

Barceloneta, Puerto Rico (Closure of RCRA Units/Part B) – Aug. 20, 2019

Meeting Objectives:

- Discuss/define steps needed to advance RCRA Closure Process (SWMU #11 and Part B Permit)

Agenda:

- Remediation Status/Overview (data supporting closure)
- RCRA Process/**Options**
- Discuss any outstanding questions?
- Discuss next steps – toward Closure



RCRA History – Barceloneta Site

1972: *Pfizer* purchases facility, constructs plant

1986: Part B Permit

1988: RFA

- 11 SWMUs

- 2 retained for further study

1990: RCRA Part B Issued

RFI Work Plans (1991, 1999, 2003, 2006)

- 33 borings

- 99 subsurface soil samples

- > 1,100 subsurface gas analysis

- 26 Vapor well installations, 10 rounds sampling

- 6 Ground Water Monitoring wells,

1997: Request to Withdraw Permit

2005 – Closure of North & South RCRA Container Storage Units EPA approval in 2006. 90 Day status

2008 – In response to EPA RFI comments – Pfizer proposed to conduct an SVE Pilot to address Benzene in soil vapor and help diminish Chlorobenzene concentrations in groundwater.

2009-2010 SVE system installation

2010-2013 Temporary EQB Air Permit issued – but not useable.

Jan 2013 – SVE Startup (short-term testing)

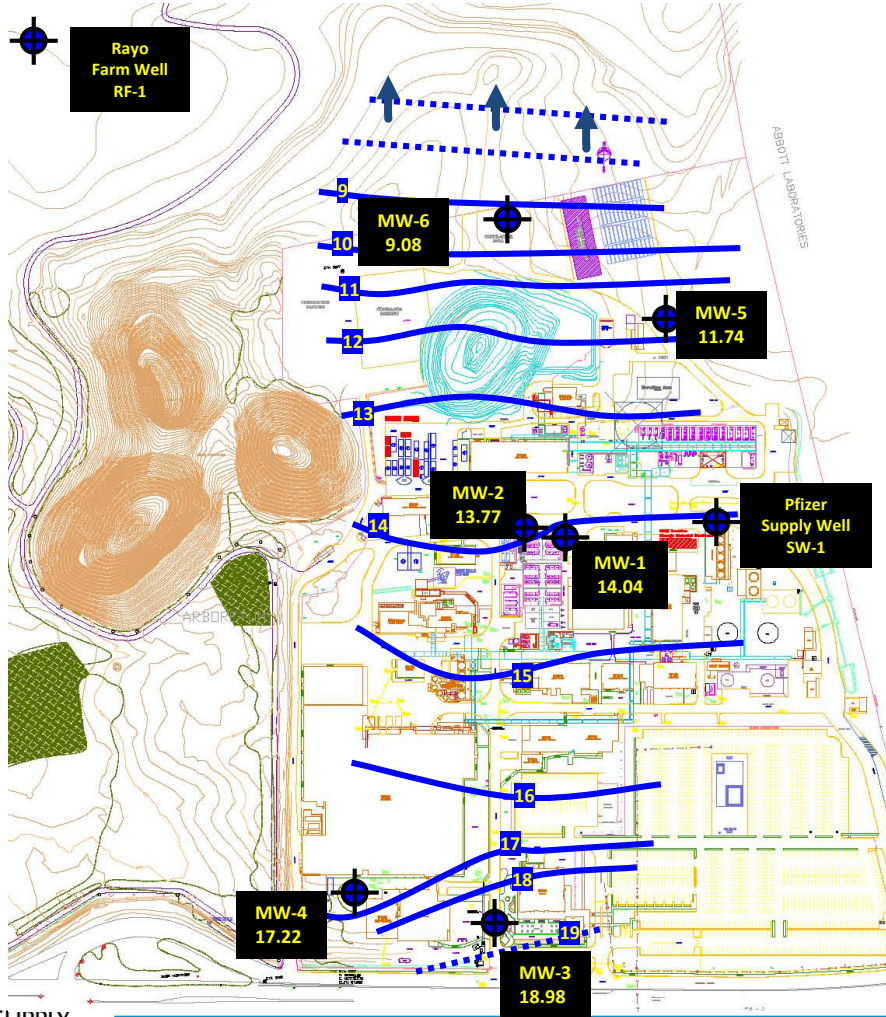
Aug 2014 - EQB Construction Permit for SVE issued – with revised permit issued in May 2015 (to be functional).

July 2015 – SVE re-start with issues (restored Oct 2015)

July 6, 2018 - SVE system shut down after pulsing/short-term rebound sampling

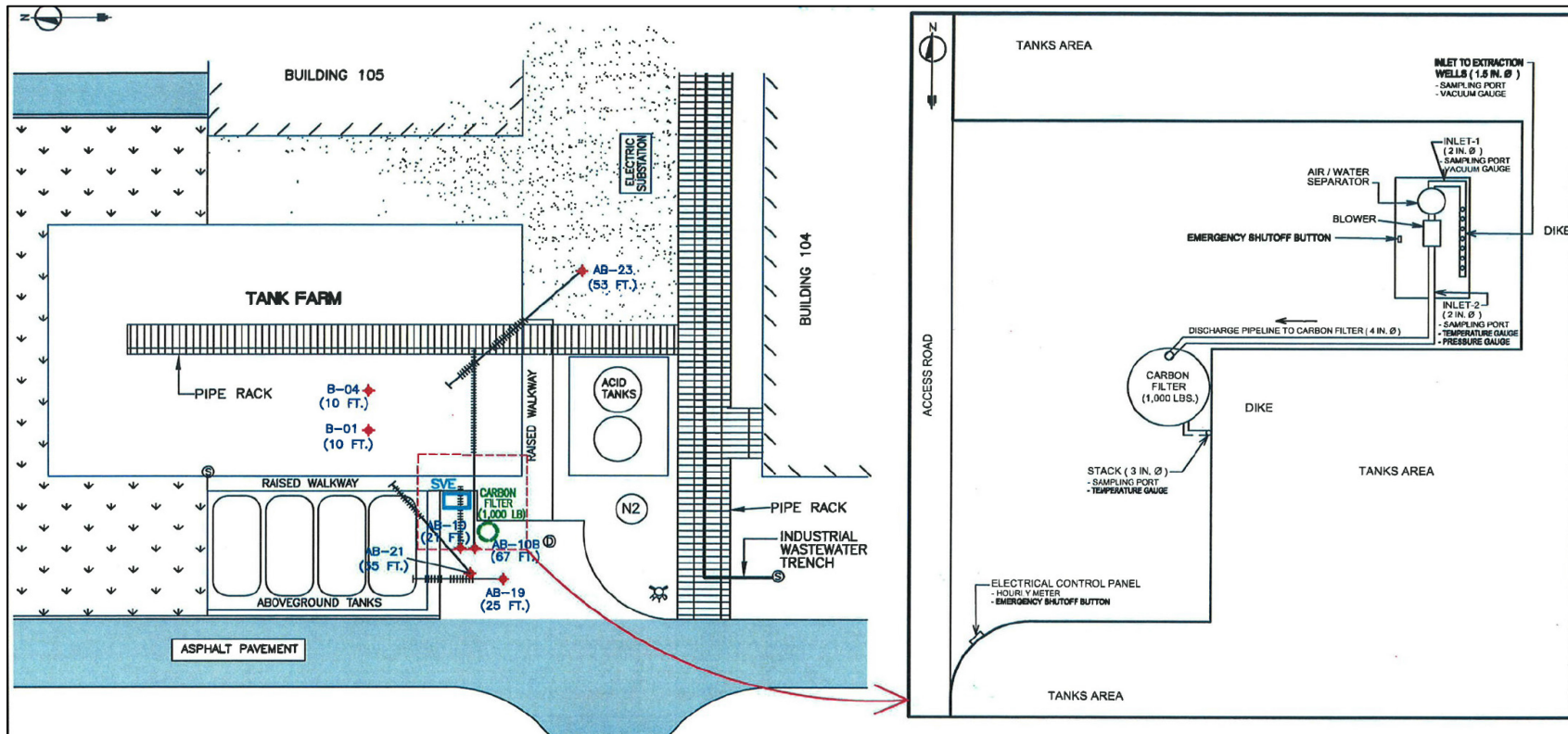
Nov. 29 2018 - SVE confirmation rebound sampling conducted (145 days after shutdown @ equilibrium) – meet CUGs; report recommended discontinuing SVE and proceed with Closure as groundwater has also met MCLs for over 2 years.

Barceloneta, Puerto Rico Site Aerial w/Monitoring Wells

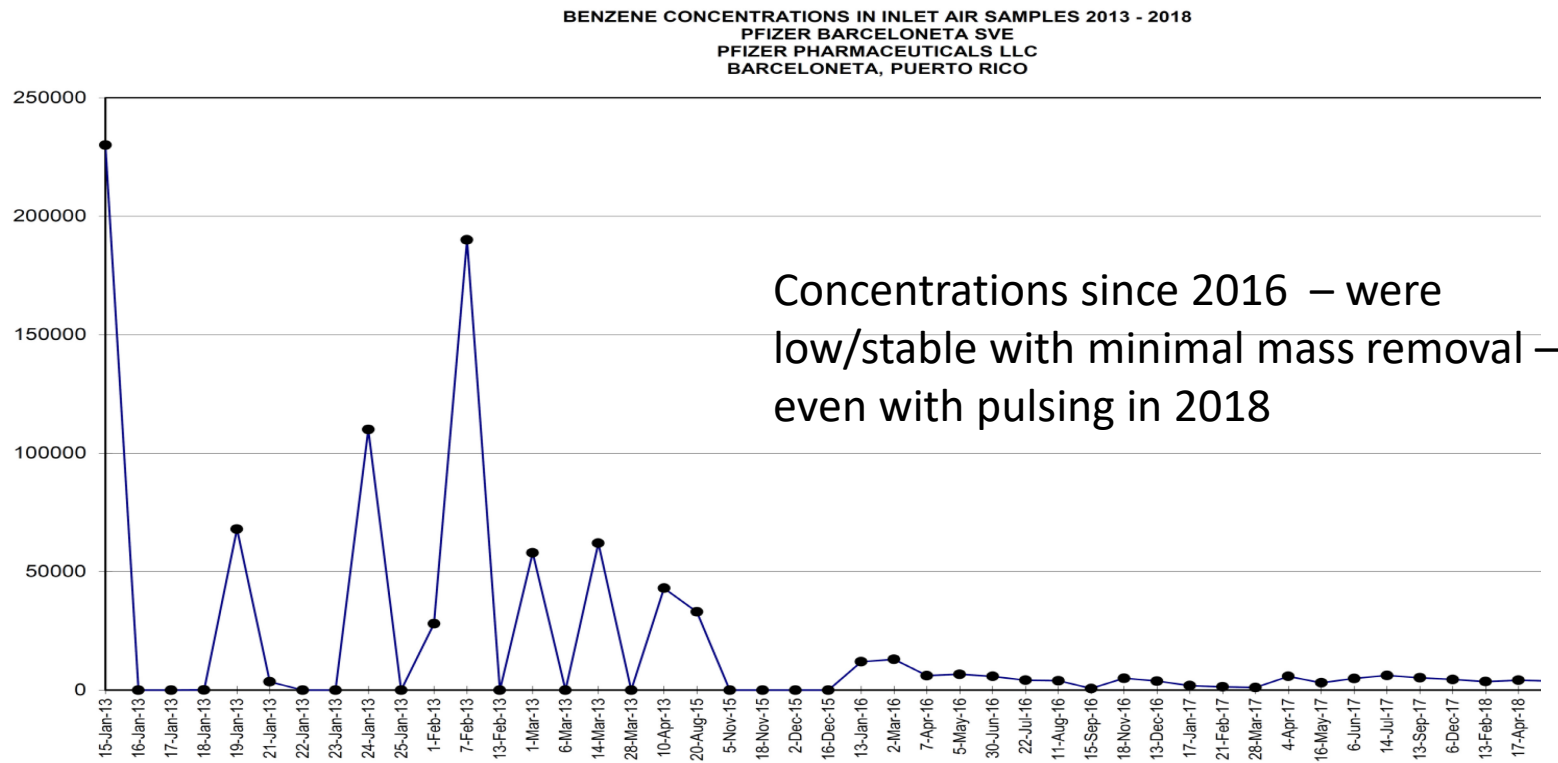


Ground Water
Flow Direction

Barceloneta, Puerto Rico SVE Layout



SVE – Inlet Concentrations 2013-2018 (Barceloneta)



Barceloneta RCRA – SVE Mass Removal

Operational Period	Operational Time (hours)	Operational Time (days)	Mass Removed (lbs)
August to December 2015	869.5	36	14.0
January to March 2016	548.5	23	3.5
April to June 2016	1268	53	4.3
July to October 2016	1044	43.5	1.0
November to December 2016	538	22	8.2
TOTAL	4268	177.5	31

Barceloneta, Puerto Rico – Data Supporting Closure (SWMU #11)

Table A below presents a summary of benzene concentrations for each individual sampling event:

TABLE A

BENZENE CONCENTRATIONS YEARS 2009, 2017 AND 2018

Well ID	Nov-09 (ppbv)	Feb-17 (ppbv)	Nov-18 (ppbv)
AB-10	1100000	1.4	1/
AB-10B	4300000	42000	520U
AB-19	46000	0.26J	1.4
AB-21	65	2.4	9.7U
AB-23	630000	340U	23
B-1	3600000	19000	5700
B-4	370000	3700	2700

TABLE 2. Target benzene USEPA risk-based clean-up value.

Scenario	Benzene Soil Gas Value (mg/m ³) TCR = 1E-06	Benzene Soil Gas Value (mg/m ³) TCR = 1E-05	Benzene Soil Gas Value (mg/m ³) TCR = 1E-04
Future Commercial/Industrial Worker – USEPA Risk Based	6.5	65	543

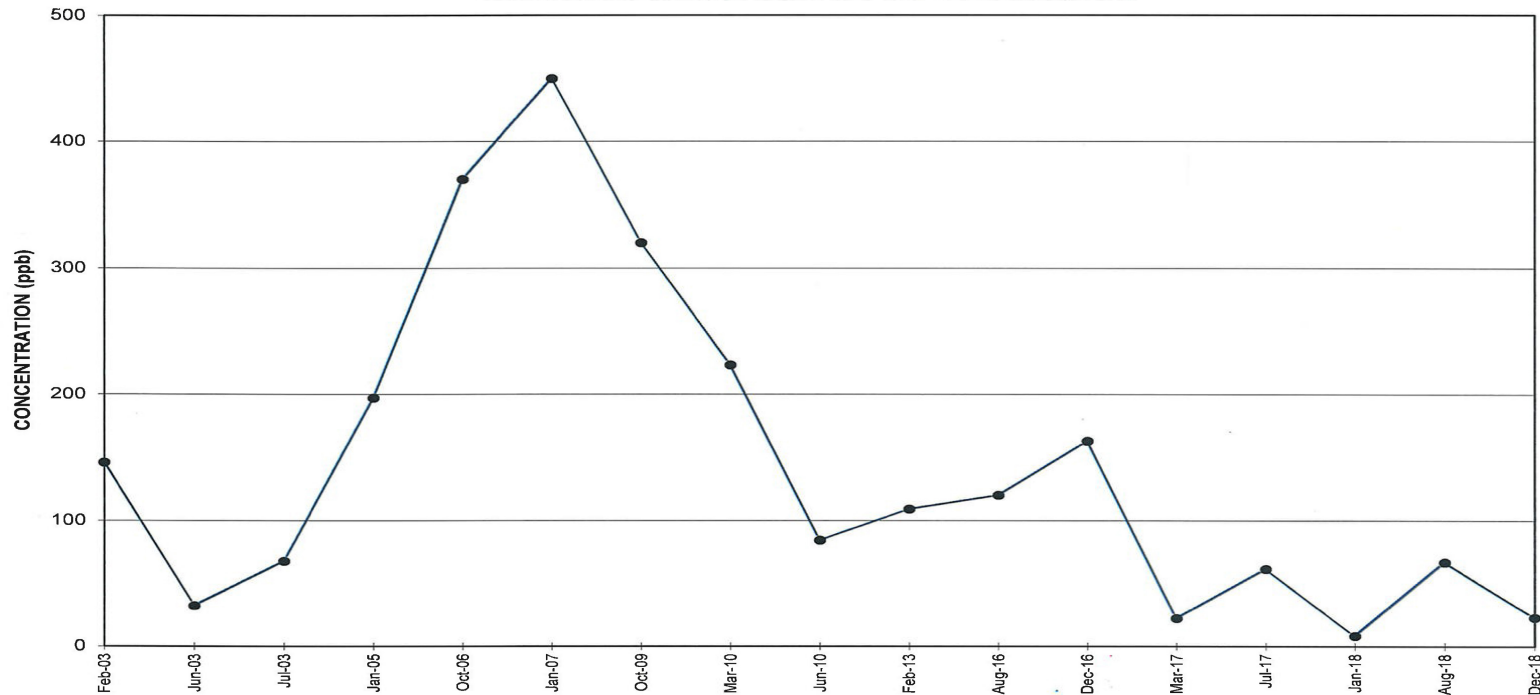
TCR = target cancer risk

Ref. Sept. 6, 2018 TRC Risk Memo; $65 \text{ mg/m}^3 = 65,000 \text{ } \mu\text{g/m}^3 \sim 20,312 \text{ ppbv (1E-05)}$

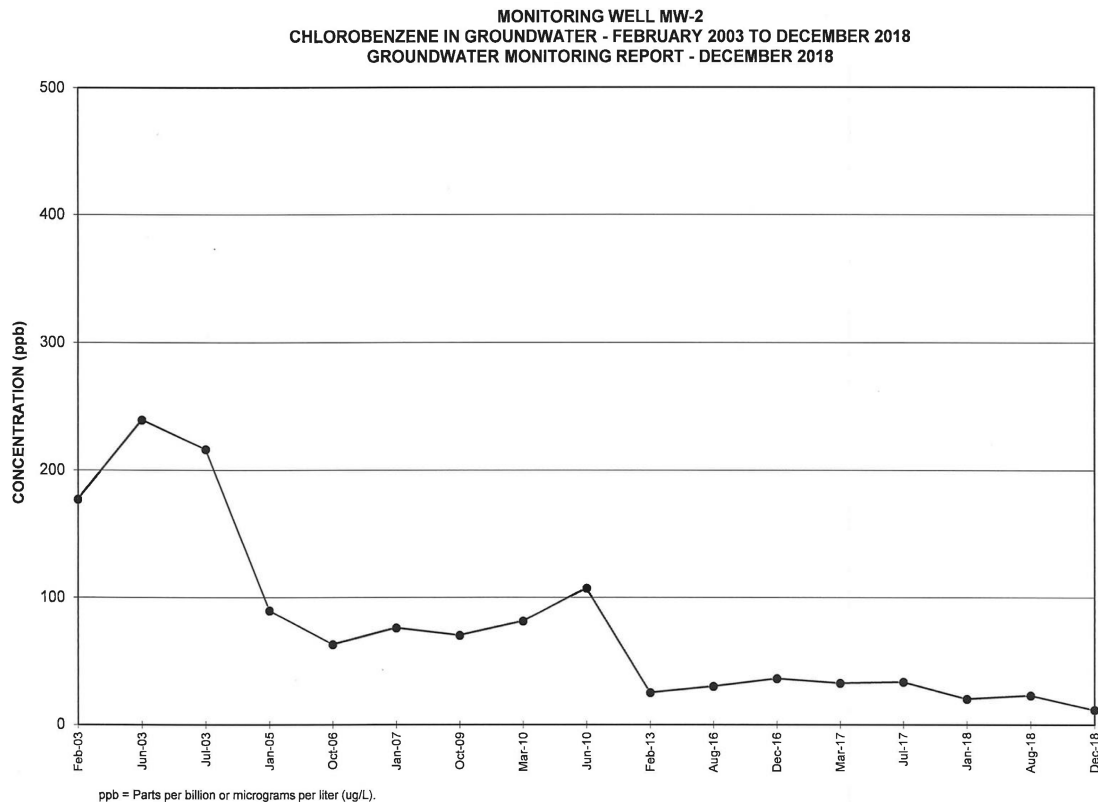
Barceloneta RCRA/SWMU #11 Closure (MW-1 – Historic GW Data)

Monitoring Well MW-1

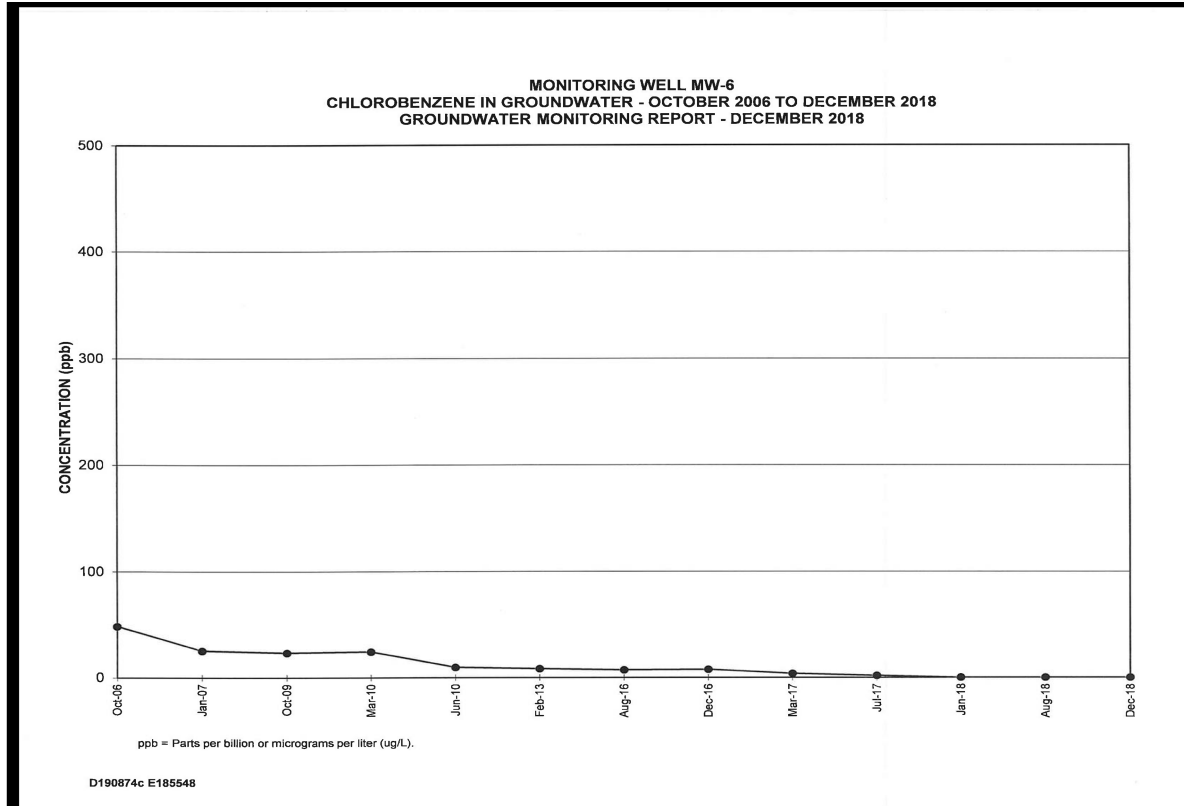
CHLOROBENZENE IN GROUNDWATER - FEBRUARY 2003 TO DECEMBER 2018
GROUNDWATER MONITORING REPORT - DECEMBER 2018



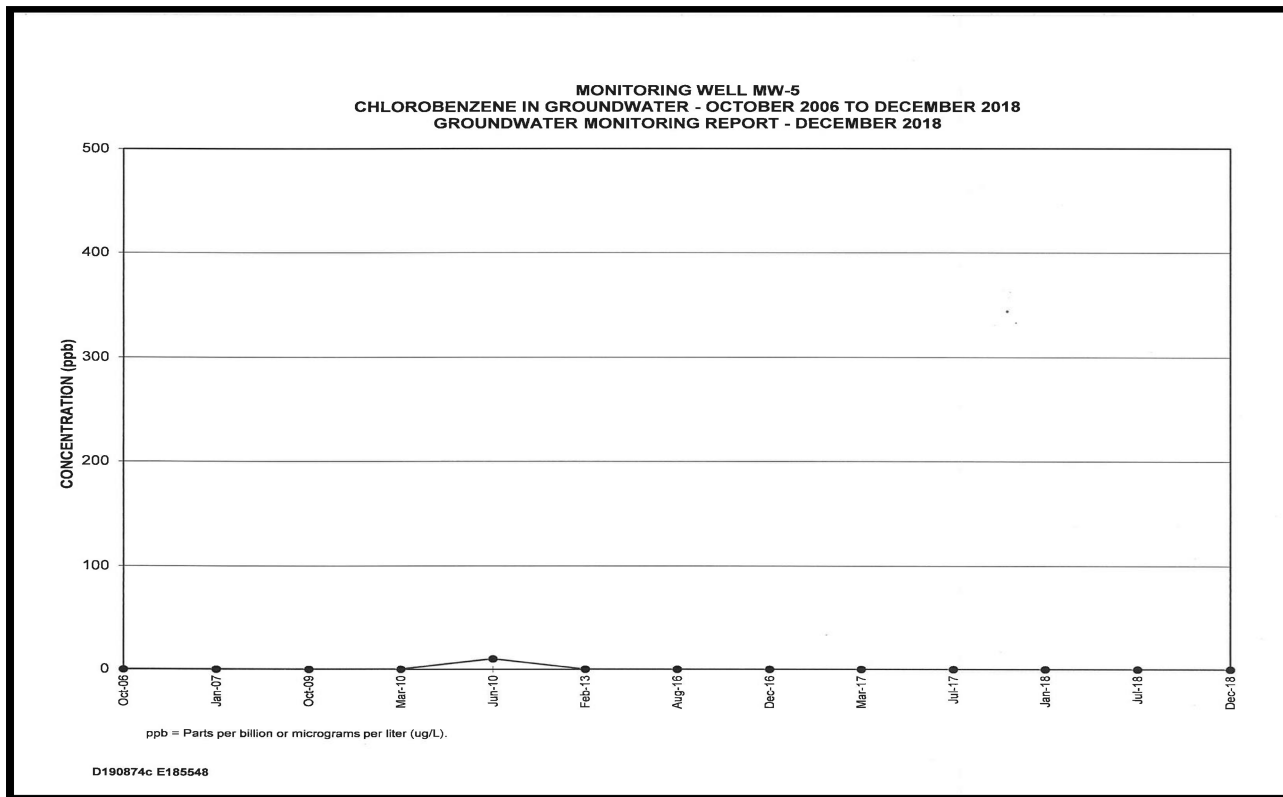
Barceloneta RCRA-SWMU#11 Closure (MW-2 Historic Data)



Barceloneta RCRA/SWMU # 11 Closure (MW-6 Historic GW Data)



Barceloneta RCRA-SWMU#11 Closure (MW-5 Historic GW Data)



Barceloneta – RCRA (SWMU #11) Closure

MAIN CONCLUSIONS:

1. Groundwater Meets Federal MCLs (Drinking water standards) – for VOCs (Chorobenzene) last 2 years of monitoring (following SVE-Pilot)
2. Soil Vapor around SWMU #11 (former UST-Tank Farm) – meets Industrial/commercial (1E-5) risk-based cleanup goals (CUGs) for Benzene (Source Remediated)
 - Benzene source was always limited – such that it did not impact groundwater above MCLs (vapor localized to tank farm – past incidental/small spills)
3. Have sufficient supporting data (Formalized in Reports to EPA) to:
 - Issue Closure approval for SWMU#11 (last remaining SWMU or RCRA unit)
 - Issue “Ready for Intended Use” determination – with IC’s to restrict former SWMU #11 area to Industrial/commercial use
 - Close-out RCRA Part B Permit

Barceloneta RCRA - Guidance



RCRA: Three Threshold Criteria:

1. Protection of Human Health (Achieved)
2. Attain Media Standards/CUGs (Achieved, GW & Soil-Vapor)
3. Control Sources of Release (Achieved)

Barceloneta RCRA – Guidance Cont.

Table A.2 Corrective Action Objectives Worksheet

Environmental Media	Human Health Residential	Human Health Non-Residential	Ecological Receptors	Cross-media Transfer	Resource Restoration
Groundwater	N/A				
Soil	N/A				
Surface Water	N/A	N/A	N/A	N/A	N/A
Air	N/A				
Waste	N/A				
Other	N/A	N/A	N/A	N/A	N/A

N/A = Not applicable

Barceloneta RCRA – Process (Discuss next Steps)

Next Steps Discussion to:

1. Issue Closure approval for SWMU#11 (last remaining SWMU or RCRA unit)
2. Issue “Ready for Intended Use” determination – with IC’s to restrict former SWMU #11 area to Industrial/commercial use:
 - Pfizer can provide draft language for deed restriction
3. Close-out RCRA Part B Permit (discussion)