Table 3-14B
Summary of Pond Sediment Sample Results, Investigation Area 9
(On-Site Ponds 1, 5 and 6)
ASARCO El Paso Smelter Phase II RI

Site	Type Name	Arsenic	Cadmium	Lead
POND 1	SEDIMENT/SOIL	3000.0	1366.7	4700.0
POND 5	SEDIMENT/SOIL	2350.0	1250.0	33500.0
POND 6	SEDIMENT/SOIL	4530.0	1336.7	13400.0

Notes:
Data presented in this table represents Phase II samples from 8/11/99, 11/2/99 and 2/8/00. Pond sediments were sampled by grab of three inch deep sample near pond soil/water interface.

U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per kilogram (mg/kg)

Table 3-14C
Summary of Surface Water Sample Results, Investigation Area 9
(On-Site Ponds 1, 5 and 6)
ASARCO El Paso Smelter Phase II RI

Site	Type Name	Arsenic	Cadmium	Lead
Dissolved Metals				
POND 1	Surface Water	0.256	16.638	0.197
POND 5	Surface Water	0.132	0.046	0.140
POND 6	Surface Water	1.559	0.110	0.091
Total Metals				
POND 1	Surface Water	2.1	286	1.8
POND 6	Surface Water	0.36	0.13	0.115
Total Recoverable Metals				
POND 1	Surface Water	0.398	14.92	0.526
POND 5	Surface Water	0.27	0.074	0.58
POND 6	Surface Water	0.876	0.141	0.25

Notes:

Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000 for all results except total metals for Pond 1. The Pond 1 total metals results are for the Nov. 1999 sample event only. This was the first event where total metals analysis method was used and the pond has been dry ever since.

U: Less than listed value (detection limit)

NA: Not applicable

All concentrations in milligrams per liter (mg/l)

Table 3-15
Summary of Groundwater Sample Results, Investigation Area 9
(Arroyo Down Gradient of Pond 1)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss		Cadmium (CD) TOT		Lead (PB) Diss		Lead (PB) TOT
EM-2	0.807	1.433	0.005	U	0.005	U	0.003	U	0.012
EM-4	0.008	0.008	0.006		0.005	U	0.003	U	0.005
EP-12	1.689	2.550	0.007		0.005	U	0.003	U	0.011
EP-14	1.750	1.667	0.005	U	0.005	U	0.004		0.007
EP-29	0.299	0.287	0.005	U	0.005	U	0.003	U	0.010
EP-35	0.506	0.790	0.005	U	0.005	U	0.003	U	0.018
EP-43	1.390	0.738	0.005	U	0.005	U	0.003	U	0.011

Notes:

Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.

U: Less than listed value (detection limit)

NA: Not applicable

All concentrations in milligrams per liter (mg/l)

Table 3-16
Summary of Groundwater Sample Results, Investigation Area 9
(Arroyo Down Gradient of Ponds 5 and 6)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss	Cadmium (CD) TOT	Lead (PB) Diss	Lead (PB) TOT
EM-5	1.880	2.400	0.049	0.011	0.005 U	0.008
EM-6	0.028	0.032	0.006	0.007	0.003	0.011
EM-7	2.100	1.835	0.015	0.113	0.031	0.713
EP-26	0.361	0.183	0.842	1.395	0.011	0.110
EP-56	1.754	1.265	0.005 U	0.005 U	0.004	0.017
EP-77	6.230	6.375	0.014	0.010	0.005 U	0.013
EP-116	NA	3.600	NA	1.350	NA	3.050
EP-117	NA	8.500	NA	1.450	NA	5.140

Notes:
Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per liter (mg/l)

Table 3-17
Summary of Soil Sample Results, Investigation Area 10
(Facility Entrance Area)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic	Cadmium	Lead
EP-110	EP-110A	10/18/1999	0-1 ft.	490	100	3000
	EP-110B	10/18/1999	1-2 ft.	190	67	3100
	EP-110C	10/18/1999	2-3 ft.	72	25	210
	EP-110D	10/18/1999	3-4 ft.	71	10 U	60
	EP-110E	10/18/1999	4-5 ft.	51	10 U	43
	EP-110F	10/18/1999	7-8 ft.	11	10 U	84
	EP-110F2	10/18/1999	7-8 ft.	12	10 U	68

Notes:

Only Phase II soil sample results are included in this table. Phase I and Phase II data averages as a function of soil depth are presented graphically in Appendix C.

U: Less than listed value (detection limit)

NA: Not applicable

All concentrations in milligrams per kilogram (mg/kg)

Depth in feet below ground surface.

Table 3-18
Summary of Groundwater Sample Results, Investigation Area 10
(Facility Entrance Area)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss	Cadmium (CD) TOT	Lead (PB) Diss	Lead (PB) TOT
EP-89	0.0071	0.009	0.005 U	0.005 U	0.003 U	0.006
EP-110		0.007		0.005 U		0.017

Notes:
Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per liter (mg/l)

Table 3-19
Summary of Soil Sample Results, Investigation Area 11
(Arroyos East of I-10)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead	
BH11-2	BH11-2F	08/04/99	10-12 ft.	17		10	U	10	U
	BH11-2G	08/04/99	15-17 ft.	10	U	10	U	10	U
	BH11-2H	08/04/99	20-22 ft.	10	U	10	U	10	U
	BH11-2I	08/05/99	25-27 ft.	10	U	10	U	10	U
	BH11-2J	08/05/99	30-32 ft.	10	U	10	U	10	U
	BH11-2K	08/05/99	35-37 ft.	10	U	10	U	10	U
	BH11-2K2	08/05/99	DUP	10	U	10	U	10	U
	BH11-2L	08/05/99	40-42 ft.	10	U	10	U	10	U
BH11-3	BH11-3F	08/05/99	10-12 ft.	55		17		1000	
BH11-4	BH11-4B	08/05/99	1-2 ft.	46		10	U	17	
	BH11-4C	08/05/99	2-3 ft.	33		10	U	20	
	BH11-4D	08/05/99	3-4 ft.	10	U	10	U	10	U
	BH11-4E	08/05/99	4-5 ft.	19		10	U	11	
	BH11-4F	08/05/99	10-12 ft.	10	U	10	U	10	U
	BH11-4G	08/05/99	15-17 ft.	10	U	10	U	10	U
SSIA11-1	SSIA11-1A	07/19/99	0-1 ft.	170		50		1500	
	SSIA11-1B	07/19/99	1-2 ft.	33		16		520	
	SSIA11-1C	07/19/99	2-3 ft.	10	U	10	U	290	
SSIA11-2	SSIA11-2A	07/19/99	0-1 ft.	82		25		1100	
	SSIA11-2B	07/19/99	1-2 ft.	12		10	U	150	
SSIA11-3	SSIA11-3A	07/20/99	0-1 ft.	2200		940		14000	
	SSIA11-3C	07/20/99	2-3 ft.	1700		580		11000	
	SSIA11-3D	07/20/99	3-4 ft.	1800		570		12000	
	SSIA11-3E	07/20/99	4-5 ft.	430		140		4400	
SSIA11-4	SSIA11-4A	07/20/99	0-1 ft.	790		300		11000	
	SSIA11-4B	07/20/99	1-2 ft.	160		70		3100	
	SSIA11-4C	07/20/99	2-3 ft.	52		21		1200	
	SSIA11-4D	07/20/99	3-4 ft.	25		20		1100	
	SSIA11-4E	07/20/99	4-5 ft.	23		11		850	
SSIA11-5	SSIA11-5A	07/20/99	0-1 ft.	20	U	10	U	150	
	SSIA11-5A2	07/20/99	DUP	20	U	10	U	150	
	SSIA11-5C	07/20/99	2-3 ft.	23		10	U	750	
	SSIA11-5E	07/20/99	4-5 ft.	44		31		1200	
SSIA11-6	SSIA11-6A	07/20/99	0-1 ft.	480		120		2000	
	SSIA11-6B	07/20/99	1-2 ft.	920		380		12000	
	SSIA11-6C	07/20/99	2-3 ft.	4400		350		2100	
	SSIA11-6D	07/20/99	3-4 ft.	7300		620		3100	
	SSIA11-6E	07/20/99	4-5 ft.	14000		1400		21000	

Table 3-19
Summary of Soil Sample Results, Investigation Area 11
(Arroyos East of I-10)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic	Cadmium	Lead
SSIA11-7	SSIA11-7A	07/20/99	0-1 ft.	2500	250	5800
	SSIA11-7A2	07/20/99	DUP	2500	150	5700
	SSIA11-7B	07/20/99	1-2 ft.	15000	260	11000
	SSIA11-7C	07/20/99	2-3 ft.	720	180	3700
	SSIA11-7D	07/20/99	3-4 ft.	750	170	3600
	SSIA11-7E	07/20/99	4-5 ft.	2800	240	6500
SSIA11-8	SSIA11-8A	07/21/99	0-1 ft.	560	610	2900
	SSIA11-8B	07/21/99	1-2 ft.	880	290	3200
	SSIA11-8C	07/21/99	2-3 ft.	1700	360	7200
	SSIA11-8D	07/21/99	3-4 ft.	1700	330	7600
	SSIA11-8E	07/21/99	4-5 ft.	890	230	5800
SSIA11-10	SSIA11-10A	08/04/99	0-1 ft.	160	12	730
	SSIA11-10B	08/04/99	1-2 ft.	23	10 U	150
	SSIA11-10D	08/04/99	3-4 ft.	10	10 U	10 U
SSIA11-11	SSIA11-11A	08/14/99	0-1 ft.	65	22	450
	SSIA11-11B	08/14/99	1-2 ft.	42	10 U	180
	SSIA11-11C	08/14/99	2-3 ft.	17	10 U	11
	SSIA11-11D	08/14/99	3-4 ft.	10 U	10 U	10 U
	SSIA11-11E	08/14/99	4-5 ft.	11	10 U	10 U
SSIA11-14	SSIA11-14B	08/06/99	1-2 ft.	17	13	10 U
	SSIA11-14C	08/06/99	2-3 ft.	23	10 U	10 U
	SSIA11-14D	08/06/99	3-4 ft.	13	10 U	10 U
	SSIA11-14E	08/06/99	4-5 ft.	17	10 U	10 U
SSIA11-15	SSIA11-15A	08/06/99	0-1 ft.	51	10 U	130
	SSIA11-15B	08/06/99	1-2 ft.	30	10 U	380
	SSIA11-15C	08/06/99	2-3 ft.	44	10 U	950
	SSIA11-15D	08/06/99	3-4 ft.	84	14	430
	SSIA11-15E	08/06/99	4-5 ft.	13	10 U	35
SSIA11-16	SSIA11-16B	08/06/99	1-2 ft.	21	10 U	34
	SSIA11-16C	08/06/99	2-3 ft.	19	10 U	10 U
	SSIA11-16D	08/06/99	3-4 ft.	20	10 U	10 U
	SSIA11-16E	08/06/99	4-5 ft.	10 U	10 U	10 U
	SSIA11-16E2	08/06/99	DUP	10 U	10 U	10 U
EP-93	EP-93A	07/21/99	0-1 ft.	27	10 U	93
	EP-93B	07/21/99	1-2 ft.	33	10 U	74
	EP-93D	07/21/99	3-4 ft.	770	210	5600
	EP-93E	07/21/99	4-5 ft.	7100	14000	54000
	EP-93F	07/21/99	10-12 ft.	110	270	5600
	EP-93G	07/21/99	15-17 ft.	360	88	3900
	EP-93H	07/21/99	20-22 ft.	160	35	1600
	EP-93I	07/21/99	25-27 ft.	20 U	10 U	38

Table 3-19
Summary of Soil Sample Results, Investigation Area 11
(Arroyos East of I-10)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead	
	EP-93J	07/21/99	30-32 ft.	20	U	10	U	49	
	EP-93J2	07/21/99	30-32 ft.	20	U	13		45	
	EP-93K	07/21/99	35-37 ft.	20	U	10	U	42	
	EP-93L	07/21/99	40-42 ft.	20	U	10	U	39	
	EP-93L	07/21/99	2-3 ft.	27		10	U	170	
	EP-93M	07/21/99	45-47 ft.	10	U	10	U	10	U
	EP-93N	07/21/99	50-52 ft.	10	U	10	U	10	U
EP-94	EP-94A	07/26/99	0-1 ft.	760	J4	560		5600	
	EP-94A2	07/26/99	0-1 ft.	1300	J4	700		8000	
	EP-94B	07/26/99	1-2 ft.	990	J4	180		8000	
	EP-94C	07/26/99	2-3 ft.	620	J4	180		5200	
	EP-94E	07/26/99	4-5 ft.	680	J4	170		3400	
	EP-94E2	07/26/99	4-5 ft.	459		152		4368	
	EP-94F	07/26/99	10-12 ft.	36	J4	17		580	
	EP-94F2	07/26/99	10-12 ft.	65		12		420	
	EP-94H	07/26/99	20-22 ft.	130	J4	85		1200	
	EP-94I	07/26/99	25-27 ft.	10	U,UJ4	10	U	40	
	EP-94J	07/26/99	30-32 ft.	10	U,UJ4	10	U	10	U
	EP-94K	07/26/99	35-37 ft.	27	J4	10	U	40	
	EP-94L	07/26/99	40-42 ft.	10	U,UJ4	10	U	10	U
	EP-94M	07/26/99	45-47 ft.	10	U,UJ4	10	U	10	U
	EP-94N	07/26/99	50-52 ft.	10	U,UJ4	10	U	10	U
	EP-94O	07/26/99	55-57 ft.	10	U,UJ4	10	U	10	U
EP-95	EP-95A	07/28/99	0 ft.	10	U	10	U	190	
	EP-95B	07/28/99	1 ft.	10	U	10	U	120	
	EP-95C	07/28/99	2 ft.	13		10	U	150	
	EP-95D	07/28/99	3 ft.	10	U	10	U	21	
	EP-95D2	07/28/99	3 ft.	10	U	10	U	30	
	EP-95E	07/28/99	4 ft.	10	U	10	U	10	U
EP-95R	EP-95RA	10/18/99	0-1 ft.	26		10	U	250	
	EP-95RB	10/18/99	1-2 ft.	10	U	10	U	130	
	EP-95RC	10/18/99	2-3 ft.	10	U	10	U	68	
	EP-95RD	10/18/99	3-4 ft.	10	U	10	U	87	
	EP-95RE	10/18/99	4-5 ft.	10	U	10	U	110	
	EP-95RF	10/18/99	10-12 ft.	10	U	10	U	48	
	EP-95RF2	10/18/99	10-12 ft.	10	U	10	U	50	
	EP-95RG	10/18/99	15-17 ft.	10	U	10	U	40	
	EP-95RH	10/18/99	20-22 ft.	10	U	10	U	39	
	EP-95RI	10/18/99	25-27 ft.	16		10	U	39	
	EP-95RJ	10/20/99	30-32 ft.	10	U	10	U	30	
	EP-95RK	10/20/99	35-37 ft.	10	U	10	U	39	

Table 3-19
Summary of Soil Sample Results, Investigation Area 11
(Arroyos East of I-10)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead	
EP-96	EP-96A	07/20/99	0-1 ft.	500		180		5100	
(formerly	EP-96B	07/20/99	1-2 ft.	27		14		160	
SSIA11-1)	EP-96C	07/20/99	2-3 ft.	42		10	U	90	J4
	EP-96D	07/20/99	3-4 ft.	32		10	U	150	
	EP-96E	07/20/99	4-5 ft.	20	U	10	U	49	J4
	EP-96F	07/20/99	10-12 ft.	20	U	10	U	59	J4
	EP-96G	07/20/99	15-17 ft.	20	U	10	U	49	J4
	EP-96H	07/20/99	20-22 ft.	20	U	10	U	31	J4
	EP-96I	07/20/99	25-27 ft.	20	U	10	U	50	J4
	EP-96J	07/20/99	30-32 ft.	25		10	U	11	J4
	EP-96J2	07/20/99	30-32 ft.	20	U	10	U	41	J4
	EP-96K	07/20/99	35-37 ft.	20	U	10	U	49	J4
	EP-96L	07/20/99	40-42 ft.	20	U	10	U	54	J4
	EP-96M	07/20/99	45-47 ft.	20	U	10	U	46	J4
	EP-96N	07/20/99	50-52 ft.	20	U	10	U	49	
	EP-96N2	07/20/99	50-52 ft.	20	U	10	U	51	
	EP-96O	07/20/99	55-57 ft.	31		10	U	37	
	EP-96P	07/20/99	60-62 ft.	20	U	10	U	27	
EP-97	EP-97A	08/04/99	0-1 ft.	64		19		340	
	EP-97A2	08/04/99	0-1 ft.	62		10	U	380	
	EP-97B	08/04/99	1-2 ft.	46		20		340	
	EP-97C	08/04/99	2-3 ft.	71		16		500	
EP-98	EP-98A	08/06/99	0-1 ft.	41		12		250	
	EP-98A2	08/06/99	0-1 ft.	60		11		320	
	EP-98B	08/06/99	1-2 ft.	10	U	10	U	10	U
	EP-98C	08/06/99	1-3 ft.	10	U	10	U	10	U
	EP-98D	08/06/99	3-4 ft.	10	U	10	U	10	U
	EP-98E	08/06/99	4-5 ft.	10	U	10	U	10	U
	EP-98F	08/06/99	10-12 ft.	10	U	10	U	10	U
	EP-98G	08/06/99	15-17 ft.	10	U	10	U	10	U
	EP-98H	08/06/99	20-22 ft.	10	U	10	U	10	U

Notes:

Only Phase II soil sample results are included in this table. Phase I and Phase II data averages as a function of soil depth are presented graphically in Appendix C.

U: Less than listed value (detection limit)

NA: Not applicable

All concentrations in milligrams per kilogram (mg/kg)

Depth in feet below ground surface.

BII11-1 is presented as EP-96.

Only slag at SSIA11-9 and SSIA11-12, no soil samples collected.

Table 3-20
Summary of Groundwater Sample Results, Investigation Area 11
(Arroyos East of I-10)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss	Cadmium (CD) TOT	Lead (PB) Diss	Lead (PB) TOT
EP-83	0.007	0.006	0.005	0.005 U	0.003 U	0.003
EP-84	0.046	0.052	0.007	0.006	0.013	0.046
EP-87	0.039	0.027	0.005 U	0.005 U	0.004	0.007
EP-93	NA	0.018	NA	0.005 U	NA	0.021
EP-94	NA	0.011	NA	0.005 U	NA	0.008
EP-95	NA	0.008	NA	0.005 U	NA	0.003
EP-96	NA	0.006	NA	0.005 U	NA	0.014
EP-97	NA	0.150	NA	0.016	NA	0.108
EP-98	NA	0.023	NA	0.005 U	NA	0.027

Notes:
Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per liter (mg/l)

Table 3-21
Summary of Soil Sample Results, Investigation Area 12
(Ephemeral Pond and Pond Sediment Storage Area)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead	
BH12-1	BH12-1A	11/3/1999	0-1 ft.	490		300		2700	
	BH12-1B	11/3/1999	3-4 ft.	10	U	10	U	140	
	BH12-1C	11/3/1999	4-5 ft.	10	U	10	U	150	
	BH12-1D	11/3/1999	10-12 ft.	10	U	10	U	10	U
	BH12-1E	11/3/1999	15-16 ft.	10	U	10	U	10	U
	BH12-1E2	11/3/1999	15-16 ft.	10	U	10	U	10	U
BH12-2	BH12-2A	11/3/1999	6-7 ft.	10	U	10	U	130	
	BH12-2B	11/3/1999	10-12 ft.	67		10		610	
BH12-3	BH12-3A	11/3/1999	6-7 ft.	10		10	U	170	
	BH12-3B	11/3/1999	10-12 ft.	10	U	10	U	10	U
	BH12-3C	11/3/1999	15-17 ft.	10	U	10	U	10	U
BH12-4	BH12-4A	11/3/1999	0-1 ft.	3100		3100		22000	
	BH12-4B	11/3/1999	1-2 ft.	3400		3400		23000	
	BH12-4C	11/3/1999	2-3 ft.	1200		1700		14000	
	BH12-4D	11/3/1999	3-4 ft.	10	U	10	U	110	J4
	BH12-4D2	11/3/1999	10-12 ft.	15		10	U	20	J4
	BH12-4E	11/3/1999	15-17 ft.	10	U	10	U	10	U,UJ4
BH12-5	BH12-5A	11/4/1999	8-10 ft.	10	U	15		10	U
BH12-6	BH12-6A	11/4/1999	12-13 ft.	120		10	U	21	
BH12-7	BH12-7A	11/4/1999	6-8 ft.	10	U	10	U	33	
	BH12-7B	11/4/1999	10-12 ft.	33		38		52	
	BH12-7B2	11/4/1999	10-12 ft.	33		51		41	
BH12-8	BH12-8A	11/4/1999	2-3 ft.	23		10	U	130	
	BH12-8B	11/4/1999	3-4 ft.	10	U	10	U	120	
	BH12-8C	11/4/1999	4-5 ft.	25		10	U	130	
BH12-9	BH12-9A	11/4/1999	4-5 ft.	52		10	U	10	U
	BH12-9A2	11/4/1999	4-5 ft.	59		10	U	10	U
	BH12-9B	11/4/1999	8-9 ft.	76		10	U	10	U
EP-108	EP-108A	10/14/1999	10-12 ft.	19		10	U	41	
	EP-108B	10/14/1999	15-16 ft.	82		10	U	67	

Table 3-21
Summary of Soil Sample Results, Investigation Area 12
(Ephemeral Pond and Pond Sediment Storage Area)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead
EP-109	EP-109XA	7/28/1999	5-5.5 ft.	380		50		2900
	EP-109XB	7/28/1999	10-11.5 ft.	180		18		660
	EP-109A	10/15/1999	0-1 ft.	380		59		2000
	EP-109B	10/15/1999	1-2 ft.	320		36		1900
	EP-109C	10/15/1999	2-3 ft.	440		25		3600
	EP-109D	10/15/1999	3-4 ft.	680		30		5000
	EP-109E	10/15/1999	4-5 ft.	460		32		4000
	EP-109F	10/15/1999	10-12 ft.	14		10	U	310
	EP-109G	10/15/1999	15-17 ft.	10	U	10	U	33
	EP-109H	10/15/1999	20-22 ft.	10	U	10	U	43
	EP-109H2	10/15/1999	20-22 ft.	10	U	10	U	38

Notes:

Only Phase II soil sample results are included in this table. Phase I and Phase II data averages as a function of soil depth are presented graphically in Appendix C.

U: Less than listed value (detection limit)

NA: Not applicable

All concentrations in milligrams per kilogram (mg/kg)

Depth in feet below ground surface.

Table 3-22
Summary of Groundwater Sample Results, Investigation Area 12
(Ephemeral Pond and Pond Sediment Storage Area)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss	Cadmium (CD) TOT	Lead (PB) Diss	Lead (PB) TOT
EP-78	5.709	4.867	0.005 U	0.005 U	0.003 U	0.006
EP-79	0.010	0.007	0.005 U	0.005 U	0.003 U	0.004
EP-82	0.010	0.009	0.005 U	0.005 U	0.003 U	0.003 U
EP-108	NA	1.050	NA	0.005 U	NA	0.005
EP-109	NA	0.011	NA	0.005 U	NA	0.021

Notes:
Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per liter (mg/l)

Table 3-23
Summary of Soil Sample Results, Investigation Area 13
(Sample Mill Area)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic	Cadmium	Lead
BH13-1	BH13-1A	10/21/1999	0-1 ft.	67	46	860
	BH13-1C	10/21/1999	19-21 ft.	45	3100	10 U
	BH13-1D	10/21/1999	25-27 ft.	65	22	10 U
	BH13-1E	10/21/1999	30-32 ft.	76	10 U	10 U
	BH13-1E2	10/21/1999	30-32 ft.	65	10 U	10 U
	BH13-1F	10/21/1999	35-37 ft.	39	10 U	10 U
	BH13-1G	10/21/1999	40-42 ft.	54	10 U	10 U
	BH13-1H	10/21/1999	45-47 ft.	80	10 U	12
	BH13-1I	10/21/1999	50-52 ft.	69	10 U	10 U
	BH13-1J	10/21/1999	55-57 ft.	1000	17	10 U
	BH13-1K	10/29/1999	60-62 ft.	87	10 U	20
EP-101	EP-101A	9/29/1999	0-1 ft.	940	690	11000
	EP-101B	9/29/1999	1-2 ft.	7700	2100	42000
	EP-101C	9/29/1999	3-4 ft.	5200	1300	21000
	EP-101C	9/29/1999	3-4 ft.	3350	1000	21800
	EP-101D	9/29/1999	4-5 ft.	1100	8000	12000
	EP-101E	9/29/1999	15-17 ft.	16	560	140
	EP-101F	9/29/1999	20-22 ft.	23	190	69
	EP-101G	9/29/1999	25-27 ft.	84	670	87
	EP-101H	9/29/1999	30-32 ft.	71	10 U	54
	EP-101H2	9/29/1999	30-32 ft.	64	10 U	54
	EP-101I	9/29/1999	35-37 ft.	65	10 U	45
	EP-101J	9/29/1999	40-42 ft.	34	10 U	60
	EP-101K	9/29/1999	45-47 ft.	33	10 U	53
	EP-101L	9/29/1999	50-52 ft.	190	10 U	19
	EP-101L2	9/29/1999	50-52 ft.	160	10 U	23
	EP-101M	9/29/1999		91	10 U	57
EP-102	EP-102A	9/30/1999	0-1 ft.	4100	3500	27000
	EP-102B	9/30/1999	1-2 ft.	6300	7100	34000
	EP-102C	9/30/1999	2-3 ft.	7700	6000	41000
	EP-102D	9/30/1999	3-4 ft.	8000	3900	40000
	EP-102E	9/30/1999	4-5 ft.	950	11000	8700
	EP-102F	9/30/1999	10-12 ft.	130	2100	200
	EP-102G	9/30/1999	15-17 ft.	48	940	130
	EP-102G2	9/30/1999	15-17 ft.	34	720	88
	EP-102G2	9/30/1999	15-17 ft.	18	614	20
	EP-102H	9/30/1999	20-22 ft.	56	1500	57
	EP-102I	9/30/1999	25-27 ft.	52	190	63
	EP-102J	9/30/1999	30-32 ft.	50	340	54
	EP-102K	9/30/1999	35-37 ft.	36	28	77
	EP-102L	9/30/1999	40-42 ft.	31	14	57
	EP-102M	9/30/1999	45-47 ft.	38	15	61
	EP-102N	9/30/1999	50-52 ft.	27	10 U	57
	EP-102N2	9/30/1999	50-52 ft.	35	10	43
	EP-102O	9/30/1999	55-57 ft.	35	10 U	50
	EP-102P	10/4/1999	60-62 ft.	Insufficient sample for analysis.		
	EP-102Q	10/4/1999	70-72 ft.	10 U	10 U	34

Notes:
Only Phase II soil sample results are included in this table. Phase I and Phase II data averages as a function of soil depth are presented graphically in Appendix C.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per kilogram (mg/kg)
Depth in feet below ground surface.

Table 3-24
Summary of Groundwater Sample Results, Investigation Area 13
(Sample Mill Area)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss	Cadmium (CD) TOT	Lead (PB) Diss	Lead (PB) TOT
EP-13	40.778	34.333	0.726	0.523	0.004	0.015
EP-101	NA	5.850	NA	0.750	NA	0.017
EP-102	NA	0.210	NA	0.063	NA	0.008
EP-118	NA	0.325	NA	0.040	NA	1.335

Notes:
Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per liter (mg/l)

Table 3-25
Summary of Soil Sample Results, Investigation Area 14
(South Terrace Area)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead	
BH14-1	BH14-1A	11/5/1999	13.2-15 ft.	100		84		31	
	BH14-1B	11/5/1999	15-17 ft.	110		92		20	
	BH14-1C	11/5/1999	20-22 ft.	150		70		10	U
	BH14-1D	11/5/1999	25-27 ft.	36		10	U	21	
	BH14-1E	11/5/1999	30-32 ft.	12		10	U	17	
	BH14-1F	11/5/1999	35-37 ft.	10	U	10	U	10	U
	BH14-1F2	11/5/1999	35-37 ft.	10	U	10	U	10	U
	BH14-1G	11/5/1999	40-42 ft.	16		10	U	10	U
	BH14-1H	11/5/1999	45-47 ft.	10	U	10	U	13	
	BH14-1I	11/5/1999	50-52 ft.	10	U	10	U	10	U
	BH14-1J	11/5/1999	55-57 ft.	10	U	10	U	10	U
	BH14-1K	11/5/1999	60-62 ft.	40		10	U	10	U
	BH14-1L	11/8/1999	65-67 ft.	10	U	10	U	10	U
	BH14-1L2	11/8/1999	65-67 ft.	10	U	10	U	10	U
	BH14-1M	11/8/1999	70-72 ft.	10	U	10	U	10	U
BH14-2	BH14-2A	12/16/1999	0 ft.	210		130		1400	
	BH14-2B	12/16/1999	1 ft.	170		87		2800	
	BH14-2C	12/16/1999	2 ft.	210		140		4400	
	BH14-2D	12/16/1999	3 ft.	62		18		510	
	BH14-2E	12/16/1999	4 ft.	210		18		970	
	BH14-2F	12/16/1999	10 ft.	10	U	12		26	J4
	BH14-2G	12/16/1999	15 ft.	10	U	10	U	10	U,UJ4
	BH14-2H	12/16/1999	20 ft.	11		10	U	10	U,UJ4
	BH14-2I	12/16/1999	25 ft.	17		10	U	21	J4
	BH14-2I2	12/16/1999	25 ft.	10	U	10	U	42	J4
	BH14-2J	12/16/1999	30 ft.	10		12		50	J4
	BH14-2K	12/16/1999	35 ft.	17		10	U	48	J4
	BH14-2L	12/16/1999	40 ft.	16		10	U	47	J4
	BH14-2M	12/16/1999	45 ft.	26		10	U	15	J4
	BH14-2O	12/16/1999	50 ft.	10	U	12		10	U,UJ4
	BH14-2P	12/16/1999	55 ft.	16		10	U	10	J4
	BH14-2Q	12/16/1999	60 ft.	10	U	10	U	10	U
	BH14-2Q2	12/16/1999	60 ft.	10	U	10	U	10	U
BH14-3	BH14-3A	12/15/1999	0 ft.	10	U	16		2600	
	BH14-3B	12/15/1999	1 ft.	27		10	U	420	
	BH14-3C	12/15/1999	2 ft.	10	U	10	U	250	
	BH14-3D	12/15/1999	3 ft.	10	U	10	U	190	
	BH14-3E	12/15/1999	4 ft.	10	U	10	U	65	
	BH14-3F	12/15/1999	10 ft.	10	U	10	U	74	
	BH14-3G	12/15/1999	15 ft.	43		10	U	530	
	BH14-3H	12/15/1999	20 ft.	19		11		33	
	BH14-3I	12/15/1999	25 ft.	23		10	U	62	
	BH14-3J	12/15/1999	30 ft.	20		10	U	31	
	BH14-3J2	12/15/1999	30 ft.	15		10	U	28	

Table 3-25
Summary of Soil Sample Results, Investigation Area 14
(South Terrace Area)
ASARCO El Paso Smelter Phase II RI

Site	Sample #	Date	Depth	Arsenic		Cadmium		Lead	
	BH14-3K	12/15/1999	35 ft.	10	U	10	U	65	
	BH14-3L	12/15/1999	40 ft.	11		10	U	54	
	BH14-3M	12/15/1999	45 ft.	10	U	10	U	10	U
	BH14-3N	12/15/1999	50 ft.	12		10	U	10	U
	BH14-3O	12/15/1999	55 ft.	10	U	12		10	U
	BH14-3P	12/15/1999	60 ft.	10	U	13		10	U
	BH14-3Q	12/15/1999	65 ft.	10	U	10	U	10	U
	BH14-3Q2	12/15/1999	65 ft.	10	U	10	U	10	U

Notes:

Only Phase II soil sample results are included in this table. Phase I and Phase II data averages as a function of soil depth are presented graphically in Appendix C.

U: Less than listed value (detection limit)

NA: Not applicable

All concentrations in milligrams per kilogram (mg/kg)

Depth in feet below ground surface.

Table 3-26
Summary of Groundwater Sample Results, Investigation Area 14
(South Terrace Area)
ASARCO El Paso Smelter Phase II RI

Site	Arsenic (AS) Diss	Arsenic (AS) TOT	Cadmium (CD) Diss	Cadmium (CD) TOT	Lead (PB) Diss	Lead (PB) TOT
EP-20	0.968	0.917	0.039	0.042	0.003 U	0.005 U
EP-43	1.390	0.738	0.005 U	0.005 U	0.003 U	0.011
EP-70	1.253	0.705	0.012	0.008	0.003 U	0.006
EP-71	0.143	0.117	0.005 U	0.005 U	0.004	0.005 U
EP-72	0.485	0.065	0.207	0.005 U	0.003 U	0.011

Notes:
Data presented in this table represents Phase I and Phase II period of record, August 1997 through February 2000.
U: Less than listed value (detection limit)
NA: Not applicable
All concentrations in milligrams per liter (mg/l)

Table 4-1
Summary of Estimated Costs for Corrective Action Measures
ASARCO El Paso Smelter Phase II RI

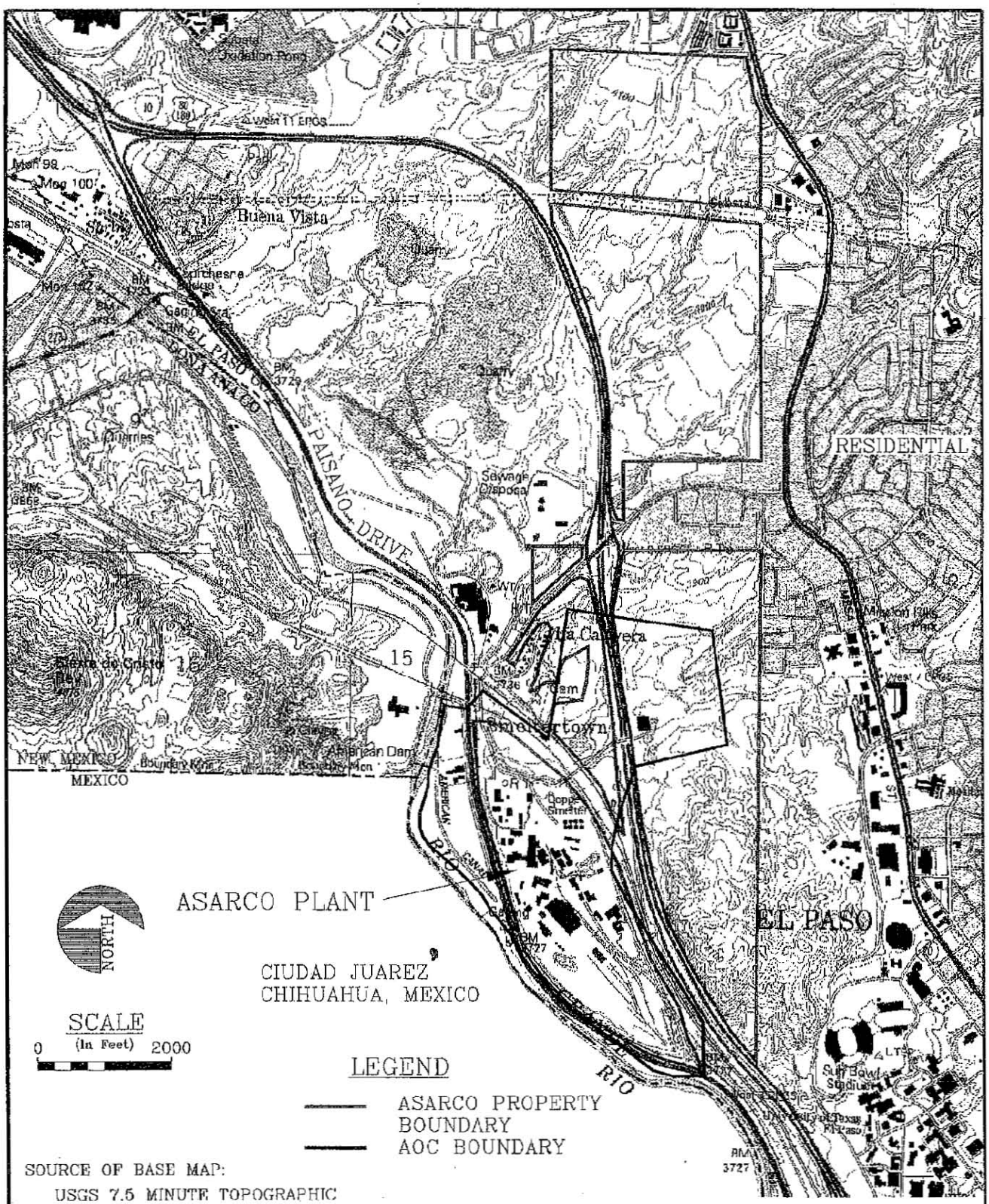
Remedial Costs With Disposal at OCF	Subtotal Remediation Work	Annual Inspections and O&M
Investigation Area #1 -- Converter Building/Baghouse Area	**$33,765**	$6,507
Investigation Area #2 -- Bone Yard/Slag Area	**$1,347,829**	$52,453
Investigation Area #3 -- Acid Plants	**$431,692**	$20,857
Investigation Area #4 -- Front Slope	**$1,761,904**	$71,451
Investigation Area #5 -- Historic Smelter Town	**$200,828**	$12,742
Investigation Area #8 -- Bedding and Unloading Facility	**$4,021,978**	$93,263
Investigation Area #9 -- Ponds 1, 5 and 6 (OCF)	**$4,584,665**	$203,470
Investigation Area #10 -- Plant Entrance	**$14,407**	$5,786
Investigation Area #11 -- East of I-10 Arroyos (Asarco Property)	**$1,707,679**	$73,102
Investigation Area #12 -- Ephemeral Pond/Pond Sediment Storage Area	**$1,648,638**	$69,522
Investigation Area #13 -- Sample Mill Area (Chlorine Leaching Operation Area)	**$490,795**	$26,416
Investigation Area #14 -- South Terrace Area	**$132,715**	$9,844
Total	**$16,376,895**	$645,413
Total Capital Outlay	**$17,022,308**	

Other Costs	Annual Expenses	Total
Long-Term Monitoring - Investigation Areas #6 Groundwater & #7 Surface Water	$281,034	$2,917,037

Notes:

(1) Present Value (i=0.5, n=15)

FIGURES



SOURCE OF BASE MAP:

USGS 7.5 MINUTE TOPOGRAPHIC MAP, SMELTERTOWN, TX-NM QUADRANGLE, (1994)

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	PROJECT VICINITY MAP	FIGURE 1-1

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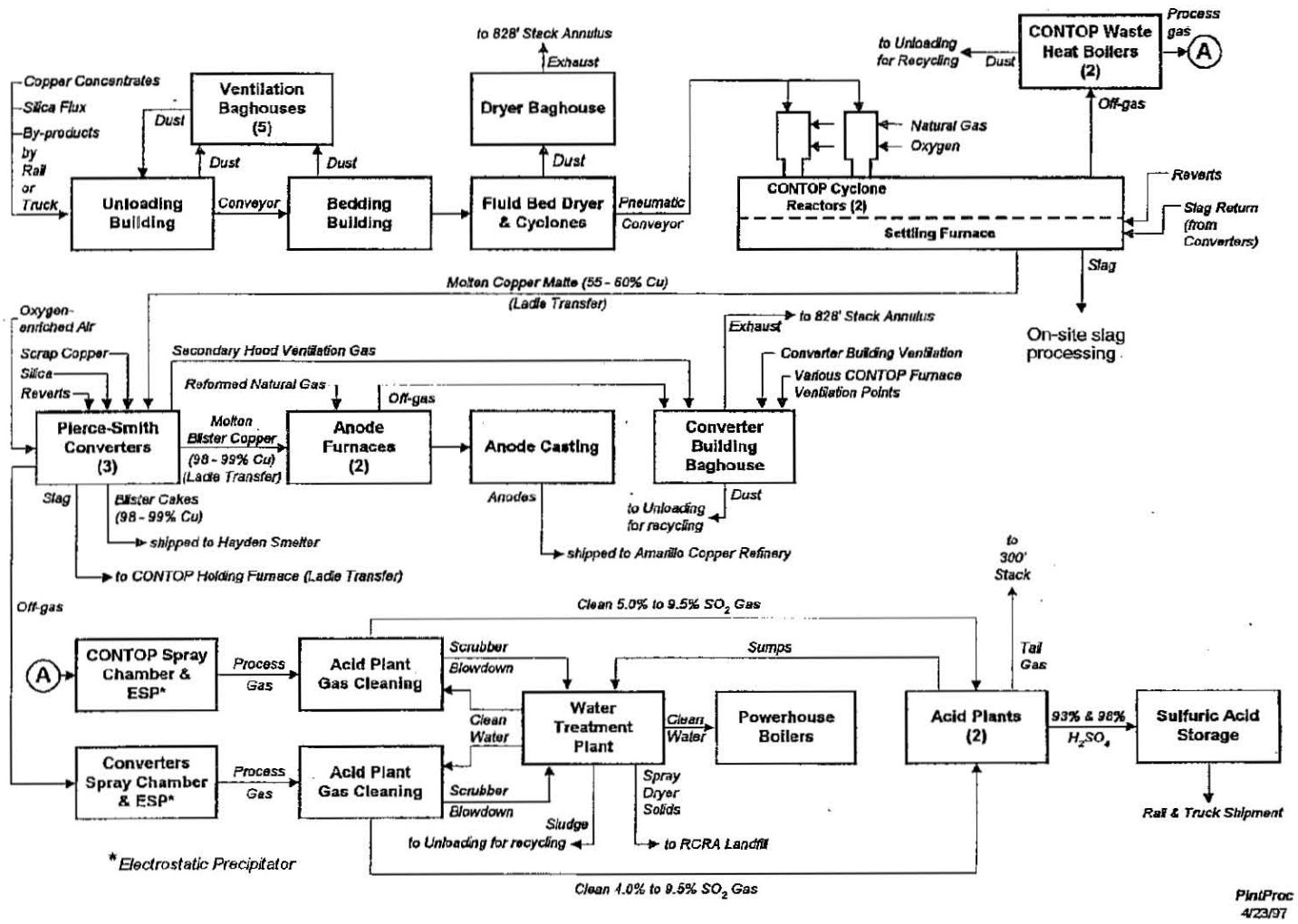

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

PROCESS DIAGRAM

FIGURE
1-2

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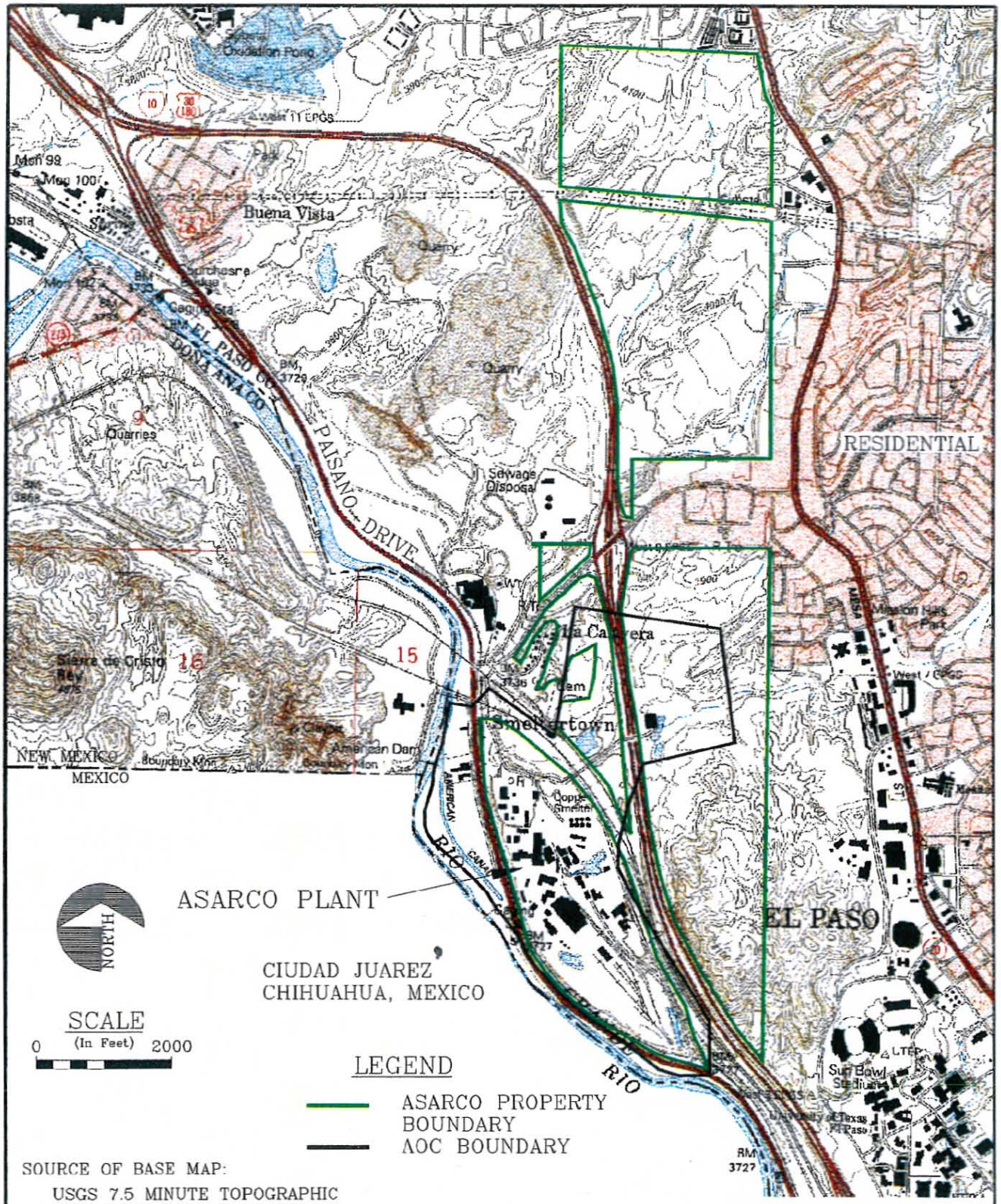

SOURCE OF BASE MAP:

USGS 7.5 MINUTE TOPOGRAPHIC MAP, SMELTERTOWN, TX-NM QUADRANGLE, (1994)

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	PROJECT VICINITY MAP	FIGURE 1-1

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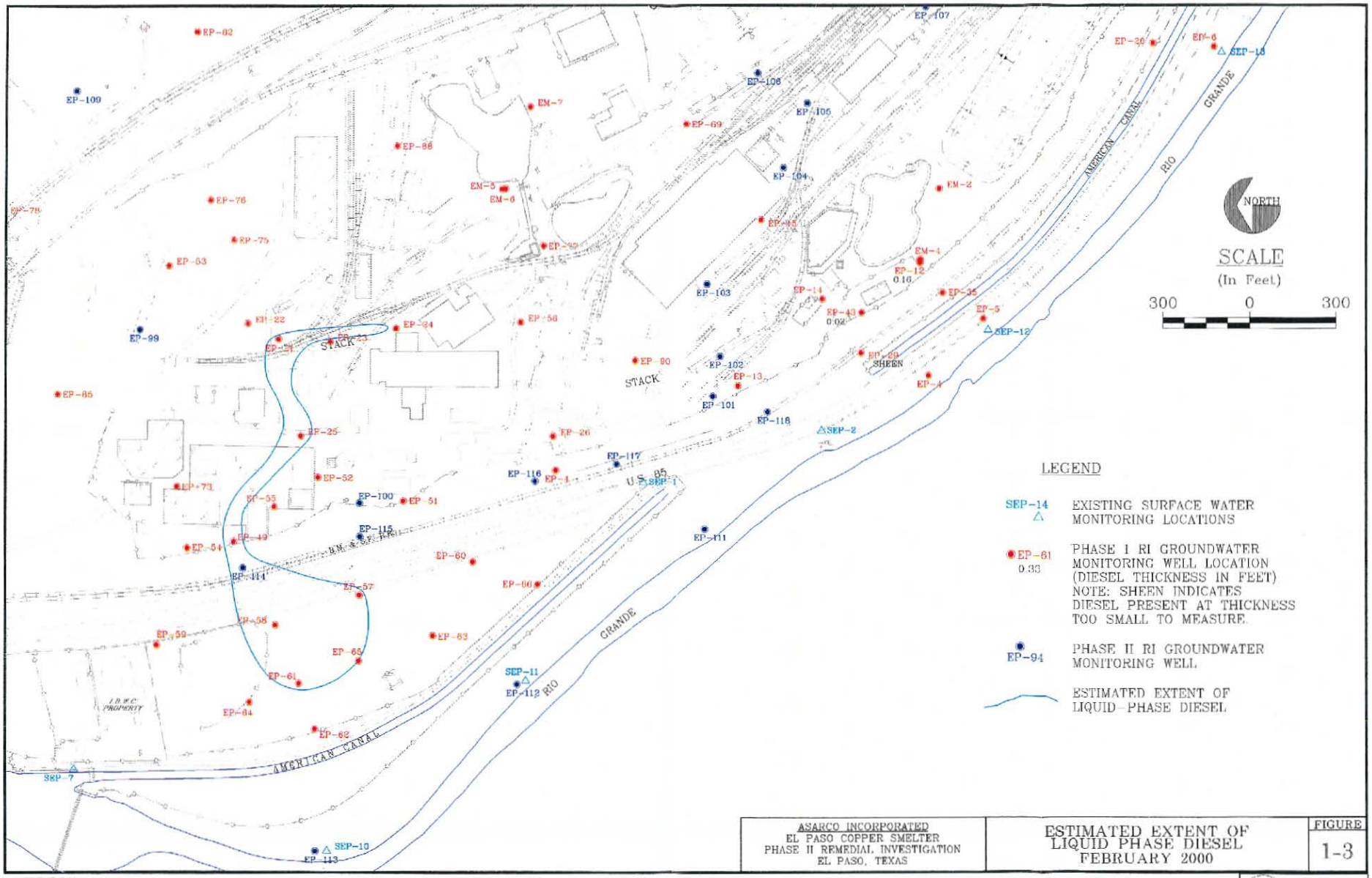

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	ESTIMATED EXTENT OF LIQUID PHASE DIESEL FEBRUARY 2000	FIGURE 1-3

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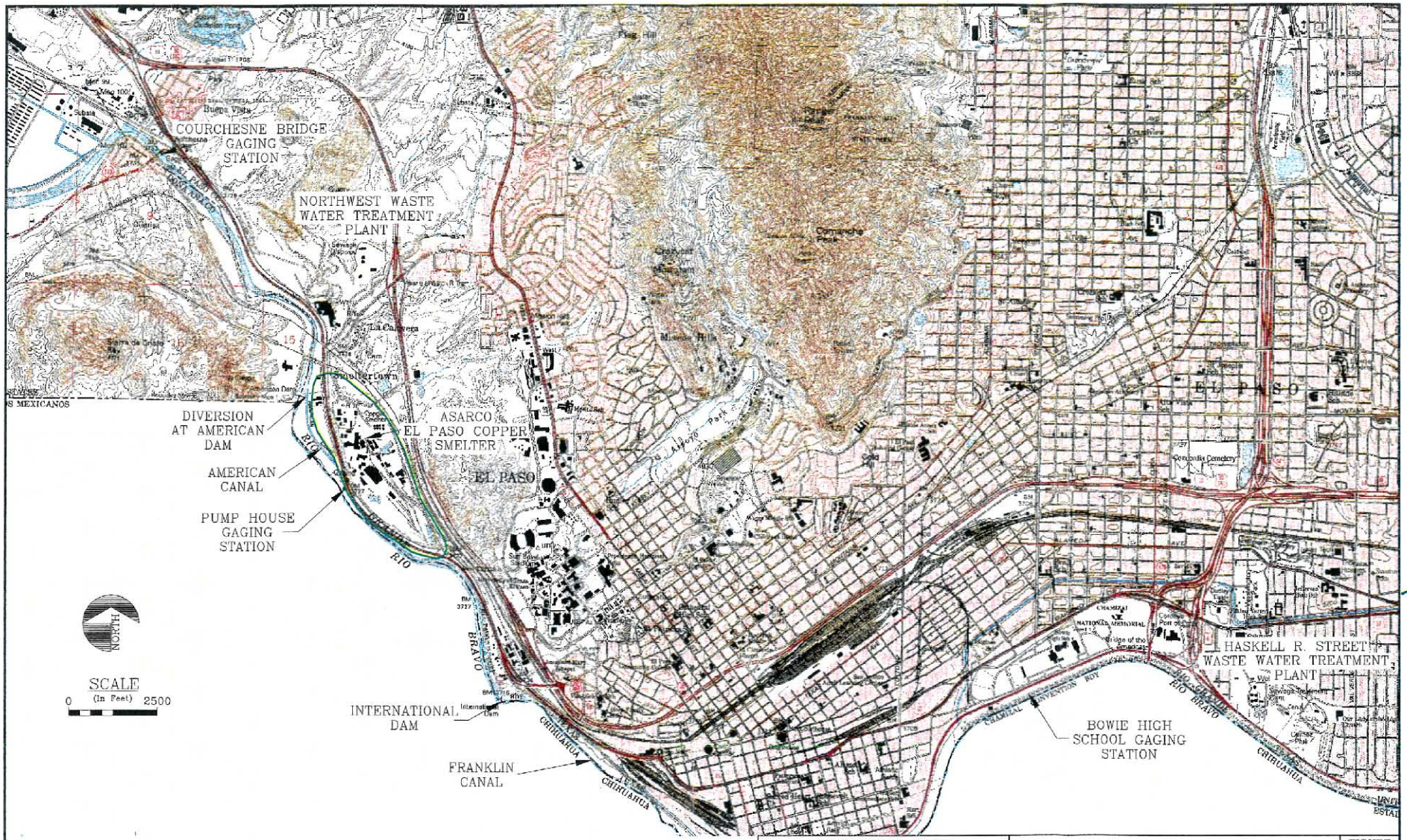

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

IBWC SURFACE WATER MONITORING LOCATIONS

FIGURE 2-1

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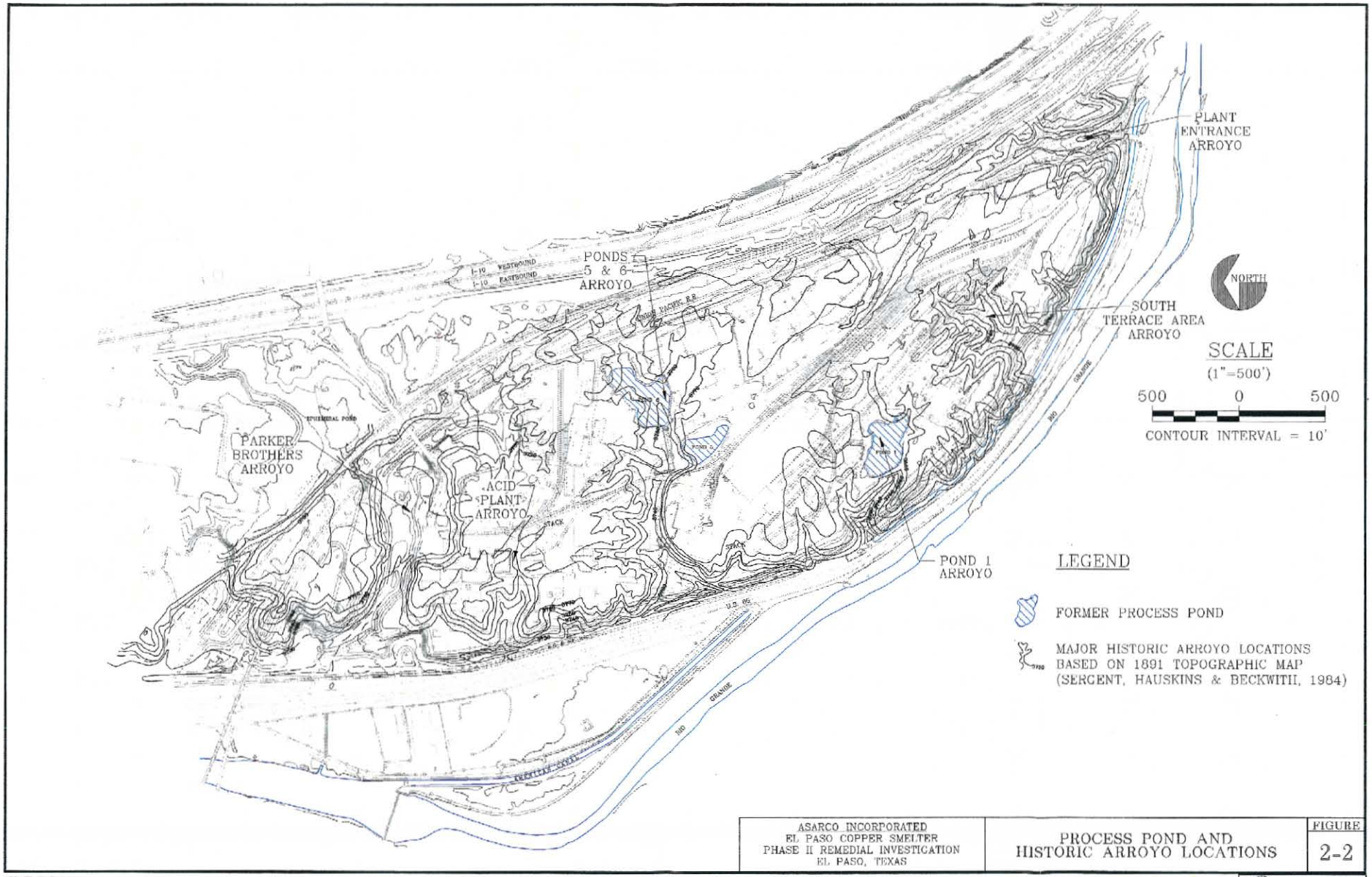
Hydrometrics, Inc.



ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	PROCESS POND AND HISTORIC ARROYO LOCATIONS	FIGURE 2-2

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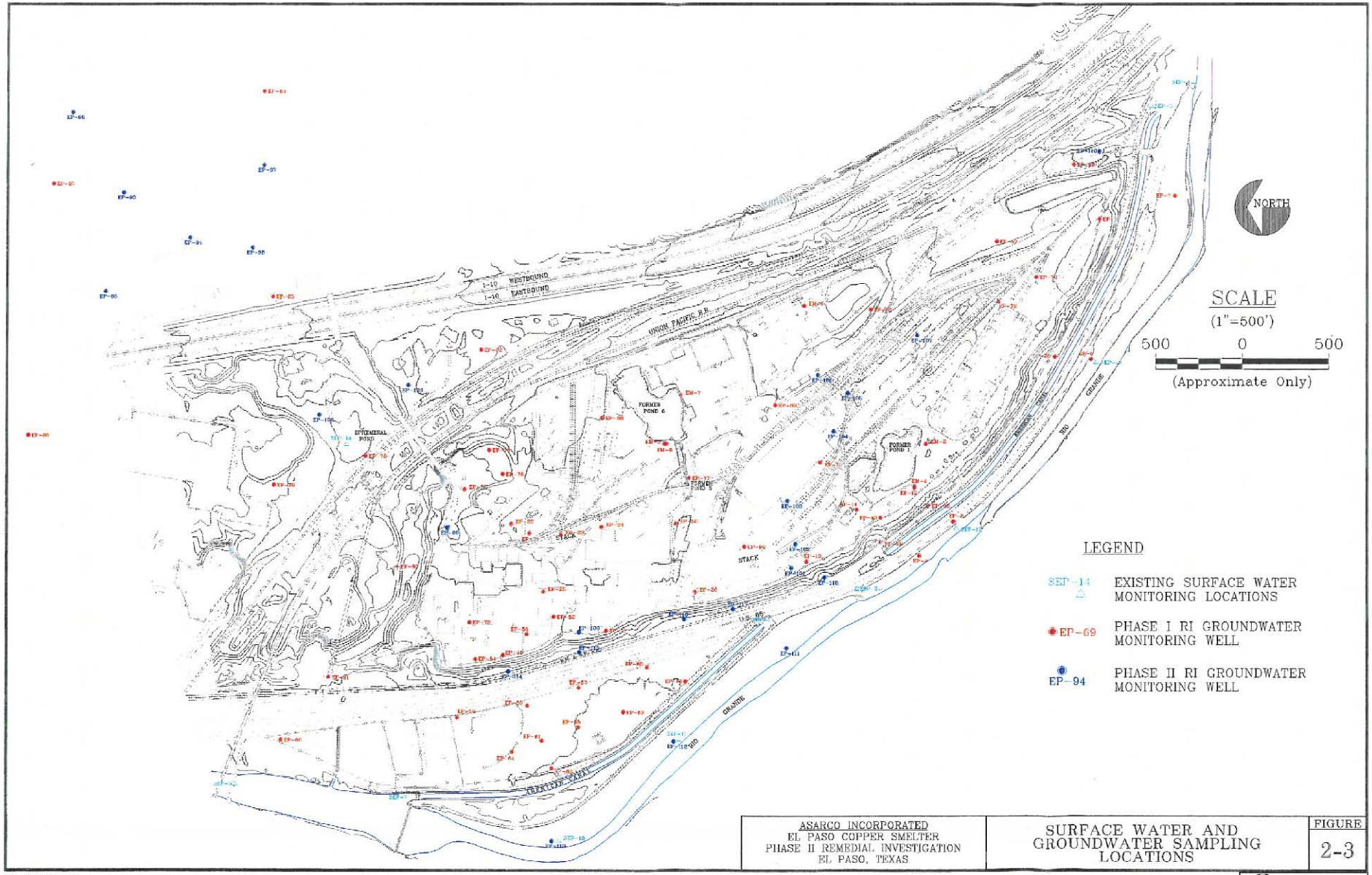

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

SURFACE WATER AND GROUNDWATER SAMPLING LOCATIONS

FIGURE 2-3

UPDATE TIME: 3:00
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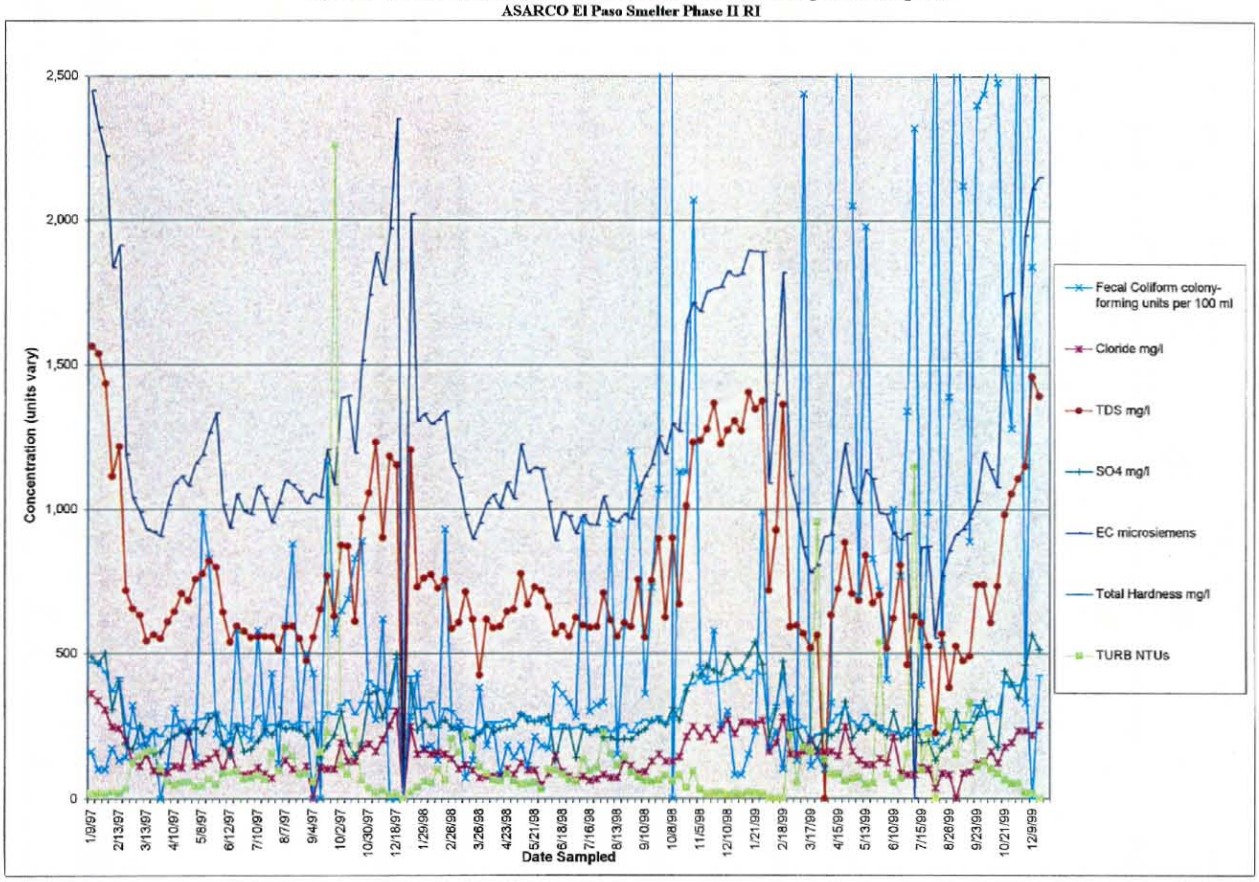
Hydrometrics, Inc.

Figure 2-4. IBWC Water Quality Data for Rio Grande at Courchesne Bridge, 1997 through 1999
ASARCO El Paso Smelter Phase II RI



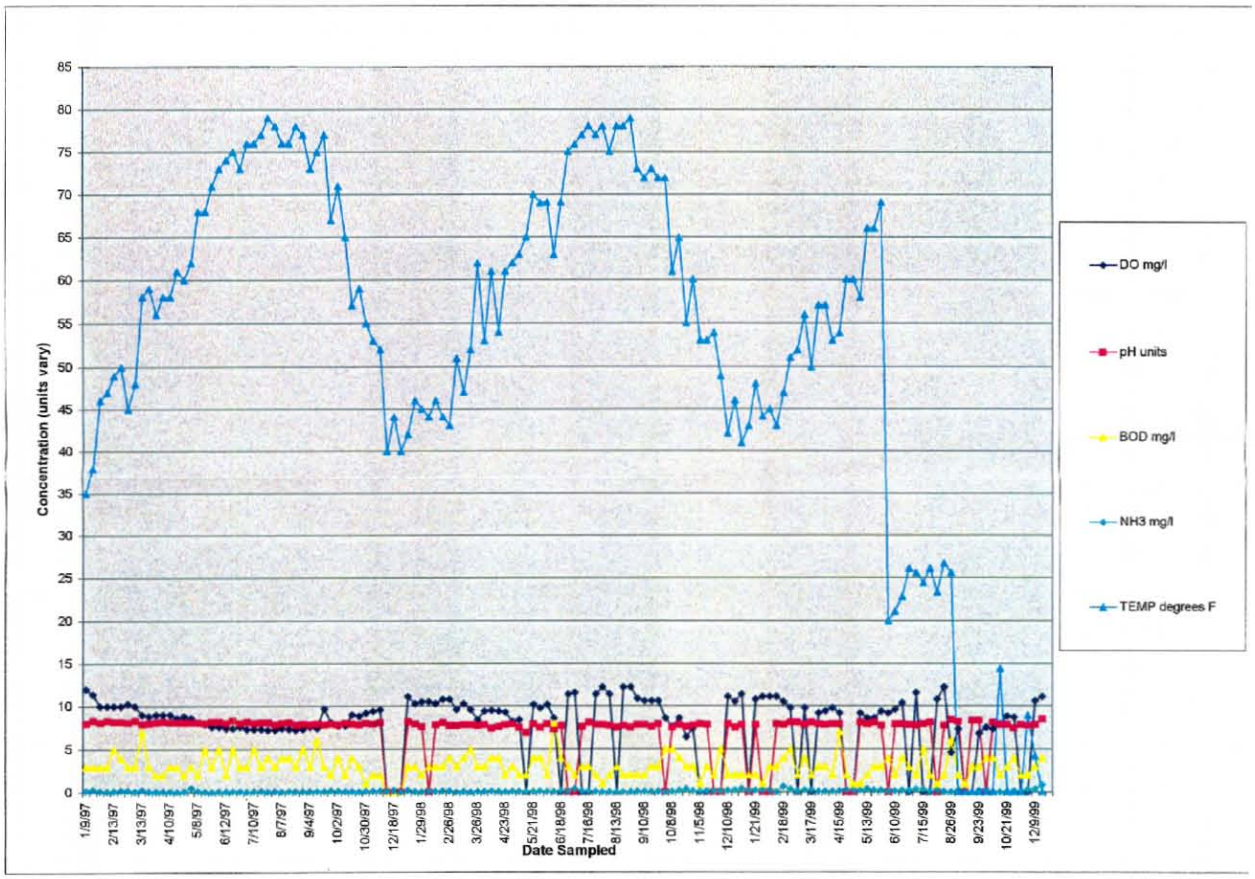
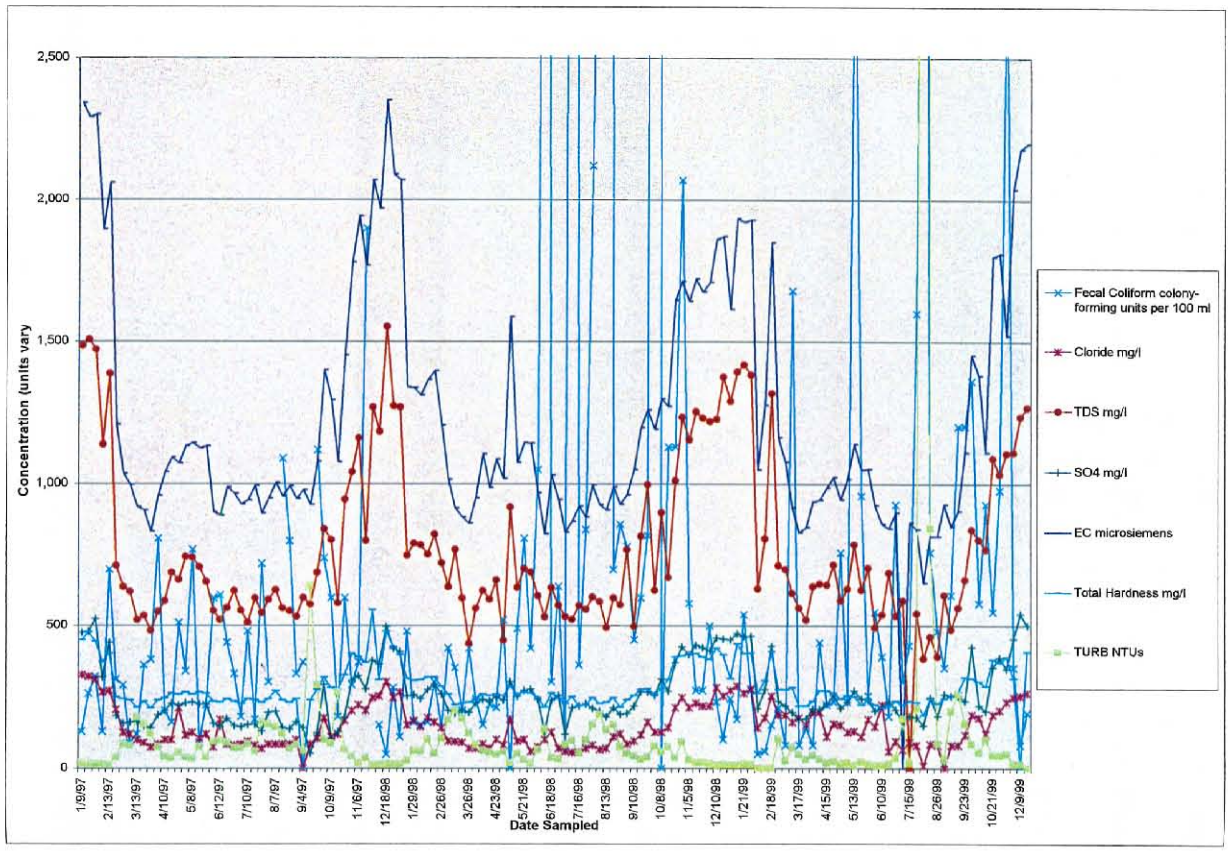


Figure 2-5. IBWC Water Quality Data for Rio Grande at Bowie High Football Stadium, 1997 Through 1999
Asarco El Paso Smelter Phase II RI



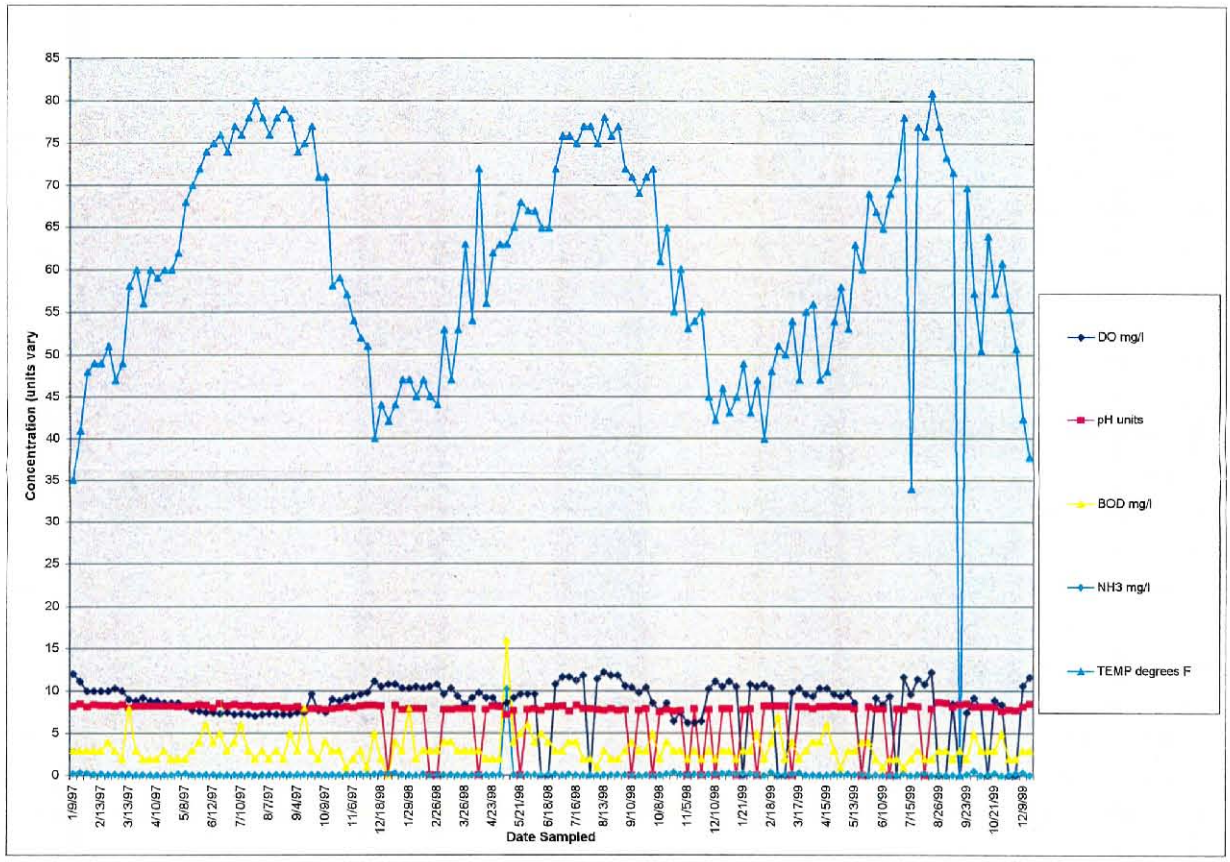


Figure 2-6. IBWC Water Quality Data for Rio Grande at Courchesne Bridge
August 1995 through August 1999
ASARCO El Paso Smelter Phase II RI

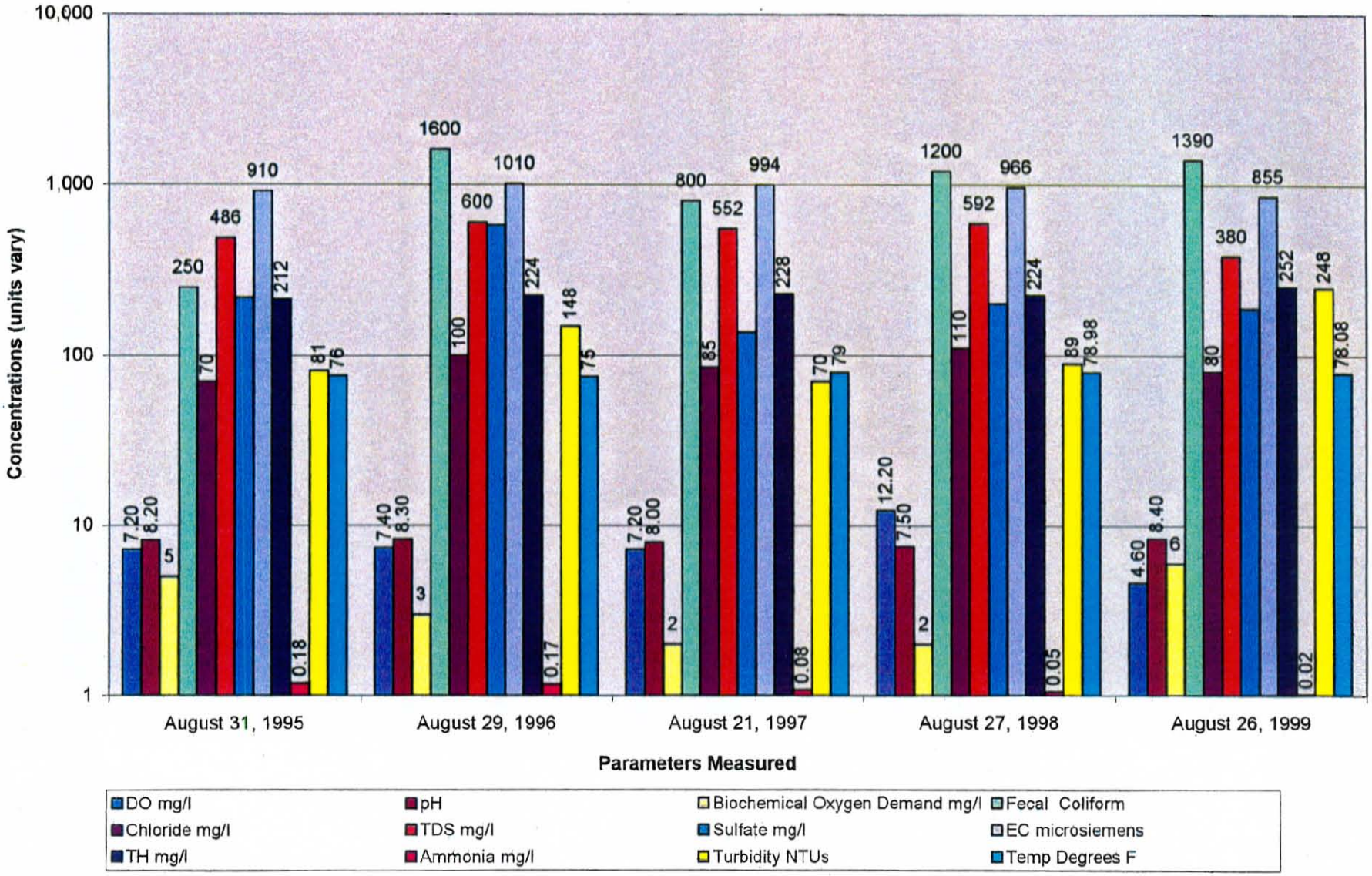


Figure 2-7. IBWC Water Quality Data for Rio Grande at Bowie High Football Stadium
August 1995 through August 1999
ASARCO El Paso Smelter Phase II RI

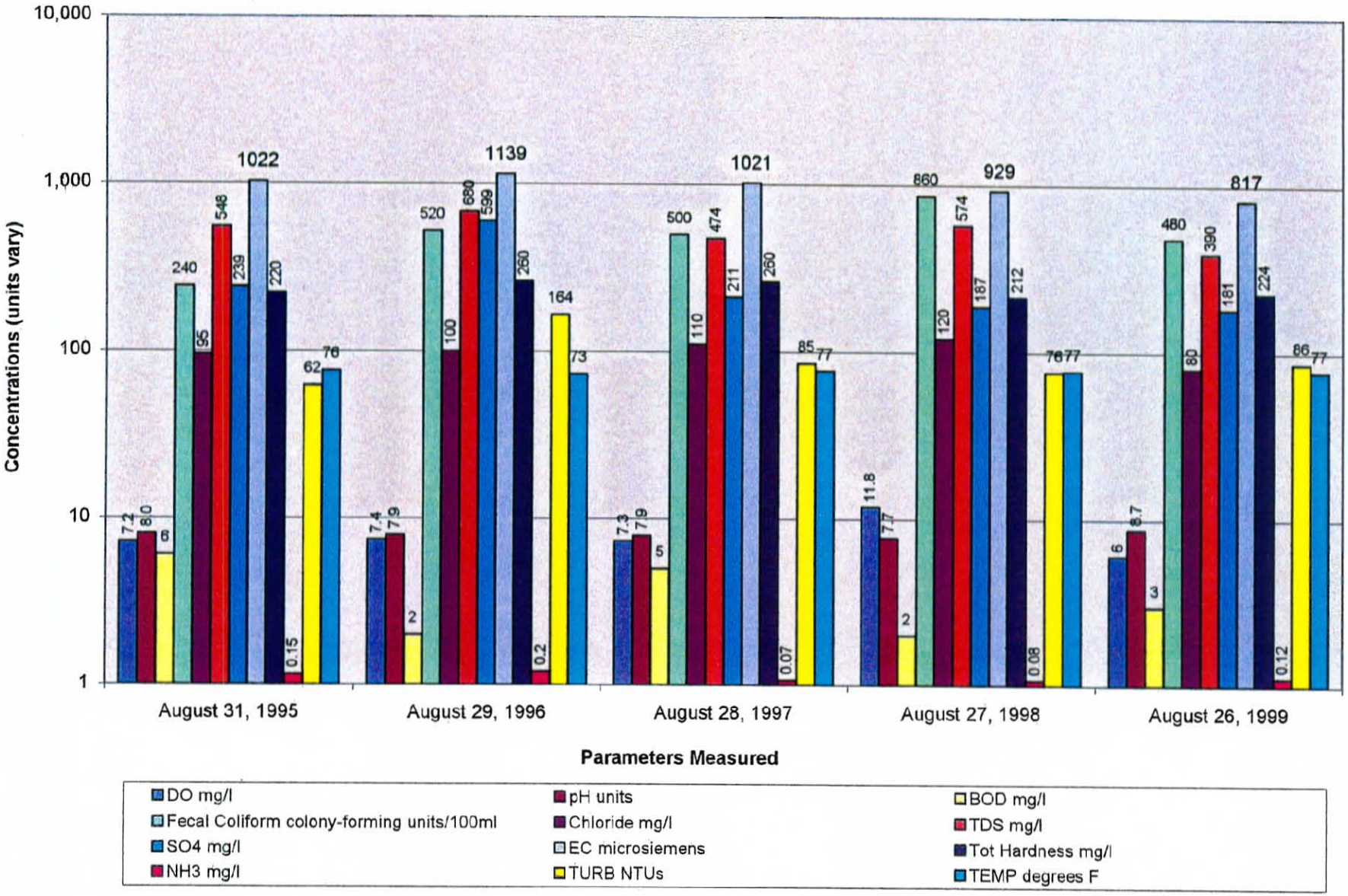


Figure 2-8. Rio Grande Daily Mean Flow Volumes at Three Measuring Locations, 1995 through 1999
ASARCO El Paso Smelter Phase II RI

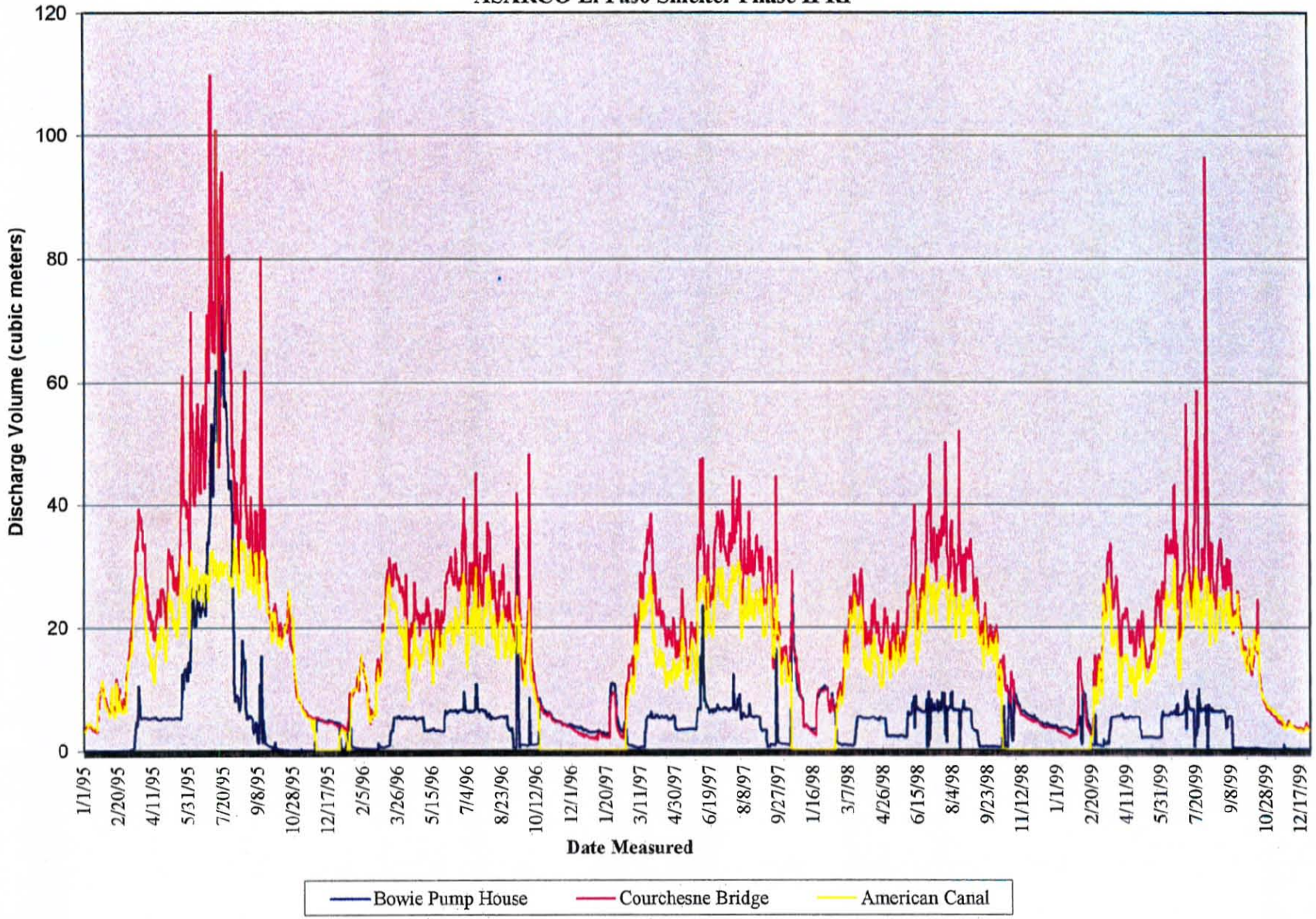
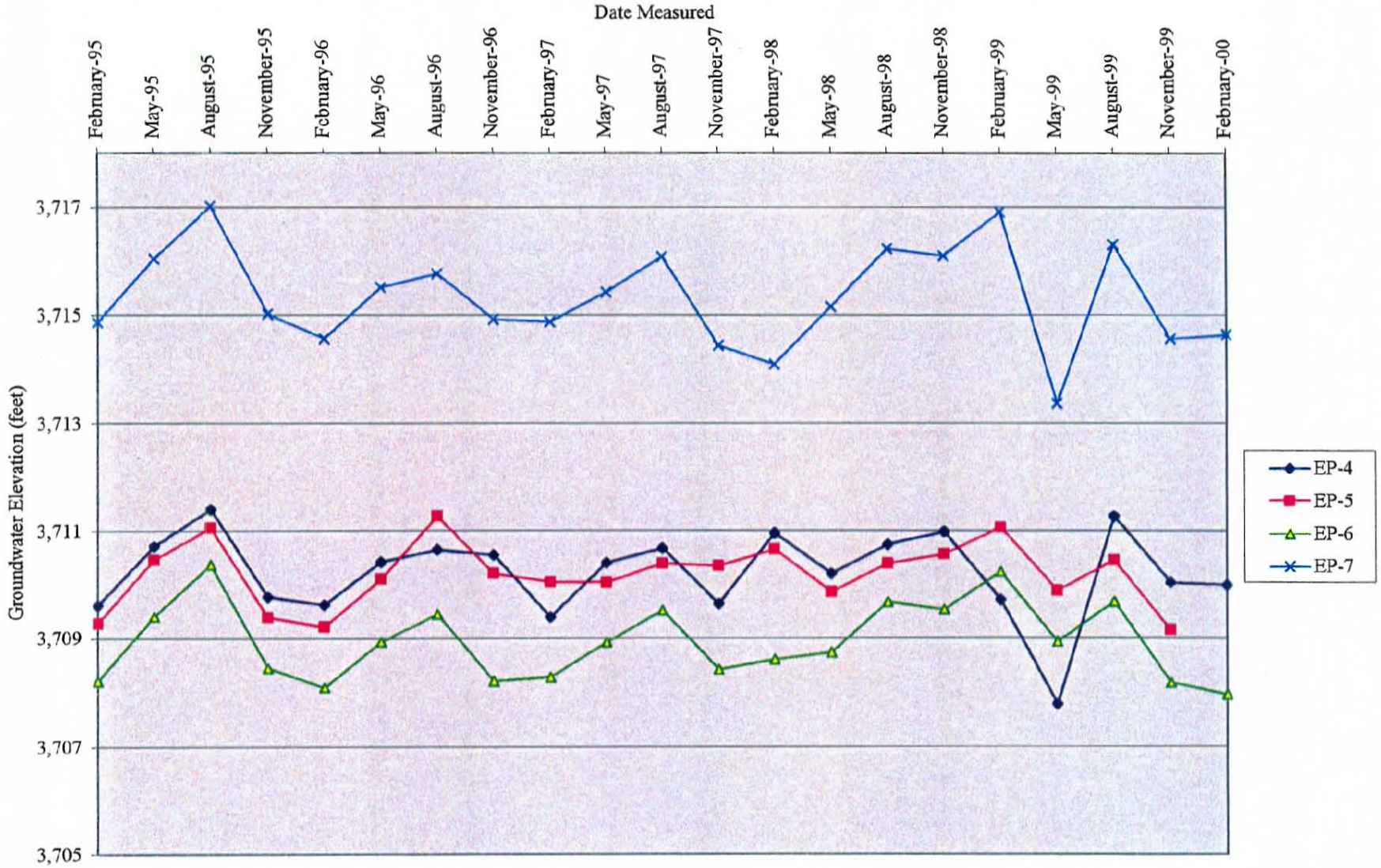
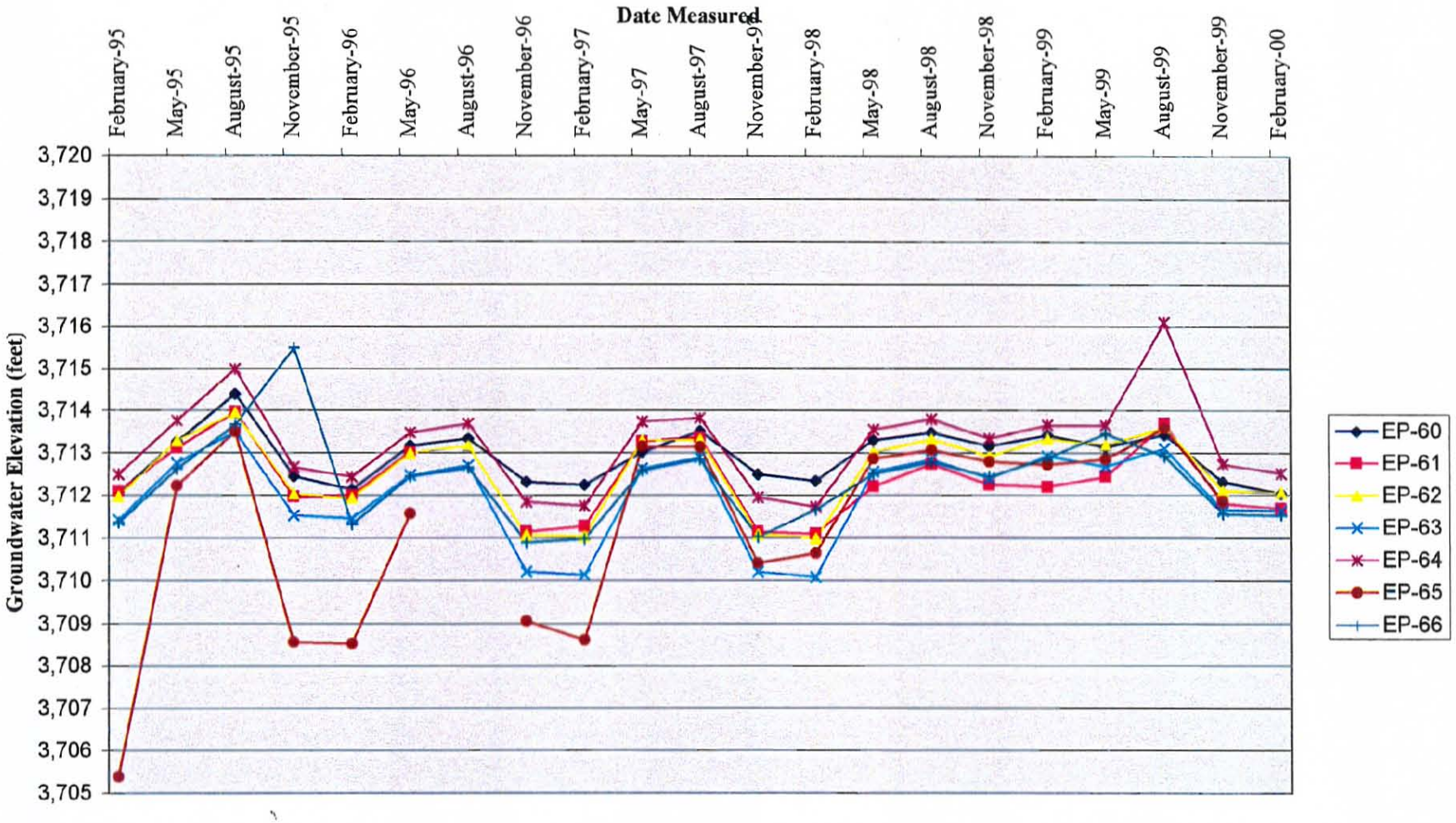


Figure 2-9. Groundwater Elevation (feet) in Wells Located Adjacent to Rio Grande, 1995 through 2000
ASARCO El Paso Smelter Phase II RI



Note: Depths to water are not adjusted for free-phase hydrocarbon occurrence, which depresses the water table elevation.

Figure 2-10. Groundwater Elevation (feet) in Wells Located in Historic Smeltertown Area, 1995 through 2000
ASARCO El Paso Smelter Phase II RI



Note: Depths to water are not adjusted for free-phase hydrocarbon occurrence, which depresses the water table elevation.

Figure 2-11a. Water Quality Data for Ponds 1, 5 and 6
December 1997
ASARCO El Paso Smelter Phase II RI

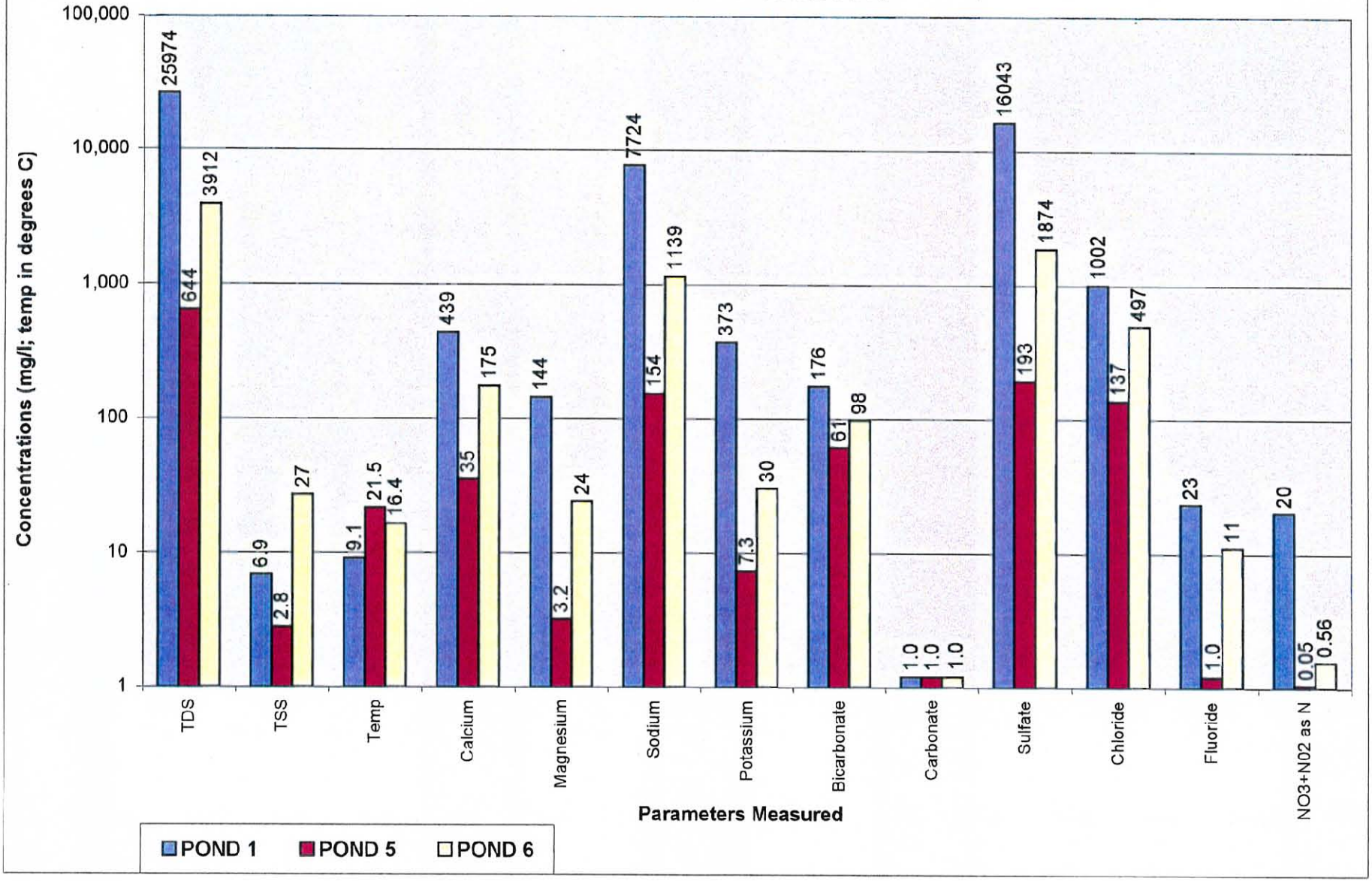


Figure 2-11b. Water Quality Data for Ponds 1 and 6
November, 1998
ASARCO El Paso Smelter Phase II RI

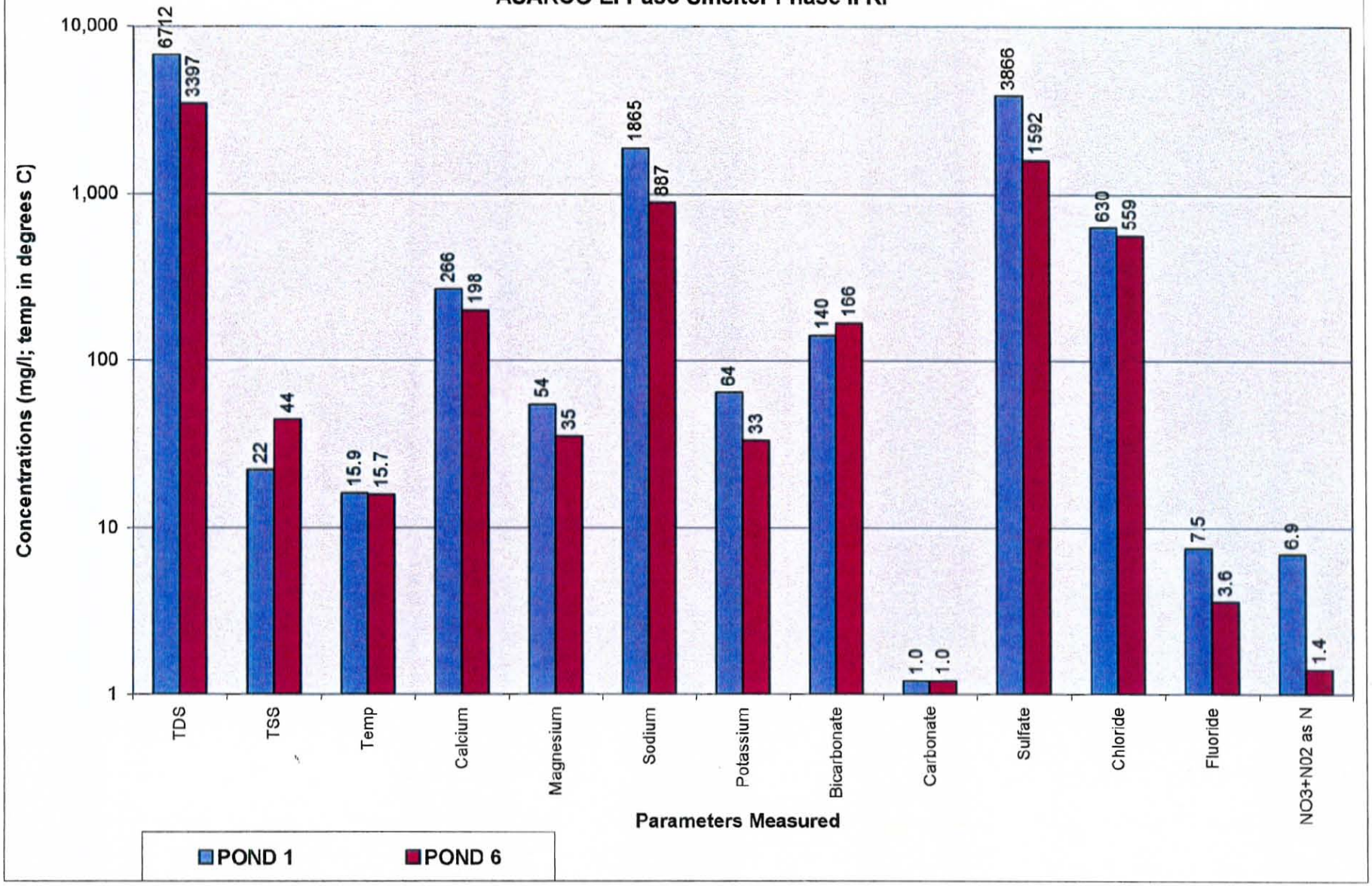
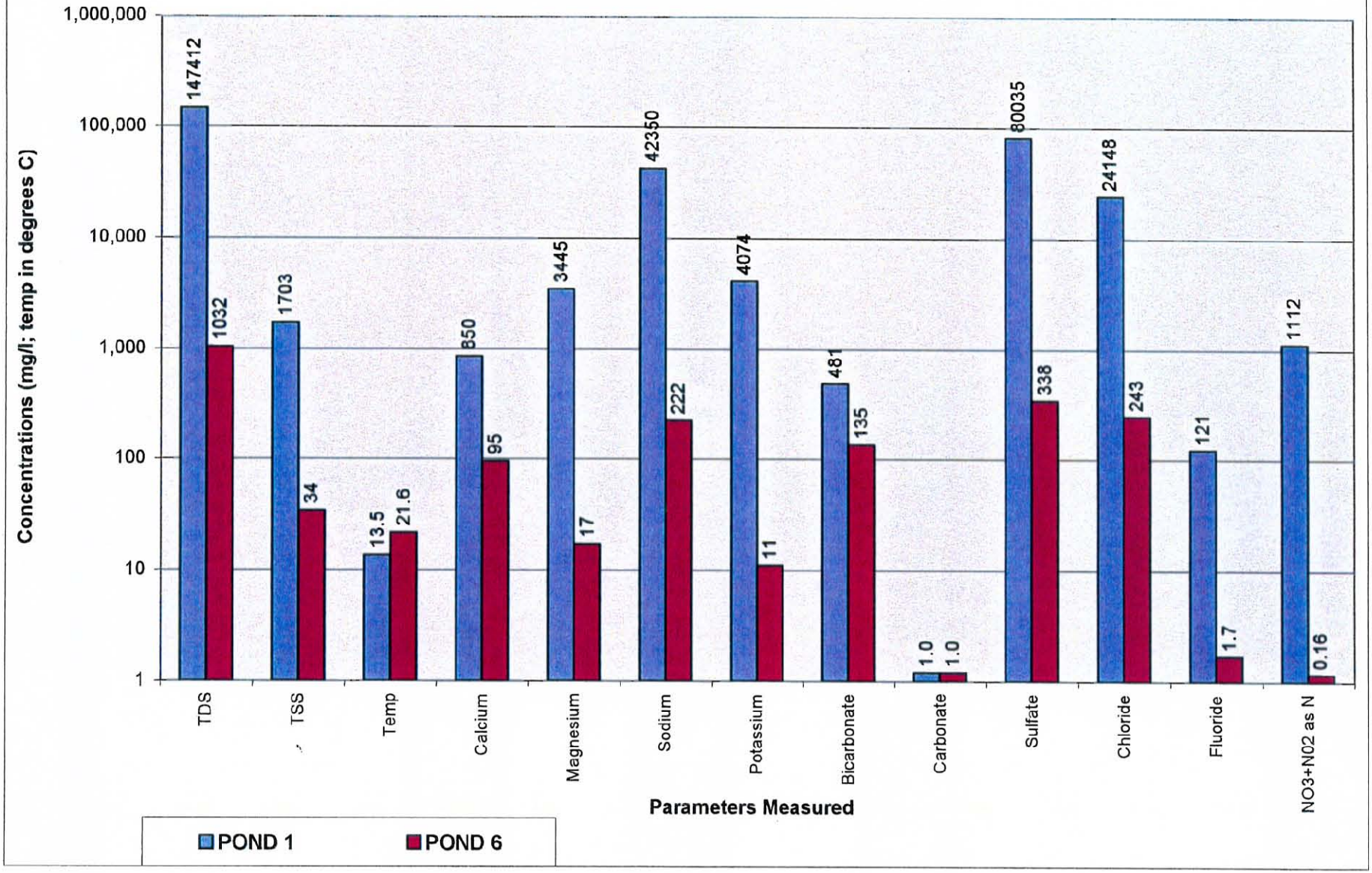
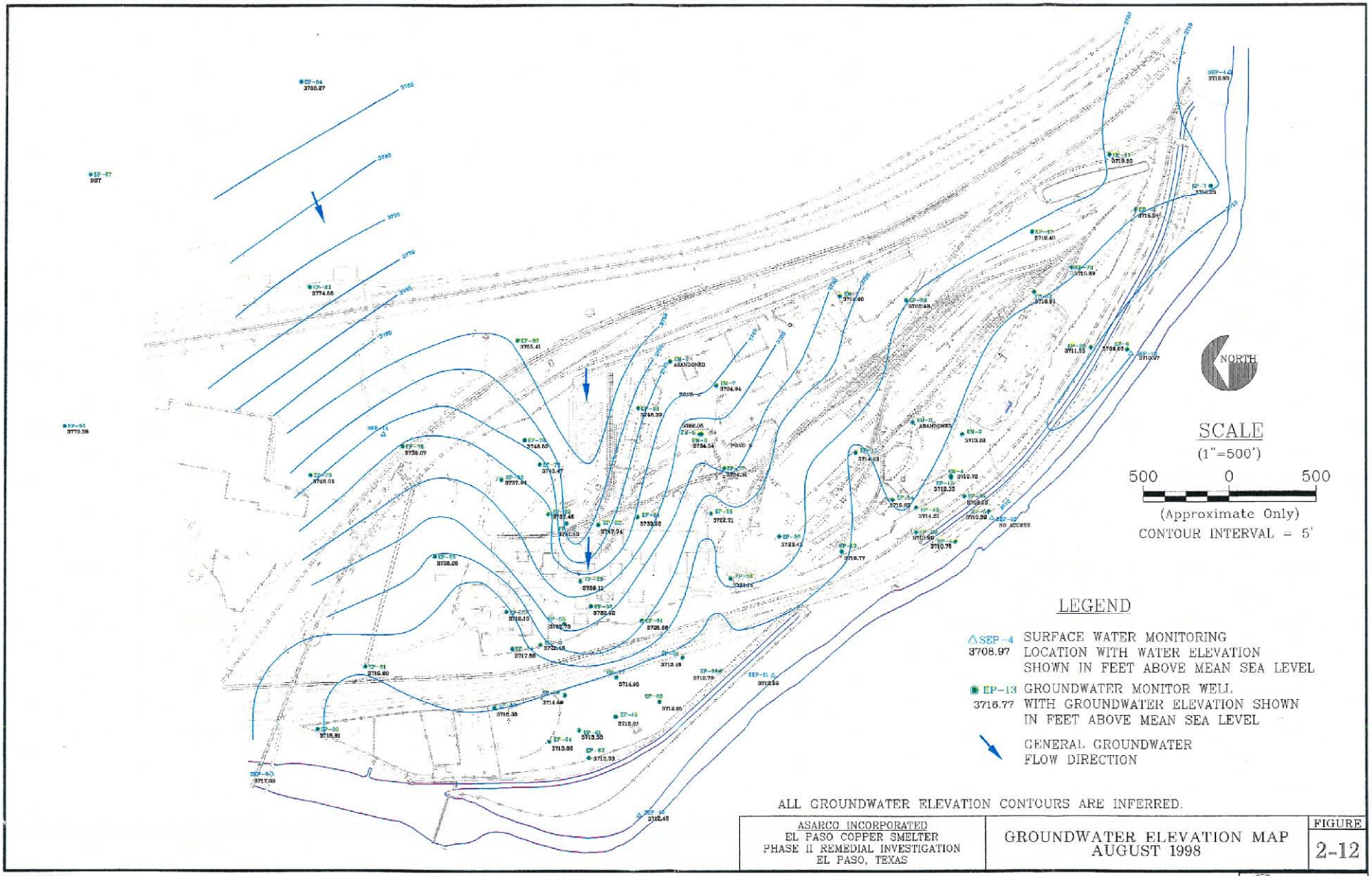


Figure 2-11c. Water Quality Data for Ponds 1 and 6
November, 1999
ASARCO El Paso Smelter Phase II RI





ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	GROUNDWATER ELEVATION MAP AUGUST 1998	FIGURE 2-12

UPDATE TIME: 3:00
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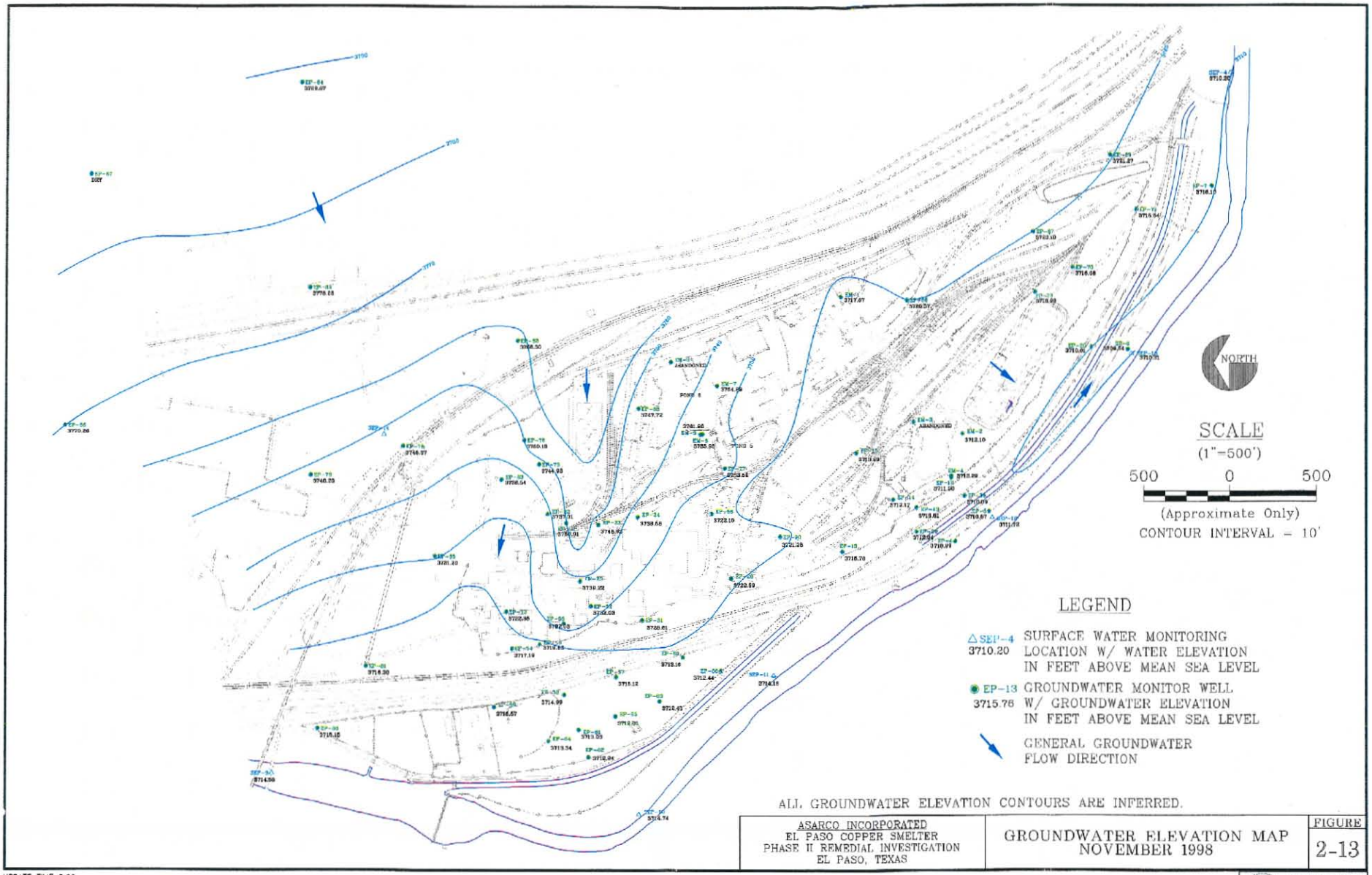
Hydrometrics, Inc.



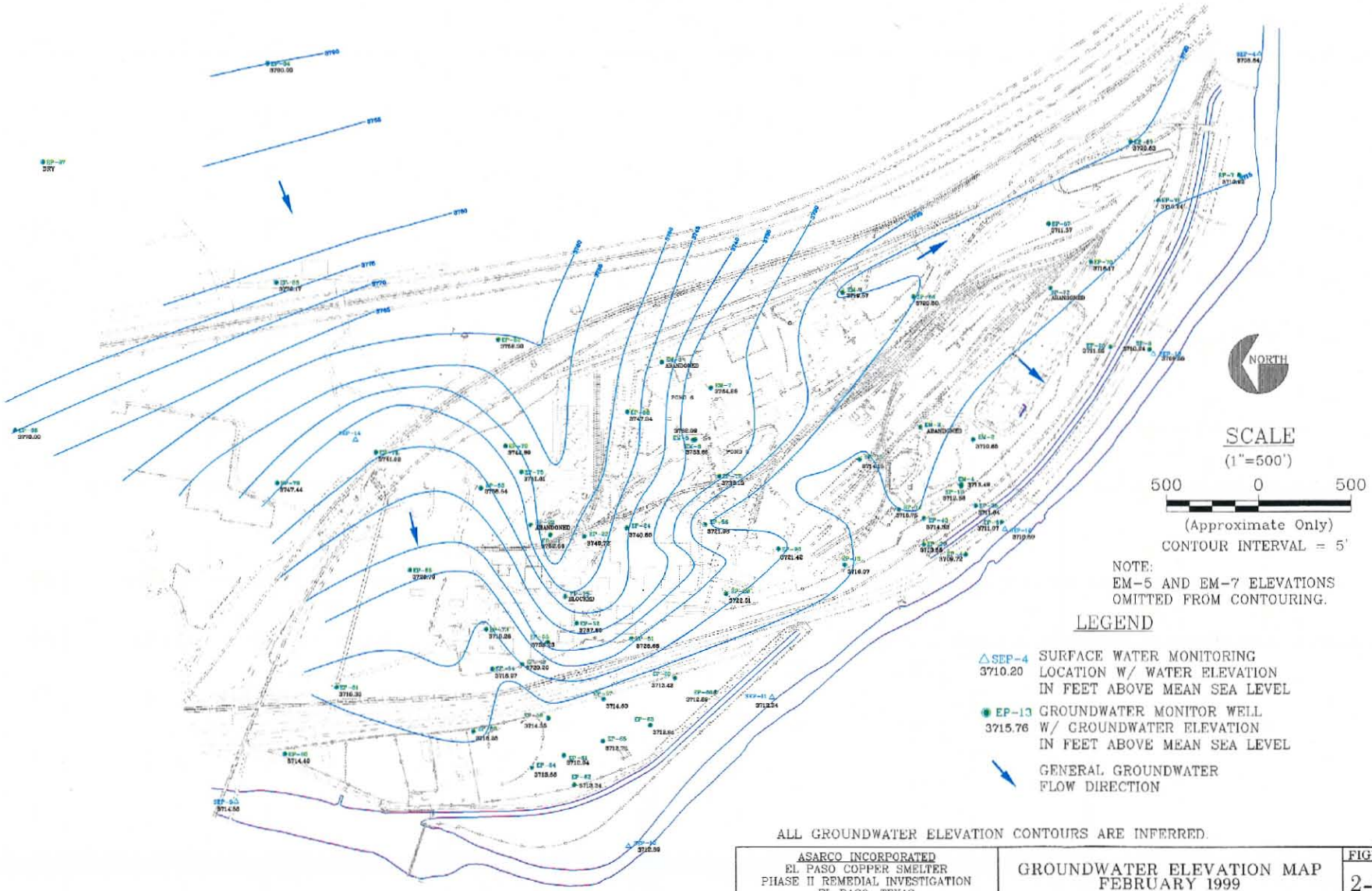
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

GROUNDWATER ELEVATION MAP
NOVEMBER 1998

FIGURE 2-13

UPDATE TIME: 3:00
000\ 1035\065\0180\10C\950900\j:\1035 1035V201U037

Hydrometrics Inc.



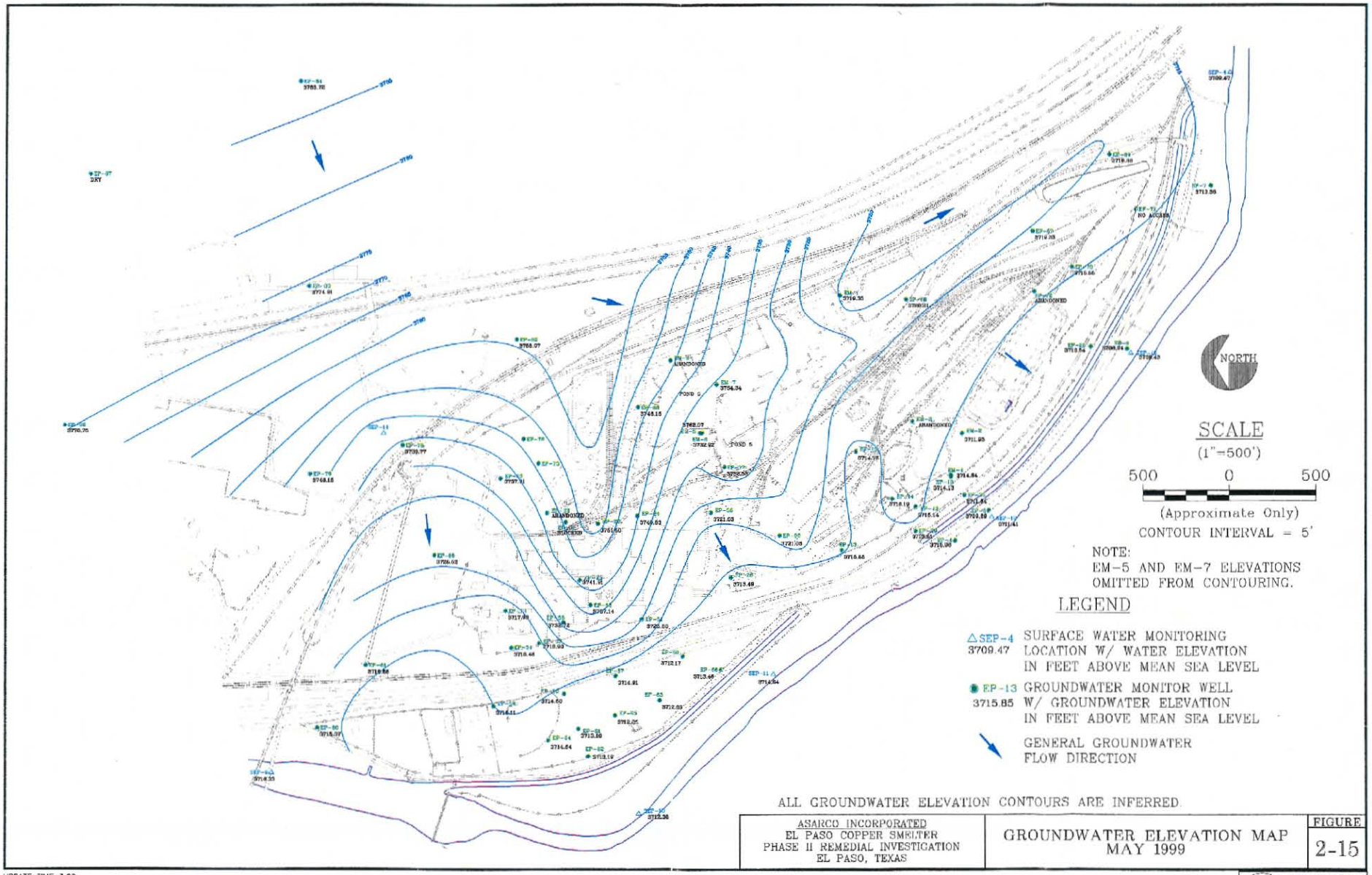
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

GROUNDWATER ELEVATION MAP
FEBRUARY 1999

FIGURE
2-14

UPDATE TIME: 3:00
000\ 1035\065\0180\TUC\050900\I:\1035 1035V2010038

Hydrometrics, Inc.



ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

GROUNDWATER ELEVATION MAP
MAY 1999

FIGURE 2-15

UPDATE TIME: 3:00
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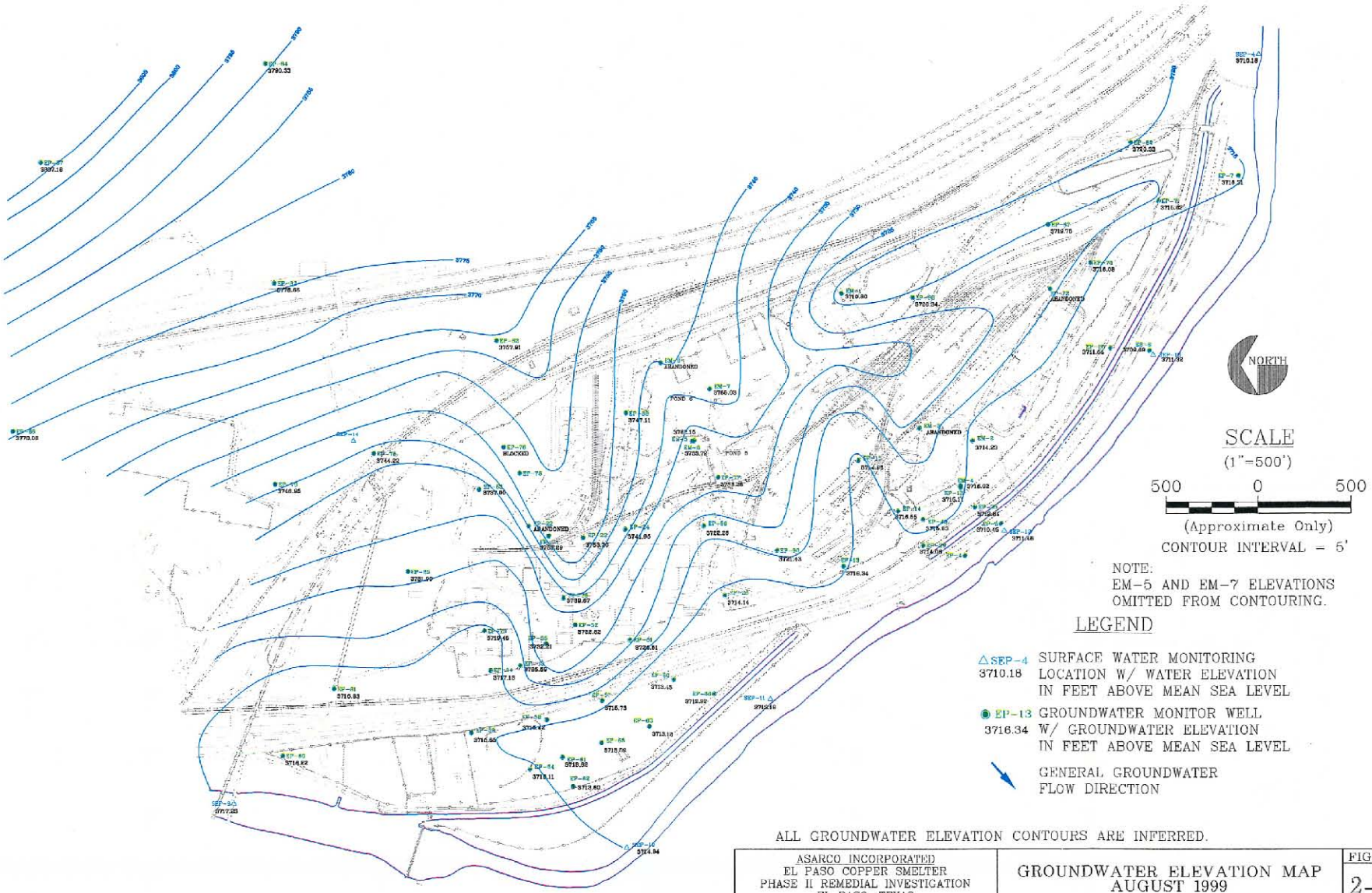
Hydrometrics, Inc.



ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	GROUNDWATER ELEVATION MAP AUGUST 1999	FIGURE 2-16

UPDATE TIME: 3:00
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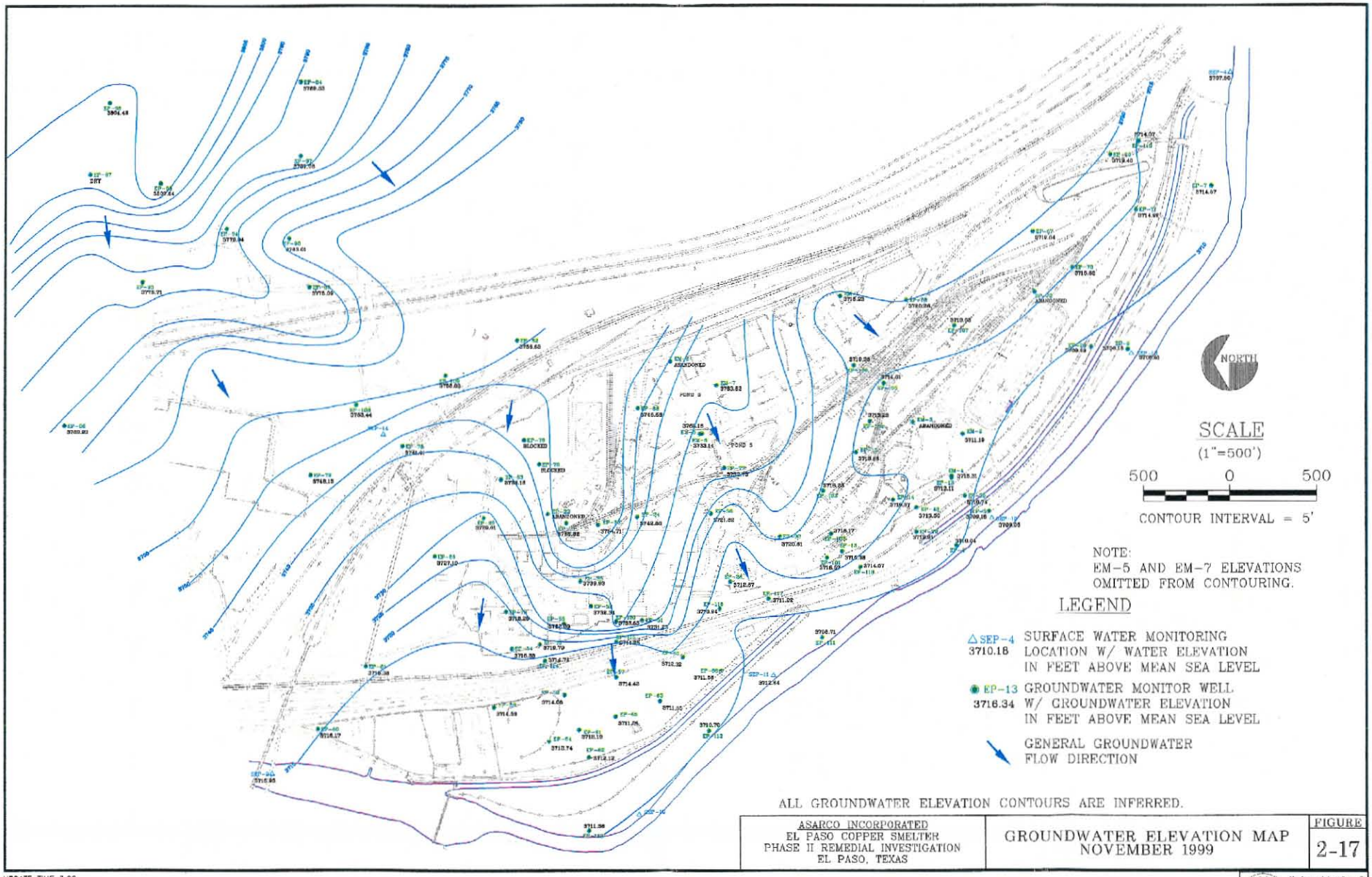
Hydrometrics, Inc.



ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	GROUNDWATER ELEVATION MAP NOVEMBER 1999	FIGURE 2-17

UPDATE TIME: 3:00
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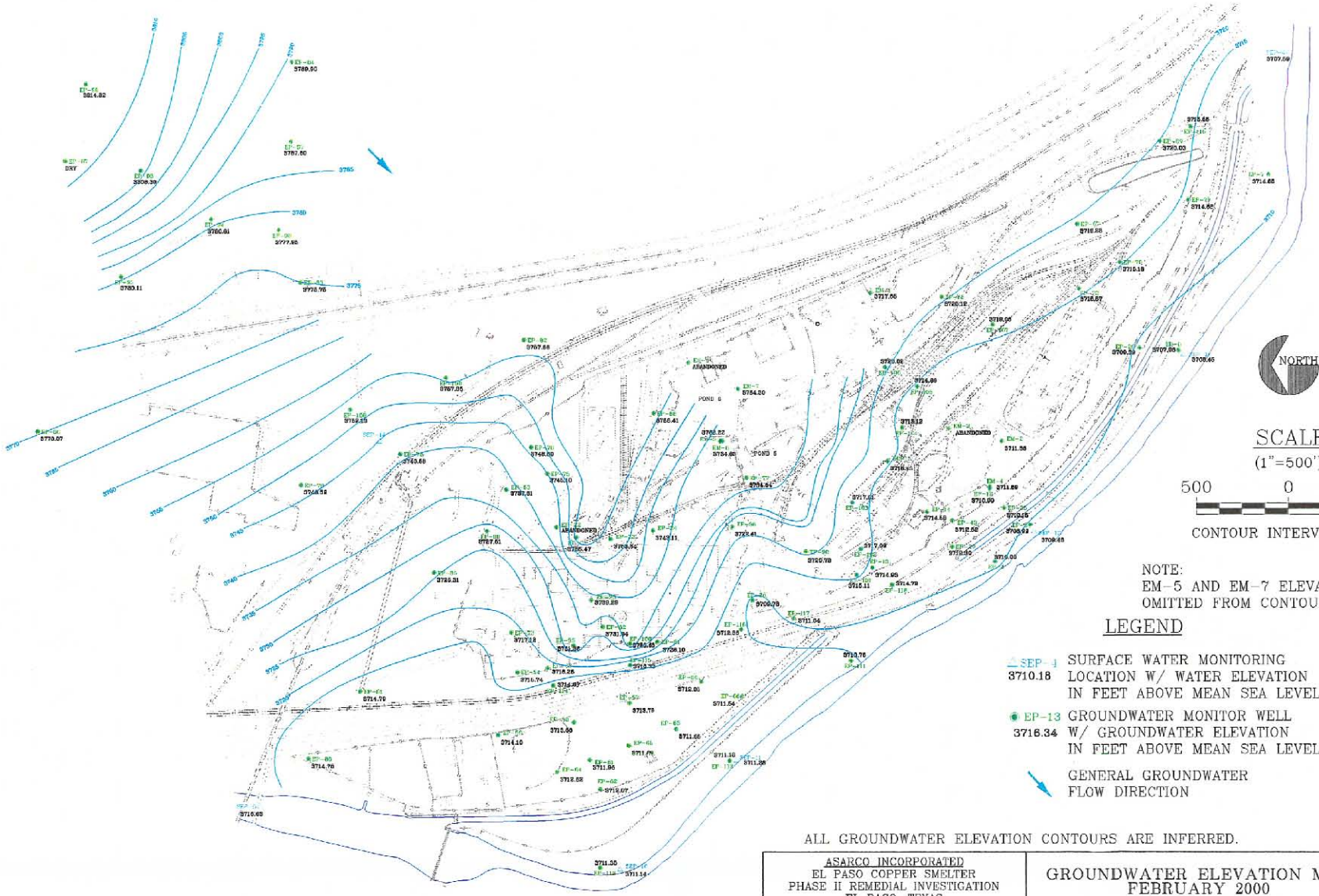
Hydrometrics, Inc.



UPDATE TIME: 3:00
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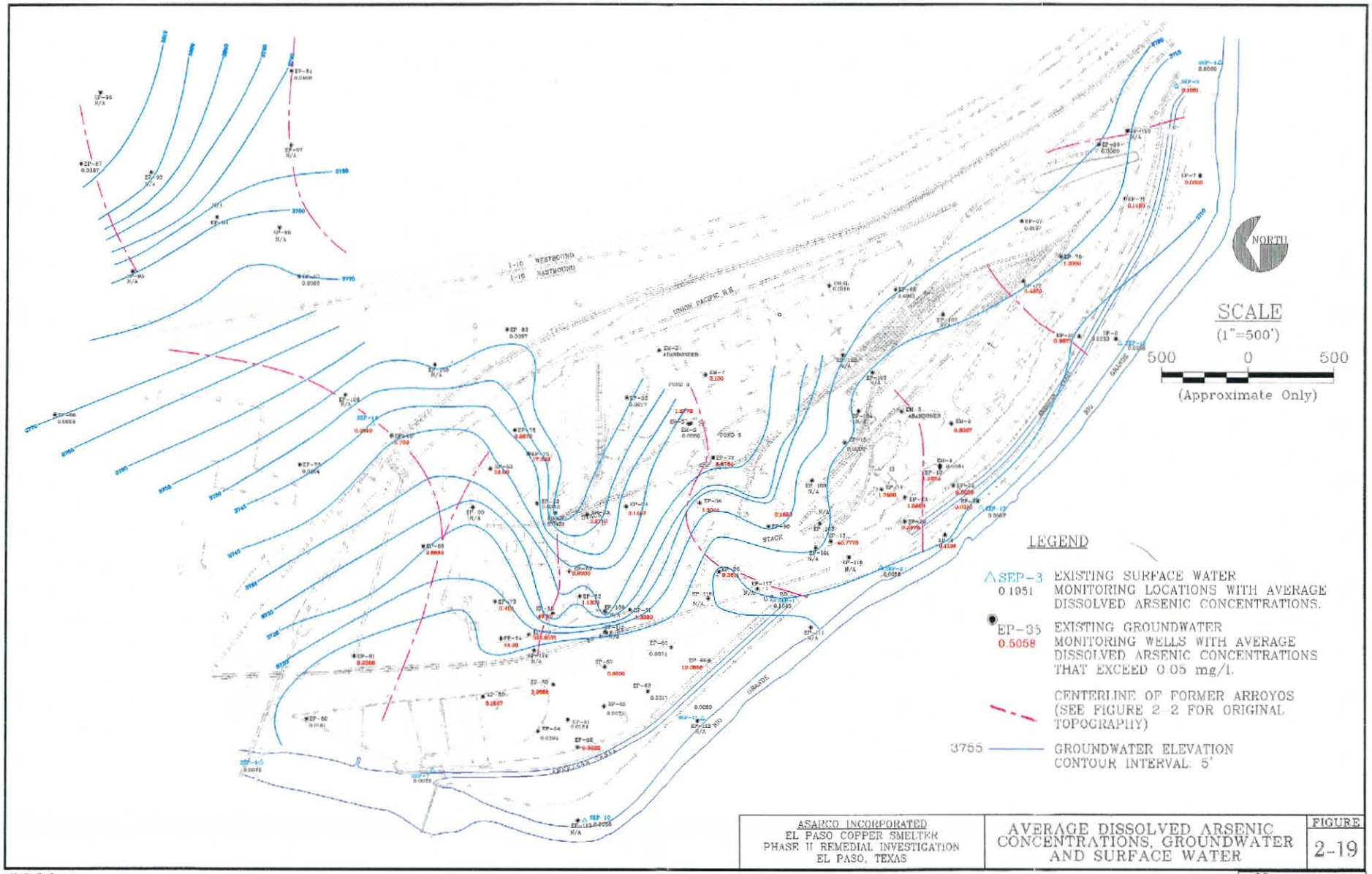


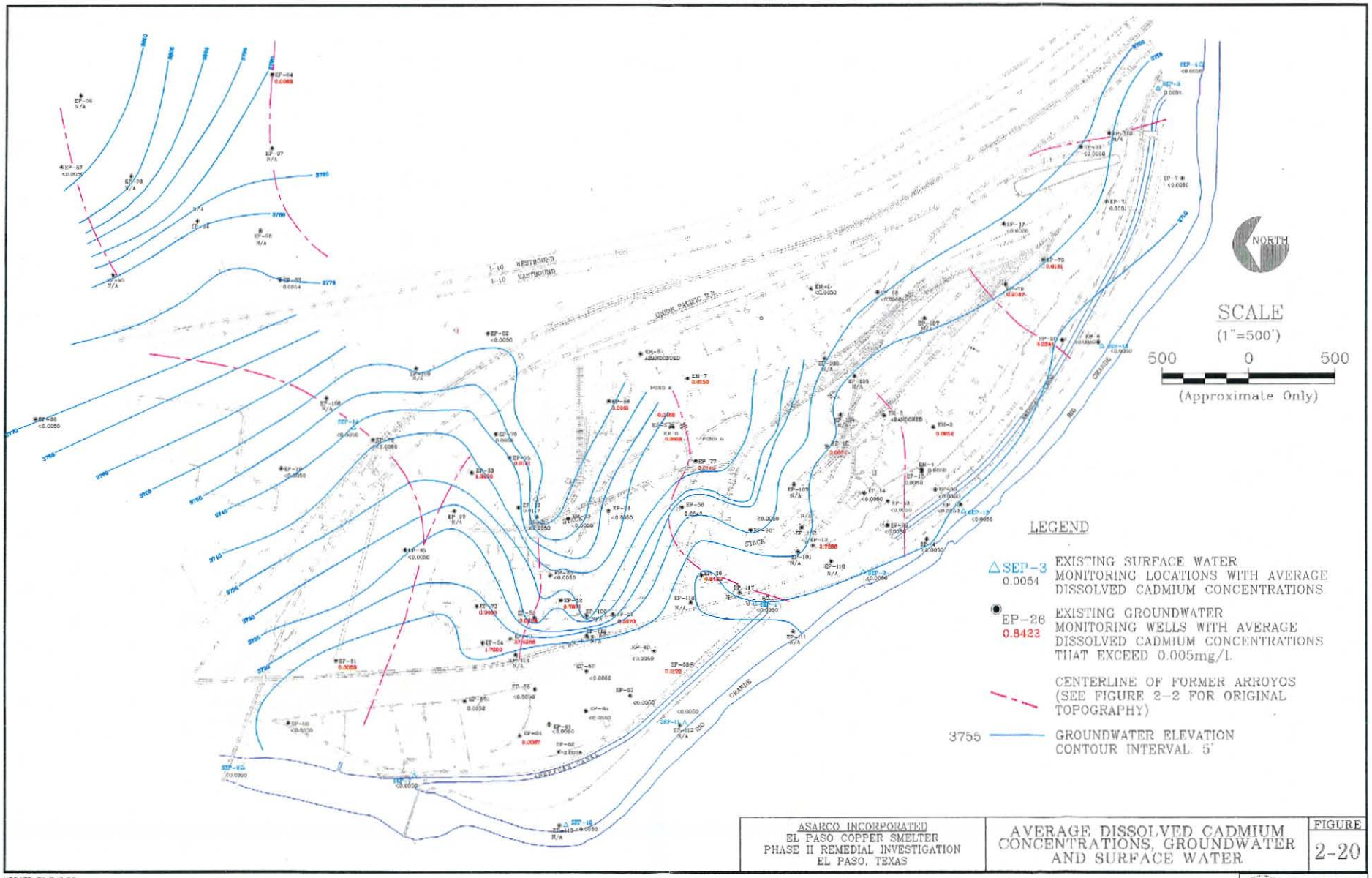
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

AVERAGE DISSOLVED ARSENIC CONCENTRATIONS, GROUNDWATER AND SURFACE WATER

FIGURE 2-19

UPDATE TIME: 3:00
000\1035\065\0180\TUC\063000\F\1035 1035V201U047

Hydrometrics, Inc.



ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

AVERAGE DISSOLVED CADMIUM CONCENTRATIONS, GROUNDWATER AND SURFACE WATER

FIGURE 2-20

Hydrometrics, Inc.

UPDATE TIME: 3:00
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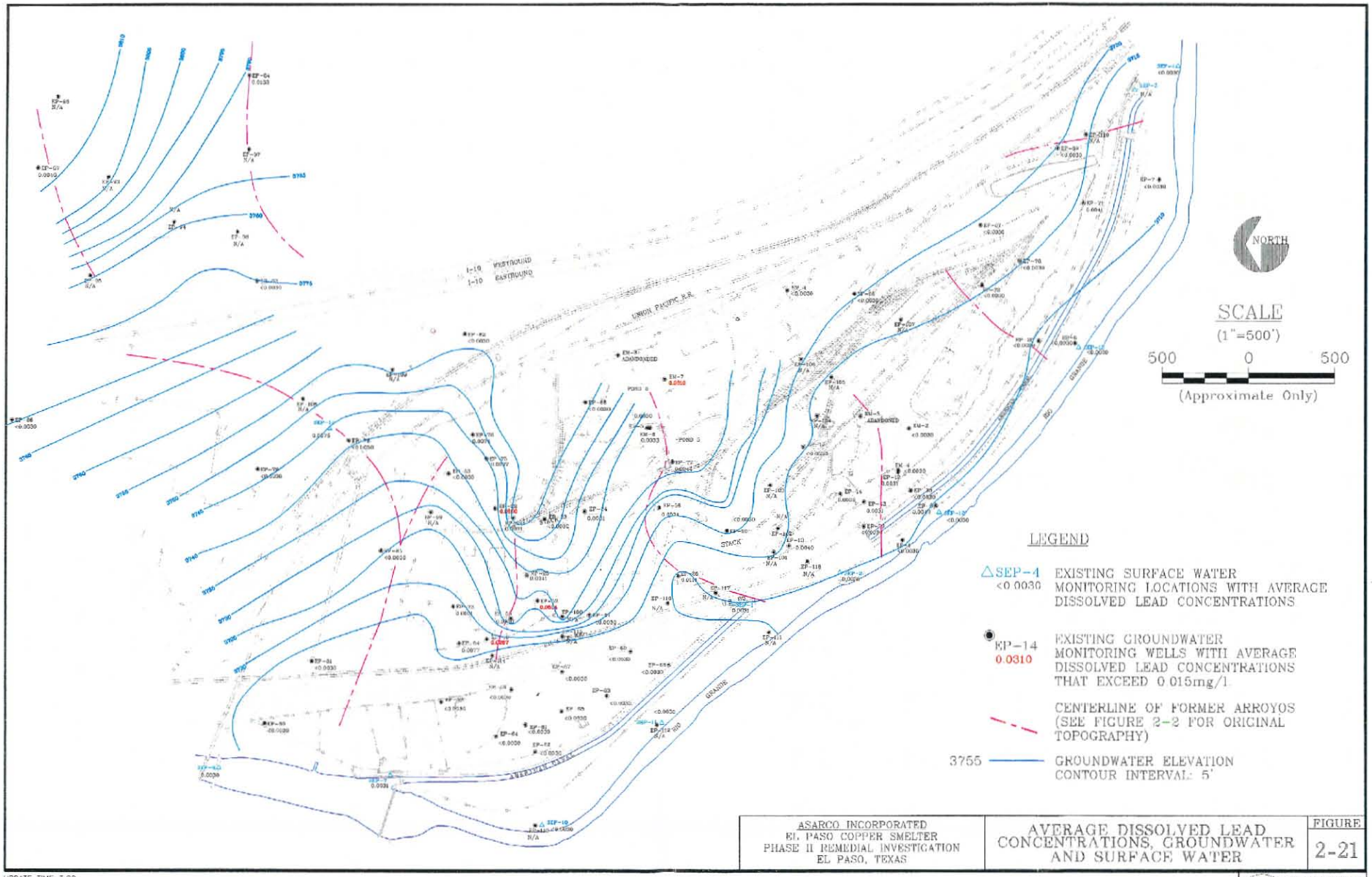
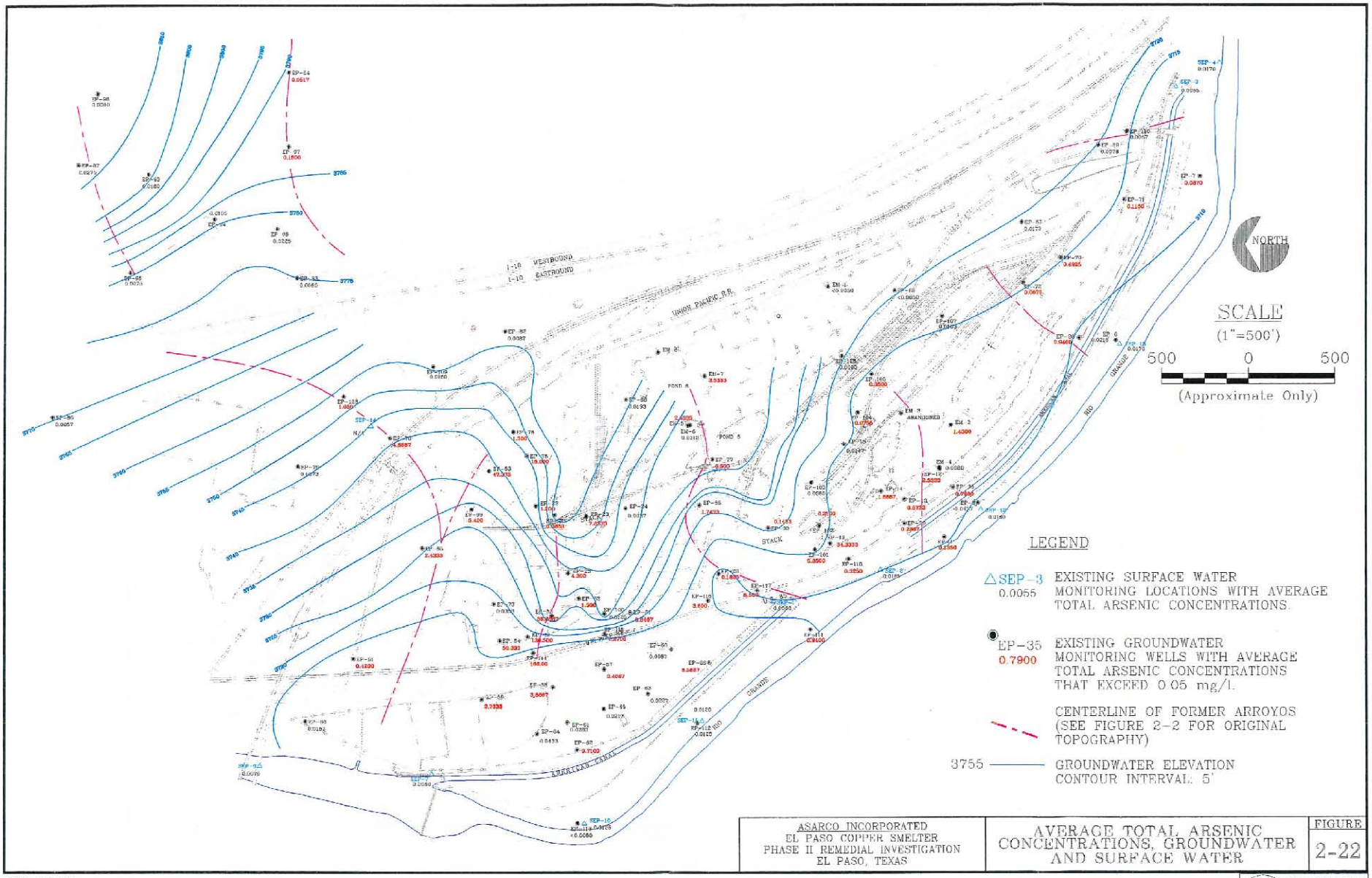


ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	AVERAGE DISSOLVED LEAD CONCENTRATIONS, GROUNDWATER AND SURFACE WATER	FIGURE 2-21

UPDATE TIME: 3.00
000\ 1035\085\0180\IUC\063000\F\1035 1035W2010049

Hydrometrics, Inc.



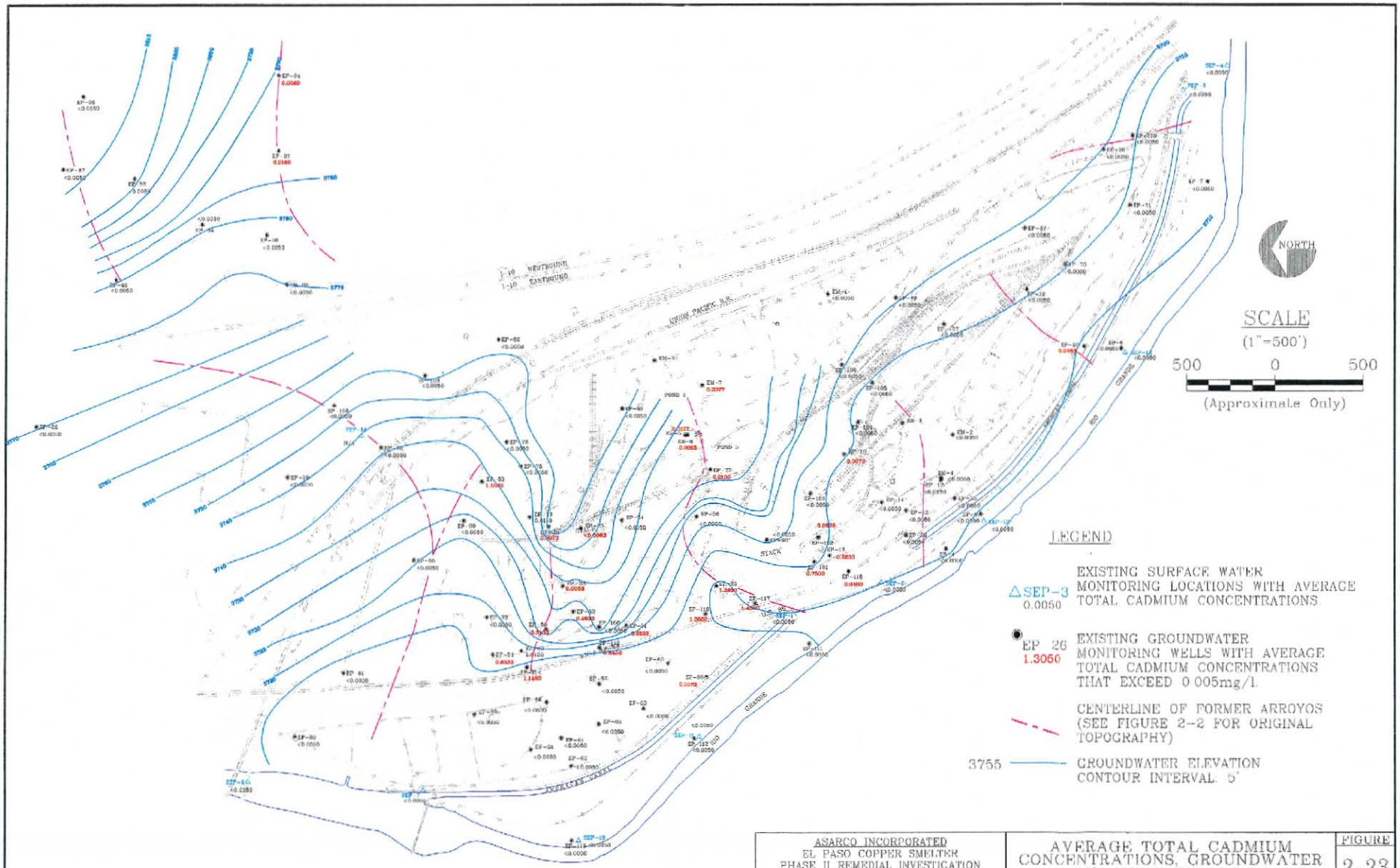
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

AVERAGE TOTAL ARSENIC CONCENTRATIONS, GROUNDWATER AND SURFACE WATER

FIGURE 2-22

UPDATE TIME: 3:00
000\1035\085\0180\TUC\062600\I:\1035 1035V2010054

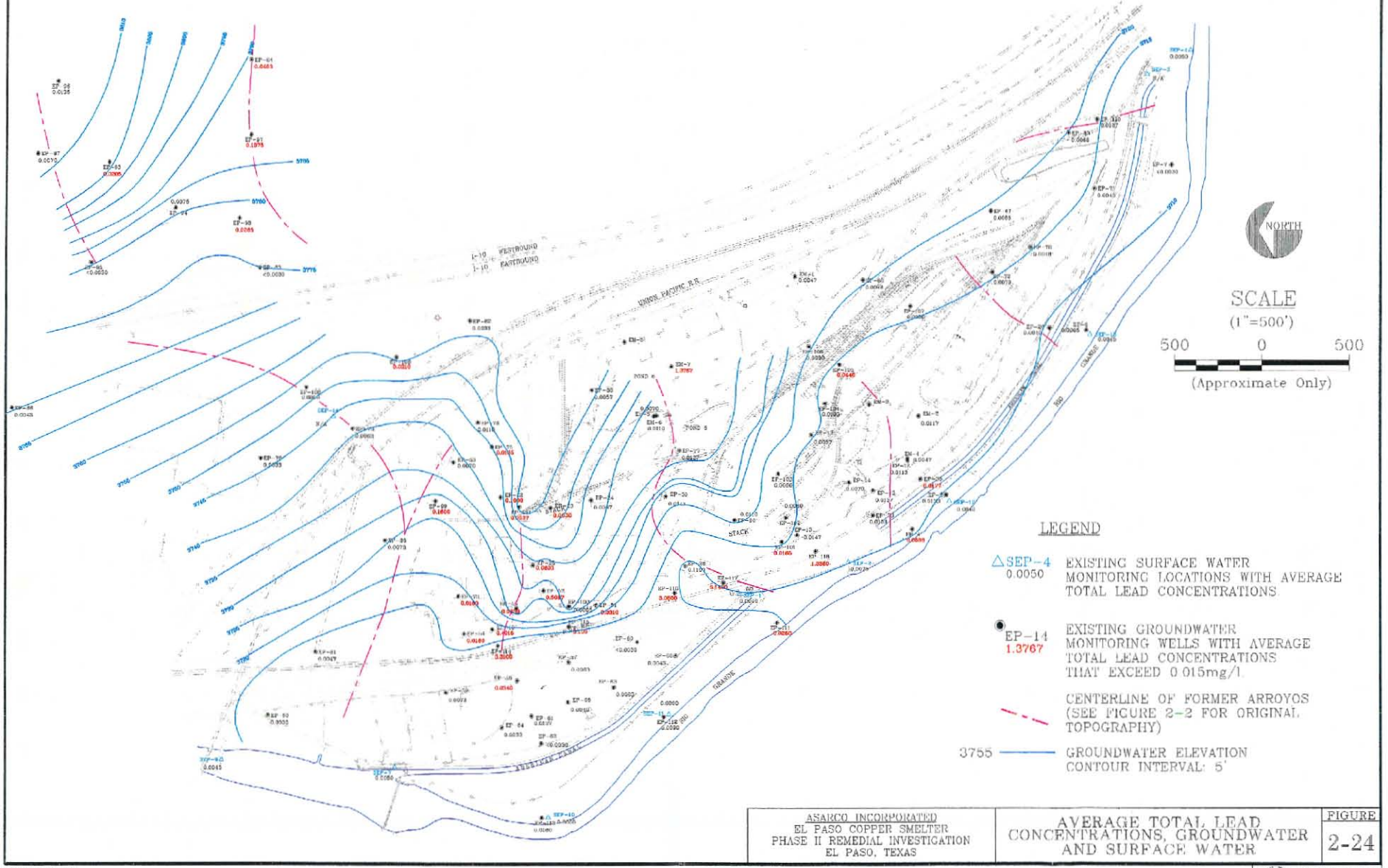
Hydrometrics, Inc.



ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	AVERAGE TOTAL CADMIUM CONCENTRATIONS, GROUNDWATER AND SURFACE WATER	FIGURE 2-23

UPDATE TIME: 3:00
000\1035\065\0180\IUC\063000\F\1035 1035V201U055

Hydrometrics, Inc.



ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

AVERAGE TOTAL LEAD CONCENTRATIONS, GROUNDWATER AND SURFACE WATER

FIGURE 2-24

Hydrometrics, Inc.

UPDATE TIME: 3.00
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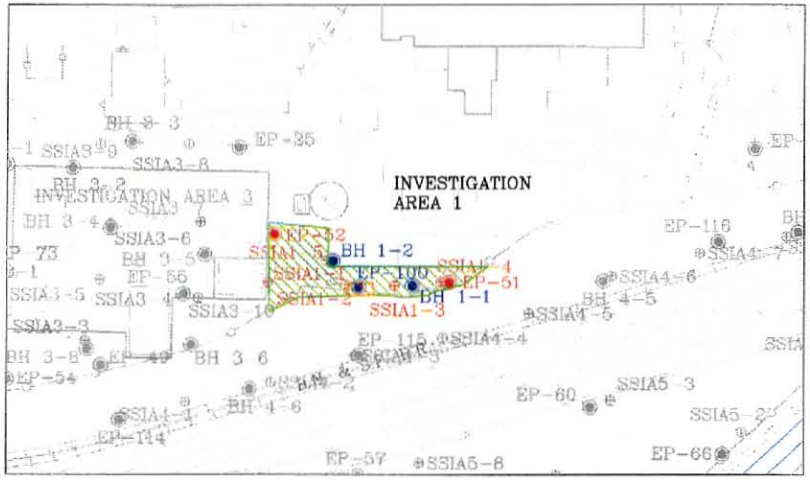

SCALE
(1"=200')
200 0 200

NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. SLAG UNDERLIES PORTIONS OF THE AREA AT DEPTH.

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-51 PHASE I RI MONITOR WELL LOCATION
- SSIA1-3 PHASE I RI BORING LOCATION
- EP-100 PHASE II RI MONITOR WELL LOCATION
- BH 1-1 PHASE II RI BORING LOCATION

IA-1 SUMMARY

Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
Medford Sump	444	800	0	0
IA - General	0	0	23,198	0
Total	444	800	23,198	0

CATEGORY I MATERIALS ASSOCIATED WITH MEDFORD SUMP HAVE BEEN REMOVED

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 1 (CONVERTER BUILDING/BAGHOUSE AREA)

FIGURE 3-1

Hydrometrics, Inc.

UPDATE TIME: 3:00
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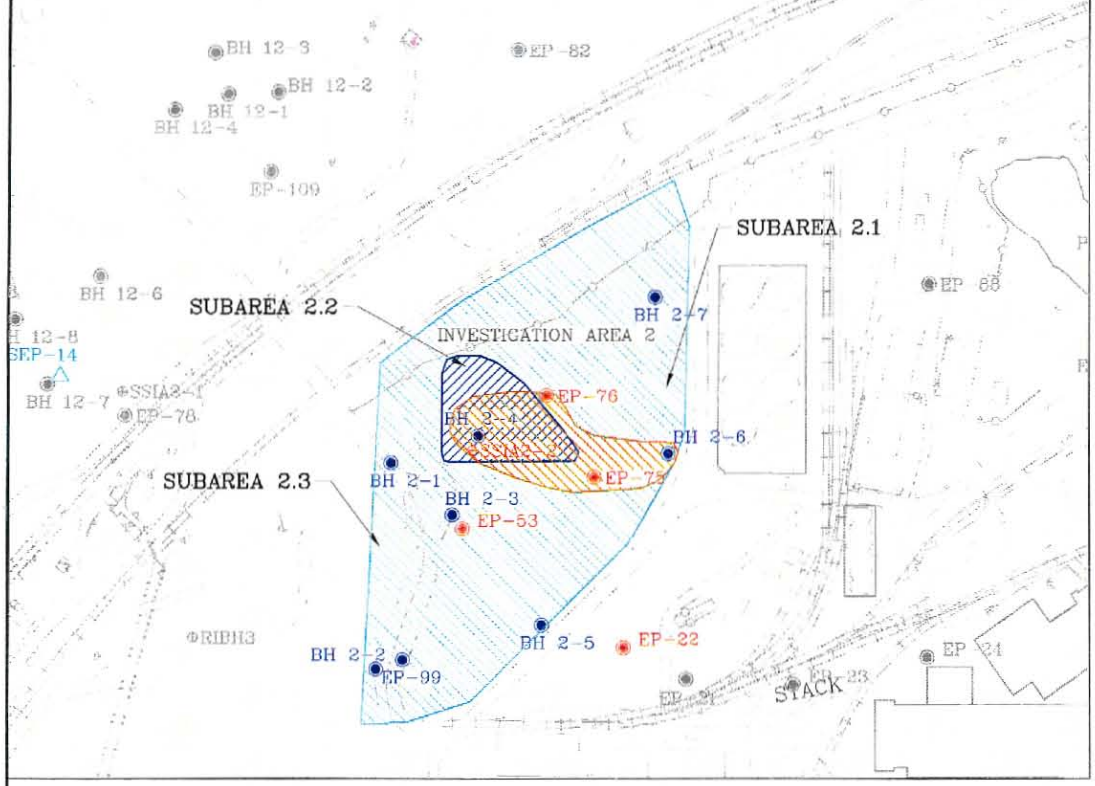


NORTH

SCALE
(1"=200')
200 0 200

NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT FIELD INVESTIGATIONS.
2. SLAG UNDERLIES THE AREA WITH THICKNESSES RANGING FROM 8 TO 63 FEET.

LEGEND
- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-53 PHASE I RI MONITOR WELL LOCATION
- SSIA1-3 PHASE I RI BORING LOCATION
- EP-99 PHASE II RI MONITOR WELL LOCATION
- BH 2-1 PHASE II RI BORING LOCATION

IA-2 SUMMARY

Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
2.1 Area Under Stored Slag	22,592	40,666	0	0
2.2 Area on Top of Stored Slag	1,119	30,222	0	0
2.3 IA - General	0	0	0	277,578
Total	23,711	70,888	0	277,578

CATEGORY I MATERIALS NEAR SURFACE ASSOCIATED WITH THE AREA AROUND EP-76 (SUBAREA 2.2) HAVE BEEN REMOVED

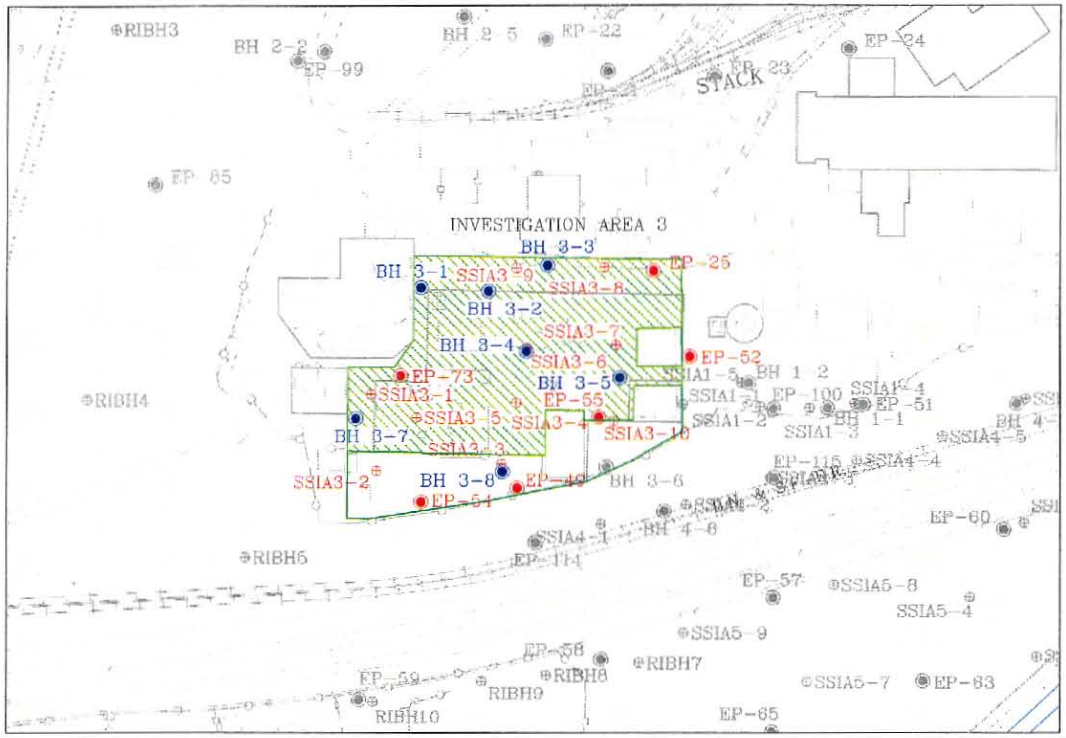
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

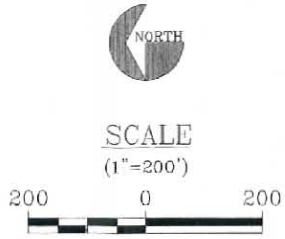
INVESTIGATION AREA 2
(BONE YARD/SLAG AREA)

FIGURE
3-2

UPDATE TIME: 3:00
000\ 1035\065\0180\TUC\061200\E:\1035 1035V201U006

Hydrometrics, Inc.





NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. SLAG UNDERLIES THE AREA AT DEPTHS RANGING IN THICKNESS OF 14 TO 40 FEET.

LEGEND

- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-54 PHASE I RI MONITOR WELL LOCATION
- SSIA3-3 PHASE I RI BORING LOCATION
- BH 3-1 PHASE II RI BORING LOCATION

IA-3 SUMMARY

AREA	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
IA-General	0	0	143,255	0
Total	0	0	143,255	0

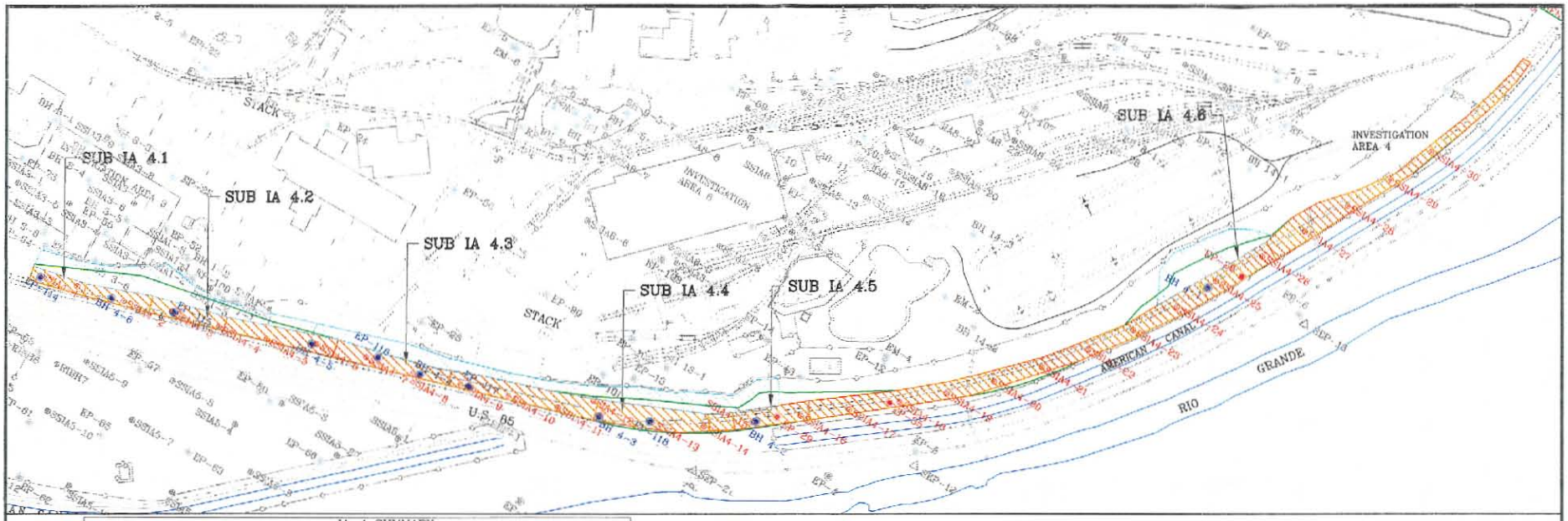
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 3
(ACID PLANTS 1 & 2 AREA)

FIGURE
3-3

UPDATE TIME: 3:00
000\1035\063\0180\TUC\052600\\:\1035 1035V2010007

Hydrometrics, Inc.



IA-4 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
IA-4.1	513	6,927	0	0
IA-4.2	2,038	11,006	0	0
IA-4.3	7,563	16,995	0	0
IA-4.4	4,103	22,157	0	0
IA-4.5	937	12,647	0	0
IA-4.6	2,770	14,960	0	0
Flat Areas at Base of Slope Not Included in in sub Areas	8,074	163,996	0	0
IA Slopes Composed of or Armored With Slag	0	0	0	148,515
Total	23,989	248,689	0	148,515

NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. ACTUAL AREAS OF CATEGORY MATERIALS ARE SMALLER THAN SHOWN.
3. SLAG UNDERLIES PORTIONS OF AREA AT DEPTH.

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-29 PHASE I RI MONITOR WELL LOCATION
- SSIA4-3 PHASE I RI BORING LOCATION
- EP-114 PHASE II RI MONITOR WELL LOCATION
- BH 4-1 PHASE II RI BORING LOCATION

NORTH

SCALE (1"=300')

300 0 300

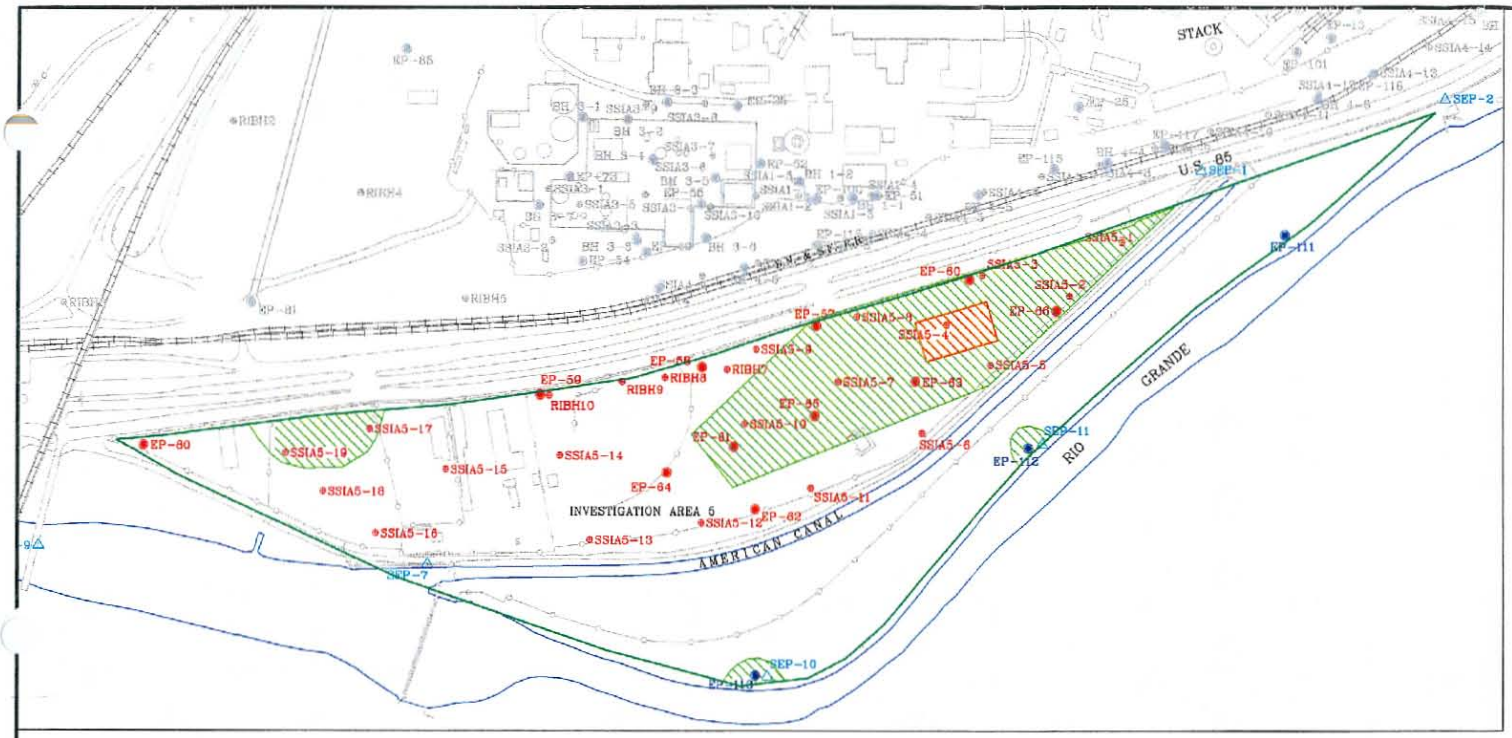
ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 4
(FRONT SLOPE/
WEST FACILITY AREA)

FIGURE 3-4

UPDATE TIME: 3:00
000\1035\065\0180\TUC\051100\I:\1035 1035V201U00B

Hydrometrics, Inc.



IA-5 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
Southeast Corner of Smeltertown	2,150	19,349	263,770	0
Area Around EP-112	0	0	5,934	0
Area Around EP-113	0	0	7,372	0
North Corner	0	0	35,114	0
Total	2,150	19,349	312,190	0

NOTES:

1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-9 PHASE I RI MONITOR WELL LOCATION
- SSIA1-3 PHASE I RI BORING LOCATION
- EP-113 PHASE II RI MONITOR WELL LOCATION
- BH 1-1 PHASE II RI BORING LOCATION

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 5
(HISTORIC SMELTERTOWN AREA)

FIGURE
3-5

UPDATE TIME: 3:00
000\ 1035\065\0180\TUC\052600\r\1035 1035V201U009

Hydrometrics, Inc.

NORTH

SCALE
(1"=200')
200 0 200

IA-8 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
Area Around EP-103	4,779	25,807	0.00	0.00
Central Area	0	0	273,579	0.00
Area around EP-104 And EP-105	7,912	71,210	0.00	0.00
Southern Area	8,984	121,285	0.00	0.00
Area Around EP-106	2,739	24,652	0.00	0.00
Area Around BH8-4	159	4,300	0.00	0.00
Total	24,574	247,254	273,579	0.00

NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS
2. SLAG UNDERLIES PORTIONS OF AREA AT DEPTH WITH THICKNESS' OF 3 TO 33 FEET

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-69 PHASE I RI MONITOR WELL LOCATION
- SSIA8-3 PHASE I RI BORING LOCATION
- EP-103 PHASE II RI MONITOR WELL LOCATION
- BH 8-1 PHASE II RI BORING LOCATION

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 8
(BEDDING & UNLOADING BUILDINGS)

FIGURE 3-6

UPDATE TIME: 3:00
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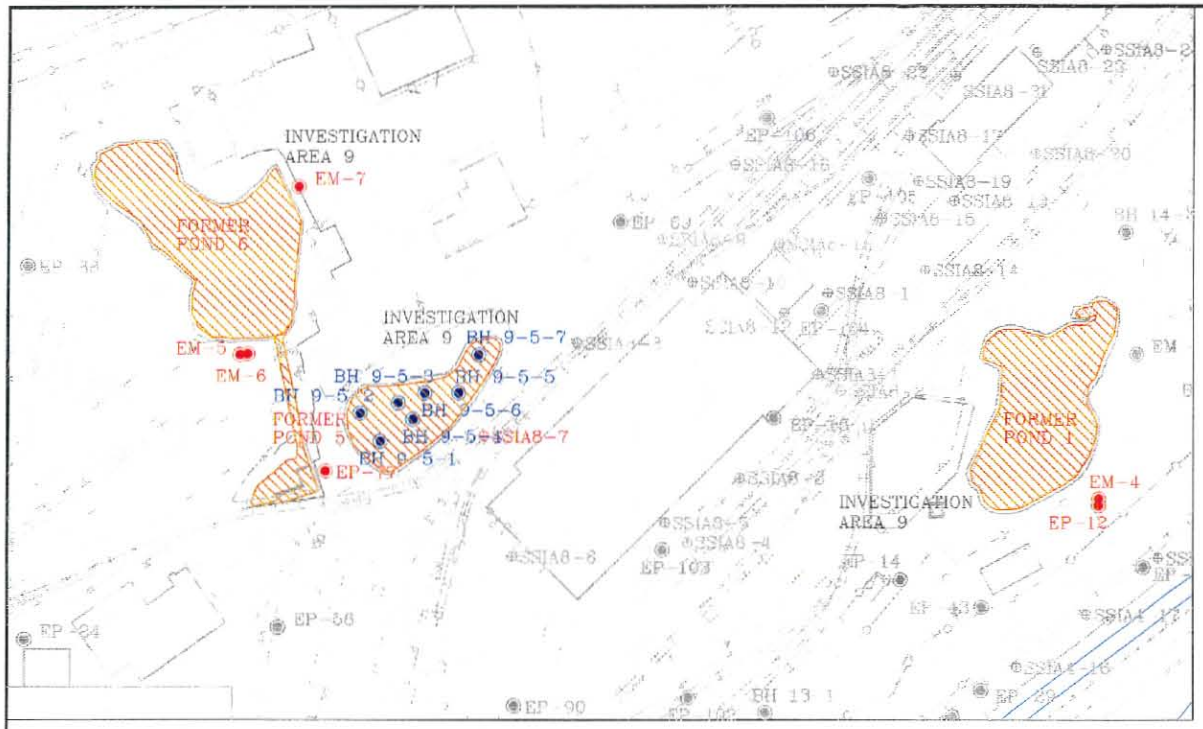
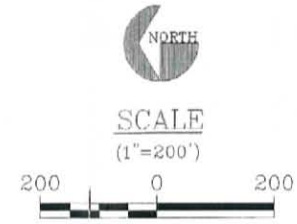
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-77 PHASE I RI MONITOR WELL LOCATION
- SSIA9-3 PHASE I RI BORING LOCATION
- BH 9-5-1 PHASE II RI BORING LOCATION
- EM-5 PHASE I RI MONITOR WELL LOCATION

IA-9 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
Pond 1	9,765	52,733	0	0
Pond 5	3,500	26,476	0	0
Pond 6	11,634	62,823	0	0
Canal Area	1,543	8,333	0	0
Total	26,443	150,365	0	0

NOTES:

1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. CATEGORY I MATERIALS CONSIST OF POND SEDIMENTS.

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 9
(POND 1,5 AND 6)

FIGURE
3-7

UPDATE TIME: 3:00
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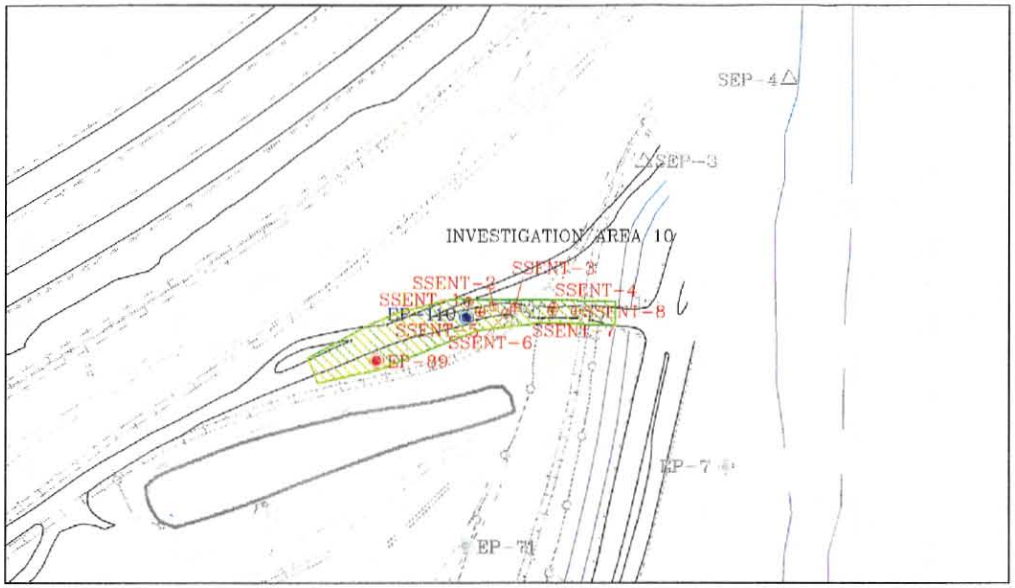
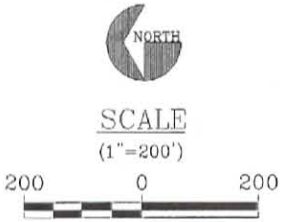
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-89 PHASE I RI MONITOR WELL LOCATION
- SSENT-7 PHASE I RI BORING LOCATION
- EP-110 PHASE II RI BORING LOCATION

IA-10 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
IA-10	0	0	29,658	0
Total	0	0	29,658	0

NOTES:

1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 10
(FACILITY ENTRANCE AREA)

FIGURE
3-8

UPDATE TIME: 3:00
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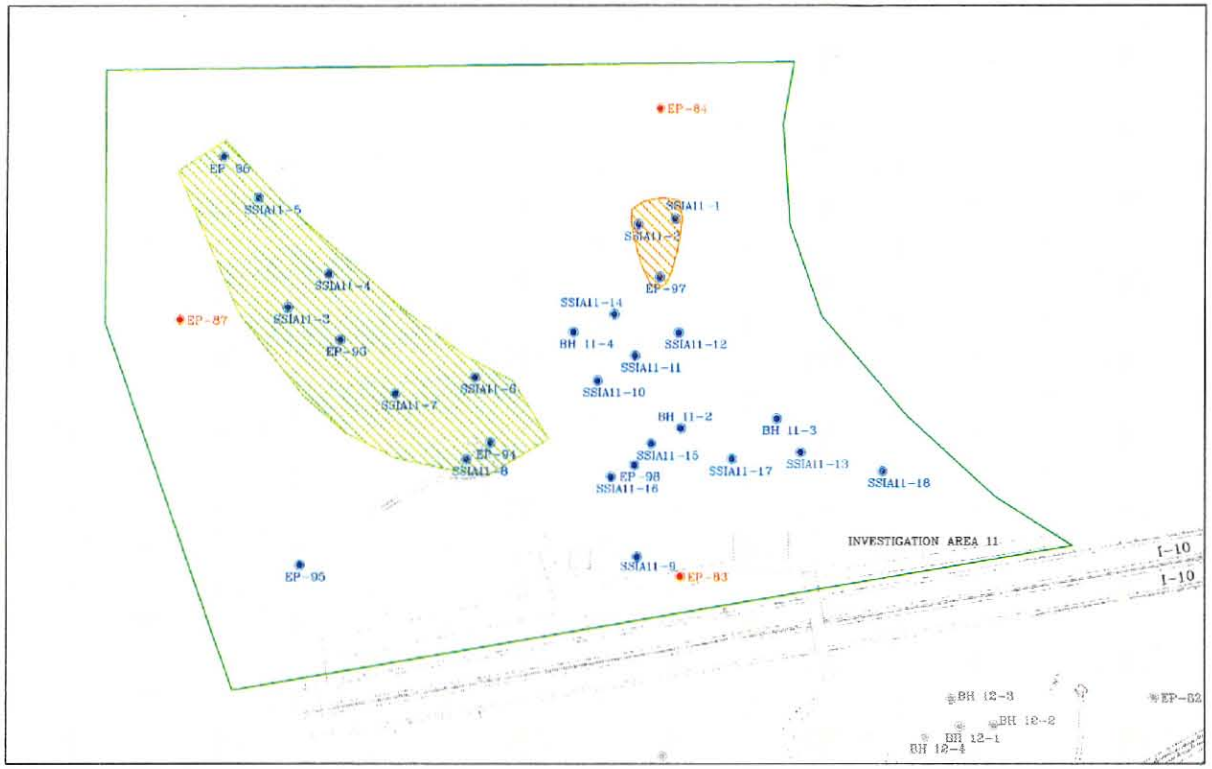
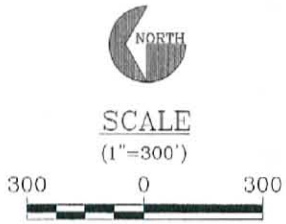
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-84 PHASE I RI MONITOR WELL LOCATION
- SSIA1-3 PHASE I RI BORING LOCATION
- BH 1-1 PHASE II RI BORING LOCATION
- EP-94 PHASE II RI MONITOR WELL LOCATION

IA-11SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
In Northern Arroyo	0	0	304,467	0
Area Around EP-97	1,620	21,876	0	0
Total	1,620	21,876	304,467	0

NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. SLAG UNDERLIES PORTIONS OF AREA AT VARIOUS DEPTHS.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 11 (ARROYOS EAST OF I-10)	FIGURE 3-9

UPDATE TIME: 3:00
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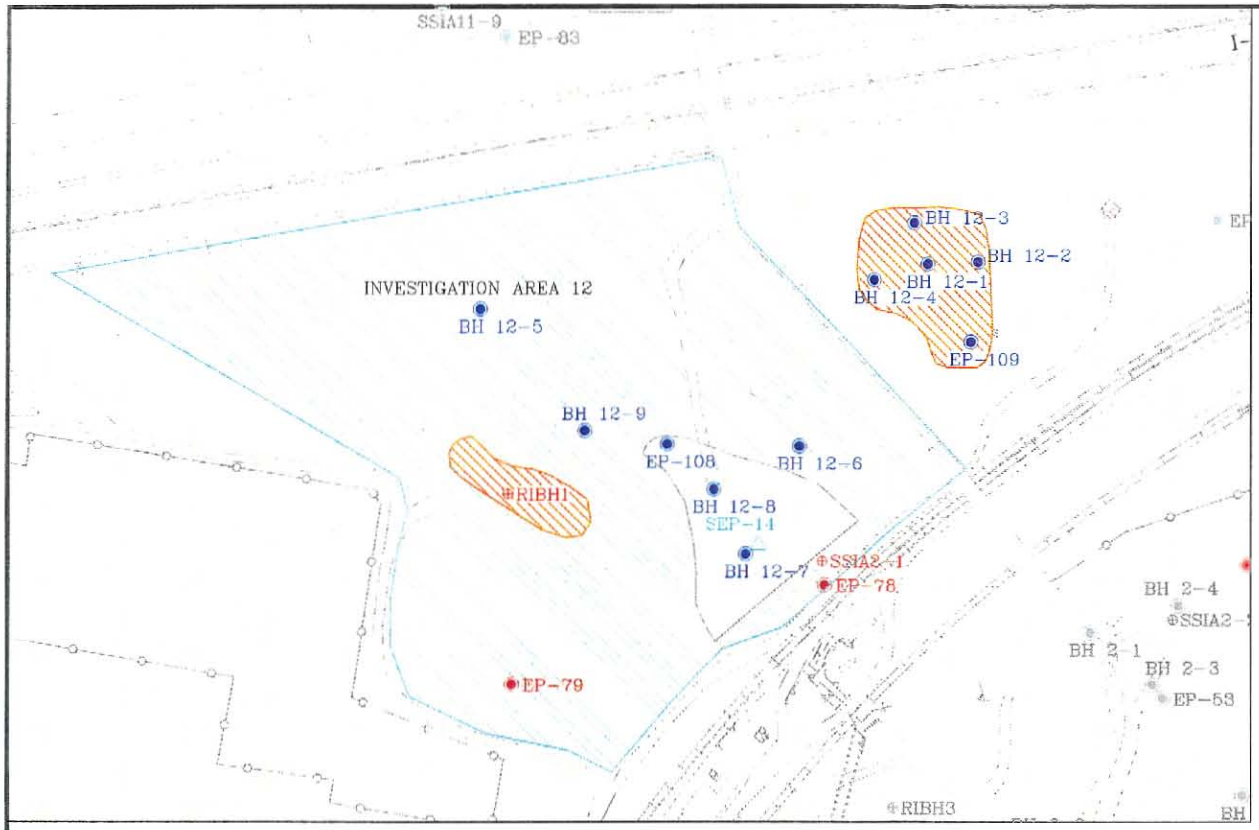
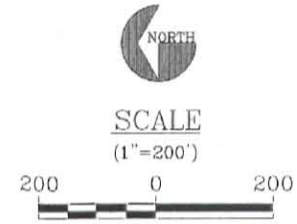
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-78 PHASE I RI MONITOR WELL LOCATION
- SSIA12-1 PHASE I RI BORING LOCATION
- BH 12-1 PHASE II RI BORING LOCATION
- EP-108 PHASE II RI MONITOR WELL LOCATION
- SEP-14 SURFACE WATER MONITORING LOCATION

IA-12 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
Slag Storage Area	0	0	0	774,204
Area Around RIBH1	6,794	18,345	0	0
Pond Sediment Storage Area	8,805	47,548	0	0
Total	15,599	65,893	0	774,204

NOTES:

1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT FIELD INVESTIGATIONS.
2. SLAG UNDERLIES THE AREA WITH THICKNESSES RANGING FROM 2 TO 33 FEET.

ASARCO INCORPORATED
EL PASO COPPER SMELTER
PHASE II REMEDIAL INVESTIGATION
EL PASO, TEXAS

INVESTIGATION AREA 12
(EPHEMERAL POND AND POND SEDIMENT STORAGE AREA)

FIGURE
3-10

UPDATE TIME: 3:00
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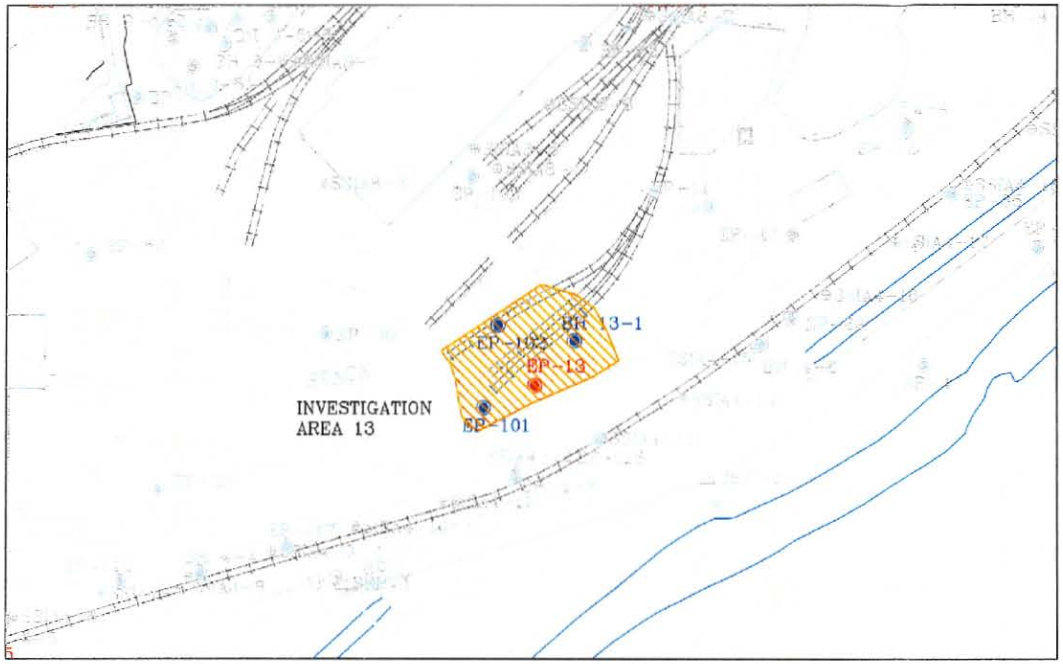
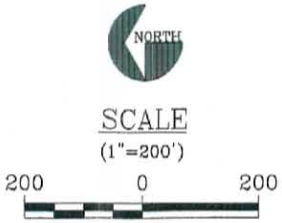
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EP-13 PHASE I RI MONITOR WELL LOCATION
- BH 13-1 PHASE II RI BORING LOCATION
- EP-101 PHASE II RI MONITOR WELL LOCATION

IA-13 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
IA-13	7,673	42,515	0	0
Total	7,673	42,515	0	0

NOTES:
1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. SLAG UNDERLIES PORTIONS OF AREA AT DEPTH.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 13 (SAMPLE MILL AREA)	FIGURE 3-11

UPDATE TIME: 3:00
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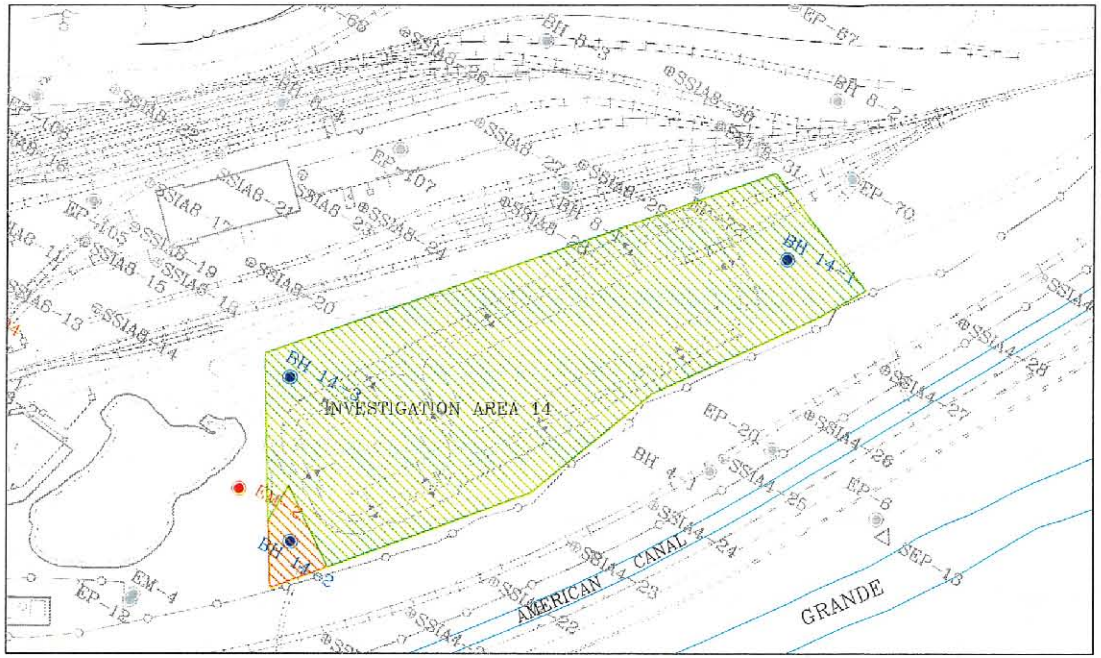
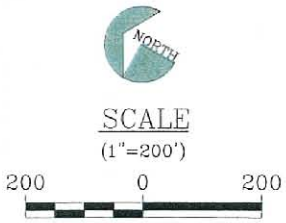
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)
- EM-2 PHASE I RI MONITOR WELL LOCATION
- BH 14-1 PHASE II RI BORING LOCATION

IA-14 SUMMARY				
Area	CAT. 1 (cy) Volume	CAT. 1 (sf) Area	CAT. 2 (sf) Area	CAT. 3 (sf) Area
Area Around Storm Water Pond	0	0	317,888	0
Area Around BH 14-2	732	9,877	0	0
Sub-Total	732	9,877	317,888	0

MAJORITY OF CATEGORY II AREA HAS BEEN CAPPED

NOTES:

1. EXACT DISTRIBUTION OF REMEDIAL MATERIAL CATEGORIES TO BE EVALUATED DURING SUBSEQUENT INVESTIGATIONS.
2. RECENT SURFACE IMPROVEMENTS (POND, ROADS, ETC.) FUNCTION AS CAP FOR CATEGORY II MATERIALS.
3. SLAG UNDERLIES PORTIONS OF AREA AT DEPTH.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 14 (SOUTH TERRACE AREA)	FIGURE 3-12

UPDATE TIME: 3:00
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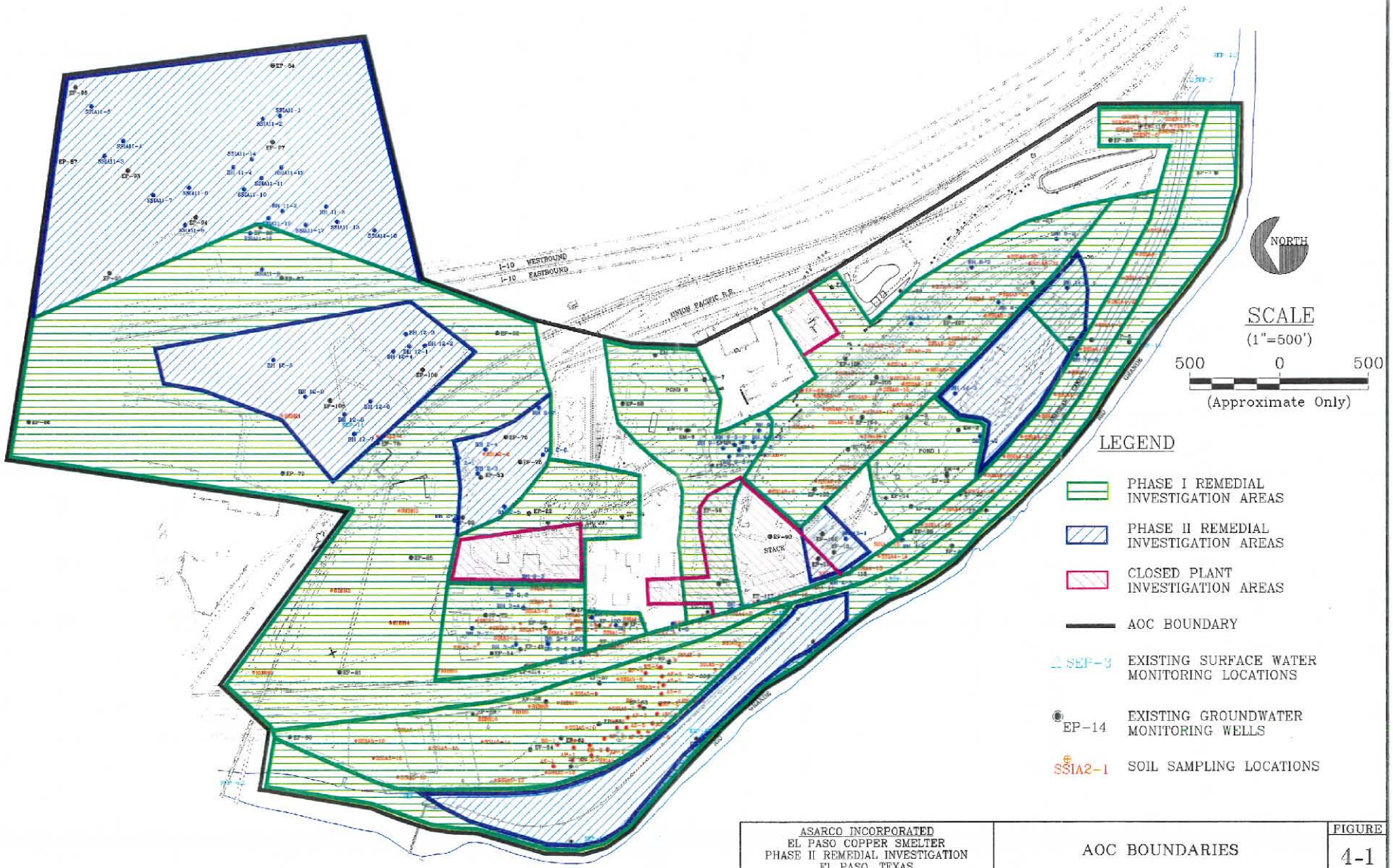
Hydrometrics Inc.



ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	AOC BOUNDARIES	FIGURE 4-1

UPDATE TIME: 3:00
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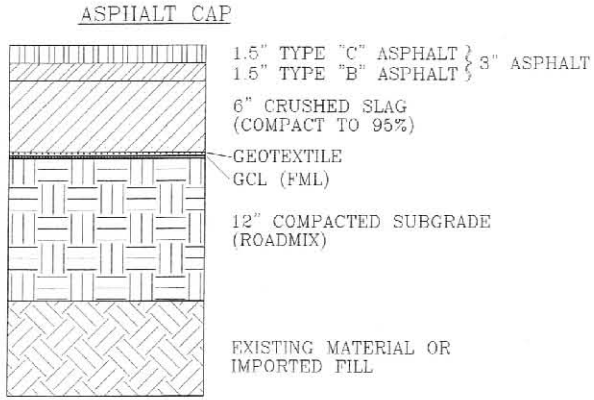
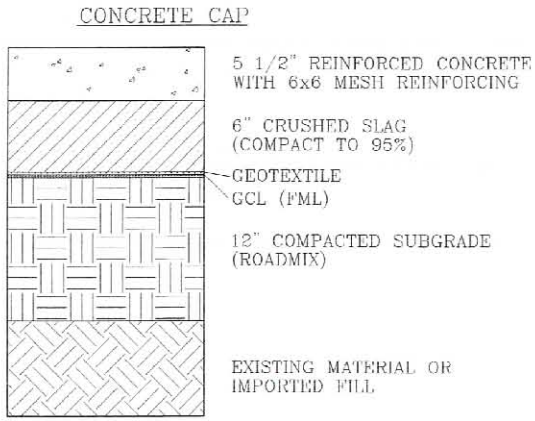
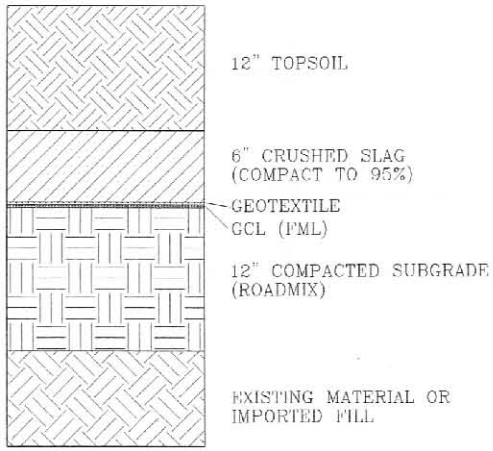
Hydrometrics, Inc.



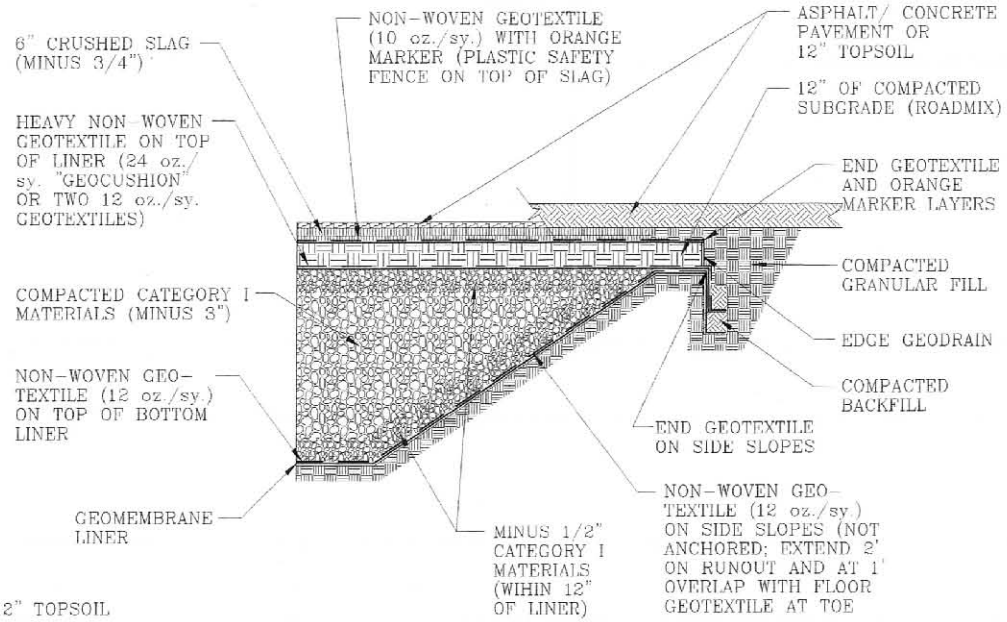




TYPICAL CAP SECTION

SCALE:N.T.S.

NOTE: CAP VARIES PER REPOSITORY



TYPICAL REPOSITORY LINER SECTION

SCALE:N.T.S.

NOTE: CAP VARIES PER REPOSITORY

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	TYPICAL CAP DETAILS	FIGURE 4-2

UPDATE TIME: 3:00
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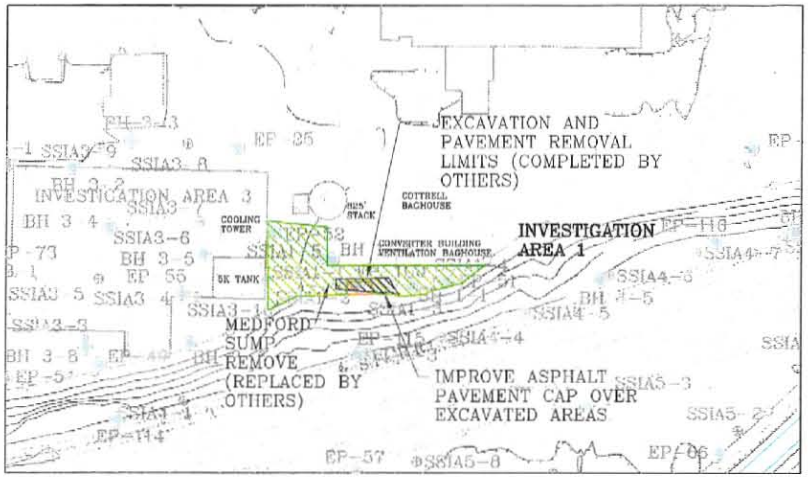
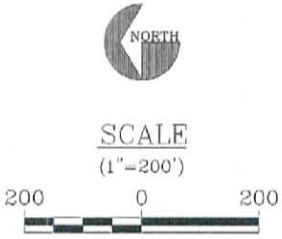
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

CONVERTER BUILDING/BAGHOUSE AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. ENGINEERING CONTROLS TO REDUCE OR ELIMINATE THE OCCURRENCE OF RELEASES FROM THE PLANT PROCESSES.
2. IMPROVE ASPHALT PAVEMENT CAP OVER EXCAVATED AREAS.

b) CORRECTIVE ACTION MEASURES COMPLETED IN 1999:

1. EXCAVATION OF CATEGORY I MATERIALS.
2. DISPOSAL OF CATEGORY I MATERIALS AT AN OFF-SITE HAZARDOUS WASTE LANDFILL.
3. DEMOLISH AND REPLACE MEDFORD SUMP.
4. BACKFILL EXCAVATED AREAS WITH CRUSHED COPPER SLAG.
5. GRADE AREA TO IMPROVE SURFACE DRAINAGE.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 1 (CONVERTER BUILDING/BAGHOUSE AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-3

UPDATE TIME: 3:00
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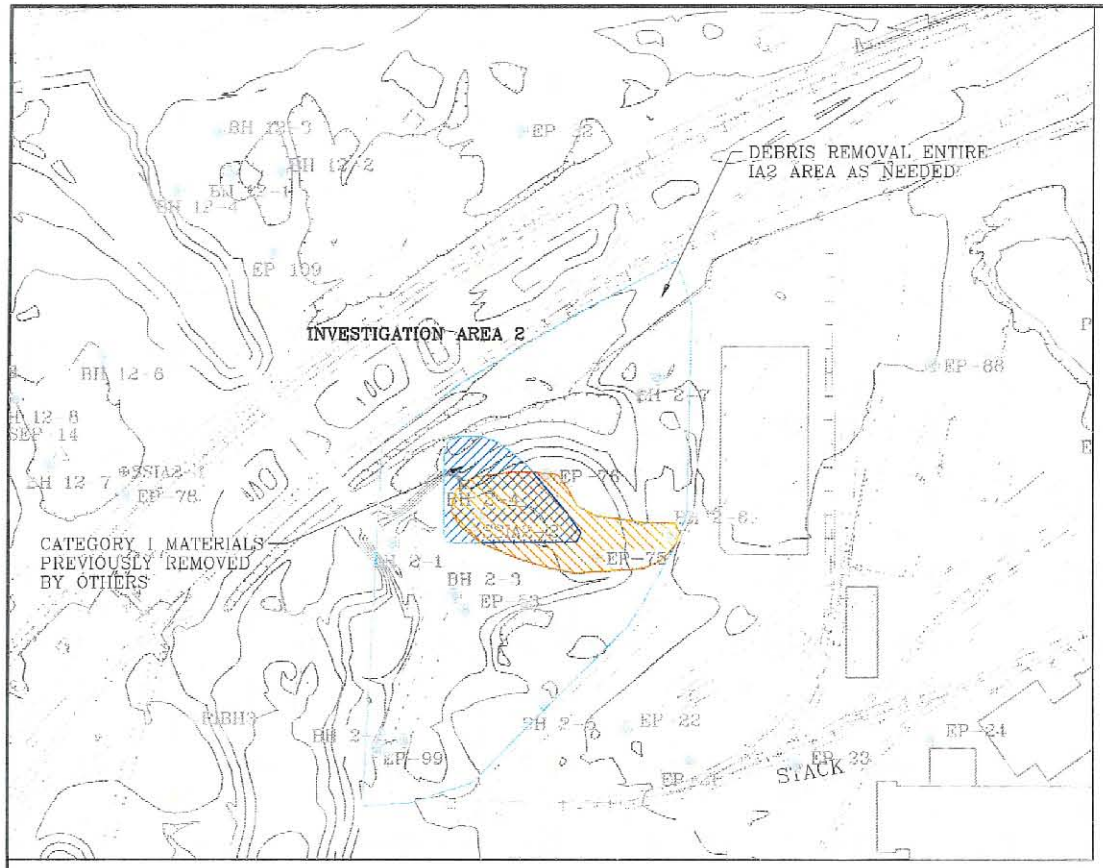
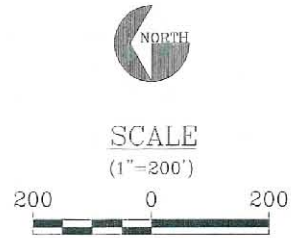
Hydrometrics Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

BONE YARD/SLAG AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. SURFACE DRAINAGE IMPROVEMENTS (SITE GRADING).
2. OPERATIONAL CHANGES TO ELIMINATE DUMPING OF DEBRIS IN THIS AREA.
3. FURTHER DELINEATE CATEGORY I MATERIALS.

b) CORRECTIVE ACTION MEASURES COMPLETED SUBSEQUENT TO THE PHASE I RI REPORT:

1. DEBRIS CLEANUP
2. EXCAVATION OF CATEGORY I MATERIALS AROUND BH 2-4
3. DISPOSAL OF CATEGORY I MATERIALS IN OFFSITE HAZARDOUS WASTE LANDFILL.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 2 (BONE YARD/SLAG AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-4

UPDATE TIME: 3:00
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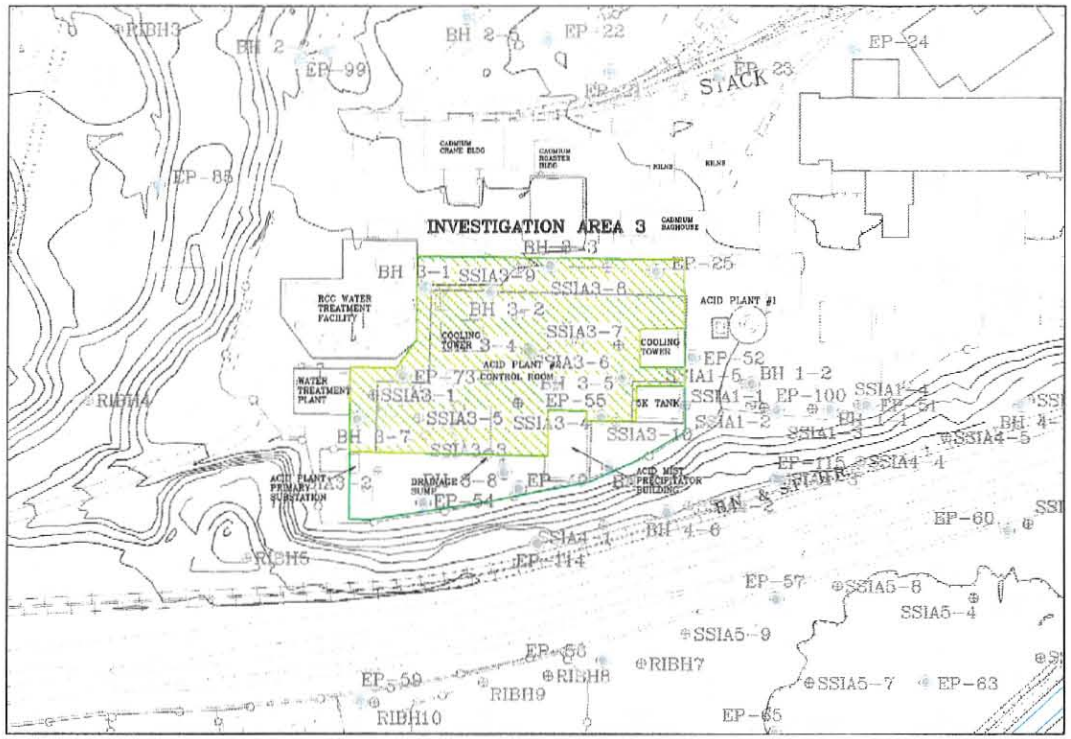
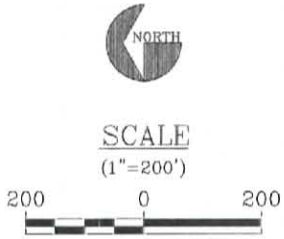
Hydrometrics, Inc.





LEGEND

- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

ACID PLANTS 1 AND 2 AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. ENGINEERING CONTROLS TO REDUCE OR ELIMINATE THE OCCURRENCE OF RELEASES FROM THE ACID PLANTS.
2. LINE AND RESURFACE THE FLOOR OF ACID PLANT MIST PRECIPITATOR BUILDING AND CONSTRUCT PERIMETER SILL FOR SECONDARY CONTAIMENT
3. CONSTRUCT LINED SECONDARY CONTAINMENT AROUND ACID PLANTS.
4. IMPROVE ASPHALT PAVEMENT CAP OVER DESIGNATED AREAS

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 3 (ACID PLANTS 1 AND 2 AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-5

UPDATE TIME: 3:00
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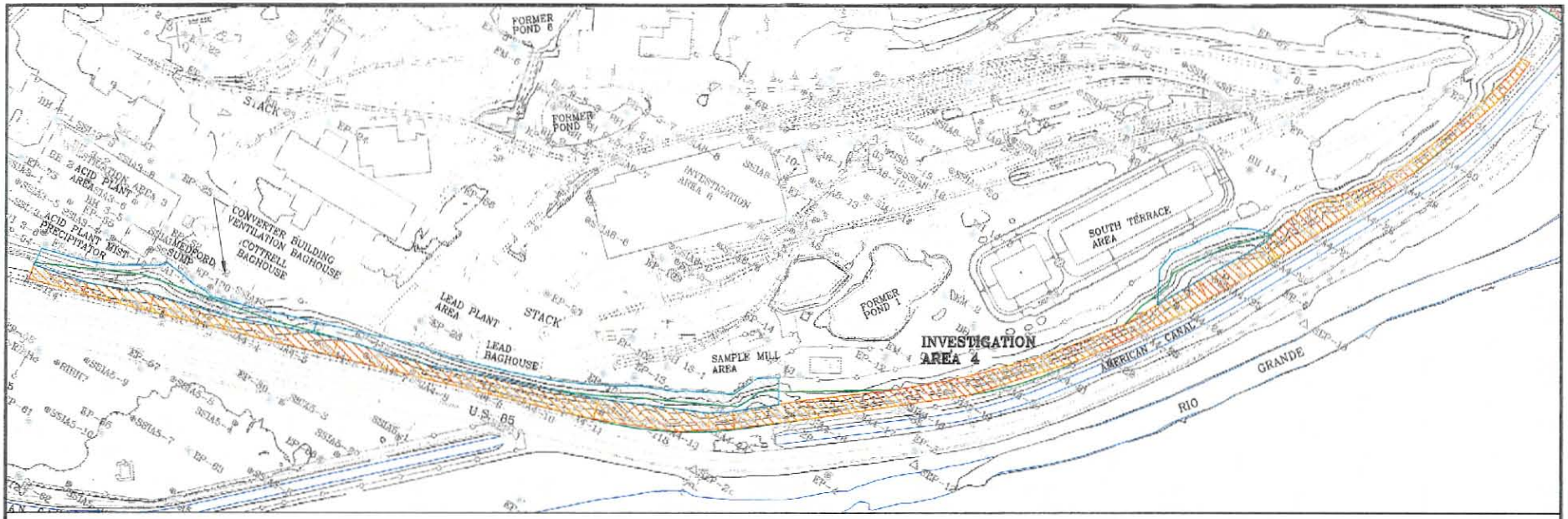
Hydromatrix, Inc.



LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

NORTH

SCALE
(1"=300')
300 0 300

FRONT SLOPE/WESTERN FACILITY AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. DEBRIS CLEANUP
2. EXCAVATION OF CATEGORY I MATERIALS.
3. BACKFILL EXCAVATED AREAS WITH CLEAN SOIL.
4. DISPOSAL OF CATEGORY I MATERIALS IN ON-SITE REPOSITORIES.
5. CAP ALL AREAS WITH ASPHALT OR GRAVEL.
6. IMPROVE SLOPE AREAS.
7. CONSTRUCT DRAINAGE COLLECTION SYSTEM.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 4 (FRONT SLOPE/WESTERN FACILITY AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-6

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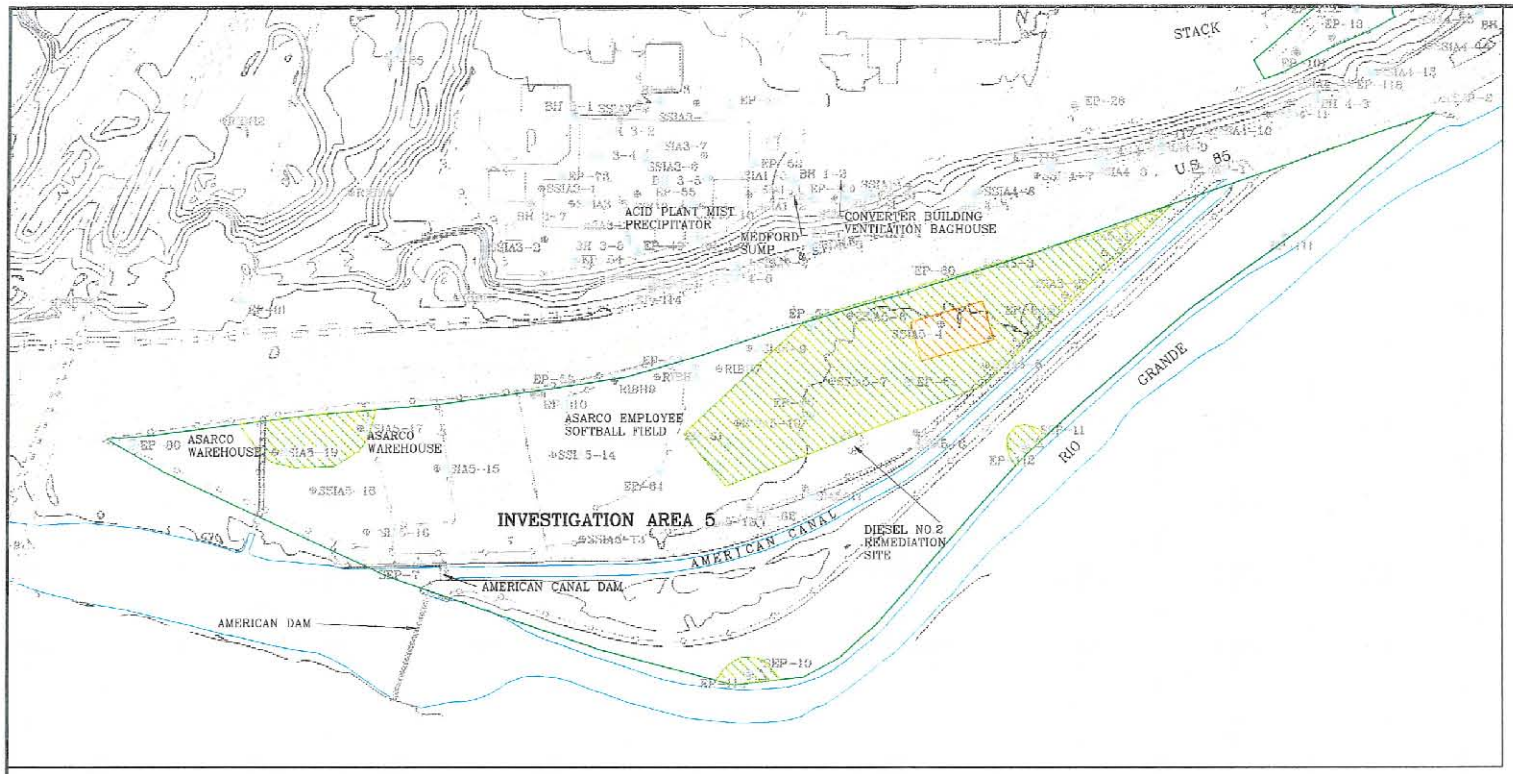
Hydrometrics, Inc.



NORTH

SCALE
(1"=300')
300 0 300

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

HISTORIC SMELTERTOWN AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. EXCAVATE SOILS CATEGORY I MATERIALS.
2. DEEP TILL CATEGORY II SOILS WITH ELEVATED METAL CONCENTRATIONS (12").
3. DISPOSAL OF CATEGORY I MATERIALS IN ONSITE REPOSITORIES.
4. STABILIZE INVESTIGATION AREA 5 SOILS WITH NATIVE VEGETATION.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 5 (HISTORIC SMELTERTOWN AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-7

UPDATE TIME: 3:00
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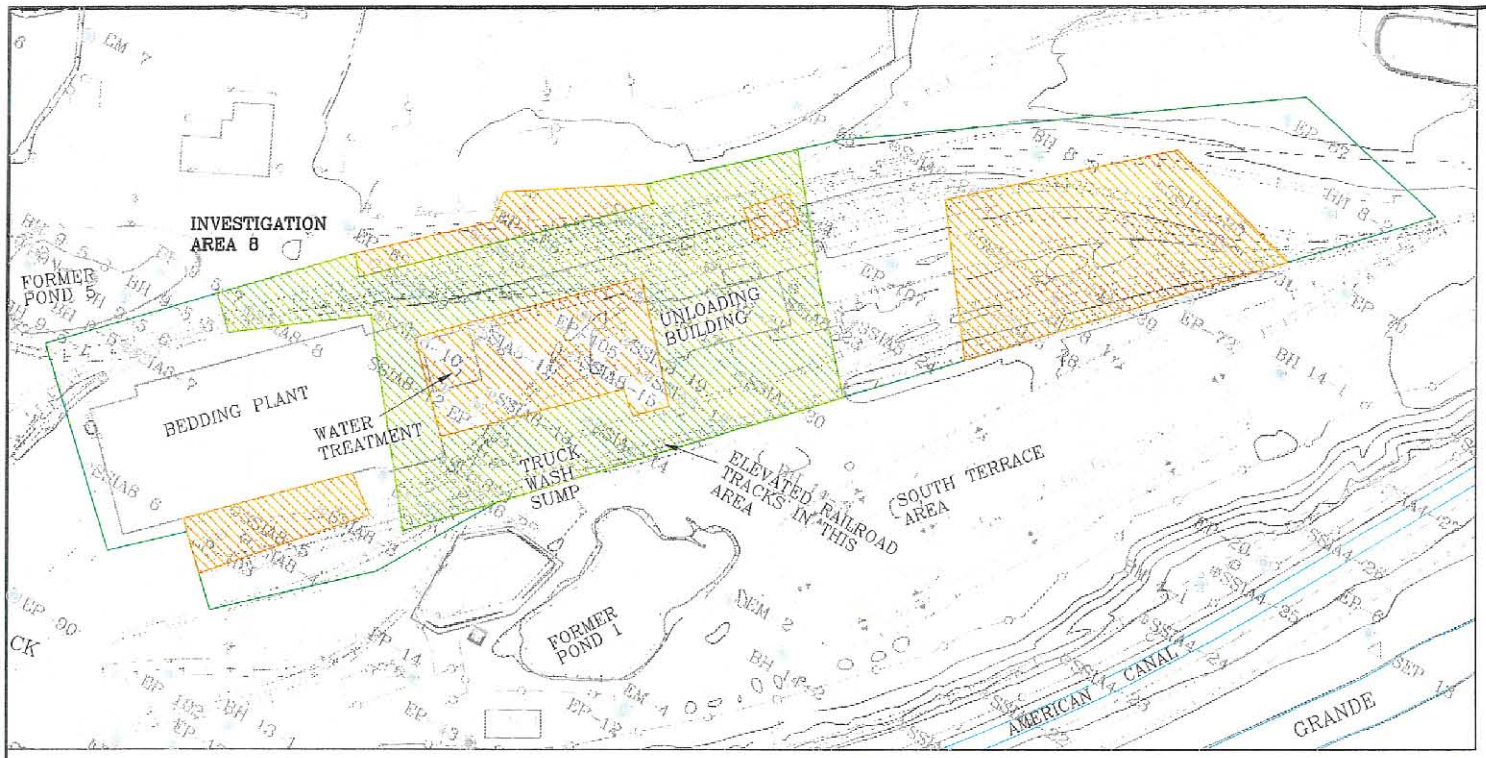
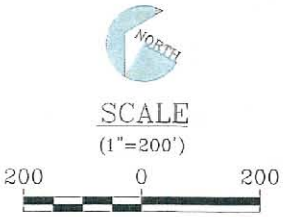
Hydrometrics, Inc.





BEDDING AND UNLOADING BUILDING AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. REMOVE RAILROAD TRACKS
2. CONSTRUCT CONCRETE SLAB (CAP) TO REPLACE BALLAST.
3. CONSTRUCT ASPHALT/FML CAP FOR OTHER CATEGORY I AND CATEGORY II AREAS.
4. CONSTRUCT DRAINAGE CONTROL FEATURES (DRAINAGE COLLECTION SYSTEM)
5. MATERIALS EXCAVATED (i.e. OLD BALLAST) AS PART OF CAP CONSTRUCTION WILL BE PLACED UNDER THE CAP.
6. EXCAVATION AND DISPOSAL OF CATEGORY I MATERIALS IN ONSITE REPOSITORIES.
7. REPLACE RAILROAD TRACKS.

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 8 (BEDDING AND UNLOADING BUILDING AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-8

UPDATE TIME: 3:00
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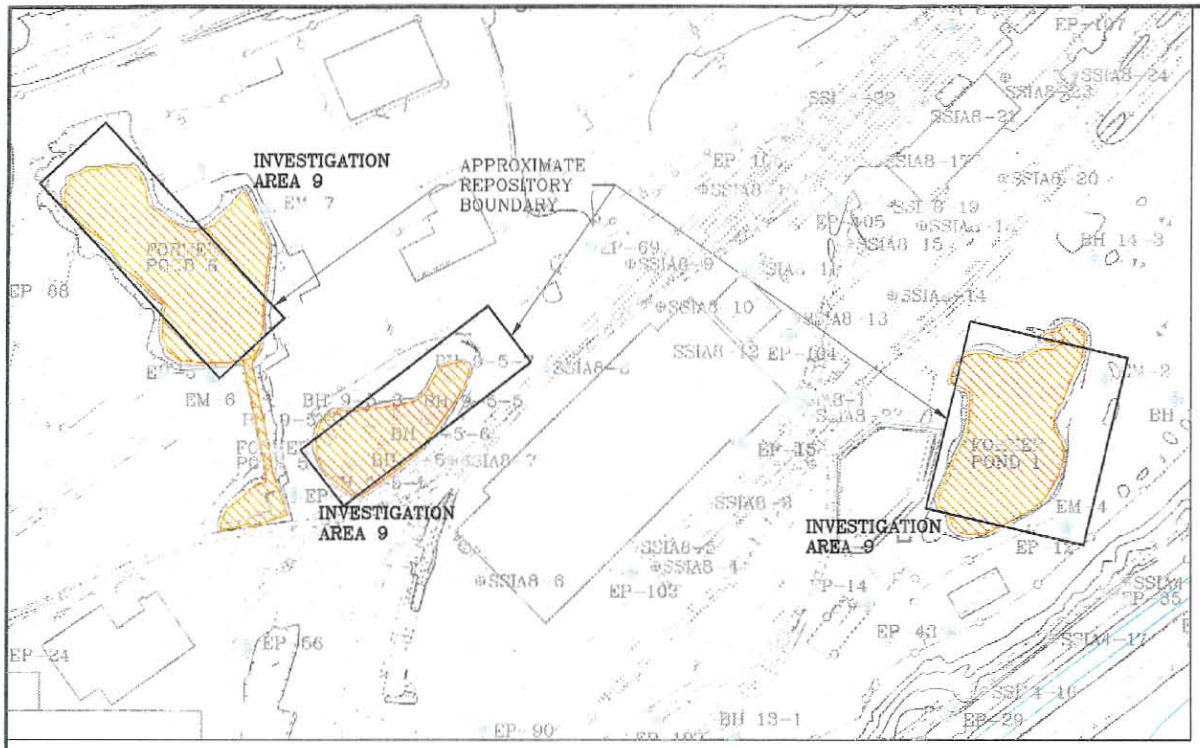
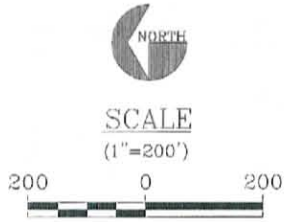
Hydrometrics, Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

PONDS 1,5 AND 6 NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. EXCAVATION OF CATEGORY I MATERIALS (EXISTING SEDIMENTS).
2. RECOVER COPPER IN SEDIMENTS FROM PONDS 5 AND 6 BY RECYCLING THROUGH THE SMELTER.
3. IF POSSIBLE, DEWATER SEDIMENTS (SURFACE DRYING METHOD).
4. RESHAPE PONDS FOR REPOSITORY CONFIGURATION.
5. CONSTRUCT REPOSITORY IN DEPRESSIONAL AREAS WITH TOP AND BOTTOM LINERS.
6. PLACE AND COMPACT DRIED POND SEDIMENTS IN ONSITE REPOSITORIES.
7. CREATE PAVED PARKING/STAGING AREA OR GREEN SPACES ON SURFACE OF CLOSED REPOSITORIES.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 9 (PONDS 1, 5 AND 6) CORRECTIVE ACTION MEASURES	FIGURE 4-9

UPDATE TIME: 3:00
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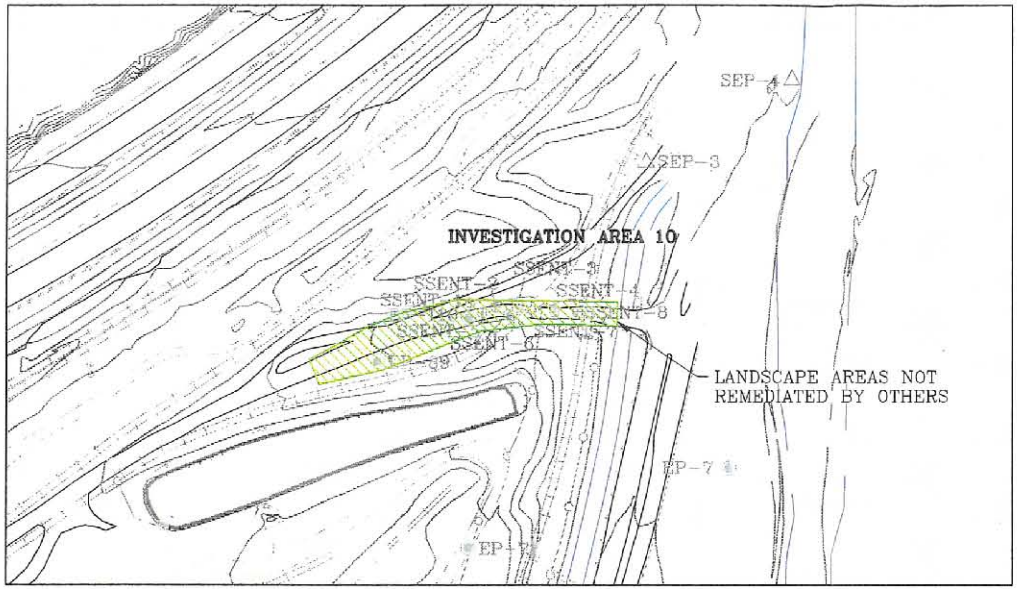
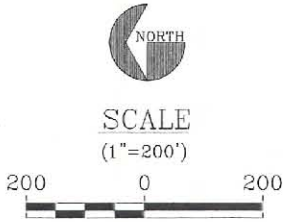
Hydrometrics Inc.





LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

FACILITY ENTRANCE AREA NOTES:

a) CORRECTIVE ACTION MEASURES COMPLETED:

1. REBUILD THE FIRST 200 FEET OF THE PLANT ENTRANCE ROAD.
2. DEMOLISH AND REPLACE EXISTING SUMP.
3. REGRADE AREA TO DIVERT WATER AWAY FROM THE AMERICAN CANAL AND TO THE NEW SUMPS.
4. LANDSCAPE (XERISCAPE) REGRADED AREAS WITH GRAVEL AND NATIVE VEGETATION.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 10 (FACILITY ENTRANCE AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-10

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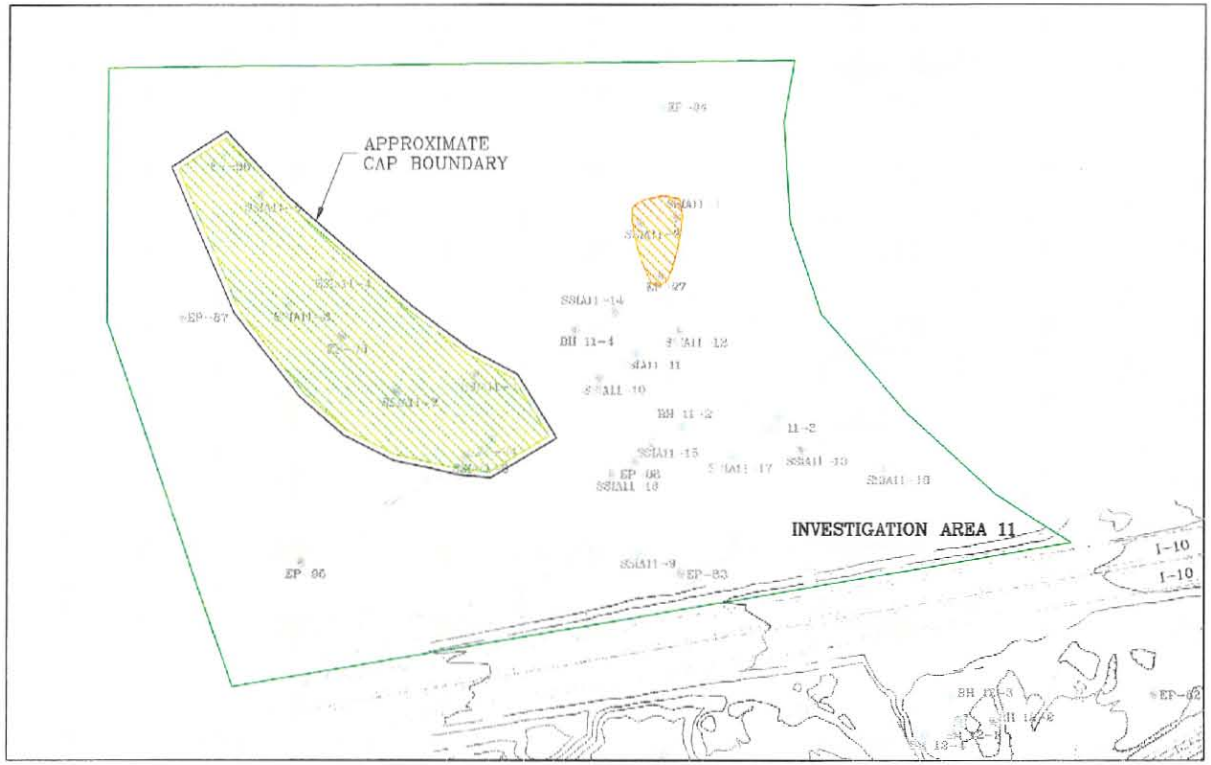

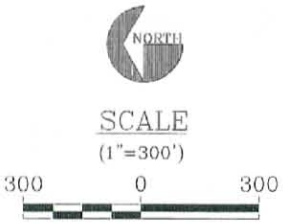

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

ARROYOS EAST OF I-10 AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. DEBRIS CLEANUP.
2. EXCAVATION OF CATEGORY I MATERIALS.
3. GRADE TO BLEND WITH EXISTING TOPOGRAPHY.
4. DISPOSAL OF CATEGORY I MATERIALS IN ONSITE REPOSITORIES.
5. CAP CATEGORY II MATERIALS.
6. CONSTRUCT DRAINAGE CONTROLS.
7. STABILIZE DISTURBED AREAS WITH VEGETATION.
8. INSTITUTIONAL CONTROLS FOR CATEGORY II (FENCING).
9. ADDITIONAL INVESTIGATION REQUIRED TO FURTHER EVALUATE SOUTHERN ARROYO AREA SOILS AND GROUNDWATER.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 11 (ARROYOS EAST OF I-10) CORRECTIVE ACTION MEASURES	FIGURE 4-11

UPDATE TIME: 3:00
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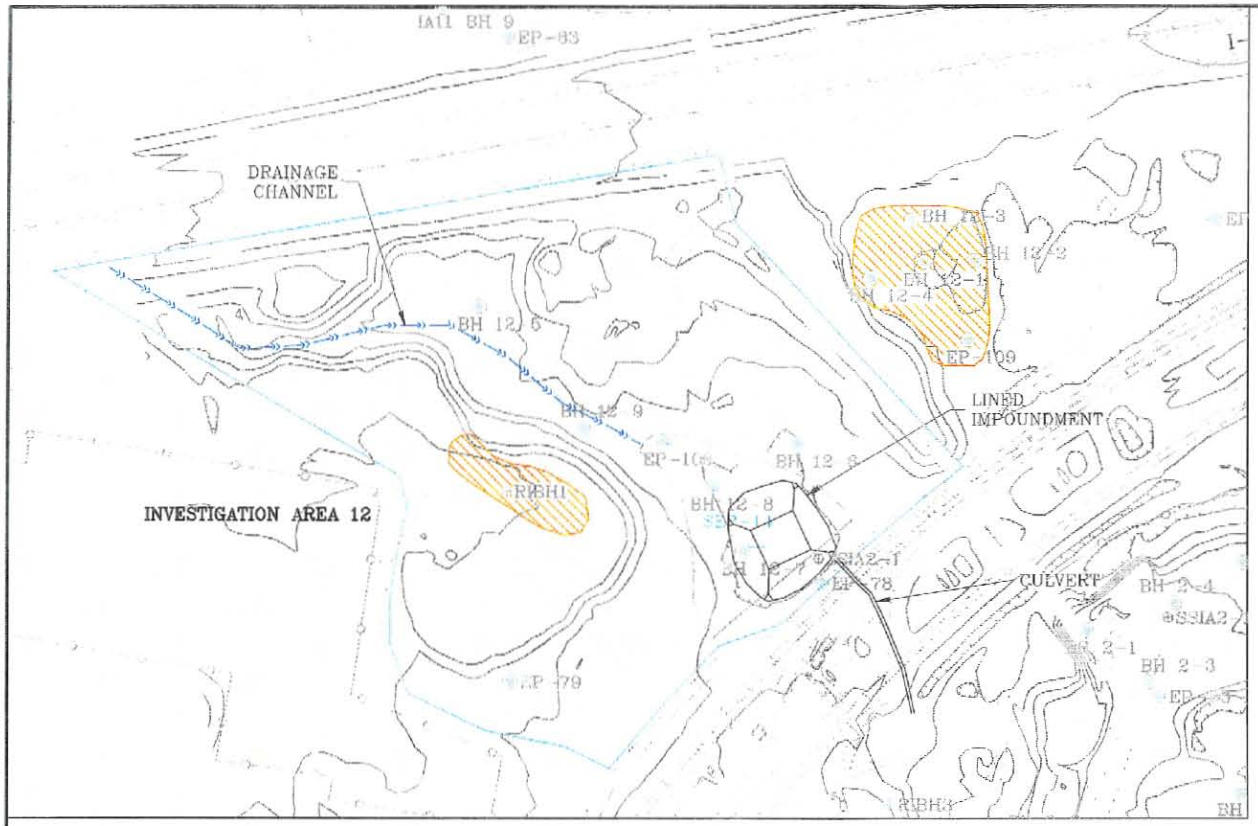

EPHEMERAL POND AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING.

1. EXCAVATION OF CATEGORY I MATERIALS.
2. GRADE TO BLEND WITH EXISTING TOPOGRAPHY.
3. DISPOSAL OF CATEGORY I MATERIALS IN ONSITE REPOSITORIES.
4. DRAINAGE IMPROVEMENTS, CONSTRUCT NEW DRAINAGE CHANNEL AND CULVERTS, AS NEEDED.
5. CONSTRUCT LINED STORM WATER IMPOUNDMENT.
6. ADDITIONAL INVESTIGATION REQUIRED TO FURTHER EVALUATE SOUTHERN ARROYO AREA SOILS AND GROUNDWATER.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 12 (EPHEMERIAL POND AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-12

UPDATE TIME: 3:00
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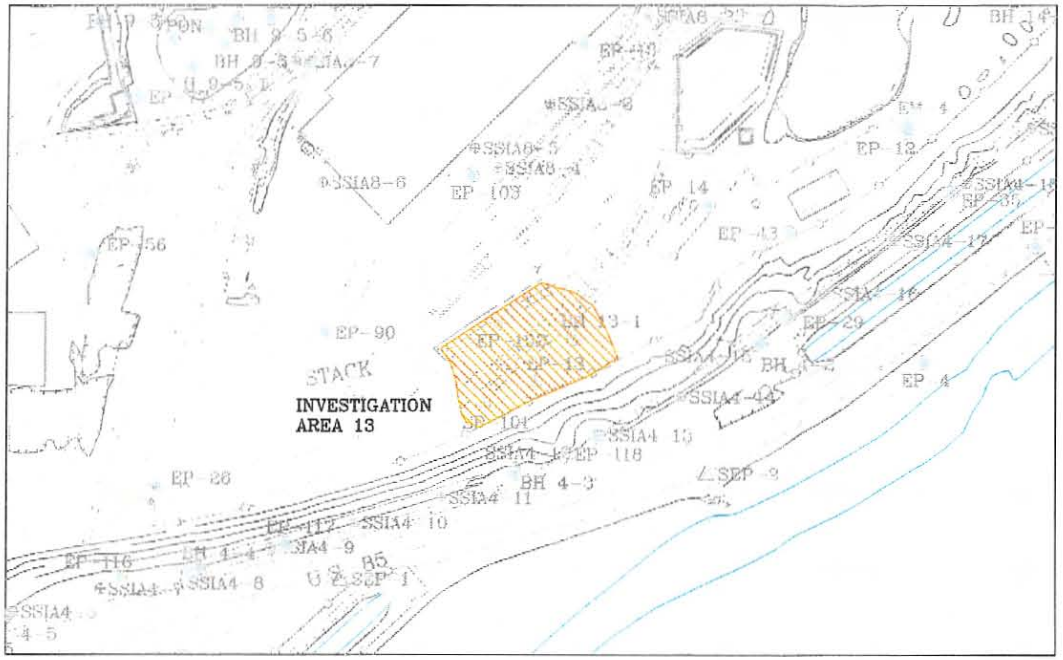

NORTH

SCALE
(1"=200')
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LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

SAMPLE MILL AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. REMOVE RAILROAD TRACKS.
2. EXCAVATION OF CATEGORY I MATERIALS.
3. BACKFILL EXCAVATED AREAS WITH CLEAN SOIL.
4. DISPOSAL OF CATEGORY I MATERIALS IN ONSITE REPOSITORIES.
5. CAP REPLACEMENT SOIL AREA WITH ASPHALT/FML CAP.
6. CONSTRUCT CONCRETE SLAB (CAP) TO REPLACE BALLAST.
7. REPLACE RAILROAD TRACKS IF NECESSARY.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 13 (SAMPLE MILL AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-13

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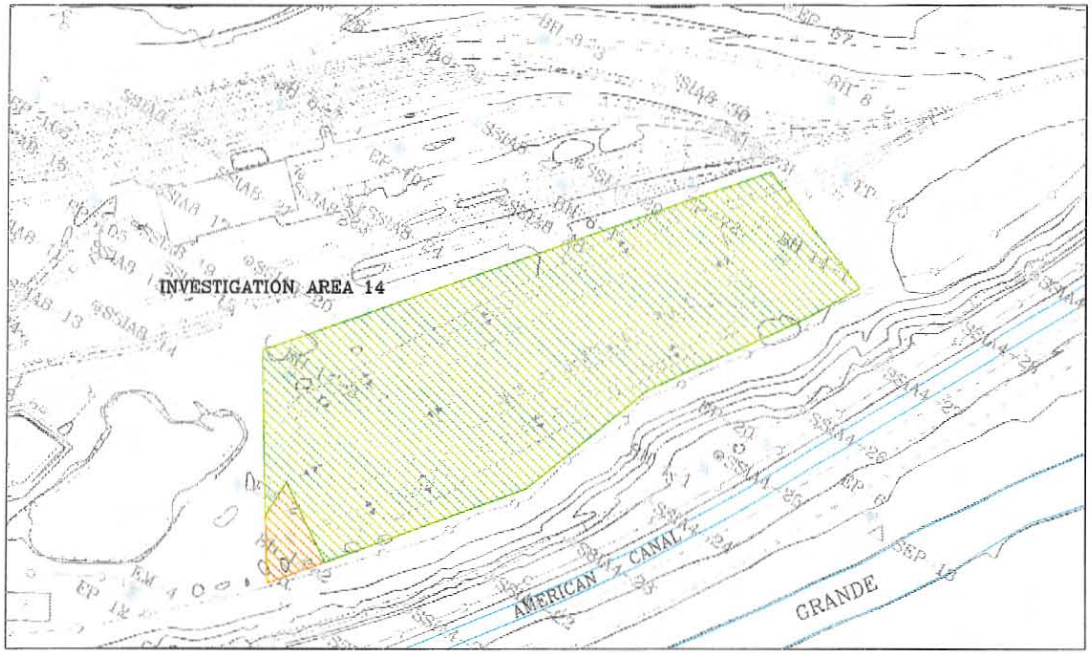

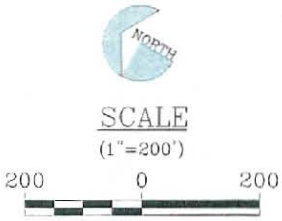

LEGEND

- CATEGORY I MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY II MATERIAL LOCATION (APPROXIMATE LIMITS)
- CATEGORY III MATERIAL LOCATION (APPROXIMATE LIMITS)

SOUTH TERRACE AREA NOTES:

a) CORRECTIVE ACTION MEASURES CONSIST OF THE FOLLOWING:

1. EXCAVATION OF CATEGORY I MATERIALS.
2. BACKFILL EXCAVATED AREAS WITH SUITABLE SOIL.
3. DISPOSAL OF CATEGORY I MATERIALS IN ONSITE REPOSITORIES
4. CAP EXCAVATED SOIL AREA WITH ASPHALT OR GRAVEL.

b) CORRECTIVE ACTION MEASURES COMPLETED:

1. CONSTRUCTION OF A STORM WATER POND AND ASSOCIATED DRAINAGE CONTROLS.
2. ROADWAY IMPROVEMENTS.

ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	INVESTIGATION AREA 14 (SOUTH TERRACE AREA) CORRECTIVE ACTION MEASURES	FIGURE 4-14

UPDATE TIME: 3:00
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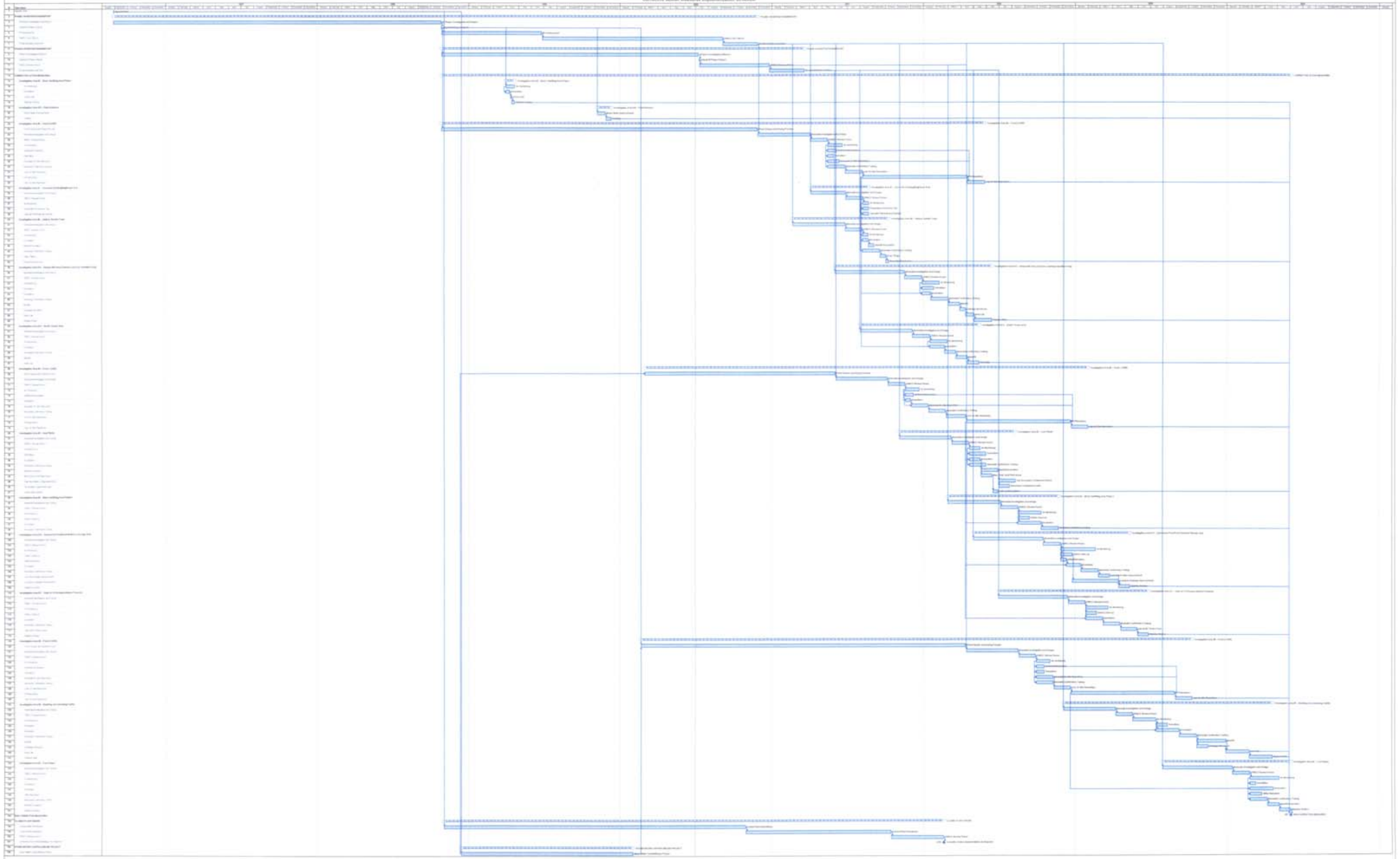
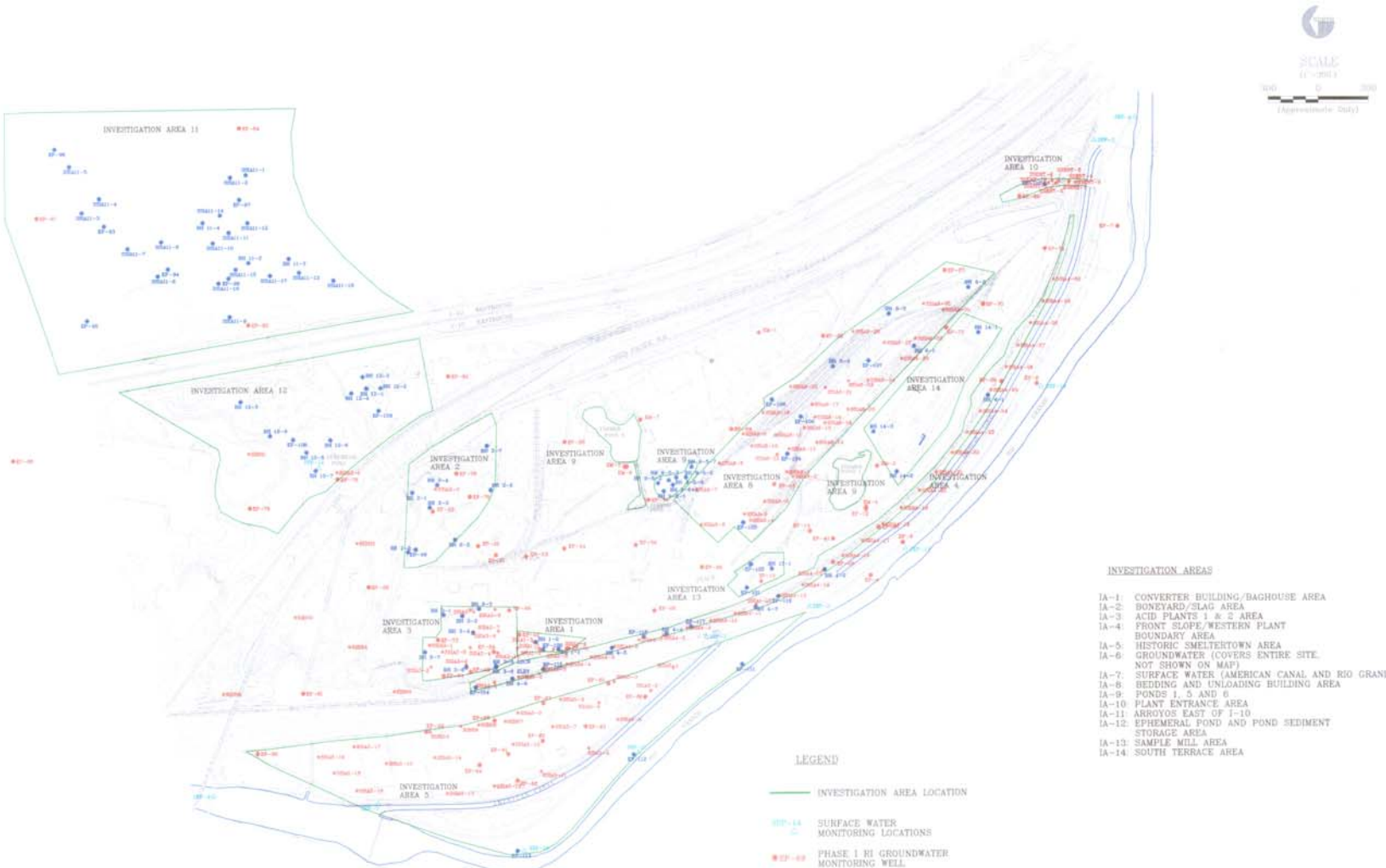
EXHIBITS

ASARCO INCORPORATED
EL PASO PLANT, EL PASO TEXAS
Corrective Action Measures Implementation Schedule





INVESTIGATION AREAS

IA-1: CONVERTER BUILDING/BAGHOUSE AREA
IA-2: BONEYARD/SLAG AREA
IA-3: ACID PLANTS 1 & 2 AREA
IA-4: FRONT SLOPE/WESTERN PLANT BOUNDARY AREA
IA-5: HISTORIC SMELTERTOWN AREA
IA-6: GROUNDWATER (COVERS ENTIRE SITE, NOT SHOWN ON MAP)
IA-7: SURFACE WATER (AMERICAN CANAL AND RIO GRANDE)
IA-8: BEDDING AND UNLOADING BUILDING AREA
IA-9: PONDS 1, 5 AND 6
IA-10: PLANT ENTRANCE AREA
IA-11: ARROYOS EAST OF I-10
IA-12: EPHEMERAL POND AND POND SEDIMENT STORAGE AREA
IA-13: SAMPLE MILL AREA
IA-14: SOUTH TERRACE AREA

LEGEND

INVESTIGATION AREA LOCATION

SURFACE WATER MONITORING LOCATIONS

PHASE I RI GROUNDWATER MONITORING WELL

PHASE I RI SOIL SAMPLING LOCATION

PHASE I RI BORE HOLE LOCATION

SSIA11-11 PHASE II RI SOIL SAMPLING LOCATIONS

BH 12-7 PHASE II RI BORE HOLE LOCATIONS

EP-94 PHASE II RI GROUNDWATER MONITORING WELL

SCALE VERIFICATION BAR IS ONE INCH ON ORIGINAL DRAWING 0 1 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	Hydrometrics, Inc. ® consulting scientists, engineers and contractors Tucson, Arizona 85741 2275 w ina suite 205 (520) 544-0180	ASARCO INCORPORATED EL PASO COPPER SMELTER PHASE II REMEDIAL INVESTIGATION EL PASO, TEXAS	FACILITY SITE PLAN SHOWING PHASE II REMEDIAL INVESTIGATION AREAS	DRAWING FILE NUMBER tuc 1035v201u043 AUTOCAD REL. 14 DRAWING (DWG) EXHIBIT 1