

Simple Forensic Evaluations that revealed the Old Contamination in New Discoveries and thus Justified Closure or Resumption of State Cleanup Funding

by:

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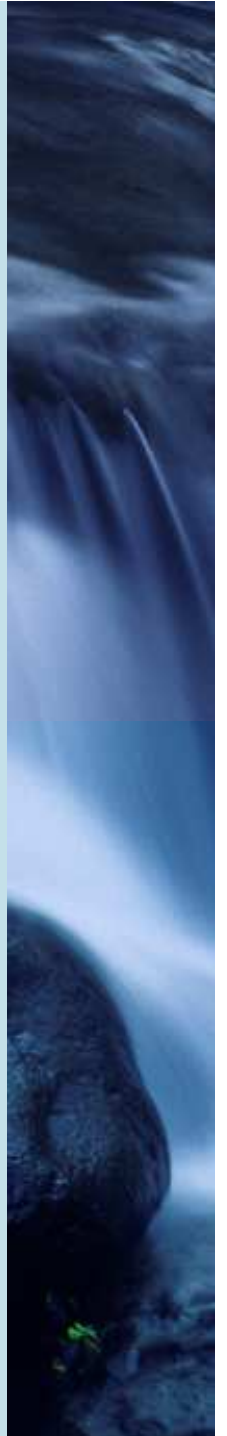
pamram@ectinc.com

Presented to:



Simple Forensics → Closures & Funding

1. **Bulk Plant**
2. Coral Way Station
3. Construction Spill Site
4. RR Station Fuel Spill
5. Miami Adel's "Amerika on the Go" Station with Schmidt, et.al.'s T/8 Method for fuel and impact aging



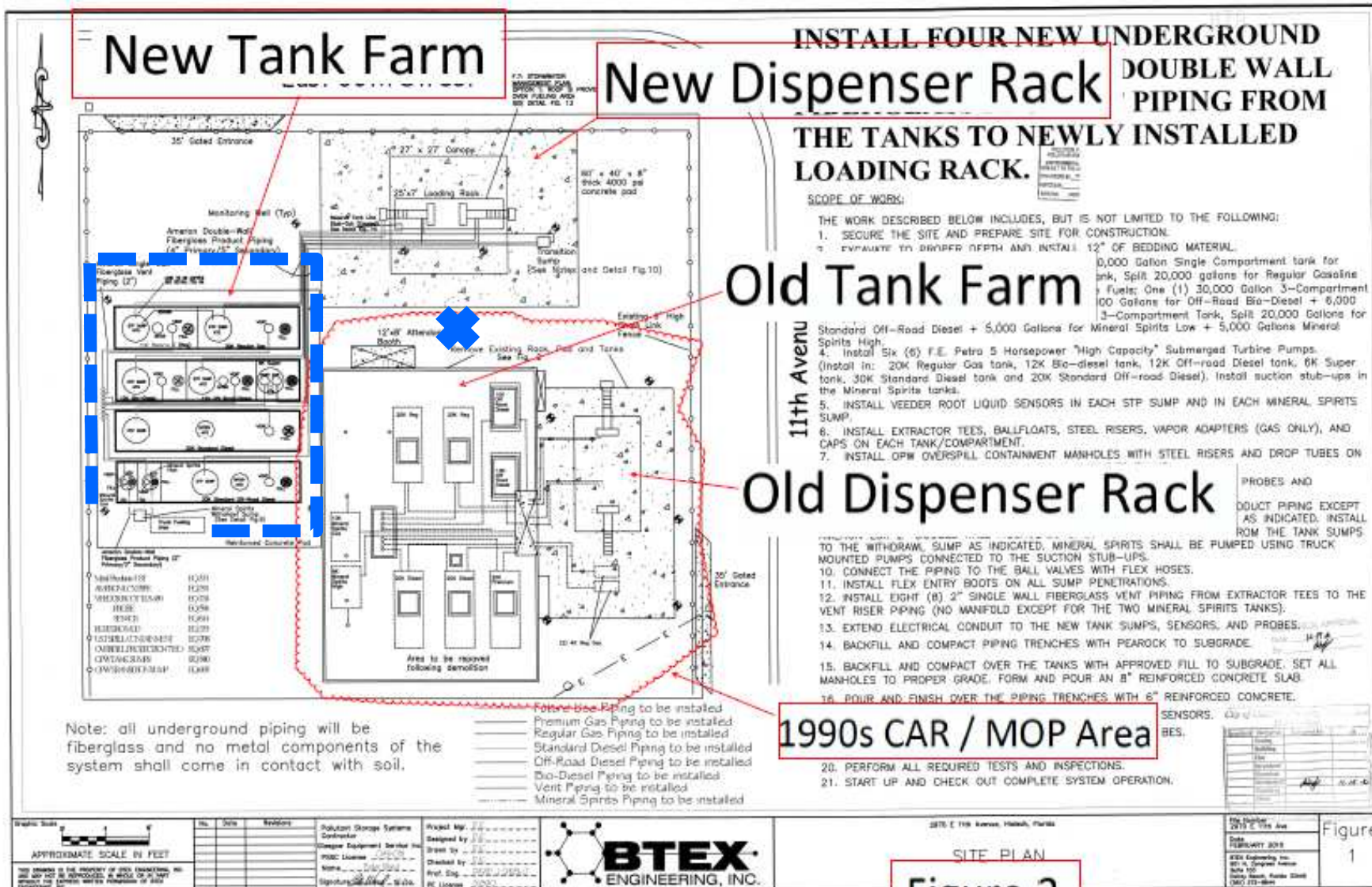
Bulk Plant - Local Distributor



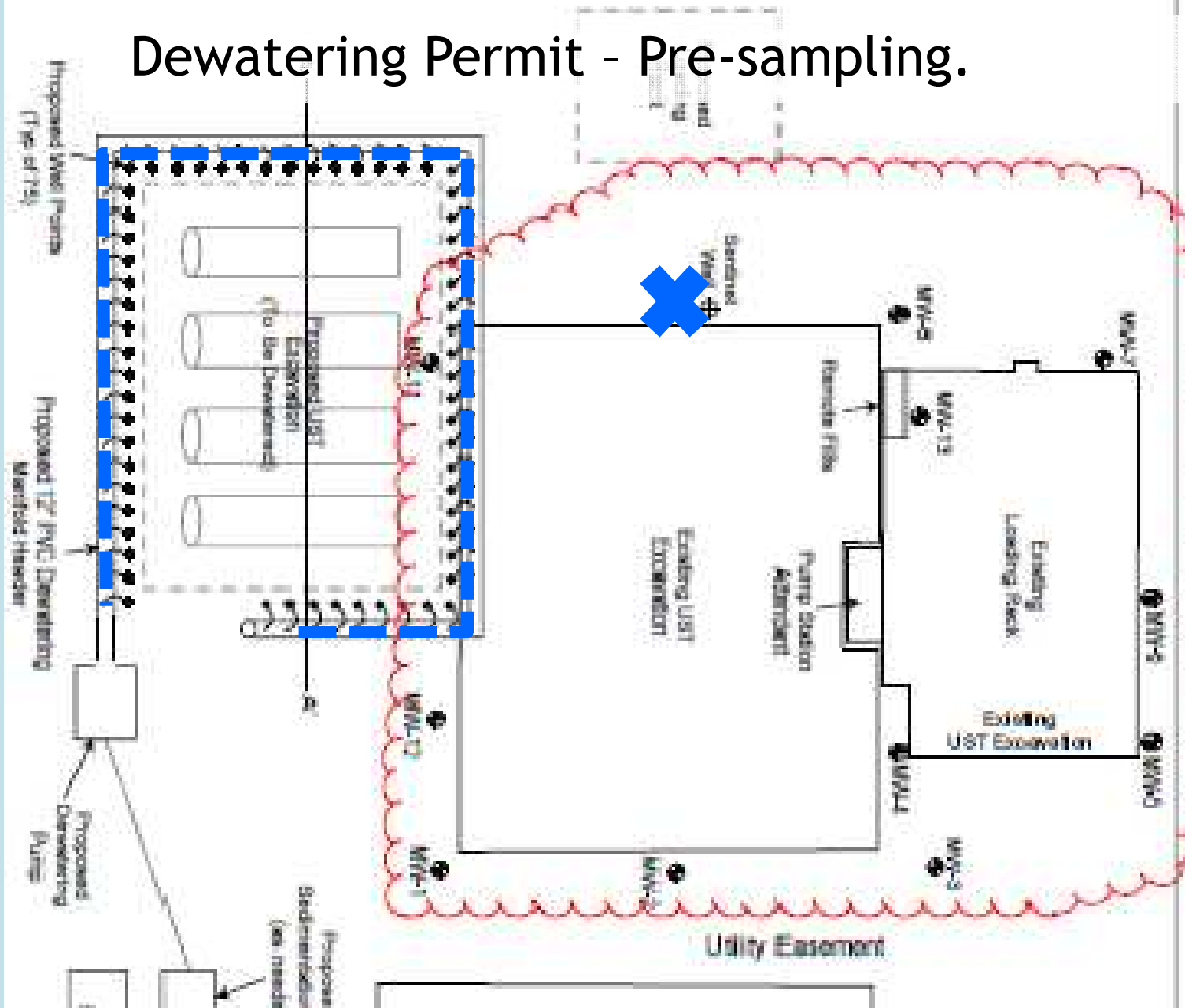
LIV

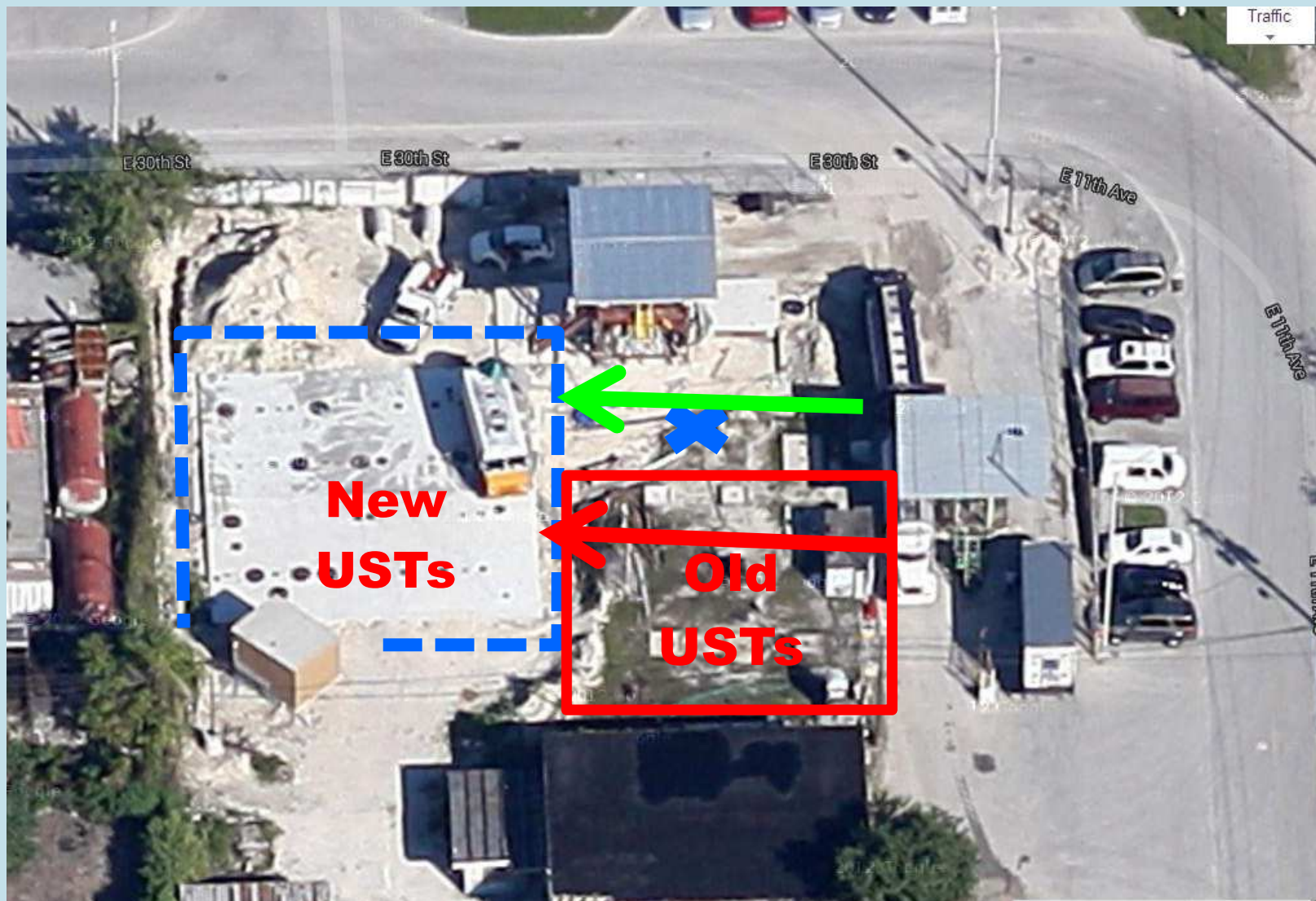
1. Distributor Bulk Plant





Dewatering Permit - Pre-sampling.

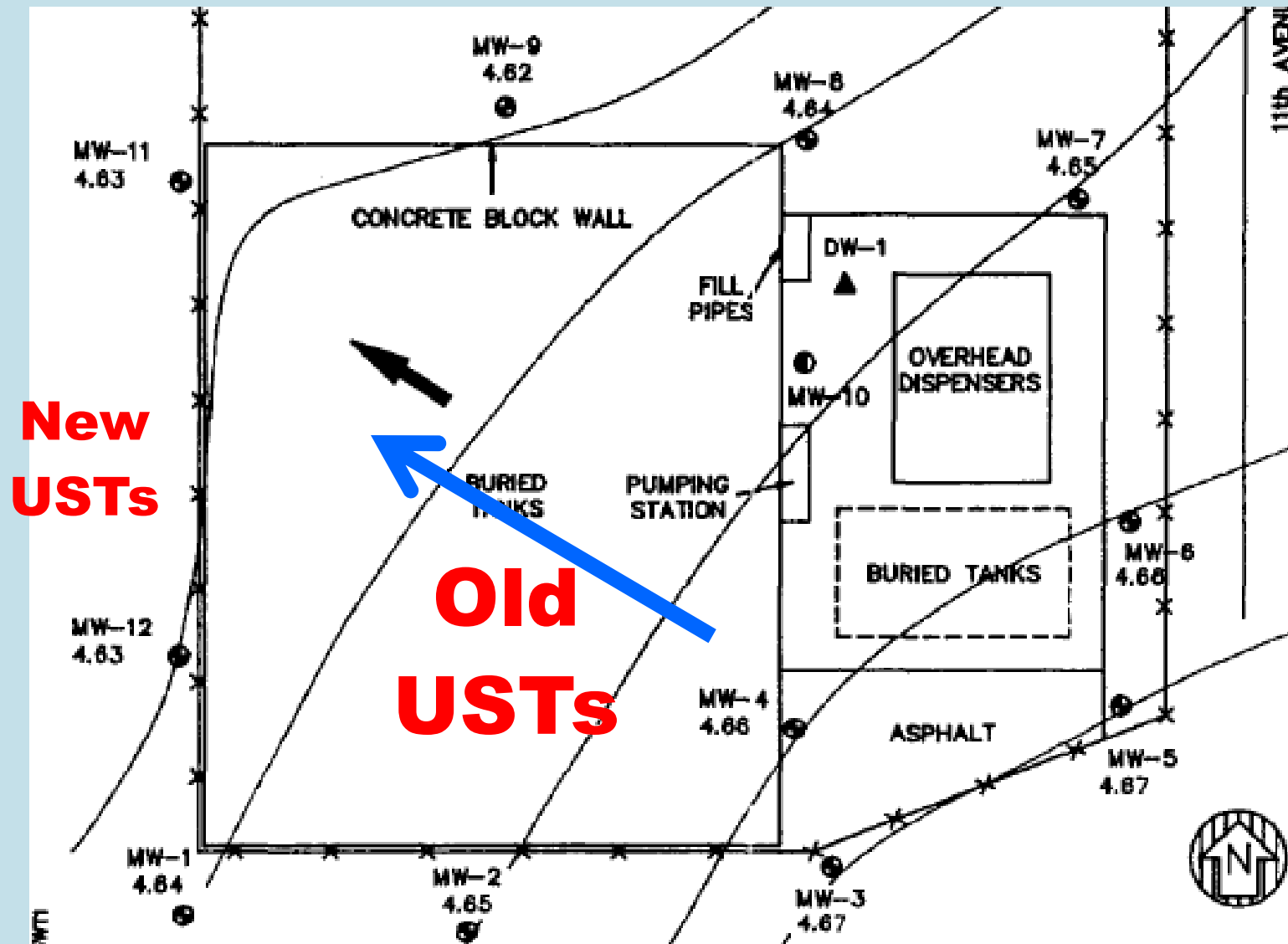




D/W samples → New Discovery → “SAR!”

“Just like Old Times”

GW Flow

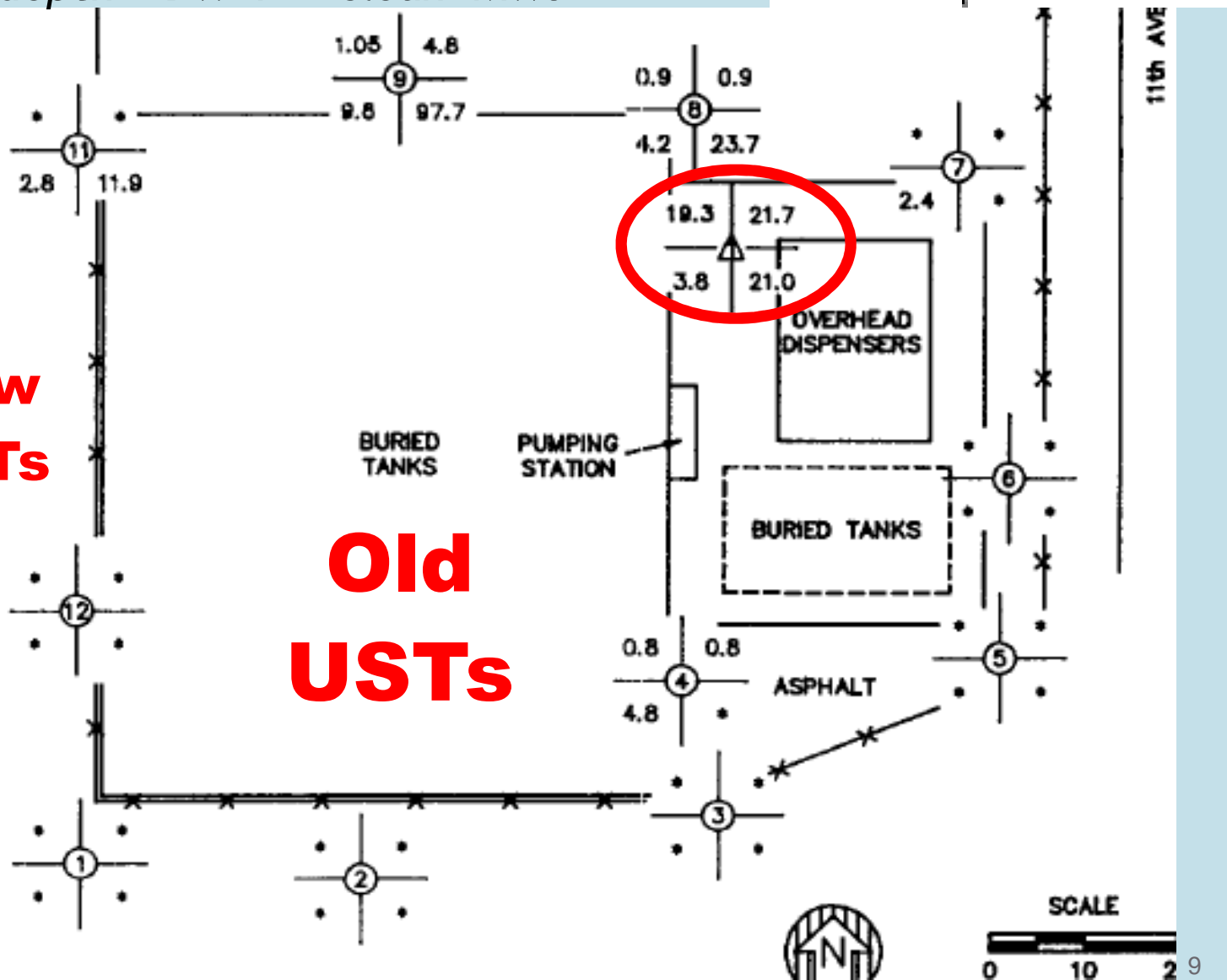


BTEX etc. in GW
 NAM, but DW-1 *not Monitored*
 D/W depth > DW-1 > 'clean' MWs

BENZENE	TOTAL VOA
TRPH	TOTAL NAPTH.

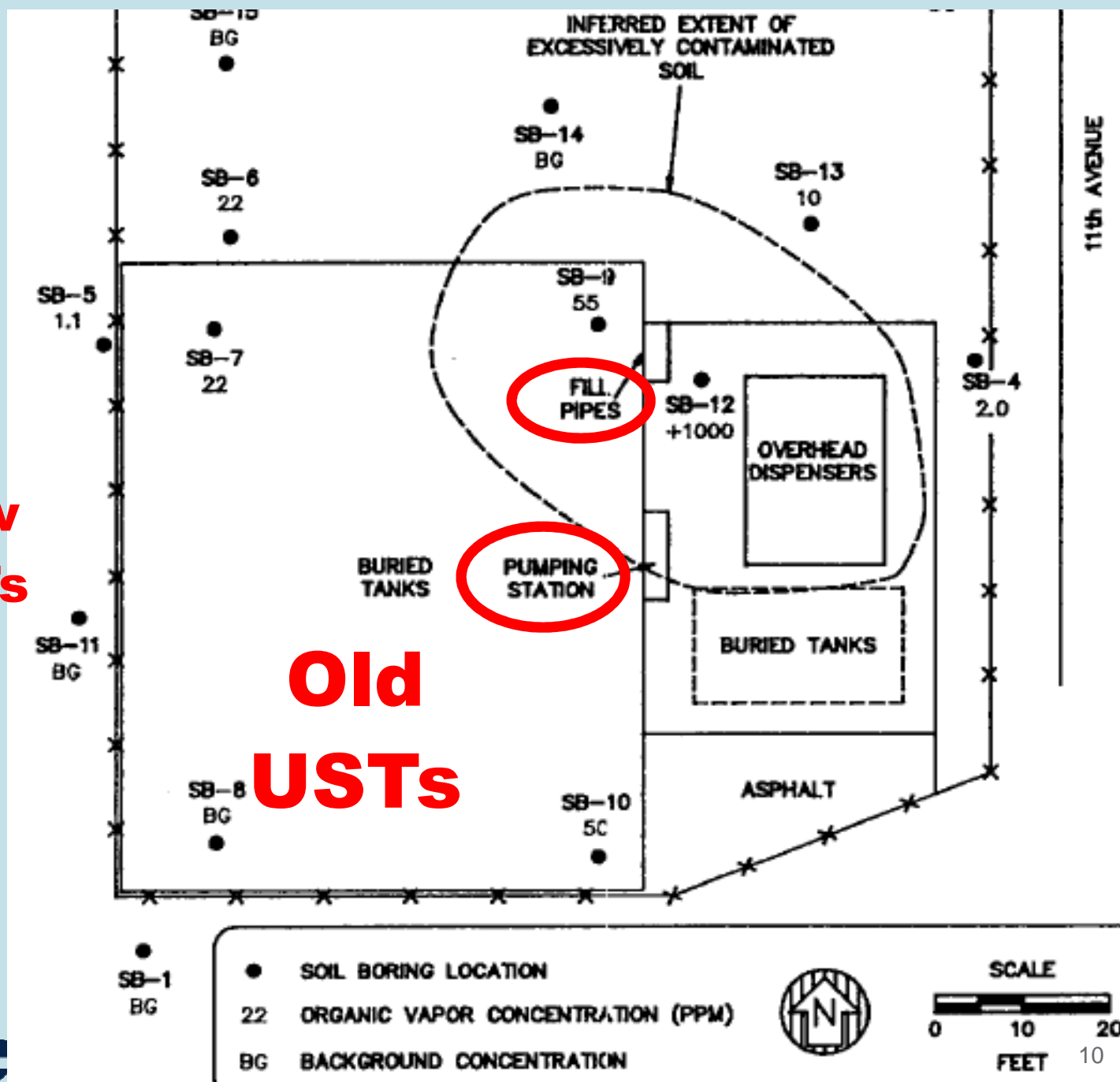
**New
USTs**

**Old
USTs**



**New
USTs**

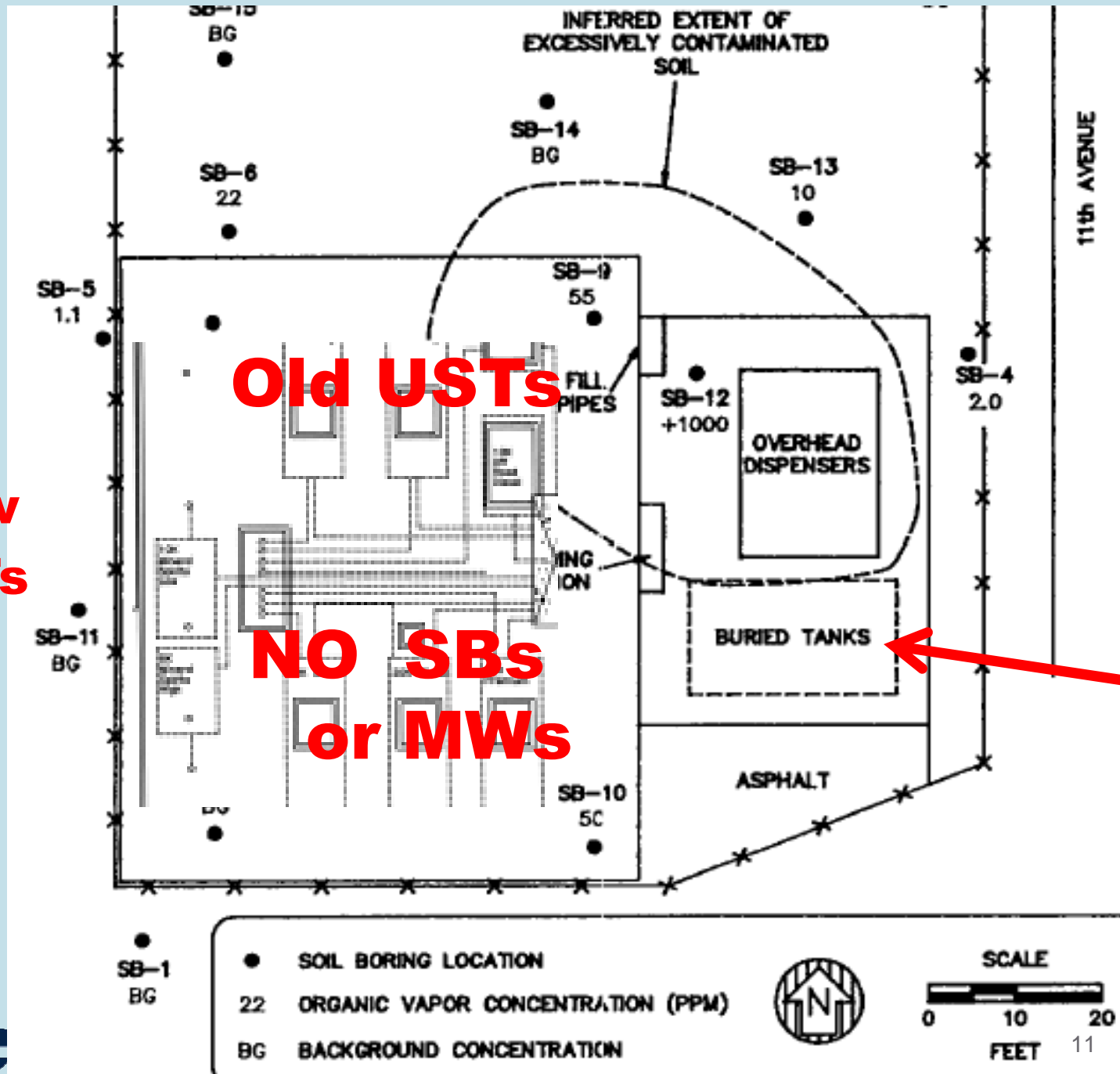
**Old
USTs**



**New
USTs**

Old USTs

**NO SBs
or MWs**



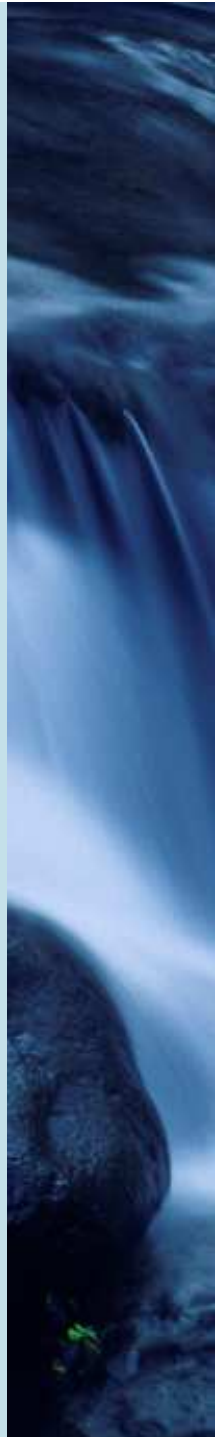
Request to void the 1995 NFA / SRCO and Resume State-funded Coverage for 1990 Discovery:

Maps with Notes

Dewatering Effects:

- to 650 gpm (2500 Lpm),
 - >10 ft (>3 m) of drawdown
 - Flow paths vs. full source areas
 - Well Depths vs. Well Pts.
- draw GW from DW-1 zone too →
- faster transport → reduced natural attenuation

Expected State Costs: \$0.00, then just NAM / Closure.



Request Approved.. State-funded Coverage restored! 😊



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

September 7, 2012

Subject: Rescission of Site Rehabilitation Completion Order dated March 27, 1995

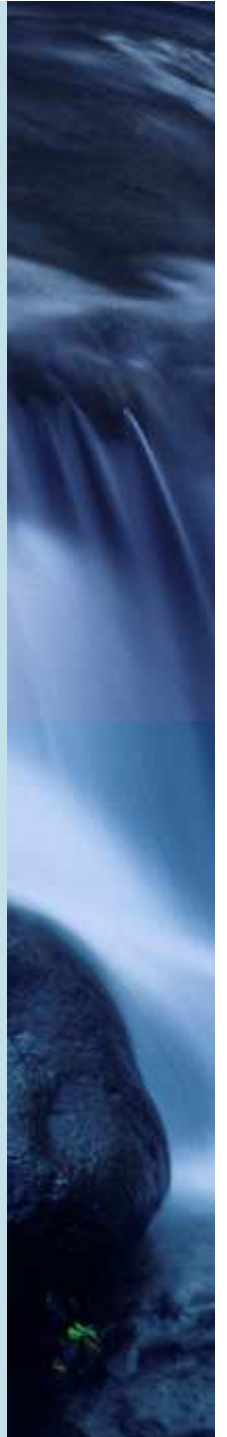
through review of the SRCR or otherwise allowed by Chapter 62-770, F.A.C." It is hereby ordered that the SRCO issued by the Department on March 27, 1995 is rescinded. Therefore, supplemental assessment and/or remediation activities must be completed in order to meet the requirements of Chapter 62-770, F.A.C.

Site conditions indicate that the increase in contaminant concentrations is not due to any subsequent discharge; therefore, further cleanup activities associated with the

May 25, 1989 discharge at this site will remain eligible for funding assistance for allowable and reasonable costs under the Florida Petroleum Liability and Restoration Insurance Program (FPLRIP). This site's score is 10, which means that funding is not

Simple Forensics → Closures & Funding

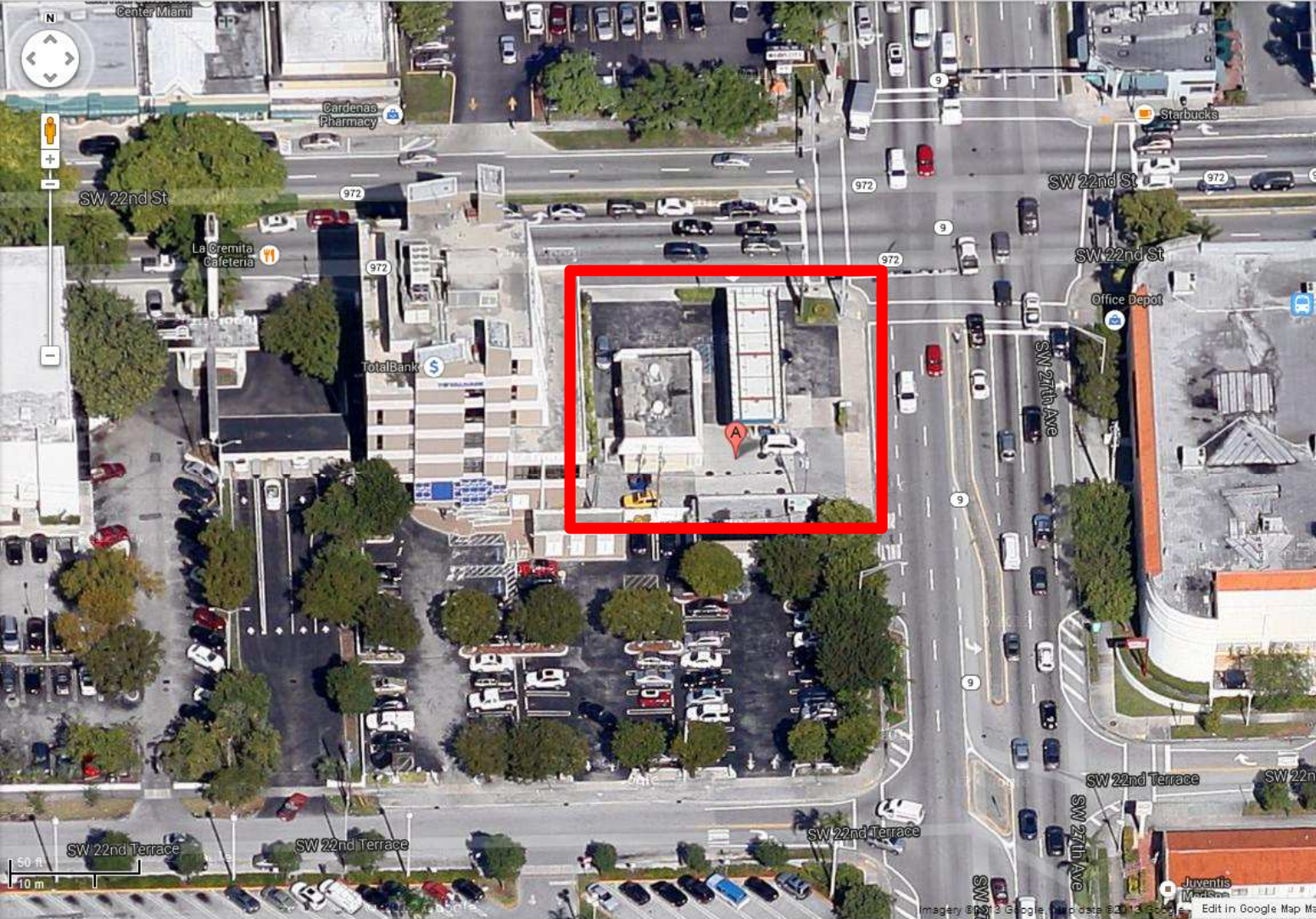
1. Bulk Plant
2. **Coral Way Station**
3. Construction Spill Site
4. RR Station Fuel Spill
5. Miami Adel's "Amerika on the Go" Station



Coral Way Station

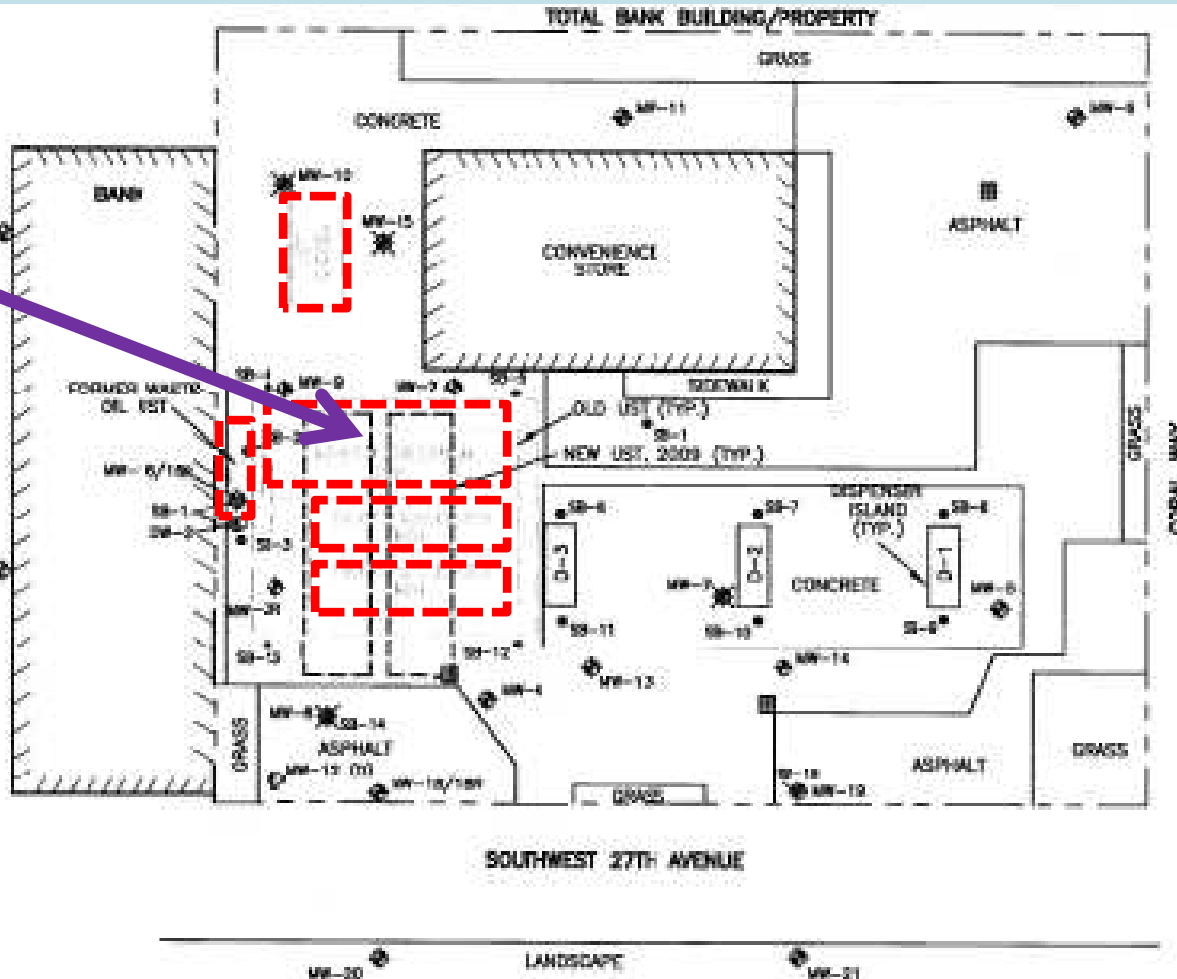


Coral Way Station

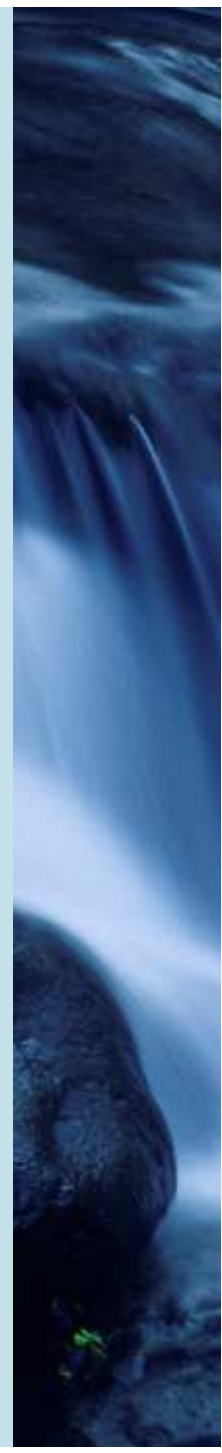




#1 - 1985 - \$\$\$



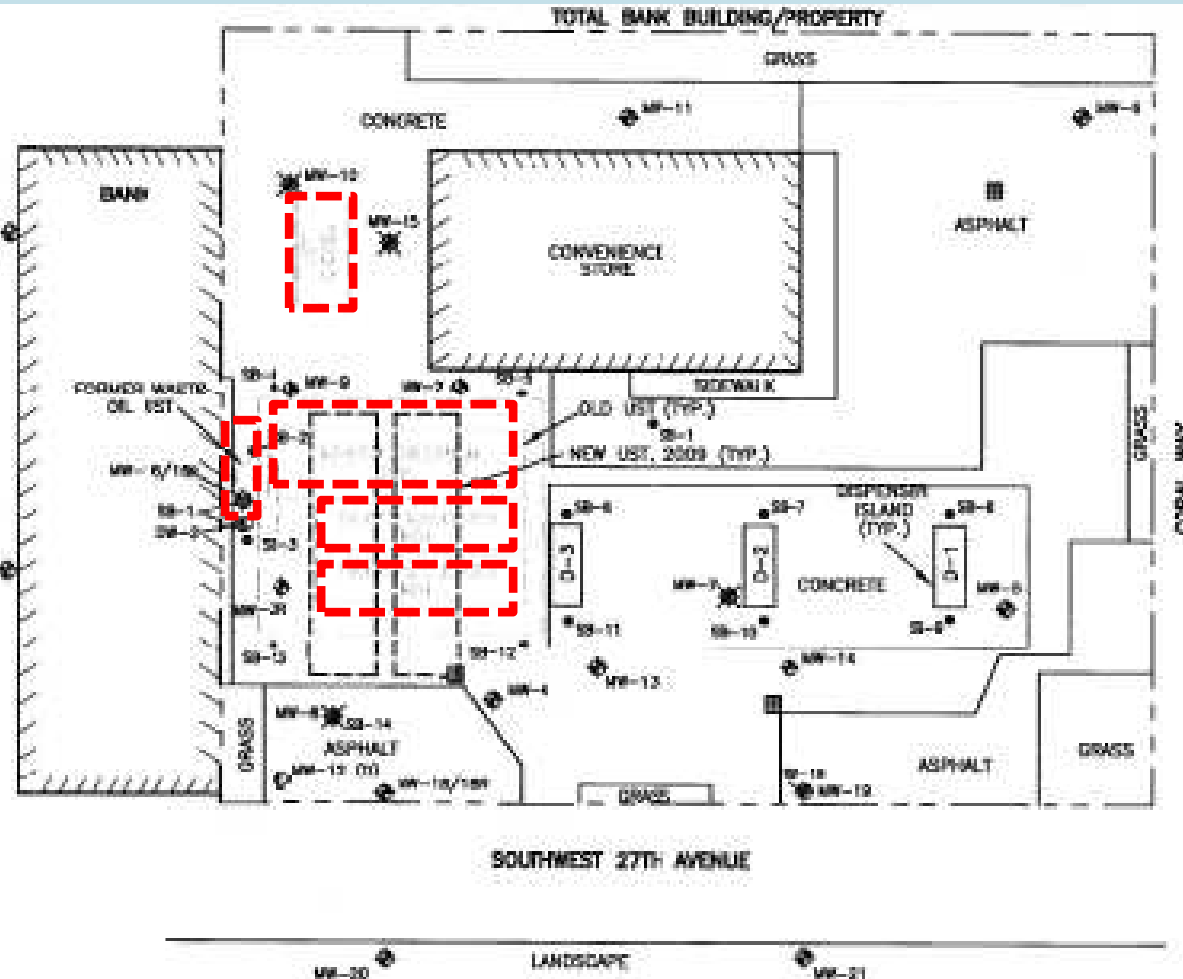
LEGEND





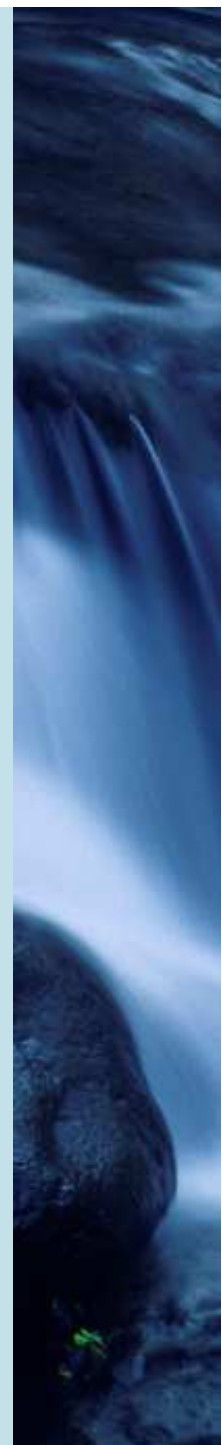
#1 – 1985 - \$\$\$

#2 – 1998 –
NAM spikes



MW-14-OLD
(PRE-2000)

LEGEND

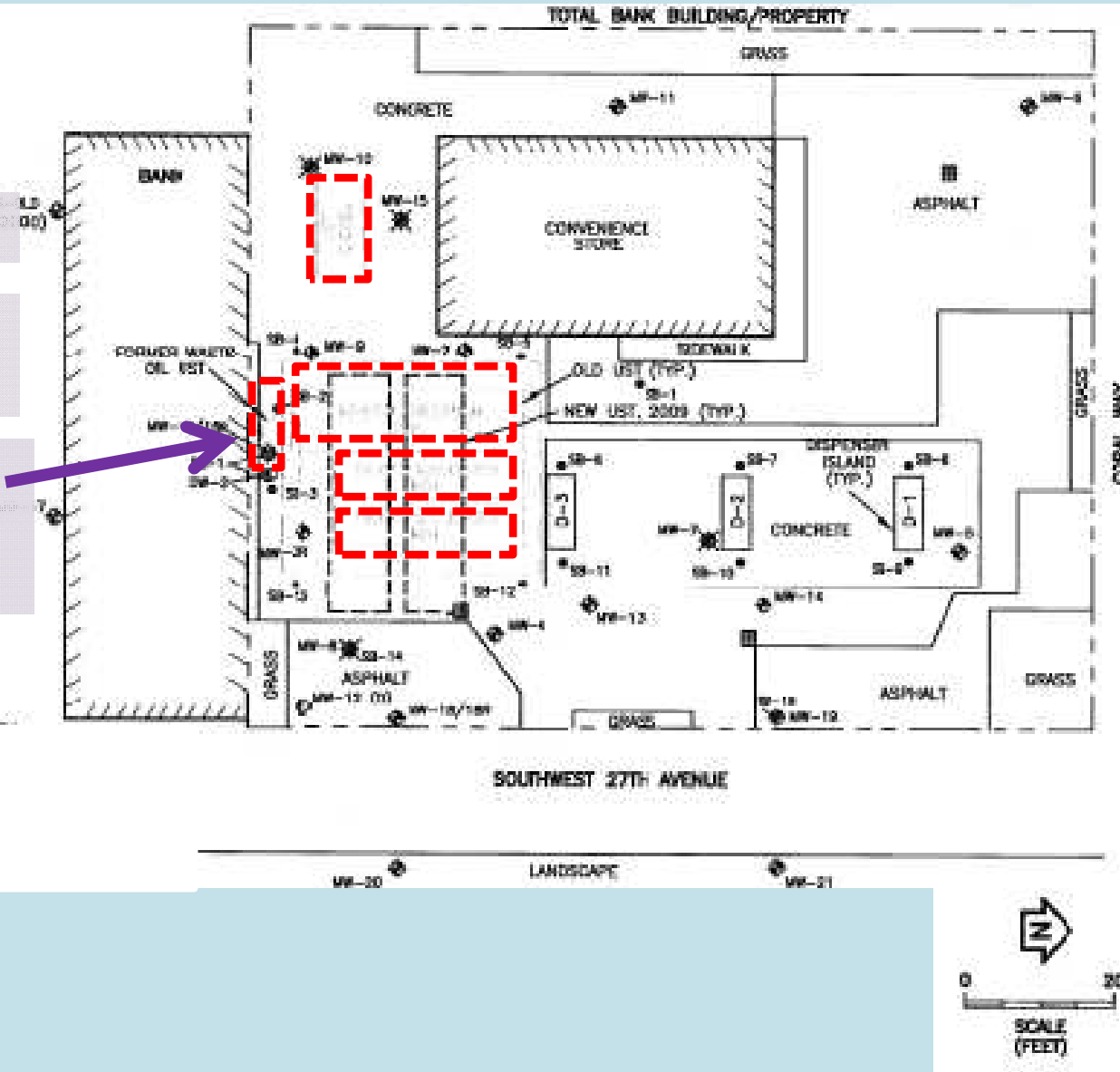




#1 – 1985 - \$\$\$

#2 – 1998 –
NAM spikes

#3 – 2004 –
NAM Spikes,
Waste Oil UST



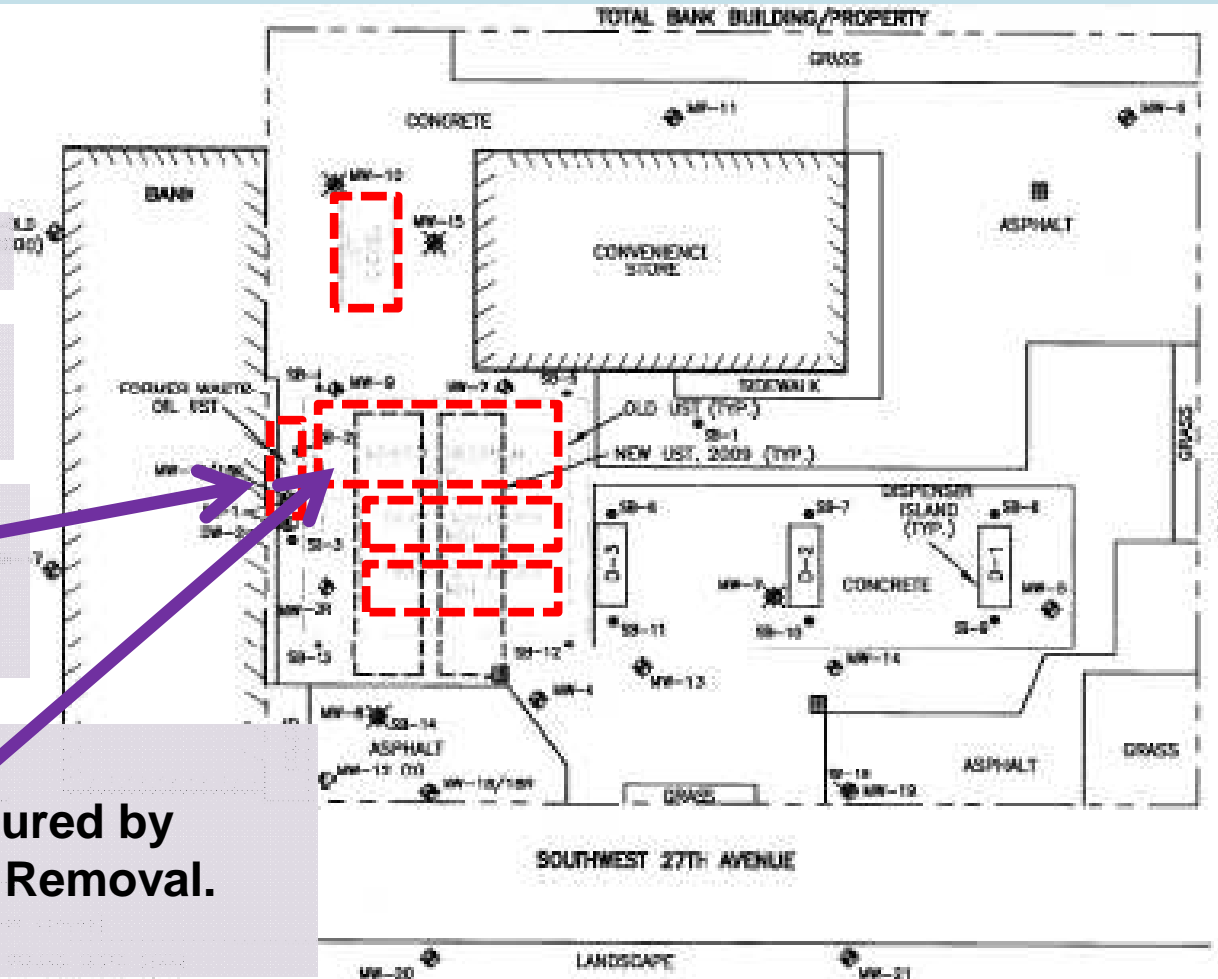


#1 – 1985 - \$\$\$

#2 – 1998 –
NAM spikes

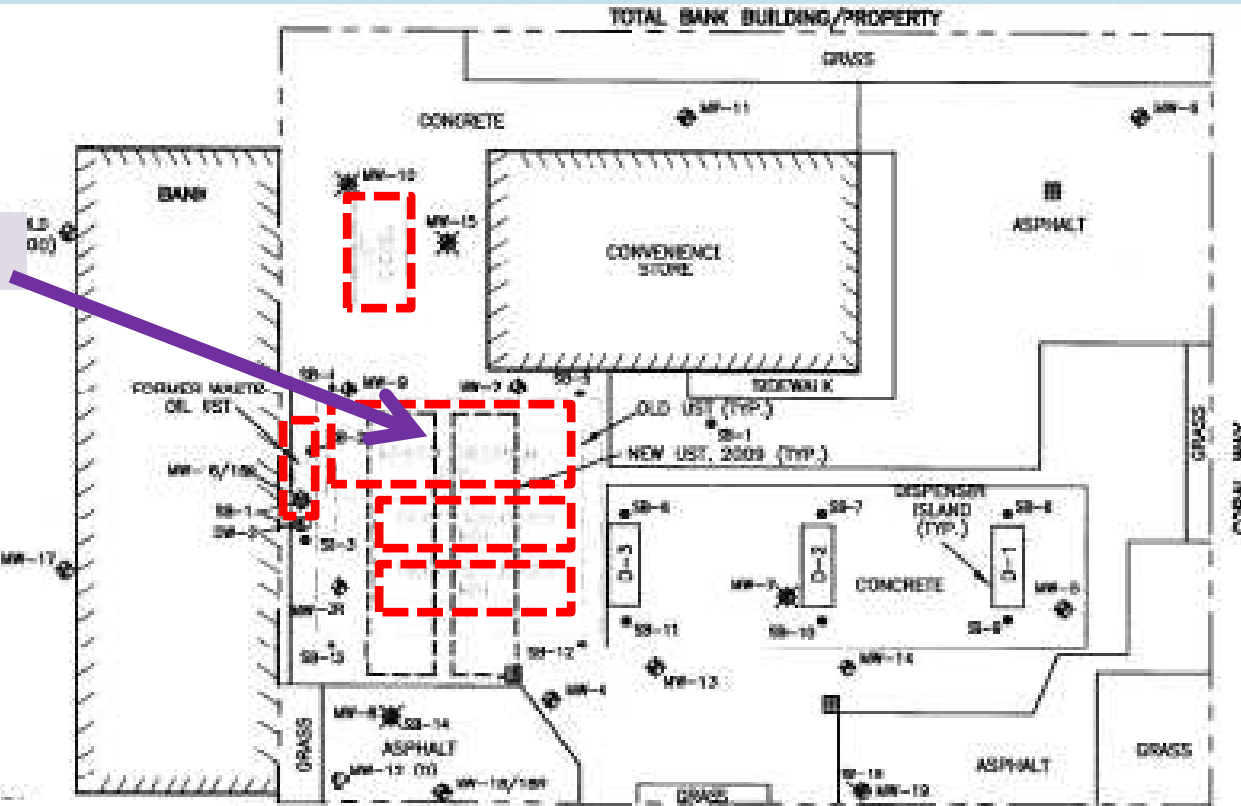
#3 – 2004 –
NAM Spikes,
Waste Oil UST

#4 – 2004 –
Gas. UST Ruptured by
Waste Oil UST Removal.
NAM to 2008.





#1 – 1985 - \$\$\$



#5 – 1999 Agency Letter:
Original RP “relieved of responsibility” for Release #1.

#6 – 2000 CAR - “1999 SRCO”/NFA for #1.

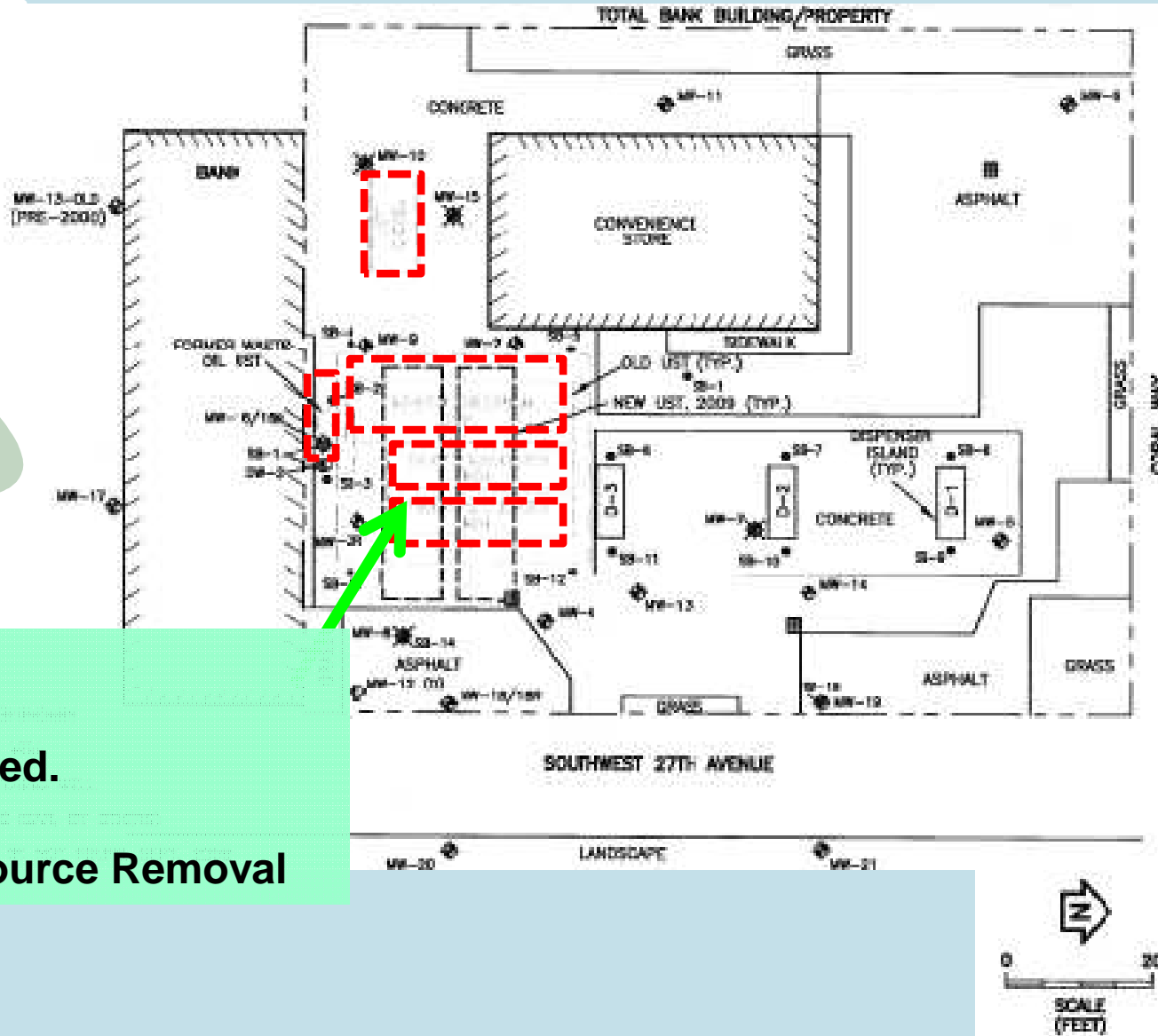




2009 –

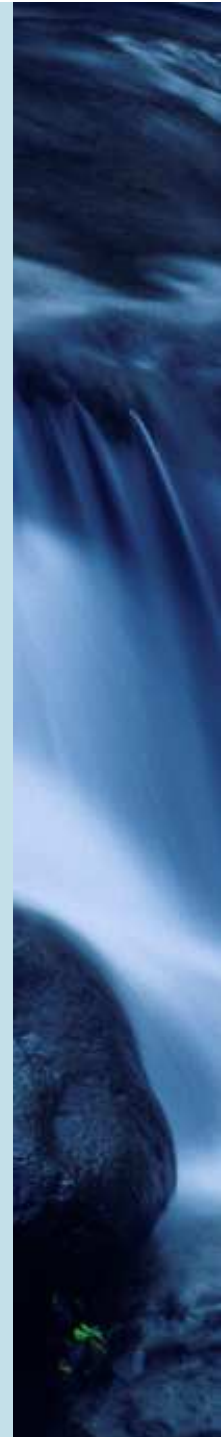
USTs replaced.

Soil / GW Source Removal



Coral Way Station

1. Work with Agency:
 1. NOV - Notice of Violation
 2. Consent Order
 3. Penalties
2. SSARs → SAR Approval
3. “NAM, LSRAP, or NFA w/ Conditions”, but:
 - Boundary well impacts
 - City ROW
 - Other Property
4. → Funding Restoration



1. Release #1 -\$\$\$ Status:
 1. Ahah! No NFA, still covered

Florida Department of Environmental Protection - Enterpri...

Facility Discharge Tasks Bayr Codes Media Poll Comments History RePorts Help Exit Window ORACLE

Storage Tank/Contamination Tracking - Discharge Information

Co: 13 Facility#: 8506226 Facility Name and Address: 27TH CORAL STATION Manager: Facility Cleanup Status: ONGO
 Facility Status: OPEN Facility Address: 2200 SW 27TH AVE MAMI Florida Highest Discharge Score: 10
 Discharge Record: 1 of 3

Cleanup Info: Info Source: E EDI Discharge Score: 10
 Lead Agency: BWC BUREAU OF WASTE CLEANUP Score Effective Date: 02/08/2006
 Cleanup Required*: R CLEANUP REQUIRED

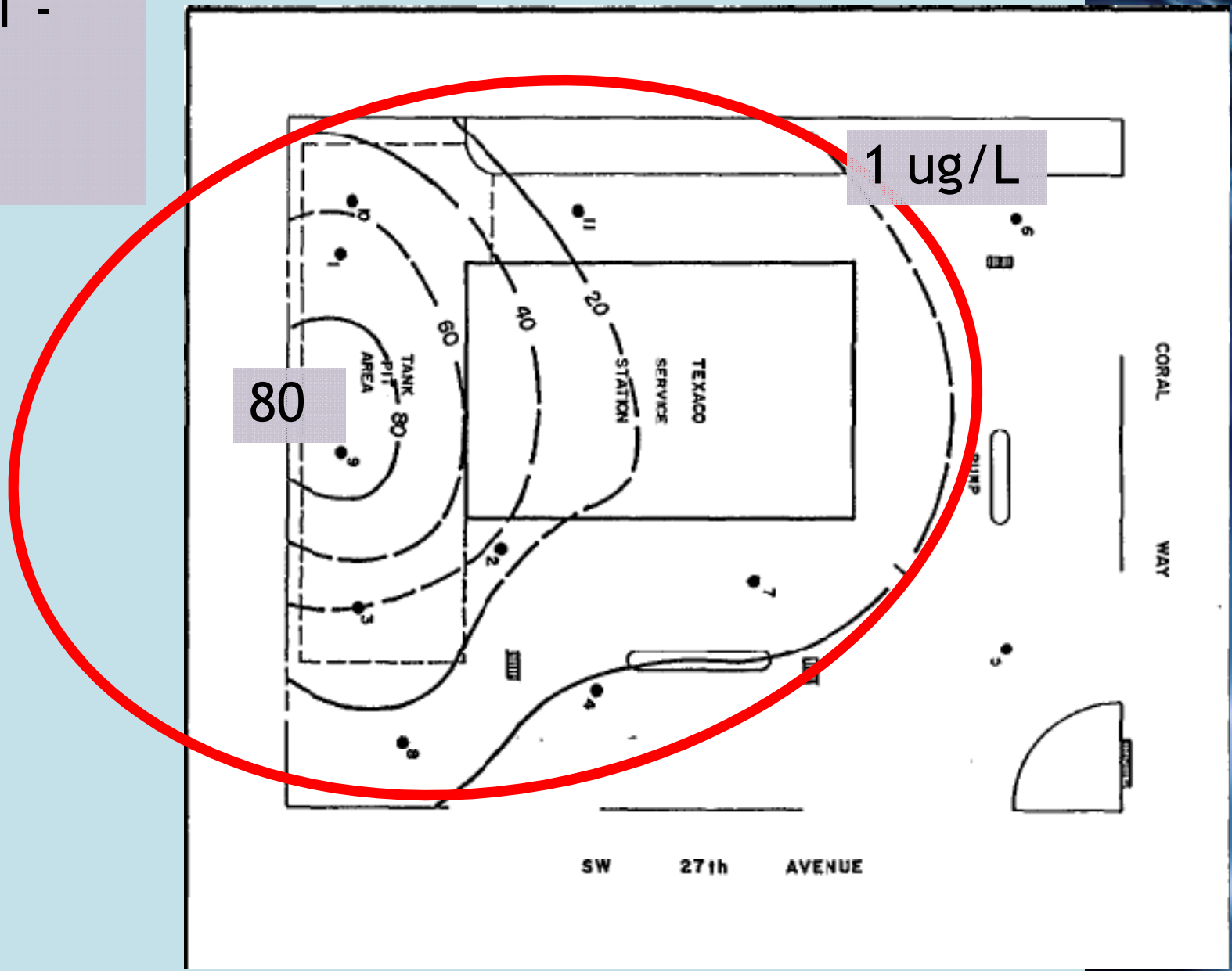
Discharge Info: Discharge Date*: 10/30/1985 Inspection Date: 09/04/1987
 Combined With: Cleanup Status/Date: RA 04/26/2006

Eligibility and Application Info	Application Received	Program	Lead	Status	Determination Letter Sent	Redetermined?
	08/04/1985	E	R	E	11/10/1987	N

Press the UP or DOWN arrow for more data
 Record: 1/3

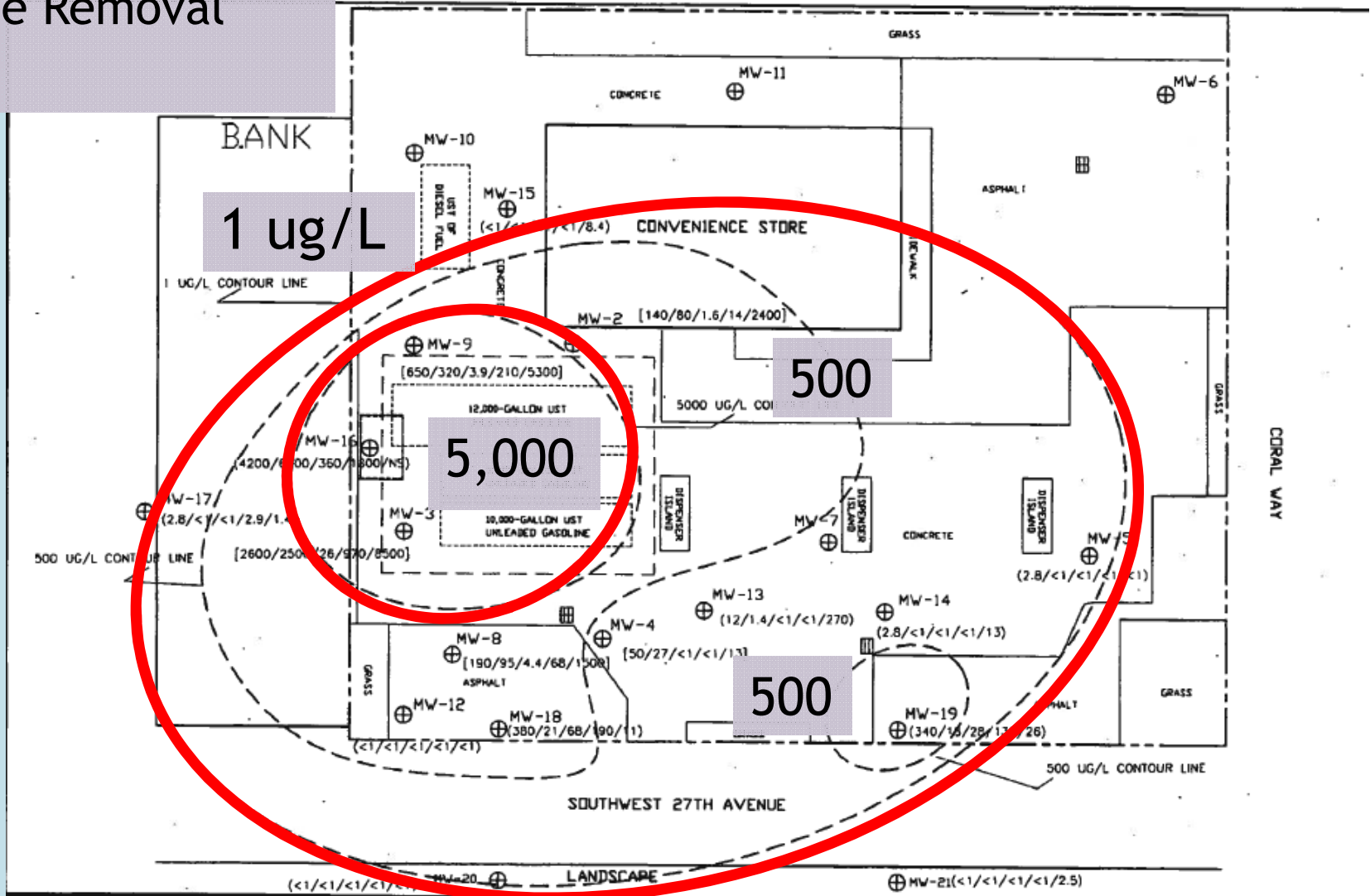
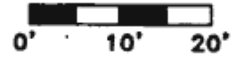


Release #1 -
Benzene
1988



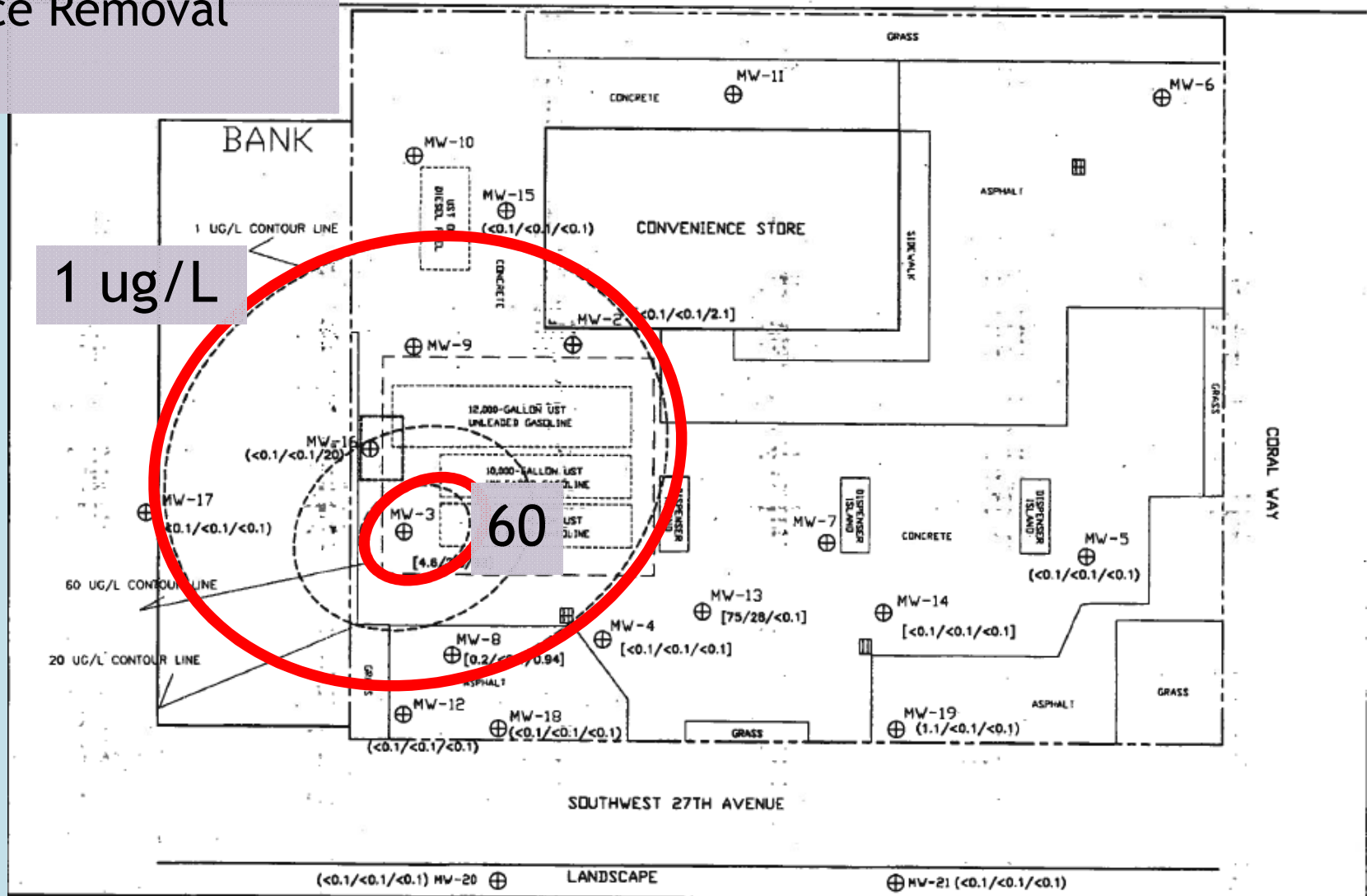
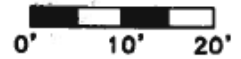
Release #1 - #4 VOCs Pre-Source Removal 2005

(<1/25/21/21/21) = BENZENE, TOLUENE, ETHYLBENZENE, TOTAL XYLENES, AND MTBE CONCENTRATIONS IN UG/L
 () GROUNDWATER SAMPLES COLLECTED ON NOVEMBER 10, 2004, JANUARY 24 & 27, 2005, AND JULY 14, 2005
 [] GROUNDWATER SAMPLES COLLECTED ON APRIL 14, 2004 AND MAY 11 & 17, 2004



Release #1 - #4
 SVOC (PAHs)
 Pre-Source Removal
 2005

(<0.1/25/21) = 1-METHYLNAPHTHALENE, 2-METHYLNAPHTHALENE, AND NAPHTHALENE CONCENTRATIONS IN UG/L
 () GROUNDWATER SAMPLES COLLECTED ON NOVEMBER 10, 2004, JANUARY 24 & 27, 2005, AND JULY 14, 2005
 [] GROUNDWATER SAMPLES COLLECTED ON MAY 11 & 17, 2004

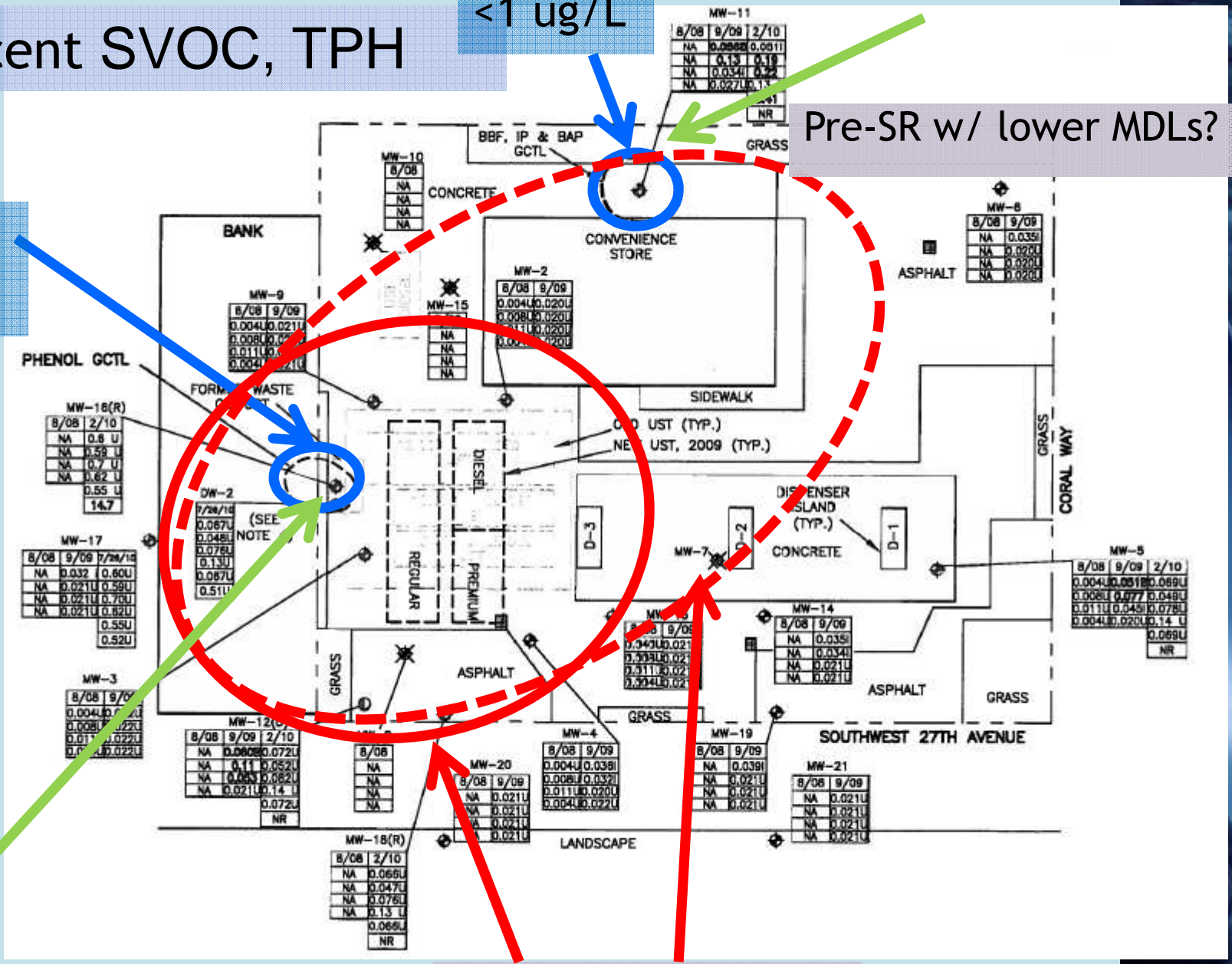


Recent SVOC, TPH

<1 ug/L

10 ug/L Phenol

Pre-SR w/ lower MDLs?

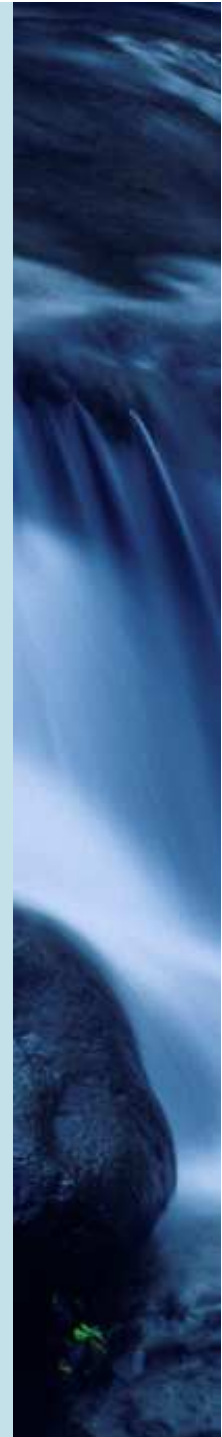
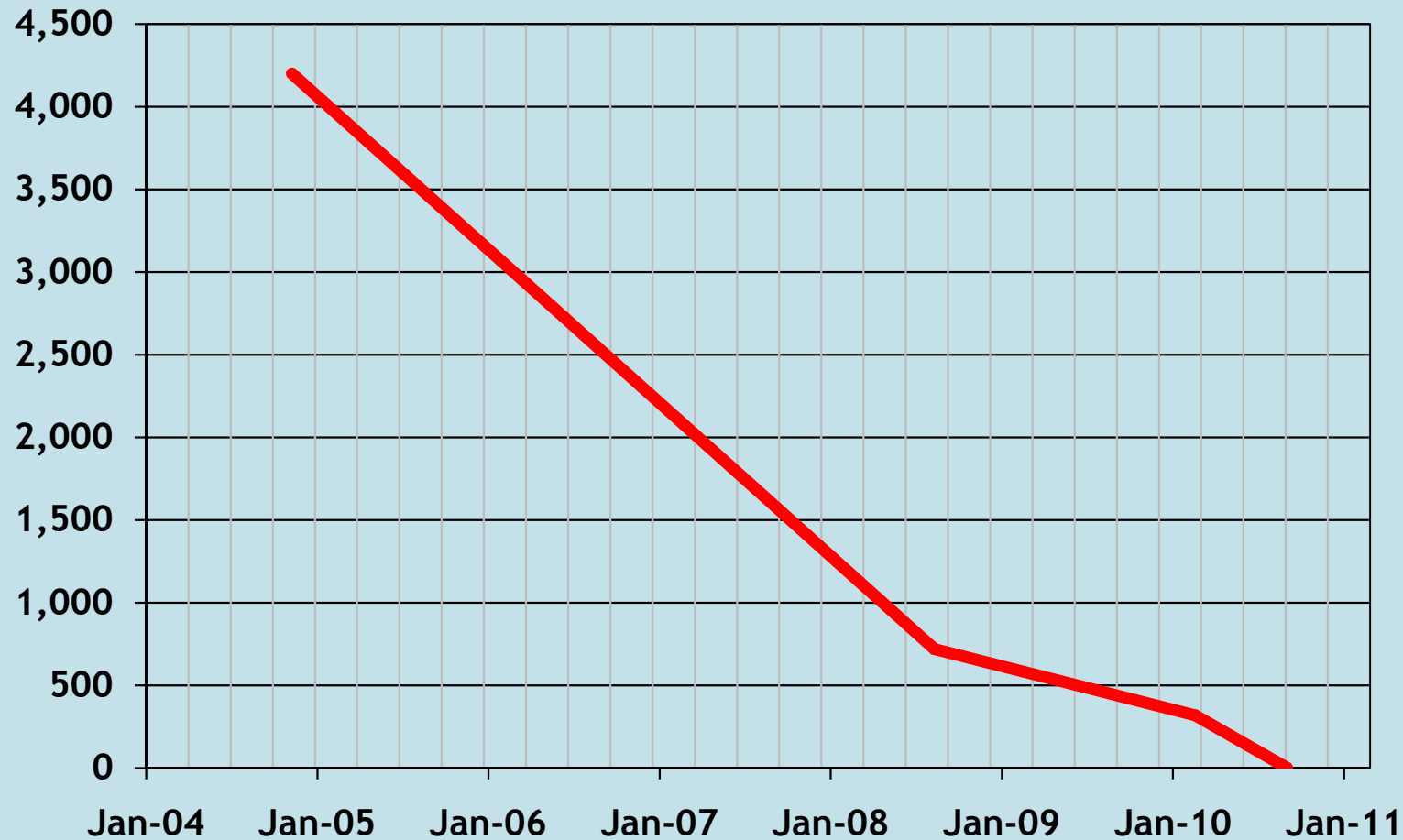


Pre-Source Removal

Typical Trend: VOC

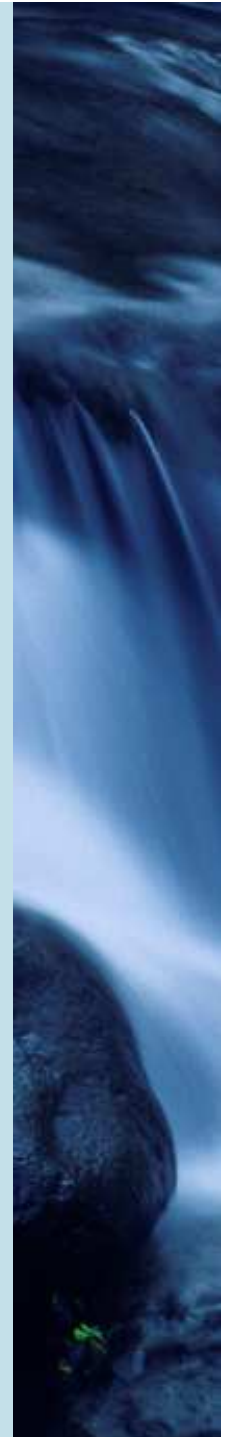
- evaluated well by well, in report.

MW-16 Benzene (DTW = 6 - 7')



Coral Way Station - Request for Coverage:

1. Release #1
 - NAM: Fluctuation, not Attenuation
 - Still Eligible \$\$\$
2. Owner-paid Source Removal = Only Cleanup
3. SSARs:
 - → Attenuation → Low, NAM-only levels
 - → Shrinking
4. Remaining impacts reduced to = #1 NAM
5. Requested 100% State coverage of future costs.



Coral Way Station - State review for EDI Coverage:

1. State analyses of plume area and mass:

69% State : 31% RP

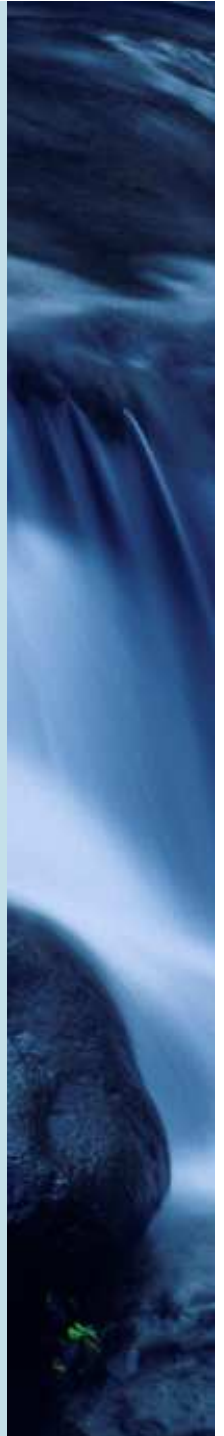
2. Other factors:

80% State : 20% RP

3. **Agreement. Funding restored.**

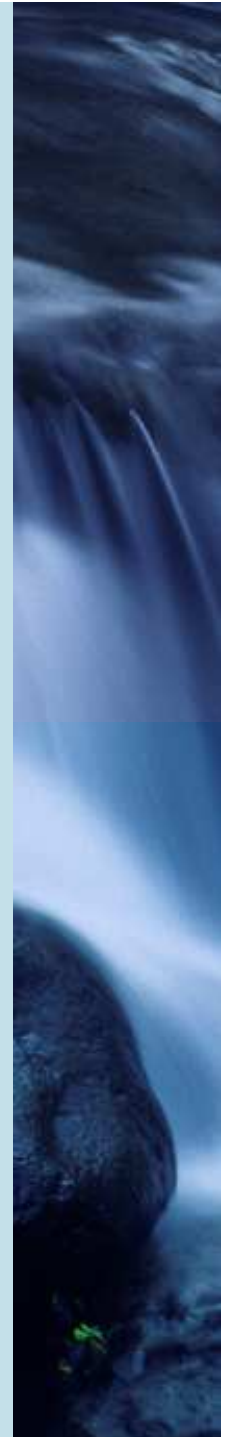
4. Status:

- Site awaiting State funds (priority order)
- **Attenuating, without Monitoring \$\$\$**
- Instead of Client paid NAM or Condition Closure
- New Rules may facilitate Condition Closure



Simple Forensics → Closures & Funding

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Construction Spill Site



Tampa Construction Spill Site



Portable Fuel Tank Spill

**Single Family Home with Well...
before this Development**



Single Family Home



Apparent Spill Impacts

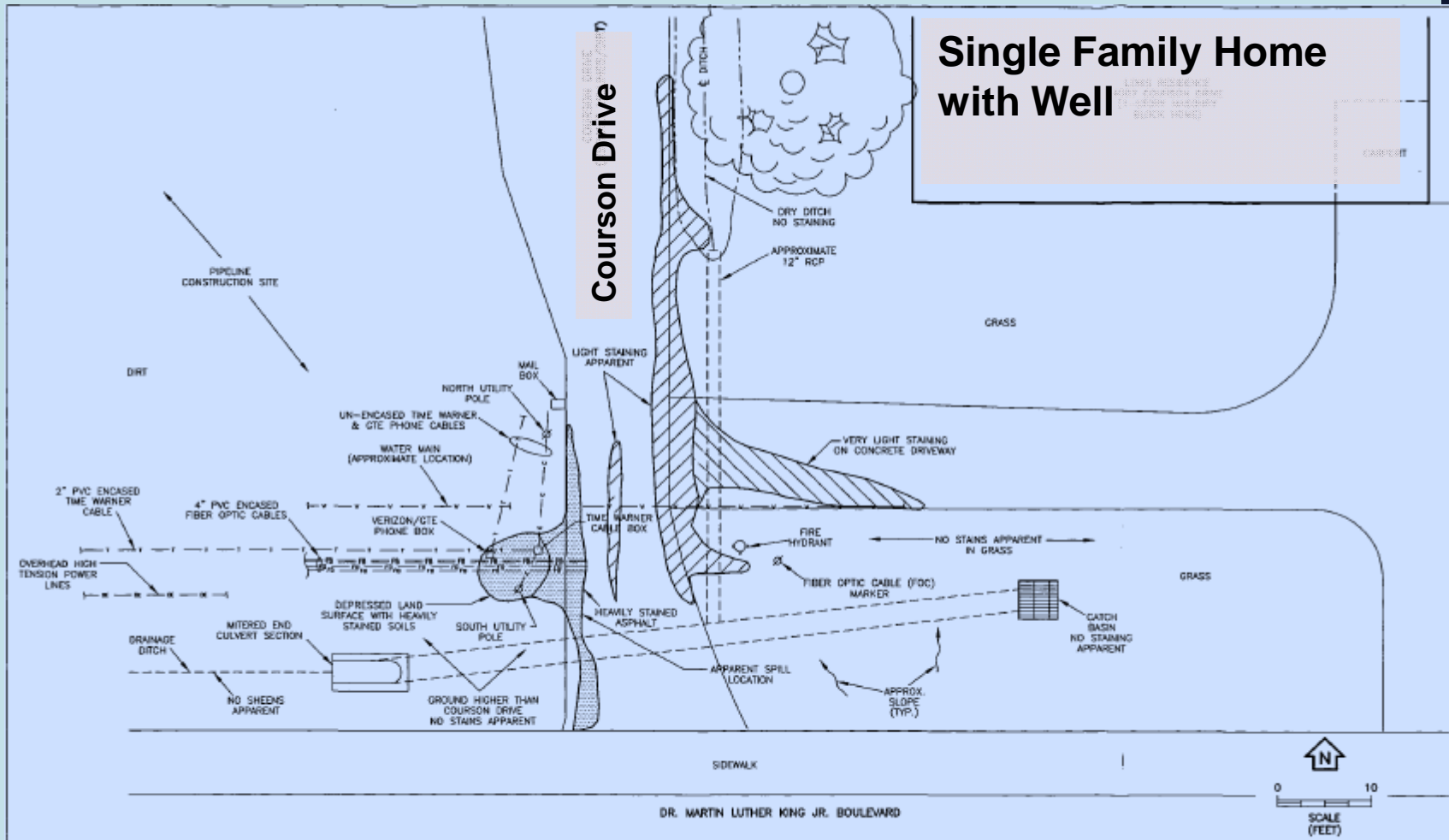


FIGURE 4.
SPILL MAP
MLK SPILL SITE
TAMPA, FLORIDA

Source: ECT, 2002.



Excavation pit, Peroxide, Bugs in backfill



Cleanup areas, Soil Sample Results - all OVA < 1 ppm

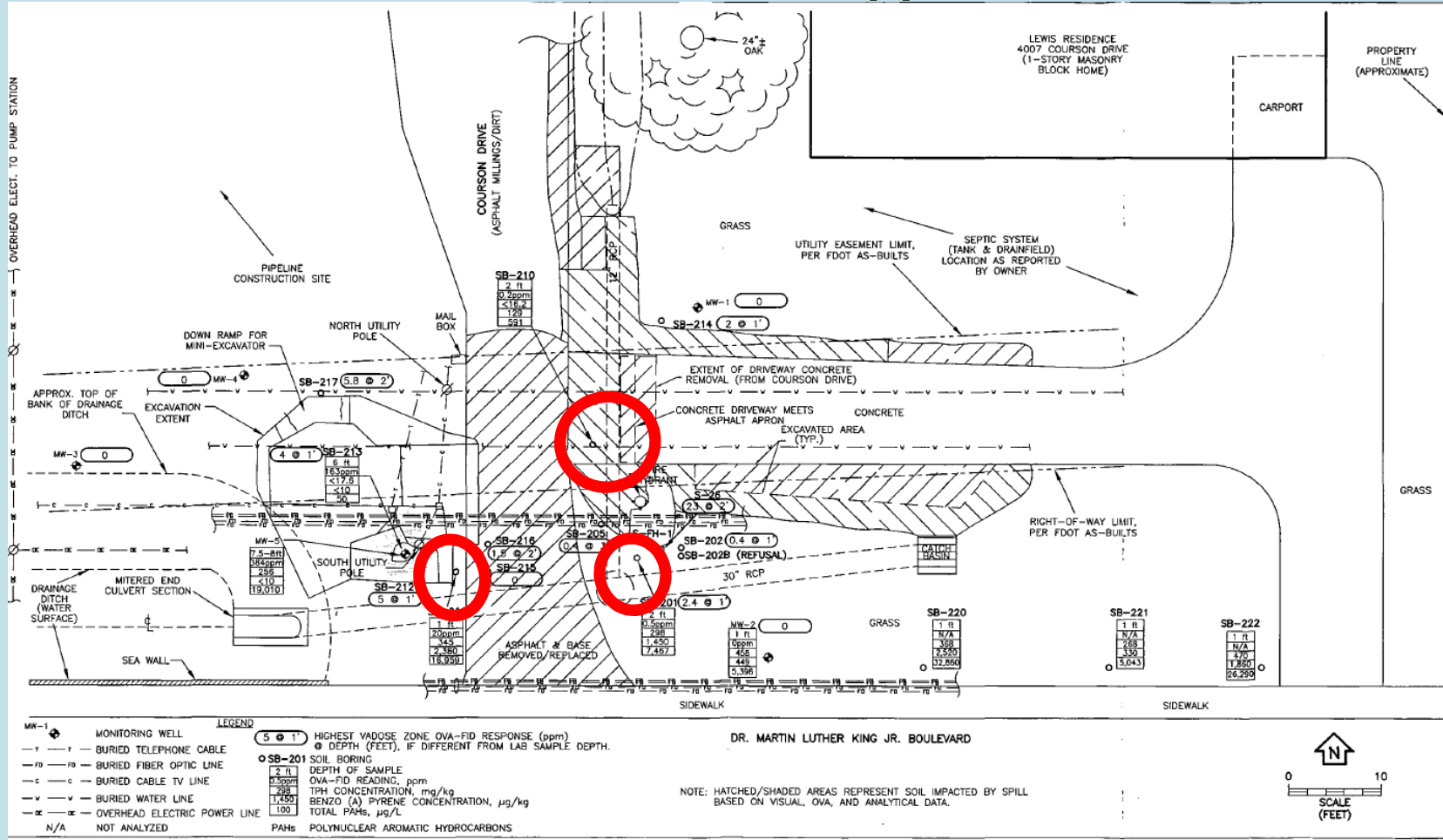


FIGURE 8-A.
SOIL TESTING DATA MAP (JULY-AUGUST 2002 & DECEMBER 2002)

B(a)P, TPH

Cleanup areas, Soil Sample Results - all OVA < 1 ppm

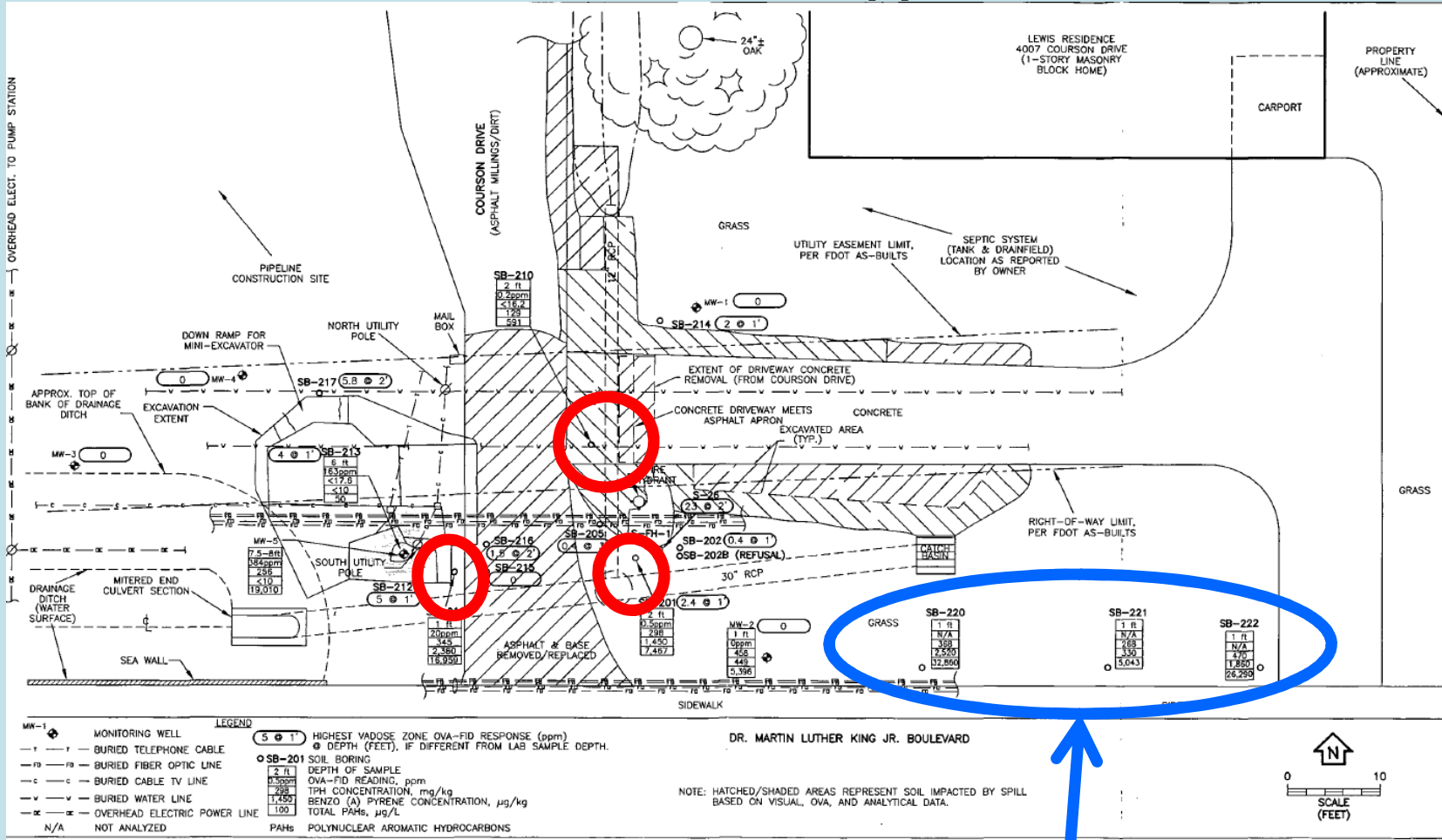


FIGURE 8-A.
SOIL TESTING DATA MAP (JULY-AUGUST 2002 & DECEMBER 2002)

B(a)P, TPH

Background Samples, up slope

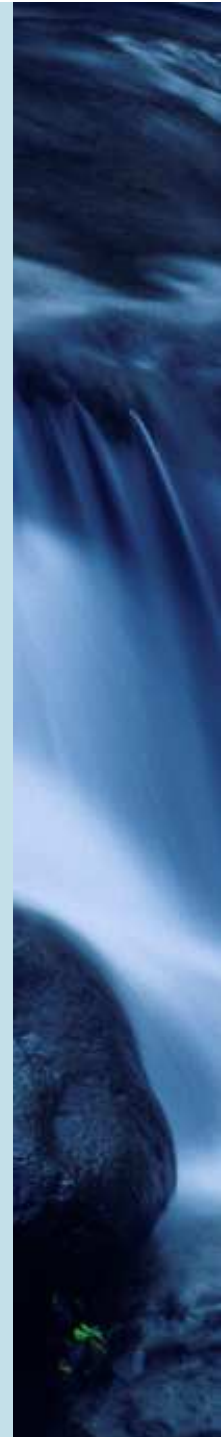
**Background Samples
UP-slope of spill impacts**



Construction Spill Site

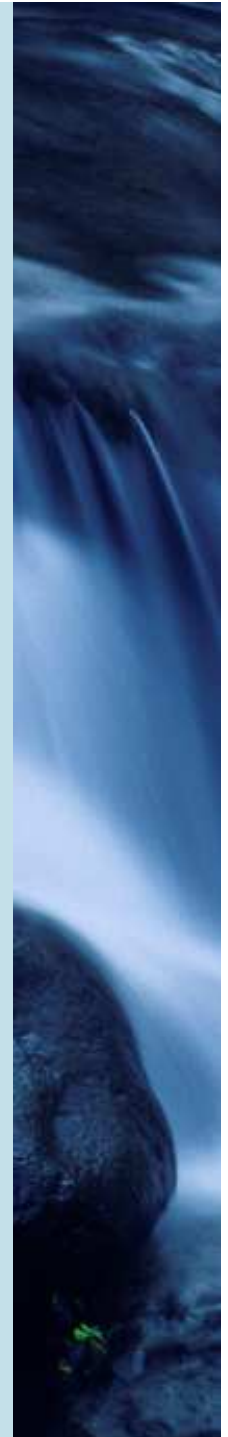
- Cited FDEP Emergency Spill Response guidance:
 - “Fresh Diesel Spill → OVA > 10 ppm”
 - hydrocarbons “typical next to high traffic roadways”

- Cited Petroleum Composition reference:
 - Diesel:
 - B(a)P vs. (non-background chem.) 2-methylnaphthalene
 - B(a)P = 0.00084% vs. 2-MNap = 1.5%
 - → Ratio B : M = 6 : 10,000
 - Motor Oils:
 - B(a)P = 0.0025% = 3 x’s Diesel B(a)P
 - = more concentrated source of B(a)P
 - N-C19 to > n-C34 → also contributes to TPH



Construction Spill Site

- On site, few non-compliant samples:
 - B : M = 3 : 1 to 2 : 1
 - = 4,000 x Diesel Fuel B(a)P content
 - B(a)P = 24 x criteria
 - TPH Max = 345 and 458 mg/L (vs. SCTL 340)
- Background Samples
 - B(a)P and TPH at and above spill cleanup samples



Construction Spill Site

- ◎ **B(a)P and TPH :**
 1. NOT diesel
 2. < = Background
 3. Other Sources: combustion emissions, asphalt materials, motor oils, Storm water runoff, from High Traffic Roadway

- ◎ **Conclusion:**
 - B(a)P and TPH
NOT attributable to recent diesel fuel spill.



Closure Approved.. ☺



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

MAY 20 2003

CERTIFICATE
RETURN

Mr. Michael Johnson
Ballast Nedam Construction, Incorporated
639 South
West Palm Beach, Florida 33411

Site Rehabilitation Completion Order Ballast Nedam Construction, Incorporated, Equipment Spill 4004 Couron Drive

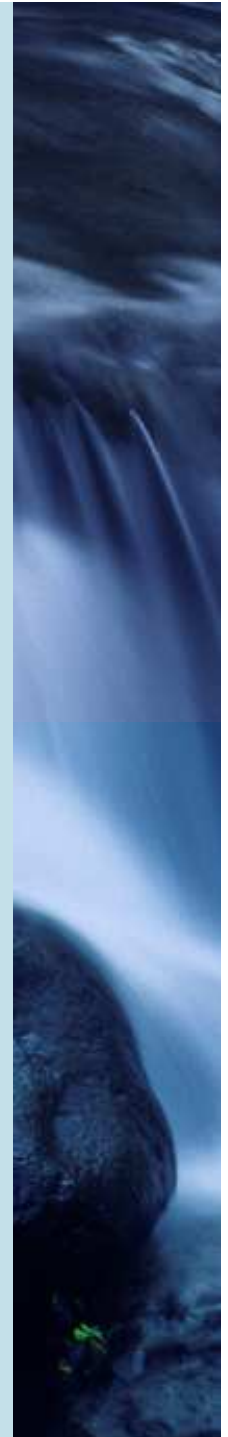
Subject: Site Rehabilitation Completion Order
Ballast Nedam Construction, Incorporated, Equipment Spill
4004 Couron Drive
Tampa, Hillsborough County
FDEP Facility ID# 299804361
Discharge Date: October 21, 2001 (Non-program)
Discharge Score: None

Dear Mr. Johnson:

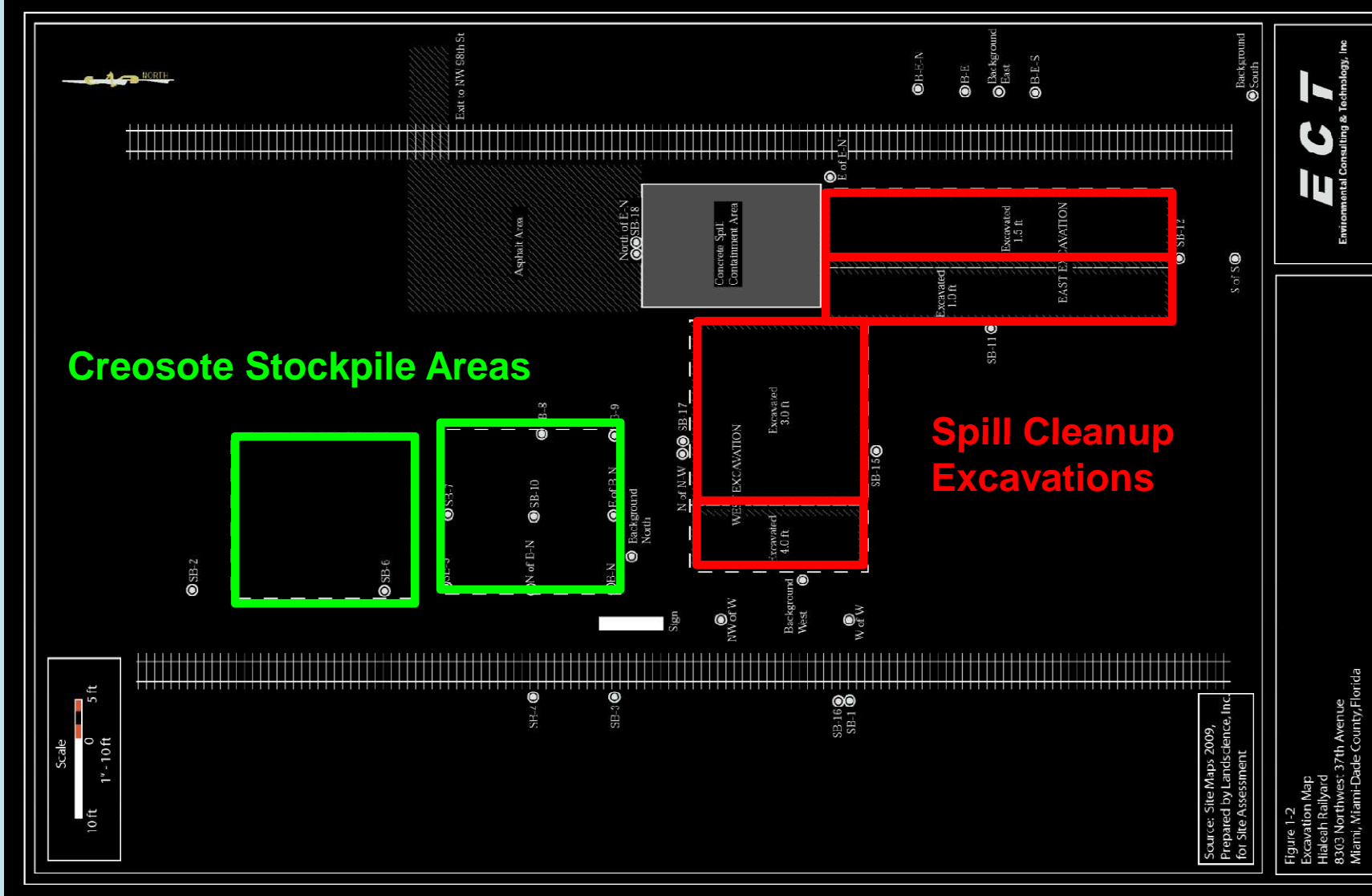
Environmental Protection Commission of Hillsborough County (EPCHC) has reviewed the Site Assessment Report (SAR) Addendum No. 2 and No Further Action Proposal (NFAP) dated March 20, 2003 (received April 3, 2003), prepared and submitted by Environmental Consulting & Technology, Incorporated, for this site. Documentation submitted with the NFAP confirms that criteria set forth in Rule 62-770.680(1), Florida Administrative Code (F.A.C.), have been met. The NFAP is hereby incorporated by reference in this Site Rehabilitation Completion Order (Order). Therefore, you are released from any further obligation to conduct site rehabilitation at the site for petroleum product contamination associated with the discharge

Simple Forensics → Closures & Funding

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-
1. **RR Station Fuel Spill**
 2. Miami Adel's Station



RR Station Fuel Spill



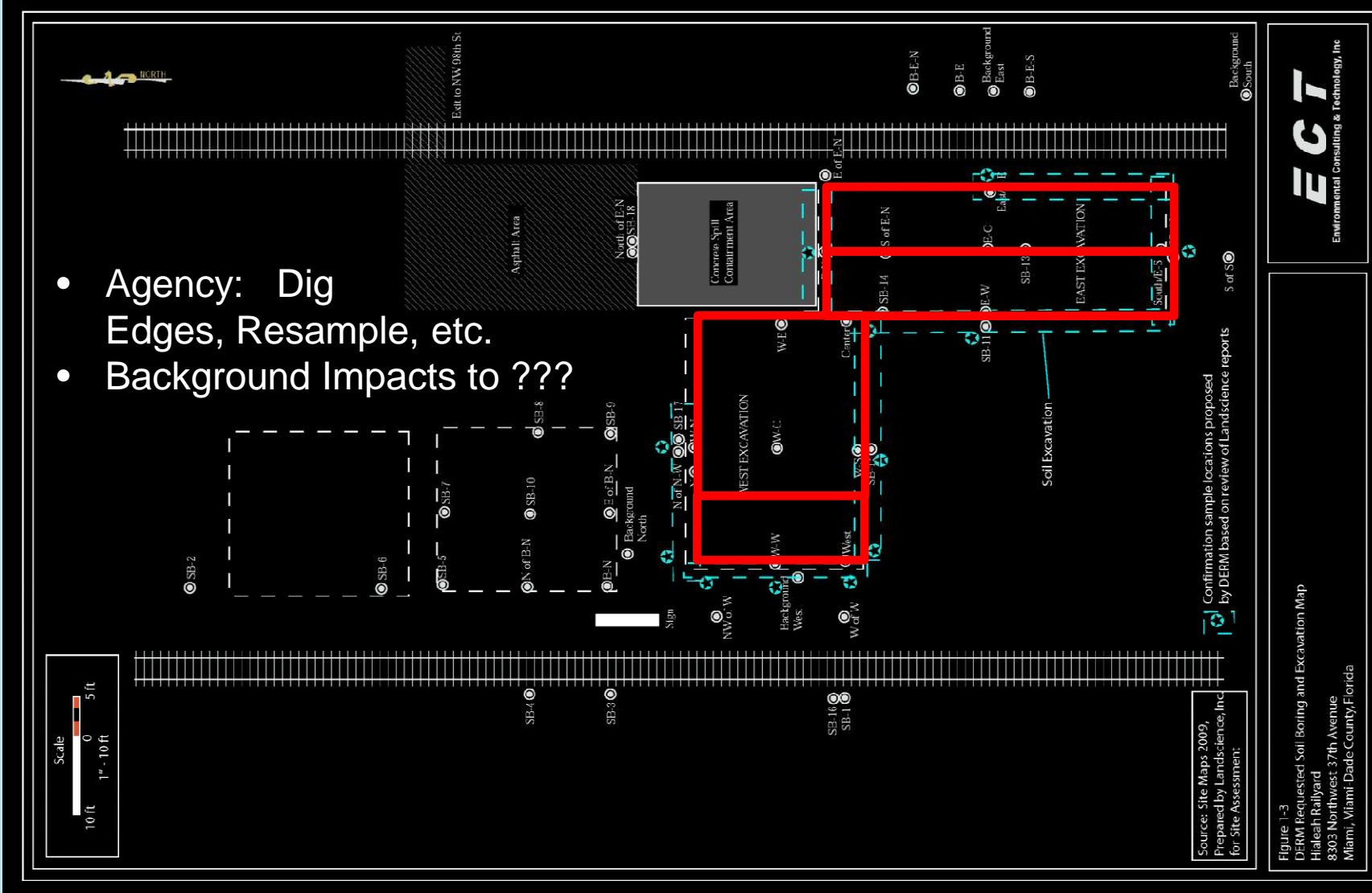
Source: Site Maps 2009,
Prepared by Landscience, Inc.
for Site Assessment

Figure 1-2
Excavation Map
Hialeah Rail yard
8300 Northwest 37th Avenue
Miami, Miami-Dade County, Florida



RR Station Fuel Spill

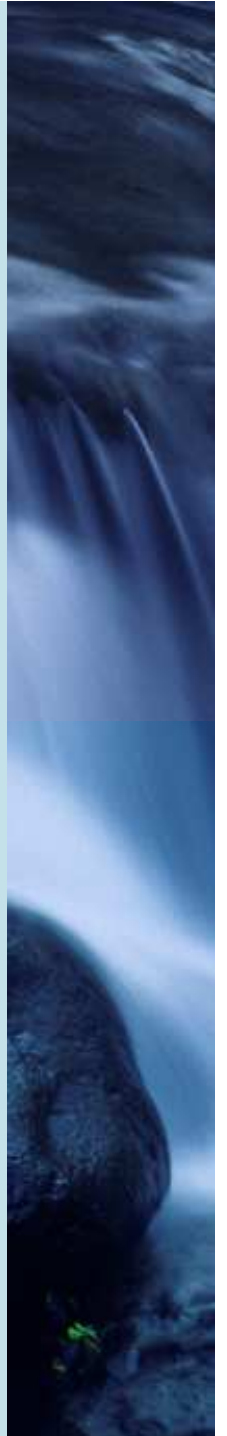
- Agency: Dig Edges, Resample, etc.
- Background Impacts to ???



RR Station Fuel Spill

Prior Work by others... Deficient:

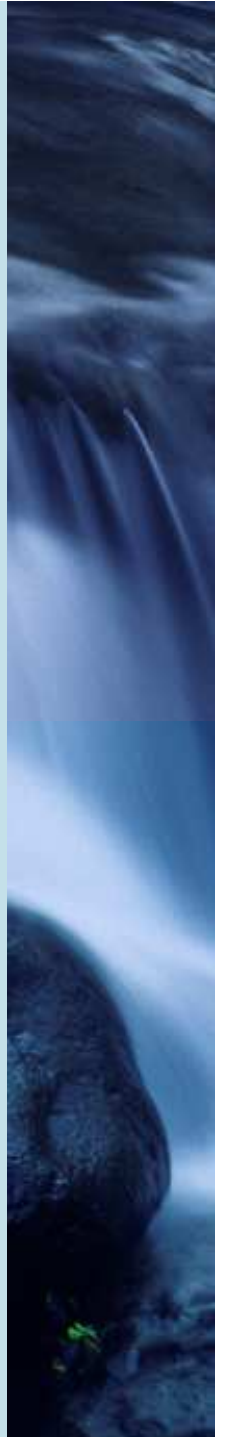
1. 5 SAR Addendums
2. Incremental Maps, Tables
3. Background impacts
4. Agency
5. Intent to re-dig limits, resample, etc.
6. \$\$\$ for “small spill”



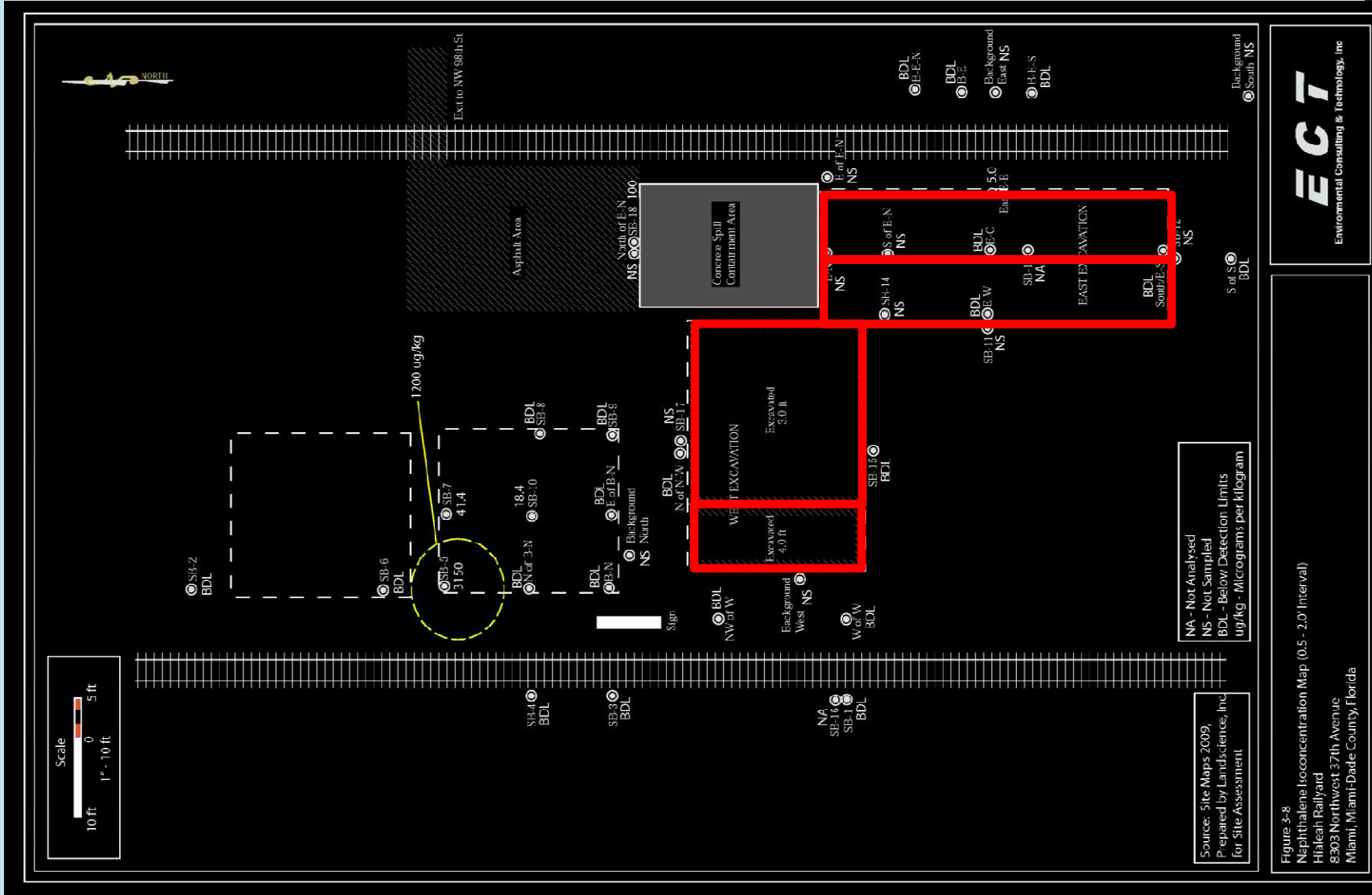
RR Station Fuel Spill

To “Get a Grip” on the basics:

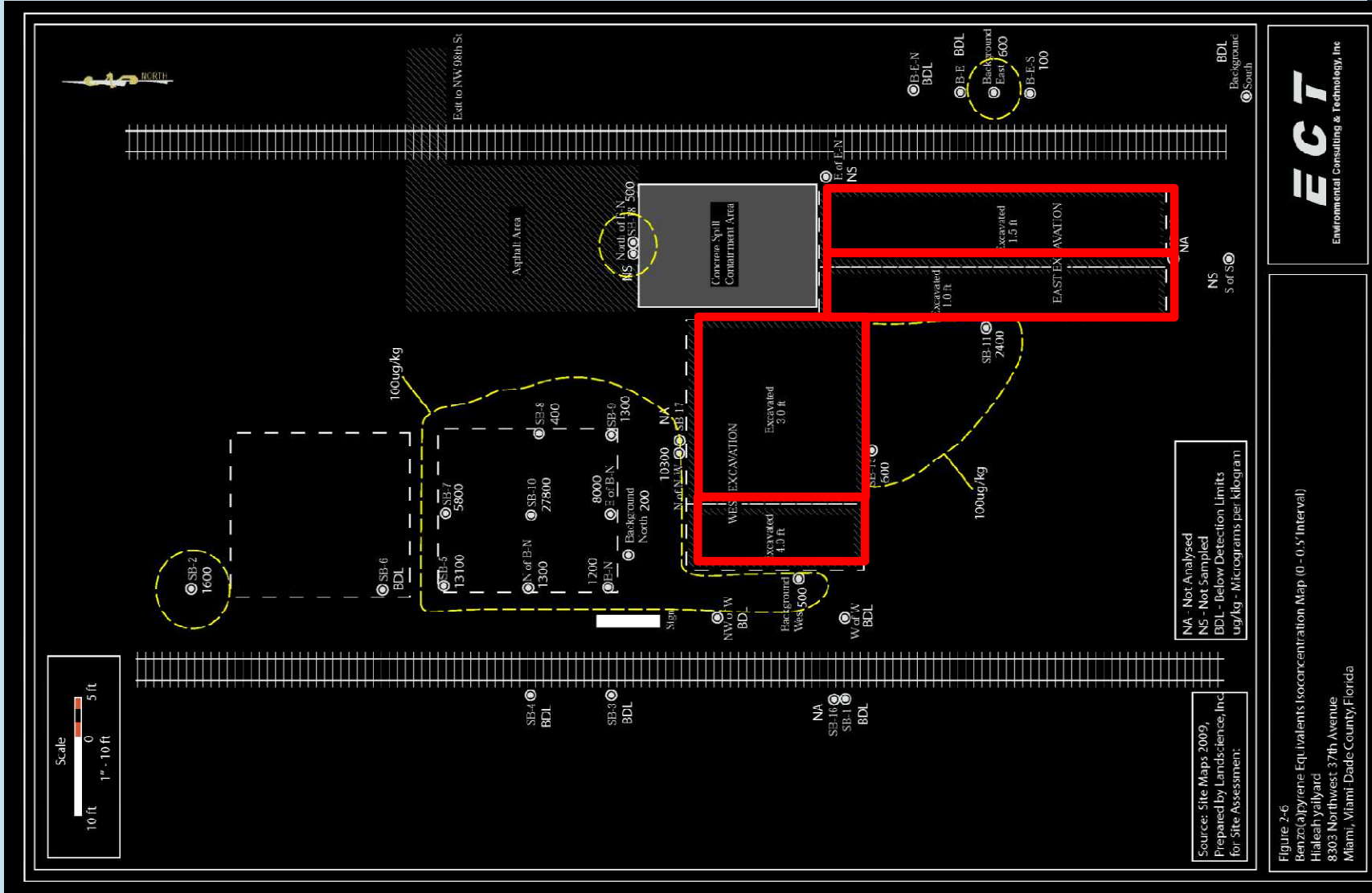
1. Data Table (5 SARs) and Updated Maps
2. “Excavated” & “Remaining” Soil Tables
3. SCTLs (soil cleanup target levels), L, DE
4. Mapped Inferred extents, depths, chems.



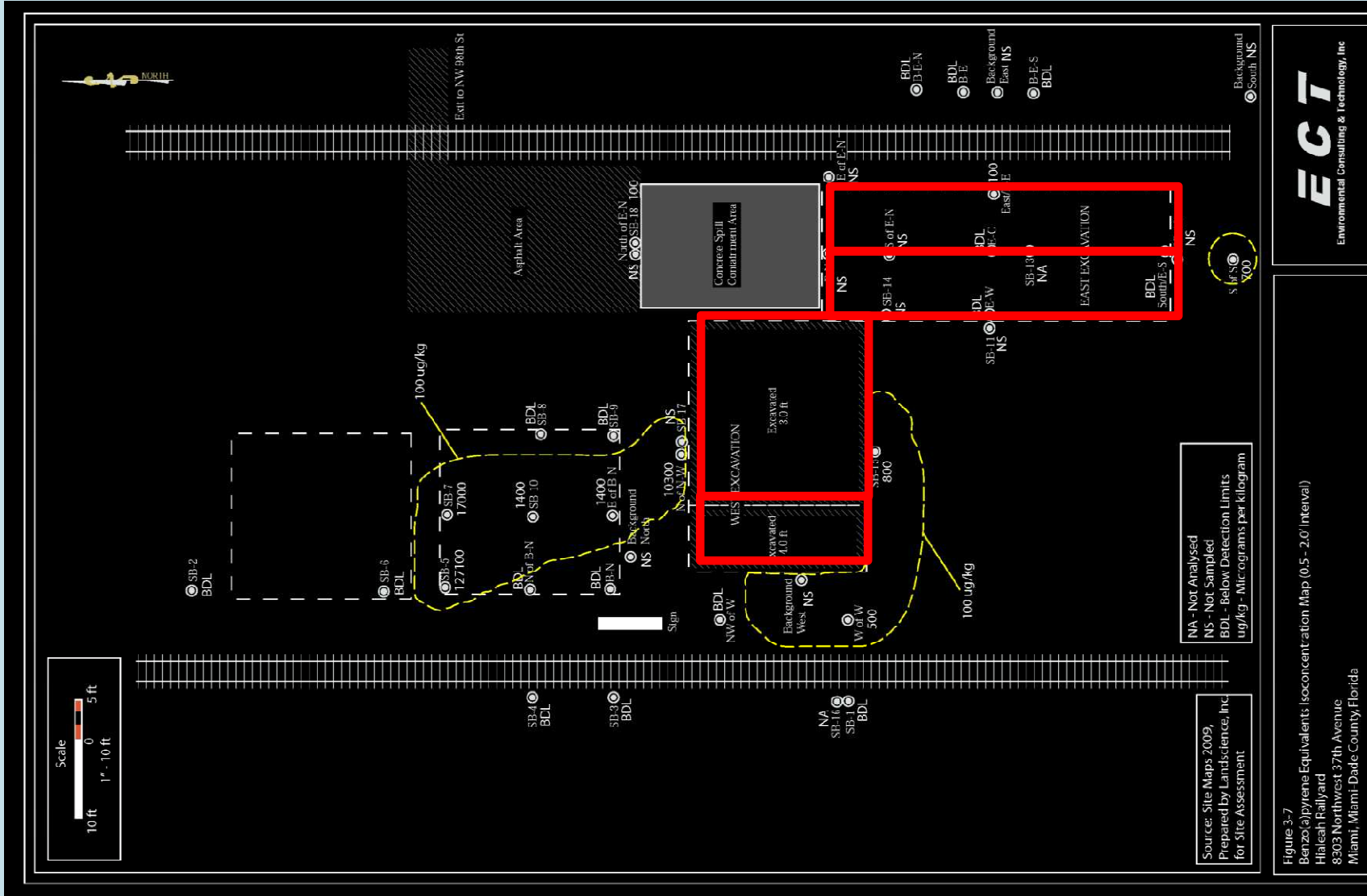
Naphthalene 0.5 - 2 ft - isolated



B(a)P Eq. 0 - 0.5 ft - no Naphthalene



B(a)P Eq. 0.5 - 2 ft (vs. Naphthalene spot)



B(a)P Eq. 2 - 4 ft - no Naphthalene

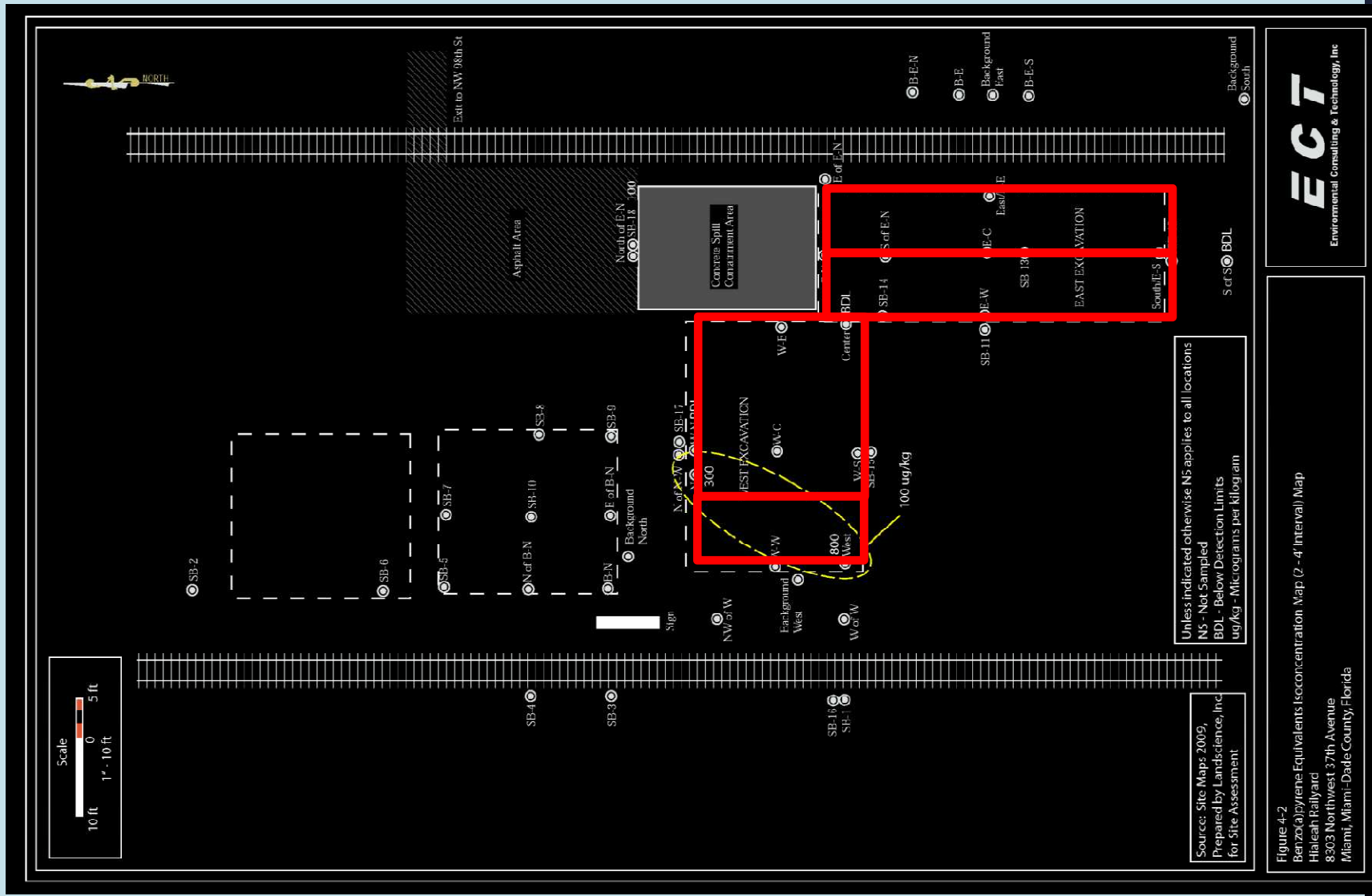
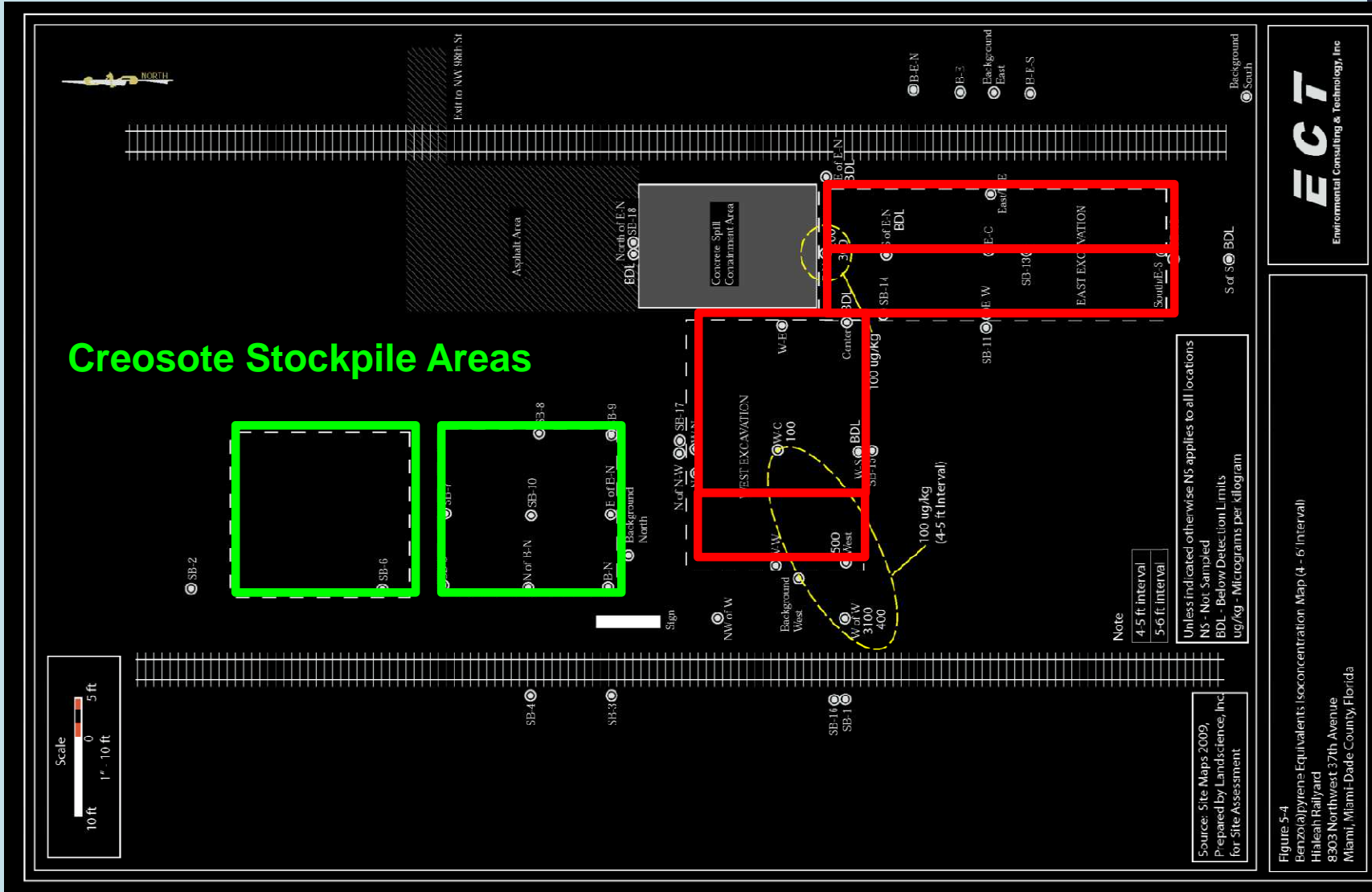


Figure 4-2
Benzopyrene Equivalents Isoconcentration Map (2-4' Interval) Map
Hialeah Railway Yard
8303 Northwest 37th Avenue
Miami, Miami-Dade County, Florida

B(a)P Eq. 4 - 6 ft -

no Naphthalene



RR Station Fuel Spill

Check vs. Other Background Sources

1. TYPICAL % COMPOSITION in FUEL
2. Computed typ. RATIOS of Chemical Groups
3. Compared to SITE Soil Chem. Ratios
4. Cited NIH reference on other PAH sources
 1. Combustion of wood, fuel,
 2. Emissions - RR, vehicle (urban area, railyard)
 3. Creosote, etc.

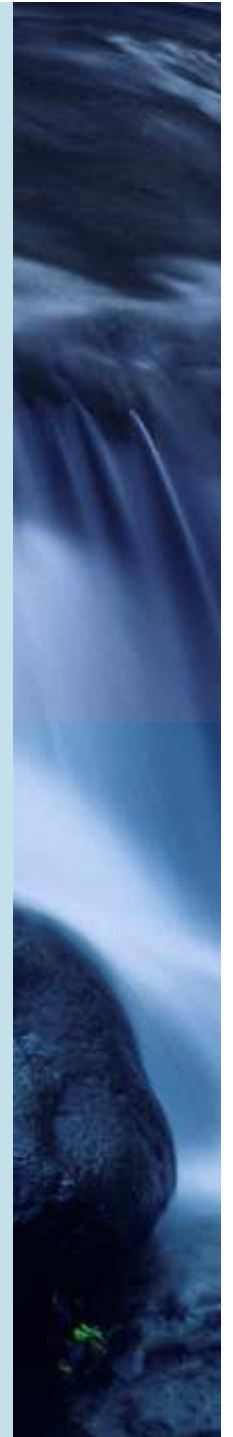


Table to Eval. SCTLs and Chem. Ratios

						CHEM. GROUP RATIOS		CHEMICAL GROUP TOTALS					
Typical % by Weight Content in Diesel Fuel						3,995	0.025%	0.777%	1.63%	3.59%	0.000408%	6.00%	0.000220%
DE-R - Residential SCTL						Group Ratios		Chemical GROUPS					100
DE-I - Industrial SCTL													700
Leachability SCTL ³													8000
Chemical Abstracts (CAS) No.													50-32-8
Carbon #													20
RESULTS SUMMARY													
Sample Designation	Sample Date	Sample Interval (ft)	Soil Excavated? Y/N	CPAH >SCTL? Y/N	Naps>SCTL? Y/N	Total Naps / Total CPAHs (-)	Total CPAH / Total Naps (%)	Total BTEX (ug/kg)	Total NAPs (ug/kg)	Total OP (ug/kg)	Total CPAH (ug/kg)	Total Eval Chems (B+N+OP+CPAH) (ug/kg)	Benzo(a) pyrene (ug/kg)
W-N	8/23/2004	0-0.5	Y	Y	N	0.11	877%	0	380	3,474	3,333	7,187	580
W-N	12/2/2005	3-4	N	N	N	NA	NA	NA	0	0	0	0	<3.3
W-S	8/23/2004	0-0.5	Y	Y	N	0.09	1089%	0	2,010	17,542	21,880	41,432	4,100
W-S	12/2/2005	4-5	N	N	N	NA	NA	NA	0	0	0	0	<3.3
W-E	8/23/2004	0-0.5	Y	Y	N	0.52	193%	8	427	1,064	824	2,323	170
W-W	8/23/2004	0-0.5	Y	Y	Y	13.89	7%	21,200	80,400	56,720	5,790	164,110	560
W-C	8/23/2004	0-0.5	Y	Y	N	0.18	547%	0	1,070	3,971	5,850	10,891	1,100
W-C	12/2/2005	4-5	N	N	N	0.00	>10,000%	NA	0	99	257	356	53

Table to Eval. SCTLs and Chem. Ratios

Typical % by Weight Content in Diesel Fuel							CHEM. GROUP RATIOS		CHEMICAL GROUP TOTALS						0.000220%	0.000
DE-R - Residential SCTL							3,995	0.025%	0.777%	1.63%	3.59%	0.000408%	6.00%	0.000220%	0.000	
DE-I - Industrial SCTL																
Leachability SCTL ³																
Chemical Abstracts (CAS) No.																
Carbon #																
Data Row #	Sample Designation	Sample Date	Sample Interval (ft)	RESULTS SUMMARY			Total Naps / Total CPAHs (-)	Total CPAH / Total Naps (%)	Total BTEX (ug/kg)	Total NAPs (ug/kg)	Total OP (ug/kg)	Total CPAH (ug/kg)	Total Eval Chems (B+N+OP+CPAH) (ug/kg)	Benzo(a)pyrene (ug/kg)	Benzofluoranthene (ug/kg)	
				Soil Excavated?	CPAH >SCTL?	Naps >SCTL?										
2	W-N	12/2/2005	3-4	N	N	N	NA	NA	NA	0	0	0	0	<3.3	<3	
4	W-S	12/2/2005	4-5	N	N	N	NA	NA	NA	0	0	0	0	<3.3	<3	
8	W-C	12/2/2005	4-5	N	N	N	0.00	>10,000%	NA	0	99	257	356	53	3	
10	E-N	12/2/2005	4-5	N	Y	N	0.00	>10,000%	0	0	562	565	1,127	120	8	
11	E-N	12/2/2005	5-6	N	Y	N	0.00	>10,000%	NA	0	799	730	1,529	210	12	
15	E-W	12/2/2005	1-2	N	N	N	NA	NA	0	0	0	0	0	<3.3	<3	
17	E-C	12/2/2005	1.5-2.5	N	N	N	NA	NA	0	0	0	0	0	<3.3	<3	
21	West	10/12/2004	4	N	Y	N	0.21	487%	NA	940	1,839	4,580	7,359	<3.3	1.2	
24	North	10/12/2004	3	N	Y	N	0.09	1061%	NA	87	591	923	1,601	210	16	
29	Background East	10/12/2004	0-0.5	N	Y	N	0.15	660%	0	360	1,290	2,375	4,025	380	33	
30	Background South	10/12/2004	0-0.5	N	N	N	0.56	178%	NA	27	62	48	137	<3.3	3	
31	Background West w	10/12/2004	0-0.5	N	Y	N	0.44	229%	NA	574	600	1,317	2,491	170	24	
32	Background North	10/12/2004	0-0.5	N	Y	N	0.38	260%	NA	165	172	429	766	180	<3	
69	SB-8	11/9/2006	0.5-2	N	N	N	0.00	>10,000%	NA	0	51	120	170	20	2	
70	SB-9	11/9/2006	0-0.5	N	Y	N	0.00	>10,000%	NA	0	1,961	3,628	5,589	790	2	
71	SB-9	11/9/2006	0.5-2	N	N	N	NA	NA	NA	0	0	0	0	<0.83	<1	
72	SB-10	11/9/2006	0-0.5	N	Y	N	0.000203	491437%	NA	18	32,736	87,230	119,984	16,400	11	
73	SB-10	11/9/2006	0.5-2	N	Y	N	0.008658	11550%	NA	37	2,067	4,285	6,409	890	7	
74	N OF N-W	5/15/2007	0-2	N	Y	N	0.00	>10,000%	NA	0	31,079	48,381	79,460	6,430	5	
75	S OF E-N	5/15/2007	4-5	N	N	N	NA	NA	NA	0	10	0	10	<1	-	
76	S OF E-N	5/15/2007	5-6	N	N	N	NA	NA	NA	0	2	0	2	<1	-	
77	E OF E-N	5/15/2007	4-5	N	N	N	0.00	>10,000%	NA	0	2	3	5	1	-	
78	E OF E-N	5/15/2007	5-6	N	N	N	0.00	>10,000%	NA	0	32	34	66	5	3	
79	S OF S	5/15/2007	0.5-2	N	Y	N	0.00	>10,000%	NA	0	1,065	3,591	4,656	498	3	
80	S OF S	5/15/2007	2-4	N	N	N	NA	NA	NA	0	0	0	0	<1	-	
81	SB-11	12/9/2008	0-0.5	N	Y	N	0.00	>10,000%	8	0	14,706	14,485	29,200	1,565	6	
82	SB-12	12/9/2008	0-0.5	N	NA	N	NA	NA	53	NA	NA	NA	53	NA	1	
83	SB-13	12/9/2008	2	N	NA	N	NA	NA	NA	NA	NA	NA	0	NA	1	
85	SB-15	12/9/2008	0-0.5	N	Y	N	0.00	>10,000%	NA	0	9,611	8,230	17,841	274	6	
86	SB-15	12/9/2008	0.5-2	N	Y	N	0.00	>10,000%	NA	0	10,918	15,371	26,289	1,901	1	
87	SB-16	12/9/2008	0-0.5	N	NA	N	NA	NA	0	NA	NA	NA	0	NA	1	
88	SB-16	12/9/2008	0.5-2	N	NA	N	NA	NA	0	NA	NA	NA	0	NA	1	
89	SB-16	12/9/2008	6-8	N	N	N	0.00	>10,000%	NA	0	9	16	26	3	<1	
90	SB-17	12/9/2008	0-0.5	N	NA	N	NA	NA	NA	NA	NA	NA	0	NA	1	
91	SB-18	12/9/2008	0-0.5	N	Y	N	0.00	>10,000%	0	0	1,654	3,260	4,914	260	1	
92	SB-18	12/9/2008	0.5-2	N	N	N	0.00	>10,000%	0	0	323	467	790	51	1	
93	SB-18	12/9/2008	2-4	N	N	N	0.00	>10,000%	NA	0	227	301	529	34	1	
1 Soil Cleanup Target Level, Direct Exposure, Residential Use, Chapter 62-777, FAC							0.56	491437%	53	8,010	180,880	375,800	564,690	Maximum		
2 Soil Cleanup Target Level, Direct Exposure, Commercial/Industrial Use, Chapter 62-777, FAC							0.04	45627%	6	158	6,749	11,808	17,435	Average		
3 Leachability Based on Groundwater Criteria, Chapter 62-777, FAC							0.00	178%	0	0	0	0	0	Minimum		
4 SPLP results indicate benzo(a)pyrene <0.019 ug/L, which is below the GCTL leachability standard of 0.02 ug/L																

TNaps : TCPAH = 0.56 | Max. vs. Fuel = 3,995 | = 0.00014 | 7,102.40

TCPAH : TNAPS = 178% | Min. vs. Fuel 0.025% | = 7,102

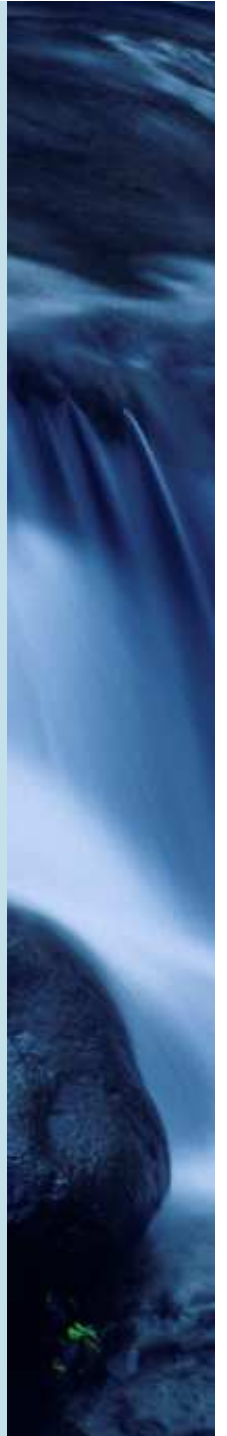
7,000 Times more CPAH:Tnaps than in Diesel Fuel

RR Diesel Spill Site

- Cited Petroleum Composition reference:
 - Diesel:
 - → Ratio CPAH : TNaps $\sim = \underline{1 : 4,000} = 0.00025$
 - → Ratio TNaps : CPAH $\sim = \underline{4,000 : 1} = 4,000$

- Site : 7,000 x's more CPAH > TNaps

- → Remaining Impacts NOT spill related



Results - No Further Assessment for Spill.

RE: Site Assessment Report (SAR) and No Further Action Proposal (NFAP) dated October 14, 2010 and prepared by Environmental Consulting & Technology, Inc. (ECT) for discharge discovered on August 12, 2004 at the South Florida Regional Transportation Authority - Hialeah Rail Yard facility (UT-5738/File-14339/DEP-138522023) located at, near, or in the vicinity of 9400 NW 37th Avenue, Miami, Miami-Dade County, Florida.

Dear Messrs. Alonso and Boardman:

The Department of Environmental Resources Management (DERM) has reviewed the above referenced document received October 15, 2010 and hereby approves the SAR. This determination was based on the additional site analysis performed by the DERM and review of all of the historical site data. The DERM does not require any additional assessment for the August 12, 2004 discharge.

Be advised that a letter recommending no further action (NFA) has been forwarded to the Florida Department of Environmental Protection (FDEP) for review. This recommendation pertains only to that area of this site addressed in the NFA and does not relieve the responsibility for any other areas of this site that may be found to be contaminated. The FDEP will determine final approval or disapproval of the NFA and will notify the responsible parties by mail.

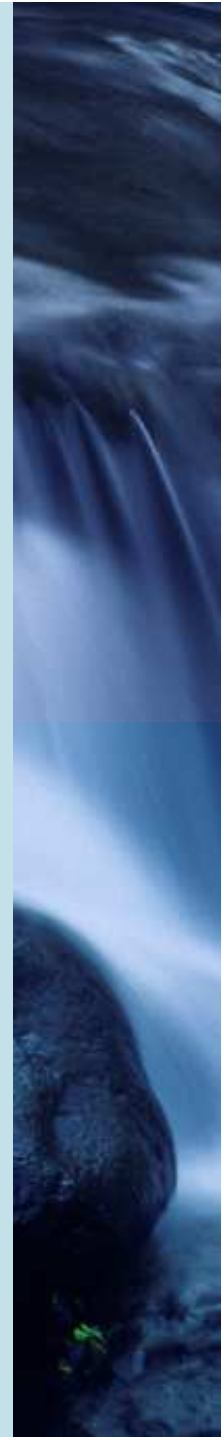
If you have any questions concerning the above, please contact Vishal Katoch, P.G. (katocv@miamidade.gov) of the Environmental Assessment Section at (305) 372-6700.

Sincerely,

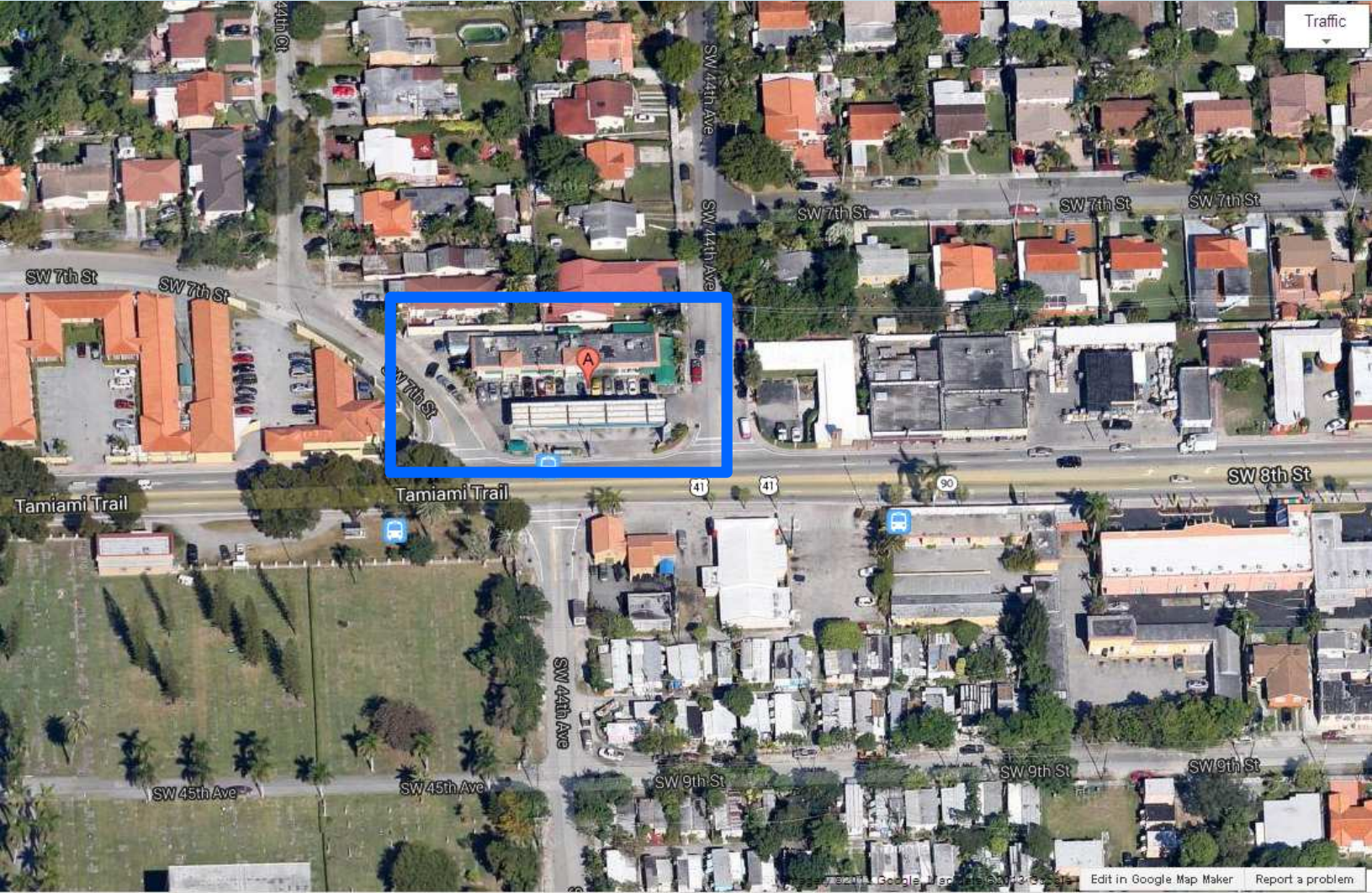


Simple Forensics → Closures & Funding

1. Bulk Plant
 2. Coral Way Station
 3. Construction Spill Site
-
1. RR Station Fuel Spill
 2. **Miami Adel's "Amerika on the Go" Station with Schmidt, et.al.'s T/8 Method for fuel and impact aging**



Miami Adel's Station



1992 Dig Limit, Assessment, NAM-'97

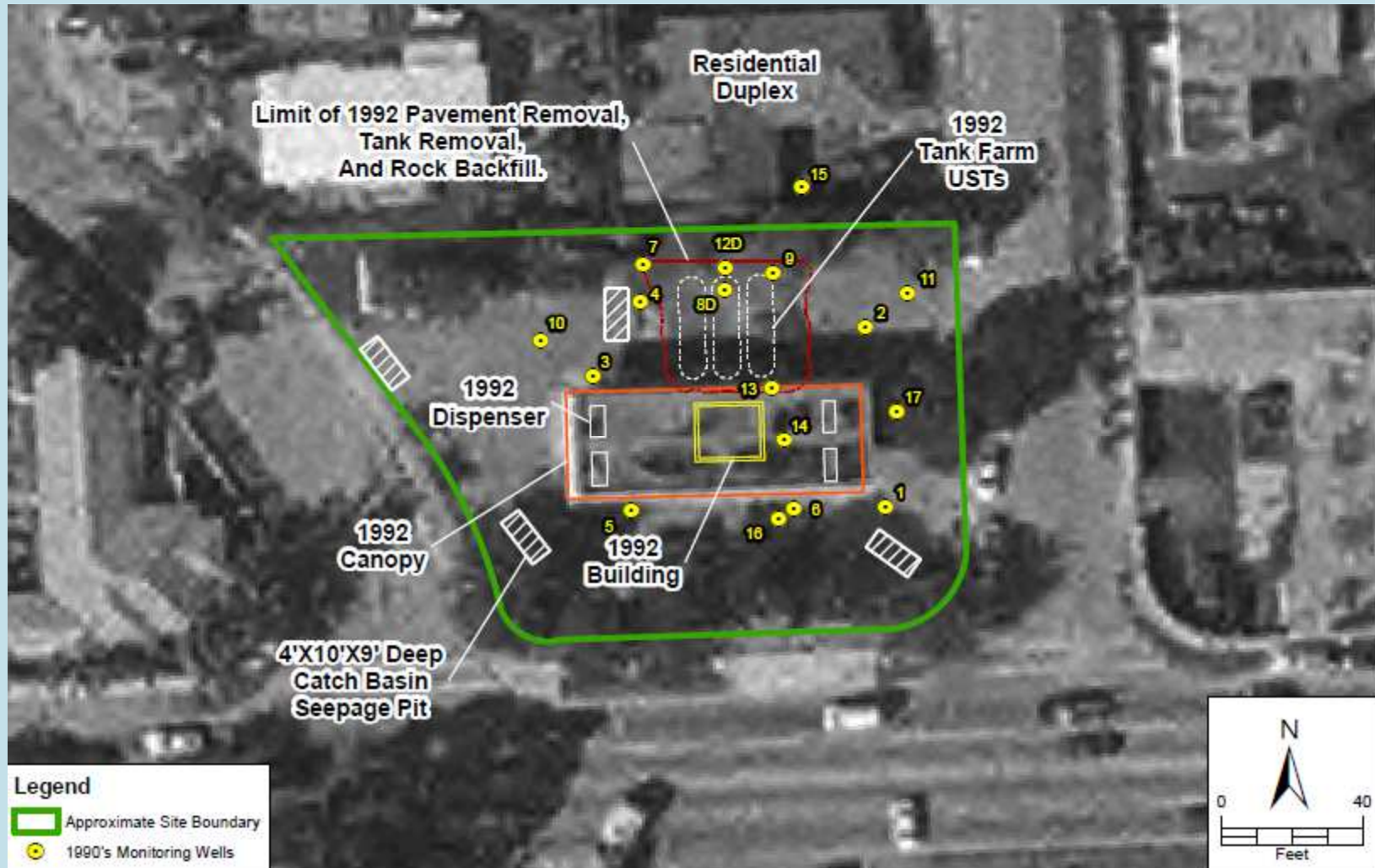


FIGURE 1:
1990's SITE MAP WITH WELLS (1998 AERIAL PHOTOGRAPH MAP)

2000 Redevelopment



FIGURE 2.
CURRENT SITE LAYOUT ON 2009 AERIAL PHOTOGRAPH MAP

2010 Inspect. → 1/4" Free Product



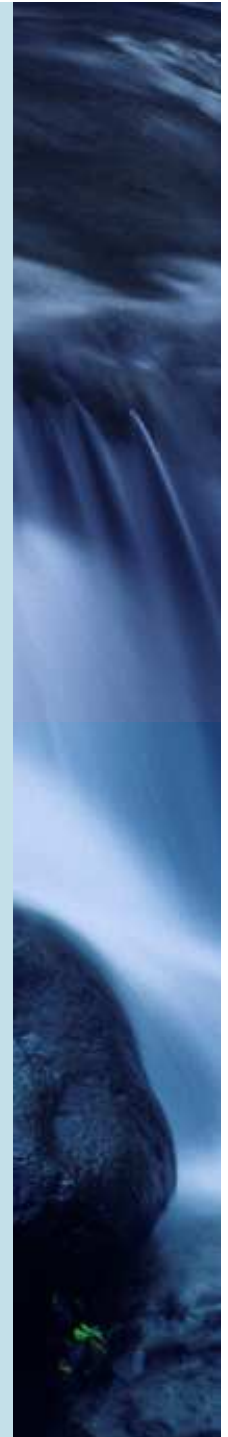
FIGURE 2.
CURRENT SITE LAYOUT ON 2009 AERIAL PHOTOGRAPH MAP

Owner: “Old Free Product”



Old Release Re-discovery?

1. No prior remediation: Tank pull, CAR, NAM to '97
2. BTEX near Fuel-Water-equilibrium
3. Product can trap and mobilize.
4. Only minor non-compliance since 2000.
5. Years of dry compliance wells. Recent rains.
6. Tanks, Lines tested “Tight”.
7. Torkelson Geochemistry -
 1. Fuel-age analysis and eval.
 2. → gasoline, highly weathered
 3. manufactured between 1973 and 1983



Agency Reply / Teleconference: 11 “New Release” points:

1. No FFP in 1992 1st dig inspections, reports, CAR, NAM.
 2. NAM → down trend
 3. No FFP in 2000 install = 2nd dig area.
 4. No FFP in Annual Compliance Inspections.
 5. 2010: FFP.
 6. Dispenser Liners Leaked.
 7. Visual FFP not proof of age
 8. Dating methods typically: “Errors, not mathematical,
“not strong enough to override other lines of evidence.”
- = NEW Release, unless submit

ADDITIONAL info, Statistically supported, Proven method

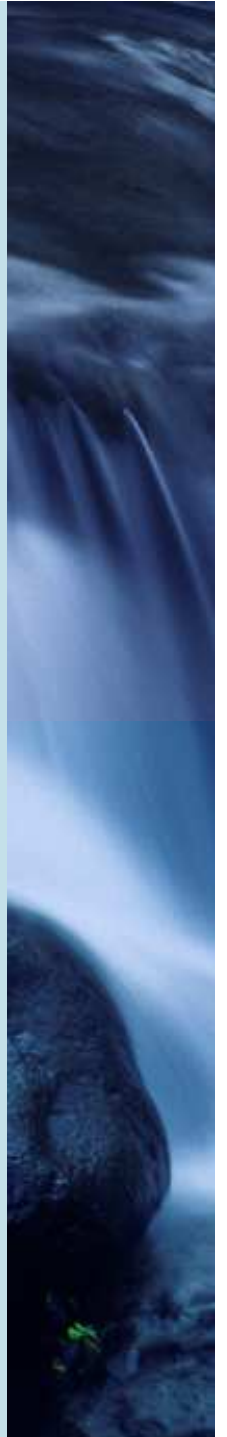


“Additional Evaluation” / Counterpoints:

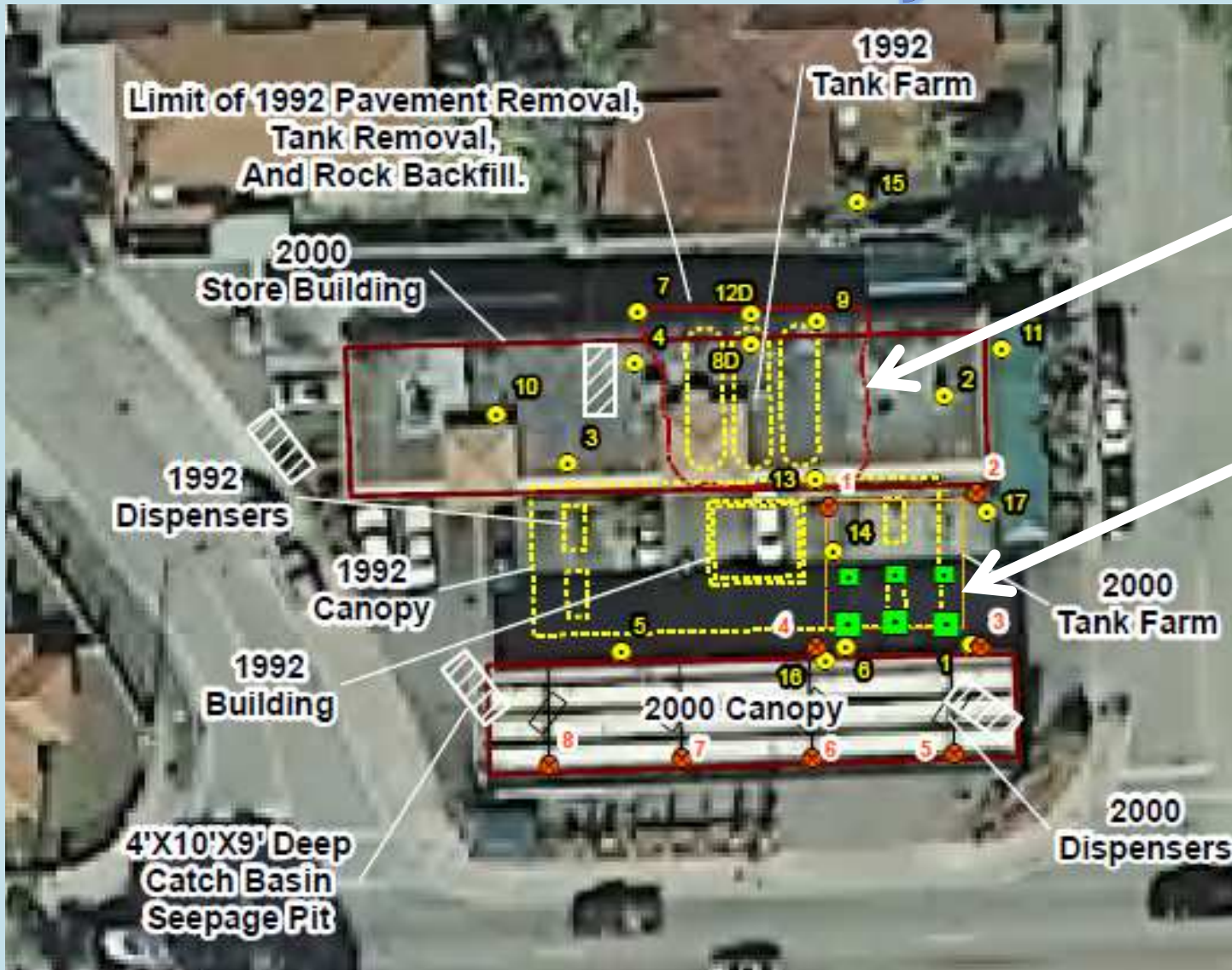
Acknowledged each Agency “New-Release point” (1 pg)
← Merit, Objective, Respect.

Research → Counterpoints CP-1 to -31 (5 pgs):

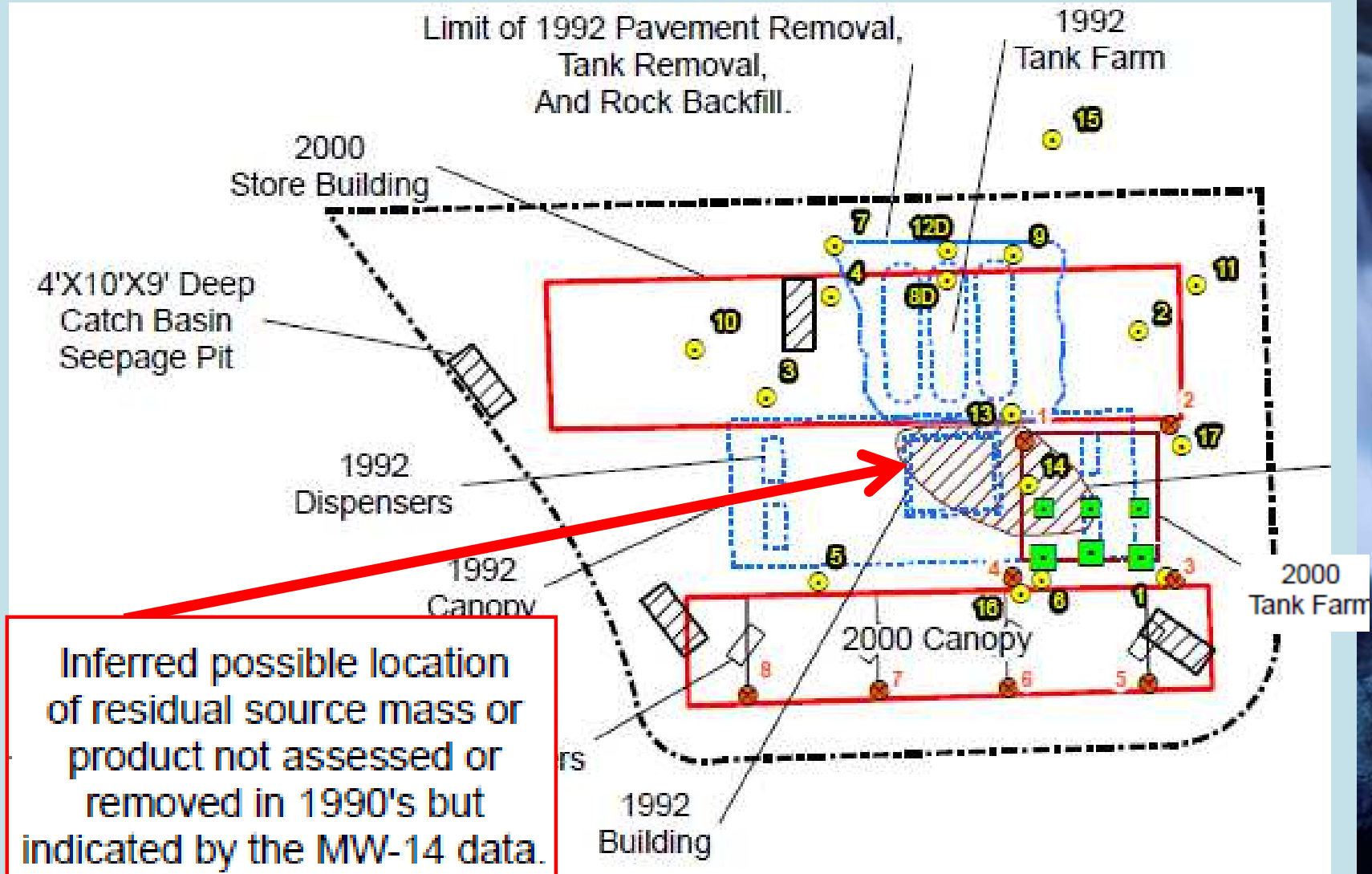
1. Old Tank Dig photo - FFP in jar, Sorbents
→ **FFP!**
2. GW impacts near FFP-equilibrium, 2 years post-dig
3. CAR Smear zone: Submerged - no soil testing.
4. NAM w/o hydroperiods: Cyclical fluctuations / mobilization not ruled out.
5. **GIS overlay 1992 site + 2000 site.**
→ **Hot area: Not assessed! Not dug out!**



1992 and 2010 Overlay



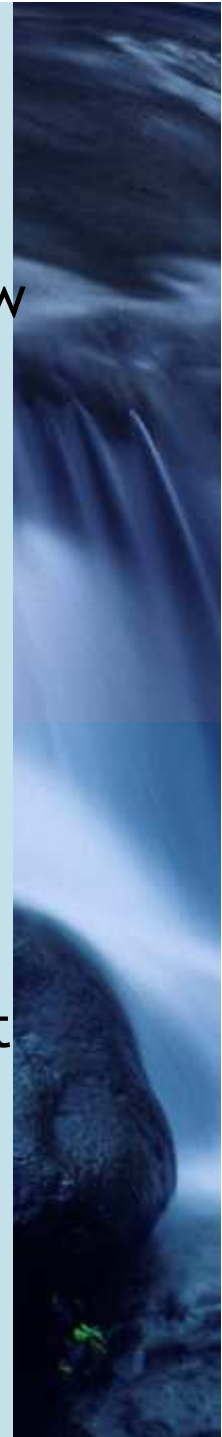
1992 and 2010 Overlay



“Additional Evaluation” / Counterpoints:

Counterpoints, cont'd:

6. Pit 1 - Rock backfill, unpaved, infiltration → outward flow
7. Rain water Seepage Pits, rock backfill, flow convergence, divergence
8. Years of dry compliance well tests.
Recent heavy rains, infiltration, water level fluctns.
→ could have mobilized trapped / entrained FFP
9. Cited technical journal article:
WL → FFP changes (trap and mobilize).
10. Tanks and lines Tight. ATG / Veeder-Root: no losses.
11. Even if dispenser pan leaky, if no leak to pan, nothing out
12. *Age dating method SPECIFICS*

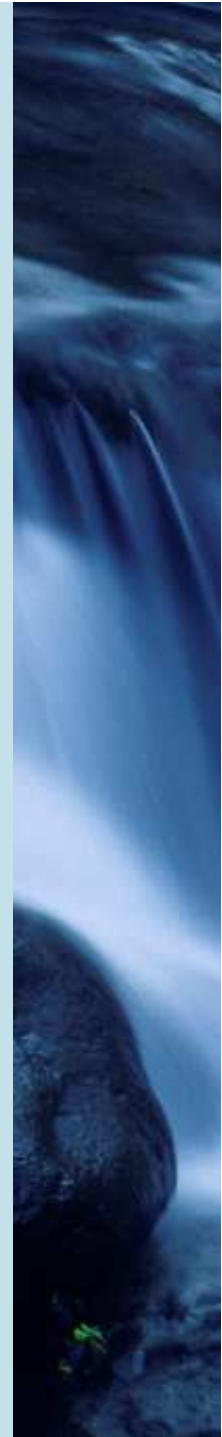


“T/8” Age dating method

by Schmidt, Beckman, Torkelson, 2002.

Basis:

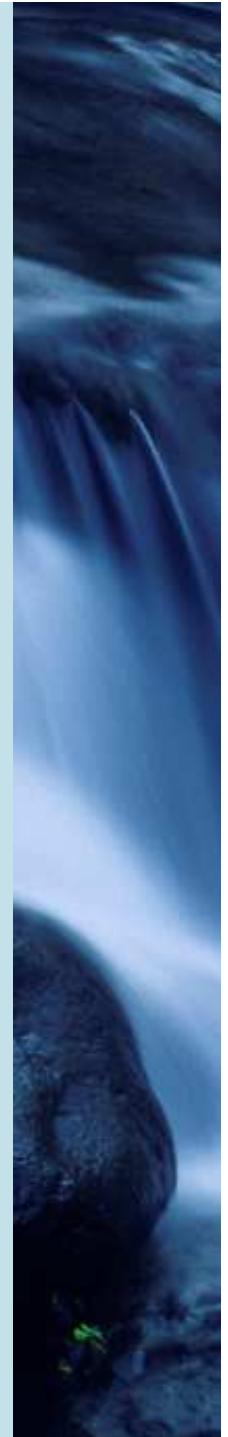
1. Gasoline Refining changes 1972 - 2002
 1. Drop lead
 2. → less Straight-chain Paraffins (alkanes)...,
more Aromatics (toluene...)
2. GC analysis, >130 gasoline impacted samples, 30 years
3. systematic, scientific, statistical evaluation
4. → “defensible scientific and legal conclusions”



“T/8” = Toluene : nC8 (octane) ratio

by Schmidt, Beckman, Torkelson, 2002.

1. Ratio $\rightarrow\rightarrow$ Age RANGE, not single year
2. Ranges \leftarrow detailed statistical evaluations
3. Evaporation fraction \leftarrow compared to standards
4. If Evaporation fraction $\leq 50\%$, T/8 ratio valid
5. Evaporation Correction factor



“T/8” ratio vs. Year

by Schmidt, Beckman, Torkelson, 2002.

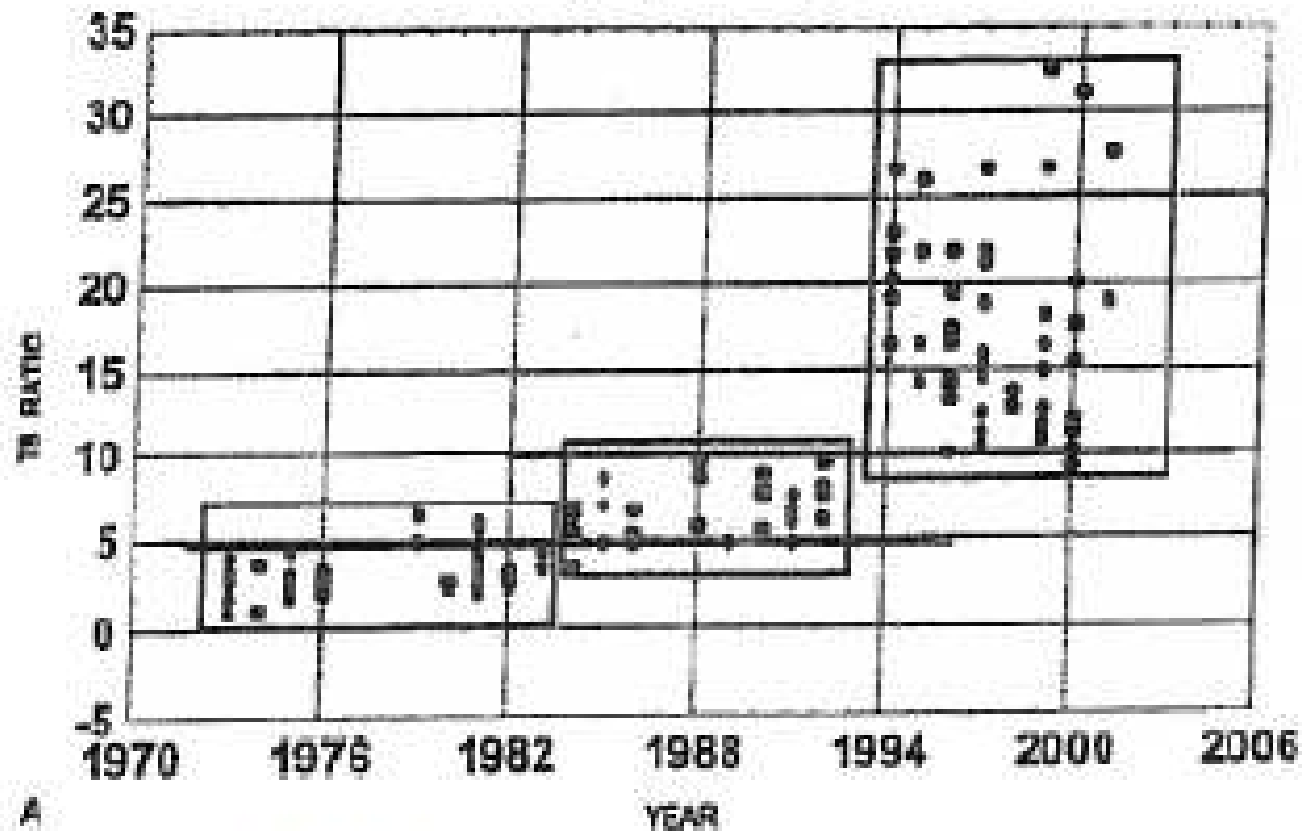


Figure 11(a) T/S Ratio versus year,
from Schmidt, et al., 2002 (publisher Taylor & Francis, Inc.)

“T/8” ratio = 3.8 uncorrected, 5.4 corrected

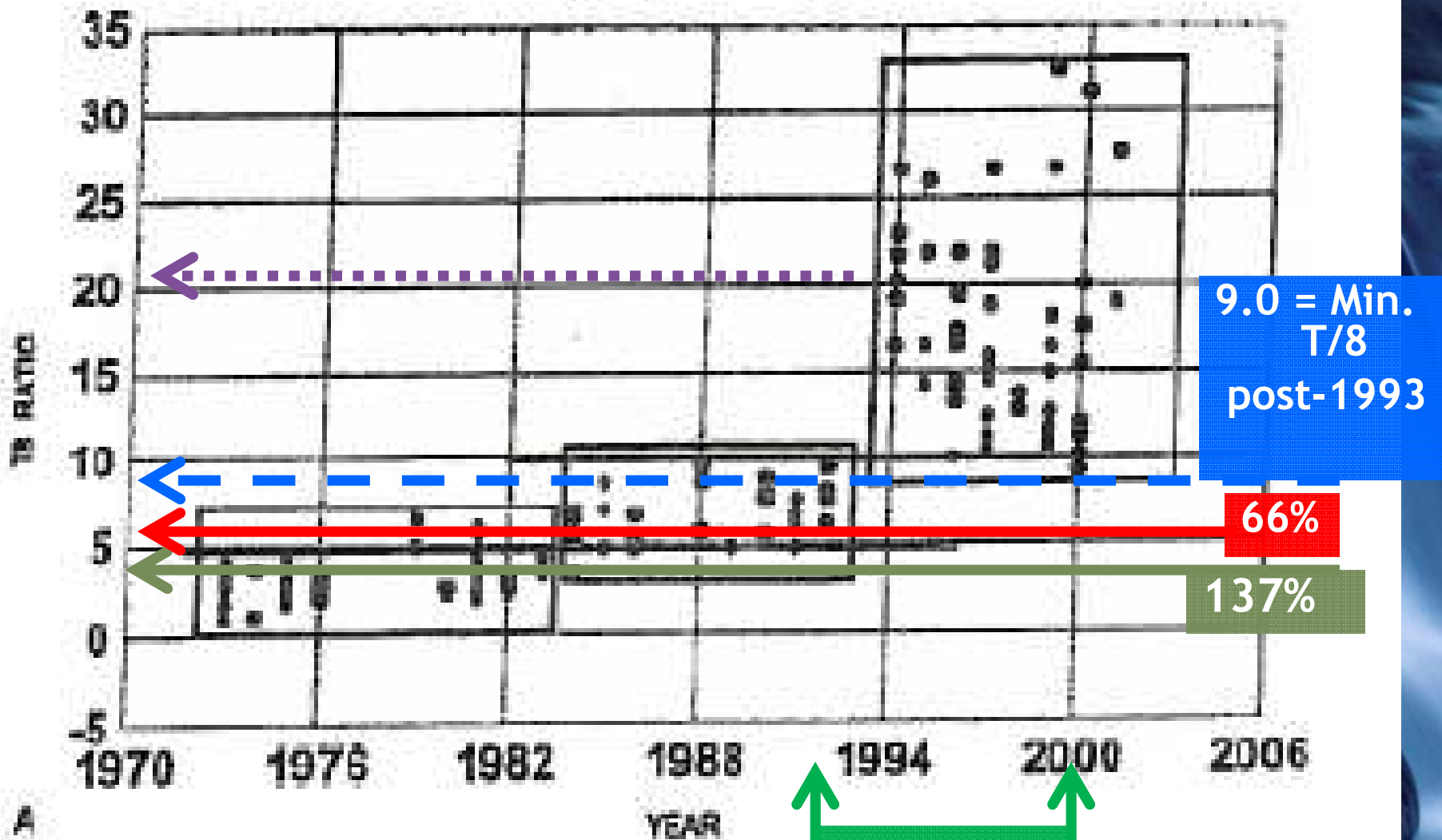


Figure 11(a) T/8 Ratio versus year, from Schmidt, et al., 2002 (publisher Francis, Inc.)

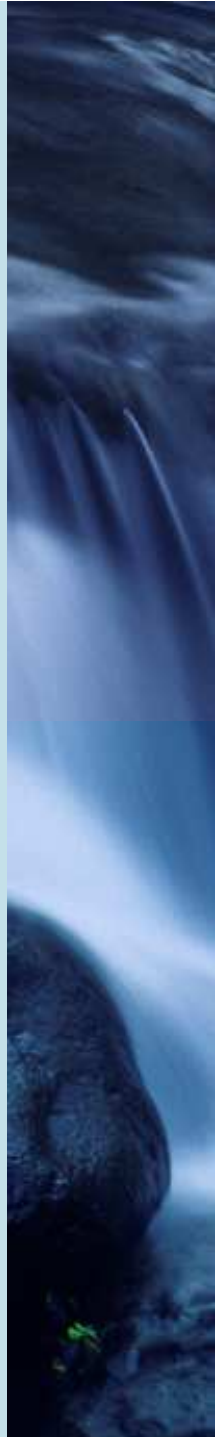
“Additional Evaluation”:

Conclusions:

1. Lines of Evidence
 1. for NEW release
 2. for OLD release, incl. statistically derived T/8 ratio, with significant factor of safety
2. Most probable: FFP old, pre-dated the current fuel system.

Additional Non-technical Case (economic):

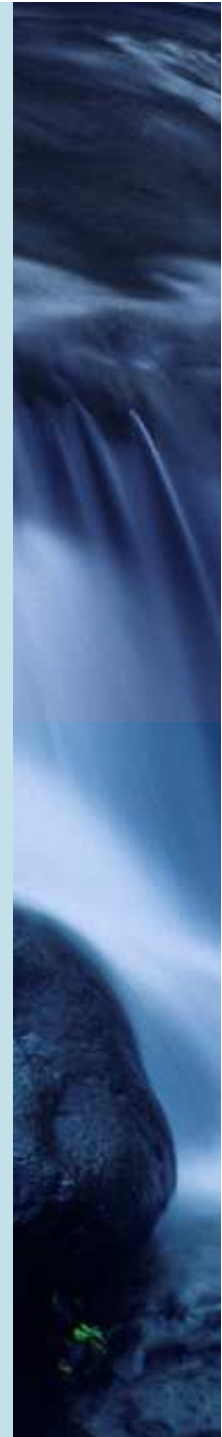
higher burden of proof on “new release” position



Results:

County paid for independent sampling and forensic chemistry evaluation, then Concluded:

- ◎ Kaplan
- ◎ EPA Falcon Fingerprint tool
- ◎ “inconsistent and conflicting results”
- ◎ → consider it remnant of Old Release.
- ◎ → No Further Assessment



Results:

Re: New discharge determination and review of Additional Evaluation of Free Product Age dated April 12, 2011 and prepared by Environmental Consulting & Technology, Inc. (ECT) for the discharge discovered on April 29, 2010 at the Amerika on the Go – Valero Station facility (File-7043/UT-261/FDEP-138504792) located at, near, or in the vicinity of 4401 SW 8th Street, Miami, Miami-Dade County Florida.

Dear Mr. Garcia:

The Department of Permitting, Environment and Regulatory Affairs (PERA) has evaluated the information provided in the referenced report along with the results of recent groundwater data collected by PERA on August 11, 2011, the site history, and the historical site data and offers the following comment:

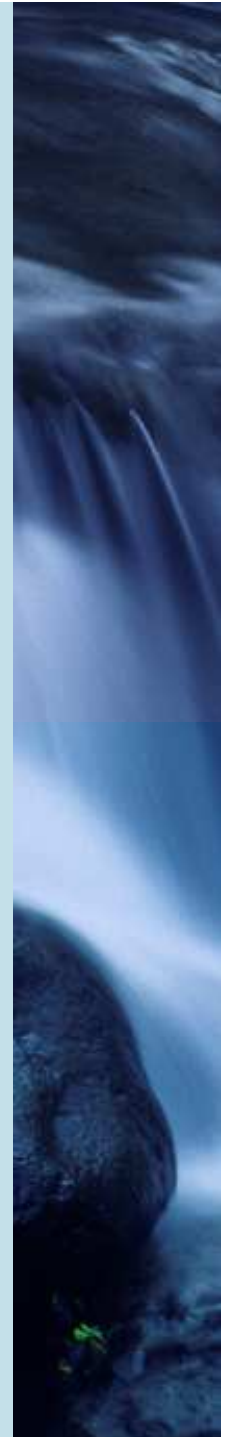
The commonly utilized qualitative petroleum fingerprinting and ageing techniques (Kaplan ratios, EPA FALCON fingerprint tool, etc) produce inconsistent and conflicting results with respect to the probable age of the contamination documented in May 2010. Therefore, PERA finds that it is not possible to conclusively determine whether or not the product discovered in the compliance wells on April 29, 2010 represents a new discharge or remnants of the 1992 discharge. Based on the above PERA will recommend that the FDEP consider the product documented in the compliance wells at the site on May 2010 as a remnant of the 1992 discharge and as such covered by the August 23, 1996 FPLIRP eligibility decision.

Therefore, no further assessment is required for this discharge at this time.



Simple Forensics...Closures & Funding

- Miami Bulk Plant
 - Funding restored.
- Coral Way Station
 - 4 Releases, 1st Eligible
 - Tank dig, SARAs, 80% Funding Restored
- Construction Spill Site
 - Cleanup, SAR, B(a)P, TPH = Background → SRCO/NFA.
- RR Station Fuel Spill
 - SAR Re-evaluation, Fuel Composition Eval. → NFA
- Miami Adel's Station -
 - Site history / GIS eval, T/8 → Funding Restored



Simple Forensic Evaluations that revealed the Old Contamination in New Discoveries and thus Justified Closure or Resumption of State Cleanup Funding

by:

Paco Amram, P.E., LEED AP

Environmental Consulting & Technology, Inc. (ECT)

1408 North Westshore Boulevard., Suite 115

Tampa, Florida 33607

813-289-9338, cell 813-503-6319

pamram@ectinc.com

Presented to:

