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NSA PANAMA CITY
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FINAL MINUTES AND AGENDA FOR PARTNERING TEAM MEETING DATED 8 JANUARY
2013 CSS PANAMA CITY FL
1/8/2013
TETRA TECH

**PARTNERING MEETING AGENDA
NSA PANAMA CITY
PANAMA CITY BEACH, FL
St. Andrews Park Training Center
January 8, 2013**

**Leader: Mike Clayton
Scribe: Libby Claggett
Timekeeper: John Winters
Guests:**

	Item	Description	Presenter	Time (Central)	Category
	1	Check-In/ Introductions/ New Members/ Opening Remarks/ Head Count and Proxies/ Guests/	Mike	9:00 – 9:15	Info
	2	Action Item & Parking Lot Review/ Approve minutes/Agenda changes/ Review Team Charter/ Ground Rules/	Mike	9:15 – 9:30	Info
	3	Training	Pat	9:30 – 10:30	Training
		Break		10:30 – 10:45	
	4	CAMP/Petroleum SMP/Exit Strategy	All	10:45 – 11:15	
	5	Tier II Update	Rich	11:15 – 11:45	Info
		Lunch	All	11:45 – 1:15	
	6	AOC 2 Update	Larry	1:15 – 1:30	Information
	7	Building 98 Update	Larry	1:30 – 1:45	Information
	8	Fuel Spill near UST 362	Mike / Richard	1:45 – 2:00	Information
	9	Monitoring Well Abandonment/Repair Update	Tread	2:00 – 2:30	Information
		Break		2:30 – 2:45	
	10	HAZWOPER Training Requirements for LUCs	Tread	3:15 – 3:30	Information
	11	CRP and RAB Update	Mike	3:30 – 3:45	Information
	12	Other Issues and Transition - Corrective Action Permit Renewal Application by 25MAY13	Team	3:45 – 4:00	Information
	13	Review CMIP/LUCIPs for Milestone Schedule	Tom	4:00 – 4:15	Information
	14	NOSC Sampling Results	John S.	4:15 - 4:30	Information
	15	Tier II Presentation	Team	4:30 – 5:00	Decision
	16	Meeting Closeout; Set 2013 Meeting Dates, Action Item Review; Next Agenda; +/-	Team	5:00 – 5:30	Planning

NA = Not applicable
Meeting Schedule:

**PARTNERING MEETING DRAFT MINUTES
NSA PANAMA CITY
January 8, 2013, St. Andrew State Park, Panama City, Beach, Florida**

Leader: Mike Clayton

Timekeeper: John Winters

Members Present:	Charles Cook	NAVFAC SE
	Mike Clayton	NSA PC
	Tom Johnston	Tetra Tech, Pittsburgh
	Tread Kissam	NAVFAC SE
	Richard Lee	NSA PC
	Rich May	Tetra Tech, Tier II Link
	Larry Smith	Tetra Tech, Tallahassee
	John Winters	FDEP
	Pat Franklin	TME, Facilitator
	Libby Claggett	Tetra Tech, Jacksonville, Scribe

Meeting Start Time: 9:00 a.m., CT

1. Check-In/Introductions/New Members/Opening Remarks/Head Count and Proxies/Guests

Team members shared events since the last meeting. Charles Cook was added to the Team as a new member. Team members shared their experience and expectations with Charles, and Charles shared his experience and expectations.

2. Action Items and Parking Lot Review/Minutes Approval/Agenda Changes/Team Charter Review/Ground Rules Review

The Team then reviewed consensus items, parking lot items, and updated the action item list. The ground rules were reviewed.

Action Item: Charles is to send his contact information to Team members.

OPEN ACTION ITEMS				
Action Item #	Responsible Party	Status	Due Date	Action Item
A-0911-12	Tread	Ongoing	12/31/11	Will determine what is required for the LUC tracker in NIRIS. 12-2011 Update: Waiting on input from Bob Fisher. 09-2012 Update: Old LUCs were reviewed and it is not clear to NAVFAC if they were done on a Statement of Basis (SB) or not. Bob understands a Memorandum of Agreement is required. FDEP stated a Permit Mod is the legal document and the SB and CMIP are used until a "bundle" of mods can be made. 01-2013 Update: NSA Panama City has not been populated yet in NIRIS.

OPEN ACTION ITEMS

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A-0612-05	Charles	Ongoing	4/01/2013	Send John a copy of the monitoring well inventory. 09-2012 Update: The monitoring well inventory is not accurate and is in the process of being updated. 01-2013 Update: Tread has not been able to get the well inventory updated. There is a short list of monitoring wells that can be abandoned. John requested the list of wells to be abandoned be brought to the Team for approval before wells are abandoned.
A-0612-07	Mike	Ongoing	8/15/2012	Determine when the last review of the CRP and RAB was. 09-2012 Update: No information could be found. Mike will talk with Steve Applegate regarding the RAB. 01-2013 Update: Mike needs further guidance from the Team on what to present to Steve Applegate.
A-0612-08	Rich	Done	7/15/2012	Send the NAS Whiting Field Community Relations Plan to Team members.
A-0912-01	Larry	Ongoing	10/1/2012	Send John the data collected by SACAL for Sites 98, 325, and AOC 2 (in multiple data dumps). 01-2013 Update: Larry sent information to Charles. Larry will send the data to John.

OPEN ACTION ITEMS				
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A-0912-03	Tread	Done	10/1/2012	Send the final Petroleum SMP for FY2012 to Team members.
A-0912-04	Tread	Done	10/26/2012	Confirm if a Memorandum of Agreement or if Chapter 62-780, F.A.C., is the legally binding document for LUCs. 01-2013 Update: The Memorandum of Agreement was never signed by the FDEP and is not legally binding. The legally binding document is the RAP Order, which is attached to a CMIP.
A-0912-05	Team members	Done	10/31/2012	Send their list of six personal characteristics of their identified “good leader” to Pat.

Consensus Item 0612-01: The Team reached consensus to approve the June and September 2012 meeting minutes (with minor changes) as final.

3. Training

Pat provided training on the Characteristics of a Leader. The training consisted of Team members sharing their top characteristics of a good leader and provided discussion as to why those characteristics were chosen. The top three characteristics were 1) honest, 2) knowledgeable, and 3) fair.

Characteristics of a Leader

Tom Johnston

1. Integrity/morality (manifested as honesty, consistency of action, and accountability)
2. Magnanimity (shares credit/accepts responsibility for failure)
3. Openness/objectivity (willing to listen to and entertain opinions and thoughts of others)
4. Fairness (lack of prejudice)
5. Assertiveness (not the same as aggressiveness)
6. Competency (understands the systems/processes/work being managed but not necessarily to a high level of detail)

Libby Claggett – Rich May

1. Stays calm under pressure
2. Can see all sides of the issue and not only his or his company's
3. Fair to all involved
4. Always tries to provide solutions to problems and not just state problem(s)
5. Maintains a presence of authority at all times
6. Plain and simple, he's a good person in life and in work

Rich May

1. Communicating
2. Knowing and Using Resources
3. Understanding the Characteristics and Needs of the Group and Its Members
4. Planning
5. Controlling Group Performance
6. Effective Teaching
7. Representing the Group
8. Evaluating
9. Sharing Leadership

10. Counseling
11. Setting the Example

John Winters – (a co-worker, my father, my High School football coach, my wife when she is working [she is a veterinarian])

1. Calm
2. Good listening skills
3. Knowledgeable
4. Able to take action after receiving all of the “facts”
5. Able to take criticism as well as praise
6. Able to involve everyone in the discussion/decision no matter their: race, age, sex, experience, how much money they earn, etc.

Mike Clayton – Ronald Reagan

1. Integrity
2. Honesty
3. Compassion
4. Resilience
5. Strong
6. Smart

Tread Kissam – Robert E. Lee

1. Inspirational
2. Honorable
3. Respectful
4. Humble
5. Assertive
6. Creative

That's six but you get a bonus seventh: Trustworthy

4. CAMP/Petroleum SMP/Exit Strategy

Team members reviewed the CAMP and Petroleum SMP made modifications accordingly.

Action Item: Charles is to verify the dates in the FY 2013 Petroleum SMP and send any changes in a letter to John.

Action Item: Tom is to send the revised CAMP to Team members for review.

Action Item: Team members are to review the Exit Strategy (sent by Tom on January 6) and send any changes to Tom.

5. Tier II Update

The last Tier II meeting was held December 11-12, 2012, in Orlando, Florida. Major discussion topics included reorganization and funding updates, Tier I Team reports and Exit Strategies, virtual meetings and teleconferencing, NTC Orlando Tier I Team presentation, review Tier II FY 2013 goals, Exit Strategy revision, five year reviews, setting 2013 training topics, and Team training. The next meeting is scheduled for March 19-20, 2013, in Jacksonville with the Panama City Tier I Partnering Team presenting.

6. AOC 2 Update

Monitoring wells were sampled quarterly for one year with no GCTL exceedances; groundwater is not an issue at AOC 2. Soil samples at 4 feet bls at AOC 2 had TRPH exceedances. Currently, there is no funding for additional soil sampling to further define/shrink the LUC boundaries and ensure the LUCs are valid for the area. When funding is available, soil samples need to be taken at AOC 2.

7. South Dock History

South Dock needs an LUC from the platform to the south to the water for groundwater. There are currently 2 bulkheads, that appear to be preventing migration of oil to the bay.

8. Site 325 History

Soil above the water table was sampled in order to determine contaminants. A report is currently being prepared.

9. Site G300 History

Site G300 was issued an SRCO. Site monitoring will continue until LUCs can be removed.

10. AOC 1 History

AOC 1, a former fire fighter training area, had petroleum and VOC issues. Bioventing and bioslurping, along with vapor extraction, were performed for the contaminants in the soil. Groundwater monitoring with LUCs was recommended for AOC 1. Biennial groundwater monitoring is being performed. During well abandonment, free product was found in the soil source area. Free product monitoring is being conducted quarterly. Soil and groundwater LUC boundaries are based on available data that were originally designed to evaluate risks for industrial land use.

11. Building 98 Update

Due to high FID readings during a tank removal, soil data was collected. The soil data needs to be reviewed to determine the path forward at the site. Groundwater is being addressed under AOC 1.

12. SACAL Data

Data has been received from SACAL, but there is no map showing where samples were taken. The samples taken at AOC 2 are the most questionable.

13. Fuel Spill Near UST 362

There will not be any funding for the fuel spill near UST 362 until FY 2014. Diesel fuel was spilled during a fuel transfer when a tanker truck was overfilled and the fuel not drained into the underground spill containment tank. FID readings were taken; however, side wall samples for laboratory analysis were not taken. A site assessment needs to be performed.

14. Monitoring Well Abandonment/Repair Update

Several wells are in the tidal zone and are under water at high tide, including well 17-I, which needs to be replaced. Other wells needing to be replaced are at 362. There is currently nothing in the contract for well replacement – just repair.

When the well abandonment list is created, it will be shared with Team before any wells are abandoned.

Tread stated that he cannot find any monitoring wells near SWMU 9, and there is no record of them being abandoned. Mike added the wells at SWMU 9 were properly closed out.

15. HAZWOPER Training Requirements for LUCs

Mike and Richard are going to create a LUC matrix that includes a map for each site showing the boundaries, notes about worker protection issues, limitations on depth of intrusive activity, contaminants, and worker training requirements.

16. Community Relations Plans (CRPs) and Restoration Advisory Board (RAB) Update

Mike needs guidance on what support is needed for the RAB. There have not been any community concerns with the Navy work being performed. There is a Navy requirement policy) to perform a 5-year assessment to re-evaluate and attempt to re-engage the community. There is a CERCLA requirement regarding RABs; however, NSA Panama City is not a CERCLA installation. According to Tread, the Navy policy on RABs is in the new DERP.

Action Item: Charles and Tread are to provide the Navy policy regarding RABs to Mike.

According to John, there is no RAB requirement in the permit.

17. Other Issues and Transition

Corrective Action Permit renewal application is due by 25 May 2013. The last renewal permit was written by the state, and it included a tally of the status of the sites (Appendix A). Charles has been tasked by his supervisor to update the sites in the permit (Appendix A) for renewal.

Action Item: Richard is to send Charles an electronic version of the Corrective Action Permit.

18. Review CMIP/LUCIPs for Milestone Schedule

There are four IR sites with LUCs; and only AOC 1 has monitoring. SWMU 9 has gone NFA. Additional monitoring could be required if land use were to change. These requirements are documents in CMIPs for the IR sites.

Action Item: Charles is to develop a milestone schedule for NSA Panama City.

19. NOSC Sampling Results

If contamination is found at NOSC, the site will be transferred to the Navy RPM (Charles). Until then, John Schoolfield is the contact for the Tallahassee NOSC. The path forward for the site is to review the data generated to date and complete the field work to support the SAR Work Plan to fulfill FDEP requirements to close the site.

20. Tier II Presentation

The Panama City Team has been requested to present at the next Tier II meeting being held March 19-20, 2013, in Jacksonville, Florida. Rich shared the Orlando Tier II presentation given in December 2012 with Team members.

Per Tier II, the following information should be included in presentations, but the emphasis should be on issues and schedule. Presentations should be 45 minutes in length with a 15 minute question/answer session.

The first 15 minutes should focus the following:

- brief introduction to installation and Team members
- milestones met (SMP or agency related)
- interesting sites (1 or 2) or technology being used
- successes (top 3 to 5)
- focus on the last 12 months

The rest of the presentation (30 minutes) should focus the following:

- issues along with resolutions, issues/concerns (top 3 to 5) with which Tier II can assist

- schedule for the next 12 months
- questions for Tier II
- responses to advance questions from Tier II

Action Item: Charles is to try to obtain the December 2010 Tier II presentation from John Schoolfield.

Action Item: Charles is to take the lead on preparing and giving the Tier II presentation on March 19, 2013, at 1:00 p.m. EST.

Action Item: Libby is to send Charles the 2008 Tier II presentation.

Successes include CMIP completions and SRCOs at 278 and G300.

21. Meeting Closeout

Action and Consensus Item Review

Action and consensus items were reviewed and provided on the following page(s).

Conference Call for Tier II Presentation

A conference call will be held at Wednesday, February 27, 2013, at 10:00 a.m. EST to review the Tier II presentation.

Action Item: Tom is to arrange the conference call on February 27, 2013, at 10:00 a.m. EST to discuss the Tier II presentation.

Meeting

The next meeting is a virtual meeting scheduled for Wednesday, April 10, 2013, beginning at 9:30 a.m. Eastern Time. John Winters will be the Team Leader, and Larry Smith will be the Time Keeper.

DRAFT MEETING AGENDA			
Description	Presenter	Time	Category/Expectation
Check-In/Introductions/New Members/Opening Remarks/Head Count and Proxies/Guests	Leader	15 min	Decision
Action Items and Parking Lot Review/Minutes Approval/Agenda Changes/Team Charter Review/Ground Rules Review	Leader	15 min	Information
Training	Pat	30 min	Training
Building 325 Update	Charles	5 min	Information
AOC 2 Update	Charles	5 min	Information
Building 98 Update	Charles	5 min	Information
South Dock Update	Charles	5 min	Information
Monitoring Well Abandonment/Repair Update	Charles	30 min	Discussion
Tier II Update	Rich	15 min	Information
CRP and RAB Update	Mike	15 min	Information
Permit Renewal	Charles	15 min	Information
Milestone Schedule	Charles	15 min	Information
NOSC Sampling Results	John S.	15 min	Information
Other Issues and Transition	Team	15 min	Information
Meeting Closeout; Action Item Review; Next Agenda; +/-	Team	30 min	Planning

DRAFT MEETING AGENDA			
Description	Presenter	Time	Category/ Expectation
CAMP/Exit Strategy/Milestone Schedule (to be discussed with site update)			

Tentative Meeting Dates/Location

July 17, 2013 St. Andrew Park, Panama City, Florida
 October 9, 2013 Virtual

PLUS/DELTA	
+	Δ
Good turnover to new RPM	Tread's last meeting
Good location	Meeting start time confusion (EST versus CT)
Clarification on sites	Not getting Charles up to speed sooner
Good discussion on CAMP/Petroleum SMP	Short meeting prep due to holiday season
Participation good – sense of camaraderie	Multiple conversations
Good communication	
Commitment to a milestone schedule	
Good interactions, clarification	

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A-0113-01	Charles		1/11/2013	Charles is to send his contact information to Team members.
A-0113-02	Charles		2/8/2013	Charles is to verify the dates in the FY 2013 Petroleum SMP and send any changes in a letter to John.
A-0113-03	Tom		1/14/2013	Tom is to send the revised CAMP to Team members for review.
A-0113-04	Team members		1/21/2013	Team members are to review the Exit Strategy (sent by Tom on January 6) and send any changes to Tom.
A-0113-05	Charles/Tread		1/15/2013	Charles and Tread are to provide the Navy policy regarding RABs to Mike.
A-0113-06	Richard		1/11/2013	Richard is to send Charles an electronic version of the Corrective Action Permit.
A-0113-07	Charles		By the next meeting	Charles is to develop a milestone schedule for NSA Panama City.
A-0113-08	Charles		2/20/2013	Charles is to try to obtain the December 2010 Tier II presentation from John Schoolfield.
A-0113-09	Charles		2/20/2013	Charles is to take the lead on preparing and giving the Tier II presentation on March 19, 2013, at 1:00 p.m. EST.
A-0113-10	Libby		1/10/2013	Libby is to send Charles the 2008 Tier II presentation.
A-0113-11	Tom		2/20/2013	Tom is to arrange the conference call on February 27, 2013, at 10:00 a.m. EST to discuss the Tier II presentation.

2012-2013 CONSENSUS ITEMS	
Consensus Item #	Consensus Item
C-0412-01	The Team reached consensus to approve the December 2011 meeting minutes as final.
C-0612-01	The Team reached consensus to approve the April 2012 meeting minutes as final.
C-0612-02	The Team reached consensus to adopt the modified Tier II Roles and Responsibilities as amended by the Team.
C-0113-01	The Team reached consensus to approve the June and September 2012 meeting minutes (with minor changes) as final.

PARKING LOT ITEMS	
Date	Parking Lot Item
06-2012	The new PWO started at NSA PC in May 2012 – will need to invite him to a Partnering Team meeting.

Florida Tier 2 Update

Panama City Tier 1 Partnering Meeting

January 8th, 2013

- The Tier 2 meeting was held in Orlando on December 11th and 12th, 2012
- **Reorganization and Funding Updates**
 - FDEP – The District offices are still in the process of reorganizing. Most every District will probably have layoffs. No layoffs are anticipated for the Waste Division.
 - EPA – Funding remains an issue. The EPA is currently working under continuing resolution through March 2013. The Superfund Division has nine people retiring at the end of the year. It has yet to be determined how the vacancies will be filled. There is one person retiring at the Branch level and two more scheduled for next year. People working at Red Stone (no FFA) will need to be reassigned.
 - Navy – Some RPMs have been reassigned; Charles Cook will be taking over Panama City. There have been changes at Headquarters on both the military and civilian sides. Funding is locked in for this year. Regarding Partnering Team meetings, it is now acceptable to meet in Contractors' offices.
 - BRAC – The Director will be retiring after the first of the year. The Southeast BRAC office will be consolidated with the office in the Northeast District.
- **Virtual Meetings and Video teleconferencing**
 - Team members discussed face-to-face meetings versus virtual meetings. The EPA uses Adobe Connect. The Navy uses Net Meeting. Video teleconferencing (VTC) issues were discussed. A conference room set up would be needed for VTC. It was decided to get the virtual meetings down before attempting VTC. Google Chat is basically a group Skype; however, all users would be required to have a web cam and some agencies are not allowed to use one.
- **FY 2013 Tier II Goals**
 - The following Tier II goals for FY 2013 were revised and/or updated at the December 2012 meeting:
 - Develop an appropriate submission (Lessons Learned) and review schedule for Five Year Reviews. **Ongoing** – The table provided by Jeff will be revised and reviewed at the next meeting.
 - Define the purpose and attributes of the Exit Strategy, revise the format, and distribute the information for Tier I implementation. **Ongoing**
 - Continue to develop contingencies for virtual meetings. **Ongoing**
 - Have the petroleum SMP Amendment submitted by August 1, 2013, and finalized by September 30, 2013.
 - Consider response complete requirements in the revised Exit Strategy.
 - Disseminate guidance on Tier I presentation formats. **Completed**
 - Complete guidance on raising Tier I issues to Tier II and disseminate to Tier I Teams. **Completed**

Florida Tier 2 Update

Panama City Tier 1 Partnering Meeting

January 8th, 2013

- **Five Year Reviews**
 - We had a discussion about how the EPA and Navy determine the due dates of the next round of Five Year Reviews.
 - Lessons learned (any sticking points or comments from agencies), timeframes for each phase of the Five Year Review, and due dates need to be included in the spreadsheet Jeff is creating.
 - The Navy guidance states that the due date of the Five Year Review is five years from the submittal date (the date the CO signs) of the previous report. The report can be turned in earlier, but not later than five years.
 - Harold is to provide the actual Five Year Review due date for each Navy installation to Tier II.

- **Exit Strategy Revision**
 - From the discussions, it appeared that information that Tier II wants in an Exit Strategy include dates about to slip, continuing extensions, and ensuring issues are captured that might not otherwise be flagged. The SMP dates seen on the Exit Strategy for Tier II should be for the current and upcoming year (rolling year).
 - Important and tracked dates for the EPA include ROD, Remedial Action Complete, Five-Year Review, Overall Construction Complete (1 per site), and RA Starts (tracked date). Important dates for the Navy include Remedy in Place, ROD, and Remedy Complete. Important dates for the FDEP include when the documents are finished and sites are closed. Tier II needs to decide on the dates needed and their operations definitions in place for the Tier I Teams.
 - Team members were shown the Whiting Field Microsoft Project Milestone Schedule. Any end dates in a given period could be filtered to provide a “snapshot” of their working schedule. If using a Gant Chart, Teams should include a line item for each extension. Team members discussed the need for the comments column to track why dates were slipped.
 - It was decided the RIP, ROD, and Construction Complete are no longer needed as a milestone on the Exit Strategy. Response Complete and Site Closeout should be retained for each site. All primary documents in SMPs (draft, draft-final, and final document dates) and CAMP dates due for that year need to be shown. The Baseline Date would be the SMP date for that year. The Projected Dated starts at the Baseline Date and moves if there is some slippage. A comment field will also be required to update and identify any and all slippages. The Completion Date would only be used when the Team completes the activity and would drop off for the next report.

- **Next meeting is scheduled for March 19-20, 2013, in Orlando or Jacksonville**
 - The Panama City Tier I Partnering Team will be invited to present at the Tier II meeting



For: Partnering Team
From: Larry Smith
Subject: South Dock
Date: May 20, 2010

Overview: South Dock over lies floating product which has been determined to be technically impractical to remove. FDEP will allow the product to remain if LUCs are established.

Goal: Determine the northern extent of dissolved groundwater contamination to establish a northern LUC boundary for groundwater. This line will likely be located south of AOC2 since groundwater there is known to be contaminant free.

Path forward: Review currently available data to establish Northern LUC boundary. If addition data becomes available reestablish boundary.

History: AOC 2 is located in a highly developed area at the southern end of the facility. The site includes a large asphalt/concrete paved parking area and is surrounded by offices, maintenance and storage buildings with the Explosive Ordnance Disposal Compound to the west. AOC-2 extends southward along a utility corridor to the South Dock. A former AST (AST 11), constructed in 1943, was previously located at AOC-2. It was originally used to store diesel fuel. Petroleum products were transferred to the AST from the South Dock via a 6-inch diameter underground transfer line connected to a pump house at the South Dock. A smaller, 3-inch diameter transfer line connected AST 11 to a fuel pump house located approximately 100 feet (ft.) to the northwest of the tank (the current location of Building 543). A circular earthen berm spaced approximately 60 ft. from the tank provided secondary containment.

The pump house associated with AST 11 was used to distribute fuel from AST 11 and tanks associated with the former fuel dispensing facility located approximately 200 ft. to the northwest of AST 11 (the current location of Building 400). Two parallel 3-inch diameter transfer lines distributed diesel fuel and gasoline from the pump house to the South Dock. Additional smaller diameter fuel lines may have been used to distribute fuel to other locations in the vicinity of AST 11. The former fuel dispensing station included two USTs, UST 12 and UST 13, which were removed in the early 1970s. No documentation is available for the condition of the tanks during removal.

Approximately 50,000 gallons of diesel fuel were reportedly released from the tank system in 1953. The exact location of the leak and whether or not the underground piping had failed is unknown. AST 11 was completely refurbished in 1957, including replacement of 28 bottom plates. The tank was then reportedly used to store gasoline, aviation fuel, diesel fuel, and waste oil. Numerous small leaks, primarily at the tank seams, were reported to have occurred both before and after the tank had been refurbished. In the mid-1960s, an estimated 10,000 gallons of product were released from ruptured fuel transfer lines located between the dock and storage tank. Following the rupture, seepage of product was observed in Alligator Bayou at the South Dock bulkhead.

AST 11 and the containment berm were removed in 1979. Reportedly, the bottom plates of the tank had completely deteriorated. The transfer piping from the tank wall to the containment berm was removed. The remaining piping was capped and abandoned in place. Based on utility drawings, the fuel dispensing station was removed after 1984. Building 400 was built in the area of the former fuel dispensing station. Building 543 has recently been constructed in the area of the former fuel pump house, and the Special Operations Facility has recently been constructed near AOC 2. All of these areas are likely to have contributed to the contamination found at AOC 2.

South Dock

The South Dock is the Southern-most reach of AOC-2 and is at the southern end of the facility along Alligator Bayou. The site consists of an asphalt/concrete paved elongated area adjacent to the pier to the south and bounded by office, storage and ship maintenance buildings to the north.

During reconstruction activities in 2009, floating product was observed beneath the South Dock relieving platform. The relieving platform is a concrete structure located 7 feet below the deck of the South Dock and adjoins the head wall. It runs the length of the head wall, and extends 25 feet inland from the head wall. During reconstruction, the relief platform with inter connected support structures were left in place without alteration with the exception of a few temporary holes drilled through the platform in order to anchor the new head wall to the platform. It was determined that the petroleum product found beneath the relieving platform was inaccessible and technically impractical to address due to the presence of the complex and numerous beams, support cables, cathodic protection wiring, and pilings that provide the structural integrity of the dock and relief platform. Additionally, it was not considered feasible that the product would migrate through the new head wall to Alligator Bay; therefore, the product could be left in place if LUCS are established. However, the product will continue to act as a source of dissolved petroleum compounds to the local groundwater and this dissolved groundwater contamination may form a dissolved front which will migrate to the north (inland) away from the dock.

Groundwater Sampling Objectives:

The Navy intends to place the South Dock under LUCs. The LUC boundary for groundwater will extend from the South Dock concrete deck northward (inland) to uncontaminated groundwater known to exist at Site AOC 2. In order to determine a reasonable boundary for the groundwater LUCs, groundwater sampling is planned at locations extending northward from the South Dock.

Groundwater Assessment

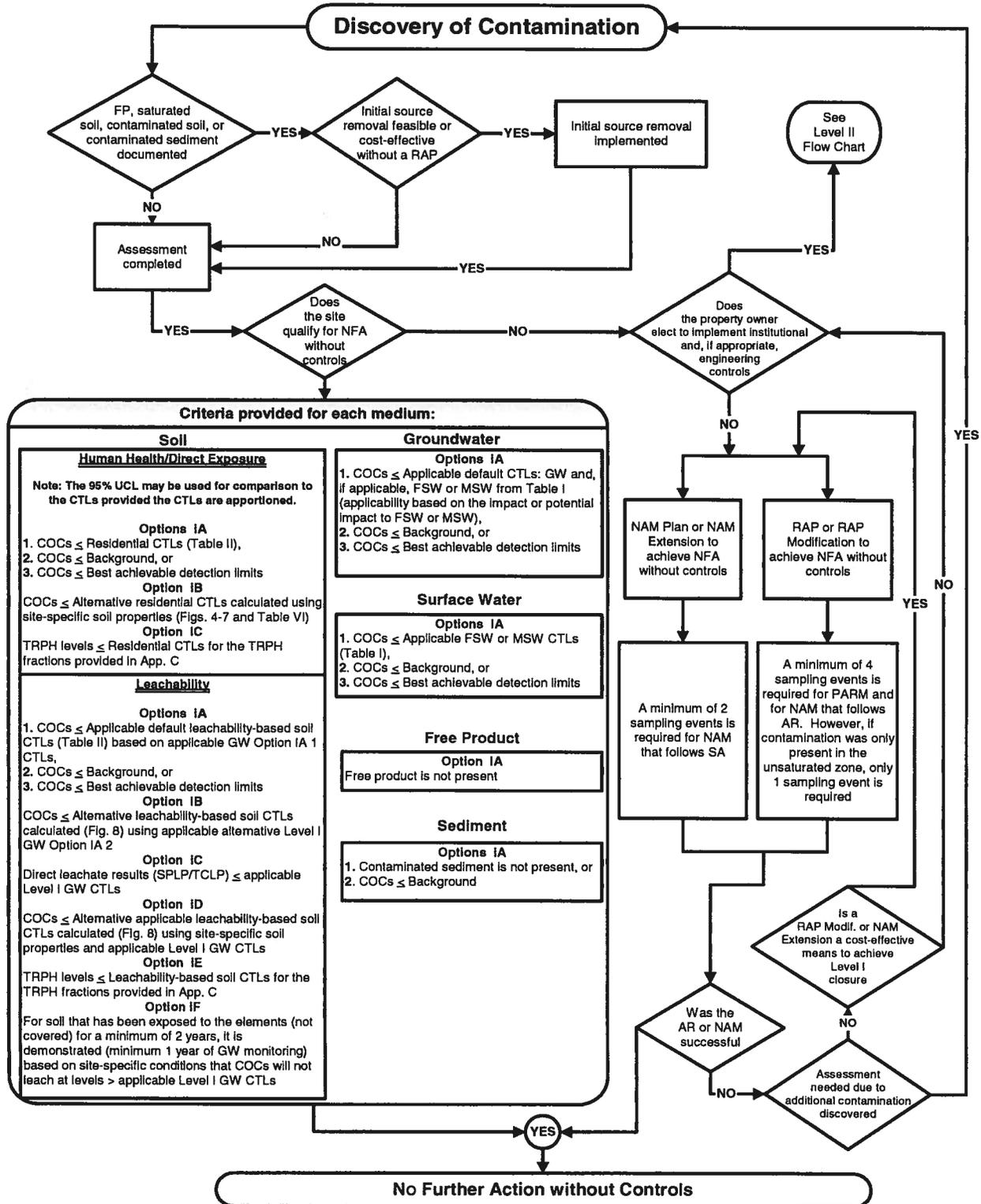
Groundwater sampling was performed at planned locations northward from the South Dock in order to determine a reasonable boundary for groundwater LUCs in this area. Seven temporary micro wells or well points using a DPT rig were established and groundwater samples were collected and analyzed. Each temporary well was advanced to a depth of approximately 12 feet bls and screened across the water table developed by pumping with a peristaltic pump until it produces non-turbid water and sampled. The locations of micro well installation are shown on Figure 8.

Groundwater Sampling

Each micro well or well point was purged with a variable speed, peristaltic pump, using low-flow technique. Field parameters (including temperature, pH, specific conductance, and turbidity) were measured at the initiation of the purging process. When field parameters stabilize and water turbidity is less than 5 nephelometric units (NTU), the groundwater sample will be collected. This numeric value is less than the FDEP stabilization criteria of 20 NTU because samples will be analyzed for metals (lead).

Groundwater samples were collected from the temporary micro wells with Teflon® tubing and a peristaltic pump, using low flow/low stress sampling techniques. Groundwater samples for VOC analyses were collected directly from the inserted tubing using the straw or reverse flow method and analyzed as described in FDEP SOPs. Following the investigation, the tubing and down-hole components were withdrawn and the boreholes backfilled, from bottom to top, with appropriate soil cuttings.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level I
December 23, 2004



Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6; **AR:** Active Remediation; **COCs:** Contaminants of Concern; **CTLs:** Cleanup Target Levels; **FP:** Free Product; **FSW:** Freshwater Surface Water; **GW:** Groundwater; **MSW:** Marine Surface Water; **NAM:** Natural Attenuation Monitoring; **NFA:** No Further Action; **PARM:** Post Active Remediation Monitoring; **RAP:** Remedial Action Plan; **SA:** Site Assessment; **SPLP:** Synthetic Precipitation Leaching Procedure; **TCLP:** Toxicity Characteristic Leaching Procedure; **TRPHs:** Total Recoverable Petroleum Hydrocarbons; **UCL:** Upper Confidence Limit of the arithmetic mean.

Note 1: Best achievable detection limit shall be the practical quantitation limit (PQL).

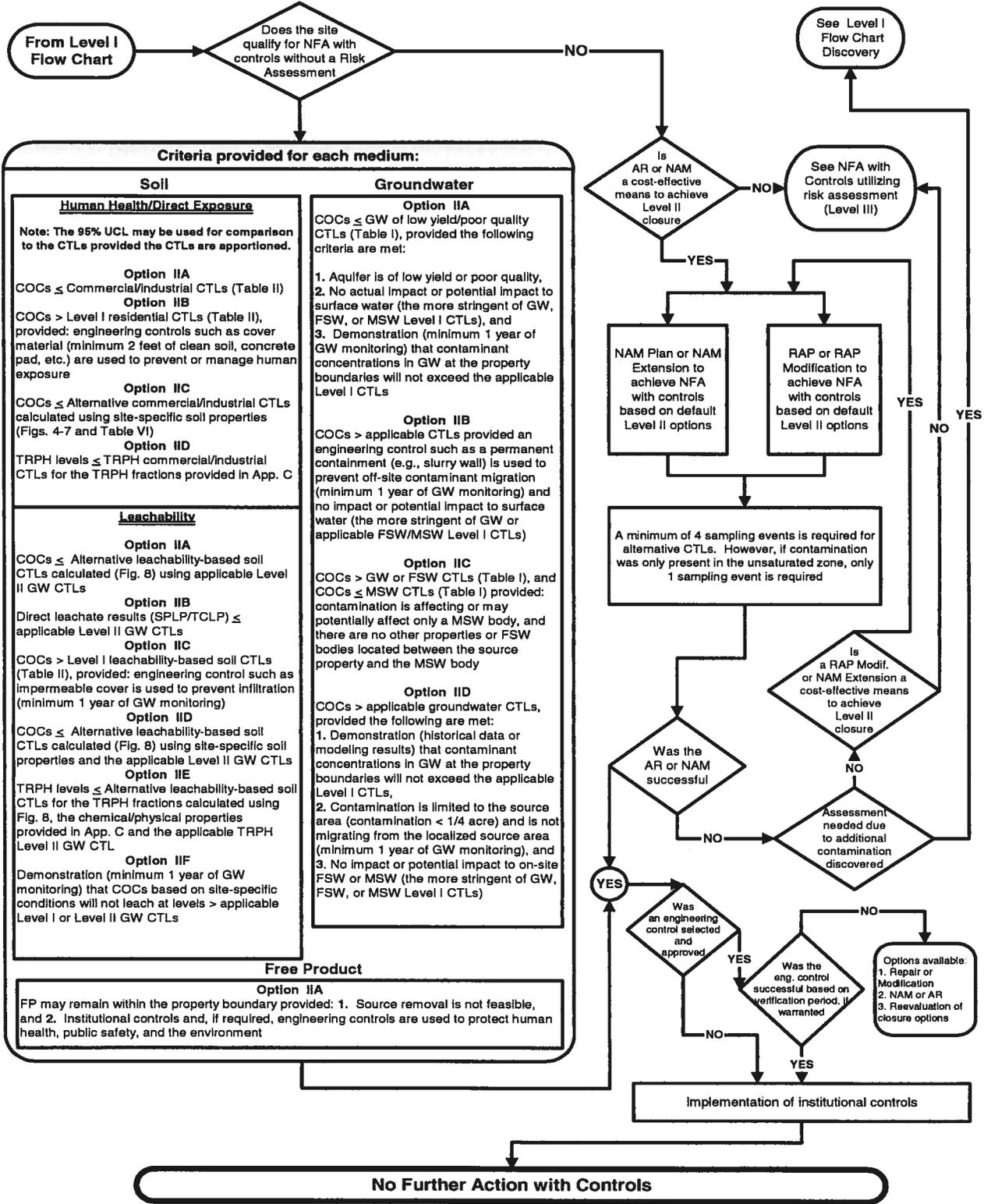
Note 2: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 3: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.

Petroleum Risk Based Corrective Action (RBCA) Flow Process

Chapter 62-770, F.A.C. Risk Management Options - Level II

December 23, 2004



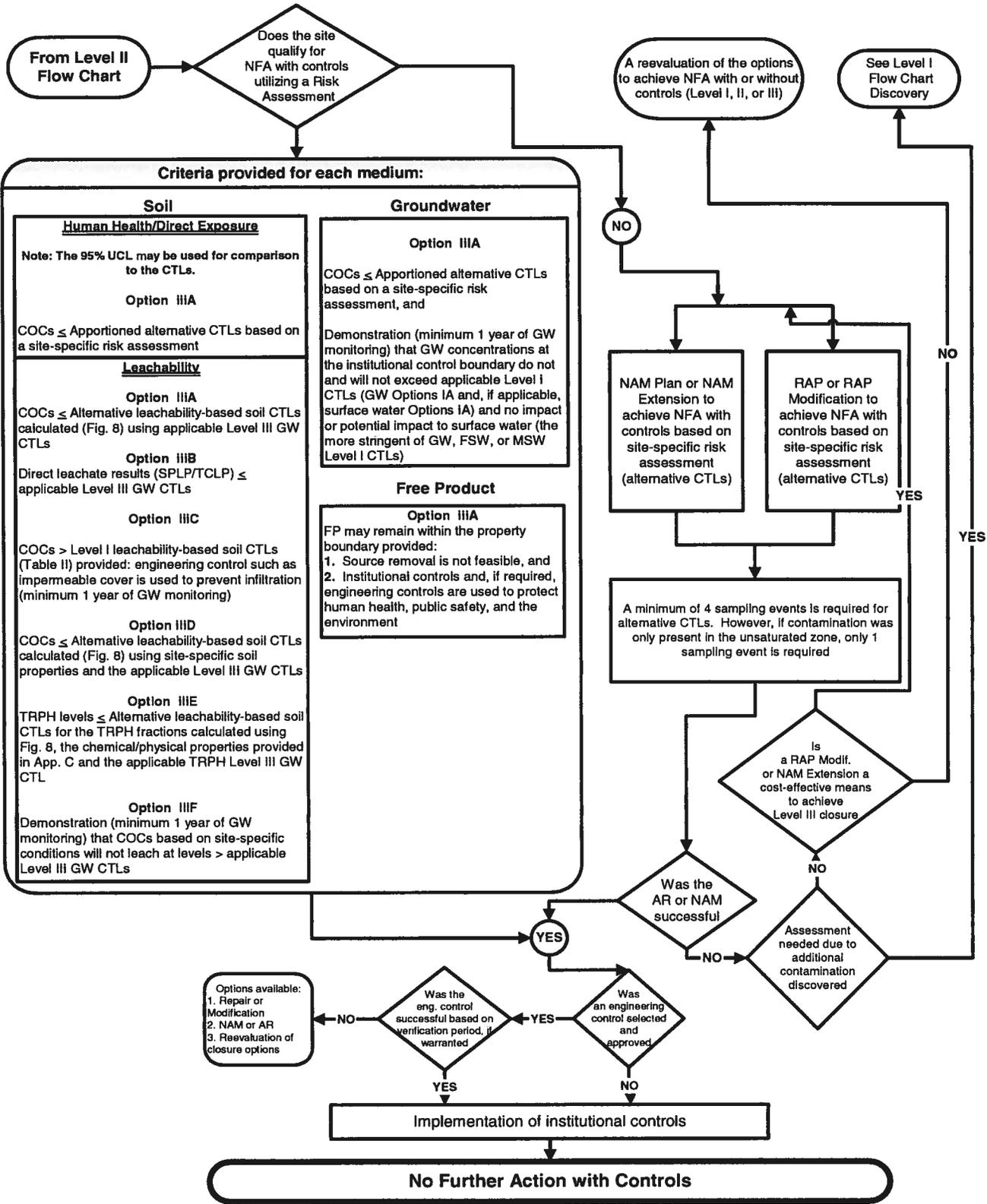
Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6. AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; Low Yield: Aquifer that has an average hydraulic conductivity of less than 1 ft/day and a maximum yield of 80 gals/day; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; Poor Quality: Affected groundwater with background concentrations that exceed any of Florida's Primary or Secondary Drinking Water Standards; RAP: Remedial Action Plan; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, F.A.C. Appendix C is provided in the technical report.

Note 2: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, F.A.C. shall be utilized for final interpretation of the rule and requirements.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level III
December 23, 2004



Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6. **AR:** Active Remediation. **COCs:** Contaminants of Concern. **CTLs:** Cleanup Target Levels. **FP:** Free Product. **FSW:** Freshwater Surface Water. **GW:** Groundwater. **MSW:** Marine Surface Water. **NAM:** Natural Attenuation Monitoring. **NFA:** No Further Action. **RAP:** Remedial Action Plan. **SPLP:** Synthetic Precipitation Leaching Procedure. **TCLP:** Toxicity Characteristic Leaching Procedure. **TRPHs:** Total Recoverable Petroleum Hydrocarbons. **UCL:** Upper Confidence Limit of the arithmetic mean.

Note 1: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 2: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.



To: Project Team
From: Larry Smith
Subject: Site 325
Date: May 20, 2010

Overview:

- Contamination is from a leak in piping associated with two 20,000-gallon USTs
- The contaminant is JP-5 jet fuel
- The media of concern is soil and groundwater

Goal: Determine current level of GW and Soil contamination. What is the source for the continued GW contamination? Is soil leaching?

Path forward: Review currently available data, design investigation to resolve current data gaps with aim of site closure.

History: The Coastal Systems Station (CSS), a part of the Navy research and development facility, consists of two areas; the laboratory area and the ordnance area. At CSS, the location of three 20,000-gallon fiberglass underground storage tanks (USTs) installed in 1976 and one 300-gallon UST installed in 1984 was designated as Site 325. Both were used for the storage of JP-5 jet fuel. As a part of the Navy Release Detection program, four compliance wells were installed around the USTs in 1989. During installation of monitoring wells, petroleum-contaminated soil was detected. ABB-ES detected free product in several wells installed during their CA investigation from 1992 to 1994. During that time, several tightness tests were performed on the 20,000-gallon USTs and associated piping in order to detect leaks. A leak was discovered in the underground pipelines associated with the middle UST (UST #2). The UST system was abandoned and replaced and free product removal began per ABB-ES recommendation for initial remedial action (IRA). The leak in UST piping is the likely source for contamination to the site. There are no active potable wells within a 0.25 mile radius of the site (Letter Report, Technical Memorandum for Site 325, CSS June 1, 1994).

Synopsis of available Site 325 historical documents:

- A CA was conducted from 1992 to 1994 by ABB-ES. During that time ten soil borings and three monitoring wells were installed. All site wells (four compliance and three monitoring wells) were sampled in October 1992. Several groundwater samples exceeded State target levels for benzene and total naphthalenes. The FDEP requested the wells be resampled in March 1993. During that event, contaminant concentrations for one well suggested that a recent release or leak had occurred. Tightness tests were conducted at the UST system after Activity personnel discovered 1.25 feet of free product in that same well. It was discovered that piping associated with UST # 2 was leaking. The Activity decided to abandon and replace the old 20,000-gallon USTs and begin free product removal as a part of ABB-ES recommendation for IRA. A CA report with ABB-ES findings through March 1994 was submitted on June 1, 1994. During this time, a potable well survey was conducted. The survey revealed that contamination of

public supply wells from the one active source at the facility is not a concern. In July 1994, ABB-ES installed three free product recovery wells after 14 soil borings were advanced at the site to locate the area of greatest free product thickness.

- From July to August of 1995, the USTs and associated pipeline were removed per the IRA. During the excavation 83 soil samples were screened with an organic vapor analyzer (OVA). Excessively contaminated soil (>50 ppm) was removed (about 490 cubic yards) and replaced with clean fill material. Only the amount of soil required to pull the tanks and pipes were removed, therefore some contaminated soil remained onsite. An attempt to remove all free product during the excavation was conducted. The groundwater surface was vacuumed for three hours; the amount of free product removed was not measurable.
- A CAR was submitted in January 1996 with additional contamination assessment work. Based on the findings of isolated free product and groundwater contamination, ABB-ES recommended an IRA.
- In September of 1995 ABB-ES submitted the IRA.
- In May of 1996 AB-ES submitted a RAP containing identified contaminants of concern (VOAs, PAHs, TRPH, ethylene dibromide, and dissolved lead), the extent of contamination (areas with free product, soil and groundwater), exposure pathways (very limited from potable wells or St. Andrews Bay), limitations to clean up, and remedial treatment (source abatement through free product monitoring and recovery, SVE and groundwater monitoring and components for future potential installation of an AAS).
- In July 2004, the construction completion report was submitted for the SVE and AAS system at the site. The report summarized the VEE installation in 1997 and completed in 1998. The system operated bimonthly through December 2001 (no free product was recorded since June 2001). In accordance with the RAP, groundwater was monitored quarterly and during that time the contract changed from Ensafe to CH2M Hill in 2002. In 2002 CH2M Hill performed baseline sampling events for soil and groundwater. CH2M Hill then replaced the mobile system in October of 2002. The system start-up and monitoring occurred until May 2004. O & M activities were scheduled along with LTM recommended.
- In the spring of 2012 a BOA performed DPT work to determine the extent of soil contamination in the area of monitoring wells exhibiting groundwater exceedances at monitoring wells MW-8 and MW-23. An initial draft report was submitted by the BOA on July 1 2012 and a subsequent revised report was provided. The report was not finalized.

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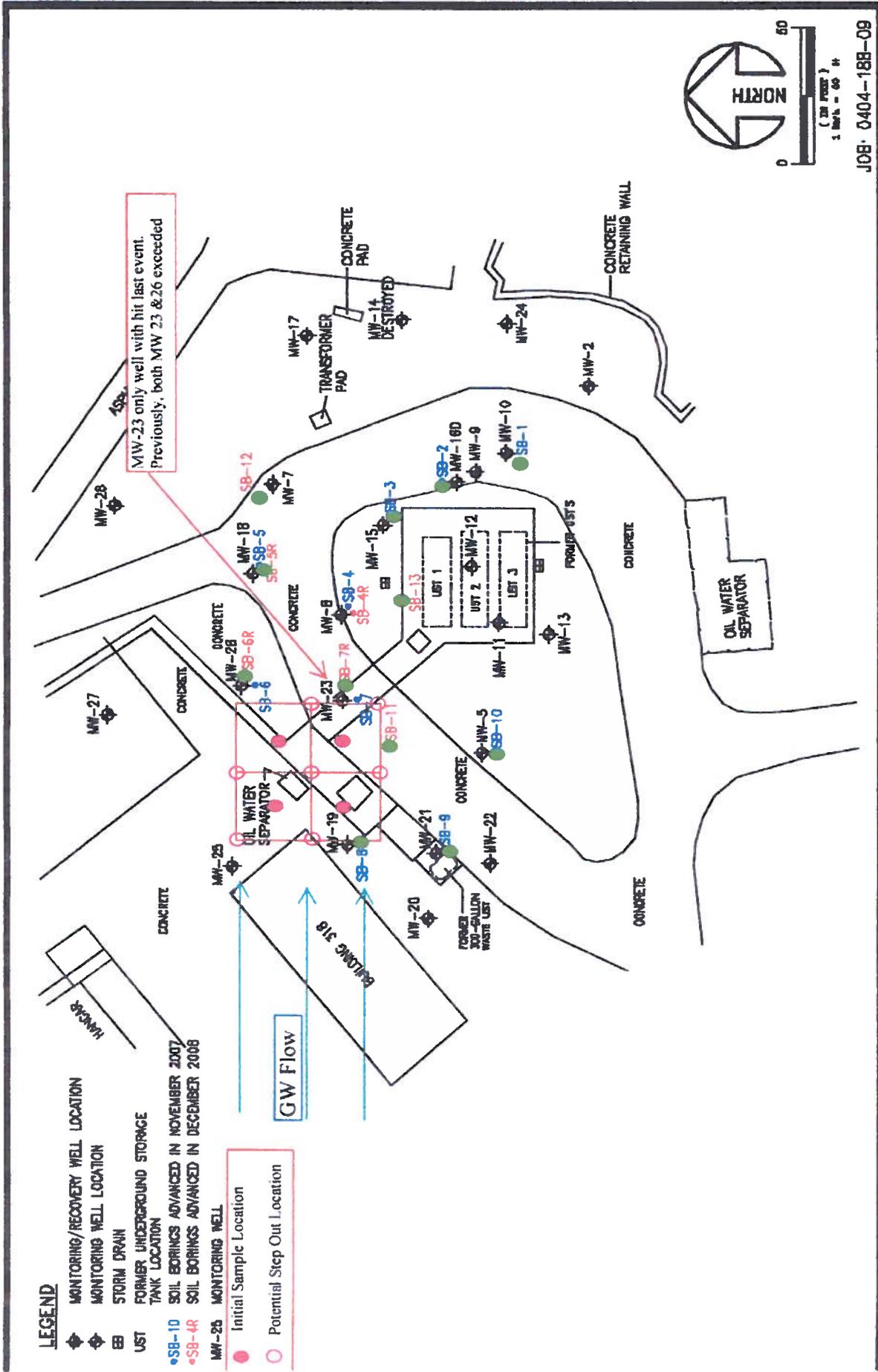


FIGURE 6 - Site 325 Soil Sampling Locations



To: Project Team
From: Larry Smith
Subject: Site G300
Date: Jan 3, 2013

Overview:

- Contamination is from an over fill of a day tank in 1996.
- The contaminant is diesel fuel.
- The media of concern is soil and groundwater.
- The fuel has migrated beneath the foundation of G300 which is 24 inch thick concrete.
- SCTLs are in exceedance only near the water table.
- LUCs are established.

Goal: Monitor the Site which currently has an SRCR until SCTLs and GCTLs are below criteria.

Path forward: Review data as required by SRCR with aim of removing LUCs and site closure if possible when SCTLs and GCTLs meet criteria.

History: The Navy Experimental Diving Unit Ocean Simulation Facility is located at Building 300. A 2500 gallon UST was installed in 1970 about 50 feet south of Building G300. On September 7, 1996, the day tank used to store diesel fuel for an emergency generator located in Building 300, was overfilled during refueling. The day tank, which has a float level and is equipped with a piping system which returns excess fuel to the source tank, could not accommodate the seven gallon per minute delivery rate of the emergency generator fuel pump, which was operated in the manual mode during the refueling of the tank. As a result, fuel was displaced into the day tank vent pipe, which extends outside Building 300, at the southwest corner of the building, approximately 10 feet above the top of the day tank. Eventually, fuel reached the end of the vent pipe, spilling to the ground at the southwest corner of Building 300 (Commanding Officer, Navy Experimental Diving Unit, 1996).

During the refueling of the tank, the pump was left unattended. Approximately one hour after the pump had been left unattended, a diesel fuel spill was discovered on the floor beneath the day tank and the pump was deactivated. Less than two quarts of diesel fuel had spilled on the floor and the spill was immediately cleaned up with absorbent pads. At the time, personnel were not aware a spill had occurred outside of Building 300. The spill outside the building was discovered on September 16, 1996, by a Florida State inspector who was at the site to inspect an unused underground storage tank which was being removed and noticed the smell at the site of the spill (Commanding Officer, Navy Experimental Diving Unit, 1996).

The Navy estimates approximately 132 gallons were spilled during the refueling of the day tank on September 7, 1996. This estimate is based on review of inventory records and fuel

consumption rates for the outside diesel fuel tank from March 28, 1996 (Commanding Officer, Navy Experimental diving Unit, 1996).

The UST G300 was not regulated, therefore no structural integrity testing of the tank and lines was performed on the diesel UST system. At the time the UST was removed in September 1996, the tank was observed to be in good condition.

The outside spill was discovered on 16 September, 1996, by an inspector from the FDEP who was at the facility to oversee the removal of the unused UST. The FDEP inspector noticed the smell of diesel in the vicinity of the vent lines. An Interim Remedial Action (IRA) was initiated to remove the contaminated soil. While performing the IRA the consultant discovered what appears to be old contamination which could have been the result of previous overfills of the day tank or the former UST. (AOC 27 old CAP/Capnav.doc)

Synopsis of Site History:

1996

On September 20, 1996, Southern Earth Science Company of Panama City, Florida installed 17 soil borings to assess soil quality at the UST system tank field along the product line, and near the southwest corner of Building 300. Samples were collected from each of the borings for field screening with an organic vapor analyzer (OVA) The results of the field screening indicated "excessively contaminated soil," as defined by Chapter 62-770, FAC, at the southwest corner of Building 300. The soil contaminant plume was approximately 4 feet wide by 25 feet long and extended along the southwest corner of the building, sidewalk, and possibly under the building. In September 1997, an Initial Remedial Action (IRA) was performed to remove "excessively contaminated soil". During the IRA, soil excavation was halted after it became apparent the amount of "excessively contaminated soil" observed during the excavation, may have resulted from various generator day tank overfills.

During removal of the UST system, the US Navy Public Works Center (PWC) collected seven soil samples for hydrocarbon vapor screening using an organic vapor analyzer (OVA). The soil samples were collected at depths of 2 feet, 4 feet, and 8 feet bls from within the tank excavation. Soil vapor screening samples were collected from each side and the bottom of the tank excavation. Results of the soil screening identified no soil hydrocarbon vapors in soil samples collected from the vadose zone.

1997

A temporary monitoring well was placed at the center of the UST excavation and groundwater samples were collected on March 25, 1997. Groundwater samples collected from the temporary monitoring well were analyzed using US Environmental Protection Agency (USEPA) Methods SW-846, 8260 and 8270. Results of the sampling reported no petroleum constituents above state target levels for storage tank closure. Groundwater concentrations of chloroform, bromodichloromethane, and dibromochloromethane were reported at levels below the State of Florida Drinking Water Standards.

An (IRA) was initiated to remove contaminated soil. A contamination assessment was conducted and a Contamination Assessment Report (CAR) submitted to the Florida Department of Environmental Protection (FDEP) in August 1997. The Site Assessment Report (SAR) Addendum recommending Natural Attenuation Monitoring was submitted to the FDEP in December 1998. The FDEP concurred with the recommendation in a Natural Attenuation Monitoring Plan Approval Order was issued on February 23, 1999.

1999

The first semi-annual monitoring event was conducted in June 1999. The second semi-annual monitoring event was conducted in November 1999. During the second semi-annual monitoring

event, diesel fuel was detected in the source monitoring well. As a result, the monitoring program was discontinued and interim diesel fuel recovery was initiated in April 2001.

2003

A Remedial Action Plan (RAP) was submitted to the FDEP on March 28, 2003. The RAP recommended Aggressive Fluid Vapor Recovery (AFVR) using a Navy owned trailer-mounted dual-phase extraction system to address the diesel fuel at Building G300. A RAP Approval Order was issued by the FDEP on May 29, 2003, concurring with the recommendations proposed in the RAP and directing the Navy to proceed with implementation of remedial action to address diesel fuel remaining at the site.

2004

Interim diesel fuel recovery was performed from July through September 2003 while waiting for funding to implement the RAP. A CTO to implement the RAP through an AFVR treatability study (TS) was awarded by the Navy in May 2004. The AFVR trailer refurbishment was completed in July 2004. The AFVR TS was initiated on August 17, 2004.

From August 17, 2004 to November 18, 2004, diesel fuel recovery and diesel fuel monitoring events were conducted on an alternating two week schedule. During the two events conducted in October 2004 (October 7 and October 21, 2004), the product thickness was less than 0.01 foot (ft) in monitoring well PCY-300-MW01 and no product was detected in any other monitoring well. During the two events conducted in November 2004, no product was detected in any monitoring well during the November 8, 2004 visit, and the product thickness was less than 0.01 ft during in PCY-300-MW01 during the November 18, 2004 visit. No product has been detected in any site monitoring well since the November 18, 2004 site visit. Therefore, the diesel fuel recovery events were discontinued in November 2004.

In accordance with the specifications provided in the RAP, if no diesel fuel is observed two months after an AVFR event, then Post-Active Monitoring per 62-770.750 Florida Administrative Code (F.A.C.) shall be implemented. Since no diesel fuel has been detected at the site since November 18, 2004, it has been agreed to discontinue the AFVR and implement post active remediation monitoring. A TS Evaluation Report recommending the implementation of a post active remediation monitoring program was submitted to the FDEP in May 2005.

2005

August 2005, 1st Quarter Groundwater Monitoring Report, based on 1 July sampling event recommending further monitoring as per TS Evaluation Report.

December 2005, 2nd Quarter Groundwater Monitoring Report based on 29 September sampling event recommending further monitoring as per TS Evaluation Report.

March 2005, 3rd Quarter Groundwater Monitoring Report based on 21 December 2005 sampling event recommending further monitoring as per TS Evaluation Report.

During the one year period, July 2005 to April 2006, four monitoring wells at G300 were sampled every three months or each quarter. Analytical data obtained during this period showed mixed results, described below. Groundwater contaminants were not detected in any of the quarterly sampling rounds at concentrations exceeding regulatory criteria in groundwater samples collected from monitoring well PCY-300-MW03.

During the 1st quarter groundwater sampling, one VOC, benzene, was detected in the groundwater sample from monitoring well PCY-300-MW01 at a concentration of 1.5 micrograms per liter ($\mu\text{g/L}$). This is greater than the benzene Groundwater Cleanup Target Level (GCTL) of 1.0 ($\mu\text{g/L}$). During subsequent sampling events, ethylbenzene was also detected above the

GCTL. Xylenes were also detected, but not above the GCTL. Additionally, during the next three sampling events polynuclear aromatic hydrocarbons (PAHs) Naphthalene, 1-Methylnaphthalene, and, 2-Methylnaphthalene exceeded their GCTLs (GCTL is 20 µg/L) in groundwater samples collected from PCY-300-MW01.

Benzo(a)anthracene was detected once at 0.2 µg/L (GCTL is 20 µg/L), in a sample collected from PCY-300-MW02 during the second quarter sampling. Benzo(a)anthracene and dibenzo(a,h)anthracene, were detected at 0.2 µg/L (GCTL is 20 µg/L) and indeno(1,2,3)pyrene was detected at 0.2 µg/L (GCTL is 0.2 µg/L), in a sample collected from PCY-300-MW04 during the second quarter sampling. No contaminants of concern (COCs) were above GCTLs in groundwater samples collected from PCY-300-MW04.

Samples collected during the 3rd quarter event showed that Volatile Organic Compounds (VOC), PAH and total recoverable petroleum hydrocarbons (TRPH) constituents were detected in the source monitoring well PCY-300-MW01 and in the perimeter monitoring well PCY-300-MW02. The VOC constituents, benzene, ethylbenzene and xylene were detected in monitoring well PCY-300-MW01 at concentration of 1.0 µg/L (GCTL is 1.0 µg/L), 24.0 µg/L (GCTL is 30 µg/L) and 3.0 µg/L (GCTL is 20 µg/L), respectively. TRPH was detected at a concentration of 4.5 milligrams per liter (mg/L) (the GCTL is 5.0 mg/L).

2006

In May 2006, Annual Groundwater Monitoring Report based on 28 March 2006 sampling event was issued. During fourth quarter sampling event 0.33 ft product was detected in the source well. Due to the presence of free product in this well, PARM was no longer in effect at this site.

In response to this turn of events, data from previous investigations were reviewed. The selected path forward was to perform ten weeks of bailing groundwater from PCY-300-MW01 to draw free product to the well, if possible, and begin quarterly sampling to determine whether contamination is still present.

TtNUS recommended the site revert to a no further action with controls status as defined in the Petroleum Risk Based Action (RBCA) 62-770, F.A.C. Option IIA. This option stipulates that "free product may remain within the property boundary provided: 1.) Source removal is not feasible, and 2.) Institutional controls and, if required, engineering controls are used to protect human health, public safety, and the environment.

2007

On October 12, 2007, TtNUS personnel mobilized to Building G300 to conduct the first quarter monitoring event. Bailing, monitoring, and sampling activities were conducted for this field event and the subsequent nine events in accordance with the FDEP's Standard Operating Procedures for Field Activities (DEP-SOP-001/01). Upon completion of all ten field events, it was evident that free product was not detected in PCY-300-MW01.

Prior to the beginning of the monitoring activities, a Wellboom was placed in monitoring well PCY-300-MW01, where there had previously been free product. The Wellboom is essentially a sock filled with organic material that works by providing a nutrient material to bacteria that would, in turn, consume free product. The Wellboom is designed to promote rapid biodegradation of the free product. When the Wellboom is depleted, it is replaced and this process is repeated until the free product has been consumed. The Wellboom was not effective. This may be due to sterile or bacteria-free groundwater conditions. There has been no significant change in dissolved contaminant concentrations in the groundwater.

2008

The water level data collected during four quarterly sampling events (February 13, 2008; June 11, 2008; November 23 & 25, 2008; and January 20, 2009) indicate groundwater flow in the Building G300 area is generally to the southeast towards St. Andrew Bay. This flow direction is consistent with previously reported groundwater flow data and basewide potentiometric surface maps.

The chemical contaminants detected in well PCY-300-MW01 are consistent with the presence of petroleum hydrocarbons and are concluded to be evidence of contamination from this free product. Concentrations of COCs above groundwater cleanup target levels (GCTLs), including polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and total recoverable petroleum hydrocarbons (TRPHs) persist in PCY-300-MW01 and free product is frequently encountered in the well. Remedial action for this well included ten weeks of bailing in an attempt to remove free product and the subsequent installation of a Wellboom for approximately one quarter. The Wellboom was removed because its presence did not allow for accurate free product measurement and appeared to be ineffective. All other monitoring wells in the study area are free of detections or do not exceed FDEP regulatory criteria. The extent of petroleum related chemical contamination at unacceptable concentrations in groundwater appears to be limited in spatial extent to the area near PCY-300-MW01. Downgradient well PCY-300-MW02, located approximately 60 feet from PCY-300-MW01, has the second highest number of detections, but did not exceed regulatory criteria during the recently completed 4 quarterly monitoring rounds.

During the monitoring period, February 2008 to January 2009, four monitoring wells at Building G300 have been sampled, per event, on a quarterly basis. The four wells sampled in each round were selected from the following five wells: PCY-300-MW01, PCY-300-MW02, PCY-300-MW03, PCY-300-MW04 and PCY-300-MW05. Exceedances of FDEP criteria were reported from monitoring well PCY-300-MW01 exclusively, which was sampled in every round. In addition, water levels were measured in all five monitoring wells and nearby piezometers PZ01, PZ02 and PZ01. PCY-300-MW01 was only sampled during the first- and second-quarter events because the presence of free product in that well precluded sample collection during the third and fourth events.

June 16th, 2009 Annual Groundwater Report Recommendations

Over a 9 year period Site G300 has been assessed with the intent of developing a remedial action. The site is difficult to assess due to the ephemeral nature of the floating product and the difficulty of assessing the plume beneath the 4 foot thick foundation of the Site building. After reviewing the historical data the stake holders have concluded a typical RAP will not adequately address contamination and that Land Use Controls should be applied while the site receives limited but sufficient monitoring for the protection of human health and the environment in the future. This conclusion is based on decreasing volume of floating product detected in the source well combined with decreasing dissolved contamination trends as shown most recently over the last four quarters of groundwater analytical data.

For the reasons described above TtNUS recommends an end to the current monitoring program, but with continued monitoring as described below.

Source removal is not feasible so land use controls (LUCs) to restrict digging and groundwater use should be established to protect human health, public safety, and the environment until "no further action" (NFA) status is granted.

Until an NFA status has been reached, monitoring well PCY-300-MW01 should be monitored quarterly for floating product which, if detected, should be bailed weekly until the

product is gone. If these conditions would not be met, LUCs with conditions would be implemented.

In addition to monitoring for floating product the groundwater at the site should be monitored annually by sampling monitoring well PCY-300-MW01 and two existing downgradient monitoring wells (PCY-300-MW02, and PCY-300-MW05) for the PAH, VOC, and TRPH COCs.

After one year of monitoring, the free product survey and groundwater analytical results should be used to review the site status. Depending on the results, two possible options are anticipated as described below. The actual approach, however, would depend on site conditions at that time.

Option 1: Implement a LUC with conditions. If free product and groundwater contamination trends remain at current levels or decrease (free product seems to be disappearing and groundwater contaminants are near Groundwater Cleanup Target Levels or GCTLs) then a LUC with conditions will be issued for the site.

Option 2: Implement a Site Rehabilitation Completion Order (SRCO) without conditions depending on what the data support in accordance with FDEP criteria. If the data support the conclusion that free product is no longer at the site, contaminant concentrations in groundwater are below the respective GCTLs for the annual sampling event, and contaminant concentrations in groundwater are below the respective GCTLs in the following two quarterly sampling events (April and July 2010) then a Site Rehabilitation Completion Report (SRCR) will be submitted to the FDEP requesting an SCRO without conditions and the LUCs will be removed (please see Chapter 62-770.680 for details) If these conditions would not be met, LUCs with conditions would be implemented.

In addition to the above recommendations, to assess the impact of soil contaminants leaching to groundwater, collection of up to twelve confirmatory soil samples (two samples from each of 6 locations yet to be determined) is recommended (Figure 1). These soil sample locations will allow soil contaminant concentration comparisons of the source area to adjacent areas and will be used to establish the lateral extent of soil contamination. The soil samples will be analyzed for the PAHs, VOCs, and TRPHs. These data will be useful in supporting a FDEP 62-770 F.A.C. Risk Management Option IIC, "No further action with controls" scenario. Because the area adjacent to the building is small, this sampling density will provide ample opportunity for detecting contaminants in soil if any significant contamination is present. The soil and groundwater data together should provide a complete assessment of site conditions.

June 7, 2001: Annual Monitoring Report Conclusions

The following conclusions pertain specifically to the previous four quarterly monitoring events and generally to the historical data preceding the 2009-2010 year.

The analytical results for soil samples collected at Building G300 on November 18, 2009 were compared to the appropriate Soil Cleanup Target Levels (SCTLs) and action levels. TPH exceeded SCTLs as shown in Table 3 and depicted in Figure 3 (Appendix C-1) in location one, depths 8 and 8.5 feet (samples SB001-8 and SB001-8.5) and location two at 8.5 feet (SB002-8.5). Soils at this depth are grading moist to wet and are likely impacted by contaminated groundwater rather than downward infiltration of contaminants from shallower depths where no exceedances of SCTLs were detected. No other analytes exceeded their respective SCTLs in any samples (Table 3, Appendix C-1).

Selected soil samples for which FDEP SCTLs were exceeded for TRPH were analyzed by the Total Petroleum Hydrocarbon Criteria Working Group Method (TPHCWG). Results of the

TPHCWG fractional speciation allow for direct comparison the FDEP SCTLs and are found in Table 4, Appendix B. All soil samples were less than FDEP SCTL residential criteria. Three TRPHs organic ranges exceeded FDEP SCTL industrial criteria in the sample collected from 8 feet below land surface: the C12-C16 aliphatics, C16-C21 and C21-C35 aromatics range were detected at 4800, 4000 and 2600 mg/kg exceeding the FDEP residential limit of 2900, 1500 and 1300 mg/kg respectively.

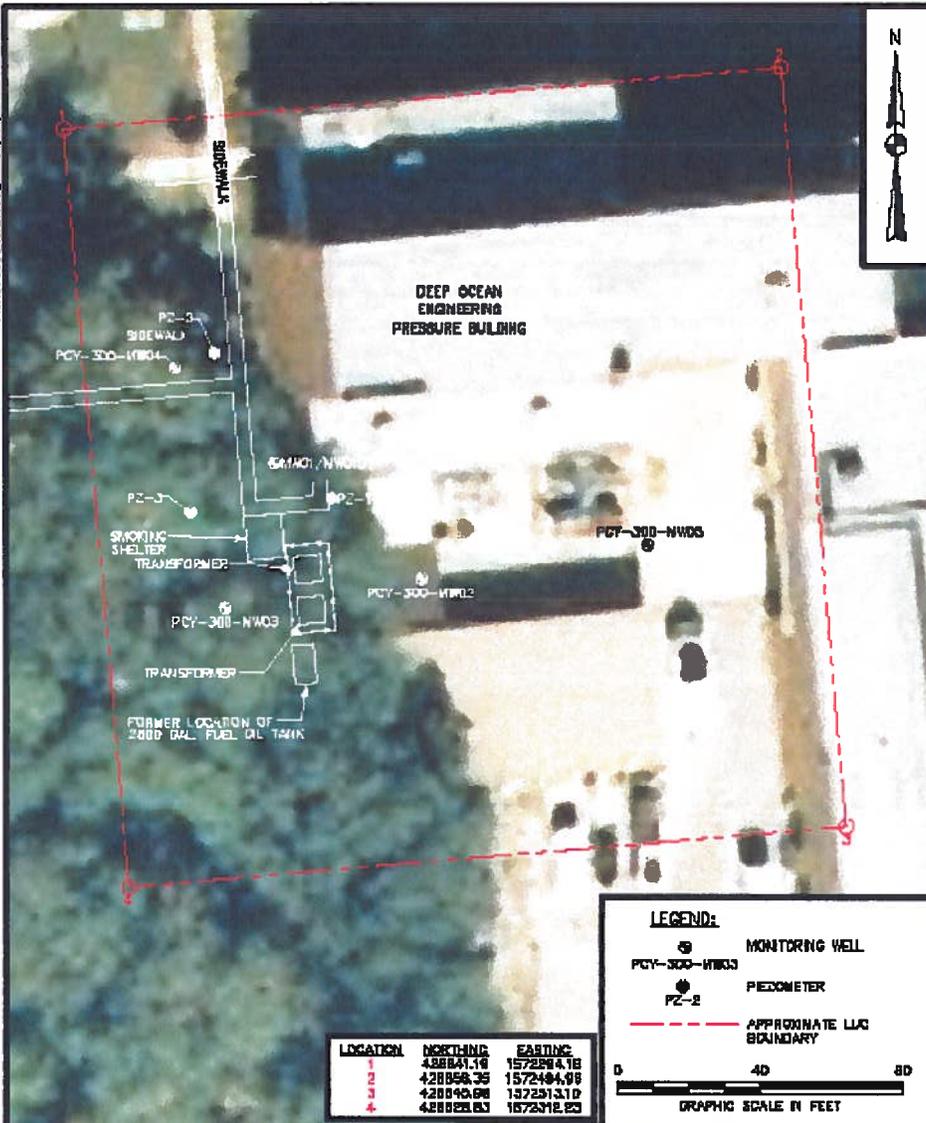
During low rainfall periods the site water table typically forms a nearly flat surface allowing for two interpretations of flow direction depending on very slight water table elevation differences. Groundwater flow direction is either to the southeast or southwest, both interpretations resulting in water flowing to local water bodies and past potential down gradient monitoring wells PCY-300-MW03 to the southwest or PCY-300-MW02 and PCY-300-MW05 to the southeast. To be protective of human health and the environment it should be assumed this water table condition will be consistent requiring the any additional monitoring to include these three wells.

Comparing the recent historical groundwater data [(2008 to 2009) Appendix B] with the 4th Quarter groundwater sampling event, contaminant concentrations are low in samples collected from the source well PCY-300-MW01. The results are typically just above GCTLs when detected and on average only occur in the source well.

RECOMMENDATIONS

Recently contaminant concentrations in PCY-300-MW01 have only slightly exceeded the GCTL for TRPH. Additional active remediation is technically infeasible due to the contaminants location beneath and adjacent to the deep ocean engineering buildings three foot thick slab foundation. Soil contamination to a depth of approximately 6 feet below land surface was free of FDEP SCTL exceedances. Deeper soils associated with surficial groundwater contamination were found to exceed SCTLs. Considering these factors, remediation would not likely remove all residual contamination or be cost effective. Based on the results of all previous monitoring events, and a review of the historical data for this site, Tetra Tech recommends that a Site Rehabilitation Closure Report be submitted to FDEP requesting a Site Rehabilitation Closure Order to formally close Site G300 with land use controls to protect receptors from the groundwater contaminants. It is also proposed that monitoring wells PCY-300-001, PCY-300-002, PCY-300-003, and PCY-300-005 be sampled for TRPH and PAHs on a Bi-Annual (once every two years) basis for four years. At the five year LUC review, the data can be evaluated to determine the path forward. Appendix E details how these recommendations or selected measures will be implemented, maintained, and monitored.

ACAP:055328.dwg 04/14/11 CR FT



LEGEND:

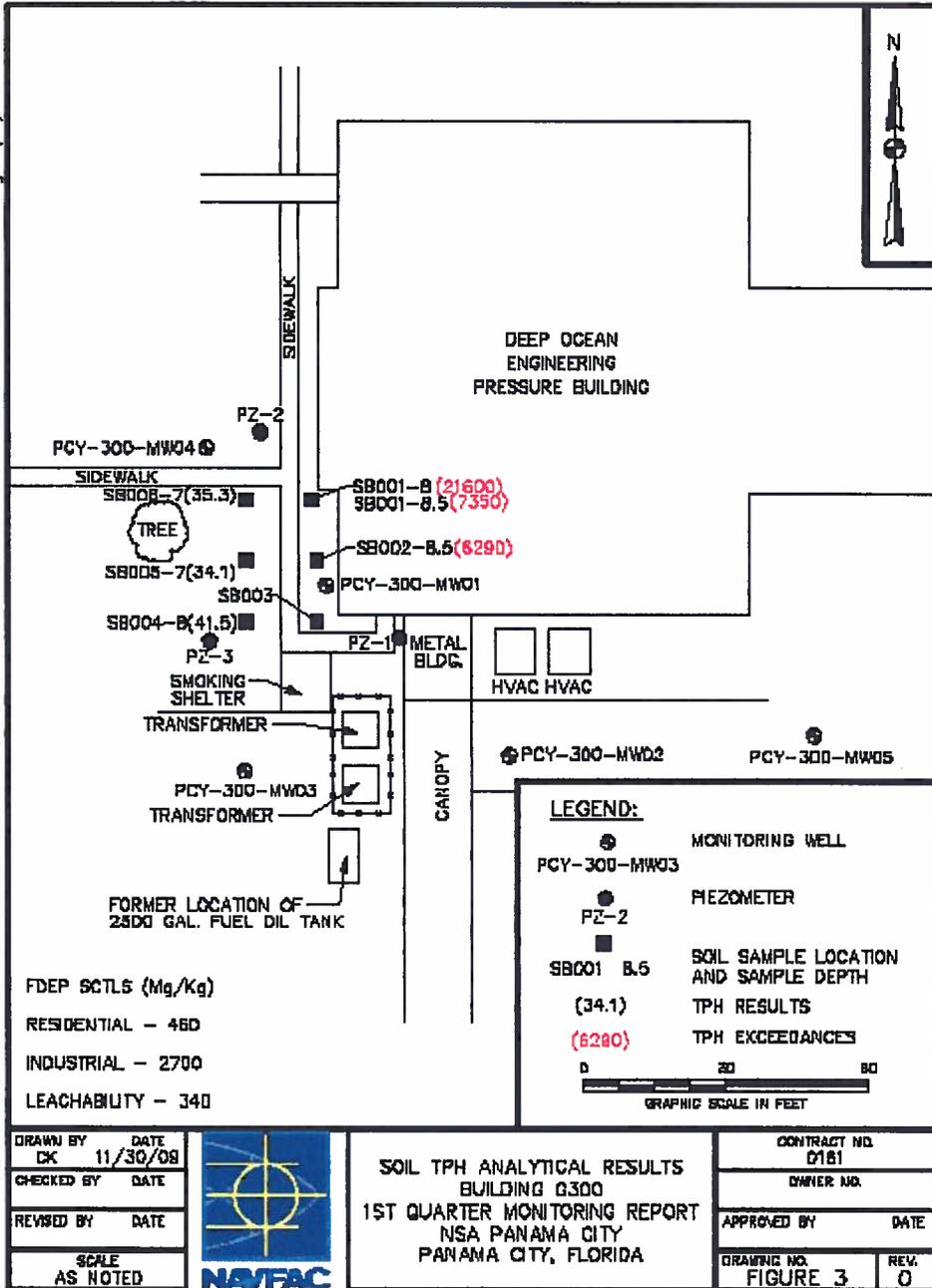
- MONITORING WELL
- PIEZOMETER
- APPROXIMATE LUC BOUNDARY

0 40 80
GRAPHIC SCALE IN FEET

LOCATION	NORTHING	EASTING
1	428841.18	1572584.18
2	428858.35	1572484.95
3	428848.08	1572513.10
4	428828.83	1572312.25

DRAWN BY CK	DATE 03/01/10		LUC BOUNDARY BUILDING G300 ANNUAL MONITORING REPORT NSA PANAMA CITY PANAMA CITY, FLORIDA	CONTRACT NO. 0181	
CHECKED BY	DATE			OWNER NO.	
REVISED BY	DATE			APPROVED BY	DATE
SCALE AS NOTED				DRAWING NO. FIGURE 4	REV. 0

ADAIR CONSULTING INC. 1/28/10 CK PIT



FORM G300 NO. 2007-RV206 - REV 1 - 9/10/08



To: Project Team
From: Larry Smith, John Schoolfield
Subject: Building 98 Tank Closure Assessment
Date: June 2012

Overview:

- Possible contamination from the presence of a 1,000 gallon UST containing diesel fuel which was removed in 1991.
- The tank closure report showed high FID readings at side wall samples SS-3, SS-4 and SS-5.
- A proper tank closure was not submitted, but site is listed as an NFA in the permit.
- Groundwater for this site is address under the AOC-1 program.

Goal: Close the Site per FDEP regulations with possible SAR/SRCR.

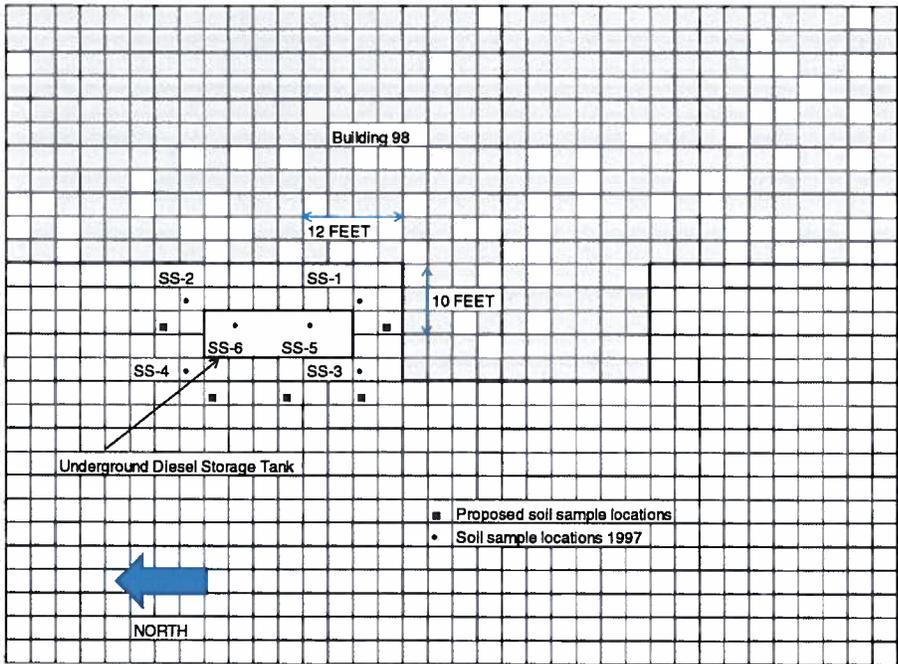
Path forward: Review soil data developed from the last investigation and determine what needs to be done.

History Building 98 is located in a developed area at the eastern side of the facility. The site includes a large asphalt paved parking lot surrounded by offices, storage, warehouse buildings, and a lay down storage compound. The site is encompassed within the groundwater Land Use Control (LUC) boundaries of another site, AOC-1. AOC-1 was investigated previously under the Resource Conservation and Recovery Act (RCRA) program and the FDEP petroleum program.

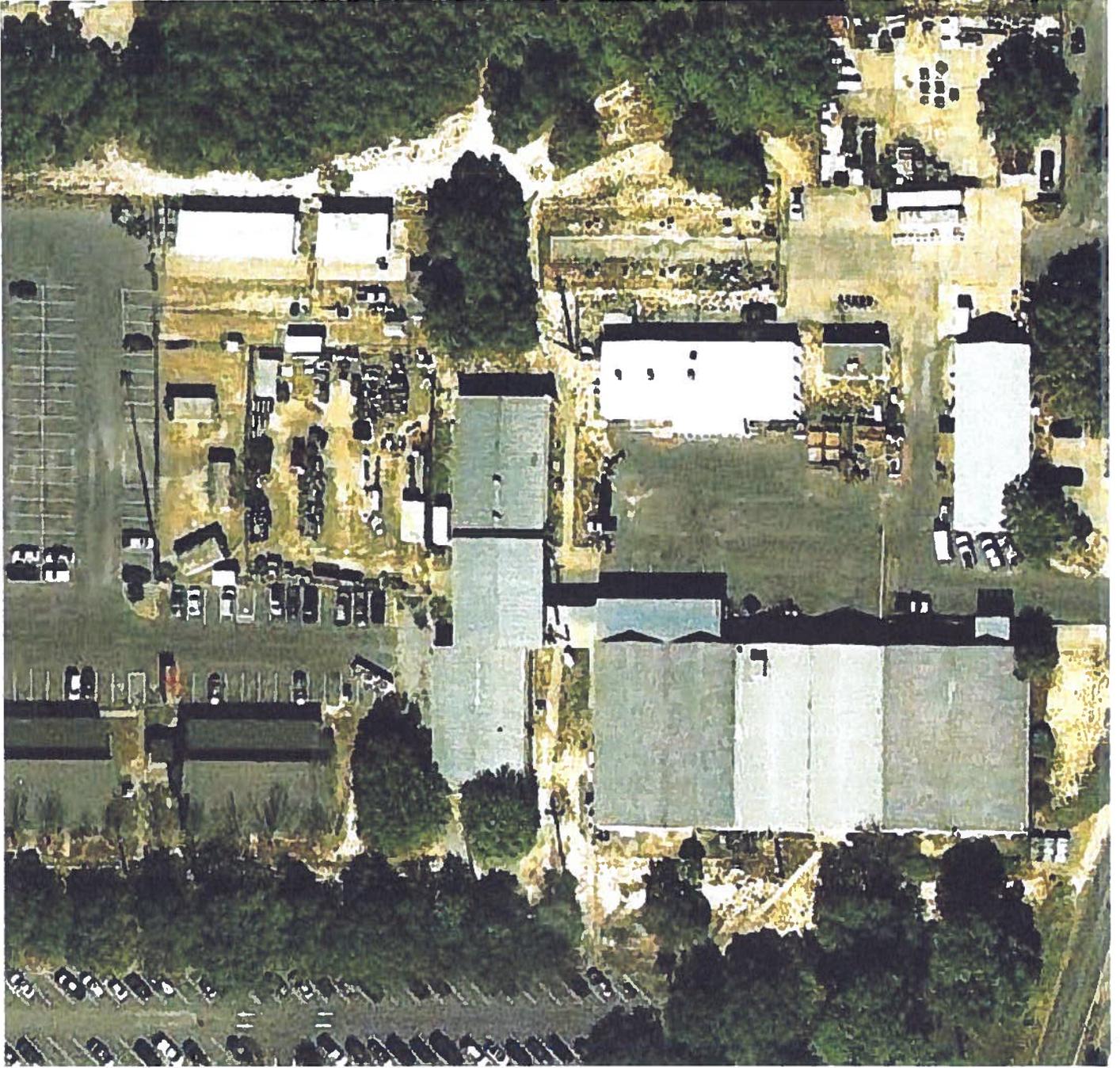
Building 98 included a 560 gallon underground storage tank (UST) containing diesel heating oil used for provide heating for the building. The tank was removed on 8 August 1997, as detailed in the document Closure Assessment Report underground Storage Tank Building 98 NSWC CSS Panama City, Florida (Dec, 1997). At this time, contaminated soil was encountered and removed based on the head space screening techniques (62-770 FAC). Contaminated soil was removed horizontally and vertically until hydrocarbon levels in the surrounding soil were less than 50 parts per million (ppm), resulting in approximately 2 cubic yards of soil being removed.

The tank pit was eight feet wide, ten feet long and five feet deep. A temporary well was installed and sampled for volatiles by EPA Method 8260, semi-volatiles by EPA Method 8270, Lead by EPA Method 239.2 and Ethylene Dibromide by EPA Method 504. The laboratory analytical report indicated that groundwater was contaminated with petroleum hydrocarbons.

The groundwater at this location is immediately down gradient of former fire training area, AOC-1, and is administered under the AOC-1 Groundwater Operable Unit. Administrative controls include a land use control program for the ground water along with long term groundwater monitoring. Therefore, the groundwater for this site is address under the AOC-1 program.



DRAWN BY:	DATE:	 <p>PROPOSED SOIL SAMPLE LOCATIONS FOR SITE 98 WORK PLAN FOR SITES 98, 325, AOC2 AND SOUTH DOCK NSA PANAMA CITY PANAMA CITY BEACH, FLORIDA</p>	CONTRACT NO:	
CHECKED BY:	DATE:		OWNER NO.	
REVIEWED BY:	DATE:		APPROVED BY: DATE:	
			DRAWING NO. FIGURE 4	REV. 0





For: Partnering Team
From: Larry Smith
Subject: Site 278
Date: May 20, 2010

Overview:

- Contamination due to leakage from four (2 asphalt coated steel installed 1964 and 2 fiberglass installed 1977 respectively) 7,500-gallon underground storage tanks (USTs) and /or piping used for diesel storage.
- Soil and groundwater impacted no visible product.
- Contaminant is diesel. Max in soil/groundwater.

Goal: With available data determine if an SRCO for NFA is applicable.

Path forward: Review currently available data to determine if two quarters of groundwater data are less than FDEP GCTLs. If so request SRCO.

History: Site 278 is located at the east dock alongside Alligator Bayou. The site is the former location of four 7,500-gallon underground storage tanks (USTs) used for diesel fuel storage. In 1989 all the tanks were removed and replaced with two 15,000-gallon double walled steel tanks. During excavation high levels of petroleum vapors were detected exceeding the explosive gas meter in use at the time. Visual inspection indicated stained soil under the tank pads. An unknown amount of stained soil was removed and disposed of while the remaining visibly contaminated soil was aerated over Visqueen. No groundwater samples were collected at that time. Several soil samples were collected from soils selected for disposal to meet acceptable levels for transport. A Tank Closure Report was not submitted by the contractor and no manifest copies were provided for soil transportation. It appears the source for contamination at the site is the four former 7,500-gallon diesel USTs.

Synopsis of available Site 278 historical documents:

- A CA of Site 278 was conducted and a CAR was submitted to FDEP in July 1993 (ABB-ES, 1993). During the CA, free product was found in one well (MW-5). Soil OVA readings indicated excessively contaminated soil per Chapter 62-770.200, F.A.C. and groundwater samples detected contaminants in the kerosene analytical group (KAG). The CA stated that natural attenuation was likely occurring. The CAR stated that soil and groundwater at the site exceed Chapter 62-770, F.A.C. target levels for KAG. The FDEP reviewed the assessment and requested additional information and clarification of site data.
- ABB-ES performed additional work at the site and provided data clarification in a CARA submitted to the FDEP in November 1993. FDEP requested additional clarification and sampling.

- FDEP requested additional assessment and information in a letter dated March 1994. ABB-ES performed a supplemental investigation to complete the CA and submitted it in May 1995 (ABB-ES 1995).
- In September 1995, FDEP completed the review of the CA, CAR, CARA, and supplemental information and recommended submission of a RAP.
- The RAP was submitted in April 1996 recommending a vacuum enhanced extraction (VEE) recovery system to clean up the free product in groundwater and soil. It was estimated that the system run no more than three years. It also recommended continued groundwater monitoring. The system startup and tuning were completed in between January and March 1998 (EnSafe 2001). The system operated on a bimonthly schedule through December 2001. In 2002, EnSafe reported that no free product had been recorded since June 2001 (EnSafe 2002).
- In May 2002, CCI conducted groundwater monitoring in order to assess current conditions at the site since VEE system operation. No measurable free product was detected and volatile organic compound (VOC) analysis revealed low concentrations at the site with no exceedances. Polynuclear aromatic hydrocarbon (PAH) exceedances were limited to well CSS-278-MW-06. Total recoverable petroleum hydrocarbon (TRPH) concentrations were detected at levels exceeding the GCTL in five of the nine monitoring wells. Soil boring samples collected at this time also detected concentrations of TRPH exceeding their SCTL regulatory limit.
- In August 2002, CH2M Hill submitted a Work Plan Addendum for Remediation System Optimization based on the recommendations of CCI. It was recommended that an AAS system with passive soil vapor extraction (SVE) be installed to address both the groundwater and soil contamination at the site. Groundwater monitoring was recommended on a semiannual basis. It was proposed at the conclusion of the system installation that a Construction Completion Report (CCR) would be submitted along with the first monitoring report.
- In April 2002, groundwater samples were collected from nine monitoring wells. No measureable free product was detected in any of the wells at Site 278, although a fuel odor was noted while sampling wells 278-MW04, MW05, MW06, and MW07. VOC analysis revealed low concentrations of ethylbenzene and cis-1,2-dichloroethylene in well 278-MW06. Cis-1,2-dichloroethylene was also detected at low concentrations in wells 278-MW03 and MW-05. PAH exceedances were limited to well 278-MW06; 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were all detected above their respective GCTLs. TRPH concentrations were detected in levels exceeding the GCTL in five of the nine monitoring locations.

The following conclusions were formulated regarding the remedial activities at Site 278: Groundwater concentrations in two of the on-site wells (278-MW05 and MW06) continued to exhibit levels of petroleum constituents above their respective GCTLs. As of May 2004, the SVE system had removed approximately 20 lbs of volatile hydrocarbons, the AAS/SVE system is effectively removing petroleum hydrocarbons from the water table and vadose zone, however, the rate of removal is lower than anticipated due to water in the SVE lines. In April 2002, groundwater samples were collected from nine monitoring wells. No measureable free product was detected in any of the wells at Site 278, although a fuel odor was noted while sampling wells 278-MW04, MW05, MW06, and MW07. VOC analysis revealed low concentrations of ethylbenzene and cis-1,2-dichloroethylene in well 278-MW06. Cis-1,2-dichloroethylene was also detected at low concentrations in wells 278-MW03 and MW-05. PAH exceedances were

limited to well 278-MW06; 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene were all detected above their respective GCTLs. TRPH concentrations were detected in levels exceeding the GCTL in five of the nine monitoring locations.

- On July 28 and November 12, 2004, Aerostar collected groundwater samples from seven monitoring wells. LNAPL was not detected in any monitoring wells during these events. Analytical results showed a slight exceedence in MW-6 (referred to as 278-MW06 in previous reports, but will be labeled as MW-6 here after) of naphthalene, detected at 0.021 mg/L, and 1-methylnaphthalene, detected at 0.033 mg/L for the sampling event on July 28. The GCTLs for both of these contaminants are 0.020 mg/L. All other wells did not exceed GCTLs for BTEX, PAH, and TRPH.
- On March 15 and June 21, 2005, Aerostar collected groundwater samples from six monitoring wells. LNAPL was detected in MW-5 during these sampling events; therefore, MW-5 was not sampled. Total BTEX and PAH concentration were below GCTLs in both sampling events. TRPH was detected in monitoring wells MW-6 (10 mg/L) above the GCTL of 5 mg/L on March 15, and MW-7 and MW-8 had exceedences with concentrations of 7 mg/L and 5.2 mg/L, respectively.
- On September 7 and November 9, 2005, Aerostar collected groundwater samples from six monitoring wells. LNAPL was detected in MW-5 during both sampling events; therefore, MW-5 was not sampled. No monitoring wells sampled exceeded GCTLs for BTEX, PAH, and TRPH.
- On February 23, 2006, Aerostar collected groundwater samples from six monitoring wells. LNAPL was detected in MW-5 during this sampling event and was not sampled. All other wells sampled were below the GCTLs for BTEX, PAHs, and TRPH.

On June 6, 2006, Aerostar collected groundwater samples from seven monitoring wells. LNAPL was not present in MW-5, so that well could be sampled. MW-5 was the only well that had exceedences, with concentrations of benzo(a)pyrene (0.0029 mg/L), benzo(b)fluoranthene (0.0004 mg/L), and Indeno(1,2,3-cd)pyrene (0.0025 mg/L) above their respective GCTLs. TRPH in MW-5 also exceeded the GCTL with a concentration of 9.5 mg/L.

- On August 22 and November 20, 2006, Aerostar collected groundwater samples from seven monitoring wells. LNAPL was not detected during these two events. Analytical results for the 3rd and 4th quarters showed BTEX and PAH concentrations below GCTLs in all monitoring wells sampled. During the 3rd quarter, TRPH exceeded the GCTL of 5 mg/L in MW-5 with a concentration of 30 mg/L. During the 4th quarter, TRPH concentrations were detected in MW-5 at 1.4 mg/L.
- On March 26, 2007, Aerostar collected groundwater samples from seven monitoring wells. On May 11, 2007, Aerostar collected groundwater samples from thirteen monitoring wells. LNAPL was not detected during the 1st or 2nd quarters, year 2007 sampling events. The sampling event confirmed that PAH, total BTEX, and TRPH are below MDLs or their respective GCTLs in all monitoring wells.
- On September 26 and November 20, 2007, Aerostar collected groundwater samples from seven monitoring wells. Analytical results for the 3rd and 4th quarters, year 2007 sampling events showed BTEX and PAH concentrations below GCTLs in all monitoring wells samples. During the 3rd quarter, TRPH concentrations were below GCTLs in all monitoring wells sampled; however, during the 4th quarter, year 2007, TRPH exceeded the GCTL of 5.00 mg/L in MW-6 (5.10 mg/L).

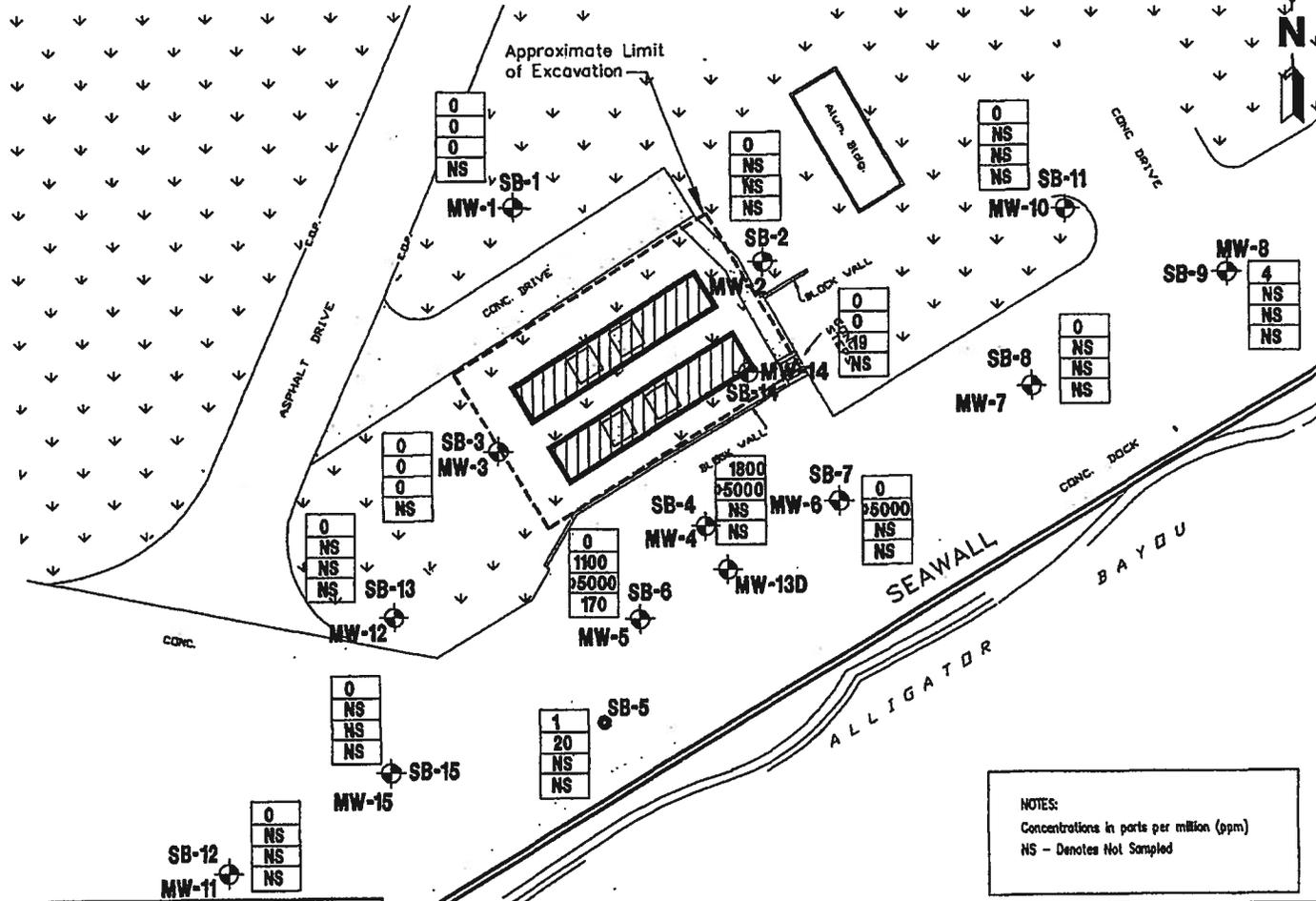
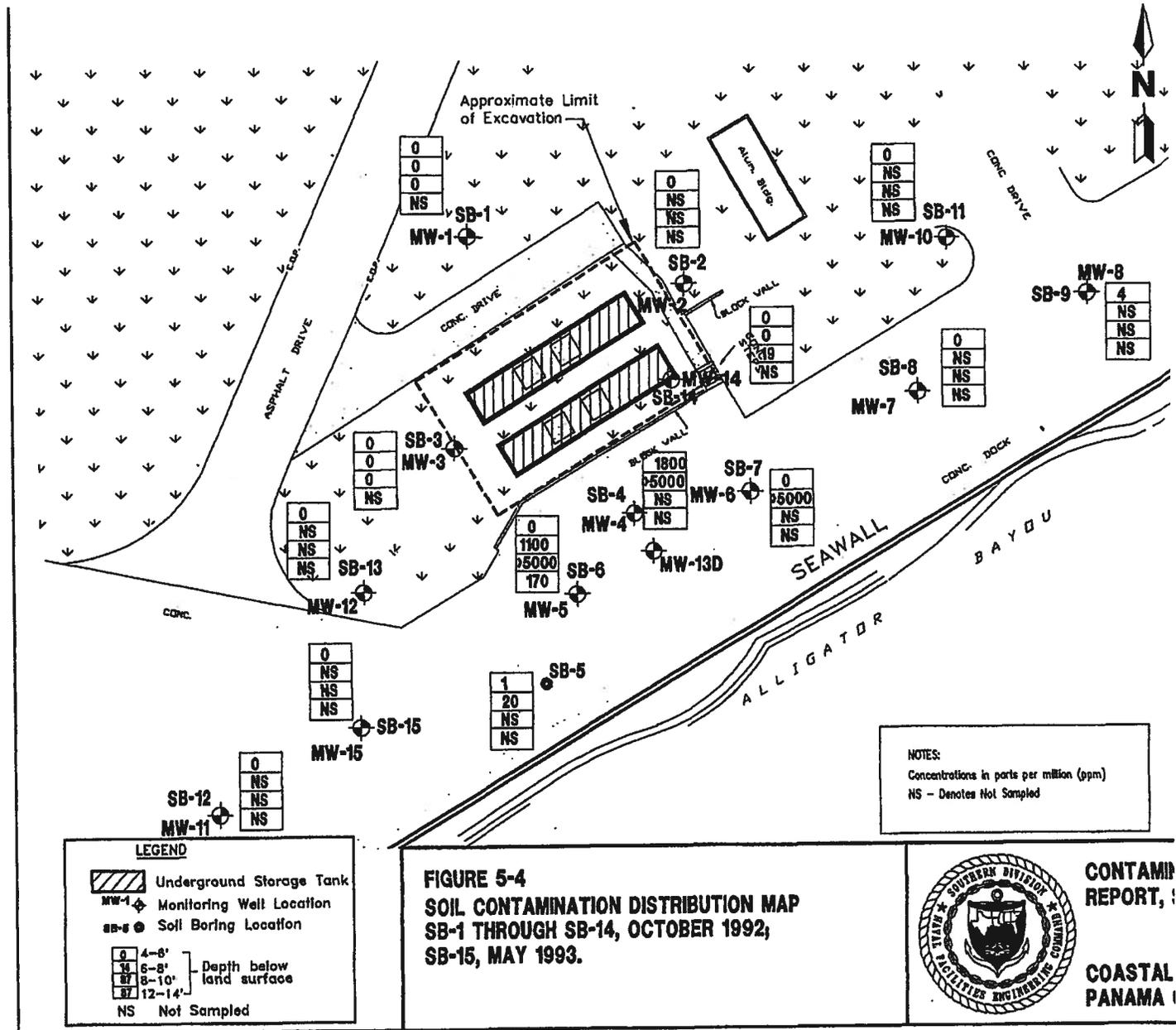
Ten soil borings were advanced on November 20, 2007. Analytical results showed BTEX and PAH concentrations below SCTLs for residential and commercial standards. TRPH was detected in soil samples SB-6 (5-7'), SB-7 (5-7'), SB-8 (5-7'), SB-9 (5-7'), SB-

10 (5-7') at concentrations of 1700 mg/kg, 890 mg/kg, 9000 mg/kg, 3400 mg/kg, 1000 mg/kg, which exceeded the SCTL for residential soil of 460 mg/kg. Soil samples SB-8 (5-7') and SB-9 (5-7') exceeded the SCTL for industrial/commercial soil of 2700 mg/kg.

- On December 8 and 9, 2008, Aerostar collected groundwater samples from 6 monitoring wells. LNAPL was not detected during this sampling event. Analytical results for this quarter showed BTEX and TRPH concentrations below GCTLs in all monitoring wells sampled. With the exception of 1-methylnaphthalene and naphthalene, all PAH concentrations were below GCTLs in all wells sampled. 1-Methylnaphthalene slightly exceeded the GCTL of 0.028 mg/L in the groundwater sample collected from MW-6 (0.033 mg/L). Naphthalene slightly exceeded the GCTL of 0.014 mg/l in the groundwater sample collected from MW-6 (0.0143 mg/L).

On December 8 and 9, 2008, Aerostar advanced seven soil borings at the site. The TRPH SCTL of 340 mg/kg was exceeded in soil samples SB-8R (4-5') and SB 9-R (4-5') with concentrations of 18,800 mg/kg and 608 mg/kg, respectively. Soil sample SB-8R (4-5') exceeded the SCTL for industrial/commercial direct contact soil of 2700 mg/kg. These soil samples were further analyzed by the Florida Criteria Working Group (CWG) method and all detections were below their respective SCTLs for TRPH Fraction.

- On March 19, 2009, Aerostar collected groundwater samples from six monitoring wells. LNAPL was not detected during this sampling event. Analytical results showed BTEX, PAH, and TRPH concentrations below GCTLs in all monitoring wells sampled.
- On August 21, 2009, Aerostar collected groundwater samples from six monitoring wells. LNAPL was not detected during this sampling event. Analytical results showed BTEX, PAH, and TRPH concentrations below GCTLs in all monitoring wells sampled. There were no FDEP GCTL exceedences in any of the monitoring wells sampled over the last two monitoring events.







For: Partnering Team
From: Larry Smith
Subject: SWMU 10
Date: January 4, 2013

History:

SWMU 10 is a former oil-water separator system near Building 363. The OWS system began operation during or before 1968 and consisted of a 6,000 gallon underground waste oil tank; a 10,000 gallon fiberglass reinforced plastic (FRP) oily waste holding tank; and the OWS pumps, controls, and associated piping. Sampling performed at the OWS during a Contamination Assessment in 1992 confirmed the presence of chlorinated solvents in soil and groundwater. An RFI for SWMU 10 was completed in January 1996, and an RFI Addendum was completed in May 2003. Following completion of the investigation, the RCRA permit required the facility to develop a Corrective Measures Study (CMS) to identify and discuss various remedies for addressing contamination detected at SWMU 10. The original CMS was completed in April 1997 and a CMS Addendum was completed in January 2004.

A Statement of Basis has been subjected to public scrutiny and was approved by FDEP in 2008. The Statement of Basis identifies proposed corrective measures to address the contamination, provides an explanation for the particular choice of corrective measures, and describes alternative corrective measures considered during the selection of the corrective measure .

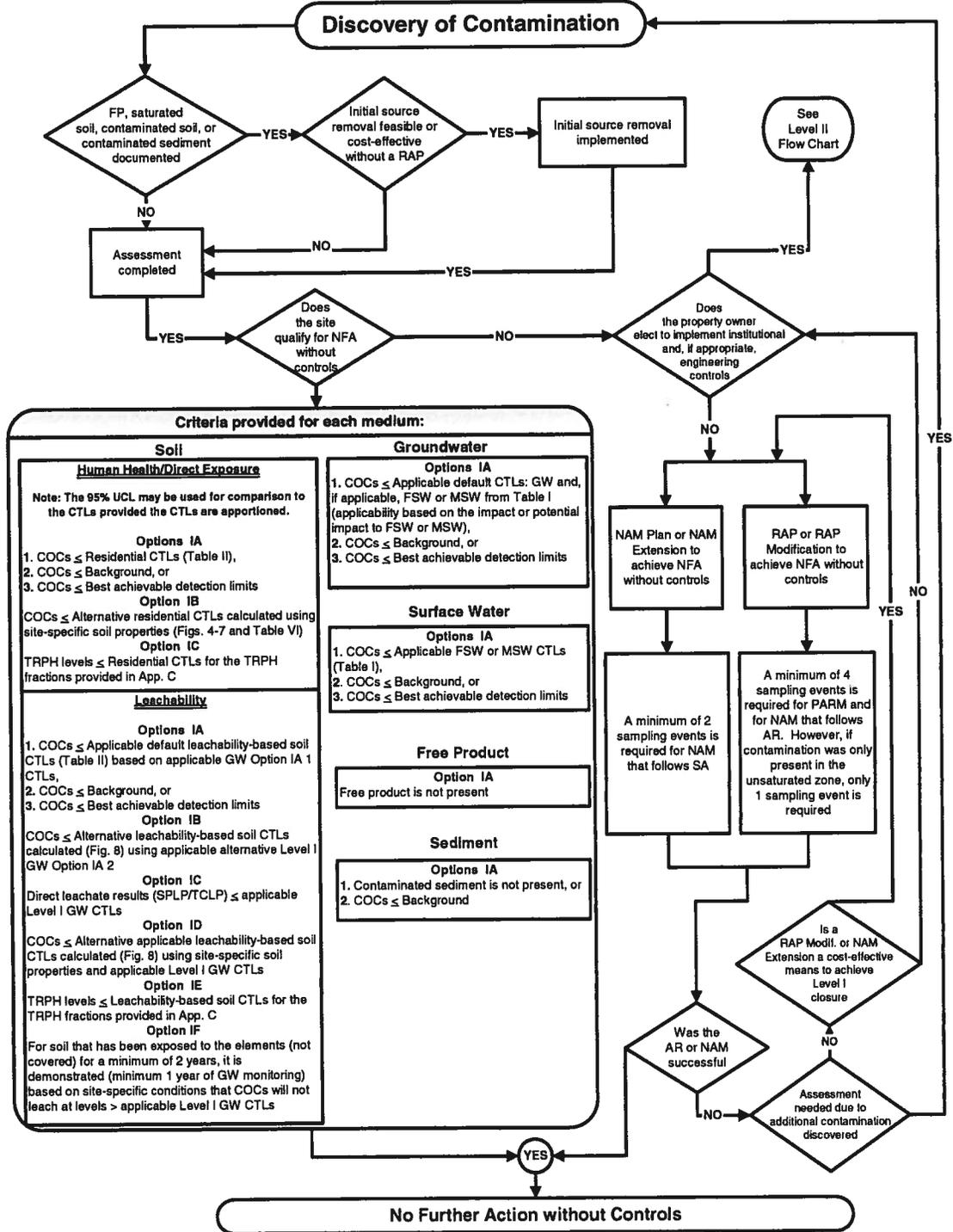
The selected corrective measure for SWMU 10 is Monitored Natural Attenuation (MNA) and Land Use Controls designed to prevent unacceptable exposure to potentially contaminated soil and groundwater. In the late 1990s and early 2000s multiple fuel-related semivolatile organic compounds (SVOCs) were detectable at concentrations greater than FDEP groundwater and surface water target cleanup levels (GCTLs and SWCTLs, respectively). After approval of the Statement of Basis, a Corrective Measures Implementation Plan (CMIP) was written, approved by FDEP, and implemented. The most recent LTM data have shown all targeted groundwater Chemical of Concern (COC) concentrations to be less than the FDEP GCTLs and SWCTLs. Arsenic (a non-COC) was noted to have elevated concentrations compared to the arsenic GCTL but the elevated arsenic concentrations were attributed to geochemically reducing conditions created by the presence of organic contaminants that cause leaching of naturally occurring arsenic from soil to groundwater. Over time, as organic contaminant concentrations decrease, the geochemical conditions are expected to become less favorable to leaching.

Under current land use no unacceptable human health or ecological risks are anticipated. No future ecological risks are anticipated, either. Based on data obtained prior to 2008, cancer risks were estimated for a hypothetical future residential land use that involves drinking the groundwater, dermal contact with soil, and incidental soil ingestion. Cancer risks of 8 in 1,000,000 from exposure to surface soil, 5 in 1,000 from exposure to groundwater, and 7 in

1,000,000 from exposure to surface water were predicted. Because COC concentrations have decreased since 2008, the cancer risks are expected to be less today but these risks have not been re-estimated. A non-cancer Hazard Index under the hypothetical future residential land use was estimated to be 10.4 (as compared to a maximum acceptable HI of 1). Because of the decreased COC concentrations, the HI estimate would be expected to be less if estimated today.

Routine LTM has ceased because COC concentrations have decreased to less than GCTLs and soil is largely covered with pavement to prevent exposure to soil. Groundwater and soil LUCs remain active. Current human health and ecological risks are acceptable. Before the SWMU 10 land use could become unrestricted, however, additional monitoring would be required to determine whether site conditions have changed sufficiently to cause arsenic concentrations to decrease to acceptable levels. The additional monitoring would include soil verification samples to verify whether soil meets SCTLs, especially in the former UST area.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level I
December 23, 2004



Definitions

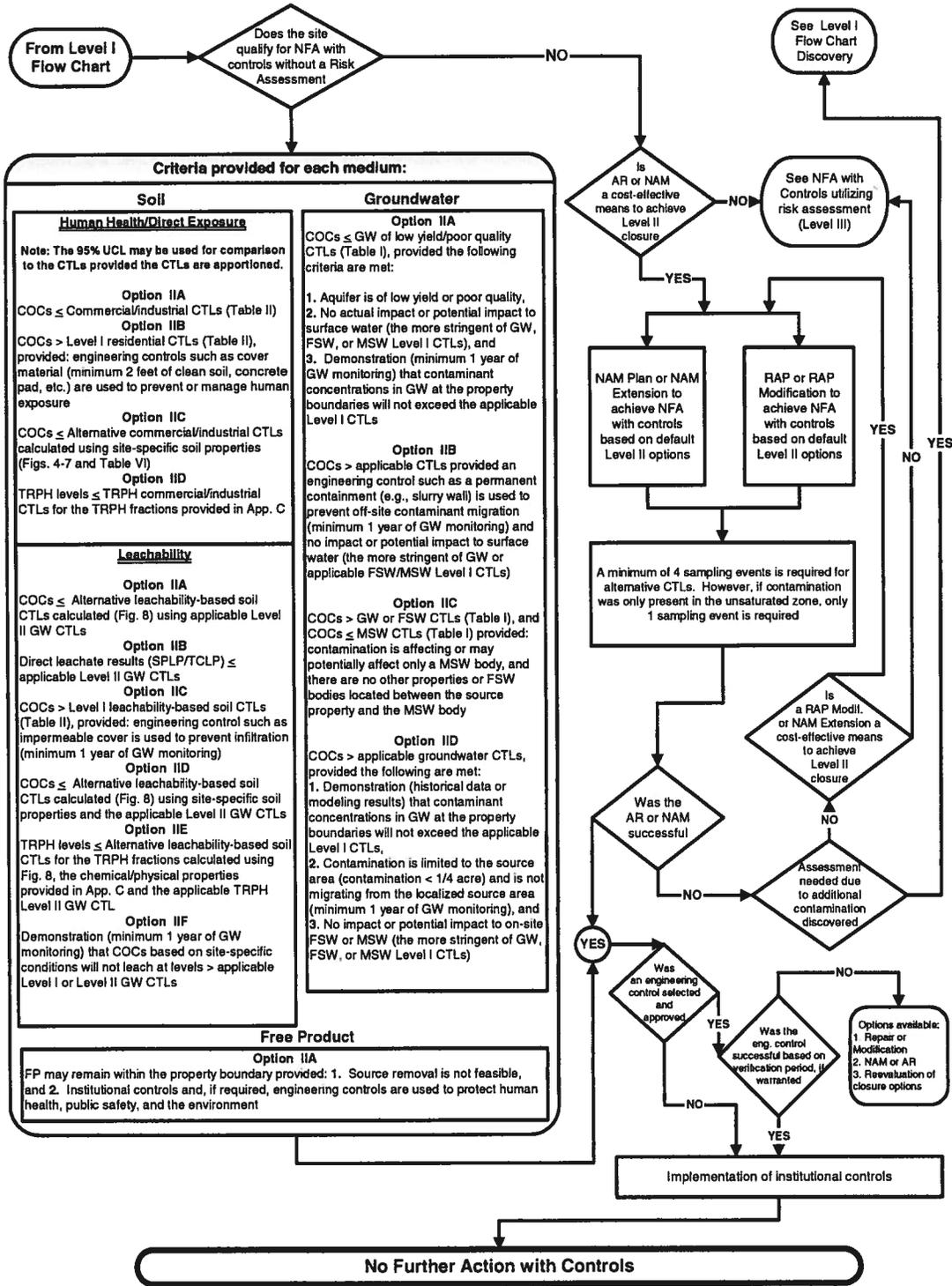
Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6; AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; PARM: Post Active Remediation Monitoring; RAP: Remedial Action Plan; SA: Site Assessment; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Best achievable detection limit shall be the practical quantitation limit (POL).

Note 2: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 3: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level II
December 23, 2004



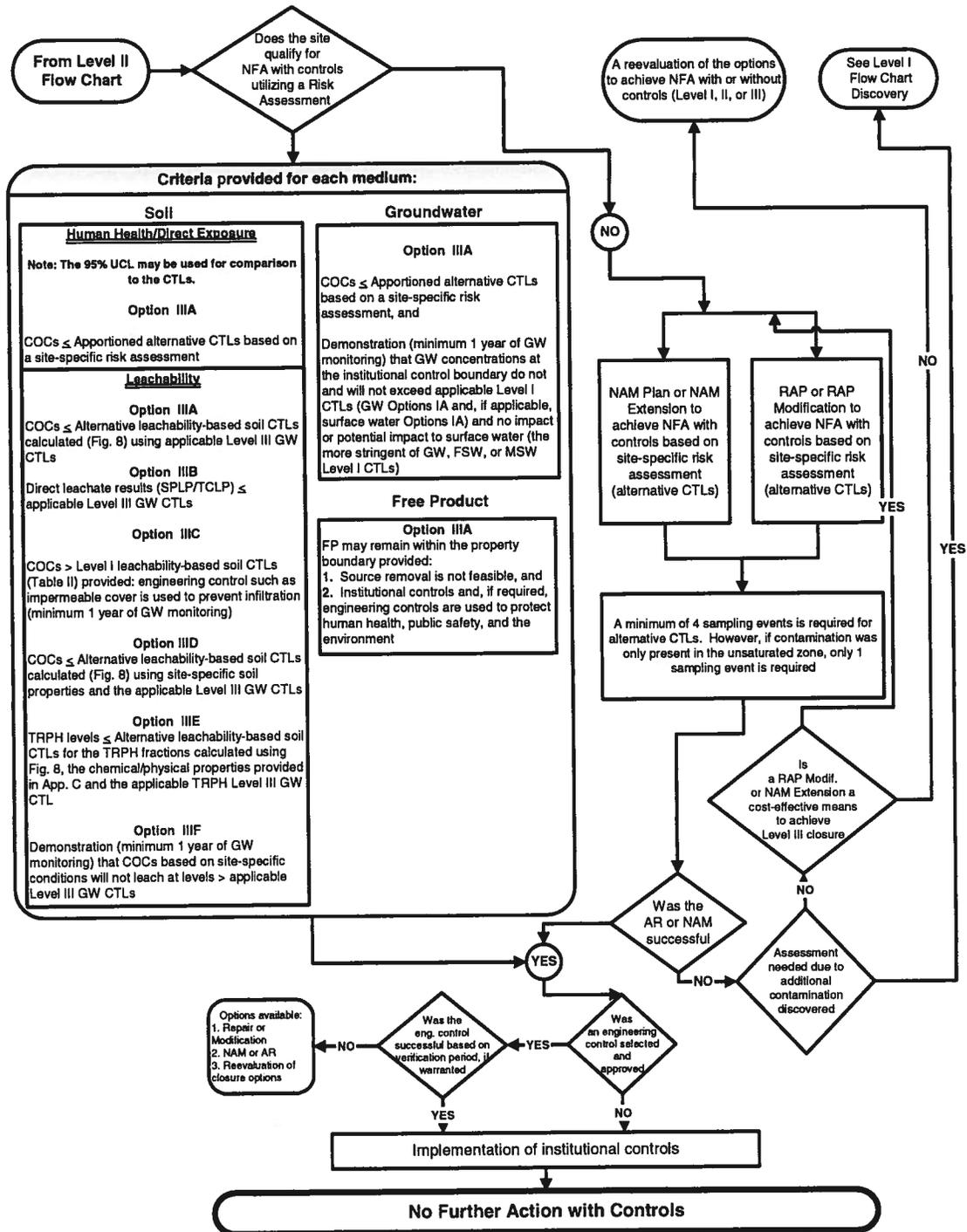
Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6. AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; Low Yield: Aquifer that has an average hydraulic conductivity of less than 1 ft/day and a maximum yield of 80 gals/day; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; Poor Quality: Affected groundwater with background concentrations that exceed any of Florida's Primary or Secondary Drinking Water Standards; RAP: Remedial Action Plan; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, F.A.C. Appendix C is provided in the technical report.

Note 2: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, F.A.C. shall be utilized for final interpretation of the rule and requirements.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level III
December 23, 2004



Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6; AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; RAP: Remedial Action Plan; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 2: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.



For: Partnering Team
From: Larry Smith
Subject: SWMU 2
Date: January 6, 2013

History:

SWMU 2, Landfill B, Burn and Landfill Area, covers approximately 11 acres located in the central part of NSA Panama City. This area is surrounded by an open storage area on the northeast, Building 455 on the southeast, the Base Exchange to the west, and recreational facilities including a softball field to the southwest and a Boy Scout trailer to the south. The SWMU 2 area is relatively flat.

Waste disposal took place at SWMU 2 in the late 1940s and early 1950s but major operations did not begin in 1957 at which time the area was used as a general burn and disposal area. Five areas, one of which was never found, were reported to have been used at SWMU 2. Wet household waste was disposed in one area; the Burn Area apparently received household garbage, tires, wood, metal, etc. An ash disposal area is presumed to have received ash of unknown origin. A red lead paint area was reportedly used for the burial of 2 to 4 tons of red lead-based paint in 1946 and 1947 but after a thorough search for this area it was not found. A one-time base cleanup disposal area located east of the present open storage area is non-contiguous with the rest of SWMU 2. Wastes from a general base cleanup were disposed there between 1970 and 1975. In 19892, approximately 30 miles of cable and other wastes including tin, copper, wood and cardboard boxes were removed from all areas to a depth of about 2 ft. and SWMU 2 was graded.

A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI), completed in 1995, identified the presence of contaminants in select environmental media. A soil removal was completed in 1997 to remove contaminated surface soil identified in the RFI. Additional soil and groundwater sampling was completed and summarized in a 2006 RFI Addendum.

The RFI addendum concluded that residual PCB, PAH, and possibly metals and other contaminants are believed to remain in the surface soil at concentrations that could pose unacceptable levels of risk to humans if the land were used for residential or residential-like purposes. Benzene, aluminum, antimony, iron, and manganese were detected at concentrations that exceeded FDEP criteria and also posed a risk to discharging into nearby surface water.

Decision Document, Current Site Conditions and Monitoring

A Corrective Measure Study (CMS) and Statement of Basis (SB) were both completed in August 2007. Corrective measures recommended in the CMS and selected in the Statement of

Basis were LUCs, groundwater monitoring, and surface water monitoring. LUCs are in place to prevent exposure to contaminated SWMU 2 soil and groundwater underlying SWMU 2. Semi-annual groundwater and surface water monitoring were initiated in September 2007 but were discontinued following the round 3 sampling event in September 2008. Aluminum, antimony, and benzene were eliminated as COCs, leaving iron as the only COC for groundwater. The round 3 LTM data showed that the iron contamination is not a threat to surface water and only wells within or immediately downgradient of the SMWU exhibited exceedances of Groundwater Cleanup Target Levels (GCTLs). Current LUCs prevent unacceptable levels of exposure to iron in groundwater. FDEP concurred with the LTM Round 3 recommendation that groundwater and surface water monitoring were no longer required and the LUC boundary for groundwater should be reduced to reflect current site conditions. LUCs will be maintained until the concentrations of COCs in the soil and groundwater are at such levels to allow for the unrestricted use and unlimited exposure of the SWMU 2 property as determined by the FDEP. A recommendation was made in the LTM Round 3 report to abandon wells at SWMU 2.

Navy plans to continue to use SWMU 2 for industrial operations. A table detailing the COCs for their respective media is presented below:

SWMU 2 COCs

Groundwater COCs	FDEP GCTL ¹ (µg/L)
Iron	300 ²
Soil COCs	FDEP SCTL ^{1,3} (mg/kg)
Aroclor-1248	0.5
Aroclor-1254	0.5
Arsenic	2.1
Benzo(a)anthracene	#
Benzo(a)pyrene	0.1
Benzo(b)fluoranthene	#
Dibenzo(a,h)anthracene	#

Notes:

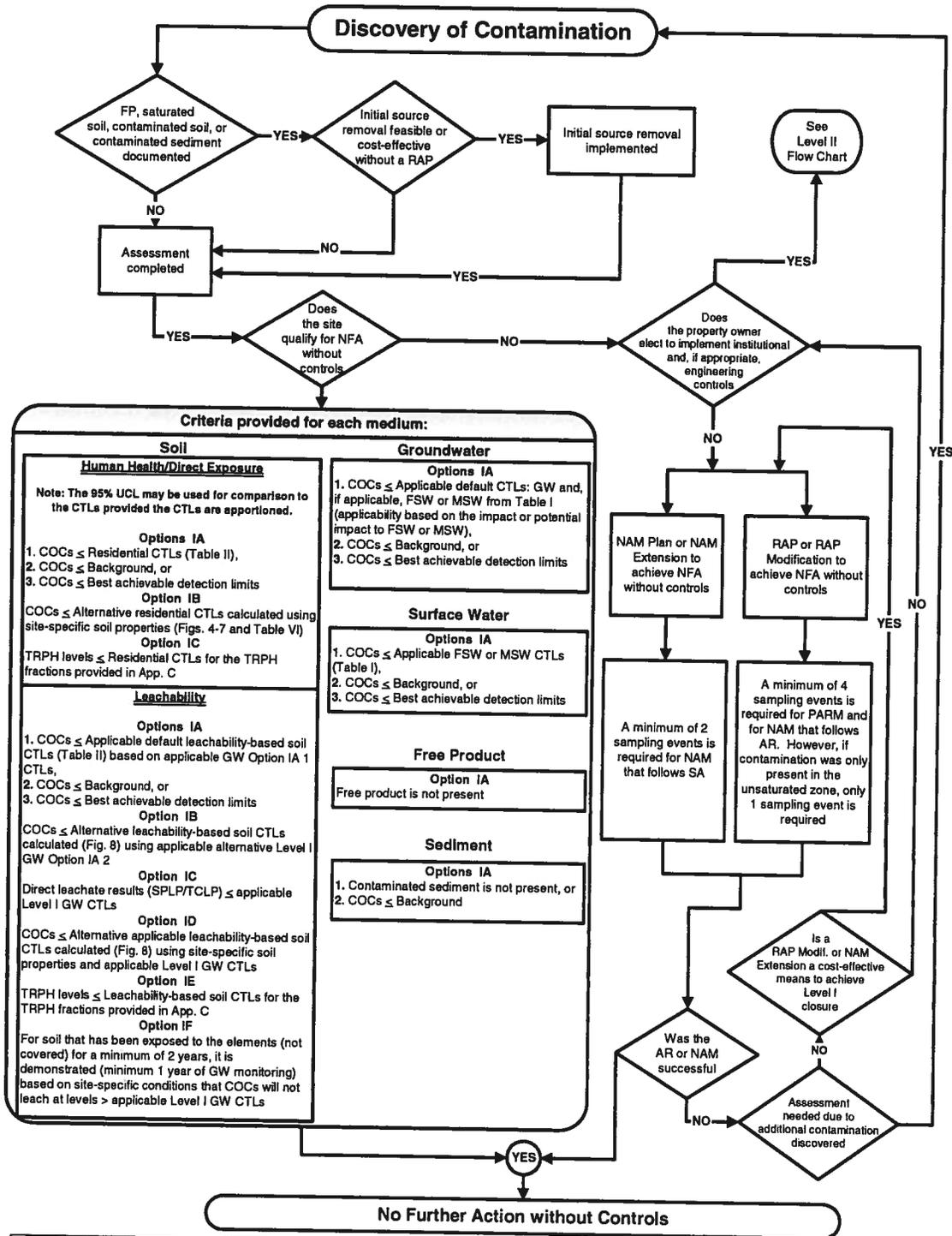
1 = As provided in Chapter 62-777, Florida Administrative Code (F.A.C.)

2 = Based on Residential Direct Exposure scenario

3 = Health based value, which is consistent with background levels, is 4,200 ug/L (F.A.C. 62-777 Table 7)

= Site concentrations for carcinogenic polycyclic aromatic hydrocarbons must be converted to Benzo(a)pyrene equivalents before comparison with the appropriate direct exposure SCTL for Benzo(a)pyrene using the approach described in the February 2005 'Final Technical Report: Development of Cleanup Target Levels (CTLs) for Chapter 62-777, F.A.C.'

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level I
December 23, 2004



Definitions

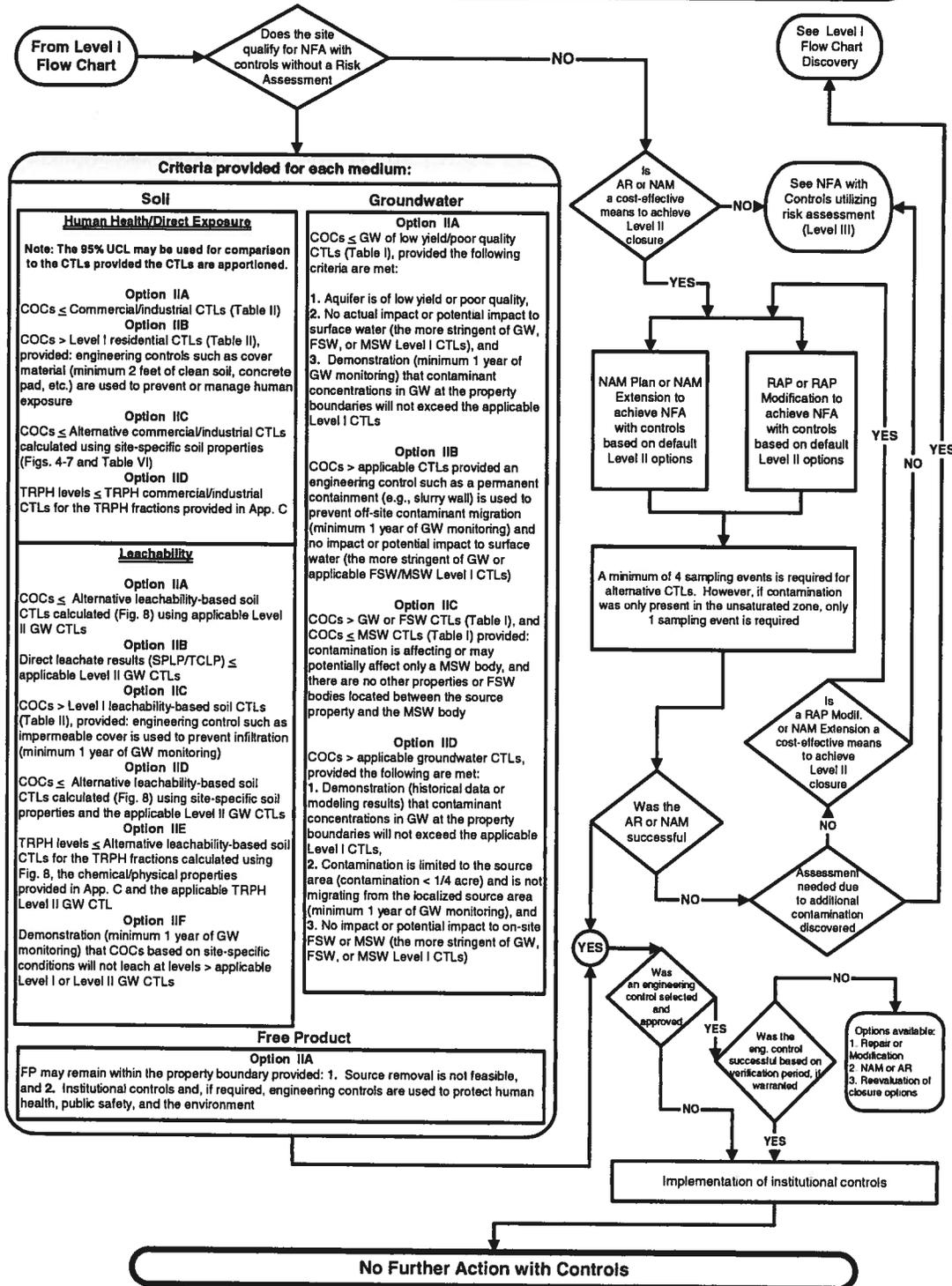
Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6; AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; PARM: Post Active Remediation Monitoring; RAP: Remedial Action Plan; SA: Site Assessment; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Best achievable detection limit shall be the practical quantitation limit (POL).

Note 2: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 3: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level II
December 23, 2004



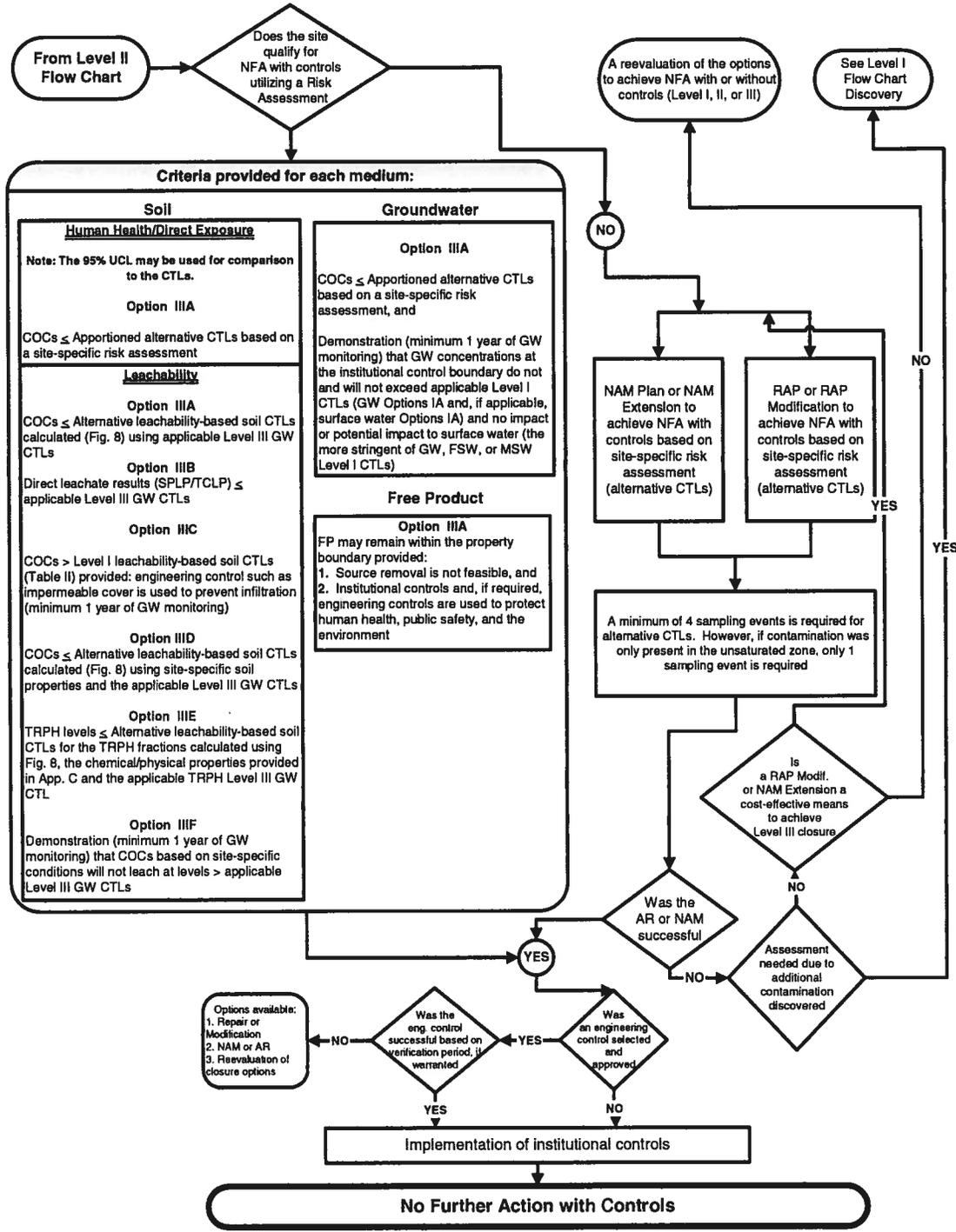
Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6; AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; Low Yield: Aquifer that has an average hydraulic conductivity of less than 1 ft/day and a maximum yield of 80 gals/day; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; Poor Quality: Affected groundwater with background concentrations that exceed any of Florida's Primary or Secondary Drinking Water Standards; RAP: Remedial Action Plan; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 2: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.

Petroleum Risk Based Corrective Action (RBCA) Flow Process
Chapter 62-770, F.A.C. Risk Management Options - Level III
December 23, 2004



Definitions

Apportioned: The adjustment of CTLs such that for non-carcinogenic contaminants that affect the same target organ(s), the hazard index is 1 or less, and for carcinogens, the cumulative lifetime excess cancer risk is 1.0 E-6; AR: Active Remediation; COCs: Contaminants of Concern; CTLs: Cleanup Target Levels; FP: Free Product; FSW: Freshwater Surface Water; GW: Groundwater; MSW: Marine Surface Water; NAM: Natural Attenuation Monitoring; NFA: No Further Action; RAP: Remedial Action Plan; SPLP: Synthetic Precipitation Leaching Procedure; TCLP: Toxicity Characteristic Leaching Procedure; TRPHs: Total Recoverable Petroleum Hydrocarbons; UCL: Upper Confidence Limit of the arithmetic mean.

Note 1: Figures 1, 2, 3A, 4, 5, 6, 7, and 8, and Tables I, II, and VI are provided in Chapter 62-777, FAC. Appendix C is provided in the technical report.

Note 2: Flow Process provided to assist in understanding the Petroleum RBCA flow process. Chapter 62-770, FAC, shall be utilized for final interpretation of the rule and requirements.



To: Project Team
From: John Schoolfield, Prakash Paraswamy, Larry Smith
Subject: Tallahassee NOSC Building 98
Date: Jan 3, 2013

Overview:

- A 1000-gallon steel UST and its associated piping used for the storage of diesel fuel were removed on October 2, 1991.
- A closure report was submitted to FDEP.
- FDEP reviewed the closure report and requested a SAR based on the detection of BTEX and TCE.

Goal: Execute SAR Work-plan as approved by FDEP to attain site closure.

Path forward: Review data generated to date and complete SAR Workplan to fulfill requirements of FDEP to close Site.

History: UST 2-B was a 1000-gallon steel UST used for the storage of diesel fuel. On October 2, 1991, UST 2-B and its associated piping were excavated and removed. The tank pit was excavated to a depth of 12 feet below ground surface (bgs.). Soil samples were collected during the excavation and analyzed using an organic vapor analyzer (OVA). All OVA readings were below 1 part per million. A boring was then advanced to a depth of 20 feet bgs. Groundwater was encountered at a depth of 17 feet bgs. Groundwater was sampled and analyzed for PAHs, VOCs, petroleum hydrocarbons, and lead. Analytes detected above respective Florida Primary Drinking Water Standards.

Groundwater contamination at UST 2- B was documented in the Closure Assessment Report (Cherokee Groundwater Consultants, 1991). Because of the detection of contaminants in groundwater, additional site characterization was required. A workplan (NAVFAC, 2011) was developed in CY2011 following FDEP guidance and procedures for conducting a site assessment. The first component, the installation of the monitoring well was completed in February 2012.

Initial Field Work

In February 2012, one groundwater monitoring well (NOSC-1-MW-01) was installed near the former UST location. The drilling was completed using a hollow-stem auger. The boring was terminated at 60 ft. bgs. The first 10 ft. bgs. consisted of sand mixed with silty clay. As depth progressed the percentage of clay increased. Limerock was encountered approximately 49 ft. Perched groundwater was measured at 43.7 ft. bgs., which was in the impermeable clay layer above the limestone. Subsurface samples from two locations (i.e., BH03 and BH04) and one groundwater sample (i.e., MW-01) were collected during this sampling event. Soil samples were collected using a hand auger. In both borings, the first 16 ft. bgs. was primarily clayey, silty, sand. At greater depth, the soil was primarily clay. A PID was used to measure OVA

readings during soil borings. No organic vapors were detected. Samples were collected at 17.5- 18 ft. bgs. and shipped to a fixed based laboratory for analysis.

MW-01: The water level was 43.7 ft. bgs. from a measurement collected on June 8, 2012. With the exception of manganese (988 µg/L); no analytes were detected above Florida GCTLs. The Florida GCTL is equivalent to the Federal secondary drinking water standard (0.05 mg/L). The high level is not likely attributable to any waste disposal practices at NOSC.

Location BH-03 is downgradient from the former UST location. A hand-auger was used to collect a soil sample from a depth of 17.5 -18 ft. bgs. (where clay was encountered). No analytes were detected above Florida residential risk-based or leachability-based SCTLs.

Location BH-04 is near the former UST location. A hand-auger was used to collect a soil sample from a depth of 17.5 -18 ft. bgs. (where clay was encountered). No analytes were detected above Florida residential risk-based or leachability-based SCTLs.