

RECEIVED DEC 18 2009



UNITED STATES MARINE CORPS

MARINE CORPS BASE
PSC BOX 20004
CAMP LEJEUNE, NC 28542-0004

IN REPLY REFER TO:

5090.10

BEMD

DEC 16 2009

Mr. Bruce Reed
North Carolina Department of Environment
and Natural Resources
Division of Waste Management
Underground Storage Tank Section
127 Cardinal Drive
Wilmington, North Carolina

Dear Mr. Reed:

The Environmental Management Division respectfully submits the proposed sampling and report submission dates for the Hadnot Point Fuel Farm Remediation Site aboard Marine Corps Base, Camp Lejeune, North Carolina.

As agreed upon by all parties at the September 10, 2009 Quarterly Partnering Meeting, the following schedule lists the timeline of the Groundwater Samplings and submissions of Annual Monitoring Reports (AMR) and Bio-Pulse Reports (BPR).

Due	Sampling	AMR	BPR
January 2010	X		
April 2010		X	X
July 2010	X		
September 2010			X
January 2011	X		
April 2011		X	
July 2011	X		
September 2011			X

If you have any questions or need further information, please contact Mr. Nick Schultz, Environmental Quality Branch, Environmental Management Division, Installations and Environment Department, at (910) 451-9114.

Sincerely,

JOHN R. TOWNSON

Director, Environmental Management
By direction of
the Commanding Officer

5090.10
BEMD

Copy to: (w/o encl)
NAVFACENGCOM (Mr. Dave Borton Code OPNCEV4)
CATLIN (Mr. Mike E. Mason) ✓



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

August 25, 2009

Commanding Officer
United States Marine Corps
Attn: I&E/EMD/EQB Bldg. 12
Mr. Thomas Burton
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

Re: Review of Report Entitled Site Assessment
Addendum, Building 1114 Hadnot Point Fuel
Farm Area
Ash Street, Camp Lejeune, Onslow County
Incident Numbers: 3671, 10615, and 2278
Ranking: Intermediate

Dear Mr. Burton:

The Site Assessment Addendum for the Building 1114 Hadnot Point Fuel Farm Area has been received by the Underground Storage Tank (UST) Section, Wilmington Regional Office on August 21, 2009. Below are comments and/or concerns in regard to the Section's review of the subject report:

- The Section agrees with the recommendations presented in the report. Please submit your next report of findings by March 1, 2010.
- The Section believes that additional actions could be immediately taken at well USTHPFFC-MW-72. The Section asks that you discuss possible additional measures with your consultants and provide us your remedy by October 1, 2009.

Thank you for your cooperation with cleaning up this site. If you have any questions regarding this letter, please contact me at the address or telephone number listed below.

Sincerely,

Bruce Reed
Hydrogeologist II

cc: WIRO-UST

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

S:\bruce\burtonhpff09fp

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28 Sept
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FROM: DIRECTOR

TO: EQB

RETURN:

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SUBJECT: REVIEW OF REPORT ENTITLED SITE ASSESSMENT ADDENDUM, BLDG 1114 HADNOT POINT FUEL FARM AREA

COMMENTS:

*Byrne / Thomas - note out / deadline to
Bruce Reed.
JMT*

ROUTING: Originator: J LEDFORD Initials: JCL Date: 8/27/2009

1. J TOWNSON Initials: JMT Date: 8/27/09

2. _____ Initials: _____ Date: _____

3. _____ Initials: _____ Date: _____

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*Thomas - original
JMT
8/28/09*



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

Division of Waste Management
Underground Storage Tank Section
August 13, 2009

Dexter R. Matthews, Director

Commanding Officer
Attn: I&E/EMD/EQB, Mr. Thomas Burton
Bldg. 12
PSC Box 20004
MCB Camp Lejeune, NC 28542-0004

Subject: Review of Bio-Pulse Air Sparging Evaluation
Report
Hadnot Point Fuel Farm/Bldg. 1115
Camp Lejeune, Onslow County
Ash Street
Ranking: Intermediate

Dear Mr. Burton:

The July 31, 2009, Bio-Pulse Air Sparging Evaluation Report for the Hadnot Point Fuel Farm/Building 1115 Area site has been received and reviewed by the Underground Storage Tank Section. The recommendations in the report are hereby approved. Please assure that xylenes, MTBE, and IPE are used in conjunction with the EPA Method 602 testing. Also, the UST Section requests clarification on two items:

- Figure 2 appears to be missing some sparge and vent wells located at, and just south, of the former fuel farm area. Please send us a corrected copy.
- On Page 6, it was referenced that no air injection data for the ninth event was available for wells BP-9, BP-10, BP-11, or BP-23. Does this mean that these wells were not utilized at all for the ninth event?

Thank you in advance for your clarification on these items. Any questions should be directed to me at (910) 796-7400.

Sincerely,

Bruce Reed
Hydrogeologist II

cc: WiRO-UST

s:\bruce\burtonbiopulserp109.aug

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TO: EQB

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COPY:

SUBJECT: REVIEW OF BIO-PULSE AIR SPARGING EVALUATION REPORT HADNOT POINT FUEL FARM/BLDG 1115

COMMENTS:

*Bryan/Thomas - fyi + action
JMT*

ROUTING: Originator: J LEDFORD Initials: JCL Date: 8/17/2009

1. J TOWNSON Initials: *JMT* Date: 8/17/09

2. Initials: Date:

3. Initials: Date:

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8/18/09*



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

July 16, 2009

Commanding Officer
United States Marine Corps
Attn: I&E/EMD/EQB Bldg. 12
Mr. Thomas Burton
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

Re: Review of 2008-2009 Annual Monitoring
Report
USMC Camp Lejeune Hadnot Point Fuel
Farm/Bldg. 1115 Area
Ash Street, Camp Lejeune, Onslow County
Incident Numbers: 3671, 10615, and 2278
Ranking: Intermediate

Dear Mr. Burton:

The Annual Monitoring Report received by the Underground Storage Tank (UST) Section, Wilmington Regional Office on June 30, 2009 has been reviewed. Below are comments and/or concerns in regard to the Division's review of the subject report:

- Page 2-8 references the word "cycles."
- The report references the actual flow rate from the groundwater recovery system. This flow rate is about one-half of the design flow. This is problematic in protecting supply well HP-642. This is one of the reasons the UST Section suggested on July 15, 2009 that the Base discontinue use of well HP-642. The UST Section understands that the Base has now discontinued use of this well, and will initiate action to properly abandon this well. The monthly sampling of HP-642 will no longer be required by the UST Section, unless the well is brought back into service.
- The plume remains undefined to the north and the east.
- Figure 4.16 and Table 4.2 do not appear to correlate in respect to product detection in a couple of monitoring wells found on the east side of the plume. Please explain.
- The report was not sealed by a licensed geologist or a professional engineer. The UST Section understands that sealed pages are in the mail.

- IPE and MTBE were not included in the testing of water samples. The UST Section had specifically asked for this testing in its July 16, 2008-letter. Shaw Environmental, in its August 7, 2008-letter, acknowledged that IPE and MTBE would be included in the analyses.
- The recommendations in the report are satisfactory. However, please include IPE and MTBE.

Thank you for your cooperation with cleaning up this site, and addressing the above comments in a timely fashion. If you have any questions regarding this letter, please contact me at the address or telephone number listed below.

Sincerely,



Bruce Reed
Hydrogeologist II
Wilmington Regional Office

cc: WIRO-UST

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 (910) 433-3300

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771

S:\bruce\burton\hpf09

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SUBJECT: ANNUAL MONITORING REPORT HADNOT POINT FUEL FARM/BLDG 1115 AREA

COMMENTS: *Bryan/Thomas - yours for action.*
RLS
JM

ROUTING: Originator: J LEDFORD Initials: JCL Date: 7/20/2009

1. J TOWNSON Initials: *JM* Date: 7/20/09

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Thomas - original

[Signature]

7/20/09



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

September 25, 2008

Commanding Officer
Attn: EMD/EQB Dr. Johanna Arnold,
Bldg. 12
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

Re: Health Risk Evaluation for Water Supply Well
Sampling Results

Dear Dr. Arnold:

Please find attached a copy of the Health Risk Evaluation performed by Mr. David Lilley on the analytical results for a sample collected from your well, identified as HP-642, located on Sneads Ferry Road, Camp Lejeune, Onslow County on July 9, 2008. If you have any questions, please contact Mr. Lilley at (919) 508-8400 or contact me at the address or telephone number listed below for the Wilmington Regional Office.

Sincerely,

Bruce Reed
Hydrogeologist II

Attachments: Health Risk Evaluation
HP-642 Sampling Results

cc: George O'Daniel, Onslow County Health Department
NC DENR, Division of Environmental Health, Public Water Supply Section, Wilmington
Regional Office
WiRO-UST

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

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Mooreville (MOR) – 610 East Center Avenue, Suite 301, Mooreville, NC 28115 (704) 663-1699

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Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771
S:\bruce\arnoldhre.sep



North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary

September 22, 2008

TO: Bruce Reed
Wilmington Regional Office
NC UST Section

FROM: David Lilley, CIH, CSP *DBL*
Industrial Hygiene Consultant
NC Division of Waste Management

RE: Health Risk Evaluation
Supply Well HP-642 Sampling Results
Sneads Ferry Road
Camp Lejeune, NC

During this sampling event, one contaminant was detected in the well water. The standards used to determine if the water is suitable for drinking and cooking are the United States Environmental Protection Agency's Maximum Contaminant Levels (MCLs) or, if no MCLs exist, North Carolina Groundwater Standards (2L).

If the contaminant concentration exceeds the applicable standard for using the water for drinking and cooking, the contaminant concentration is further analyzed to determine if the water is suitable for other household uses, such as showering, bathing, washing dishes, flushing toilets, and hand washing. The chart below compares the detected contaminant concentration with the applicable standard:

Sample ID	Contaminant	Concentration (ug/l)*	MCL (ug/l)	2L (ug/l)
680-38422-22	Naphthalene	0.20		21**

* The abbreviation ug/l stands for micrograms of contaminant per liter of water and is roughly equivalent to parts per billion.

** The 2L standard for naphthalene is based on odor. The health based value is 100 ug/l.

RECOMMENDATION: The detected contaminant did not exceed the applicable water standard. Therefore, no restrictions on the use of this water are recommended at this time.



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

September 18, 2008

MEMORANDUM

TO: David Lilley, Division of Waste Management
(FAX (919) 733-4811)

FROM: ^{BR} Bruce Reed, Wilmington Regional Office, UST Section

SUBJECT: Request for Health Risk Evaluation for Well Sampling Results

Enclosed please find the analytical results for a water sample(s) collected from the Camp Lejeune supply well, identified as HP-642, located along Sneads Ferry Road, Camp Lejeune. Please perform a health risk evaluation and send your determination, with a copy of this memo, to our office. Our office will then forward your evaluation to the well owner.

If you have questions or need additional information, please contact me at the address or telephone number below. Thank you for your assistance.

Attachment(s): Camp Lejeune HP-642 Sampling Results

Cc: Johanna Arnold, Ph.D., Marine Corps Base-Camp Lejeune

UST Regional Offices

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Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771

S:\ust\bruce\HRE requestHP-642.sep

Analytical Data

Job Number: 680-38422-6

Client: Terraine, Inc.
Client Sample ID: PSW-HP642
Lab Sample ID: 680-38422-22
Client Matrix: Water

Date Sampled: 07/09/2008 1040
Date Received: 07/10/2008 0904

524.2 Purgeable Organic Compounds in Water by GC/MS

Method: 524.2
Preparation: N/A
Dilution: 1.0
Date Analyzed: 07/22/2008 2230
Date Prepared: N/A
Analysis Batch: 680-112269
Instrument ID: GCMS Volatiles - S
Lab File ID: s072201.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Chlorodibromomethane	0.16	U	0.16	0.50
Chloroform	0.20	U	0.20	0.50
Methyl tert-butyl ether	0.13	U	0.13	0.50
Hexachlorobutadiene	0.20	U	0.20	0.50
Isopropylbenzene	0.15	U	0.15	0.50
1,2-Dichloroethane	0.19	U	0.19	0.50
4-Isopropyltoluene	0.15	U	0.15	0.50
Naphthalene	0.20	J.B	0.13	1.0
N-Propylbenzene	0.19	U	0.19	0.50
Trichlorofluoromethane	0.31	U	0.31	0.50
1,2,4-Trimethylbenzene	0.17	U	0.17	0.50

Surrogate
1,2-Dichlorobenzene-d4
4-Bromofluorobenzene
%Rec
101
107
Acceptance Limits
70 - 130
70 - 130

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FROM: DIRECTOR

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SUBJECT: HEALTH RISK EVALUATION FOR WATER SUPPLY WELL SAMPLING RESULTS

COMMENTS:

*Brynn/Johnson - please take for action
JMT*

ROUTING: Originator: J LEDFORD Initials: JCL Date: 9/29/2008

1. J TOWNSON Initials: *JMT* Date: 9/29/08

2. Initials: Date:

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*ORIGINAL - Johnson
9/29/08*

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RECEIVED SEP 29 2008

Arnold CIV Johanna E

From: Bruce Reed [Bruce.Reed@ncmail.net]
Sent: Monday, September 22, 2008 3:35 PM
To: Arnold CIV Johanna E
Subject: letter received

Johanna:

We have received the 9/19/2008 letter and attachment concerning Bldg. 1114. Please keep in mind that the Base must comply with 15A NCAC 2L .0106 in regard to this incident. Please see the related guidelines for further information. We do not agree with the statement that no further soil sampling is necessary. You may use any screening or assessment tools that you like, but ultimately, actual laboratory data will be needed to show the extent of the contamination.

We will send the Base a letter on this, but it will be awhile before we can get to it. Please contact me if there are any questions in the interim.

Thank you,

Bruce Reed
WiRO-UST



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

July 16, 2008

Commanding Officer
Attn: I&E/EMD/EQB Bldg. 12
Dr. Johanna Arnold
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

Re: Review of Annual Monitoring Report
USMC Camp Lejeune Hadnot Point Fuel
Farm/Bldg. 1115 Area
Ash Street
Camp Lejeune, Onslow County
Incident Numbers: 3671, 10615, and 2278
Ranking: Intermediate

Dear Dr. Arnold:

The Annual Monitoring Report received by the Underground Storage Tank (UST) Section, Wilmington Regional Office on June 23, 2008 has been reviewed. A review of the report and other file information suggests a source, or sources, of contamination exist at the Building 1114 area. Past uses of Building 1114 have been reported to include a warehouse where solvents, used oil, and fuels were stored, and also a lawn mower repair shop. There is also an oil/water separator near this building. Other unknown use former structures are in the area, one of which may have been a wash pad.

Field screening of soils suggests contamination problems in the unsaturated zone. Please see borings HPFF-66, 67, and 72, obtained in 2001 and 2002, which all had 1,000 plus organic vapor analyzer readings from intervals of 3.5 to 8.0 feet. HPFF-72 had high hydrocarbon odor present as shallow as the 2-4 foot interval (well log attached). The water table at this time was encountered at approximately 10 feet. Organic vapor analyzer readings of greater than 1,000 ppm were also obtained at and below the water table. Hydrocarbon odor was also detected. MW-15, which is located near the oil/water separator, has historically contained free-product, and MW-72 contains approximately 13 feet of free-product. It appears that no soil samples have been submitted for laboratory analysis from the Building 1114 area.

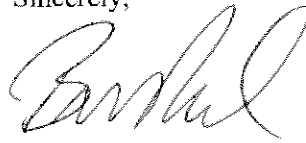
→ Please further investigate the Building 1114 area, and define the extent of product, soil contamination, and groundwater contamination in this area. A report of findings is due by October 31, 2008.

The recommendations in the Annual Monitoring Report are acceptable at this time. Please assure that analysis of IPE and MTBE are included in the upcoming sampling event. The UST Section prefers the use of Method 6200B to Method 8260B.

* → The UST Section is concerned about the high levels of the solvent MEK found in close proximity to Building 1230 even though it is not under our purview. Please work with the appropriate regulatory agency to properly address this problem.

Thank you for your cooperation with these matters. If you have any questions regarding this letter, please contact me at the address or telephone number listed below.

Sincerely,



Bruce Reed
Hydrogeologist II
Wilmington Regional Office

Attachment

cc: WiRO-UST

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

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Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771

S:\bruce\arnoldhpf08-7

WELL LOG

CATLIN

ENGINEERS and SCIENTISTS

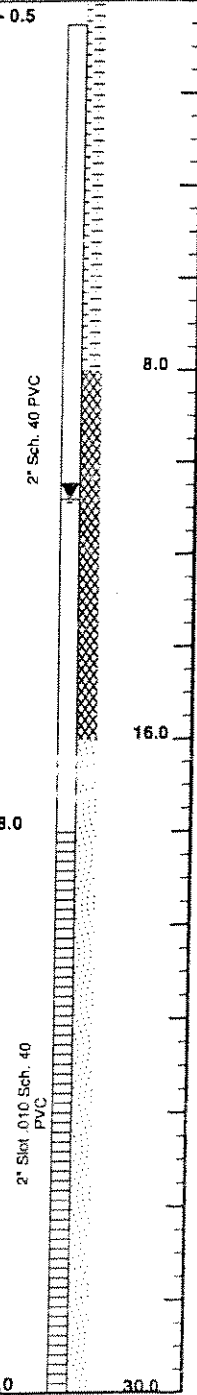
Wilmington, North Carolina

SHEET 1 OF 2

PROJECT NO.: 202-027	STATE: NC	COUNTY: Onslow	LOCATION: Camp Lejeune
PROJECT NAME: HADNOT POINT FUEL FARM 2002 SAMPLING EVENT		LOGGED BY: Charles Ray	WELL ID: HPFF-72
NORTHING: 3,839,024.9	EASTING: 286,316.1	DRILLER: Bobbie Fowler	
BORING LOCATION: SE SECTOR - Corner of Ash St. & East Rd. @ Bld. 1114			T.O.C. ELEV.: 27.84
DRILL MACHINE: Diedrich D-50	METHOD: HSA/MR	0 HOUR DTW:	BORING DEPTH: 50.0
START DATE: 03/06/02	FINISH DATE: 03/06/02	DTW(7/16/2002): 10.27	WELL DEPTH: 30.0

DEPTH	BLOW COUNT				OVA (ppm)	LAB.	U S C S	L O G	SOIL AND ROCK DESCRIPTION	ELEVATION	WELL DETAIL
	6in	6in	6in	6in							
0.0									LAND SURFACE	28.4	
0.0	2	2	2	1	0		SM		Dark brown, SILTY, v.f. to f. SAND with roots and grass @ top 4". Moist. No HCO.	26.4	-0.5
2.0	1	2	2	1	240		SM		Dark brown, SILTY/CLAYEY, v.f. to f. SAND. Sat. High HCO.	24.4	
4.0	1	2	1	1			SM		S.A.A.	22.4	
6.0	1	2	2	3	1000+		SM		Tan/gray, brown, SILTY, v.f. to f. SAND. Sat. High HCO.	20.4	
8.0	4	5	6	6	1000+		SM		Tan, S.A.A.	18.4	
10.0	5	12	12	14	1000+		SP		Tan, well sorted, fine SAND. Sat. High HCO.	16.4	
12.0	3	6	13	10	1000+		SP		S.A.A.	14.4	
14.0	6	9	8	9	1000+		SC		Brown, SILTY, v.f. to f., CLAYEY SAND. Sat. High HCO.	12.4	
16.0	7	8	6	4	1000+		SM		Tan/gray, SILTY, v.f. to f. SAND. Last 4" of spoon, gray, SILTY/SANDY CLAY with med. stiffness. Sat. High HCO.	10.4	18.0
18.0	7	9	8	10	1000+		SP		Gray, well sorted, fine to med. SAND. Sat. High HCO.	8.4	
20.0	4	11	13	13	1000+		SP		S.A.A.	6.4	
22.0	3	6	12	12	1000+		SP		S.A.A.	4.4	
24.0	6	11	10	9	1000+		SP		Gray, well sorted, fine SAND. Sat. High HCO.	2.4	
26.0	7	6	5	4	850		SP		S.A.A with trace med. size grains.	0.4	
28.0	3	3	3	3	420		SP		Dark gray, well sorted, v.f. to f. SAND. Sat. High HCO.	-1.6	
30.0										30.0	

CATLIN BORING LOG - 202-027.GPJ - CATLIN.GOI 12/03/02



HP = Hydraulic Push NM = Not Measured

Portland Cement
 Bentonite Pellets
 #2 Medium Sand

WELL LOG

CALIN
ENGINEERS and SCIENTISTS
Wilmington, North Carolina




SHEET 2 OF 2

PROJECT NO.: 202-027	STATE: NC	COUNTY: Onslow	LOCATION: Camp Lejeune
PROJECT NAME: HADNOT POINT FUEL FARM 2002 SAMPLING EVENT		LOGGED BY: Charles Ray	WELL ID: HPFF-72
NORTHING: 3,839,024.9	EASTING: 286,316.1	DRILLER: Bobbie Fowler	
BORING LOCATION: SE SECTOR - Corner of Ash St. & East Rd. @ Bld. 1114		SYSTEM: UTM NAD83 (m)	T.O.C. ELEV.: 27.84
DRILL MACHINE: Diedrich D-50	METHOD: HSA/MR	0 HOUR DTW:	BORING DEPTH: 50.0
START DATE: 03/06/02	FINISH DATE: 03/06/02	DTW(7/16/2002): 10.27	WELL DEPTH: 30.0

DEPTH	BLOW COUNT				OVA (ppm)	LAB.	U S C S	L O G	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION	WELL DETAIL
	6in	6in	6in	6in								
30.0	2	1	1	2	500		SP		S.A.A.	32.0	-3.6	
32.0	2	2	6	8	260		SM		White, light gray, SILTY, v.f. to f. SAND with weathered LS. Sat. High HCO.	34.0	-5.6	
34.0	3	9	7	13	290		SM		Light gray, SILTY, v.f. to f. SAND. Sat. High HCO.	36.0	-7.6	
36.0	4	9	22	17	530		SP		Gray, well sorted, fine SAND with sand size shell frags. Sat. High HCO.	38.0	-9.6	
38.0	14	12	14	19	200		SP		S.A.A with cemented sands.	40.0	-11.6	
40.0	13	19	19	29	160		SP		S.A.A with cemented sands, without shell frags. Wet. Moderate HCO.	42.0	-13.6	
42.0	3	20	16	14	110		SP		S.A.A.	44.0	-15.6	
44.0	7	10	11	9	120		SP		44.5 S.A.A.	44.5	-16.1	
46.0									Severely weathered LS. w/silty, fine sands. Sat. Slight HCO.	46.0	-17.6	
48.0	1	6	6	22	80				Severely weathered, SILTY, v.f. to f., SANDY LS. Sat. Slight to moderate HCO.	48.0	-19.6	
50.0	3	13	29	22	90		SP		Gray/green, well sorted, fine SAND. Wet. Moderate HCO.	50.0	-21.6	
Boring Terminated at Elevation -21.6 ft												

CALIN BORING LOG 202-027.GPJ CALIN.GDT 12/03/02

HP = Hydraulic Push NM = Not Measured

 Portland Cement
  Bentonite Pellets
  #2 Medium Sand

JUL 24 2008

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SUBJECT: REVIEW OF ANNUAL MONITORING REPORT USMC, CAMP LEJEUNE HADNOT POINT FUEL FARM/BLDG 1115 AREA

COMMENTS:

Brynn/Scott/Johanna - please ensure timely + complete response to this by Oct 15 '08 ST.

ROUTING: Originator: J LEDFORD Initials: JCL Date: 7/24/2008

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North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

July 8, 2008

Commanding Officer
I&E/EMD/EQB (Dr. Johanna Arnold, Bldg. 12)
PSC Box 20004
MCB Camp Lejeune, NC 28542-0004

Re: Review of Bio-Pulse Air Sparging
Evaluation Report
Hadnot Point Fuel Farm/Bldg. 1115
Ash Street, Camp Lejeune, Onslow County
Risk Classification: Intermediate
Ranking: I195D

Dear Dr. Arnold:

The June 23, 2008 Bio-Pulse Air Sparging Evaluation Report for the Hadnot Point Fuel Farm/Building 1115 Area site has been received and reviewed by the Underground Storage Tank Section. The report is hereby approved.

If you have any questions regarding this letter, please contact me at the address or telephone number listed below.

Sincerely,

Bruce Reed
Hydrogeologist II
Wilmington Regional Office

cc: WiRO-UST

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – Systel Building, Suite 714, Fayetteville, NC 28301 (910) 486-1541

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 571-4700

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Street Extension, Wilmington, NC 28405 (910) 395-3900

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-4600

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771

s:\bruce\arnold1115op08

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SUBJECT: REVIEW OF BIO-PULSE AIR SPARGING EVALUATION REPORT HADNOT POINT FUEL FARM/BLDG. 1115

COMMENTS: Bryan/Scott/Johansen - fyi
ST

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SCOTT - copy
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North Carolina Department of Environment and Natural Resources
Division of Air Quality

Michael F. Easley, Governor

William G. Ross, Jr., Secretary
B. Keith Overcash, P.E., Director

May 9, 2008

John Townson, Director
Environmental Management
P. O. Box 20004
Camp Lejeune, North Carolina 28542-0004

HPFF -
Cat Ox System

Dear Mr. Townson:

Subject: Site Remediation Bio Sparge/Soil Vapor Extraction (BS/SVE)
Facility ID: 6700011
Camp Lejeune Marine Corps Base
Camp Lejeune, North Carolina
Onslow County
Fee Class: Title V

This letter is in response to your letter to Mr. Donald van der Vaart, received by the Division of Air Quality (DAQ) Permits Section on November 28, 2007. This letter contained a summary of the hazardous air pollutant (HAP) emissions test results for the bio sparge/soil vapor extraction remediation system (BS/SVE, A-HP-1068-01) and associated control device (propane/natural gas-fired catalytic oxidizer, CD-14). This submittal was required to demonstrate compliance with the National Emission Standards for Hazardous Air Pollutants for Site Remediation in accordance with 40 CFR Part 63, Subpart GGGGG. The test results indicate that compliance has been met with the limitations listed in 40 CFR §63.7890 (b)(1): "reduce from all affected process vents the total emission of the HAPs listed in Table 1 of Subpart GGGGG, to a level less than 3.0 pounds per hour and 3.1 tons per year". According to the test, the 3.0 pound per hour limit can be achieved without the control of the catalytic oxidizer, however the oxidizer must be used intermittently to comply with the annual limit of 3.1 tons of HAPs per year.

The test results showed the average catalytic oxidizer destruction efficiency of 97.62%. As shown in the calculation below, intermittent use of the oxidizer is required to meet the annual standard.

Control efficiency = 97.62%
Total HAP emissions = 0.84 pounds per hour (controlled = 0.02 pounds per hour)
Total hours without control = 7008 hours per year
Total hours with control = 1752 hours per year

$$\text{Annual emission rate of HAPs} = \left[\left(\frac{0.84 \text{ lbs HAP}}{\text{hour}} \times \frac{7008 \text{ hours}}{\text{year}} \right) + \left(\frac{0.02 \text{ lbs HAP}}{\text{year}} \times \frac{1752 \text{ hours}}{\text{year}} \right) \right] \times \frac{1 \text{ tons HAP}}{2000 \text{ lbs HAP}} = \frac{2.96 \text{ tons HAPs}}{\text{year}}$$

Permitting Section

1641 Mail Service Center, Raleigh, North Carolina 27699-1641
2728 Capital Blvd., Raleigh, North Carolina 27604
Phone: 919-715-6235 / FAX 919-733-5317 / Internet: www.ncair.org

One
North Carolina
Naturally

Mr. Townson
May 9, 2008

The bio sparge/soil vapor extraction remediation system (BS/SVE, A-HP-1068-01) indicates compliance with the limits listed in the Site Remediation MACT when operating the catalytic oxidizer for a minimum of 1752 hours per year. The facility shall record the oxidizer operation times, and during operation, will monitor and document the oxidizer bed temperature differential per 40 CFR §63.7925(g)(5). These monitoring and recordkeeping requirements will be placed into the Title V Air Permit that is currently at the DAQ Raleigh Central Office for renewal.

The DAQ agrees that the limitations listed in 40 CFR Part §63.7890 (b)(1), Subpart GGGGG should be met by the bio sparge/soil vapor extraction remediation system (BS/SVE, A-HP-1068-01) when operating the catalytic oxidation control device unit intermittently during the year as long as the total control device operation time is greater than 1752 hours per year.

Sincerely yours,



William D. Willets, P.E.
Supervisor, Permitting Section

c: Wilmington Regional Office
Central Files

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COMMENTS: SITE REMEDIATION BIO SPARGE/SOIL VAPOR EXTRACTION

*Byn/Erin - for your action, please ensure we record oxidizer
operation times and oxidizer bed temperature differential
as required. ST*

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North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

October 30, 2007

Commanding Officer
I&E/EMD/EQB (Dr. Johanna Arnold, Bldg. 12)
PSC Box 20004
MCB Camp Lejeune, NC 28542-0004

Re: Review of Bio-Pulse Air Sparging
Evaluation Report
Hadnot Point Fuel Farm/Bldg. 1115
Ash Street, Camp Lejeune, Onslow County
Risk Classification: Intermediate
Ranking: I195D

Dear Dr. Arnold:

The October 11, 2007 Bio-Pulse Air Sparging Evaluation Report for the Hadnot Point Fuel Farm/Building 1115 Area site has been received and reviewed by the Underground Storage Tank Section. The report is hereby approved.

It seems that operation of the Bio-Pulse system has been discontinued intermittently a couple of times in order to evaluate pulse events. It is the Division's opinion that this system needs to operate continuously. Minor adjustments can be made without system shut-down. The current report states that it will be six months before specific recommendations on the pulse rates will be reviewed. Please continue to pulse these wells at the prescribed rate until your consultant calculates the new rate. In summary, the Bio-Pulse system must always be operating unless good cause is shown to temporarily suspend operation.

If you have any questions regarding this letter, please contact me at the address or telephone number listed below.

Sincerely,

Bruce Reed
Hydrogeologist II
Wilmington Regional Office

cc: WIRO-UST

Marine Corps Base Camp Lejeune
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SUBJECT: REVIEW OF BIO-PULSE AIR SPARGING EVALUATION REPORT

COMMENTS:

*Bryan / Scott / Johnson - please ensure we abide by direction given by Mr. Red. Let me know if any problems.
ST*

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