

M67001.AR.005593
MCB CAMP LEJEUNE
5090.3a

PUBLIC MEETING FOR PROPOSED REMEDIAL ACITON PLAN SITE 23 OPERABLE UNIT
49 (OU49) MCB CAMP LEJEUNE NC
2/21/2013
CAROLINA COURT REPORTERS, INC

COPY

PUBLIC MEETING

PROPOSED REMEDIAL ACTION PLAN
SITE 23, OPERABLE UNIT NO. 49
MARINE CORPS INSTALLATIONS EAST BASE
CAMP LEJEUNE, NORTH CAROLINA

FEBRUARY 21, 2013
COASTAL CAROLINA COMMUNITY COLLEGE
444 WESTERN BOULEVARD
JACKSONVILLE, NORTH CAROLINA 28546

* * * * *

MEETING MODERATOR - MS. CHARITY RYCHAK
DOI CO-CHAIR
MCB CAMP LEJEUNE EMD/EQB
BUILDING 12, MCHUGH BOULEVARD
CAMP LEJEUNE, NORTH CAROLINA
28542-0004

PRESENTER - MR. CHRIS BOZZINI, CH2MHILL

COURT REPORTER - XAVIER N. BLOUNT

CAROLINA COURT REPORTERS, INC.
105 Oakmont Professional Plaza
Greenville, North Carolina 27858
TEL: (252) 355-4700 (800) 849-8448
FAX: (252) 355-4707

LIST OF ATTACHMENTS

ATTACHMENT [1] PROPOSED REMEDIAL ACTION PLAN PRESENTATION

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

COURT REPORTER'S NOTE: The public meeting convened at 6:02 P.M. at Coastal Carolina Community College, Jacksonville, North Carolina on Thursday February 21, 2013.

MS. CHARITY RYCHAK: Since we're doing a public meeting for the first presentation, which is site 49, we have a court reporter here with us. As, like normal, when we do public meetings, if you ask any questions, just state your name first so that he can put it into the record. My name is Charity Rychak, Camp Lejeune base environment. I'm the RAB co-chair for the base, and welcome to our quarterly RAB meeting. The first topic on the agenda is to talk about installation, restoration site 49 the proposed remedial action plan. This is a public meeting, so Chris Bozzini with CH2M HILL is going to go through the presentation. And then, again, if you have any questions, speak up; again, just state your name beforehand.

MR. CHRIS BOZZINI: Thanks Charity. And before we get started, we thought this would be better than over there. And, once again, if you have any questions, just say them as we go. So the discussion today is the proposed remedial action plan site 49, operable unit 23. The purpose of this public meeting is to present the proposed remedial action plan, go through the site history, the remedial action objectives, the preferred alternatives the department selected and to answer any kind of questions and so forth.

1 Site 49 is right out by the air station and it's
2 right on the water. The history, it has been an active site
3 for a good 60, 70 years as a part of the marine air group
4 support. The initial environmental reports at Camp Lejeune
5 in 1983 identified it as suspected minor dump; however, no
6 sampling was done at the time. So, in 2009, the base went
7 ahead and did some sampling at this site, and they discovered
8 some solvents out there, some VOCs, somewhat low
9 concentrations. We did the next step in the process, which
10 is a preliminary assessment site investigation. We went out
11 and did more through sampling and followed that by a remedial
12 investigation. So this is kind of a complicated map, but
13 it's really all of the work we've done out there to date. So
14 we've got, these blue symbols are our monitoring wells.
15 These symbols out here are what's called core water, which
16 tells us what the ground water discharged into the river,
17 what the conditions are like. And these green dots are kind
18 of a little faint to see, are soil samples. And we've got
19 some sediment; there's a little drainage ditch, so we grabbed
20 some sediment and surface water samples.

21 So throughout all the sampling out there, these
22 are the highest concentrations, so we've got
23 trichloroethylene at 276 parts per billion. And then some of
24 the degradation products of trans-1, 2-Dichloroethene, vinyl
25 chloride, just frankly pretty typical solvent contamination

1 that we see across the base. The really, frankly unique part
2 of all of this is this is the well. We only see one well
3 with contamination in it, and it's about 5 feet from the
4 river bank. And this well, that up gradient is about 30 feet
5 away. So the size of this site is probably from me to the
6 wall, I mean, it's really small. Our best guess is -- we
7 found an old terra cotta pipe out there, so we're just kind
8 of maybe guessing at one point somebody had something and
9 poured it down a sump or something like that. It probably
10 just leaked in this general area. So, like I said, the scale
11 of this compared to most of our other sites, it's really
12 small.

13 MR. MICHAEL CURTIS: The up gradient well is
14 showing no contamination at all?

15 MR. CHRIS BOZZINI: None.

16 MR. RANDY McELVEEN: And they have a deep well
17 as well as an intermediate, Randy McElveen.

18 MR. CHRIS BOZZINI: Yeah, so here is our
19 conceptual site model, and these are actually somewhat to
20 scale so we would have an up gradient well, one that has the
21 contamination in it, and we put a deep one right next to it
22 to make sure it didn't go deep. And it is just this minor --
23 this relatively small pocket that is about 5 feet off the
24 river bank.

25 As part of the RA/FS, we do our risk assessment

1 work and so for the human health risk assessment, in summary,
2 the ground water would be unacceptable risk if somebody was
3 to drink it continually. And then the indoor air, there
4 potentially could be a vapor intrusion if somebody built a
5 structure on this plume area. From an ecological standpoint,
6 there's no unacceptable risk. As far as the river being
7 impacted, those core water samples we collected had very
8 minor concentrations of a couple of solvents, but nothing
9 approaching the surface water standards or anything like
10 that.

11 So the team developed remedial action objectives
12 and, in short, the first objective is to restore ground water
13 quality to meet the State and Federal standards. The second
14 remedial action objective is to prevent exposure to the COCs
15 in groundwater and vapor intrusion. These are our standards,
16 and they're based on the North Carolina groundwater
17 protection standards. During our feasibility study, we came
18 up with four alternatives that we looked at: 1 is no action,
19 which is our base line. The second one is monitored natural
20 attenuation and land use controls, where we just go out and
21 sample the groundwater. This action would be sample every
22 other year, monitor the degradation of the solvents and we
23 put land use controls and prohibit the groundwater from being
24 used. The third alternative is to inject an organic
25 substrate to promote natural degradation of the solvents and

1 also to add bioaugmentation, add to bugs, so it will eat the
2 solvents, conduct groundwater monitoring and apply the land
3 use controls. And the last alternative we looked at was air
4 sparging, where we install a couple of wells and blow air to
5 strip the solvents out of the groundwater, followed by long-
6 term monitoring and land use controls.

7 When we compare the alternatives to each other,
8 we feel that all of the alternatives are protective of human
9 health and the environment. They all comply with the laws
10 and regulations of the State and the Federal government. We
11 felt that these alternatives would be effective and permanent
12 in the long term. For the most part, you're reducing
13 toxicity, mobility, volume through treatment. EPA
14 technically doesn't count monitored attenuation as treatment
15 so, therefore, that gets a low ranking. We felt that they're
16 very equivalent in the short term, they're easy to implement.
17 And the bottom line is our cost estimates to do these
18 remedies ranged from \$79,000-\$300,000.

19 So the team voted, and the preferred alternative
20 was this monitored natural attenuation and land use controls.
21 One of the issues that kind of helped support this approach
22 in this is our monitoring over the last several years of our
23 primary contaminate TCE. And it has been going down every
24 year, and so, we project this out theoretically, in about 5-7
25 years, we'll be hitting the standards if we keeping going at

1 this rate. And then this is a picture, this is our
2 contaminated well so you kind of get an idea of how close we
3 are to the river, and, frankly, it would really be hard to do
4 much of anything because we just don't have a whole lot of
5 room to work. So the preferred alternative is the monitored
6 natural attenuation. So the approach is to set up a
7 monitoring program of the wells, the contaminated well plus
8 our clean wells around it. The wells are sampled every other
9 year to see how the trends are going to make sure we're
10 moving in the right direction. Apply this in our land use
11 control that would prevent aquifer use and potential
12 construction in that area. And during the 5-year review, not
13 only this site but every site, look to see to make sure we're
14 being protective and really see how the remedy is going.

15 This is the public meeting; community
16 participation is part of the circle process. So the official
17 public comment opened on Sunday, February 17th. It will
18 continue for a month until March 19th. Any comments have to
19 be post marked by the 19th. Any comments received by the
20 team will be responded to and will be included in the record
21 of decision in the administrative record. Once again, this
22 is the public meeting. The information is online; it's also
23 in the library. I think everybody knows the points of
24 contact: Dave Cleland with the Navy, Charity, Gena Townsend
25 with the EPA and Randy McElveen with the State. So you can

1 send any comments to any of those four folks. I think that's
2 it.

3 So the path forward, the Navy and the base
4 working with EPA and DENR will make the final decision, and
5 that will be documented in the record of decision. After
6 reviewing all of the information and comments from the
7 public, the ROD will have the selected remedy and provide any
8 responses to comments. I think this is the last slide.

9 So, relatively speaking, this is a really small
10 site for us. So any questions? Great.

11

12 * * * * * THE PUBLIC MEETING CONCLUDED AT 6:13 P.M. * * * * *

13

14

15

16

17

18

19

20

21

22

23

24

25

STATE OF NORTH CAROLINA)

) C-E-R-T-I-F-I-C-A-T-I-O-N

COUNTY OF PITT)

I, XAVIER N. BLOUNT, A COURT REPORTER AND NOTARY PUBLIC IN AND FOR THE AFORESAID COUNTY AND STATE, DO HEREBY CERTIFY THAT THE FOREGOING PAGES ARE AN ACCURATE TRANSCRIPT OF THE PUBLIC MEETING ON THE PROPOSED REMEDIAL ACTION PLAN FOR SITE 23, IN JACKSONVILLE, NORTH CAROLINA, WHICH WAS TAKEN BY ME BY STENOMASK, AND TRANSCRIBED BY ME.

I FURTHER CERTIFY THAT I AM NOT FINANCIALLY INTERESTED IN THE OUTCOME OF THIS ACTION, A RELATIVE, EMPLOYEE, ATTORNEY OR COUNSEL OF ANY OF THE PARTIES, NOR A RELATIVE OR EMPLOYEE OF SUCH ATTORNEY OR COUNSEL.

THIS THE 15TH DAY OF MARCH, 2013.

NOTARY PUBLIC NUMBER 2012121000222.



XAVIER N. BLOUNT
COURT REPORTER AND NOTARY PUBLIC
CAROLINA COURT REPORTERS, INC.
105 OAKMONT PROFESSIONAL PLAZA
GREENVILLE, NC 27858

**This concludes the
Public Meeting**

**Questions or
Comments?**

**Thank you for
attending!**



Path Forward

- The Navy and Base, in consultation with USEPA and NCDENR, will make the final decision on the remedial approach for Site 49 after reviewing and considering all information submitted during the public comment period
- Prepare Record of Decision (ROD)
 - **Select Remedy**
 - **Provide responses to any comments**
 - Responsiveness Summary



Points of Contact

Mr. Dave Cleland

NAVFAC Mid-Atlantic,
North Carolina IPT
6506 Hampton Blvd
Norfolk, VA 23508
Phone (757) 322-4851
Fax (757) 322-8280

david.c.cleland@navy.mil



Ms. Charity Rychak

MCIEAST-MCB CAM LEJ
G-F/EMD/EQB

EMD Mailroom, Rm 244
12 Post Lane

Camp Lejeune, NC 28547
Phone (910) 451-9385
Fax (910) 451-5997

charity.rychak@usmc.mil

Ms. Gena Townsend

USEPA Region 4
Atlanta Federal Center
61 Forsyth Street SW
Atlanta, GA 30303
Phone (404) 562-8538
Fax (404) 562-8518

townsend.gena@epa.gov



Mr. Randy McElveen

NCDENR

Green Square Complex, 3rd Floor
1646 Mail Service Center
Raleigh, NC 27699-1646
Phone (919) 707-8341
Fax (919) 707-8341

randy.mcelveen@ncdenr.gov



Available Information

- PRAP and previous documents available in the Administrative Record: <http://go.usa.gov/jzi>
- Internet access to Administrative Record available at:

Onslow County Public Library

58 Doris Avenue East

Jacksonville, North Carolina 28540

(910) 455-7650



Community Participation

- Public input is key in the decision-making process
- Public comment period gives opportunity for input
 - February 17 – March 19, 2013**
 - Comments postmarked by March 19, 2013
 - Responses to any comments received will be prepared**
 - Included in Record of Decision and Administrative Record
- Public meeting
 - February 21, 2013**



Proposed Remedial Action Plan

Site 49: Operable Unit No. 23
Marine Corps Installations East-Marine Corps Base Camp Lejeune
North Carolina

February 2013

1 Introduction

This Proposed Remedial Action Plan (PRAP) identifies the Preferred Alternatives for addressing groundwater contamination at Site 49: Operable Unit (OU) No. 23, located at Marine Corps Installations East-Marine Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ) in Onslow County, North Carolina.

The Preferred Alternative for Site 49 includes monitored natural attenuation (MNA) and land use controls (LUCs).

This PRAP is issued jointly by the U.S. Department of the Navy (Navy), the lead agency for site activities, MCIEAST-MCB CAMLEJ, and the U.S. Environmental Protection Agency (EPA), in consultation with the North Carolina Department of Environment and Natural Resources (NCDENR) in order to solicit public comments on the remedial alternatives, and in particular the preferred remedial action for Site 49. This PRAP fulfills the public participation responsibilities required under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This PRAP summarizes the remedial alternatives evaluated for Site 49. Detailed background information for Site 49 is contained in the Comprehensive Remedial Investigation (RI) / Feasibility Study (FS) (CH2M HILL, 2012), and other documents in the Administrative Record file and Information Repository for MCIEAST-MCB CAMLEJ. Key information from the RI/FS report, including all remedial options considered and the rationale for selection of MNA and LUCs as the preferred remedy for Site 49 is summarized in this PRAP. A glossary of key terms used in this PRAP is attached, and the terms are identified in bold print the first time they appear.

Mark Your Calendar for the Public Comment Period

Public Comment Period	Attend the Public Meeting
February 17 – March 19, 2013	February 21, 2013, 6:00 p.m.
Submit Written Comments	Coastal Carolina Community College Business Technology Building, Room 105 444 Western Blvd Jacksonville, NC 28546
The Navy will accept written comments on the PRAP during the public comment period. To submit comments or obtain further information, please refer to the insert page.	The Navy will hold a public meeting to explain the PRAP. Verbal and written comments will be accepted at this meeting.

Location of Administrative Record File:

Available Online at: <http://go.usa.gov/jZi>
Internet access is available at the Onslow County Library:
50 Doris Avenue East
Jacksonville, NC 28540
(910) 455-7350

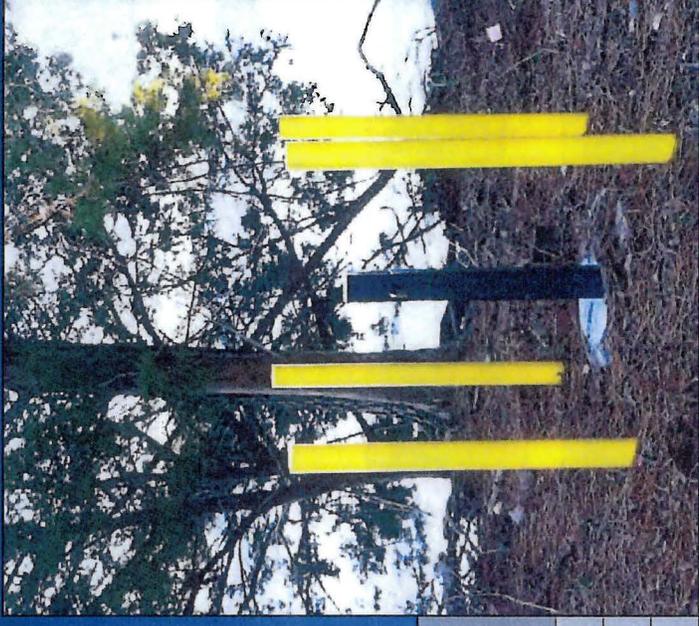
Preferred Alternative – MNA and LUCs

- Approach:
 - **Biennial groundwater monitoring for 5 years**
 - Re-evaluate monitoring frequency during 5-Year Review
- **LUCs to prevent aquifer use and mitigate potential future vapor intrusion**

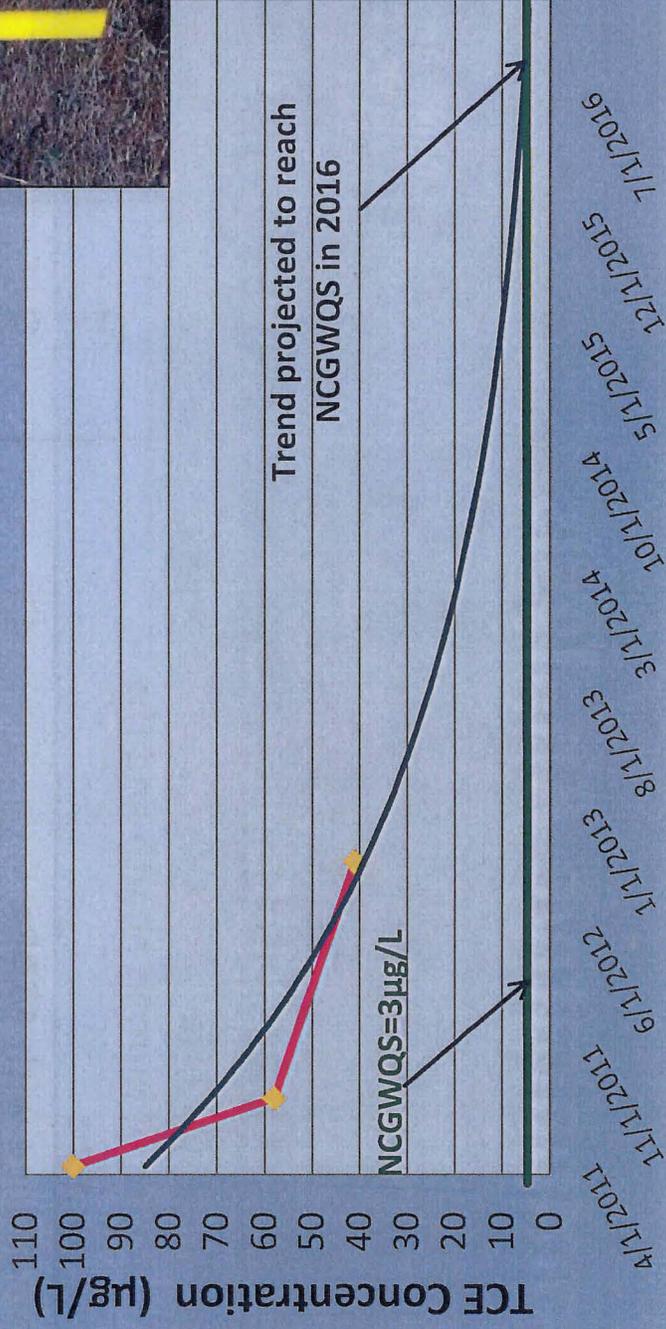


Preferred Alternative – MNA and LUCs

- Rationale:
 - Contaminant trends decreasing over time
 - Small and isolated plume
 - Lowest cost alternative



TCE



Comparative Analysis

	No Action	MNA and LUCs	EISB, LTM, and LUCs	AS, LTM, and LUCs
CERCLA Criteria	(1)	(2)	(3)	(4)
Threshold Criteria				
Protection of human health and the environment	○	●	●	●
Compliance with ARARs	○	●	●	●
Primary Balancing Criteria				
Long-term effectiveness and permanence	○	◐	◐	●
Reduction in toxicity, mobility, or volume through treatment	○	○	●	●
Short-term effectiveness	○	◐	◐	◐
Implementability	●	●	○	○
Present worth cost	\$0	\$79k	\$302k	\$306k

Ranking: ● High ◐ Moderate ○ Low

Preferred Alternative - MNA and LUCs

Remedial Alternatives

1. No Action
 - Baseline for comparison
2. Monitored Natural Attenuation (MNA) & Land Use Controls (LUCs)
 - Biennial groundwater sampling to monitor VOC degradation
 - LUCs to prohibit aquifer use and potential future vapor intrusion
3. Enhanced Insitu Bioremediation (EISB), Long-Term Monitoring (LTM), & LUCs
 - Inject bioremediation substrate & bioaugmentation culture to degrade VOCs
 - Groundwater monitoring to evaluate effectiveness and LUCs
4. Air Sparging (AS), LTM, & LUCs
 - Inject air to induce mass transfer (stripping) of VOCs from groundwater
 - Groundwater monitoring to evaluate effectiveness and LUCs

Remedial Action Objectives

- Restore groundwater quality to meet NCDENR and federal primary drinking water standards based on the classification of the aquifer as a potential source of drinking water (Class GA or Class GSA) under 15A NCAC 02L.0201.
- Prevent exposure to COCs in groundwater and vapor intrusion until such time as groundwater concentrations or vapor intrusion mitigation measures allow for unlimited use/unrestricted exposure.

Cleanup Levels	
Chemicals of Concern	NCGWQS/MCL* (µg/L)
1,1,2,2-PCA	0.2
1,1,2-TCA	5
1,2-DCA	0.4
Benzene	1
cis-1,2-DCE	70
PCE	0.7
TCE	3
trans-1,2-DCE	100
Vinyl Chloride	0.03

µg/L - micrograms per liter
NCGWQS - North Carolina Groundwater Quality Standard
MCL - Maximum Contaminant Level
* More conservative value of NCGWQS or MCL

Risk Summary

- **Human Health Risk Assessment**

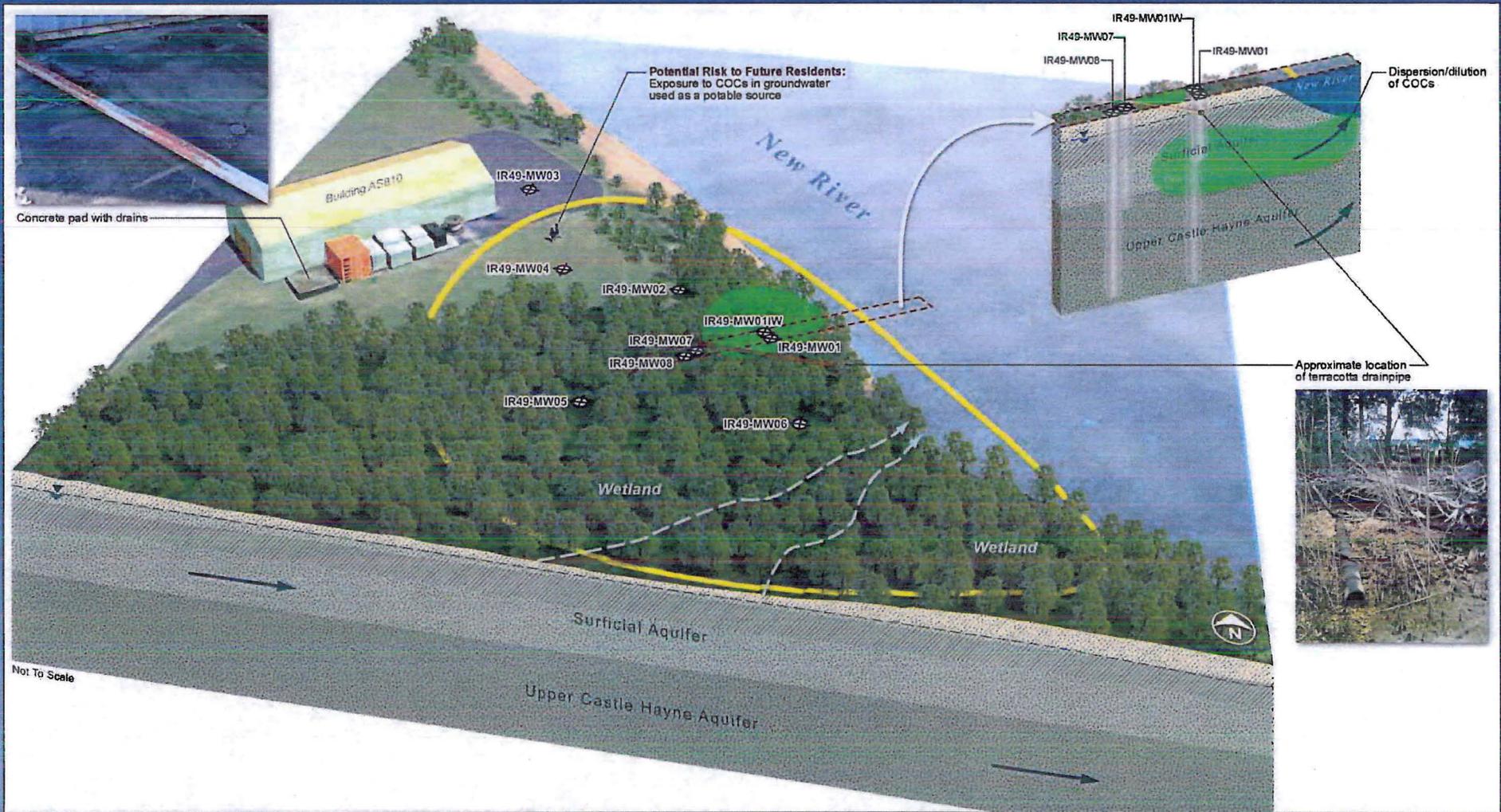
- **No unacceptable risk from exposure to surface soil, subsurface soil, sediment, or surface water**
- **Potential risk to future residents from exposure to VOCs in groundwater, if used as a potable water supply**
- **Potential vapor intrusion risk if buildings constructed within 100 feet of impacted groundwater**

- **Ecological Risk Assessment**

- **No unacceptable risk**

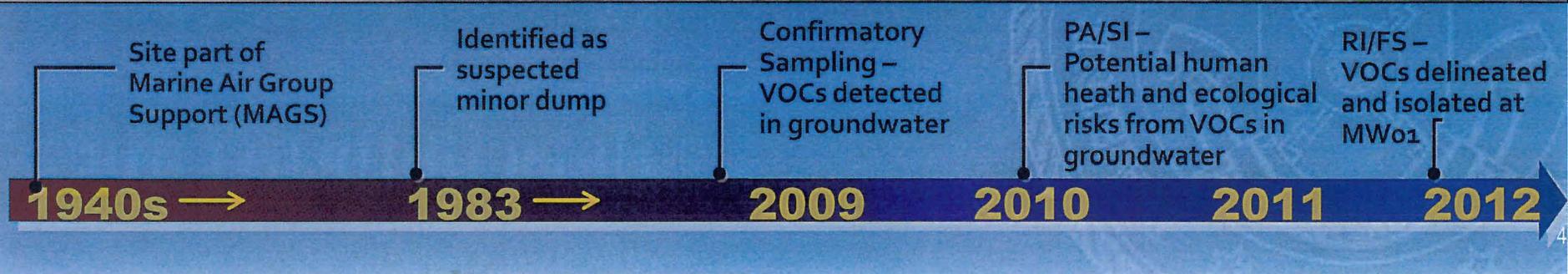
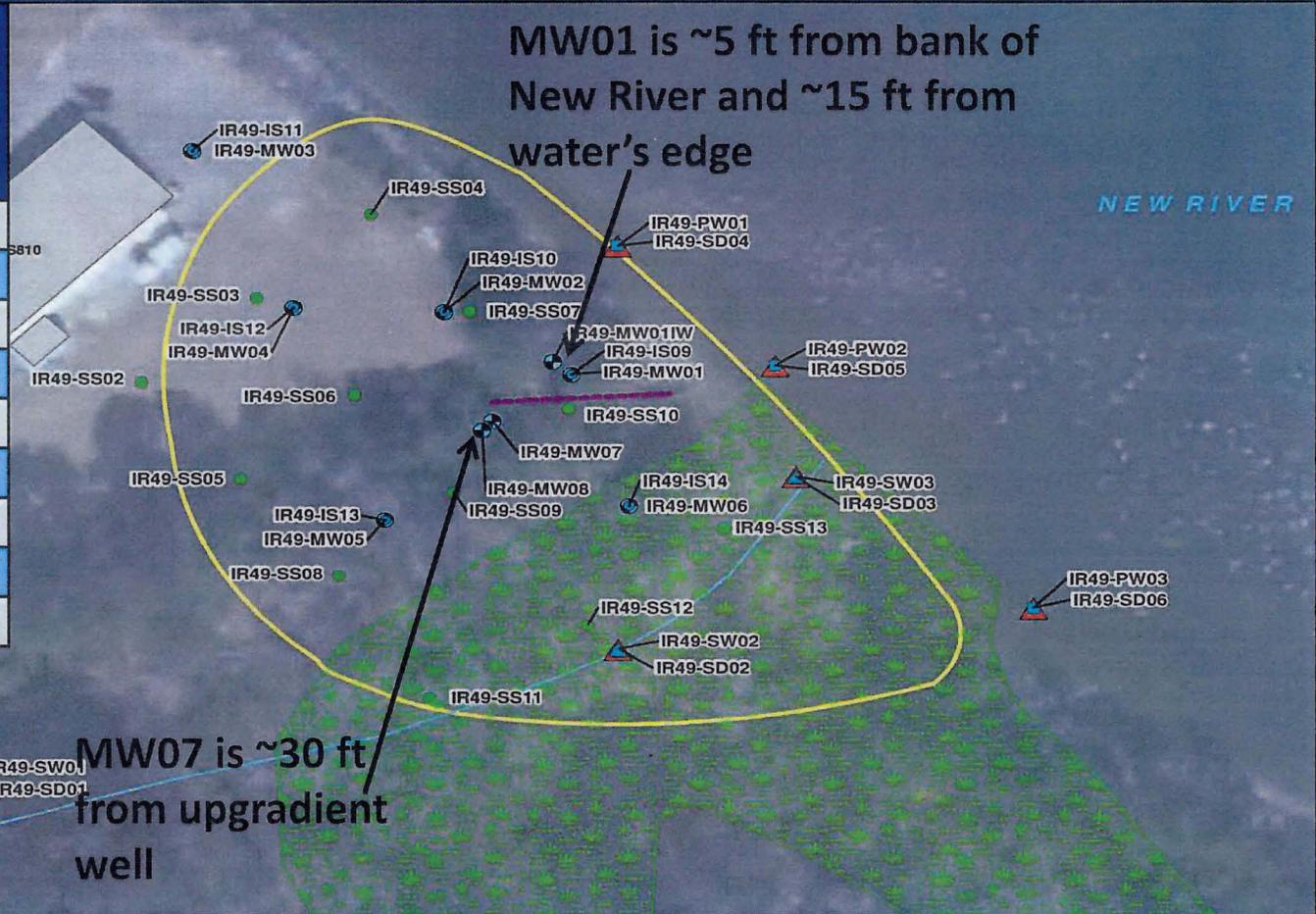
Media	Human Health	Ecological
Surface Soil	Acceptable	Acceptable
Subsurface Soil	Acceptable	Not Applicable
Groundwater	Unacceptable	Not Applicable
Sediment	Acceptable	Acceptable
Surface Water	Acceptable	Acceptable
Indoor Air	Unacceptable	Not Applicable

Conceptual Site Model

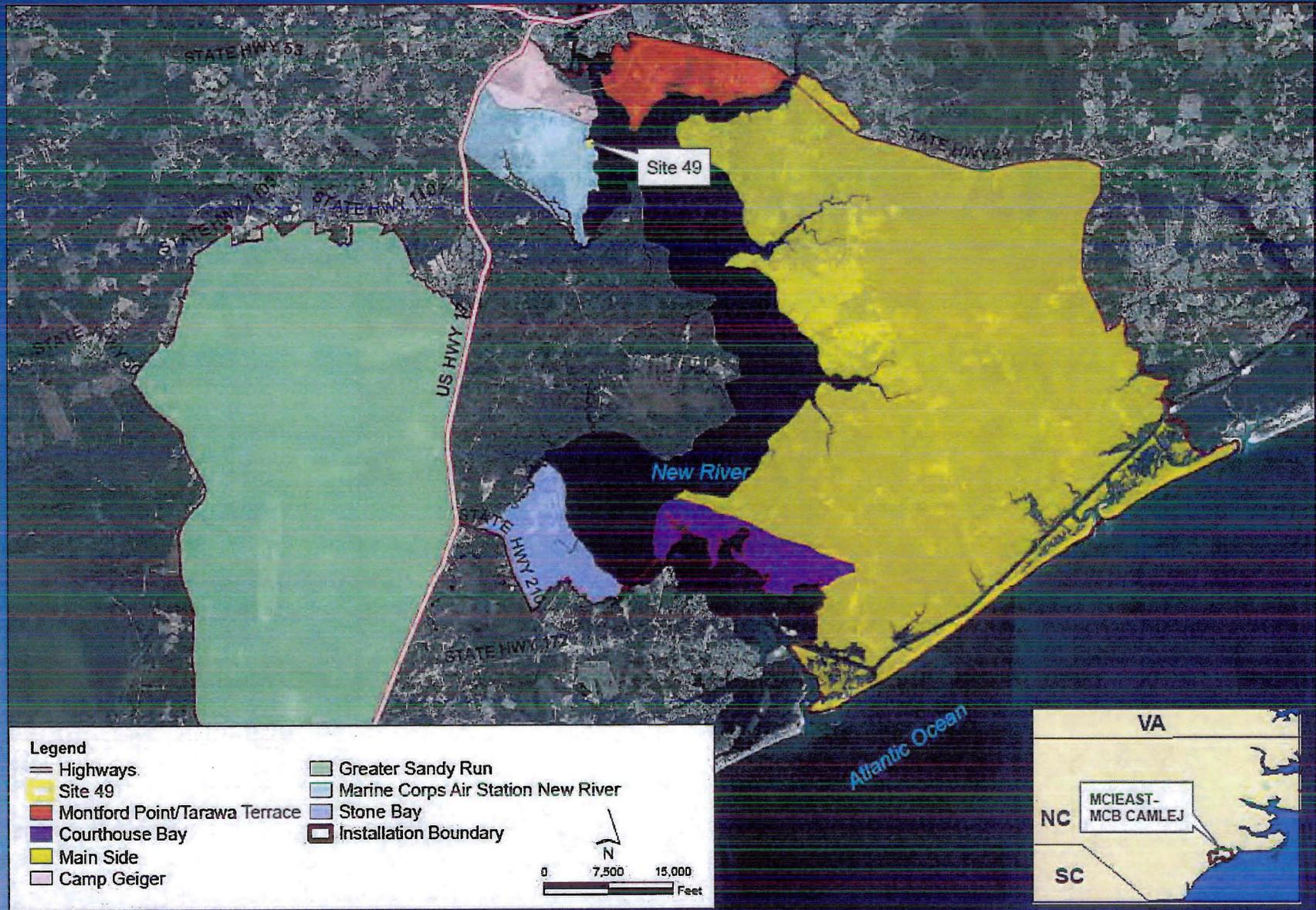


Site History

Volatile Organic Compounds (VOCs)	Maximum Concentration (µg/L)
1,1,2,2-PCA	78.5
1,1,2-TCA	1.35
1,2-DCA	0.62J
Benzene	2.47
cis-1,2-DCE	155
PCE	1.33
TCE	276
trans-1,2-DCE	108
Vinyl Chloride	22.1

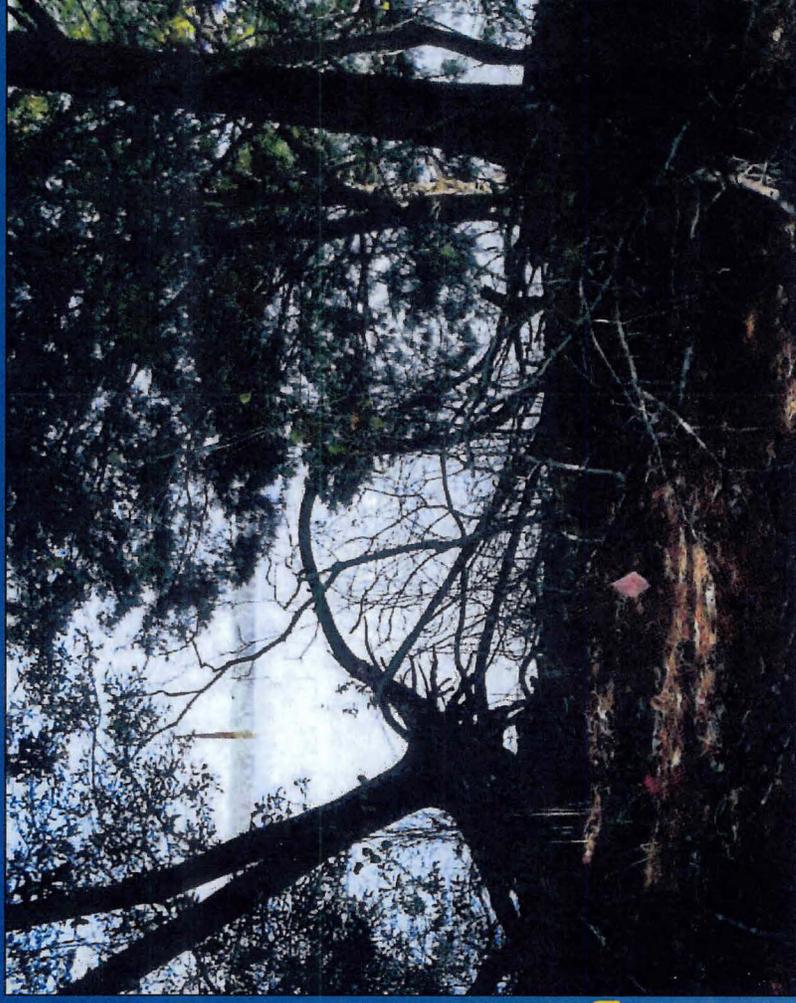


Site Location Map



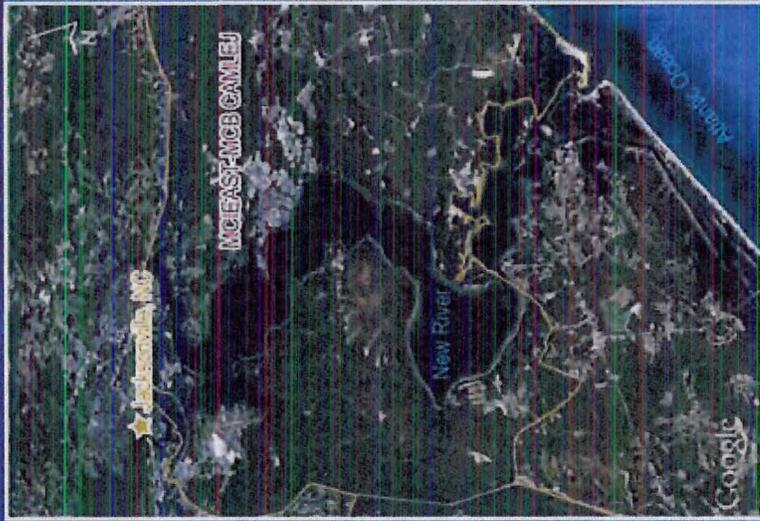
Purpose

- Present the Proposed Remedial Action Plan (PRAP) for Site 49
 - Site history
 - Remedial action objectives and remedial alternatives evaluated for addressing groundwater contamination
 - Preferred alternative and rationale
- Answer questions and seek community feedback



Proposed Remedial Action Plan Operable Unit 23, Site 49

MCIEAST-MCB CAMLEJ Public Meeting February 21, 2013



CH2MHILL

ES101612682438VDC