US Department of the Navy

And

Agency for Toxic Substances and Disease Registry

Camp Lejeune Data Mining Technical Workgroup Closeout Report

November 27, 2012

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Introduction and Purpose

In June 2010, the US Department of Navy (DON) and the Agency for Toxic Substances and Disease Registry (ATSDR) established the DON/ATSDR Camp Lejeune Data Mining Technical Workgroup (hereafter referred to as "Workgroup"). Building upon previous efforts that resulted in the exchange of large amounts of DON information and data, the agencies established the Workgroup to review all relevant DON data and information repositories in order to identify any additional data and information that may be of value to ATSDR in studying the Camp Lejeune water contamination issue (see Appendix 1 for the Workgroup Charge and Appendix 2 for Workgroup Membership). As set forth in its Charge, the Workgroup's goal is to, "Implement a plan to ensure ATSDR possesses all relevant data and information needed for their health activities" (e.g., historical reconstruction of groundwater and drinking water contamination and health studies). The Workgroup's activities were governed by the 2009 Memorandum of Understanding (MOU) between DON and ATSDR.

The Workgroup met periodically either in person or via conference call beginning in June 2010 through August 2011. Summaries of those meetings can be found online at: http://www.atsdr.cdc.gov/sites/lejeune/data_mining_workgroup.html. This report is being provided to document the Workgroup's joint cooperation and accomplishments.

Key Accomplishments

The first Workgroup accomplishment was the development of a Plan of Operation (see Appendix 3) to establish a common understanding of the path forward. Following the Plan of Operation, ATSDR outlined their information and data needs for the ATSDR Camp Lejeune health activities (Appendix 4) and the Workgroup then reviewed the contents of various DON information repositories (Appendix 5 "Potential DON Information and Data Repositories").

The Workgroup then compared the various DON Camp Lejeune repository indexes with the information and data compiled by ATSDR prior to the Workgroup formation (Appendix 6) and facilitated the transfer of any newly identified potentially relevant information and data to ATSDR. In addition, the Workgroup established a process so that DON would continually update ATSDR when new data and information is added to any of the DON Camp Lejeune repositories.

To gain more insight regarding some of the 1985-6 Camp Lejeune drinking water sample results, the Workgroup contacted a former US Marine Corps employee and obtained written responses to eight questions (see Appendix 7).

In an effort to locate information that was not in DON repositories, the Workgroup sent a letter (see Appendix 8) to former DON drinking water laboratory contractors and requested that they identify whether they have any files and records of historic Camp Lejeune drinking water sampling results conducted 1995 or prior. Based upon ATSDR's review of DON repositories, letters were also sent to a group of environmental consulting companies that conducted

investigations at Camp Lejeune. In its letter the Workgroup requested reply-by date of 17 June 2011. The former DON contractors did not identify any new information or data.

In March 2011, the Workgroup provided an Interim Report to DON and ATSDR management (Appendix 9). The Interim Report stated: "Pursuant to the Charge and the goals of the Workgroup, the two agency leads remain confident that the Workgroup has successfully created an accurate and complete inventory Further, the continued efforts of the Workgroup members have ensured that ATSDR representatives have received full access to all relevant information identified in the inventory."

The Workgroup completed all the tasks and follow-up action items it identified. The final After Action Item List is presented in Appendix 10. The continued efforts of the Workgroup members have ensured that ATSDR possess all relevant information and data needed for their health activities. As such, the Workgroup goals have been met and its charge has been fulfilled.

Looking Forward

Environmental investigations and remediation and health studies continue at Camp Lejeune. As reports are developed, DON will provide ATSDR with updated DON Repository Indexes until ATSDR publishes its water modeling report or indicates that the updated Indexes are no longer needed for their health initiatives at Camp Lejeune. While this Workgroup's tasks have been completed, its methodology has been effective and may be a valuable model for future similar endeavors.

Appendix 1 – DON/ATSDR Camp Lejeune Data Mining Technical Workgroup Charge

Charge of the Camp Lejeune Data Mining Technical Workgroup

Purpose

The Camp Lejeune Data Mining Technical Workgroup (hereafter "Workgroup") has been established to complete the necessary activities associated with the identification, review and exchange of documents, data, and information collected by the U.S. Department of Navy (DON). DON has collected, maintained, and shared large amounts of related information with Agency for Toxic Substances and Disease Registry (ATSDR). Both agencies believe the most effective way for ATSDR to move forward with its studies is for ATSDR and DON to work together to establish this Workgroup that will closely review all repositories of available data and information in order to identify any additional data and information that may be of value to ATSDR. The Workgroup's activities are governed by the 2009 Memorandum of Understanding (MOU) between DON and ATSDR. As such, it does not excuse any party from rapidly and fully meeting their existing obligations under the 2009 MOU. This written Workgroup charge serves to formalize the existing commitment that both agencies have shared with the intent to bring data mining activities to completion.

Workgroup Membership

DON (including NAVFAC and USMC) and ATSDR will each provide up to five members to the Workgroup who are most knowledgeable about potentially relevant data and information. All Workgroup members will continue to be directed by their chain of command to achieve the common goals and tasks of the Workgroup. Each Workgroup member will be available for all Workgroup activities and will give the highest priority to accomplishing the Workgroup's activities.

Workgroup Goals

- Develop a plan to ensure that ATSDR possesses all relevant data and information needed for their health activities. This includes information and data possessed by current DON contractors. All reasonable efforts will be made to ensure that ATSDR possesses all relevant data and information possessed by former contractors and other federal and state agencies.
- Implement the plan to ensure ATSDR possesses all relevant data and information needed for their health activities.
- Complete the data mining phase that must be done prior to the historical dose reconstruction modeling and epidemiological phases of the health activities.

Workgroup Tasks

- Convene a kickoff conference call as soon as possible after approval of this Charge and conduct the first face-to-face meeting in the Washington, DC area on 28 or 30 June 2010.
- Finalize the plan by 9 July 2010.
  - Document the type and scope of data and information potentially relevant to ATSDR health activities (ATSDR lead) and the methodology to be used to identify and inventory DON data and information (DON lead).
- Implement the plan and complete the data mining necessary for ATSDR health activities at Camp Lejeune by 30 September 2010 or as soon as ATSDR possesses all identified relevant data and information.
  - Identify and inventory data and information deemed potentially relevant to ATSDR health activities and ensure ATSDR possesses data and information (DON lead).
- Produce a short closeout report that documents the Workgroup's efforts.

Signatories

LtGen Frank A. Panter, Jr., USMC	Donald R. Schregardus, OASN(EI&E)	Henry Falk, MD, MPH, ATSDR

Appendix 2
Camp Lejeune Data Mining Technical Workgroup Membership

US Department of the Navy

Scott Williams, HQ USMC (DON Lead)
Richard Mach, ASN (EI&E)
Brian Harrison, NAVFAC HQ
Michael Helbling, NAVFAC
Thomas Burton, USMC

Agency for Toxic Substances and Disease Registry

RADM Sven Rodenbeck, DHAC (ATSDR Lead)
Susan Moore, DHAC
Morris Maslia, DHAC
Frank Bove, DHS
Robert Faye, Subcontractor to Eastern Research Group

Appendix 3 – DON/ATSDR Camp Lejeune Data Mining Technical Workgroup Plan of Operation

Camp Lejeune Data Mining Technical Workgroup

Plan of Operation

August 12, 2010

US Department of the Navy

and

Agency for Toxic Substances and Disease Registry

Note: This Plan of Operation was developed by the Camp Lejeune Data Mining Technical Workgroup as a guide. The Workgroup will amend the Plan of Operation as needed so it achieves its goals.

Purpose

The Camp Lejeune Data Mining Technical Workgroup (hence forth identified as the Workgroup) is a joint effort between the US Department of the Navy (DON) and the Agency for Toxic Substances and Disease Registry (ATSDR). The Workgroup will complete the data mining effort so that ATSDR has the relevant information and data needed for ATSDR health activities currently proposed and/or being conducted at Camp Lejeune. The Workgroup Charge and membership are in Appendices 1 and 2, respectively, of this document.

This document outlines the operational plan that will be used by the Workgroup to achieve its goals and may be augmented as deemed necessary by the Workgroup. The plan has five phases, some or all of which may be executed concurrently.

Phase 1 - Defining the Scope of Information and Data Needs

The goal of Phase 1 is to provide DON with a list of data elements and parameters – to include type, scope, and timeframe – related to each category of information ATSDR considers relevant and necessary to complete health activities currently proposed and/or being conducted at Camp Lejeune (hereinafter referred to as the "list of information and data needs" or the "information and data needs list"). This Phase of the Plan of Operation will be conducted in three steps.

Step 1 – ATSDR Develops Information and Data Needs List

ATSDR will develop and provide to DON a draft list of information and data needs. ATSDR may also provide DON an updated list of specific items it considers relevant and necessary to complete its health activities at Camp Lejeune; so the list is as complete and current as possible, it may include items that DON has already provided to ATSDR, items that DON will provide to ATSDR, and items that DON does not have and is not charged with obtaining.

Step 2 – Clarification of ATSDR's Information and Data Needs

DON will review the draft lists provided by ATSDR and identify specific data elements and parameters that require clarification or additional description in order to assure that DON understands what ATSDR is requesting. DON may also ask ATSDR to clarify their expectations regarding what some of the information and data needs constitute. Such discussions will continue until all parties to the Workgroup achieve a mutual and complete understanding of ATSDR's data and information needs.

Step 3 – Finalization of Information and Data Needs List

Following completion of clarification discussions, ATSDR will edit the lists and include the mutually agreed upon additional descriptions and clarifications. ATSDR will then provide DON with the revised final list of information and data it needs.

Phase 2- Methods to Identify Potentially Relevant Information and Data

The goal of Phase 2 is to inventory sources/repositories of potentially relevant data and information. The inventory will include sources/repositories of data and information under the direct management and control of DON as well as data and information and related sources/repositories in the control of non-DON entities. The deliverable derived from Phase 2 efforts is the inventory of potentially relevant data and information sources/repositories and will be divided into two categories.

Category 1 - Information Managed/Controlled by DON (Includes Current Contractors)

Based on the information and data needs defined and recorded in Phase 1 of this Plan of Operation, DON will create an inventory of sources/repositories containing potentially relevant information and data. For each source/repository, an index of the documents that may contain relevant information and data will also be developed by DON and at a minimum include the title or subject identifier, author(s), date or date range, and any other pertinent details so ATSDR can determine the relevance of the document or data to the ATSDR Camp Lejeune health activities. The inventory and associated indexes will include repositories with information that may have been previously provided, accessed, or otherwise identified to ATSDR. DON will have lead responsibility to develop the inventories and indexes. DON will collaborate with the full Workgroup to ensure completeness, accuracy, and consensus regarding this effort.

Category 2 - Information Managed/Controlled by non-DON Entities Such as Other Federal or State agencies (e.g., EPA, NCDENR, USGS) Universities, and Former Contractors

Based on information and data needs defined and recorded in Phase 1 of the Plan of Operation, the Workgroup will collaborate with knowledgeable persons (Workgroup members and non-members) to create an index of potentially relevant information and data managed or controlled by non-DON entities. DON and ATSDR will share responsibility to create this index. Official or written requests to such entities for information will come from the Workgroup or jointly from DON and ATSDR.

Phase 3 - Methods to Screen Potentially Relevant Information and Data

The goal of Phase 3 is to filter/refine/screen the inventory of repositories and indexes of potentially relevant information and data created at the completion of Phase 2 for relevancy. The deliverable at the completion of Phase 3 will be a final list of information and data that have been deemed relevant to ATSDR's Camp Lejeune health activities. This Phase of the Plan of Operation will be divided into two categories.

Category 1 - Information Managed/Controlled by DON (Includes Current Contractors)

The inventory of repositories and associated indexes of potentially relevant information and data developed during Phase 2 of the Plan of Operation will be reviewed by the Workgroup. ATSDR will identify to the Workgroup which relevant information and data it already possesses and the

specific sources of information and data of interest to ATSDR. ATSDR may also request a site visit or an electronic copy of a particular document to help determine the value of a particular information source. ATSDR will have lead responsibility for determining relevance of any information or data reviewed as well as determining if a site visit is required. DON will have lead responsibility to coordinate/facilitate any site visits and for scanning/electronic conveyance/provision of information or data that is ultimately deemed relevant to ATSDR's Camp Lejeune health activities.

Category 2 - Information Managed/Controlled by Other Federal or State agencies (e.g., EPA, NCDENR, USGS) Universities, and Former Contractors

The index of potentially relevant information and data managed or controlled by non-DON entities developed during Phase 2 of the Plan of Operation will be reviewed by the Workgroup. ATSDR will identify to the Workgroup which relevant information and data it already possesses and specific sources of information and data of interest to ATSDR. Such identification may indicate the need for a site visit to completely determine the value of a particular information source or may simply result in a request for an electronic copy of a particular document. ATSDR will have lead responsibility for determining relevance of any information or data reviewed as well as determining if a site visit is required. DON and ATSDR will share responsibility to coordinate/facilitate any site visits. Official or written requests to such entities for information will come from the Workgroup or jointly from DON and ATSDR. If the entity in control of the information or data cannot facilitate, DON and ATSDR will share responsibility for scanning/electronic conveyance/provision of information or data that is ultimately deemed relevant to ATSDR's Camp Lejeune health activities.

Phase 4 - Transfer of Identified Information and Data

The goal of Phase 4 is the transfer of relevant information and data to ATSDR necessary to complete ATSDR's data mining activities.

ATSDR will prioritize the final information and data list created during Phase 3 and indicate the preferred data format (e.g., PDF, Excel) for electronic transfer**.** If the preferred format is not practicable (e.g., scanning large maps), DON and ATSDR will determine how best to transfer those information and data to ATSDR. The information and data will then be transferred. DON will have lead responsibility for scanning /electronic conveyance/provision of information or data that is in the possession of DON that has been deemed relevant to ATSDR's Camp Lejeune health activities. ATSDR and DON will have shared responsibility for scanning/electronic conveyance/provision of information or data that is not in the possession of DON that has been deemed relevant to ATSDR's Camp Lejeune health activities.

ATSDR requires information and data that can be referenced in ATSDR's reports and made publicly available. DON will expedite the review of any information and data in DON's custody and control that has been identified by the Workgroup as relevant to ATSDR's health activities

and, subject to release ability restrictions, approve the requested information or data for public release.

Phase 5 – Report of Workgroup's Accomplishments

The DON and ATSDR Workgroup Leads will be responsible for completing a Workgroup Close-Out Report. The Close-Out Report will highlight the accomplishments of the Workgroup including the inventory of repositories, locations, contractors, and data/information repositories reviewed and data/information identified by the Workgroup that were provided to ATSDR. The Close-Out Report will also indicate whether any changes were made to the Plan of Operation during the implementation phase and the report will include lessons learned and recommendations. As necessary, the Close-Out Report will identify any non-DON information or data sources that were not obtained by the Workgroup and provide an indication as to how the information and data will be obtained. The full Workgroup will review and concur with the Close-Out Report before it is finalized.

Target Completion Dates (subject to change)

Phase 1:	21 August – Scope of information and data needs has been defined (Meeting at Camp Lejeune).
Phase 2:	21 August – Written inventories of potentially relevant information and data have been finalized for workgroup review.
Phase 3:	8 September – Relevant information and data has been identified. Any necessary site visits have been conducted.
Phase 4:	22 September – Relevant information and data has been scanned, electronically conveyed or otherwise provided to ATSDR.
Phase 5:	30 September – Report of Workgroups accomplishments is finalized contingent upon agency clearance.

Appendix 4 – ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities (July 2010)

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Aquifer geometry	Borehole logs, geophysical logs, driller's logs	CERCLA AR, UST files (site assessment files, etc.), research reports, journal articles, symposia papers	Yes	IRP sites complete; UST sites in progress; additional site files to be reviewed; research reports, etc., not identified	1940–2009	UST (UST Portal) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries, Off Base Encroachment, MMRP)
Horizontal hydraulic conductivity and anisotropy	Slug tests, aquifer tests, multi-well aquifer test	CERCLA AR, UST files (site assessment files, etc.), research reports, journal articles, symposia papers	Yes, multi-well aquifer tests/ anisotropy results inconclusive	IRP sites complete; UST sites in progress; additional site files to be reviewed; other data sources such as research reports, journal articles, etc., not yet identified	1940–2009	Drinking water (9,14,20) UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries, Off Base Encroachment, MMRP)
Vertical hydraulic conductivity	Laboratory tests (permeameter), aquifer tests	CERCLA AR, UST files (site assessment files, etc.), research reports, journal articles, symposia papers	Yes	IRP sites complete; UST sites in progress; additional site files to be reviewed; research reports, etc., not yet identified;	1940–2009	Drinking water (9,14,20) UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries, Off Base Encroachment, MMRP)

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Recharge	Precipitation, evapotranspiration, runoff, meteorological station data, land use data, soils data, lysimeter data	Research project reports, journal articles, symposia papers, NOAA reports, USDA Natural Resources Conservation Service reports	ATSDR has identified potential site-specific data, not fully reviewed and analyzed	Recharge initially determined from non-site-specific data and Tarawa Terrace model calibration; NAVFAC research project (DCERP) has gathered monthly precipitation data at Camp Lejeune, ATSDR has requested data–June 2010	1940–2009	Meteorological Data (MCAS Air Station, EMD Forestry, DCERP, NOAA)
Water level	Water-level measurements, depth to water measurements , land surface altitude	CERCLA AR, UST files (site assessment files, etc.), USGS reports	Yes	IRP sites complete; UST sites in progress; parameter required to derive starting heads and asses model calibration; additional site files to be reviewed	1940–2009	Drinking water (9,14,20) UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries, Off Base Encroachment, MMRP)
Drain conductance	Stream stage, streambed conductance	Site assessment reports	No	IRP sites complete; UST sites in progress; parameter required to simulate springs and creeks	1940–2009	Not applicable

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Specific yield, Specific storage	Aquifer tests, laboratory tests	CERCLA AR, UST files (site assessment files, etc.)	Yes	IRP sites complete; UST sites in progress; additional site files to be reviewed; limited site-specific data	1940–2009	UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries, Off Base Encroachment, MMRP)
Supply-well pumping rate	Location, construction data, screen location, capacity history, pumping rates, operational status, WTP flows	CLW files, water-plant log books and files, GIS files, location survey reports	Yes	Incomplete historical records; daily for supply wells, January 1998–June 2008; daily WTP (delivered and raw) flows, January 1995 – June 2009 (a few missing values); monthly WTP (delivered flows), January 1980–December 1993 (a few missing values); monthly WTP raw flows, January 1980–February 1989 (a few missing);yearly WTP raw flows for 1953, 1957, 1959-1968, 1971, and 1974–1979	1940–2009	Public Works (MAXIMO, Correspondence and documents, GIS, Records Vault) Document Repositories (CLW, BAH, EMD Libraries)

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Dispersivity	Tracer test	CERCLA AR, research reports, journal articles, symposia papers	Yes, IR site 88	Model also to rely on appropriate literature-identified values	1940–2009	Document Repositories (CLW, BAH, EMD Libraries)
Longitudinal to lateral dispersivity ratio	Multi-well tracer test	Research reports, journal articles, symposia papers	TBD	Model also to rely on appropriate literature-identified values	1940–2009	Document Repositories (CLW, BAH, EMD Libraries)
Retardation factor	Bulk density, porosity, effective porosity, distribution coefficient	CERCLA AR, UST files (site assessment files, etc.), research reports, journal articles, symposia papers	Yes, IR site 88	Site-specific porosity data only; porosity data limited; no effective porosity data	1940–2009	Document Repositories (CLW, BAH, EMD Libraries) UNC Research Papers
Source concentration	Operational history, spill history, contaminant remediation and extraction history	CERCLA AR, UST files (site assessment files, etc.), remediation reports	Yes	IRP sites complete; UST sites in progress; additional site files to be reviewed	1940–1987	UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries
Mass-loading rate	Operational history, spill history, contaminant remediation and extraction history	CERCLA AR, UST files (site assessment files, etc.), remediation reports	TBD	Will need to estimate using mass computation techniques	1940–1987	UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries)

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Source location	Operational history, spill history, contaminant remediation and extraction history	CERCLA AR, UST files (site assessment files, etc.), remediation reports	Yes	IRP sites complete; UST sites in progress; limited data	1940–1987	Public Works (MAXIMO, Correspondence and documents, GIS, Records Vault) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries) UST (UST Portal, Terrabase)
Supply-well contaminant concentration data	Water-quality sample data for various contaminant constituents (PCE, TCE, Benzene and BTEX)	CERCLA AR, UST files (site assessment files, etc.), remediation reports, laboratory analytical reports	Yes	ATSDR has reviewed reports provided by DON; some analytical laboratory analysis reports unavailable	1940–2009	Drinking Water (1,6,23)
Water treatment plant contaminant concentration data	Water-quality sample data for various contaminant constituents	CERCLA AR, UST files (site assessment files, etc.), remediation reports, laboratory analytical reports	Yes	ATSDR has reviewed reports provided by DON; some analytical laboratory analysis reports unavailable	1940–1987	Drinking Water (4,5,13,15,18, 23)
Molecular diffusion	None	Research reports, journal articles, symposia papers, laboratory and chemical analysis reports	No	Model to rely on appropriate literature-identified values	Not applicable	Not applicable

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Reaction rate	None	Research reports, journal articles, symposia papers, laboratory and chemical analysis reports	No	Model to rely on appropriate literature-identified values	Not applicable	Not applicable
Multiphase flow	Saturation-capillary pressure relationship, relative permeability-saturation relationship	Research reports, journal articles, symposia papers	To be determined	To be determined	1940–2009	IR (REVA, MMRP, Base Wide Vapor Intrusion Assessment)
Residual LNAPL	Moisture content, porosity, sorption parameters, pore water-soil partition coefficients, total contaminant concentration, physical and chemical properties of contaminants,	Research reports, journal articles, symposia papers, groundwater contamination studies	To be determined	To be determined	1940–2009	IR (REVA, MMRP, Base Wide Vapor Intrusion Assessment), UST (UST portal Terrabase)
Source concentration	Operational history, spill history, contaminant remediation and extraction history	CERCLA AR, UST files (site assessment files, etc.), remediation reports	Yes	IRP sites complete; UST sites in progress; additional site files to be reviewed	1940–1987	UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Mass-loading rate	Operational history, spill history, contaminant remediation and extraction history	CERCLA AR, UST files (site assessment files, etc.), remediation reports	To be determined	Will need to estimate using mass computation techniques	1940–1987	UST (UST Portal, Terrabase) Document Repositories (CLW, BAH, EMD Libraries) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries)
Source location	Operational history, spill history, contaminant remediation and extraction history	CERCLA AR, UST files (site assessment files, etc.), remediation reports	Yes	IRP sites complete; UST sites in progress; limited data	1940–1987	Public Works (MAXIMO, Correspondence and documents, GIS, Records Vault) IRP (Databases, NIRIS, REVA, SWMU, EMD Libraries) UST (UST Portal, Terrabase)
Supply-well contaminant concentration data	Water-quality sample data for various contaminant constituents	CERCLA AR, UST files (site assessment files, etc.), remediation reports, laboratory analytical reports	Yes	ATSDR has reviewed reports provided by DON; some analytical laboratory analysis reports unavailable	1940–2009	Drinking Water (1,6,23)
Water treatment plant contaminant concentration data	Water-quality sample data for various contaminant constituents	CERCLA AR, UST files (site assessment files, etc.), remediation reports, laboratory analytical reports	Yes	ATSDR has reviewed reports provided by DON; some analytical laboratory analysis reports unavailable	1940–1987	Drinking Water (4,5,13,15,18, 23)

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
LNAPL vaporization rate	Soils data, lysimeter data	Research reports, journal articles, symposia papers	To be determined	To be determined	Not applicable	IR (REVA, MMRP, Base Wide Vapor Intrusion Assessment)
LNAPL dissolution rate	LNAPL residual, mass fraction, grain-size distribution, volume fraction of LNAPL, dynamic viscosity, soils properties	Research reports, journal articles, symposia papers, groundwater contamination reports	To be determined	To be determined	Not applicable	IR (REVA, MMRP, Base Wide Vapor Intrusion Assessment)
Dispersivity	Tracer tests	CERCLA AR, research reports, journal articles, symposia papers	Yes, IR site 88	Model also to rely on appropriate literature-identified values	1940–2009	Document Repositories (CLW, BAH, EMD Libraries)
Longitudinal to lateral dispersivity ratio	Multi-well tracer test	Research reports, journal articles, symposia papers	To be determined	To be determined	1940–2009	Document Repositories (CLW, BAH, EMD Libraries)
Molecular diffusion	None	Research reports, journal articles, symposia papers, laboratory and chemical analysis reports	No	Model to rely on appropriate literature-identified values	Not applicable	Not applicable

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Reaction rate	None	Research reports, journal articles, symposia papers, laboratory and chemical analysis reports	No	Model to rely on appropriate literature-identified values	Not applicable	Not applicable
Junctions	Elevation, demand, demand pattern, delivered water	CLW files, water-plant log books and files, GIS files, consulting reports	No demand and demand pattern data	Demand data derived using Water Conservation Analysis [ECG 1999]); demand pattern data derived using PEST analysis; limited delivered water data	1940–2004	Drinking water program, installation GIS
Pipes	Length, diameter, roughness coefficient, initial status (open/closed), material type, date installed or retired	CLW files, water-plant log books and files, GIS files, consulting reports	Yes	Roughness coefficients determined from ATSDR field tests (2004) and literature-identified values	1940–2004	Drinking water program, installation GIS
Storage tanks	Elevation, initial water level, minimum water level, maximum water level diameter, date installed or retired	CLW files, water-plant log books and files, GIS files, consulting reports, survey reports	Yes	Tank locations located during 2004 using fourth-order survey	1940–2004	Drinking water program, installation GIS

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
Hydraulics	Pressure, booster pump flow, booster pump status, pump head-discharge curve	CLW files, water-plant log books and files, consulting reports, pump manufacturer spec sheet, SCADA data, field tests	Limited	Pressure data obtained from SCADA and ATSDR 2004 field data; limited data for booster pump status	1940–2004	Drinking water program, installation GIS
Water quality	Initial quality, source quality, reaction rate, bulk coefficient, wall coefficient, WTP concentration data	Field data, research reports, journal articles, symposia papers, laboratory and chemical analysis reports	Limited	Some analytical laboratory analysis reports unavailable; January–February 1985 sampling data for Holcomb Boulevard water-distribution system available; data from 2004 and 2005 ATSDR field test available (tracer data for 2004; travel –time data for 2005)	1940–1987	Drinking Water (1,6,23)
Times	Duration, hydraulic time step, quality time step, pattern time step	Not applicable	Not applicable	Model determined values dependent on calibration approach and simulation scenarios	Not applicable	Not applicable

ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities as of July 2010						
Parameter	**Related field data**	**Potential data sources**	**Site-specific data identified/ acquired by ATSDR**	**Status of ATSDR information review and data extraction**	**Relevant time frame**	**DON/CL/EMD program location for information and data[1]**
N/A	Family housing records, barrack locations, job locations, active-duty activities, command chronologies, unit codes	Family housing office, Quantico Library, industrial hygiene staff, Defense Manpower Data Center, retired Marines	Yes, about 15,000 entries for housing records are missing	Reviewed available housing records, personnel data from DMDC, and unit codes	1968–1987	To be determined

[1] Provided at ATSDR-DON Data Mining & Discovery Technical Work Group Meeting, July 21-22, 2010, Marine Corps Base Camp Lejeune.

AR, administrative record; ATSDR, Agency for Toxic Substances and Disease Registry; CERCLA, Comprehensive Environmental Restoration, Compensation, and Liability Act; CL, camp Lejeune; CLW, Camp Lejeune water; DMTWG, ATSDR-DON data mining technical work group; EMD, Environmental Management Division; GIS, geographic information system; IRP, installation restoration program; MESL, Multimedia Environmental Simulations Laboratory; NAVFAC, Naval Facilities Engineering Command; NOAA, National Oceanographic and Atmospheric Administration; PEST, parameter estimation model; SCADA, supervisory control and data acquisition; USDA, U.S. Department of Agriculture; UST, underground storage tank; WTP, water treatment plant

Appendix 5 – Potential DON Information and Data Repositories of Interest to ATSDR (August 2010)

The following list, derived from Camp Lejeune's environmental compliance and other programs, is believed to be comprehensive regarding information relating to historic water quality issues and other issues of potential interest to ATSDR at Camp Lejeune. However, given the broad nature of the inquiry it is possible that relevant documents exist that have been inadvertently omitted.

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21 July Presentation Topic	List of Documents, Studies and Databases for ATSDR	Document Description
		Drinking Water and Water Quality Information
Drinking Water Program	**1) Semi-Annual Drinking Water Supply Well Sampling for VOCs**	Non-regulatory sampling performed voluntarily - All water supply wells in annually - Wells within 1500' of known contaminated areas are sampled in semi-annually - Began in 1997
Drinking Water Program	**2) Drinking Water Supply Well Sampling for Munitions Constituents**	Initial assessment in 2004, no regulatory requirement - Included well & plant sampling
Drinking Water Program	**3) Monthly Sampling at Water Treatment Plants for Munitions Constituents**	Non-regulatory sampling performed voluntarily - Conducted at distribution point at all WTP plants - Constituents sampled include perchlorate - Began in 2004
Drinking Water Program	**4) Compliance Sampling at Water Treatment Plants**	Required by Regulation - Samples are collected by MCBCL personnel - Analysis conducted In-House & by contract laboratories - Regulatory reports forwarded by MCBCL
		~ Weekly Fluoride Reports (HB, HP WTP) - Report to NCDENR
		~ Monthly Bacteriological Report - Coliform analysis for each plant - Report to NCDENR
		~ Monthly Report of Operations/Water Usage - Data collected by WTP personnel - Report to NCDENR
		~ Monthly Distribution Chlorine Reports - New Requirement - Data collected by WTP personnel - Report to NCDENR
		~ Monthly 4-Log Treatment Report - New Requirement - Data collected by WTP personnel - Report to NCDENR
		~ Regulatory Periodic Sampling for VOCs, SOCs, Nitrates, Asbestos, Radionuclides, Inorganics, THMs, Lead/Copper*
		*Frequency Dictated by Regulation - Samples collected by MCBCL personnel -
		Analysis performed by Contract Laboratories - Results forwarded to State by laboratory -
		Data located at Public Water Supply, NCDENR website "Drinking Water Watch"
Drinking Water Program	**5) Monthly Special Sampling at Water Treatment Plants**	Non-regulatory sampling performed voluntarily - Conducted at distribution point at all WTP plants - VOCs/Limited list of SOCs - Began in 2000
Drinking Water Program	**6) Wellhead Management Plans and Associated Sampling Events**	MCBCL voluntarily (not regulatory-required) developed a Wellhead Management Plan which identifies specific management actions, procedures, and plans that will protect both individual wells and the groundwater source. All Wellhead Management Plans are available on EMD's Shared S Drive. This information will soon be available on the EM Portal. All 1992/1993 drinking water supply well sampling performed for the original wellhead management plan are also available.
Stormwater Program	**7) Stormwater Analytical Sampling**	Required by MCBCL Phase I Stormwater permit - Includes visual observation data (VOPS) & sample results from permit-specified locations - Data compiled & forwarded to NCDENR - Database available with sampling & VOPS information
Wastewater Treatment	**8) Monthly Wastewater and River Sampling**	Required by NPDES WW permit - NPDES report consists of daily sample results which are analyzed by both the MCBCL EMD laboratory & contract laboratory/ River Report provides sample data collected from various locations in New River during months of April - October/Toxicity Report consists of quarterly monitoring data on the WWTP effluent to determine if the discharge inhibits the growth of Mysid Shrimp - Report data compiled & forwarded to NCDENR - Data stored in LabTrak
Landfill Monitoring Program	**9) Landfill Monitoring Reports for Closed and Active Landfills**	In accordance with Solid Waste Management rules, MCBCL is required to sample all active and closed landfill monitoring wells on a semi-annual basis to ensure landfill contaminants are not leaving the site. These reports are available on the EM Portal.

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Wastewater Treatment	**10) Land Application (Wastewater Residuals) Reports**	Land Application Reports are provide to NCDENR and EPA on an annual basis. These reports provide compliance analytical monitoring information for wastewater sludge in accordance with MCBCL's Residuals Application Permit. This information is available on the EM Portal.
Drinking Water Program	**11) Lead and Copper Materials Survey**	Initial survey conducted in 90s which evaluated MCBCL's various DW distribution systems & identified locations for lead/copper sampling.
Drinking Water Program	**12) Analysis of Water Coolers for Lead**	The purpose of this project was to identify any water coolers at MCBCL with a lead content above the Environmental Protection Agency (EPA) designated limit of 15 (ug/l). This 1992 study is available in hard copy form.
Compliance Monitoring	**13) Oil Water Separator Inventory**	The Oil Water Separator Inventory provides a list of all active and inactive oil water separators basewide. This study contains as-built drawings of each separator location and also provides upgrade recommendations.
USGS Studies	**14) Castle Hayne Aquifer Monitoring (19 Monitoring Well Sites Base-wide)**	In 2007 MCBCL initiated and funded a contract with USGS to maintain a groundwater level and conductance monitoring network for the Base. Camp Lejeune's network of groundwater monitoring wells is comprised of 19 wells Base-wide. Data gathered from these wells will provide a basis for measuring short and long term fluctuations in aquifer water levels and water quality as a result of the groundwater withdrawal practices of neighboring large volume water suppliers. Both the USGS and MCBCL will work together in an effort to assess hydrologic conditions and determine critical groundwater level and conductance conditions. Data is available on the USGS website http://wdr.water.usgs.gov
Drinking Water Program	**15) Labtraks**	Database for collection of in-house drinking water and wastewater analysis results - Produces monthly reports and annual River Report - Data includes bacteriological sampling results, wastewater NPDES-compliance sample results and data collected during the April-October New River sampling events.
Wastewater Treatment	**16) Wastewater Collection System Database**	This database was developed to satisfy the Wastewater Collection System Permit Requirements. It houses all sanitary sewer overflows, inspections and maintenance that is performed on the wastewater collection system. It is currently stored on the Shared "S" drive and will soon be converted to the EM Portal
Drinking Water Program	**17) Consumer Confidence Reports (CCRs)**	CCRs are developed annually for each water treatment system (except Onslow Beach - Transient non-community system). These reports (1998 - Present) are available in hard copy form and on the EMD website http://www.lejeune.usmc.mil/emd
Drinking Water Program	**18) Local Water Supply Plan**	A Local Water Supply Plan is an assessment of a water system's current and future water needs and its ability to meet those needs. North Carolina General Statute G.S 143-355(1) requires all units of local government that provide or plan to provide public water service to prepare a Local Water Supply Plan and update that plan at least every five years. Camp Lejeune's Local Water Supply Plans are available online at http://www.ncwater.org (passwords can be provided upon request)
Drinking Water Program	**19) Unregulated Contaminants (UCMRs) Sampling Data**	The purpose of UCMR monitoring is to collect contaminant occurrence data to support the U.S. EPA Administrator's decisions regarding whether or not to regulate contaminants, such as those on the Drinking Water Contaminant Candidate List, to protect public health. Sample schedule is set by EPA - Data collected by MCBCL and analyzed by contract laboratories - Results are provided to EPA

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Drinking Water Program/ Onslow Water Resources Initiative	**20) Capacity Use Reports**	NCDENR developed the Central Coastal Plain Capacity Use Area (CCPCUA) in response to lowering water table levels within the Black Creek Aquifer. Although Camp Lejeune supplies it's water from the Castle Hayne Aquifer, which has much faster recharge rates and is not as heavily stressed as the Black Creek Aquifer, the Base was still required to apply for a CCPCUA permit. This permit requires pumping and static water levels are recorded by the Base and provided to NCDENR on a monthly basis. This information is available on the Public Works Shared N Drive.
Wastewater Treatment	**21) Annual Wastewater Performance Report**	Mandated by the North Carolina Clean Water Act of 1999, Session Law 1999-329, owners or operators of wastewater collection or treatment works are required to provide to the users or customers of the collection or treatment works and to the Department of Environment and Natural Resources an annual report that summarizes the performance of the collection system or treatment works and the extent to which the collection system or treatment works has violated the permit or federal or state laws, regulations, or rules related to the protection of water quality. These reports are available in hard copy form and on the EMD website http://www.lejeune.usmc.mil/emd
Drinking Water Program	**22) Other Drinking Water Studies, Plans and Projects**	This covers various studies, plans and projects that are not covered under the categories above. For example, Corrosion Control Studies, Operation and Maintenance Plans, Emergency Management Plans, Emergency Response Plans, etc.
Drinking Water Program	**23) Historical TCE/PCE Drinking Water Analysis Spreadsheet**	This analytical data was compiled from documents discovered to date; primarily the CLW document database and specifically JTC lab reports that exist in several places in the record. This is a draft document that includes errors and duplications due to discrepancies in the record. This draft document has changed over the years based on additional information and requests from various investigators. A copy was provided to ATSDR, GAO and NRC.
		Air Quality Program
Air Quality Program	**1) Air Program Information Management System (APIMS)**	APIMS is used to collect and store data such as material usage data and equipment run-time data that is subsequently used to estimate air emissions. Annual air emissions estimates are logged in NCDENR's web-based application database AERO.
Air Quality Program	**2) Risk Management Plan**	MCBCL is no longer subject to the RMP requirements of 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112r of the Federal Clean Air Act. MCBCL submitted a letter to EPA on 15 May 2008 to de-register from the program.
Air Quality Program	**3) Emergency Planning and Community Right to Know Act (EPCRA)**	Data documenting storage of hazardous materials required for EPCRA 311 and 312 reporting is submitted to NC Department of Emergency Management (NCDEM) on-line through E-plan. Hard copy Tier II forms are prepared for local districts using the Tier2Submit software package. EPCRA 313 Reports or Toxics Release Inventory (TRI) reporting is submitted on-line to EPA's TRI database.
Air Quality Program	**4) Title V Reports**	Semi-annual compliance and annual compliance certification reports are compiled and submitted to NCDENR and EPA as required. These reports summarize MCBCL's compliance status in regards to the Title V Air Permit.
Air Quality Program	**5) Aerospace NESHAP Database/Site Remediation NESHAP Reports**	MCBCL is subject to the Aerospace NESHAP (MACT Subpart GG) and the Site Remediation NESHAP (MACT Subpart GGGGG). Semi-annual compliance reports are submitted to EPA and NCDENR. Aerospace coatings usage data is kept in an Oracle Discoverer database.
Air Quality Program/ Compliance Monitoring	**6) Other Air Quality Documents**	Including but not limited to: NCDAQ evaluation of the toxic air pollutant emissions from combustion sources; and other toxic/hazardous air pollutant modeling documents.

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	AST/UST Program	
UST Program/ Document Repositories	**1)UST Portal**	The UST Portal is a working tool for the MCB UST Program and is used by Marine Corps Base Camp Lejeune, NAVFAC, contractor employees, and others as necessary. The Web Portal began to be developed in 2003 when a contractor scanned all available hard copy reports, files, correspondence, etc. related to the Camp Lejeune UST Program from the Camp Lejeune Environmental Management Department (EMD) Library. Subsequent to 2003, all documents related to the UST Program were added to the UST Portal. These documents still reside in hard copy form in the EMD LUST library. ATSDR has toured and been given access to this library of information on many occasions over the years. Last year when ATSDR began their water modeling efforts of the Hadnot Point Industrial Area in earnest, they requested and were given access to the online web portal version of these documents. ATSDR has never been denied access to LUST program documents.
UST Program	**2) Integrated Contingency Plan**	The ICP combines various federal and state regulatory requirements pertaining to hazardous material spill prevention, response actions, containment, and cleanup into a single source document. The ICP contains information related to active petroleum, oils, and lubricant storage areas as well as spill prevention and containment information.
UST Program/Databases	**3) Terrabase (UST)**	CATLIN maintains Access Database with approximately 700,000 records of analytical data. The time frame of this data stretches from 1984 until January 2010. This database was developed from the Terrabase database that the IR Program provided Catlin back in November 2005 which contained analytical data for the IR Program and some data from the UST program. Since July 2005 CATLIN has been updating our database with analytical data for the "Active" UST Sites (those sites included in the UST Management Program, approximately 15 sites over the past four to five years). Therefore, I believe our database would contain the most comprehensive set of analytical data for the "Active" UST Sites over the past four to five years. NOTE: IR data since 2005 is not included in the UST Terrabase; the IR Terrabase contains all IR data to present.
Document Repositories	**4) CLW Document Database**	The CLW Document Database contains documents collected by MCBCL from 1991 through 2004 relevant to the Historic Drinking Water Issue. Documents included sampling/analytical data, memorandums, reports, letters, briefs, telephone conversations, regulations, guidance, etc. The documents were collected from EMD Utilities, Public Works, and EACO facilities. ATSDR has had the CLW database since at least 2003
Document Repositories	**5) Camp Lejeune Historic Drinking Water (CLHDW) Consolidated Document Repository (CDR), including the Camp Lejeune Document Search and Collection (DSC) Repository**	The Camp Lejeune Document Search and Collection (DSC) Repository contains over 6000 documents collected by Booz Allen Hamilton (Booz Allen) in an independent document recovery effort undertaken in 2006. Leveraging a diverse team that included subject matter experts in records and information management and in environmental issues, the Booz Allen team searched over 700 buildings aboard MCBCL, following established methodology and search criteria; documents were selected if they were dated between 1942 and 1987 and contained certain keywords or matched specific document types. ATSDR participated in the project kickoff meeting and provided input on the date range used in the search. The Camp Lejeune DSC Repository is a part of the larger Camp Lejeune Historic Drinking Water (CLHDW) Consolidated Document Repository and accompanying database that contains over 8000 documents and is currently maintained by Booz Allen personnel aboard MCBCL. ATSDR has been briefed on the Booz Allen efforts, provided indexes of the Consolidated Document Repository, and given access to the documents throughout all document search, collection, and custodianship initiatives.

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UST Program	**6) Other UST Studies, Plans and Projects**	Includes, but is not limited to, the Active Tank Mngt Program which tracks Operating Permits, Veeder Root operations, Tank Inspections, Cathodic Protection Evals, Tightness Testing, Leak detection, Repairs, and Operator Education for all active USTs aboard MCBCL; and Sample/Analysis Data from Water Supply Well 642 which is a well that was removed from service in summer of 2009. It was the closest (~2000') to the HPFF and we sampled/analyzed/reported to NCDENR on a monthly basis per the HPFF P&T Operating Permit since 2006.
UST Program/ Document Repositories	**7) Camp Lejeune EMD Libraries**	Hard copy repository of UST Program reports and documents. This repository was a source of information for the UST Portal document library.
	Installation Restoration Program	
IR Program	**1) Installation Restoration Program Administrative Record**	Official Electronic database containing copies of reports, permits, letters, etc. associated with environmental restoration on Base (IR, SWMU & MMRP). Official copy maintained by Navy. The IRP Administrative Record has been publicly available since 1992.
IR Program/Databases	**2) Terrabase Database (IR)**	Electronic (Access) database containing electronic data from past and present sampling events on Base. TerraBase is a software program used to query information from the Access storage area. Although MCBCL has maintained a copy of the database in the past, the Terrabase program was not approved for use under NMCI. CH2M Hill (Navy's IR CLEAN contractor) maintains the up-to-date copy of the electronic database (IR, SWMU, MMRP and some PSW data). ATSDR was aware of database and was recently sent a copy.
IR Program	**3) Range Environmental Vulnerability Assessment (REVA)**	Report completed August 2009 documenting sampling events associated with operational ranges on MCBCL. This report has been publicly available since Sept, 11, 2009 at website http://www.lejeune.usmc.mil/reva/
IR Program	**4) Basewide Vapor Intrusion Assessment**	Report completed November 2009 documenting groundwater, soil, soil vapor and indoor air sampling events associated with assessing potential vapor intrusion issues on MCBCL. Report sent to ATSDR December 16, 2009.
IR Program/ Databases	**5) Partnering Enterprise Database**	Internal IR Partnering Team (MCBCL, NAVFAC, EPA, NCDENR and contractors) used to share information (draft reports for review, sampling data, tech memos, etc.). Not an official database but the partnering team does maintain recent data in this database for easy access. The Navy's official copy of the Administrative record still maintains the Final copies of any submittals.
IR Program/ Databases	**6) Naval Installation Restoration Information Solution (NIRIS)**	Recently developed Navy database used to share information within the entire Navy. The Navy's official copy of the Administrative Record is accessed through NIRIS. The development of NIRIS is not yet complete.
IR	**7) Perchlorate Database -**	Electronic database maintained by the CNO and HQMC containing perchlorate sampling data for MCBCL required by DoD. MCBCL began entering Perchlorate Data into database in 2004.
IR Program	**8) Solid Waste Management Unit (SWMU) Program Reports -**	Final reports maintained in Administrative Record. These RCRA reports are also maintained by the NCDENR as required by the Base Hazardous Waste Management Permit.

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IR Program	**9) Reports not in Admin Record - Includes, but is not limited to, the following:**	
	a) Final Radiological Survey Report - 10/29/2007 (Not	Report documenting the assessment of three areas on Base reportedly used for testing or disposing of low-level radiological material. The project was contracted through the Navy Radiological Affairs Support Office and funded by MCBCL
	CERCLA related) **b) Final Radiological Investigation Report for the** **Former Naval Medical Research Facility Laboratory (FNMRFL) - 9/25/2009 (Not CERCLA related)**	Report documenting the assessment of the FNMRFL on Base reportedly used for testing (and nearby disposal activities) of low-level radiological material. The project was contracted through the Navy Radiological Affairs Support Office and funded by MCBCL. This report is an addendum to the Draft Expanded Site Inspection Report for the Wallace Creek MILCON Area (12/30/09) which will be included in the Admin Record once finalized.
	c) Draft Base Boundary Report for Potential Off-Base	Currently in the review process by the Navy and MCBCL. Assessment initiated to determine if off-Base industrial activities near the boundary of the Base have affected the environment on Base. Will be included in Admin Record once finalized.
IR Program/ Document Repositories	**Contamination Encroachment - February 2010 -** **10) Camp Lejeune EMD Libraries**	Hard copy repository of various CERCLA and RCRA reports and documents.
	Asbestos Program	
Asbestos	**1) Quarterly Asbestos Waste Shipment Records**	NC statues require a copy of all North Carolina Waste Shipment Records (DHHS Form 3787) to be provided to the Health Hazards Control Unit pursuant to 10A North Carolina Administrative Code (NCAC) 41C .0605(j). All permitted Waste Shipment records are sent to the Health and Hazards Control Unit every quarter.
Asbestos	**2) MCBCL Asbestos Management Plan**	Required by 40CFR 763 Asbestos Hazard Abatement and Reauthorization Act of 1992 (ASHARA) - Provides guidance for managing asbestos containing materials aboard MCBCL.
Asbestos	**3) Asbestos Building Surveys**	Buildings are initially inspected for asbestos in areas where workers could become exposed - Once initial surveys are completed, buildings are inspected on a triennial period and quarterly reports are provided to the Asbestos Program Manager (APM) -Deficiencies on the report are given to PWD Operations for immediate action - Buildings surveyed are posted with asbestos surveys and drawings indicating what types and the locations of the asbestos containing materials in each building. Warning labels are also posted so building occupants and maintenance workers are aware of the hazards in the workplace.
	Hazardous Waste Program	
Hazardous Waste	**1) NCDENR Biennial Hazardous Waste Report**	NCDENR requires that MCBCL submit their Biennial report detailing quantities of hazardous waste generated and practices implemented to minimize HW aboard the installation.
Hazardous Waste	**2) NFESC Hazardous Waste Annual Report**	In accordance with MCO 5090.2A, Marine Corps installations are required to collect and submit hazardous waste data utilizing the EPRPortal. Reports are due during the month of March to HQMC and NFESC.
Hazardous Waste	**3) Hazardous Materials Management System (HMMS)**	HMMS is an Oracle-based relational database program that operates on a UNIX server and uses the depot's local area network (LAN). Its user can, in most cases, access it through existing PCs. Using bar-codes, HMMS maintains an inventory and visibility not only of HAZMAT, but of chemicals being used aboard the Base. It tracks the issue of HAZMAT to a workplace through its disposal at EMD. It allows managers to control and limit HAZMAT issue to authorized users and control or minimize the quantity of HAZMAT issued for specific uses and operations.

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Hazardous Waste	**4) Annual PCB Datacall**	Annual report required by MCO P5090.2A that is centered around the elimination of PCBs and the compliance with Federal, state and local regulations.
Hazardous Waste	**5) Associated Hazardous Waste Documents**	Includes manifests for regulated and non-regulated hazardous waste/material transfers, hazardous waste profile sheets and sampling/analysis data of wastes, materials and unknowns
Naval Hospital Associated Program Documents		
Naval Hospital	**1) Preventive Medicine Sanitation - Ice and Water Sample Database**	Data from monthly sampling/analysis - Indicates the presence or absence of bacteriological Coliform
Naval Hospital	**2) Preventive Medicine Sanitation - Quarterly Water Plant Sanitation Inspections**	Allows the Preventive Medicine Department the opportunity to conduct an assessment of the broad operations involved with the overall function of the facility
Naval Hospital	**3) Industrial Hygiene - Industrial Hygiene Periodic Surveys/Reports**	Conducted throughout commands aboard MCBCL - Identifies chemical and physical occupational hazards, personal protective equipment, recommended control measures, and recommendations for Occupational Safety and Health Medical Surveillance Programs - Reports provided to commands
Naval Hospital	**4) Industrial Hygiene - Workplace Monitoring Database**	Contains monitoring results for identified occupational hazards {chemical hazards, physical hazards, ventilation measurements, and indoor air quality (temperature, humidity, and carbon dioxide)
Other Documents of Potential Interest		
NEPA	**1) Integrated Natural Resource Management Plan/Integrated Cultural Resource Management Plan**	Management plans directing Camp Lejeune's environmental conservation programs
NEPA	**3) National Environmental Policy Act (NEPA) Documents**	Documents concerning environmental review and impacts of proposed actions at Camp Lejeune.
NEPA	**3) Noise Studies**	Studies relating noise and military training: 2009 Air Installation Compatible Use Zone, MCASNR. Draft Range Compatible Use Zone, MCBCL.
NEPA	**4) Defense Coastal Estuarine Research Program**	10 year ecological study of Camp Lejeune's coastal environment and military mission, funded by OSD/SERDP.
IR Program	**5) Environmental Condition of Property (ECP) Documents**	Documents used in conjunction with Real Estate transactions providing the environmental condition of the property before lease or transfer.
EMS	**6) Environmental correspondence archives**	Read files, permanent files and scanned copies of official correspondence, including EM Portal and S Drive file
Public Works Division Technical Records and Engineering Documents		
Public Works	**1) Filemaker Pro Project Database**	Filemaker Pro is a database of engineering projects, designs, and studies in the Public Works Division. The database is used to provide access to records drawings for construction and repair of facilities throughout MCBCL and MCASNR. All files are a remote server.
Public Works	**2) Technical Records Vaults in Building 1005**	Hard copy and electronic files (discs and CD) are kept in two "vaults". Filemaker Pro is used locate/access the files. Most record drawings created prior to electronic media have been scanned and saved as an electronic file.
Public Works	**3) Transformer disposal records**	Documentation for disposal of transformers beyond service life.
Public Works	**4) Facilities Integration Website**	Database for submission, approval, and funding of major facility repair projects, design approvals, minor construction, and environmental projects.
Public Works	**5) MAXIMO Maintenance Management System**	Software and database for managing maintenance and repair to all facilities at MCBCL and MCASNR.

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Public Works	**6) Installation Geospatial Information & Services (GIS) Database**	Geodatabase of all geographic and facilities information for MCBCL and MCASNR. The database consists of approximately 295 layers that include Camp Lejeune and Oak Grove. Of these layers, 3 are DPS/Fire, 115 are Environmental, 7 are IDD/Planning, 4 are Logistics, 111 are Public Works (Infrastructure/Utilities), 33 are Military/Operations, and 22 are Miscellaneous. The database also maintains 54 layers that fall outside of Camp Lejeune: 42 are environmental, 7 are Public Works, 1 is Military/Operations, and 4 are Miscellaneous. There are 64 layers in the Sensitive database: 5 are Base Telephone, 8 are Public Works, 49 are Environmental, and 2 are IA.
Public Works	**7) PR Builder**	Supply system software for purchase of materials and supplies for use in utility production and maintenance activities.
Public Works	**8) Utilities Operations Report**	Records of all utilities produced, purchased, distributed, and sold for the installation. Includes all fuel consumption data.
Public Works	**9) Steam plant fuels sulfur content records**	Records of coal and fuel oil sulfur contents delivered to steam plants.
Public Works	**10) Steam plant chemical receipts**	Documentation of all boiler water treatment chemical delivered to steam plants.
Public Works	**11) Public Works Division correspondence and programs documentation**	Read files, permanent files and scanned copies of official correspondence. Contract, design, engineering studies, maintenance and repair records, and facility projects.
Public Works	**12) iNFADS**	The Internet Navy Facility Assets Data Store (iNFADS) is the Real Property Inventory (RPI) for the DON. This enterprise system includes all of the data necessary to support RPI, Planning, and acquisition for the Navy and Marine Corps. iNFADS has been operations since 2001.
		Weather Data
	1) MCAS Air Station	Collects precipitation data, temperature, relative humidity, wind speed and direction, and pressure. Data is kept for approximately 1 month. If needed, data request must go through the MCAS weather station.
	2) EMD Forestry	Collects precipitation data, temperature, relative humidity, wind speed and direction, and pressure. Data is available from the Greater Sandy Run Area from February 2003 through present. This data is available on-line at the RAWS USA Climate Archive http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?laNSND). Data is available from Mainside October 1997 through August 2005. If needed, data request must go through EMD.

Appendix 6 - List of Information and Data Compiled by ATSDR Prior to Workgroup

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
ATSDR information (requests and authored reports)					
ATSDR information request, 11 July 2003	CD-ROM	Camp Lejeune	CD-ROMs with numerous files,	Final Basewide Remediation Assessment Groundwater Study (Baker 1998); GIS data for Camp Lejeune; historical water-supply well data from wellhead management program study (Geofex Ltd. 1991); wellhead protection plan update (AH Environmental 2002); historical water treatment plan booster pump information (Van Oesen and Associates 1979)	Aug. 2003 (varies)
ATSDR information request, 2004	CD-ROM, DVD	Camp Lejeune	About 25 gigabytes	Natural color digital orthophotography; data layers maintained in the integrated geographic information repository (IGIR) master database, Feb. 2004; TIFF files	Nov. 2004 (Feb. 2004)
ATSDR information request, 2005	Paper	Camp Lejeune	12 pages	Documentation for startup of Holcomb Boulevard water treatment plant; acquisition data form, April 1973; plant account record card, July 1990; Newspaper (Globe) article, August 1972; Command chronology, July-Dec 1972	Sep. 2005
ATSDR information request, 1 December 2005	CD-ROM	Camp Lejeune	3 CD-ROMs	VOC impacted drinking water document database (CLW database); TCE/PCE sample result summary spreadsheet; JTC historical laboratory analytical results (subset of CLW database, about 34 files)	Dec. 2005 (1980-1986)
ATSDR information request, 2006	CD-ROM, DVD	Camp Lejeune	1 CD-ROM,1 DVD	Natural color digital orthophotography of entire base, Feb. 2004, Mr. SID image format; color infrared color digital orthophotography of entire base, Mar. 1996, Mr. SID image format;	Sep. 2006 (Nov. 2004; Mar. 1996)

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
ATSDR information request, May 2009	CD-ROM, DVD, paper	Camp Lejeune	CD-ROM, DVD, paper	186 documents (PDFs) from the Consolidated Document Repository (f/k/a BAH files); 31 sets of contract drawings from Public Works vault; Raw Water Master Pan (AH Environmental 2005); Draft USGS Groundwater Modeling Report (USGS 2009); Permit to Construct Municipal Solid Waste Landfill (Dewberry and Davis 1995); Evaluation of Cogdell's Creek (CH2M Hill, Inc. 1998); Corrosion Control Study, Hadnot Point and Marine Corps Air Station (MCAS) New River (Malcolm Pirnie 1999)	July 2009 (varies)
ATSDR information request, Nov. 2009	CD-ROM	Camp Lejeune	1 CD-ROM (about 160 megabytes)	Site Management Plans for 2007, 2009, and 2010	Dec. 2009 (Apr. 2007-Aug. 2009)
Hadnot Point-Holcomb Boulevard reports	Paper; electronic (PDF)	ATSDR http://www.atsdr.cdc.gov/sites/lejeune/watermodeling.html	One report and map plate (Chapter C) to date, about 13 megabytes	Analyses of selected contaminants within the service areas of the Hadnot Point and Holcomb Boulevard water treatment plant areas and vicinities Camp Lejeune; among contaminants of interest in this report series PCE, TCE, benzene, and vinyl chloride	Oct. 2010 (1940s-2004)
Public Health Assessment for ABC One-Hour Cleaners	Paper	ATSDR records room and LAN	1 folder in records room	Administrative records for 1990 public health assessment; 1996 site review and update also available	Aug. 1990; Sep. 1996 (Aug. 1990; Sep. 1996)
Public Health Assessment for Camp Lejeune	Paper	ATSDR records room and LAN	52 folders in records room and numerous electronic files	Administrative records for 1997 public health assessment	Aug. 1997 (Aug. 1997)
Tarawa Terrace reports	Paper; electronic (PDF)	ATSDR http://www.atsdr.cdc.gov/sites/lejeune/watermodeling.html	Executive summary report and 9 report volumes (Chapters A-I); about 100 megabytes	Analyses of the Tarawa Terrace drinking water system at Camp Lejeune that was contaminated with PCE and its degradation by-products from the nearby, off-base, ABC One-Hour Cleaners	2007-2009 (1950s-1994)
Databases and information portals					

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
ABC One-Hour Cleaners site reports	Paper; electronic (PDF)	U.S. EPA web site: http://www.epa.gov/region4/waste/npl/nplnc/abc1hrnc.htm	About 25 electronic files (PDF), 125 megabytes	Reports primarily related to CERCLA activities at ABC One-Hour Cleaners site; files vary in size from a few pages to several hundred pages	2003-2007 (1986-2007)
Camp Lejeune water document (CLW files)	CD-ROM	Camp Lejeune	About 574 megabytes; about 1,100 files	Documents, handwritten notes, reports, lab analyses primarily related to water supply, distribution, and water quality issues; files vary in size from a few pages to several hundred pages	Dec. 2005 (varies)
CERCLA administrative record for ABC One-Hour Cleaners	Paper and electronic (PDF)	USEPA web site: http://www.epa.gov/region4/waste/npl/nplnc/abc1hrnc.htm	About 100 files listed on CERCLA administrative record index	Documents, handwritten notes, and reports primarily related to CERCLA activities at ABC One-Hour Cleaners site; files vary in size from a few pages to several hundred pages	2003-2007 (1986-1994)
CERCLA administrative record for Camp Lejeune	Hard drive (provided by Camp Lejeune)	Baker Engineers, Inc. , web portal; http://www.bakerenv.com/camplejeune_irp	About 15 gigabytes; about 3,700 files	Documents, handwritten notes, and reports primarily related to installation restoration program sites at Camp Lejeune; files vary in size from a few pages to several hundred pages	Jan. 2006 (varies)
Consolidated repository index	Electronic (PDF)	Camp Lejeune	514 pages (index only); about 8,000–10,000 documents	The index (f/k/a BAH index) is a list of documents compiled from a base-wide search of buildings and documents; a single index entry may reference several boxes to tens of boxes of documents and information records	Apr. 2009 (varies)
Environmental Management Division (EMD) document index	Electronic (MS Excel; PDF)	Camp Lejeune	Hundreds to thousands of reports and documents	Reports and documents related to base IR program, wastewater, drinking water, surface water, groundwater, indoor air quality, vapor intrusion, solid waste, landfill activities, environmental conservation, compliance, wellhead management, etc.	2003-2010 (varies)
Terrabase—Installation restoration (IR) sites	CD-ROM (MS Access)	CATLIN /Camp Lejeune	About 1.3 million records of analytical data	Analytical data associated with base IR program provided to CATLIN by Camp Lejeune; IR data derived from other source documents	Apr. 2010 (1984-2010)

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
Terrabase—Underground storage tank (UST) sites	CD-ROM (MS Access)	CATLIN /Camp Lejeune	About 700,000 records of analytical data	Time frame of data is 1984 to 2005. Database developed from database provided to CATLIN by Camp Lejeune during November 2005; contains analytical data for UST sites	Mar. 2010 (1984-2005)
Underground storage tank (UST) files	Electronic (Web portal)	Camp Lejeune; CATLIN Engineers and Scientists http://lejeune.webmainframe.com	1,535 files	Information, site data, meeting minutes, monitoring data, etc., related to all UST sites and activities at Camp Lejeune; files vary in size from a few pages to exceeding 1,000 pages	Mar. 2010 (1986-2009)
Drinking-water system information and data					
AH Environmental reports on drinking-water systems	Paper	Camp Lejeune	5 reports, about 200 pages	Cataloging and information gathering of drinking-water systems at Camp Lejeune; reports are: (1) Long Term Water System Master Plan (Dec. 2001), (2) Wellhead Protection Plan–2002 Update (Aug. 2002), (3) Water Distribution System Modeling Support (Aug. 2004), (4) ATSDR Support—Estimation of VOC Removal (Dec. 2004), and (5) Meter Installation Work Plan (Dec. 2004)	Aug. 2003–Dec. 2004 (2001–2004)
Golf course watering information	Paper	Camp Lejeune	5 electronic files	Scanned images (PDFs and TIFFs) of golf course sprinkler locations and information	Sep. 2010 (Mar. 1969; Aug. 1991; Jun. 1993)
Pump rating curves	Paper	Camp Lejeune	4 pages	Pump rating curves for finished water pumps at Hadnot Point and Holcomb Boulevard water treatment plants	Mar. 2004 (~1985?)
Survey of selected water-distribution system locations	Electronic (MS Excel)	U.S. geological Survey, North Carolina Water Science Center	27 fire hydrants and 7 water-storage tanks	Horizontal and vertical data survey data for selected hydrants and water storage tanks	May-Jul 2004 (May-Jul 2004)
Survey of selected water-distribution system locations	Electronic (MS Excel)	Parker and Associates (subcontractor to Eastern research Group, Inc.)	56 fire hydrants, 21 monuments, and 6 water-storage tanks	Horizontal and vertical data survey data for selected hydrants and water storage tanks	Oct. 2004 (Oct. 2004)

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
Water treatment plant flow data	CD-ROM	Camp Lejeune	About 100 megabytes	2-minute supervisory control and data acquisition (SCADA) data for various times during 2004-2005	2004-2007 (Mar. 2004-Sep. 2005)
Water treatment plant flow data	Electronic (MS Excel); paper	Camp Lejeune	About 15 megabytes	Daily and monthly flows from water treatment plants; 1995-1999 in paper format; 2000-2005 in electronic format	2004–2009 (1999–2005)
Water utility maps	CD-ROM; paper	Camp Lejeune	About 100-150 files, 500 megabytes	Historical (1956-1987) water utility maps, scanned in as TIFFs, showing water-distribution systems aboard Camp Lejeune	July 2006 (1956-1987)
Water utility and housing maps	CD-ROM	Camp Lejeune	About 500 files, 525 megabytes	Historical (1940s and 1950s) water utility and housing maps, scanned in as TIFFs, 50-ft and 500-ft scales	Oct. 2003 (1940s-1950s)
Water plant log books	Paper	Camp Lejeune	About 2,100 pages	CLW files 6610.pdf - 8761.pdf; handwritten entries in water utility log books containing information on mechanical repairs, water-supply operations, operation & maintenance manuals, water-quality issues, and customer contacts and complaints	Dec. 2005 (varies)
Water-supply wells capacity data	Paper	Camp Lejeune	About 110 wells	Historical and present-day notes, information and data on operations and capacity histories of Tarawa Terrace, Holcomb Boulevard, and Hadnot Point water-supply wells	Aug. 2003–Aug. 2010 (1940s–2010)
Water-supply well operations data	CD-ROM	Camp Lejeune	10,000 scanned pages	Ten years of daily records, 1999-2008, indicating water-supply well on-off cycling operations—handwritten entries	2009 (1999–2008)
Housing records and information					
Housing maps	Paper	Camp Lejeune	About 10 maps (sheets)	Paper maps that show housing units, addition of housing units, and estimated number of housing units	Date unknown (1940s-1990s)
Housing records	Paper	Camp Lejeune	About 90,000 records	Camp Lejeune housing records used for identifying enlisted and officer personal housing locations; used for small for gestational age study (ATSDR 1998)	About 1994 (1950s-1995)
Mapping information and data					
Airborne laser digital imagery; spatial data, Onslow County, NC	DVD	Spectrum Mapping Corporation, North Carolina	44 DVDs (about 170 gigabytes)	Digital orthophotographs of Onslow County, North Carolina	Nov. 2004 (Feb. 2003?)

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
AutoCAD files	CD-ROM	Camp Lejeune	About 100 megabytes; 70 files	Quadrangle maps of Camp Lejeune containing features such as topography, utility lines, waste water and water-distribution systems, housing locations, etc.	Oct. 2003 (1996)
Camp Lejeune survey control data	Paper	Camp Lejeune	1 report (85 pages)	Report on geodetic survey to upgrade and update horizontal control aboard Marine Corps Base Camp Lejeune	2005 (Sep. 1984)
Digital elevation model (DEM) data	DVD	U.S. Geological Survey, North Carolina Water Science Center	1.9 giagbytes	LIDAR-derived DEM data for Camp Lejeune area, 20-ft and 5-ft grids; obtained from the NC Flood Mapping Program	Jan. 2004; Aug. 2010 (--)
Digital topographic contour data	CD-ROM	U.S. Geological Survey, North Carolina water Science Center	650 megabytes	2-ft contours created from the 20-ft LIDAR-derived DEM, available from the N.C. Flood Mapping Program; projection is NC State Plane, NAD83, units feet	Feb. 2004 (--)
Geographic information system files	CD-ROM; DVD	Camp Lejeune	Several dozen CD-ROMs and DVDs	Installation geospatial information and historical satellite imagery files	Aug. 2003-Jul. 2009 (1938-Jun. 2009)
North Carolina documents and reports					
Central Coastal Plain Capacity Use Investigation Report	Electronic (PDF)	NCDENR, Division of Water Resources	1 report (24 pages)	Report describing the central coastal plain capacity use area under the 1967 Water Use Act	Nov. 2003 (Nov. 1998)
Detailed soil maps for Onslow County, NC	CD-ROM	North Carolina Center for Geographic Information and Analysis	52 megabytes	Detailed digital soils maps for Onslow County, North Carolina	Apr. 2005 (2003-2004)

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
North Carolina water-supply plan	Electronic (PDF)	North Carolina Department of Environment and Natural Resources (NCDENR)	1 report and 20 appendixes (about 150 pages)	Compilation of over 500 water-supply plans developed by local government water systems to assess water-supply needs over the next 20 years; report dated January 2001 and based on local water-supply plans developed during 1998 and 1999	Nov. 2003 (1998-1999)
State of North Carolina Records	CD-ROM, DVD, paper	NCDENR and historical archives in Raleigh and Wilmington	5 CD-ROMs, 1 DVD, (historical files unknown) [1]	Historical and present-day water-supply information ; water-supply well construction information; site information for Hadnot Point fuel farm (IR site 22) and Hadnot Point industrial area (IR site 78)	Mar. 2004; Jun. 2010; Aug. 2010 (1980–2007)
State of North Carolina vital statistics data files	Paper	NCDENR	1 report (116 pages)	Documentation of North Carolina vital statistic data files available for public use	Unknown (Oct. 1993)
Miscellaneous information, data, and reports					
Community group web sites	Electronic	http://www.watersurvivors.com http://www.tftptf.com/	N/A	Former marines and citizens web sites containing miscellaneous information and numerous Camp Lejeune documents (current and historical). Historical obtained from the U.S. Marine Corps through Freedom of Information Act (FOIA) requests	N/A (N/A)
Onslow County Soil Survey	Paper	U.S. Department of Agriculture, Soil Conservation Service	1 report (152 pages)	Information that can be used for land-planning programs in Onslow County; report contains predictions of soil behavior for selected land uses.	May 2003 (1982)
Specific DON and USMC reports	CD-ROM; electronic (PDF); paper	Camp Lejeune	10-15 volumes	Base Master Plans (1984, 1988); Water Conservation Study (1999); Site Management Plans (2005-2010); REVA report (2009); Vapor Intrusion report (2009)	2005-2010 (1984-2009)
Technical Memoranda	Electronic (PDF)	Camp Lejeune	Several electronic files	SWMU350, IR site 88, AOPCs (9, 10, 11)	May 2010 (Mar.-May 2010)

ATSDR information sources for water-modeling analyses, U.S. Marine Corps Base Camp Lejeune, North Carolina, compiled by ATSDR prior to the Camp Lejeune Data Mining Technical Workgroup					
Information source	**Original media**	**Supplier or location of information source**	**Approximate quantity or size**	**Description**	**Date obtained (date of information)**
U.S. Geological Survey (USGS) open files and reports	Paper	USGS, North Carolina Water Science Center, Raleigh	Several hundred to thousand pages; published reports	Files on well construction, well locations, and water use at Camp Lejeune; published reports on Camp Lejeune	Mar. 2004 (1940s-1987)
National Climatic Data Center (NCDC) http://www.ncdc.noaa.gov/oa/ncdc.html	Electronic	NCDC, Ashville, NC	6 files, about 6 mb	Precipitation and evaporation data for the Hoffman/Maysville station, NC	Dec. 2008 (Dec. 1945-Dec. 2008)
National Geophysical Data Center http://www.ngdc.noaa.gov/	Electronic	NGDC, Boulder, CO	4 files, about 600 kb	Bathymetry survey data for New River area of Camp Lejeune, NC (5 surveys: H04697 (1927), H05277 (1933), H05301 (1933), H05302 (1933), and H09882 (1980)	Dec. 2008 (1927, 1933, 1980)
Vapor intrusion activities	Electronic (PDF); paper	USEPA; NAVFAC (Camp Lejeune)	Several reports including one, 6-volume report	Reports describing vapor intrusion activities at ABC One-Hour Cleaners, Tarawa Terrace Elementary School, and Camp Lejeune (Mainside)	2007-2009 (2007-2009)

[1]In searching the historical archives in Raleigh, North Carolina, information contained in files folders dated 1969–1989 were missing.

List of abbreviations and acronyms: ATSDR, Agency for Toxic Substances and Disease Registry; BAH, Booze Allen Hamilton; CD-ROM, computer disc, read-only memory; CERCLA, Comprehensive Environmental Response, Compensation, and Liability Act of 1980; CLW, Camp Lejeune water document; DEM, digital elevation model; DON, Department of the Navy; DVD, digital video disc; f/k/a, formerly known as; FOIA, Freedom of Information Act; GIS, geographic information system; IGIR, integrated geographic information repository; IR, installation restoration; LIDAR, line detection and ranging; N/A, not available; NAVFAC, Naval Facilities Engineering Command; NC, North Carolina; NCDENR, North Carolina Department of Environment and Natural Resources; PCE, tetrachloroethylene; PDF, portable document file format; PHA, public health assessment; SCADA, supervisory control and data acquisition; SWMU, solid waste management unit; TCE, trichloroethylene; TIFF, tagged image file format; USEPA, U.S. Environmental Protection Agency; USGS, U.S. Geological Survey; USMC, U. S. Marine Corps; UST, underground storage tank

Appendix 7 - Former USMC Employee's Written Response to Workgroup Questions Regarding 1984-5 Camp Lejeune Drinking Water Sampling Activities

Camp Lejeune Historical Dose Reconstruction Project

Clarification Questions and Answers from Ms. Elizabeth A. Betz

Former USMC Employee

December 10, 2010

Background: The Camp Lejeune Data Mining Technical Workgroup is a joint effort between the US Department of the Navy (DON) and the Agency for Toxic Substances and Disease Registry (ATSDR). It was established to complete the necessary activities associated with the identification, review and exchange of documents, data, and information collected by DON. The Workgroup has identified some information gaps regarding the 1985 drinking water sampling activities conducted at several of the Camp Lejeune drinking water systems. Ms. Elizabeth A. Betz, former US Marine Corps Camp Lejeune employee and currently an employee of the US Environmental Protection Agency may be able to provide information regarding those sampling activities. The following written questions were provided to Ms. Betz in the effort to fill the information gaps. She provided the following responses to the questions from the Workgroup. DON and ATSDR greatly appreciate any information or clarifications that Ms. Betz provided.

Please refer to the documents listed below to address the following questions:

- Letter of 24 Jan 1986: "ANALYSIS OF DRINKING WATER SYSTEMS ABOARD CAMP LEJEUNE/MCAS NEW RIVER" and its enclosures (CLW 1406).
- JTC Analytical Reports (CLW 5849 and JTC Reports_1986).

Question 1: *Regarding the drinking water analytical lab summary sheets for November and December 1985, do you recall who conducted the analyses? Do you recall who authored the enclosures?*

The analysis was done by the contract laboratory of the Naval Facilities Engineering Command – Atlantic Division (LANTDIV) which based on the enclosed laboratory reports was JTC Environmental Consultants, Inc out of Rockville Maryland at the time. Obviously, the transmittal letters from LANTDIV were generated by LANTDIV and enclosed the JTC laboratory reports. The Memorandum to the Environmental Engineer was generated by my supervisor at the time, Danny Sharpe. I prepared the summary of the Volatile Organic Analysis (VOA) analysis that had been conducted on weekly sampling of the two water treatment plants, Hadnot Point and Tarawa Terrace for the last half of 1985. To the best of my recollection, these weekly samples were collected at the distribution pump in each of the plants.

Question 2: *Regarding the 19 November 1985 Hadnot Point Water Treatment Plant (WTP)analytical lab summary report, what was meant by the handwritten remarks "not representative" that appear next to the analyses result (Benzene 2,500, Methylene Chloride 2,600, Toluene100)?*

The "not representative" was meant the since the previous five months had shown not even trace amounts of these chemicals the result was suspicious especially as the next two weekly samplings did not show anything.

Question 3: *Do you recall where the November and December 1985 drinking water samples were taken at Hadnot* Point WTP*? If so, please describe the sampling locations.*

As I recall, the samples were taken from a spigot located at the distribution pump. Most plants had spigots located at a laboratory bench for running their water quality samples and some also had spigots at the distribution pump as well. The Hadnot Point weekly samples were collected at the distribution pump, not at the sink.

Question 4: *Do you recall whether any additional sampling or other types of investigations were conducted to identify the cause of the Hadnot Point WTP benzene and methylene chloride detections found in the 19 November and 10 December 1985 results? If so, please provide as much detail as possible (e.g., types of investigations and results).*

I do not recall any other types of investigations into the Hadnot WTP benzene and methylene chloride.

Questions 5: *Do you recall whether any samples were collected at Holcomb Boulevard WTP at the same time that samples were collected at the other WTPs (e.g., Hadnot Point)? Please explain the rational for the decision and any summary of the results.*

The ground water contamination was initially found in November 1984, because a Hadnot Point well near the fuel farm was sampled as part of NACIP. As a result of the contamination in that well, in December, we started sampling other wells near that well and the fuel farm. As more wells were found contaminated the sampling areas expanded. All contaminated wells found in December 1984 were serving the Hadnot Point Plant.

As a precaution, a decision was made, initiated by Danny Sharpe, to sample all of Camp Lejeune's WTPs and their supply wells. This sampling may have started as early as December 1984 and was mostly completed in January 1985. While all the systems and wells were being systemically sampled, one Sunday morning in late January 1985, the Base Chief of Staff's wife complained that her water smelt of fuel. It was discovered that day that the fuel line for the distribution pumps at Holcomb Blvd ran through the wall of the reservoir and then up to the pumps and had developed a leak. The Holcomb Blvd plant was taken off line and the valve that connected the Holcomb Blvd and Hadnot Point water distribution systems was open to supply water to the Holcomb Blvd distribution system. It was my understanding that normally that valve stayed closed and the two systems operated independent of each other. The reservoir at Holcomb Blvd was flushed and samples were collected of the Holcomb Blvd plant, Hadnot Point plant and two points in the Holcomb Blvd distribution system and taken to the North Carolina Department of Human Resources, Division of Health Services Occupational Health Laboratory so that the Holcomb Blvd Plant could be turned back on.

The results from the State laboratory showed that there had to be more contaminated wells in the Hadnot Point well field. And results from LANTDIV's laboratory received at the same time showed that Well HP 651 was contaminated with high levels. Additionally, the system wide sampling found the Tarawa Terrace contamination as well.

Question 6: *Are you aware of any additional sampling conducted at Holcomb Boulevard WTP or system after February 1985? If so, please provide much detail as possible.*

Once the fuel leak was cleaned up and all the systems and wells were identified that had contamination, I do not recall any specific sampling of the Holcomb Blvd system. I also do not recall any Holcomb Blvd supply wells showing any contamination.

Question 7: *During the 11 December 1984 sampling effort, some of the sample bottles were noted as broken. Do you recall if there were any efforts to resample again during December 1984?*

If sample bottles were broken, then additional sampling probably occurred as soon as possible.

Question 8: *Between September 1985 and December 1986, 15 water samples collected at the Tarawa Terrace (TT) WTP returned detections of benzene(1–8 µ/L), which were below the detection limit for benzene (10 µ/L). During this period the Tarawa Terrace WTP received water from TT supply well, raw water from several Holcomb Boulevard supply wells, and possibly from the Holcomb Boulevard WTP. Was any effort made during the period in question to determine the source of the benzene at the TT WTP by sampling the active TT supply wells, the Holcomb Boulevard supply wells or the finished water from the Holcomb Boulevard WTP? What other efforts, if any, were initiated to determine the source of benzene in the TT water supply?*

I do not have any recollection of any efforts that may have been initiated to determine the source of trace amounts of benzene in the Tarawa Terrace WTP.

Appendix 8 – Joint DON/ATSDR Letter Sent to Former DON Drinking Water Laboratory Contractors and Selected Consultants

Camp Lejeune Data Mining Technical Workgroup

U.S. Department of the Navy and Agency for Toxic Substances and Disease Registry

To Whom It May Concern:

The U.S. Department of the Navy (DON) and the Agency for Toxic Substances and Disease Registry (ATSDR) are asking for your assistance in identifying any information, data, or reports that may be of interest for the ATSDR public health activities currently being conducted at the U.S. Marine Corps (USMC) Base Camp Lejeune, North Carolina. We are interested in files and records of any historic Camp Lejeune drinking water sampling results conducted 1995 or prior. We are also interested in any Camp Lejeune environmental investigations (e.g., geohydrologic, drinking water resources, or environmental contamination) you may have conducted 1995 or prior. As a former environmental laboratory, contactor, or environmental consultant to DON or USMC you may have files and records with this type of information. We are requesting that you search your files and records and forward any sampling results and/or list of environmental investigations to:

Ms. Charity Rychak
I&E/EMD/EQB
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

When listing environmental investigations, please include a brief description of the investigation and the titles and dates of associated reports submitted to either DON or USMC.

Please respond by June 17, 2011. **If necessary, we have resources available to assist with managing and/or copying the requested information.** Please contact us if you believe this assistance will be needed. Should you determine that you do not have any Camp Lejeune information, data, or reports, please send a letter indicating that fact and that you have conducted and completed a search for the aforementioned information, data, and reports.

You may direct questions concerning our request to Ms Charity Rychak. Her office telephone number is 910-451-9385 and her e-mail address is charity.rychak@usmc.mil .

Respectfully,

Scott Williams, HQ USMC
DON Lead

RADM Sven Rodenbeck, USPHS
ATSDR Lead

Appendix 9 – March 2011 DON/ATSDR Camp Lejeune Data Mining Technical Workgroup Interim Report and Inventory

Camp Lejeune Data Mining Technical Workgroup
March 2011 Status Report

U.S. Department of the Navy and
Agency for Toxic Substances and Disease Registry

The Camp Lejeune Data Mining Technical Workgroup (Workgroup) is a joint effort between the U.S. Department of the Navy (DON) and the Agency for Toxic Substances and Disease Registry (ATSDR). This Status Report is being provided to DON and ATSDR leadership to document the joint cooperation and accomplishments to date. As set forth in its Charge, the Workgroup's goal is to, "Implement a plan to ensure ATSDR possesses all relevant data and information needed for their health activities."

To achieve this goal, the Workgroup created a five phase Plan of Operation to complete data discovery for the ATSDR historical dose reconstruction modeling and epidemiological studies. The first four phases of the five-phase plan are to: define the scope of data needs; identify potentially relevant information; screen the information; and, transfer/share potentially relevant information. Creating and issuing a close-out report annotating the workgroup's efforts comprises the last phase of the plan.

The Workgroup created an index (see attached) of repositories and sources of potentially relevant information under DON control as a tool to facilitate its data and information goals. The index now serves as the Workgroup's inventory and is used to focus the Workgroup's data mining efforts. Because of the Workgroup members' substantial work and cooperation, we are now able to begin our close-out phase of the plan.

Pursuant to the Charge and the goals of the Workgroup, the two agency leads are confident that the Workgroup has successfully created an accurate and complete inventory. Further, the continued efforts of the Workgroup members have ensured that ATSDR representatives have received full access to all relevant information identified in the inventory.

The Workgroup's accomplishments to ensure ATSDR possesses all relevant data and information under DON control for the historical dose reconstruction modeling and epidemiological studies will be more thoroughly described in a forthcoming close-out report of that activity. Because the efforts of this Workgroup have proven to be effective in assuring DON and ATSDR data and information exchange, future DON and ATSDR data mining efforts should consider utilizing this or a similar procedure.

Respectfully,

Scott Williams, HQ USMC
DON Lead

RADM Sven E. Rodenbeck, USPHS
ATSDR Lead

Pursuant to the Charge and the goals of the Camp Lejeune Data Mining Technical Workgroup, the Workgroup created an index of repositories and sources of potentially relevant information under DON control as a tool to facilitate the Workgroup's data and information goals. The index below serves as the Workgroup's inventory and was used to focus the Workgroup's data mining efforts. Please also note that when this index of information sources was originally compiled there was a concerted effort to err on the side of inclusion so that no potentially relevant information source was missed by the Workgroup. As such, it contains information sources that had been identified as potentially relevant and were ultimately not used by and/or deemed not needed by ATSDR for their health initiatives (e.g. Air Quality Program Data). 20110325

Media/Area	Information Source (Repositories, Databases, Studies, Documents)	Information Source Description	Information Source Location
		Drinking Water and Water Quality Information	
Drinking Water Program	**1) Drinking Water Supply Well Sampling for VOCs**	Non-regulatory sampling performed voluntarily. All water supply wells sampled annually. Wells within 1500' of known contaminated areas sampled semi-annually. Began in 1997.	Hard Copy Files - Bldg 12
Drinking Water Program	**2) Drinking Water Supply Well Sampling for Munitions Constituents**	Non-regulatory sampling performed voluntarily. Initial assessment in 2004. Included well & plant sampling.	Electronic Files Maintained by Environmental Management Division (EMD)
Drinking Water Program	**3) Monthly Sampling at Water Treatment Plants for Munitions Constituents**	Non-regulatory sampling performed voluntarily. Conducted at distribution point at all WTP plants. Constituents sampled include perchlorate. Began in 2004.	Electronic Files Maintained by EMD; Hard Copy Files - Bldgs FC440 & 1101
Drinking Water Program	**4) Compliance Sampling at Water Treatment Plants**	Required by regulation. Samples are collected by MCBCL personnel. Analysis conducted In-House & by contract laboratories. Regulatory reports forwarded by MCBCL. ~ Weekly Fluoride Reports (HB, HP WTP). Report to NCDENR. ~ Monthly Bacteriological Report. Coliform analysis for each plant. Report to NCDENR. ~ Monthly Report of Operations/Water Usage. Data collected by WTP personnel. Report to NCDENR. ~ Monthly Distribution Chlorine Reports. New Requirement. Data collected by WTP personnel. Report to NCDENR. ~ Monthly 4-Log Treatment Report. New Requirement. Data collected by WTP personnel. Report to NCDENR. ~ Regulatory Periodic Sampling for VOCs, SOCs, Nitrates, Asbestos, Radionuclides, Inorganics, THMs, Lead/Copper* *Frequency Dictated by Regulation. Samples collected by MCBCL personnel. Analysis performed by Contract Laboratories. Results forwarded to State by laboratory. Data located at Public Water Supply, NCDENR website "Drinking Water Watch".	Electronic Files Maintained by EMD; Hard Copy Files - Bldgs FC440 & 1101
Drinking Water Program	**5) Monthly Special Sampling at Water Treatment Plants**	Non-regulatory sampling performed voluntarily. Conducted at distribution point at all WTP plants. VOCs/Limited list of SOCs. Began in 2000.	Electronic Files Maintained by EMD; Hard Copy Files - Bldgs FC440 & 1101
Drinking Water Program	**6) Wellhead Management Plans and Associated Sampling Events**	MCBCL voluntarily (not regulatory-required) developed a Wellhead Management Plan which identifies specific management actions, procedures, and plans that will protect both individual wells and the groundwater source. All Wellhead Management Plans are available on EMD's Shared S Drive. This information will soon be available on the EM Portal. All 1992/1993 drinking water supply well sampling performed for the original wellhead management plan are also available.	Electronic Files Maintained by EMD, Hard Copy Files - Bldgs 12 and 1101
Stormwater Program	**7) Stormwater Analytical Sampling**	Required by MCBCL Phase I Stormwater permit. Includes visual observation data (VOPS) & sample results from permit-specified locations. Data compiled & forwarded to NCDENR. Database available with sampling & VOPS information.	Electronic Files Maintained by EMD, Hard Copy Files - Bldg 12
Wastewater Treatment	**8) Monthly Wastewater and River Sampling**	Required by NPDES WW permit. NPDES report consists of daily sample results which are analyzed by both the MCBCL EMD laboratory & contract laboratory. River Report provides sample data collected from various locations in New River during months of April - October. Toxicity Report consists of quarterly monitoring data on the WWTP effluent to determine if the discharge inhibits the growth of Mysid Shrimp. Report data compiled & forwarded to NCDENR. Data stored in LabTrak.	Electronic Files Maintained by EMD; Hard Copy Files - Bldgs FC440 & 1101
Landfill Monitoring Program	**9) Landfill Monitoring Reports for Closed and Active Landfills**	In accordance with Solid Waste Management rules, MCBCL is required to sample all active and closed landfill monitoring wells on a semi-annual basis to ensure landfill contaminants are not leaving the site. These reports are available on the EM Portal.	Electronic Files Maintained by EMD, Hard Copy Files - Bldgs 12 and 1101
Wastewater Treatment	**10) Land Application (Wastewater Residuals) Reports**	Land Application Reports are provided to NCDENR and EPA on an annual basis. These reports provide compliance analytical monitoring information for wastewater sludge in accordance with MCBCL's Residuals Application Permit. This information is available on the EM Portal.	Electronic Files Maintained by EMD, Hard Copy Files - Bldgs 12 and 1101
Drinking Water Program	**11) Lead and Copper Materials Survey**	Initial survey conducted in 1990s which evaluated MCBCL's various DW distribution systems & identified locations for lead/copper sampling.	Electronic Files Maintained by EMD, Bldg 12 and 1101
Drinking Water Program	**12) Analysis of Water Coolers for Lead**	The purpose of this project was to identify any water coolers at MCBCL with a lead content above the Environmental Protection Agency (EPA) designated limit of 15 (ug/l). This 1992 study is available in hard copy form.	Hard Copy Files - Bldg 12
Compliance Monitoring	**13) Oil Water Separator Inventory**	The Oil Water Separator Inventory provides a list of all active and inactive oil water separators basewide. This study contains as-built drawings of each separator location and also provides upgrade recommendations.	Hard Copy Files - Bldg 12

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Media/Area	Information Source (Repositories, Databases, Studies, Documents)	Information Source Description	Information Source Location
USGS Studies	**14) Castle Hayne Aquifer Monitoring (19 Monitoring Well Sites Base-wide)**	In 2007 MCBCL initiated and funded a contract with USGS to maintain a groundwater level and conductance monitoring network for the Base. Camp Lejeune's network of groundwater monitoring wells is comprised of 19 wells Base-wide. Data gathered from these wells will provide a basis for measuring short and long term fluctuations in aquifer water levels and water quality as a result of the groundwater withdrawal practices of neighboring large volume water suppliers. Both the USGS and MCBCL will work together in an effort to assess hydrologic conditions and determine critical groundwater level and conductance conditions. Data is available on the USGS website http://wdr.water.usgs.gov.	Electronic Files Maintained by EMD, Hard Copy Files - Bldg 12
Drinking Water Program	**15) Labtraks**	Database for collection of in-house drinking water and wastewater analysis results. Produces monthly reports and annual River Report. Data includes bacteriological sampling results, wastewater NPDES-compliance sample results and data collected during the April-October New River sampling events.	Electronic Files Maintained by EMD
Wastewater Treatment	**16) Wastewater Collection System Database**	This database was developed to satisfy the Wastewater Collection System Permit Requirements. It houses all sanitary sewer overflows, inspections and maintenance that is performed on the wastewater collection system. It is currently stored on the Shared "S" drive and will soon be converted to the EM Portal.	Electronic Files Maintained by EMD; Hard Copy Files - Bldg 12
Drinking Water Program	**17) Consumer Confidence Reports (CCRs)**	CCRs are developed annually for each water treatment system (except Onslow Beach - Transient non-community system). These reports (1998 - Present) are available in hard copy form and on the EMD website http://www.lejeune.usmc.mil/emd.	Electronic Files Maintained by EMD
Drinking Water Program	**18) Local Water Supply Plan**	A Local Water Supply Plan is an assessment of a water system's current and future water needs and its ability to meet those needs. North Carolina General Statute G.S 143-355(1) requires all units of local government that provide or plan to provide public water service to prepare a Local Water Supply Plan and update that plan at least every five years. Camp Lejeune's Local Water Supply Plans are available online at http://www.ncwater.org (passwords can be provided upon request)	Electronic Files Maintained by EMD; Hard Copy Files - Bldg 12
Drinking Water Program	**19) Unregulated Contaminants (UCMRs) Sampling Data**	The purpose of UCMR monitoring is to collect contaminant occurrence data to support the U.S. EPA Administrator's decisions regarding whether or not to regulate contaminants, such as those on the Drinking Water Contaminant Candidate List, to protect public health. Sample schedule is set by EPA. Data collected by MCBCL and analyzed by contract laboratories. Results are provided to EPA.	Electronic Files Maintained by EMD/Hard Copy Files - Bldgs FC440 & 1101
Drinking Water Program/ Onslow Water Resources Initiative	**20) Capacity Use Reports**	NCDENR developed the Central Coastal Plain Capacity Use Area (CCPCUA) in response to lowering water table levels within the Black Creek Aquifer. Although Camp Lejeune supplies its water from the Castle Hayne Aquifer, which has a much faster recharge rates and is not as heavily stressed as the Black Creek Aquifer, the Base was still required to apply for a CCPCUA permit. This permit requires that pumping and static water levels are recorded by the Base and provided to NCDENR on a monthly basis. This information is available on the Public Works Shared N Drive.	Electronic Files Maintained by EMD; Hard Copy Files - Bldg 12
Wastewater Treatment	**21) Annual Wastewater Performance Report**	Mandated by the North Carolina Clean Water Act of 1999, Session Law 1999-329, owners or operators of wastewater collection or treatment works are required to provide to the users or customers of the collection or treatment works and to the Department of Environment and Natural Resources an annual report that summarizes the performance of the collection system or treatment works and the extent to which the collection system or treatment works has violated the permit or federal or state laws, regulations, or rules related to the protection of water quality. These reports are available in hard copy form and on the EMD website http://www.lejeune.usmc.mil/emd.	Electronic Files Maintained by EMD; Hard Copy Files - Bldg 12
Drinking Water Program	**22) Other Drinking Water Studies, Plans and Projects**	This covers various studies, plans and projects that are not covered under the categories above. For example, Corrosion Control Studies, Operation and Maintenance Plans, Emergency Management Plans, Emergency Response Plans, etc.	Electronic Files Maintained by EMD, Hard Copy Files - Bldgs 12, FC440 and 977
Document Repositories	**23) CLW Document Database**	The CLW Document Database contains documents collected by MCBCL from 1991 through 2004 relevant to the Historic Drinking Water Issue. Documents included sampling/analytical data, memorandums, reports, letters, briefs, telephone conversations, regulations, guidance, etc. The documents were collected from EMD, Utilities, Public Works, and EACO facilities.	Hardcopy documents maintained in Bldg. 12; Electronic Files Maintained by EMD
Document Repositories	**24) Camp Lejeune Historic Drinking Water (CLHDW) Consolidated Document Repository (CDR), including the Camp Lejeune Document Search and Collection (DSC) Repository**	The Camp Lejeune DSC Repository is a part of the larger Camp Lejeune Historic Drinking Water (CLHDW) Consolidated Document Repository and accompanying database that contains over 8000 documents and is currently maintained by contractor personnel aboard MCBCL.	Electronic Files maintained by contractor personnel aboard MCBCL.
Drinking Water Program	**25) Draft Historical TCE/PCE Drinking Water Analysis Spreadsheet**	This analytical data was compiled from documents discovered to date; primarily the CLW document database and specifically JTC lab reports that exist in several places in the record. This is a draft document that includes errors and duplications due to discrepancies in the record. This draft document has changed over the years based on additional information and requests from various investigators. A copy was provided to ATSDR, GAO and NRC.	Draft Electronic File Maintained by EMD
Drinking Water Program	**26) Consolidated Drinking Water Database**	Access database in daft form created to consolidate existing (and future) sources of drinking water analytical data. Database is currently in draft form (as of March 2011).	Electronic File will be Maintained by EMD

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Media/Area	Information Source (Repositories, Databases, Studies, Documents)	Information Source Description	Information Source Location
Air Quality Program			
Air Quality Program	**1) Air Program Information Management System (APIMS)**	APIMS is used to collect and store data such as material usage data and equipment run-time data that is subsequently used to estimate air emissions. Annual air emissions estimates are logged in NCDENR's web-based application database AERO.	Electronic Files Maintained by Contractor through Public Works Division (PWD) (IDIQ) Contract.
Air Quality Program	**2) Risk Management Plan (RMP)**	Historical RMP information. MCBCL is no longer subject to the RMP requirements of 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112r of the Federal Clean Air Act. MCBCL submitted a letter to EPA on 15 May 2008 to de-register from the program.	Recent hardcopy documents maintained in Bldg 12; all other hardcopy documents maintained in Bldg. 1101; electronic files maintained by EMD
Air Quality Program	**3) Emergency Planning and Community Right to Know Act (EPCRA)**	Data documenting storage of hazardous materials required for EPCRA 311 and 312 reporting is submitted to NC Department of Emergency Management (NCDEM) on-line through E-plan. Hard copy Tier II forms are prepared for local districts using the Tier2 Submit software package. EPCRA 313 Reports or Toxics Release Inventory (TRI) reporting is submitted on-line to EPA's TRI database.	Recent hardcopy documents maintained in Bldg 12. All other hardcopy documents maintained in Bldg. 1101; electronic files maintained by EMD
Air Quality Program	**4) Title V Reports**	Semi-annual compliance and annual compliance certification reports are compiled and submitted to NCDENR and EPA as required. These reports summarize MCBCL's compliance status regarding the Title V Air Permit.	Recent hardcopy documents maintained in Bldg 12. All other hardcopy documents maintained in Bldg. 1101; electronic files maintained by EMD
Air Quality Program	**5) Aerospace NESHAP Database/Site Remediation NESHAP Reports**	MCBCL is subject to the Aerospace NESHAP (MACT Subpart GG) and the Site Remediation NESHAP (MACT Subpart GGGGG). Semi-annual compliance reports are submitted to EPA and NCDENR. Aerospace coatings usage data is kept in an Oracle Discoverer database.	Recent hardcopy documents maintained in Bldg 12. All other hardcopy documents maintained in Bldg. 1101; electronic files maintained by EMD
Air Quality Program/ Compliance Monitoring	**6) Other Air Quality Documents**	Including but not limited to: NCDAQ evaluation of the toxic air pollutant emissions from combustion sources and other toxic/hazardous air pollutant modeling documents.	Recent hardcopy documents maintained in Bldg 12. All other hardcopy documents maintained in Bldg. 1101; electronic files maintained by EMD
Aboveground Storage Tank (AST)/Underground Storage Tank (UST) Program			
UST Program/ Document Repositories	**1) UST Portal**	The UST Portal is a working tool for the MCB UST Program and is used by Marine Corps Base Camp Lejeune, NAVFAC, contractor employees, and others as necessary. The Web Portal began to be developed in 2003 when a contractor scanned all available hard copy reports, files, correspondence, etc. related to the Camp Lejeune UST Program from the Camp Lejeune Environmental Management Department (EMD) Library. Subsequent to 2003, all documents related to the UST Program were added to the UST Portal. These documents still reside in hard copy form in the EMD LUST library.	Hardcopy documents maintained in Bldg. 12. Electronic Files Maintained by Contractor (Catlin) under NAVFAC contract
UST Program	**2) Integrated Contingency Plan (ICP)**	The ICP combines various federal and state regulatory requirements pertaining to hazardous material spill prevention, response actions, containment, and cleanup into a single source document. The ICP contains information related to active petroleum, oils, and lubricant storage areas as well as spill prevention and containment information.	Hardcopy documents maintained in Bldg. 12. Electronic Files Maintained by EMD
UST Program/Databases	**3) Terrabase - UST**	Contractor- maintained Access Database with approximately 700,000 records of analytical data. The time frame of this data stretches from 1984 until January 2010. This database was developed from the Terrabase database that the IR Program provided the contractor in November 2005 which contained analytical data for the IR Program and some data from the UST program. Since July 2005 the contractor has been updating our database with analytical data for the "Active" UST Sites (those sites included in the UST Management Program, approximately 15 sites over the past four to five years). NOTE: IR data since 2005 is not included in the UST Terrabase. The IR Terrabase contains all IR data to present.	Electronic Files Maintained by Contractor under NAVFAC contract
UST Program	**4) Other UST Studies, Plans and Projects**	Includes, but is not limited to, the Active Tank Mngt Program which tracks Operating Permits, Veeder Root operations, Tank Inspections, Cathodic Protection Evals, Tightness Testing, Leak detection, Repairs, and Operator Education for all active USTs aboard MCBCL; and Sample/Analysis Data from Water Supply Well 642 which is a well that was removed from service in summer of 2009. It was the closest (~2000') to the HPFF and we sampled/analyzed/reported to NCDENR on a monthly basis per the HPFF P&T Operating Permit since 2006.	Hardcopy documents maintained in Bldg. 12. Electronic Files Maintained by EMD
UST Program/ Document Repositories	**5) Camp Lejeune AST/UST Library**	Hard copy repository of UST Program reports and documents. This repository was a source of information for the UST Portal document library.	Hardcopy documents maintained in Bldg. 12. Electronic Files Maintained by EMD

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Media/Area	Information Source (Repositories, Databases, Studies, Documents)	Information Source Description	Information Source Location
	Installation Restoration Program		
IR Program	**1) Installation Restoration Program Administrative Record**	Official Electronic database containing copies of reports, permits, letters, etc. associated with environmental restoration on Base (IR, SWMU & MMRP). Official copy maintained by Navy. The IRP Administrative Record has been publicly available since 1992.	Recent hardcopy documents maintained in Bldg. 12. All other hardcopy documents maintained in Bldg. 1101. Official Electronic Files Maintained by Navy Contractor under NAVFAC contract
IR Program/Databases	**2) Terrabase Installation Restoration (IR) Database**	Electronic (Access) database containing electronic data from past and present sampling events on Base. TerraBase is a software program used to query information from the Access storage area. Although MCBCL has maintained a copy of the database in the past, the Terrabase program was not approved for use under NMCI. Navy's IR CLEAN contractor maintains the up-to-date copy of the electronic database (IR, SWMU, MMRP and some PSW data).	Electronic Files Maintained by Navy Contractor under NAVFAC contract
IR Program	**3) Range Environmental Vulnerability Assessment (REVA) (Not CERCLA related)**	Voluntary program not required by regulation. Report completed August 2009 documenting sampling events associated with operational ranges on MCBCL. This report has been publicly available since Sept, 11, 2009 at website http://www.lejeune.usmc.mil/reva/	Hardcopy documents maintained in Bldg. 12. Electronic Files Maintained by EMD. Available to public at http://www.lejeune.usmc.mil/reva/
IR Program	**4) Basewide Vapor Intrusion Assessment**	Report completed November 2009 documenting groundwater, soil, soil vapor and indoor air sampling events associated with assessing potential vapor intrusion issues on MCBCL.	Hardcopy documents maintained in Bldg. 12. Electronic Files Maintained by EMD
IR Program/ Databases	**5) Partnering Enterprise Database**	Internal IR Partnering Team (MCBCL, NAVFAC, EPA, NCDENR and contractors) used to share information (draft reports for review, sampling data, tech memos, etc.). Not an official database but the partnering team does maintain recent data in this database for easy access. The Navy's official copy of the Administrative record still maintains the Final copies of any submittals.	Electronic Files Maintained by Navy Contractor under NAVFAC contract
IR Program/ Databases	**6) Naval Installation Restoration Information Solution (NIRIS)**	Recently developed Navy database used to share information within the entire Navy. The Navy's official copy of the Administrative Record is accessed through NIRIS. The development of NIRIS is not yet complete.	Electronic Files Maintained by Navy
IR	**7) Perchlorate Database -**	Electronic database maintained by the CNO and HQMC containing perchlorate sampling data for MCBCL required by DoD. MCBCL began entering Perchlorate Data into database in 2004.	Electronic Files Maintained by Navy
IR Program	**8) Solid Waste Management Unit (SWMU) Program Reports -**	Final reports maintained in Administrative Record. These RCRA reports are also maintained by the NCDENR as required by the Base Hazardous Waste Management Permit.	Recent hardcopy documents maintained in Bldg. 12. All other hardcopy documents maintained in Bldg. 1101. Electronic Files Maintained by EMD. Official Files Maintained by NCDENR
IR Program	**9) Reports not in Admin Record. Includes, but is not limited to, the following:**		
	a) Final Radiological Survey Report - 10/29/2007 (Not CERCLA related)	Report documenting the assessment of three areas on Base reportedly used for testing or disposing of low-level radiological material. The project was contracted through the Navy Radiological Affairs Support Office and funded by MCBCL.	Hardcopy documents maintained in Bldg. 12 or 1101. Electronic Files Maintained by EMD
	b) Final Radiological Investigation Report for the former Naval Medical Research Facility Laboratory (FNMRFL) - 9/25/2009 (Not CERCLA related)	Report documenting the assessment of the FNMRFL on Base reportedly used for testing (and nearby disposal activities) of low-level radiological material. The project was contracted through the Navy Radiological Affairs Support Office and funded by MCBCL. This report is an addendum to the Draft Expanded Site Inspection Report for the Wallace Creek MILCON Area (12/30/09) which will be included in the Admin Record once finalized.	Hardcopy documents maintained in Bldg. 12 or 1101. Electronic Files Maintained by EMD
	c) Draft Base Boundary Report for Potential Off-Base Contamination Encroachment - February 2010	Currently in the review process by the Navy and MCBCL. Assessment initiated to determine if off-Base industrial activities near the boundary of the Base have affected the environment on Base. Will be included in Admin Record once finalized.	Hardcopy documents maintained in Bldg. 12 or 1101. Electronic Files Maintained by EMD
	d) Draft Off-Base Surface Danger Zone (SDZ) Investigation Reports	Assessment initiated to address former off-base ranges located adjacent to the southeastern boundary of the Base, including private, state-administered, and state-owned property owners. To date, the only documents available include the investigation work plan and recent anomaly investigation conducted by Base Range Control contractor on Hammocks Beach.	Hardcopy documents maintained in Bldg. 12 or 1101. Electronic Files Maintained by EMD
IR Program/ Document Repositories	**10) Camp Lejeune EMD Libraries**	Hard copy repository of various CERCLA and RCRA reports and documents.	Recent hardcopy documents maintained in Bldg. 12. All other hardcopy documents maintained in Bldg. 1101

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		Asbestos Program	
Asbestos	**1) Quarterly Asbestos Waste Shipment Records**	NC statutes require a copy of all North Carolina Waste Shipment Records (DHHS Form 3787) to be provided to the Health Hazards Control Unit pursuant to 10A North Carolina Administrative Code (NCAC) 41C .0605(j). All permitted Waste Shipment records are sent to the Health and Hazards Control Unit every quarter.	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 12/1101
Asbestos	**2) MCBCL Asbestos Management Plan**	Required by 40CFR 763 Asbestos Hazard Abatement and Reauthorization Act of 1992 (ASHARA). Provides guidance for managing asbestos containing materials aboard MCBCL.	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 12
Asbestos	**3) Asbestos Building Surveys**	Buildings are initially inspected for asbestos in areas where workers could become exposed. Once initial surveys are completed, buildings are inspected on a triennial period and quarterly reports are provided to the Asbestos Program Manager (APM). Deficiencies on the report are given to PWD Operations for immediate action. Buildings surveyed are posted with asbestos surveys and drawings indicating what types and the locations of the asbestos containing materials in each building. Warning labels are also posted so building occupants and maintenance workers are aware of the hazards in the workplace.	Electronic Files Maintained by EMD; Hardcopy Files - Bldgs 12/1101
		Hazardous Waste Program	
Hazardous Waste	**1) NCDENR Biennial Hazardous Waste Report**	NCDENR requires that MCBCL submit their Biennial report detailing quantities of hazardous waste generated and practices implemented to minimize HW aboard the installation.	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 12/977/1101
Hazardous Waste	**2) Naval Facilities Engineering Support Center (NFESC) Hazardous Waste Annual Report**	In accordance with MCO 5090.2A, Marine Corps installations are required to collect and submit hazardous waste data utilizing the EPRPortal. Reports are due during the month of March to HQMC and NFESC.	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 12/977/1101
Hazardous Waste	**3) Hazardous Materials Management System (HMMS)**	HMMS is an Oracle-based relational database program that operates on a UNIX server and uses the depot's local area network (LAN). Its user can, in most cases, access it through existing PCs. Using bar-codes, HMMS maintains an inventory and visibility not only of HAZMAT, but of chemicals being used aboard the Base. It tracks the issue of HAZMAT to a workplace through its disposal at EMD. It allows managers to control and limit HAZMAT issue to authorized users and control or minimize the quantity of HAZMAT issued for specific uses and operations.	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 977
Hazardous Waste	**4) Annual PCB Datacall**	Annual report required by MCO P5090.2A that is centered around the elimination of PCBs and the compliance with Federal, state and local regulations.	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 12/977/1101
Hazardous Waste	**5) Associated Hazardous Waste Documents**	Includes manifests for regulated and non-regulated hazardous waste/material transfers, hazardous waste profile sheets and sampling/analysis data of wastes, materials and unknowns	Electronic Files Maintained by EMD; Hardcopy Files - Bldg 12/977/1101
		Naval Hospital Associated Program Documents	
Naval Hospital	**1) Preventive Medicine Sanitation - Ice and Water Sample Database**	Data from monthly sampling/analysis. Indicates the presence or absence of bacteriological Coliform.	NHCL Preventive Medicine Unit Bldg 65
Naval Hospital	**2) Preventive Medicine Sanitation - Quarterly Water Plant Sanitation Inspections**	Allows the Preventive Medicine Department the opportunity to conduct an assessment of the broad operations involved with the overall function of the facility.	NHCL Preventive Medicine Unit Bldg 65
Naval Hospital	**3) Industrial Hygiene - Industrial Hygiene Periodic Surveys/Reports**	Conducted throughout commands aboard MCBCL. Identifies chemical and physical occupational hazards, personal protective equipment, recommended control measures, and recommendations for Occupational Safety and Health Medical Surveillance Programs. Reports provided to commands.	NHCL Preventive Medicine Unit Bldg 65; Historic Hardcopy Reports Maintained in Bldg 5400F
Naval Hospital	**4) Industrial Hygiene - Workplace Monitoring Database**	Contains monitoring results for identified occupational hazards {chemical hazards, physical hazards, ventilation measurements, and indoor air quality (temperature, humidity, and carbon dioxide).	NHCL Preventive Medicine Unit Bldg 65
		Other Information Sources	
NEPA	**1) Integrated Natural Resource Management Plan/Integrated Cultural Resource Management Plan**	Management plans directing Camp Lejeune's environmental conservation programs.	Electronic Files Maintained by EMD; Hard Copy files-Bldg 12
NEPA	**3) National Environmental Policy Act (NEPA) Documents**	Documents concerning environmental review and impacts of proposed actions at Camp Lejeune.	Electronic Files Maintained by EMD; Hard Copy files-Bldg 12
NEPA	**3) Noise Studies**	Studies relating noise and military training: 2009 Air Installation Compatible Use Zone, MCASNR. Draft Range Compatible Use Zone, MCBCL.	Electronic Files Maintained by EMD; Hard Copy files-Bldg 12
IR Program	**4) Environmental Condition of Property (ECP) Documents**	Documents used in conjunction with Real Estate transactions providing the environmental condition of the property before lease or transfer.	Hard Copy Reports maintained in Bldg 12 and 1005
EMS	**5) Environmental Correspondence Archives**	Read files, permanent files and scanned copies of official correspondence, including EM Portal and S Drive files.	Electronic Files Maintained by EMD; Hard Copy files-Bldgs 12 and 1101
Family Housing	**6) Camp Lejeune Family Housing Records**	Historic Camp Lejeune family housing occupancy records. These records exist in hard copy and electronic form.	Hard Copy and electronic files located at Camp Lejeune Family Housing Office - Bldg TT43
Command Chronologies	**7) Command Chronologies**	A command chronology is the principal historical report required of each Marine command. Chronologies are submitted by each Marine Corps command, both Regular and Reserve, and provide a concise review of the operational experiences of the command on a continuing basis.	Historic hard Copy and electronic files are located at the Gray Research Center, Quantico, VA. More recent files reside with the individual commands.
Miscellaneous	**8) NAVFAC Box of Miscellaneous Camp Lejeune Environmental Files**	A box of miscellaneous Camp Lejeune Environemtnal files in hard copy form. Document dates range from the late 1960s to the mid 1980s.	NAVFAC Atlantic, Norfolk, VA

Pursuant to the Charge and the goals of the Camp Lejeune Data Mining Technical Workgroup, the Workgroup created an index of repositories and sources of potentially relevant information under DON control as a tool to facilitate the Workgroup's data and information goals. The index below serves as the Workgroup's inventory and was used to focus the Workgroup's data mining efforts. Please also note that when this index of information sources was originally compiled there was a concerted effort to err on the side of inclusion so that no potentially relevant information source was missed by the Workgroup. As such, it contains information sources that had been identified as potentially relevant and were ultimately not used by and/or deemed not needed by ATSDR for their health initiatives (e.g. Air Quality Program Data). 20110325

Media/Area	Information Source (Repositories, Databases, Studies, Documents)	Information Source Description	Information Source Location
Public Works Division Technical Records and Engineering Documents			
Public Works	**1) Filemaker Pro Project Database**	Filemaker Pro is a database of engineering projects, designs, and studies in the Public Works Division. The database is used to provide access to records drawings for construction and repair of facilities throughout MCBCL and MCASNR. All files are a remote server.	Electronic Files Maintained by PWD
Public Works	**2) Technical Records Vaults in Building 1005**	Hard copy and electronic files (discs and CD) are kept in two "vaults". Filemaker Pro is used to locate/access the map and drawing files. Most record drawings created prior to electronic media have been scanned and saved as an electronic file. Unscanned materials stored in the vaults, such as contract submittals, specs, and other miscellaneous documents, have been catalogued in a searchable index.	Hard-copy drawings are stored in Bldg 1101 and are all available electronically through filemaker. Contract submittals and other technical documents are located in Bldg 1005 "Vaults".
Public Works	**3) Transformer disposal records**	Documentation for disposal of transformers beyond service life.	Hard Copy Reports related to PCB disposal maintained in Bldg 1101.
Public Works	**4) Facilities Integration Website**	Database for submission, approval, and funding of major facility repair projects, design approvals, minor construction, and environmental projects.	FI website is maintained by HQMC and access is via the world wide web.
Public Works	**5) MAXIMO Maintenance Management System**	Software and database for managing maintenance and repair to all facilities at MCBCL and MCASNR.	Electronic Files Maintained by PWD
Public Works	**6) Installation Geospatial Information & Services (GIS) Database**	Geodatabase of all geographic and facilities information for MCBCL and MCASNR. The database consists of approximately 295 layers that include Camp Lejeune and Oak Grove.	Electronic Files Maintained by PWD
Public Works	**7) PR Builder**	Supply system software for purchase of materials and supplies for use in utility production and maintenance activities.	Electronic Files maintained by PWD
Public Works	**8) Utilities Operations Report**	Records of all utilities produced, purchased, distributed, and sold for the installation. Includes all fuel consumption data.	Electronic Files maintained by PWD; hard copy files located at Bldgs 8, 1301, and 12.
Public Works	**9) Steam plant fuels sulfur content records**	Records of coal and fuel oil sulfur contents delivered to steam plants.	Hard Copy files-Bldg 1700
Public Works	**10) Steam plant chemical receipts**	Documentation of all boiler water treatment chemical delivered to steam plants.	Hard Copy files-Bldg 1700
Public Works	**11) Public Works Division correspondence and programs documentation**	Read files, permanent files and scanned copies of official correspondence. Contract, design, engineering studies, maintenance and repair records, and facility projects.	Hard Copy files-Bldg 1005
Public Works	**12) iNFADS**	The Internet Navy Facility Assets Data Store (iNFADS) is the Real Property Inventory (RPI) for the DON. This enterprise system includes all of the data necessary to support RPI, Planning, and acquisition for the Navy and Marine Corps. iNFADS has been operations since 2001.	iNFADS website is maintained by DON and access is via the internet.
Weather Data			
EMD	**1) EMD Forestry**	Collects precipitation data, temperature, relative humidity, wind speed and direction, and pressure. Data is available from the Greater Sandy Run Area from February 2003 through present. This data is available on-line at the RAWS USA Climate Archive http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?laNSND). Data is available from Mainside October 1997 through August 2005.	Electronic Files Maintained by EMD; Hard Copy files-Bldg 12

Appendix 10 – DON/ATSDR Camp Lejeune Data Mining Technical Workgroup Final After Action Item List

21-22 July 2010 Meeting After Action Items

The following table outlines the status of the various 21-22 July 2010 Meeting After Action Items identified by the Workgroup.

Status of Camp Lejeune Data Mining Technical Workgroup 21-22 July 2010 Meeting After Action Items – As of February 2012		
After Action Item Number	**Description**	**Status**
1	US Department of the Navy (DON) to provide copy of the DON "Broad Information List" Table discussed at the meeting	Completed
2	DON to provide a PDF copy of the entire meeting binder to ATSDR after it is finalized	Completed
3	DON to provide additional information on permitted municipal solid waste landfill groundwater data (water quality and VOC chemical data)	Completed
4	DON to provide an index of the Industrial Hygiene (IH) document inventory (file codes index provided but need copy of index of reports)	Completed
5	DON to provide a copy of the baseline IH reports	Completed (No baseline reports found)
6	ATSDR to provide DON with document reference regarding "baseline IH report" to facilitate item number 5	Completed
7	DON to provide a copy of Navy Retention Policy (NRP), including the "cheat sheet"	Completed

Status of Camp Lejeune Data Mining Technical Workgroup 21-22 July 2010 Meeting After Action Items – As of February 2012		
After Action Item Number	**Description**	**Status**
8	DON to provide additional information on IR Site 88, specifically any updates/changes to conceptual model and ATSDR will provide a listing of which reports it already has regarding IR Site 88	Completed
9	DON to plan first of proposed regularly scheduled technical discussions, similar to the Partnering Meetings in the IR and UST programs, between MCB Camp Lejeune and ATSDR	Completed
10	DON to provide all information on Site 96, to include a copy of all applicable reports, and/or a listing of reports available on the NIRIS	Completed
11	DON to provide listing of MMRP Sites, map showing locations, and listing of available reports. Reports should be available on NIRIS AR; those that are not should be provided separately	Completed
12	DON to review unfinalized MMRP data/reports for physical characteristic data that may be of use to ATSDR (this item will be addressed after 10 and 11 are completed)	Completed
13	DON to provide ATSDR access to NIRIS-private side	Completed
14	DON to provide information on how to acquire copy of and license for "Terrabase" software (http://www.terrabase.com. - Contacts: phone-225-448-3296, fax-225-218-6807, email-mcrouch@terrabase.com)	Completed
15	DON to look for historical maintenance records for former Hadnot Point Fuel Farm (HPFF) tanks and review DESC records for a historical fuel usage inventory for HPFF, specifically fuel inventory losses	Completed

Status of Camp Lejeune Data Mining Technical Workgroup 21-22 July 2010 Meeting After Action Items – As of February 2012		
After Action Item Number	**Description**	**Status**
16	a) ATSDR will inform USMC if they would like USMC to have contractor re-calculate mass of petroleum product remaining in subsurface at HPFF b) DON to find out from Contractors how they calculate mass of petroleum recovered (methodology) for HPFF and their confidence level for methodology and results	Completed (ATSDR does not need the mass of petroleum re-calculated)
17	a) DON to provide map of SERDP precipitation and surface water gauging stations monitoring locations b) In addition, DON to determine where data for figure on page ES-14 (Tab 8) came from, and where TP stations are located	Completed
18	DON will requested that ATSDR (i.e., Morris Maslia) be copied on distribution of Onslow Water Resources Group bi-monthly meetings agenda	Completed
19	DON to look for WTP data that has not been located to date, as detailed on 3-page document entitled "Camp Lejeune Water Treatment Plant Data Not Located," July 2010	Completed (Some additional water usage data found)
20	DON to provide information on temporary and permanent water feed from Holcomb Blvd to Tarawa Terrace WTP (~1985-1987 time period)	Completed
21	ATSDR and DON to determine feasibility of placing an ATSDR liaison stationed at Camp Lejeune	Completed
22	DON to prepare an SOP for all key staff that denotes all studies/reports/etc should be reviewed for value to ATSDR. When in doubt, will provide copy of report to ATSDR, or discuss with ATSDR	Completed
23	DON to provide list NAVFAC-sponsored/funded research projects/reports, specifically for projects related for aquifer studies and chemical degradation	Completed (Nothing additional found)

Status of Camp Lejeune Data Mining Technical Workgroup 21-22 July 2010 Meeting After Action Items – As of February 2012		
After Action Item Number	**Description**	**Status**
24	DON and ATSDR to determine what drinking water system information can be release to the public (i.e. supply well location maps, lat/longs, etc)	Completed
25	a) ATSDR to prepare a list of questions/ clarifications on historical data, including the hand-written lab results from around November/December 1985 b) DON and ATSDR will jointly contact former DON employees via joint conference call regarding above-referenced questions.	a) Completed b) Completed
26	a) DON and ATSDR to determine what laboratories were used from 1985 to 1995 using the Drinking Water Watch website (ATSDR) and historical records (DON) b) DON and ATSDR to conduct a joint communication to the lab(s) requesting lab reports from said time period, specifically for VOCs, including BTEX. c) DON and ATSDR send a joint communication to NCDENR requesting lab reports from said time period, specifically for VOCs, including BTEX	a) Completed b) Completed c) Completed (communicated/fulfilled request in person on field visit)
27	a) ATSDR to provide additional information regarding inaccurate elevation data in Terrabase b) DON to review information provided by ATSDR to determine sources of inaccuracies and whether they can be rectified	Completed (ATSDR should rely upon the source documents not Terrabase)
28	DON to determine whether it is possible for booster pump and Marston Pavilion to be opened at the same time, as queried by ATSDR upon review of log books	Completed
29	Technical Work Group members to review Draft Plan of Operation and provide comments to RADM Rodenbeck by 3 August 2010	Completed (Plan finalized on 12 August 2010)

Status of Camp Lejeune Data Mining Technical Workgroup 21-22 July 2010 Meeting After Action Items – As of February 2012		
After Action Item Number	**Description**	**Status**
30	ATSDR to revise Data Needs Table to include at a minimum the following additional information: a) Potential document sources per "EMD's broad listing table," included in Tab 3 of handout, b) Date range for information already have (i.e., copy of AR from 2006) and information needed (i.e., chemical analyses for WTP system pre-1996), c) Revised table will be provided to DON by 30 July 2010, and d) DON will review and provide feedback no later than 6 August 2010	Completed

<u>1 September 2010 Meeting After Action Items</u>

The following table outlines the status of the various 1 September 2010 Meeting After Action Items identified by the Workgroup.

1 September 2010 Camp Lejeune Data Mining Technical Workgroup Meeting After Action Items – As of February 2012		
After Action Item Number*	**Description**	**Status**
31	ATSDR will provide list(s) of assumptions for the various aspects of the modeling efforts at the appropriate time to DON for review and comment. These assumptions will be discussed as part of the regularly scheduled Technical "Partnering" meetings, per After Action Item 9.	Completed
32	ATSDR and DON to talk/meet with the State Archives in Raleigh to determine what the "check-out" process is for viewing documents, and to review State archive files on Camp Lejeune to ensure additional information has not been overlooked	Completed (No additional information or data found)
33	DON to provide a list of historic contractors who operated on/for Camp Lejeune, as it relates to site assessment/remediation activities.	Completed
34	a) DON to review the Draft ATSDR list of information and data sources it has already in its possession. Comments are to be provided to ATSDR by September 10, 2010	a) Completed b) Completed c) Completed

1 September 2010 Camp Lejeune Data Mining Technical Workgroup Meeting After Action Items – As of February 2012		
After Action Item Number*	**Description**	**Status**
	b) ATSDR to revise the list of information and data sources it already has in its possession to address DON suggestions c) DON and ATSDR to conduct final review	
35	a) DON to review the EPA's "CLU-IN" system to determine whether there is research information available that may be useful to ATSDR. b) ATSDR will review the list of EPA "CLU-IN" research information to determine if any of the identified research is relevant to ATSDR Camp Lejeune modeling activities. c) ATSDR will provide DON with a summary of what EPA "CLU-IN" research is relevant to ATSDR Camp Lejeune modeling activities.	a) Completed b) Completed c) Completed
36	ATSDR to contact the EPA-Cincinnati laboratory to determine whether there is information available that may be useful to ATSDR.	Completed
37	ATSDR to perform a library search for relevant research information available through Universities and Colleges that may be useful to ATSDR	Completed
38	DON to reconcile NC Department of Environment and Natural Resource's document archive of Underground Storage Tank files for HPFF and IR Site 78 with DON's document archive.	Completed (DON provided ATSDR with the comparison of the two archives)
39	DON to prepare listing of repositories, per Phase 2 of the Workgroup's Plan of Operation	Completed
40	ATSDR to prepare a figure depicting Column 7 of Table 1. "ATSDR Information and Data Needs for ATSDR Camp Lejeune Health Activities." It will be used in the Workgroup Close-Out Report.	Determined to not be necessary
41	Workgroup Co-Leads will develop and provide for comment a draft Close-out Report outline to the Workgroup members	Completed
* - For ease of tracking, After Action Items will be number continuously throughout the Workgroup's efforts.		

<u>20 September 2010 Meeting After Action Items</u>

The following table outlines the status of the various 20 September 2010 Meeting After Action Item identified by the Workgroup.

20 September 2010 Camp Lejeune Data Mining Technical Workgroup Meeting After Action Item – As of February 2012		
After Action Item Number*	**Description**	**Status**
42	a) ATSDR to develop a plan of action to complete the review of the EMD Library (CERCLA and RCRA SWMU Files etc.) and Consolidated Document Repository b) DON to provide an external hard drive with all of the electronic Consolidated Document Repository information and data c) ATSDR will review the information and data on the DON external hard drive to determine what is relevant to ATSDR Camp Lejeune modeling activities d) ATSDR will return the DON external hard drive, provide DON with a summary of what new relevant information and data was found on the DON external hard, and request official copies of new relevant information and data e) DON to provide copies of requested relevant information and data	a) Completed b) Completed c) Completed d) Completed e) Completed (Will revisit as necessary)
* - For ease of tracking, After Action Items will be number continuously throughout the Workgroup's efforts.		

<u>18 October 2010 Meeting After Action Items</u>

The following table outlines the status of the various 18 October Meeting After Action Item identified by the Workgroup.

18 October 2010 Camp Lejeune Data Mining Technical Workgroup Meeting After Action Item - As of February 2012		
After Action Item Number*	**Description**	**Status**
43	DON to determine the accessibility of the NAVFAC files that are being temporarily stored at a different location because of flooding that occurred this summer.	Completed (DON contractor developed index of information and cross referenced with the Consolidated Document Repository)
* - For ease of tracking, After Action Items will be number continuously throughout the Workgroup's efforts.		