Surface Seal? N

DEVELOPMENT/SAMPLING

Well Developed? N

Water Samples Taken? N

Boring Samples Taken? Y XRF

5 foot intervals

Static Water Level Below MP: NA

Date: NA

MP Description: Ground Surface

MP Height Above or Below Ground (ft): 0

Surface Casing Height (ft):

Riser Height (ft):

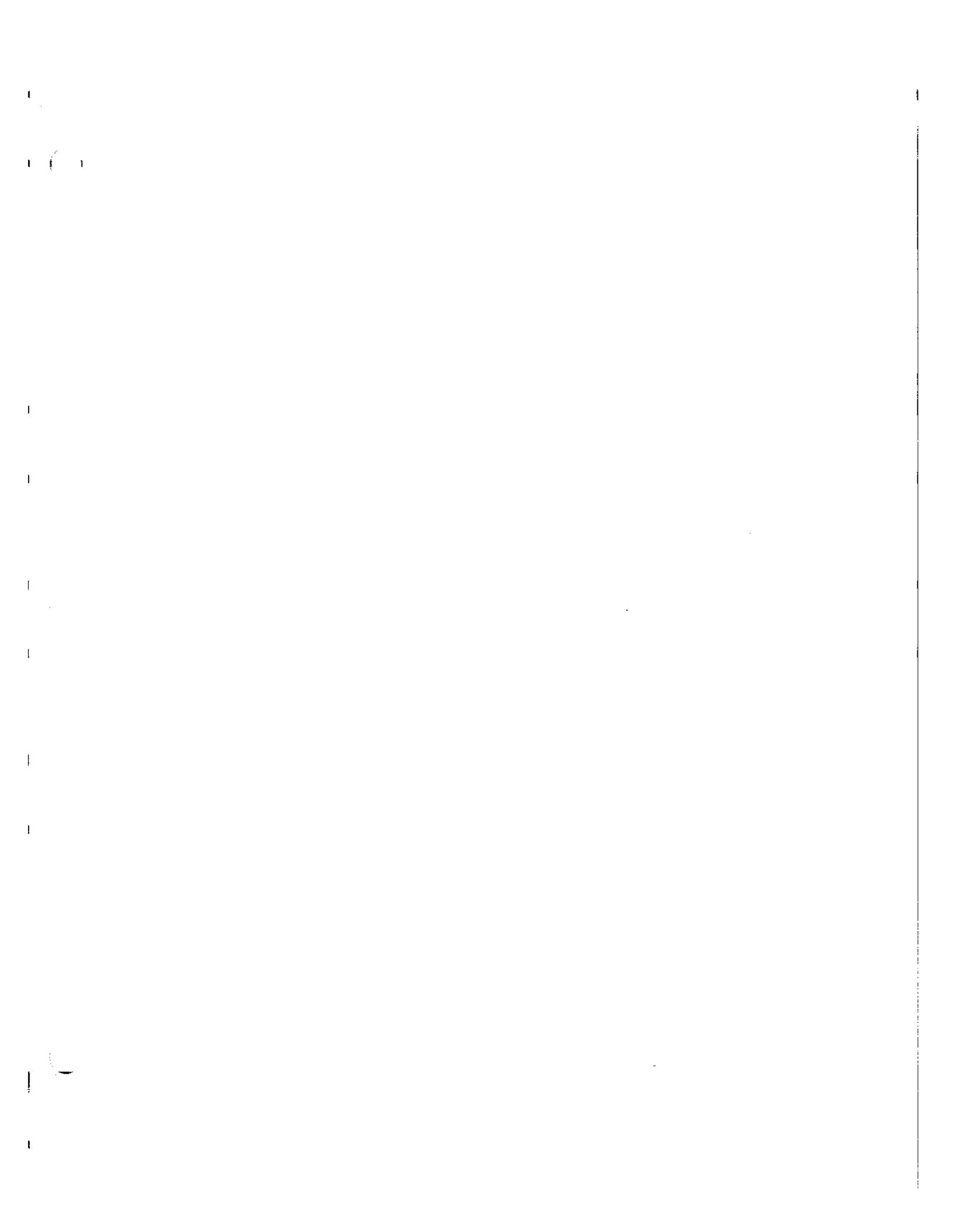
Ground Surface Elevation (ft): 3778.94

MP Elevation (ft):

Remarks: Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	SSIA8-31A	G			0.0 - 0.2'		0.0 - 0.2' ASPHALT
							0.2 - 3.5' Gravelly SAND Dark yellowish-brown (10YR 4/2), fine to coarse, loose, gap graded.
	SSIA8-31B	SS	40/1.5	1.30	1.5 - 3.0'		
							3.5 - 4.0' SLAG

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Soil Boring Log

Hole Name: RIBH-1

Date Hole Started: 6/19/97 Date Hole Finished: 6/19/97

Client: ASARCO, Inc.
Project: Asarco El Paso Agreed Order RI
County: El Paso State: Texas
Property Owner: ASARCO, Inc.
Legal Description: Asarco Plant
Descriptive Location: SLAGPILE S of Cemetary
Recorded By: Lairy Johnson
Drilling Company: Layne
Driller: Dave Hogan
Drilling Method: Hollow Stem Auger
Drilling Fluids Used: None
Purpose of Hole: Boring
Target Aquifer: Alluvial/Colluvial
Hole Diameter (in): 9 inch
Total Depth Drilled (ft): 63.5

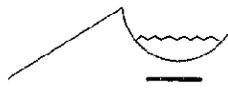
WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	35 - 63.5 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: _____
Date: _____
MP Description: _____
MP Height Above or Below Ground (ft): _____
Surface Casing Height (ft): _____
Riser Height (ft): _____
Ground Surface Elevation (ft): 3808.57
MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0 - 39.0'							0.0 - 39.0' SLAG
40.0 - 42.0'	RIBH-1A	SS	20/50	1.00	40.0 - 42.0' Rock in shoe		
45.0 - 47.0'	RIBH-1B	SS	20/50	1.00	45.0 - 47.0' Brick in shoe		
50.0 - 52.0'	RIBH-1C	SS					
55.0 - 57.0'	RIBH-1D	G					
60.0 - 62.0'	RIBH-1E	G					

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Soil Boring Log

Hole Name: **RIBH-2**

Date Hole Started: 6/30/97 Date Hole Finished: 6/30/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc.
 Legal Description: Asarco Plant
 Descriptive Location: Parker Bros. Slag Pile

Recorded By: Lairy Johnson
 Drilling Company: Layne
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Boring
 Target Aquifer: Alluvial/Colluvial
 Hole Diameter (in): 6 inch
 Total Depth Drilled (ft): 18

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	0 - 18 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: _____ Surface Casing Height (ft): _____
 Date: _____ Riser Height (ft): _____
 MP Description: _____ Ground Surface Elevation (ft): 3780.59
 MP Height Above or Below Ground (ft): _____ MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0							0.0 - 3.0' SLAG
3.0							3.0 - 9.0' Gravelly SAND Light brown (5YR 5/6), fine to coarse, loose, gap graded, gravels of quartzite.
7.0	RIBH-2A	SS	50/4*	0.25	7.0 - 9.0' Rock in shoe		
10.0	RIBH-2B	SS	50/1'	1.00	10.0 - 12.0' tight		9.0 - 13.5' Clayey Silty SAND Pale yellow brown (10 YR 6/2), fine graded, dense, moderate plasticity, some fine bedding.
15.0	RIBH-2C	SS	50/1	1.00	15.0 - 17.0' tight		13.5 - 18.0' Gravelly Clayey SAND Pale yellow brown (10 YR 6/2), fine to coarse, gap graded, med. dense, dry, gravel 5%.
18.0							18.0 - 0.0' BEDROCK Auger Refusal, TD=18'

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Soil Boring Log

Hole Name: RIBH-3

Date Hole Started: 6/30/97 Date Hole Finished: 6/30/97

Client: ASARCO, Inc.
Project: Asarco El Paso Agreed Order RI
County: El Paso State: Texas
Property Owner: ASARCO, Inc.
Legal Description: Asarco Plant
Descriptive Location: Parker Bros. Slag Pile

Recorded By: Lairy Johnson
Drilling Company: Layne
Driller: Dave Hogan
Drilling Method: Hollow Stem Auger
Drilling Fluids Used: None
Purpose of Hole: Boring
Target Aquifer: Alluvial/Colluvial
Hole Diameter (in): 7 inch
Total Depth Drilled (ft): 41

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	31 - 41 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		5 foot intervals

Static Water Level Below MP: _____ Surface Casing Height (ft): _____
Date: _____ Riser Height (ft): _____
MP Description: _____ Ground Surface Elevation (ft): 3770.32
MP Height Above or Below Ground (ft): _____ MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0 - 27.0'							0.0 - 27.0' SLAG
27.0 - 34.0'	RIBH-3A	SS	40/2	2.00	28.0 - 30.0'		27.0 - 34.0' SAND Moderate yellow brown (10 YR 5/4), fine to coarse uniform loose, some gravels of slag brick etc., moist, 1" tar zone, HC odor.
34.0 - 41.0'	RIBH-3B	SS	75/1.5	1.50	35.0 - 37.0'		34.0 - 41.0' Gravelly SAND Moderate yellow brown (10 YR 5/4), fine to coarse, loose, gap graded, moist, H2O = 40.5, TD = 41.
40.0 - 42.0'	RIBH-3C	SS	50/1	1.00	40.0 - 42.0' Rock in shoe		

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Soil Boring Log

Hole Name: RIBH-4

Date Hole Started: 6/30/97 Date Hole Finished: 6/30/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc.
 Legal Description: Asarco Plant
 Descriptive Location: Canyon to EP-85

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: Lairy Johnson
 Drilling Company: Layne
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Boring
 Target Aquifer: Alluvial/Colluvial
 Hole Diameter (in): 7 inch
 Total Depth Drilled (ft): 16

Static Water Level Below MP: _____
 Date: _____
 MP Description: _____
 MP Height Above or Below Ground (ft): _____
 Surface Casing Height (ft): _____
 Riser Height (ft): _____
 Ground Surface Elevation (ft): 3735.90
 MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0 - 1.0'	RIBH-4A	SS	63/1	1.00	0.0 - 2.0' Rock in shoe		0.0 - 1.0' Gravelly SAND Pale yellow brown (10 YR 6/2), fine to coarse, loose, gap graded, dry, gr of 15, quartzite, and slag.
1.0 - 9.5'							1.0 - 9.5' SLAG
9.5 - 16.0'	RIBH-4B	SS			10.0 - 12.0' Rock in shoe		9.5 - 16.0' Gravelly SAND Pale brown yellow (10YR 6/2), fine to coarse, loose, gap graded, dry, gravels of quartzite, H2O @ 14.5.
15.0 - 17.0'	RIBH-4C	SS			15.0 - 17.0'		

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Soil Boring Log

Hole Name: RIBH-5

Date Hole Started: 6/30/97 Date Hole Finished: 6/30/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc.
 Legal Description: Asarco Plant
 Descriptive Location: Along Paisano across from IBWC

Recorded By: Lairy Johnson
 Drilling Company: Layne
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None

Purpose of Hole: Boring
 Target Aquifer: Alluvial/Colluvial
 Hole Diameter (in): 7 inch
 Total Depth Drilled (ft): 17

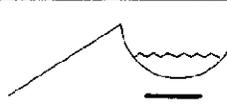
WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	12 - 17 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Static Water Level Below MP: _____ Surface Casing Height (ft): _____
 Date: _____ Riser Height (ft): _____
 MP Description: _____ Ground Surface Elevation (ft): 3729.79
 MP Height Above or Below Ground (ft): _____ MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
							0.0 - 2.0' SLAG SLAG
	RIBH-5A	SS	47/2	2.00	2.0 - 4.0'		2.0 - 12.0' Gravelly SAND Pale yellow brown (10 YR 6/2), fine to coarse, loose, gap graded, moist, quartz gravels, diesel odors and staining @ .5
5							
	RIBH-5B	SS	35/2	2.00	8.0 - 10.0'		
10							
	RIBH-5C	SS	30/2	2.00	10.0 - 12.0'		
	RIBH-5D	SS	40/2	2.00	12.0 - 14.0'		12.0 - 17.0' SAND Pale yellow brown (10 YR 6/2), fine to medium, loose uniform, WET, H2C @ 15', 3 1/2 of HC.
15							
	RIBH-5E	SS	21/2	2.00	15.0 - 17.0'		
20							

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Soil Boring Log

Hole Name: RIBH-6

Date Hole Started: 6/30/97 Date Hole Finished: 6/30/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc.
 Legal Description: Asarco Plant
 Descriptive Location: E of Paisano between RR Track
 Recorded By: Lairy Johnson
 Drilling Company: Layne
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Boring
 Target Aquifer: Alluvial/Colluvial
 Hole Diameter (in): 7 inch
 Total Depth Drilled (ft): 5

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	0 - 5 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		5 foot intervals

Static Water Level Below MP: _____ Surface Casing Height (ft): _____
 Date: _____ Riser Height (ft): _____
 MP Description: _____ Ground Surface Elevation (ft): 3729.80
 MP Height Above or Below Ground (ft): _____ MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
							0.0 - 0.5' SLAG
							0.5 - 5.0' Gravelly SAND Dark yellow brown (10 YR 4/2), fine to coarse, angular grain, med. dense gravels of slag, brick ls qtz, H2O @ 2'
	RIBH-6A	SS	61/2	1.50	2.0 - 4.0'		

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Soil Boring Log

Hole Name: RIBH-7

Date Hole Started: 7/1/97 Date Hole Finished: 7/1/97

Client: ASARCO, Inc.

Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc.
 Legal Description: Asarco Plant
 Descriptive Location: Near EP-58

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	8 - 12 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	XRF	5 foot intervals

Recorded By: Lairy Johnson
 Drilling Company: Layne
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Boring
 Target Aquifer: Alluvial/Colluvial
 Hole Diameter (in): 7 inch
 Total Depth Drilled (ft): 12

Static Water Level Below MP: _____ Surface Casing Height (ft): _____
 Date: _____ Riser Height (ft): _____
 MP Description: _____ Ground Surface Elevation (ft): _____
 MP Height Above or Below Ground (ft): _____ MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
	RIBH-7A	SS	72/2	2.00	0.0 - 2.0'		0.0 - 1.5' Gravelly SAND Pale yellow brown (10 YR 6/2), fine to coarse, gap graded, dry.
							1.5 - 4.0' SAND Pale yellow brown (10 YR 6/2), fine to coarse, loose uniforms, dry.
5	RIBH-7B	SS	18/2	2.00	5.0 - 7.0'		4.0 - 12.0' Gravelly Silty SAND Pale yellow brown (10 YR 6/2), fine to coarse loose, gap graded. Diesel @ 9.5, H2O @ 12, 9-11, Silty Sand.
10	RIBH-7C	SS	6/2	2.00	10.0 - 12.0'		
15							

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Soil Boring Log

Hole Name: RIBH-8

Date Hole Started: 7/1/97 Date Hole Finished: 7/1/97

Client: ASARCO, Inc.
 Project: Asarco El Paso Agreed Order RI
 County: El Paso State: Texas
 Property Owner: ASARCO, Inc.
 Legal Description: Asarco Plant
 Descriptive Location: Left Field Foul Line

Recorded By: Lairy Johnson
 Drilling Company: Layne
 Driller: Dave Hogan
 Drilling Method: Hollow Stem Auger
 Drilling Fluids Used: None
 Purpose of Hole: Boring
 Target Aquifer: Alluvial/Colluvial
 Hole Diameter (in): 7 inch
 Total Depth Drilled (ft): 12

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		
Surface Casing Used?	N		
Screen/Perforations?	N		
Sand Pack?	Y	12-20 CSSI	8 - 12 Feet
Annular Seal?	Y	Bentonite Chips	
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		5 foot intervals

Static Water Level Below MP: _____ Surface Casing Height (ft): _____
 Date: _____ Riser Height (ft): _____
 MP Description: _____ Ground Surface Elevation (ft): 3724.60
 MP Height Above or Below Ground (ft): _____ MP Elevation (ft): _____

Remarks: All soil descriptions and size fraction distributions based on field observations and tests. Samples were collected with a 2-inch ID split spoon and grab samples

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY (feet)	DRILLING AND GEOTECHNICAL NOTES	GRAPHICS	GEOLOGICAL DESCRIPTION
0.0 - 1.0'	RIBH-8A	SS	6 1/2	1.50	0.0 - 2.0'		0.0 - 1.0' Gravelly SAND Pale yellow brown (10YR 6/2), fine to coarse, loose, gap graded, limestone, gravel, dry.
1.0 - 2.5'							1.0 - 2.5' SAND Moderate yellow brown (10YR 5/4), fine to medium, med. dense, uniform dry.
2.5 - 5.5'							2.5 - 5.5' Gravelly SAND Pale yellow brown (10YR 6/2), fine to coarse, med. dense, loose, dry, coke bottle @ 4".
5.0 - 7.0'	RIBH-8B	SS	9/2	2.00	5.0 - 7.0'		5.5 - 6.5' SAND Light brown (5YR 5/6), fine to coarse, loose, uniform, dry.
6.5 - 8.5'							6.5 - 8.5' Gravelly SAND Light brown (5YR 5/6), fine to coarse, loose, gap graded, dry.
8.5 - 12.0'	RIBH-8C	SS	4/2	2.00	10.0 - 12.0'		8.5 - 12.0' SAND Dark yellow brown (10YR 4/2), uniform, fine grained, med. dense, HC @ 9.5, H2O @ 10.

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