ARCADIS Design & Consultancy for natural and built assets

Ms. Eleanor Wehner, P.G.
Texas Commission on Environmental Quality
Remediation Division
VCP-CA Section, Mail Code MC-127
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Austin, Texas 78753

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ENVIRONMENT

Subject:

Request to Plug & Abandon Monitoring Wells
Texas Custodial Trust
Former ASARCO Smelter Site, El Paso, Texas
TCEQ SWR No. 31235; EPA ID No. TXD990757668;
Customer No. CN603597782; Regulated Entity No. RN100219021

Date:
January 21, 2016

Contact:
Scott Brown

Phone:
602.797.4536

Email:
scott.Brown@arcadis.com

Our ref:
06835001.2014

Dear Ms. Wehner:

Arcadis, Inc. (Arcadis) is pleased to submit this letter requesting approval to plug and abandon (P&A) groundwater monitoring wells at various locations across the Former ASARCO Smelter in El Paso, Texas (the Site). Arcadis is conducting this work on behalf of the Texas Custodial Trust (Trust). The Texas Commission on Environmental Quality (TCEQ) previously approved Arcadis' request to P&A groundwater monitoring wells on the plant site in a letter dated June 2, 2015. The purpose of this submittal is to obtain agency concurrence with our proposed actions to plug and abandon the remaining monitoring wells on the former smelter site that are not part of the Remedial Action Plan (RAP) monitoring program submitted on October 28, 2015.

Arcadis has conducted an evaluation of concentration and water level trends in these monitoring wells and has evaluated them with respect to the closure goals proposed in the RAP. The goal of the monitoring program for the RAP is to demonstrate that the response actions have effectively mitigated potential exposures to constituents of concern (COCs) in soil and groundwater above their respective PCLs. Arcadis has selected a network of monitoring wells within each assessment area that address these needs. A list of these monitoring wells, their location, monitoring requirement, and data collection type is included in Table 1.

The objectives of the RAP monitoring plan are to:

1. Demonstrate waste control units (WCUs) do not adversely impact groundwater quality.
2. Demonstrate performance of low-permeability soil covers and asphalt covers to prevent direct contact and control storm water infiltration and future leaching of COCs to groundwater.
3. Monitor groundwater compliance at alternative points of exposure (POEs) wells based on the plume management zone (PMZ).
4. Monitor groundwater elevations at attenuation monitoring wells for demonstration of achieving remedial goal at alternative POEs.
5. Monitor performance of permeable reactive barriers (PRBs).

Arcadis is requesting the approval to abandon monitoring wells that are not part of the RAP monitoring program. The monitoring wells that are proposed to be P&Aed are included in Table 2 and shown on Figures 1 and 2. A status summary for each proposed well is included in Table 2. The table summarizes the dates of most recent sampling event and arsenic concentrations reported for each of the monitoring wells recommended for P&A. Arsenic is the COC that defines the PCL Exclusion Zone in groundwater at the Site and represents the most significant COC mass. As a result, arsenic represents the most appropriate COC for evaluation of the utility for a monitoring well.

Arcadis will abandon the monitoring wells in accordance with the Texas Administrative Codes Chapter 76. However, Arcadis will request a variance from the Texas Department of Licensing and Regulation (TDLR) as discussed in 76.109, to not attempt to pull the well casing out of the ground as this may result in ineffective well bore sealing, which is an inadequate condition that is not consistent with our RAP objective to confidently eliminate all pathways to the subsurface. Therefore, Arcadis will be requesting to plug the full depth of all existing casings with an approved bentonite plugging material. All other required abandonment procedures will be employed as noted in the regulations.

SCHEDULE

Upon TCEQ approval, these wells will be scheduled to be P&Aed.

If you have any questions regarding the proposed scope of work please feel free contact me at (602) 797-4536 or Bob Forsberg at (480) 905-9311

Sincerely,

Arcadis, Inc.

Scott M. Brown, PE
Vice President

Robert Forsberg, RG
Principal Geologist

Copies:

File

Enclosures:

Tables

1 Proposed Monitoring Well Network for Remedial Action Plan
2 P&A Well Locations

Figures

1 Sitewide P&A, Proposed Monitor Wells
2 Proposed P&A Monitor Wells in Parker Brothers Arroyo

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Table 1. Proposed Monitoring Well Network for Remedial Action Plan
Former ASARCO Smelter Site - El Paso, Texas

Assessment Area	Monitoring Well ID	Location	Monitoring Requirement	Data Collection
Flood Plain	EP-07	Flood Plain	Alternative POE for PMZ (South Terrace)	Analytical
	EP-06	Flood Plain	Alternative POE for PMZ (South Terrace)	Analytical
	EP-04	Flood Plain	Alternative POE for PMZ (Pond 1)	Analytical
	EP-128	Flood Plain	Alternative POE for PMZ (Pond 5/6; EP-13)	Analytical
	EP-133	Flood Plain	Alternative POE for PMZ (Pond 5/6; EP-117)	Analytical
	MW-132D	Flood Plain	Attenuation Monitoring for MNA	Analytical
	EP-58	Flood Plain	Attenuation Monitoring for MNA	Analytical
	EX-4	Flood Plain	Attenuation Monitoring for MNA	Analytical
	EP-64	Flood Plain	Attenuation Monitoring for MNA	Analytical
	EP-112	Flood Plain	POE well	Analytical
	MW-2	Flood Plain	POE well	Analytical
	MW-9S	Flood Plain	POE well	Analytical
	MW-11S	Flood Plain	POE well	Analytical
South Terrace	EP-67	South Terrace Arroyo AA	Up-gradient Well	Water elevation for gradient
	EP-71R	South Terrace Arroyo AA	Down-gradient Well	Water elevation for gradient
	EP-68	South Terrace Arroyo AA	Up-gradient Well	Water elevation for gradient
			Up-gradient Well for Plant Site Cover	Analytical
	EP-72R	South Terrace Arroyo AA	Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-20	South Terrace Arroyo AA	Attenuation Monitoring for PMZ	Water elevation for gradient
			Down-gradient Well for Cover Monitoring	Analytical
Pond 1 Arroyo	EP-68	Pond 1 Arroyo AA	Up-gradient Well	Water elevation for gradient
			Up-gradient Well for Plant Site Cover	Analytical
	New Well (No. 1)	Pond 1 Arroyo AA	Up-gradient Well for WCU (Cell 1 Landfill)	Analytical
			Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EX-8	Pond 1 Arroyo AA	Down-gradient Well for WCU (Cell 1 Landfill)	Analytical
			Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-35	Pond 1 Arroyo AA	Down-gradient Well for Cover Monitoring	Analytical
Pond 5/6 Arroyo	New Well (No. 2)	Pond 5/6 Arroyo AA	Up-gradient Well for WCU (Cells 2&3 Landfill)	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	MW-131	Pond 5/6 Arroyo AA	Down-gradient Well for WCU (Cells 2&3 Landfill)	Analytical
			Cover Monitoring Well	Analytical
	EP-13	Pond 5/6 Arroyo AA	Down-gradient Well	Water elevation for gradient
	EP-117	Pond 5/6 Arroyo AA	Down-gradient Well for Cover Monitoring	Analytical
	New Well (No. 5)	Pond 5/6 Arroyo AA	Attenuation Monitoring for PMZ	Water elevation for gradient
			Down-gradient Well	Analytical
Acid Plant Arroyo	New Well (No. 3)	Acid Plant Arroyo AA	Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-49	Acid Plant Arroyo AA	Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-51	Acid Plant Arroyo AA	Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-100	Acid Plant Arroyo AA	Cover Monitoring Well	Analytical
			Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-114	Acid Plant Arroyo AA	Attenuation Monitoring for PMZ	Water elevation for gradient
			Attenuation Monitoring for MNA	Analytical
East Property	EP-96	East Property, North Arroyo	Up-gradient Well for Category II Stock Pile	Analytical
	EP-94	East Property, North Arroyo	Up-gradient Well for Category II Stock Pile	Analytical
	New Well (No. 4)	East Property, North Arroyo	Cover Monitoring Well for Category II Stock Pile	Analytical
	EP-163	East Property, North Arroyo	GHB Pumping Well	Analytical
				Water elevation
	EP-95	East Property, North Arroyo	GHB Monitoring Well	Water elevation
	EP-164	East Property, North Arroyo	GHB Monitoring Well	Water elevation
	EP-120	PBA	Down-gradient Well for Category II Stock Pile	Analytical
	EP-162	East Property, South Arroyo	Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-129	East Property, South Arroyo	Up-gradient Well for Category II Stock Pile	Analytical

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Table 1. Proposed Monitoring Well Network for Remedial Action Plan
Former ASARCO Smelter Site - El Paso, Texas

Assessment Area	Monitoring Well ID	Location	Monitoring Requirement	Data Collection
Parker Brothers Arroyo	EP-82	PBA: Boneyard	Up-gradient Well for Plant Site Cover	Analytical
	EP-53	PBA: Boneyard	Cover Monitoring Well	Analytical
	EP-75	PBA: Boneyard	Cover Monitoring Well	Analytical
	EP-76	PBA: Boneyard	Cover Monitoring Well	Analytical
	EP-147	PBA: Boneyard	Down-gradient Well for Cover Monitoring	Analytical
		PBA: Lined Channel	Cover Monitoring Well	Analytical
		PRB	Down-gradient PRB 1	Analytical
	EP-149	PBA: Boneyard	Down-gradient Well for Cover Monitoring	Analytical
		PBA: Lined Channel	Cover Monitoring Well	Analytical
		PRB	Up-gradient PRB 2	Analytical
	EP-78	Lower PBA: Cell 4 Landfill	Up-gradient Well for WCU (Cell 4 Landfill)	Analytical
		Upper PBA: Fines Pile	Down-gradient Well for Fines Pile Cover	Analytical
		Lower PBA	Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-81	Lower PBA: Cell 4 Landfill	Down-gradient Well for WCU (Cell 4 Landfill)	Analytical
	EP-120	Upper PBA: Cell 4 Landfill	Up-gradient Well for Fines Pile Cover	Analytical
		PBA: Lined Channel	Attenuation Monitoring for PMZ	Water elevation for gradient
	EP-123	Lower PBA: Fines Pile	Cover Monitoring Well	Analytical
	EX-1	PBA	Alternative POE for PMZ	Water elevation for gradient
				Analytical
	EP-138R	PRB	Up-gradient PRB-1	Analytical
	EP-140B	PRB	PRB 1 Monitoring	Analytical
	EP-140C	PRB	PRB 1 Monitoring	Analytical
	EP-142	PRB	Down-gradient PRB-1	Analytical
	EP-143	PRB	Down-gradient PRB-1	Analytical
	EP-144	PRB	Down-gradient PRB-1	Analytical
	EP-146	PRB	Down-gradient PRB-1	Analytical
	EP-150BS	PRB	PRB 2 Monitoring	Analytical
	EP-150CS	PRB	PRB 2 Monitoring	Analytical
	EP-152S	PRB	Down-gradient PRB-2	Analytical
	EP-152D	PRB	Down-gradient PRB-2	Analytical
	EP-154	PRB	Attenuation Monitoring for PMZ	Water elevation for gradient
			Down-gradient PRB-2	Analytical
	EP-155R	PRB	Attenuation Monitoring for PMZ	Analytical
	EP-156R	PRB	Attenuation Monitoring for PMZ	Water elevation for gradient
			Down-gradient PRB-2	Analytical
	EP-54	PBA	Attenuation Monitoring for PMZ	Water elevation for gradient

Notes:

· PMZ = plume management zone

· POE = point of exposure

· PRB = permeable reactive barrier

· AA = assessment area

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Table 2. P&A Well List

Former ASARCO Smelter Site - El Paso, Texas

Well ID	Most Recent Water Level Measurement Date	Most Recent Sample Collection Date	Arsenic, Total Concentration (mg/l)
EP-05	NA	NA	--
EP-108	2/17/2015	8/11/2009	0.627
EP-109	2/17/2015	8/11/2009	< 0.00448 U
EP-111	2/17/2015	8/4/2009	0.75
EP-115	2/17/2015	7/16/2001	0.3
EP-116	3/4/2015	3/4/2015	0.523
EP-118	2/24/2004	8/6/2003	0.25
EP-119	2/17/2015	8/27/2015	2.2
EP-121	2/17/2015	2/9/2006	0.435
EP-122	2/17/2015	8/25/2015	1.36
EP-122 INJ	10/4/2007	NA	--
EP-122 OBS1	10/4/2007	NA	--
EP-122 OBS2	10/4/2007	NA	--
EP-122 OBS3	10/4/2007	NA	--
EP-122 OBS4	10/4/2007	NA	--
EP-122D	10/4/2007	NA	--
EP-127	2/17/2015	8/12/2009	2.7
EP-128	2/17/2015	8/12/2009	0.88
EP-132	2/17/2015	8/27/2015	1.57
EP-134	2/17/2015	8/12/2009	0.522
EP-135	2/17/2015	8/27/2015	2.00
EP-136	2/17/2015	8/12/2009	0.058
EP-137	2/17/2015	8/12/2009	0.168
EP-139R	5/18/2015	2/3/2015	0.880
EP-140A	5/18/2015	2/2/2015	0.356
EP-141A	5/18/2015	2/4/2015	1.01
EP-141B	5/18/2015	2/3/2015	0.806
EP-141C	5/18/2015	2/4/2015	0.852
EP-145	5/18/2015	2/5/2015	0.414
EP-148	5/18/2015	2/6/2015	1.6
EP-150AD	2/9/2015	2/9/2015	1.5
EP-150AS	2/9/2015	2/9/2015	0.0088
EP-150BD	2/10/2015	2/10/2015	1.38
EP-150CD	2/9/2015	2/9/2015	0.31
EP-151D	2/10/2015	2/10/2015	0.65
EP-151S	2/11/2015	2/11/2015	0.544
EP-153	5/18/2015	2/11/2015	0.733
EP-155R	5/18/2015	2/11/2015	0.811
EP-157	5/18/2015	2/4/2015	1.04

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Table 2. P&A Well List

Former ASARCO Smelter Site - El Paso, Texas

Well ID	Most Recent Water Level Measurement Date	Most Recent Sample Collection Date	Arsenic, Total Concentration (mg/l)
EP-161	2/17/2015	2/16/2015	0.00318 J
EP-168A	5/18/2015	2/4/2015	0.875
EP-168B	5/18/2015	2/3/2015	0.909
EP-169	5/18/2015	2/4/2015	0.484
EP-62	2/17/2015	8/27/2015	1.31
EP-64	2/17/2015	8/13/2009	0.03
EP-79	2/17/2015	8/12/2009	< 0.00448 U
EP-80	2/17/2015	8/3/2009	0.017
EP-83	2/17/2015	8/11/2009	< 0.00448 U
EP-87	8/10/1999	8/10/1999	0.03
EP-97	2/17/2015	3/28/2014	0.106
EP-98	2/17/2015	8/19/2015	0.00636
EX-2	10/4/2007	NA	--
MW-10D	2/17/2015	8/31/2015	0.914
MW-10S	2/17/2015	8/31/2015	0.656
MW-11D	2/17/2015	8/31/2015	0.638
MW-132D	2/17/2015	NA	--
MW-132S	2/17/2015	NA	--
MW-9D	2/17/2015	3/10/2015	0.461
PZ-1	10/5/2007	10/5/2007	0.21
PZ-2	10/5/2007	10/5/2007	1.21
PZ-3	10/5/2007	10/5/2007	0.6
PZ-4	10/5/2007	10/5/2007	1.72

Notes:

· mg/l = milligrams per liter

· NA = not available

· J = estimated value

· U = the analyte was analyzed for but not detected

See Figure 2

Proposed Wells for RAP

- Up-gradient Well
- Down-gradient Well
- Cover monitoring Well
- Attenuation Monitoring for PMZ
- Alternative POE for PMZ
- POE Well
- Attenuation Monitoring for MNA
- PRB Monitoring Well
- GHB Pumping Well
- GHB Monitoring Well

Proposed Plugged and Abandoned Wells

- Previously Abandoned Wells
- Proposed Wells to be Abandoned

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LEGEND

- Property Boundary
- Historical Arroyo Trace Lines
- Historical Drainage Divide
- WCUs
- Compacted Native Soil with Vegetation
- Asphalt Areas from Site Operations
- Paved Areas Completed to Category II Remediation Standards
- Lined Stormwater Pond
- Closure Turf System
- Desert Armor Cover System
- Category II Storage Area Evaporative Transpiration Soil Cover
- Fines Pile Closure Turf System
- Lined Channel
- Plant Site Evaporative Transpiration Soil Cover
- Lined Stormwater Pond
- Lined Armor Stone
- Geosynthetic Clay Liner
- Ephemeral Pond Hydro Turf Lining System
- Low Permeability Cover

N

0 650 1,300 Feet

FORMER EL PASO SMELTER SITE
EL PASO, TEXAS

SITEWIDE P&A
PROPOSED MONITOR WELLS

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FIGURE
1

CITY: Highlands Ranch DIV/GROUP: GIS DB: BG
Path: G:\GIS\ASARCO_ElPaso\GIS\MXD\RAP\Fig 1 ProposedRAPWells_Sitewide_rev3.mxd Date: 12/1/2015 Time: 3:58:18 PM

EP-120
EP-108
EP-109
EP-123
EP-78
EP-79
EP-138R
EP-139
EP-139R
EP-140B
EP-138
EP-141A
EP-169
EP-140C
EP-141B
EP-140
EP-168B
EP-143
EP-157
EP-53
EP-142
EP-145
EP-144
EP-146
EP-147
EP-150AS/D
EP-150BD
EP-150CD
EX-3
EP-85
EP-149
EP-85D
EP-148
EP-152D
EP-150CS
EP-152S
EP-150BS
EP-151S/D
EP-154
EP-153
EP-155
EP-155R
EP-156
EP-81
EP-156R
EX-2
EX-1
EP-88
EP-126
EP-76
EP-125
EP-75
EP-22R
EP-99
EP-22
EP-21
EP-23
EP-24
New Well 3
EP-25
EP-27
EP-73
EP-52
EP-55
EP-92
MW-49
EP-49
EP-100
EP-51
EP-54
EP-91
EP-115
EP-114

Proposed Wells for RAP

- Up-gradient Well
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- Lined Armor Stone
- Geosynthetic Clay Liner
- Ephemeral Pond Hydro Turf Lining System
- Low Permeability Cover

N

0 210 420 Feet

FORMER EL PASO SMELTER SITE
EL PASO, TEXAS

PROPOSED P&A MONITOR WELLS IN PARKER BROTHERS ARROYO

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FIGURE 2

CITY: Highlands Ranch DIV/GROUP: GIS DB: BG
Project (Project #)
Path: G:\GIS\ASARCO_ElPaso\GIS\MXD\RAP\Fig 2 ParkerBrothersArroyoZoom_rev1.mxd Date: 1/12/2016 Time: 11:22:25 AM