

**HUNTERS POINT SHIPYARD
RESTORATION ADVISORY BOARD (RAB) MEETING HANDOUTS
MARCH 23, 2000**

MEETING HANDOUTS:

- March 23, 2000 RAB Meeting Agenda
- February 24, 2000 RAB Meeting Minutes
- Western Stakeholders' Forum on Land Use Controls in Federal Facilities Cleanup (held on February 11 through 13, 2000 at Hastings College of Law)
- Calculation of Hunters Point Ambient Levels (HPAL)
- Estimation of Hunters Point Shipyard Groundwater Ambient Levels Technical Memorandum
- Technical Assistance for Public Participation (TAPP) Application
- Parcel B Update Overheads

STANDARD MONTHLY HANDOUTS (not included in this package):

- HPS List of Acronyms and Abbreviations
- HPS Mailing List Update Form
- HPS RAB Membership Application Form



CLEAN II Program
Bechtel Job No. 23818
Contract No. N68711-95-D-7526
File Code: 0218

IN REPLY REFERENCE: CTO-007/0178

November 2, 2000

Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, 02R1
Building 127, Room 112
1220 Pacific Highway
San Diego, Ca. 92132-5190

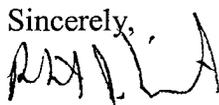
Subject: Hunters Point Shipyard – Records for Administration Record

Dear Mr. Selby:

Enclosed please find documents related to the environmental investigation and cleanup of Hunters Point Shipyard. The enclosure includes 8 months of Restoration Advisory Board (RAB) meeting handouts (from February 2000 through October 2000).

Please include the enclosed documents in the Hunters Point Shipyard Administrative Record (AR) file with each month receiving a separate AR file number (e.g., Subject: Hunters Point Shipyard Restoration Advisory Board October 26, 2000 Meeting Handouts). The front page of each set of handouts includes a list of the specific handouts for that meeting that are included in the package, please use this information in the Subject field of the AR file index, if possible. We have provided copies to the Information Repository (IR), therefore, we do not need to receive copies from you for the IRs.

If you should have any questions regarding this transmittal please contact Charmaine Cosky at (619) 744-3092 or me at (619) 744-3078. We appreciate your assistance with including this in the Hunters Point Shipyard Administrative Record file.

Sincerely,

Robert J. Tait
Project Manager

Enclosure

cc: D. Silva
D. DeMars

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BECHTEL ENVIRONMENTAL, INC.

CLEAN 3 TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-95-D-7526

Document Control No. CTO-007/0178

File Code: 02161

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 02R1
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: November 2, 2000
CTO #: 007
LOCATION: Hunters Point Shipyard

FROM: Robert Tait, Project Manager

DESCRIPTION: Hunters Point Shipyard Restoration Advisory Board Meeting Handouts for:
(1) February 24, 2000; (2) March 23, 2000; (3) April 27, 2000; (4) May 25, 2000; (5) July 27, 2000;
(6) August 24, 2000; (7) September 28, 2000; (8) October 26, 2000 - Dated November 2, 2000

TYPE: Contract Deliverable (Cost) CTO Deliverable (Technical) Other X

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Date/Time Received
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**HUNTERS POINT SHIPYARD
RESTORATION ADVISORY BOARD (RAB) - MEETING AGENDA
MARCH 23, 2000**

Day/Date:

Thursday - March 23, 2000

Time:

6:00 p.m. to 8:00 p.m.

Location:

**San Francisco Police Department
Bayview Station
201 Williams Street
San Francisco**

Time	Topic	Leader
6:00 p.m. - 6:10 p.m.	Welcome/Introductions/ Agenda Review	Richard Mach <i>Navy Co-Chair</i>
6:10 p.m. - 6:15 p.m.	Old Business/Approval of Meeting Minutes	Richard Mach
6:15 p.m. - 6:20 p.m.	Announcements	Richard Mach
6:20 p.m. - 6:30 p.m.	Community Reports	Jill Fox, Dorothy Peterson, & Caroline Washington <i>Community Co-Chairs</i>
6:30 p.m. - 7:00 p.m.	Community Outreach	Richard Mach & Community Co-Chairs
7:00 p.m. - 7:15 p.m.	Early Transfer	Joseph Joyce <i>Deputy Base Closure Manager</i>
7:15 p.m. - 7:30 p.m.	Parcel B Update	Dave DeMars <i>Lead Remedial Project Manager</i>
7:30 p.m. - 7:45 p.m.	Technical Assistance Grant (TAG) Update	Alex Lantsberg <i>Southeast Alliance for Environmental Justice</i>
7:45 p.m. - 7:50 p.m.	Future Agenda Topics	Richard Mach
7:50 p.m. - 8:00 p.m.	Meeting Summary/Evaluation & Adjournment	Richard Mach

**HUNTERS POINT SHIPYARD
RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES
FEBRUARY 24, 2000**

These minutes summarize the discussions and presentations from the RAB meeting held at the Bayview Police Station (201 Williams Street) between 6:00 pm and 8:00 pm on February 24, 2000. The minutes are not a verbatim transcript, but instead summarize the topics discussed at the meeting. The list of agenda topics are provided below. Attachment A provides a list of attendees.

AGENDA TOPICS:

- 1) Welcome/Introductions/Agenda Review
- 2) Old Business/Approval of Meeting Minutes
- 3) Announcements
- 4) Community Reports
- 5) Bay Trails/Trust for Public Lands
- 6) Preliminary Development Concept
- 7) Parcel B Update
- 8) Community Outreach
- 9) Future Agenda Topics
- 10) Meeting Summary/Evaluation
- 11) Adjourn

MEETING HANDOUTS:

- Agenda
- HPS RAB Listing
- HPS BCT/RPM Draft Meeting Minutes for January 18, 2000
- HPS BCT/RPM Draft Meeting Minutes for December 9, 1999
- HPS BCT/RPM Draft Meeting Minutes for October 21, 1999
- HPS RAB Draft Meeting Minutes for January 27, 2000
- Package of overheads from a Navy presentation in February 2000 titled "City of San Francisco, Early Transfer Opportunities"
- Package of overheads for the Parcel B Update agenda topic

1) Welcome/Introductions/Agenda Review

Mr. Joseph Joyce, Deputy Base Closure Manager (BCM) and interim Base Realignment and Closure (BRAC) Environmental Coordinator (BEC), opened the meeting at 6:05 p.m. Mr. Joyce introduced Mr. Richard G. Mach, Jr. as the new BEC for Hunters Point Shipyard (HPS) and highlighted the fact that Mr. Mach recently received the award of "Remedial Project Manager of the Year" for Naval Facilities Engineering Command. Mr. Mach stated that he is looking forward to working together on HPS. Mr. Mach mentioned that he spent the last 6 years working on Naval Air Station North Island and

and said he looks forward to working with everyone on all the HPS sites and moving the property to closure.

Mr. Joyce asked that everyone introduce themselves and state the company or the organization that they are with. He also reminded everyone to sign in so that there is a record of attendees and so that attendees can receive copies of the meeting minutes.

2) Old Business/Approval of Meeting Minutes

Before approving the meeting minutes, and as part of the discussion of old business, Ms. Washington asked that Ms. Peterson also be recognized as a community co-chair. Mr. Joyce suggested that the discussion of having three community co-chairs on the RAB be included in the community outreach portion of the meeting but acknowledged that there are three RAB community co-chairs.

Mr. Joyce discussed the December 8, 1999 and January 27, 2000 meeting minutes. Following a request for comments on the meeting minutes, and with none received, Mr. Joyce moved to approve the meeting minutes. Mr. Joyce reiterated that comments or clarifications or approvals were requested. Mr. Joyce proposed that the meeting minutes be accepted unless there is any need for clarification. Based on the RAB input, the December 8, 1999 and the January 27, 2000 meeting minutes were approved as written. If any future clarifications are needed, Mr. Mach (619-532-0913) or Mr. Joyce (619-532-0963) should be contacted. Mr. Joyce provided the local voice-mail phone number (650-244-3144) for the BEC and mentioned that this is a dedicated voice mail number that will provide access to the Navy's HPS team.

A RAB member asked that minutes be sent out in a timely fashion so there isn't confusion about which set of minutes will be discussed at the RAB meeting. Mr. Joyce agreed and said that the goal is to issue meeting minutes 1 to 2 weeks before the upcoming meeting, which means that they would have to be issued 2 weeks after each meeting. Mr. Joyce committed to having the meeting minutes out in advance of the next meeting; however, asked the RAB to be flexible about the 1 to 2 week time. Mr. Joyce made one final call for comments on the meeting minutes; none were voiced. The December 8, 1999 and January 27, 2000 meeting minutes were considered approved as written.

3) Announcements

Mr. Joyce provided an update on a previously announced opportunity for the community to participate in the cleanup of HPS through a Bay Area Defense Conversion Action Team (BADCAT) project. As part of BADCAT, a demonstration project was held on January 28, 2000 where sampling was conducted using multi-port wells to collect samples at discrete locations within the well; this event took place, as advertised. Results from the project are being evaluated and will be presented at a future meeting.

On February 11, 12, and 13, 2000, a Land Use Controls for Western Stakeholders Forum was held at the Hastings College of Law. This forum discussed the following types of land use control issues: design, enforcement, monitoring, and long-term effectiveness. Mr. Joyce noted that a number of the community members present tonight were also present at this forum; he commended the community participation and the depth of the discussion. He also noted that stakeholders from community groups all around the country were brought in and overall it was a very good forum. Mr. Joyce asked for future involvement here locally in these conferences. Mr. Joyce had hoped to bring information from the land use controls forum tonight but did not have the information in time; those who are interested in obtaining this information should contact Mr. Joyce. Mr. Joyce also mentioned that various grants may be available that include costs incurred by travelling from non-local areas; this information will also be made available to the community. The forum is in June 2000 so there is plenty of time.

Mr. Joyce mentioned that there have been discussions between the Navy and the City of San Francisco (City) about early transfer (e.g., transfer of the property while cleanup is underway but prior to completion of environmental cleanup). The focus is how to close and cleanup the HPS and convey the property as an early transfer. This is only one of many options. Mr. Joyce brought a copy of an early transfer presentation that was given to the senior City staff and developers by a senior Navy manager at a meeting on February 10, 2000. This presentation included information on how early transfer is done and clarified that the Navy's responsibility for environmental cleanup does not go away once the property is transferred. Environmental cleanup does not go away until it is completed.

Mr. Joyce provided a response to Ms. Peterson's question regarding cleanup responsibility. He explained there are several scenarios: one way is to transfer money to the City. In this case, the City takes responsibility to clean up the property. Another way is to convey property and have the Navy keep the responsibility to clean it up. At this time, there is no particular focus on any one particular option. Ms. Brownell with the City provided a response to Ms. Peterson's question as to whether or not discussions had occurred. She verified that there has been a discussion of early transfer but that there are a lot of issues that need to be resolved before actually doing an early transfer. She stated that nothing would be signed or agreed to without community input and also that there were a lot of things that needed to be figured out before early transfer could occur. Mr. Joyce mentioned that Mayor Brown and Bill Cassidy, the Deputy Assistant Secretary of the Navy, met today to discuss the options available to transfer the property. He emphasized that the Navy is concerned with clean up and transfer so that HPS can be redeveloped.

Mr. Lantsberg of Southeast Alliance for Environmental Justice (SAEJ) asked if a cost/liability had been determined for the cleanup/transfer and noted that he has heard of a \$300 million cost estimate. He feels that the community should know what the Navy and the City are negotiating. Mr. Joyce replied that when the cost is determined that this will be put on the appropriate RAB meeting agenda.

The March 25, 2000 HPS site tour will have to be rescheduled as a result of tonight's discussions. During the site tour the Navy will be prepared to share what the difference between the previous site tour and what has been done up to the current site tour. The rescheduled date for the site tour will be discussed later, after tonight's meeting. Ms. Fox thought that it would be a good idea to schedule the site tour by March 23, 2000 so that the date can be announced during that meeting and flyers can be provided.

4) Community Reports

Ms. Fox (community co-chair) provided a report on the Preliminary Development Concept (PDC) meeting that was held on February 5, 2000. Lennar/Bayview Hunters Point (BVHP) gave a presentation on reuse in which small group discussions occurred and several hundred people from the community attended. The number one thing that people wanted from the HPS, across the board, was cleanup. Ms. Fox emphasized that people really do want the HPS cleaned up because nothing can really be done at HPS until it is cleaned up. Ms. Fox mentioned that at this meeting, the work of the RAB was never included in the presentation. Ms. Fox felt this was remiss since this is the opportunity for the community to be involved in the cleanup.

Ms. Fox pointed out that there is some confusion amongst the community about the change of the meeting day of week. Ms. Fox also mentioned that since the previous facilitator (Mr. Ryan Brooks) has left, perhaps the vacant position can be filled by a member of the community rather than the Navy. Mr. Joyce and Ms. Fox agreed that these issues should be discussed in the community outreach portion of the meeting.

Community reports were solicited by Mr. Joyce from the other two community co-chairs, Ms. Washington and Ms. Peterson; they had nothing specific to report.

5) Bay Trails, Trust for Public Lands

Ms. Fox introduced two presenters, Ms. Capita and Mr. Ingenito, who represent Bay Trails, Trust for Public Lands. The Bay Trails is a network of pathways that will go all the way around the bay (approximately 400 miles) so a person could literally hike the entire trail. One of the big missing pieces is the HPS and this is another reason why the community believes that HPS should be cleaned up. The renaissance of India Basin Shoreline (north of HPS) is also a big issue because it is the next big piece of shoreline northwest of the HPS. Ms. Harrison is also working with the Trust for Public Lands to facilitate community outreach.

Ms. Capita explained that the Trust for Public Lands organization is a non-profit land conservation organization that tries to help improve parks and open spaces in urban areas and provide recreation opportunities for segments of the bay area that have not had these opportunities. Since last fall, the work of this organization has been ongoing and basically started a renaissance of the BVHP neighborhood. This neighborhood spans the area from Heronsett Park (Pier 98) to Phase 1 of the India Basin Shoreline Park, which has been completed. Phase 2 will include a basketball court, a children's play area, and

community center. Phase 3 will include additional wetlands restoration as well as the continuation of the Bay Trails through the HPS to an interim trail and a proposed hilltop park. Mr. Ingenito noted that for years there have been plans to have open lands in the India Basin Waterfront. Improvements proposed include stairway access and ramps in useful locations and trees along the streets and sidewalks. The plan is to work with the redevelopers of HPS to make the connections to the Bay Trails on HPS.

The Trust for Public Lands works to coordinate with the Department of Public Works, the Department of Parks and Recreation, and other nonprofit groups so they can have access to funding. The Trust for Public Lands has hired people from the community to help get the word out and get community input. Also, Ms. Capita noted that the organization has hired three community members as liaisons for the work and recently conducted a survey to see what people are interested in seeing at the India Basin Shoreline Park.

In response to Ms. Peterson's inquiry regarding the type of links planned for Hunters View and Westbrook, Mr. Ingenito responded that the link will consist of an access ramp. Also, improved stairs are planned for Griffith Street. The proposed layout is being working on. Also, the Trust for Public Lands is trying to coordinate with the proposed community and senior center.

In response to Mr. Dacus' inquiry, Mr. Ingenito responded that there is funding slated for portions of phase 2 which does not include the proposed playground, basketball court, and community gardens but does include the continuation of the bay trails and some picnic areas, some miscellaneous funding that has not been allocated yet, and also funding that is planned to be obtained from other organizations. Ms. Peterson asked about the portion of the link that is on PG&E property. Mr. Ingenito responded that, in the plan, PG&E must provide shoreline access and a bridge is also being proposed. BCDC regulations require such access since the PG&E property is between two public parks.

In response to Mr. Lantsberg's inquiry, Ms. Capita responded that the Trust for Public Lands is working with BCDC and the Mayor's office to get the boatyard owned by Mr. J.R. Manuel cleaned up and used. A meeting occurred today (on February 24, 2000) at the Mayor's office and there were discussions about the privately-owned boatyard and the tug boats that are kept there.

Mr. J. R. Manuel introduced himself and stated that the community's main concern during the February 5, 2000 meeting pertains not to cleanup per se, but to exclusion from the process. He mentioned that he is the only one here at this meeting who lives in the India Basin community. He also reported that Hudson Ave. is not a dedicated right-of-way and the city grids were arbitrarily drawn, as shown on the city grid displayed by Ms. Capita and Mr. Ingenito. Mr. Manuel said that he owns 8.5 acres of property in the India Basin and that he has never been contacted by anyone here with regard to community outreach. Mr. Manuel feels that erroneous information is being relayed regarding the community outreach efforts since he has not specifically been contacted. He said that he

thinks that people are going to be getting together from the community to represent themselves since the outsiders are not and cannot adequately represent the India Basin community.

Mr. Joyce suggested that information be given on community outreach. Ms. Peterson replied that they have made some attempts to contact the people in the areas that they represent. Ms. Peterson said that Ms. Fox and Ms. Harrison asked her to contact several communities on the hill above India Basin, which is part of Hunters Point. Mr. Manuel emphasized that although she was contacted, he (Mr. Manuel) was not contacted and he is the only India Basin resident present. Mr. Joyce focused on the community outreach issue that will be addressed as an agenda topic. Ms. Capita and Mr. Ingenito spoke about their organization's effort to get local people to do the community outreach in the area. He noted that the Bay Trails has a database of 100 people, including businesses and residents, from India Basin, who were contacted as part of public outreach. There was some discussion about the definition of India Basin. Mr. Joyce pointed out that the RAB points of contact could be used to circulate information.

Ms. Capita reminded everyone that the phone number for the Trust for Public Lands is on the flyer that was distributed. Mr. Joyce thanked the Bay Trails, Trust for Public Lands, for their participation in this meeting.

6) Preliminary Development Concept (PDC)

Mr. Joyce stated that as Jesse Blout from the Mayor's office, is unavailable, Mr. Willis will give the presentation instead. He introduced Mr. Roy Willis, who stated that he was happy to be here tonight. Mr. Willis is the operations director for Lennar/BVHP. He mentioned again that the February 5, 2000 meeting regarding the planned development of HPS was covered on TV. He pointed out that no ill will was meant by not mentioning the RAB and that community outreach is important. The goal of the February 5, 2000 meeting was to present to the community what the land uses were and to emphasize the need for cleanup.

The PDC is a proposal on how the HPS could be redeveloped. The proposal has been developed over several years with extensive community input. Mr. Willis used figures to present the areas of the redevelopment plan, including residential, light-industrial park, cultural centers, and access to the waterfront. The plan represents a mixed-use development on the waterfront that is very dependent upon the HPS being cleaned up to certain standards.

Mr. Floren explained that one year ago Lennar/BVHP was selected to redevelop the HPS and as a result a PDC was developed. The PDC was based upon the community coming together and thinking about what issues were important. The need for phases of development is related to cleanup and transfer. He noted that infrastructure at HPS is in serious need of rebuilding.

Mr. Floren stated that Parcel A will be the first to be delivered; it is slated mainly for residential use. Phase I illustrates a series of uses that will happen simultaneously with the housing that will be developed in Parcel A. Many of those uses are in Parcel B, which will be delivered in a timely manner to fulfill the commitments that have been made. Those commitments include an African-American marketplace and museum. Parcel B's Lockwood Landing will essentially be a new neighborhood that, according to a "town center" concept, will center around the marketplace and museum. A community facility will be built on the space that is currently occupied by Building 123; this facility will support a conglomeration of neighborhood uses. Some of the artists and community-based nonprofit organizations will be relocated to Parcel A. Bill Strickland will lead a group called Baypac; this group will develop a training center in Parcel A.

Mr. Floren stated that there is a huge demand for multi-media apartments, but Lennar/BVHP is constrained by the delivery date of the property. Parcel D is slated for light industrial use. The overall development plan spans ten years, starting from the delivery of the property. The plan is extended to 20 years, for the purposes of the regulatory documents. He stated that Lennar/BVHP is looking forward to participating in the ongoing community dialogue regarding the development of the shipyard.

In response to Ms. Harrison's inquiry, Mr. Floren replied that at this juncture, the PDC does not reflect an on-site waste treatment facility other than for regular stormwater runoff. There are no current plans for an on-site sewer treatment. He stated that this is open for discussion, and that regulatory issues are involved. Ms. Harrison stated that community members have previously expressed concern with the overburdened waste treatment facility on Third Street and Fell. She expressed her displeasure that no provisions were included in the PDC to address this issue.

Mr. Willis acknowledged her comment and stated that a treatment facility is not currently part of the proposal. He explained that Lennar/BVHP will enter into more detailed discussion with the City and Redevelopment Agency regarding issues such as this, Lennar/BVHP will update the community on the results of this discussion. He also noted that the PDC is subject to amendments.

Mr. Joyce asked Mr. Willis to specify the avenue through which the community can contact Lennar/BVHP. Ms. Zimmerman provided the following address and telephone number: HPS PDC, c/o Luster, 1550 Bryant St., Suite 535, San Francisco, CA 94103 (877) 747-9273. Mr. Willis stated that Lennar/BVHP representatives have met with the Redevelopment Commission, Project Area Committee (PAC), and the Mayor's Advisory Committee. He encouraged attendees to provide verbal and written comments that will be addressed when Lennar/BVHP meets with the Redevelopment Commission.

Ms. Fox asked about a follow-up meeting and Ms. Zimmerman responded that a follow-up meeting is planned for March 25, 2000 from 9:30 a.m. to 3:00 p.m. with focus groups on various topics including the sewer issue at that meeting. Therefore, as mentioned earlier, it was determined that the site tour that was scheduled for this date would need to be rescheduled.

7) Parcel B Update

Mr. Joyce stated that the HPS team had made a commitment to have the status of Parcel B as a standing agenda topic at every at every monthly meeting until all the issues associated with Parcel B are resolved. On February 15, 2000, a meeting was held with the regulators to discuss the Navy's proposal to move forward with remediation of Parcel B. Mr. Joyce explained that in a follow-on meeting, the regulatory agencies indicated that they wanted more detail on how the remediation work would be implemented in the field before moving forward with the proposal. The Navy has provided this information. Although consensus has not yet been reached with the regulators, the Navy would like to provide the community with the information that was presented to the regulators during the February 15, 2000 meeting. Mr. Joyce introduced Mr. DeMars, Navy Lead Remedial Project Manager, who gave the Parcel B presentation. Mr. DeMars passed around handouts and noted that they are similar to the December 1999 meeting handouts but are condensed.

The key points of the handouts are discussed below:

- Navy point of contact information: Mr. David B. DeMars Lead RPM; telephone (619) 532-0912; and e-mail at demarsdb@efdswnavfac.navy.mil. Also contact Mr. Richard G. Mach, Jr. BEC; telephone number (619) 532-0913; and e-mail at machrg@efdswnavfac.navy.mil.
- The Record of Decision (ROD) for Parcel B calls for excavation of contaminated soil from Parcel B, to prevent contact. Cleanup goals were established using the residential risk scenario and are protective to one in a million excess cancer risk with unrestricted reuse down to ten feet in the soil. There are no changes to the Parcel B ROD goals that have been presented in past. The Navy's proposal deals with incorporating the new 1999 preliminary remediation goals (PRGs) that result in updated cleanup levels for the site and utilizing accepted risk assessment methodology and statistics.
- Mr. DeMars presented an updated Table 8 from the existing ROD. This table shows the difference between the old and the new PRGs. Mr. DeMars mentioned that the laboratory measured chemicals down to very low levels and that a milligram/kilogram measurement represents one part per million (i.e., 22 milligrams/kilogram equals 22 parts per million).
- A draft proposal in the form of an e-mail was presented to the regulators on January 13, 2000 and a meeting was held one week later. On January 27, 2000 a formal proposal was provided by the Navy to the regulators. A copy of the formal proposal was provided as an attachment to the January 27, 2000 meeting minutes. From February 2 to 10, 2000 the Navy received written comments from the Environmental Protection Agency (EPA). The main comment was regarding how this proposal would be implemented in the field. This is the topic of tonight's discussion. The

regulators were supposed to give feedback on the proposal leading to concurrence to proceed with remediation of Parcel B.

- Three basic comments were received from the regulatory agencies: (1) the sites may not be fully characterized; (2) the presence and discovery of potential hidden hotspots; and (3) the type of samples collected (discrete vs. composite samples). Discrete samples relate to the chemical testing of one soil sample, whereas composite samples relate to the chemical testing of two or more samples collected from different locations that are combined to make one sample.
- A total of 103 sites at HPS require cleanup. As of September 1999, there were 60 sites that did not meet the current ROD cleanup goals, and therefore, required further investigation. The Navy took these 60 sites and decided to put all of them into a five-phase proposed plan. First, before going out to the sites and excavating, the Navy will collect confirmation samples to be sure the boundaries of the site are drawn around the contamination. Then the data from these samples will be used in the risk assessment. Previous excavations required 5 or 6 step-outs. This planned approach uses the borings around the sites to better delineate the boundaries before excavation begins. Recommendations for excavation boundaries for each site will go to the regulatory agencies for concurrence. In the event that soil staining or debris are encountered, additional sampling will be conducted. Following the regulatory agency's approval, the holes will be filled with clean soil.

Mr. DeMars emphasized that this was a brief presentation and a more detailed written proposal is being prepared and will be distributed. Mr. Joyce asked for questions in a "timely fashion".

In response to Mr. Harrison's inquiry, Mr. DeMars explained that the Navy will start off where IT Corp. left off. That is, the Navy will begin work on the sites that have not met the cleanup goals according to the sampling results. The Navy will not excavate on the approximately 45 sites that have met the cleanup goal.

In response to J. Abdul Al-Bari's inquiry about Table 8, Mr. DeMars explained that the basis of the original target was the 1995 PRGs; the basis of the new target is the 1999 PRGs. Mr. Joyce explained that the EPA, and not the Navy, develops the cleanup goals. Ms. Lauth stated that EPA develops the cleanup goals by evaluating the risks through various pathways. For example, 1×10^{-6} is the residential cleanup goal. She noted that although the home-grown produce pathway is not normally included in the EPA's PRGs, it is incorporated into the cleanup goals. Toxicological data are updated as additional information becomes available, which results in an increase or decrease of the cleanup goals.

In response to Mr. Al-Bari's comment, Ms. Lauth explained that dramatic increases are due to the inherent uncertainty involved in estimating the protective numbers. Mr. Joyce added that Dr. Dan Stralka is part of the risk assessment process; Dr. Stralka has given presentations to the RAB in the past.

A RAB member asked what happened to the soil that was already excavated. Mr. DeMars stated that the soil was trucked to Idaho for disposal. Mr. Joyce pointed out that the out-of-state facilities used are permitted facilities that are prepared to handle this type of contaminated soil.

In response to Darnell Blackwell's inquiry, Mr. DeMars explained that PRG stands for "preliminary remediation goal." PRGs are values generated by the EPA on which the Navy bases its cleanup levels. Mr. DeMars explained that HPAL stands for "Hunters Point ambient levels," or naturally-occurring levels. Mr. Blackwell inquired how the ambient levels are determined, given the prolonged industrial activity and the fill that was used. He added that even if harmful levels were truly ambient, it does not signify that the substances should be left on the site. Mr. Joyce replied that the rock formation on Innes Avenue consists of serpentinite rock. Nickel is one of the metals in serpentinite rock. Although the concentration of nickel in the rock is higher than the PRG, it is not a release, because it is part of the naturally occurring rock formation. The Navy's cleanup activities are focused on past releases. Given the various locations that the fill may have originated from, he questioned if the levels in the fill are actually naturally occurring. Ms. Brownell suggested that a presentation be given on how the HPALs were determined. Mr. Joyce agreed.

In response to Mr. Dacus' inquiry as to where the backfill material for new excavations will be coming from, Mr. DeMars replied that it will be coming from an off-station clean source.

In response to Mr. Blackwell's inquiry as to how much money is projected for sampling under Phase 1 of the proposal, Mr. DeMars responded that the proposal only shows the concept. Following regulatory approval of the proposal, as part of the amendment to the remedial design documents, the sampling cost will be determined as part of the remedial action work.

In response to Mr. Heagy's comment that the PRG levels are interesting because there seem to be some unusually high numbers, Mr. DeMars noted that the list is comprehensive and does not necessarily indicate chemicals that are at the site.

8) Community Outreach

Mr. Joyce began by saying that at the last RAB meeting there were not many community members. So it is the goal of this discussion to see how we can generate more involvement by the community. Mr. Joyce led a brainstorming session to obtain input regarding community outreach. Ms. Fox noted that there was excellent turn out (roughly 12 community members raised their hand). Mr. Joyce pointed out that it is the goal of the community outreach discussion to come up with ways to get more of the community informed and involved. Mr. Joyce suggested noting what recommendations there are for community outreach and then having a separate co-chair meeting to figure out these issues. Mr. Joyce asked that the community forward the issues that they would like to

have discussed at upcoming RAB meetings to the community co-chairs or the Navy so that it can also be included. The following input was provided:

- Pick, set, and stick to a day/date for the meeting – need a consistent meeting date and location. Meet on the fourth Thursday of each month as opposed to fourth Wednesday. The meeting dates have been established based upon the fourth Thursday of each month. For the time being, the March 23, 2000 on Thursday is the next meeting.
- Get co-chair approval on extracurricular meetings and tours.
- Continue to use simple English in meetings, publications, and other media – A community member mentioned that this was appreciated and recognized as a good point of the community relations efforts so far.
- Hand out RAB membership applications to be handed out so that community members can be invited and join the RAB – Mr. Joyce asked that they be provided with the meeting minutes.
- Explore a new location for the meetings – the community room at the Southeast Community College (SECC) was a good location. Since the room size is limited at the present location, it was recommended that an alternate location be explored. Consider the following for the location of meetings: Opera House, City College, or the Gloria R. Davis meeting room.
- Produce a monthly RAB newsletter and announce the meetings (and a briefing of what happened at the meeting) in the local newspapers. Ms. Peterson asked if the Navy can post a monthly advertisement in local newspapers. A RAB member recalled that a newsletter used to be prepared. Monthly or every other month, it would be good to have an announcement, in particular, in the free newspapers, such as the Independent and the Bayview papers. A RAB member emphasized providing more information in the newspaper than an announcement, for example, a summary (or a feature article) of what was discussed.
- Distribute flyers to community groups – community co-chairs could provide lists of group names for mailings/presentations. This would be one format for distributing information on the RAB activities.
- Get out to the schools – A RAB member suggested going to the schools and informing the students and parent-teachers association (PTA).
- Technical Assistant Grant (TAG) – provided through U.S. EPA. This is a \$50,000 grant that provides the community with technical assistance to support their involvement in the cleanup process. A RAB member suggested that the TAG group, SAEJ, report on their technical issues to the community in that forum. SAEJ is a community-based coalition that should be able to provide this information. A RAB member recalled that previously, every month at the RAB meetings, a SAEJ representative would come and make a presentation.
- Provide an acronym list at the RAB meetings – Mr. Freeman suggested that a master list of acronyms be provided at each RAB meeting. Mr. Mach agreed that the acronym list was useful at other RAB meetings and he would suggest providing it here as well, possibly along with the meeting minutes. The Navy has several acronym lists and, in order to be the most useful, the Navy will be preparing a list for the HPS RAB.

- Appreciation/recognition of RAB volunteers – recognize the level of commitment it takes for a community member to participate.
- Use of a web site – Ms. Fox thought this would be a good way to announce various community meetings.

Mr. Joyce asked for input from two community relations experts, who were present at the meeting. Ms. Lupton with TetraTech EM, Inc. felt that it would be helpful to map out milestones and metrics so as to measure the success of these good suggestions from the RAB members. Mr. Joyce said that there was a lot of good discussion tonight and emphasized that this forum is not set up to discuss the technical details. Mr. Coleman with Bechtel suggested that phone numbers for RAB members be provided as an attachment to the meeting minute, that handouts from the RAB meetings be provided in public information packages and placed in the Information Repository, and that a web site be provided so that information can be made available electronically.

Mr. Joyce asked that the RAB members review the RAB guidelines and the charter so that the roles and responsibilities of co-chairs and the Navy are clear. Ms. Fox pointed out that this is provided in the “white notebooks.” Ms. Fox also noted that there are a lot of community meetings going on and that other ways to reach the public need to be explored, especially since it is hard for the community to make the meetings. Mr. Joyce noted that there are concerns regarding outside meeting coordination and information sharing.

Mr. Al-Bari noted that almost everyone in the room is on someone’s payroll. In response to his inquiry, Mr. Marini confirmed that IT Corp. hired 14 Hunters Point residents who participated in the EPA program. Mr. Al-Bari noted that a small percentage out of the total contract amount was paid to Hunters Point residents. He stated that one way to increase community participation is to involve community members in the work activities and to pay them accordingly. He asked how much money was already spent, how much more will be spent, and who makes the hiring decisions.

Mr. Joyce acknowledged that job allocation is a common theme. He stated that information can be provided at a community center that pertains to the future environmental action and redevelopment plans, along with the skills that are being sought, job training that will be provided, and other business opportunities. Ms. Peterson stated that the community has already been through this process with IT Corp. She noted that although a “watchdog” was assigned, the jobs did not go to Hunters Point/Bayview residents. Mr. Joyce suggested that it would be good to note which tactics were effective, as well as which were not, in order to apply the lessons learned to future endeavors.

9) Future Agenda Topics

Ms. Fox read her list of standing topics: Welcome/Introductions/Agenda Review; Old Business/Approval of Meeting Minutes; Announcements; Community Reports; TAG Report; and Parcel B Update. She noted that there have been too many items on the agenda during the last few meetings. She suggested keeping the number of variable topics

to two items, such as early transfer and the HPAL presentation. Mr. Joyce reiterated that early transfer and ambient levels will be discussed in future meetings.

10) Meeting Summary/Evaluation

The community outreach portion of the agenda went into overtime and the meeting summary/evaluation was not discussed specifically.

11) Adjourn

Mr. Joyce thanked everyone for their participation and support in his interim role as Base Environmental Coordinator. Mr. Joyce said that he personally has enjoyed participating in the RAB. Mr. Joyce turned over the meeting to the new Base Environmental Coordinator, Mr. Mach, and Mr. Mach adjourned the meeting.

**ATTACHMENT A
FEBRUARY 24, 2000 - RAB MEETING
LIST OF ATTENDEES**

Name	Organization
Joseph Joyce	Deputy Base Closure Manager (BCM)
Richard G. Mach, Jr.	BRAC Environmental Coordinator
Caroline Washington	Community Co-chair
Dorothy Peterson	Community Co-chair
Marie Harrison	RAB member
Jill Fox	India Basin Neighborhood Organization and Community Co-chair
Greg Freeman	RAB member
Jim Heagy	RAB member
Garlen Capita	Trust for Public Land
Joe Ingenito	Trust for Public Land
Sheryl Lauth	U.S. Environmental Protection Agency (U.S. EPA)
Jackie Lane	U.S. EPA
Marie Avery	Base Closure Manager (BCM)
John Corpos	Environmental Liaison
Marcus Dancer	
Bob Coleman	Bechtel, Community Relations
Charmaine Cosky	Bechtel, Community Relations
Jose Payne	Remedial Project Manager (RPM)
Julie Crosby	RPM
Bill Radzevich	RPM
Judy Waters	Lennar
J.R. Manuel	
Don Marini	IT Corporation (IT Corp.)
Darnell Blackwell	
Roy Willis	Lennar/Bayview Hunters Point (BVHP)
Karita Zimmerman	Lennar/BVHP
Jason Brodersen	Tetra Tech EM Inc. (TtEMI)
Chuck Pardini	Levine Fricke
J. Abdul Al-Bari	
David DeMars	Lead RPM
Charles Dacus	
Maria Villafuerte	Gutierrez-Palmenberg (GPI)
Andy Piszkin	Environmental Business Manager
Amy Brownell	San Francisco Health Department
Alex Lantsberg	Southeast Alliance for Environmental Justice
Stacey Lupton	TtEMI

Western Stakeholders' Forum
on
Land Use Controls in Federal Facilities Cleanup
Hastings College of Law, San Francisco, CA
February 11-13, 2000
Sponsored by: CPEO and ICMA

FRIDAY, FEBRUARY 11, 2000

10:30-11:45 am. Primer on Land Use Controls for Early Arrivals

- Seth Kirshenberg, Executive Director Energy Communities Alliance/Partner, KutakRock - Attorneys
- Vicky Peters, Senior Assistant Attorney General, Colorado State Attorney General's Office

Noon-1 pm. Forum Registration

1 pm-3:15 pm. Opening Plenary

- Bill Lee, City Administrator, City and County of San Francisco. Welcome and a Local Perspective
- Dianna Young, EPA Headquarters, Federal Facilities Restoration and Reuse Office Overview of Land Use Control Issues in Cleanup
- Mario Ierardi, Environmental Engineer, Air Force Base Conversion Agency. Road to Site Close-Out
- Joe Schilling, Director of Economic Development, International City/County Management Association. Survey on Land Use Controls

3:30-5:30 pm Friday. Break-out Panels by Contamination

1. Toxics

- a. Moderator, Torri Estrada, Director, Brownfields Project, Urban Habitat Program
- b. Bobbye Smith, Chief, Air Force and Department of Energy Section, U.S. EPA Region 9
- c. Greg Hurley, Partner, KutakRock - Attorneys and Community Co-Chair El Toro Restoration Advisory Board
- d. Steve Chao, former Navy Base Environmental Coordinator, Moffett Naval Air Station
- e. Tim Gagen, City Manager, Commerce City, CO

2. Radiation

- a. Moderator, Tom Schneider, Fernald Project Manager, Ohio EPA
- b. LeRoy Moore, Consultant, Rocky Mountain Peace and Justice Center
- c. Susan Gawarecki, Executive Director, Oak Ridge Reservation Local Oversight Committee, Oak Ridge, TN
- d. Steve Tarlton, Unit Leader, Rocky Flats Oversight Unit, Colorado Department of Health and the Environment

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3. Explosives

- a. Moderator, Myrna Hayes, Community Co-Chair Mare Island Naval Shipyard Restoration Advisory Board
- b. Rob Wilcox, Program Manager, Army Corps of Engineers Center of Expertise Ordnance and Explosives
- c. Jim Austreng, Unexploded Ordnance Coordinator, California Department of Toxic Substances Control, Sacramento, CA
- d. Harry Craig, Senior Remedial Project Manager, U.S. EPA Region 10
- e. Keoni Fairbanks, Executive Director, Kaho'olawe Island Reserve Commission

5:30-7 pm. Reception

- Alumni Reception Center, 200 McAllister Street (directly across the street on the northwest corner of Hyde and McAllister Streets)

SATURDAY, FEBRUARY 12th

8:30-9:30 am. Plenary Speaker

- Colonel John P. Selstrom, Jr., Director, Department of Defense Environmental Cleanup Programs. Defense Department Perspective.

9:30-11:30 am. Panel. Tools for Strengthening the Consideration and Enforcement of Land Use Controls

- a. Stan Phillippe, Division Chief, Office of Military Facilities, California Department of Toxic Substances Control, Sacramento, CA
- b. Amy Edwards, Partner, Holland and Knight, Washington, DC, and AST.
- c. Jay Pendergrass, Senior Attorney, Environmental Law Institute, Washington, DC
- d. Don Gardner, City of Portland, Oregon
- e. John Yelenick, 1996-1998 Community Co-Chair Rocky Mountain Arsenal Restoration Advisory Board
- f. Roger Baker, City Attorney, Tooele City and Redevelopment Agency, Tooele City, UT

11:30 am -1:30 pm. Round Table Discussions and Buffet Lunch

1:30-2:00 pm. Plenary Speaker.

- Stuart Harris, Risk Assessor, Confederated Tribes of the Umatilla Indian Reservation. Tribal Perspective.

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2:00-4:30 pm. Break-out Panels Followed by Discussion of Potential Recommendations

1. Active Facilities - How to Ensure that Federal Agencies Record and Follow Land Use Controls

- a. Moderator, Aimée Houghton, Associate Director, CPEO
- b. Lori Cora-Houck, Assistant Regional Counsel, U.S. EPA Region 10
- c. Larry Hourclé, Associate Professor of Environmental Law, George Washington University Law School
- d. Marylia Kelley, Executive Director, Tri-Valley CARES, Livermore, CA
- e. Tom Anderson, Senior Environmental Compliance Specialist, NASA Ames Research Center, Moffett Field

2. Facilities Transferring to Non-Federal Ownership

- a. Moderator, Joe Schilling, ICMA
- b. Barry Steinberg, Partner, Kutak Rock - Attorneys
- c. Eve Bach, Staff Economist/Planner, ARC Ecology
- d. Bernard K. Schafer, Senior Counsel, Office of the Assistant General Counsel (Installations and Environment) General Counsel of the Navy
- e. Ken Paulsen, General Services Administration

3. Inactive Facilities Remaining in Federal Hands (Includes Wildlife Refuges, Long-Term Stewardship Sites, etc.)

- a. Moderator, Seth Kirshenber, ECA/KutakRock - Attorneys
- b. Ruth Culver, Conservation Chair, Uncertain Audubon Society
- c. Dan Miller, First Assistant Attorney General, Colorado Department of Law
- d. Andrew Duran, Office of Long-term Stewardship Staff, Department of Energy
- e. Bob Wilson, Environmental Protection Specialist, Office of Environmental Policy and Compliance, US Department of Interior

4. Locally Owned Properties (Primarily Formerly Used Defense Sites)

- a. Moderator, Lenny Siegel, Executive Director, CPEO
- b. Bob Lubbert, Chief Formerly Used Defense Branch, HQ US Army Corps of Engineers
- c. Jennifer Roberts, Alaska Department of Environmental Conservation
- d. Bonnie Rader, Citizen Co-Chair, Former Lowry Bombing and Gunnery Range Restoration Advisory Board

4:45-6:00 pm. Plenary Report-back.

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SUNDAY, FEBRUARY 13th

9 am-Noon. Wrap-up/Write-up

Remaining participants will work with forum sponsors to forge a Land Use Control agenda, based upon the Saturday afternoon discussion. This will be brought to the second (East Coast) forum for further discussion, and then be made available as a starting point for a proposed, ongoing multi-stakeholder dialogue on land use controls.

The following questions are meant to help frame the issues, and discussions we will be having throughout the course of this forum. They may also help provide a framework for potential solutions and recommendations.

1. **DESIGN OF LUCs:** If risk assessments, cleanup standards and remedies rely upon assumptions about future land use, how can land use controls change or reinforce those assumptions?
2. **SELECTION OF LUCs:** Are land use controls adopted in consideration of communities' land use priorities and do they provide flexibility for change in the long term?
3. **IMPLEMENTATION & ENFORCEMENT:** How can controls on use and access be monitored and enforced both in the short run and in the long run?

Western Stakeholder LUC Forum

Agenda for Sunday, February 13, 2000

- 9:00 Opening Comments
- Refinement of Challenges and Solutions
- Feedback Regarding Western Forum/Suggestions for Eastern Forum
- Discussion for Long Term Dialogue

WORKSHEET FOR DISCUSSION

TOPIC #1: DESIGN OF LUC'S

Challenges:

Lack of information: full site characterization of contamination.

Failure to consider a number of issues related to design of LUCs:

- Realistic future land uses that are compatible with the community
- Ecological risk assessments
- Unique cultural and behavioral characteristics of community

Problem gaps in communication between regulators and community re: site

Lack of public involvement in design of LUCs

Unique issues surrounding UXO

Failure to adequately define health risk

Possible Options:

Identify:	Short Term versus Long Term Solution Legislative vs. Policy Change Required Possible Lead Agency or Entity to Move Forward
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Should include impacts of contamination on adjacent communities/cities.

Create consistent standard for cleanup that minimizes political influence.

Create mechanism for resolving disputes between LUC players (Community, local government, regulators...).

Increase the role of the private sector

Consider public safety ~~in~~ ^{while} designing remedy

Use performance standards to measure LUC effectiveness

Early involvement of key players especially real estate experts (GSA, private)

WORKSHEET FOR DISCUSSION

TOPIC #2: Tracking and Recording

Challenges:

Lack of central database and recordkeeping

How to ensure that right people get the right information about LUCs?

How to get the proper information to the community?

Possible Options:

Identify:	Short Term versus Long Term Solution
	Legislative vs. Policy Change Required
	Possible Lead Agency or Entity to Move Forward

Develop a uniform format for the information that easily explains why the LUC is present and how the LUC was determined (abstracting);

Review recent executive order for federal agencies to create one-stop shop/database for all federal government information

Develop database (GIS, websites) that tracks all contaminated lands with LUCs; Start with the most contaminated properties (NPL, BRAC, DOE radiation sites)

Replicate and expand the Portland one-call model; need to get LUC information to private and public utility/construction workers

WORKSHEET FOR DISCUSSION

TOPIC #3 Implementation of LUC'S

Challenges:

Monitoring LUCs over the long term: how will it work?

Lack of uniformity regarding federal LUC guidance (each region has different guidance for active bases versus transferring bases)

Possible Options:

Identify:	Short Term versus Long Term Solution Legislative vs. Policy Change Required Possible Lead Agency or Entity to Move Forward
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Requirement for agencies to consider new technologies at 5-year review (could reopen ROD); particularly relevant for new technologies for UX

WORKSHEET FOR DISCUSSION

TOPIC #4: Enforcement of LUC'S

Challenges:

Covenants and deed restrictions: how to ensure they run with the land?
Lack of uniform state laws and regulations on LUC enforcement

Need for layering enforcement options
How to create incentives that place enforcement authority with entities that want to enforce?
Need to make enforcement feasible (affordable, simple and easy)
Need to define role for tribal governments

Need to oversee role of LRA in enforcement

Possible Options:

Identify:	Short Term versus Long Term Solution Legislative vs. Policy Change Required Possible Lead Agency or Entity to Move Forward
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Expand the role of the general citizen in enforcement: citizen suits, waiver of sovereign immunity, attorneys fees and treble damages
Create citizen groups to monitor LUCs modeled on the "river keepers" and "gate keepers" programs

WORKSHEET FOR DISCUSSION

TOPIC #5: Cost and Funding Issues

Challenges:

Need to do life-cycle cost analysis of LUCs; assessing when and what are the cleanup costs and compare the costs with the value of the property and the long-term impacts of LUCs (opportunity costs)
How do you notify to the potential buyer/developer about the life-cycle costs of LUCs

Clarifying indemnification for enforcement and implementation of LUCs
Obtaining comprehensive funding sources for LUCs over the long term
How to engage public and political support for funding LUCs and the development of innovative cleanup technologies
What is the role of the private sector in funding LUCs?
Cost shift from federal to state/local government: who pays?

Possible Options:

Identify:	Short Term versus Long Term Solution Legislative vs. Policy Change Required Possible Lead Agency or Entity to Move Forward
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DOD insurance fund

WORKSHEET FOR DISCUSSION

TOPIC #6: Stewardship/Capacity Building

Challenges:

Role of new cleanup technology and who pays for its development

Lack of communication throughout federal agencies and between agencies and regions

Need to build state and local capacity to implement, enforce, make better-informed decisions, and make more convincing political cases to legislators; need to empower and inform communities for more involvement (provide technical assistance to communities).

Need to understand roles of all LUC players (esp. regulators) and to encourage early participation

Decide which communities get full cleanup vs. LUCs (need objective guidance as to how this is done)

Possible Options:

Identify:	Short Term versus Long Term Solution
	Legislative vs. Policy Change Required
	Possible Lead Agency or Entity to Move Forward

Use LUCs only as temporary approach until new technologies and possibly new funds are obtained for permanent and complete cleanup

CLEAN

Contract No. 5086-90-057-004

Contract Task Order 0110

**Base Environmental Coordinator: Michael McClelland
Head Environmental Restoration Section I: Richard E. Powell
Navy Engineer-In-Charge: William McAvoy
PRC Project Manager: James Sickles
PRC Assistant Project Manager: Thomas D. Shoff**

**ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA**

CALCULATION OF HUNTERS POINT AMBIENT LEVELS

DRAFT

Prepared by

**PRC Environmental Management, Inc.
135 Main Street, Suite 1800
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(415) 543-4880**

April 11, 1995

**HPAL DISCUSSION
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Table 11	Non-detect Population Analysis - Upper Undifferentiated Sand (Soil Type 3)
Table 12	Non-detect Population Analysis - Bay Mud (Soil Type 4)
Table 13	Non-detect Population Analysis - Undifferentiated Fill (Soil Type 5)
Table 14	Non-detect Population Analysis - All Soil Types

ATTACHMENT A: Regression Plots

1.0 INTRODUCTION

This appendix presents the results for recalculating interim ambient levels (IAL) at Hunters Point Shipyard (HPS), San Francisco, California. This work was performed by PRC Environmental Management, Inc. (PRC) as part of the remedial investigation/feasibility study (RI/FS) at HPS under Contract Task Order (CTO) 110 from Engineering Field Activity West (EFA WEST). The IALs were recalculated using new data sets as required by task III for CTO 110.

1.1 Background

Developing IALs began at HPS in 1992 when Harding Lawson Associates (HLA) submitted the work plan "Background Sampling Plan, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California," and the first technical memorandum presenting results of the evaluation, the "Draft Technical Memorandum Background Soil and Groundwater Conditions, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California."

On January 17, 1995, the Navy, PRC, HLA, the California Department of Toxic Substances Control (DTSC), the U.S. Environmental Protection Agency (EPA), and the California Regional Water Quality Control Board (RWQCB), met to confirm areas of agreement in evaluating and using IALs, and to discuss areas of technical differences of opinion. At this meeting, the Navy, U.S. EPA and the RWQCB agreed to a revised approach for assessing IALs. The DTSC concurred with the technical approach in their comments letter dated February 27, 1995.

The term Hunters Point ambient levels (HPAL) will replace the term IAL because the results of this effort are expected to be final values representing agreement among the signatories to the Federal Facility Agreement (FFA). The HPALs will be used in human health risk assessments and for screening sites requiring no further investigation.

1.2 Scope of Services

The scope of work performed for recalculation HPALs include the following:

- Task I: Develop magnesium regression-based ambient levels for nickel, chromium, and cobalt

- Task II: Develop ambient levels for 14 metals and five lithologic types, and for all five lithology types grouped together
- Preparation of this report

1.3 Report Organization

Section 1 of this report provides the introduction. Section 2 present the technical approach for calculating HPALs. The results are summarized in the following tables:

- The regression equations and correlation factors for chromium, cobalt, and nickel versus magnesium for all soil lithologies are summarized in Table 1
- The calculated ambient levels of 14 metals in five different soil types (Task II) with supporting data including the number of samples, threshold limit, adjusted mean, adjusted standard deviation, and calculated ambient levels are summarized in Tables 2 through 6
- The calculated ambient levels of 14 metals in all soil types is presented in Table 7
- The calculated ambient levels for each metal and soil lithology are summarized in Table 8
- The nondetect sample population analyses results for each soil type and for all soil types are summarized in Tables 9 through 14

The regression plots for Task I are included as Attachment B-A to this appendix. The metal is identified on each plot. The soil lithology code is as follows:

- 1 - Serpentinite Fill
- 2 - Serpentinite Bedrock
- 3 - Upper Undifferentiated Sand
- 4 - Bay Mud
- 5 - Undifferentiated Fill
- All - All soil types

2.0 TECHNICAL APPROACH

2.1 Task 1 - Develop Magnesium Regression-Based Ambient Levels for Chromium, Cobalt, and Nickel

For this task, magnesium regression plots were generated for nickel, chromium, and cobalt using the entire soil data set excluding the following:

- Phase IIA soil data
- Data from samples collected at depths of less than 5 feet below ground surface
- Data from sites IR-1, IR-2, IR-3, and IR-9
- Soil data rejected during data validation (R validation qualifier)

A total of 2,870 samples were used for the regression plots. Magnesium-based regression plots were generated for the three metals segregated by five soil lithologic categories (serpentine fill, serpentine bedrock, upper undifferentiated sand, bay mud, and undifferentiated fill), and for all five lithologies grouped together (all soil types).

To approximate a normal distribution, the original data sets were logarithmically transformed. The transformed data was then used to generate regression plots of magnesium versus chromium, cobalt, and nickel. Outliers were visually identified and excluded from each data set. A regression line was obtained for each data set using the least squares method. The regression line and the 90 percent confidence interval for the regression line are included on each plot. The 90 percent confidence interval represents the 95 percent one-sided (upper or lower) confidence limit for the regression line. The equations describing the regression lines for each metal and soil lithology are presented in Table 1. The magnesium-based regression approach is based on two assumptions: (1) magnesium concentrations in soil are naturally occurring, and (2) there is a correlation between naturally occurring concentrations of magnesium and naturally occurring concentrations of chromium, cobalt, and nickel. This correlation is represented by the regression equation developed for each metal and soil lithology. Using this approach, a sample is considered affected by site-related activities (above ambient level) when chromium, cobalt, or nickel concentrations exceed the calculated naturally occurring concentrations at a statistically significant level (95 percent upper confidence limit [UCL]). The naturally occurring concentrations for chromium, cobalt, and nickel are calculated using the regression equations presented in Table 1.

2.2 Task 2 - Hunters Point Ambient Levels for Metals Using Population Partitioning and the 95 Percent UCL/95th Percentile Method

Hunters point ambient levels for 14 metals were calculated for the entire data set segregated by five lithologic categories, and for all five lithology categories grouped together (all soil types). The metals included in the study were antimony, arsenic, barium, beryllium, cadmium, copper, lead, mercury, molybdenum, selenium, silver, thallium, vanadium, and zinc. For this task 2,870 samples were used, which represents the entire soil data set excluding the following:

- Phase IIA soil data
- Data from samples collected at depths of less than 5 feet below ground surface
- Data from sites IR-1, IR-2, IR-3, and IR-9
- Soil data rejected during data validation (R validation qualifier)

Probability plots and histograms were generated for each metal and lithologic category using both original and logarithmically transformed data. These plots were assessed to identify a cut-off value (threshold limit), separating the background population from the contaminated population. In some instances, these plots were also used to identify and exclude outliers from a data set of concern.

The probability plots and histograms were generated using GEO-EAS 1.2.1 geostatistical environmental assessment software developed by the U.S. Environmental Protection Agency. For all data sets, nondetect samples were substituted by one half the reported detection limit. The new data sets were then analyzed to determine the percentage of nondetect samples. Data sets with significant nondetect populations were assessed to reduce the errors resulting from anomalously high detection limits.

The threshold limits were evaluated using information from the probability plots and histograms, as well as the non-detect population. To compensate for extreme values of background concentrations that may exist above the identified threshold limit, Cohen's maximum likelihood estimators (MLE) for right-censored data were applied. With Cohen's MLEs, the mean for the population below the threshold limit is adjusted upward based on three factors: (1) the difference between the population's mean value and the threshold limit, (2) the population's variance, and (3) the proportion of the population above the threshold limit.

The adjusted means and standard deviations were used to calculate the 95 percent UCL for the 95th percentile of each background population according to the following equation:

$$UL_{1-\alpha}(x_p) = \bar{x} + sK_{1-\alpha,p}$$

Where:

$UL_{1-\alpha}(x_p)$	=	Upper limit, 95 percent UCL/95th percentile for this task
\bar{x}	=	Adjusted Mean (using Cohen's MLEs)
s	=	Adjusted Standard Deviation (using Cohen's MLEs)
$K_{1-\alpha,p}$	=	Constant, available from statistics tables

2.3 Results

The regression plots for Task I are presented in Attachment A. Table 1 presents a summary of the regression equations for each metal and soil lithology. Task II summary tables compiling the nondetect analysis information, adjusted mean, adjusted standard deviation, and calculated ambient levels for each metal and soil lithology are presented in Tables 2 through 14.

3.0 REFERENCES

- Harding Lawson Associates, 1990. "Background Sampling Plan, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California."
- 1992a. "Draft Technical Memorandum, Background Soil and Groundwater Conditions, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California." March 19.
- 1992b. "Navy Responses to Agency Comments on Draft Technical Memorandum, Background Soil and Groundwater Conditions, Naval Station Treasure Island, Hunters Point Annex, San Francisco, California." June 19, 1992.
- Department of Toxic Substance Control (DTSC), California Environmental Protection Agency, 1994. "Background Concentrations of Elements on Soil Hunters Point Annex." Letter from Cyrus Shabahari (DTSC) to Richard Powell (EFA West). October 28.
- Meeting Summary, Hunters Point IAL Meeting, EPA Region IX Offices, January 17, 1995.
- DTSC, California Environmental Protection Agency, 1995. "Hunters Point Annex Interim Ambient Levels (IAL) Meeting, January 17, 1995." Letter from Cyrus Shabahari (DTSC) to Richard Powell (EFA West). February 27.

TABLE 1
REGRESSION EQUATIONS
MAGNESIUM VERSUS CHROMIUM, COBALL, AND NICKEL
HUNTERS POINT ANNEX

SOIL TYPE	METAL	REGRESSION EQUATION	CORRELATION (R^2)	PERCENT NON-DETECT SAMPLES
Serpentinite Fill Soil Type 1	Chromium	$y=0.7334x-2.4746$	0.7163	0.09%
	Cobalt	$y=0.4629x-1.2981$	0.7487	0.45%
	Nickel	$y=1.0109x-4.9863$	0.8503	0.18%
Serpentinite Bedrock Soil Type 2	Chromium	$y=0.9506x-5.0604$	0.6000	0.00%
	Cobalt	$y=0.5403x-2.2151$	0.5843	0.00%
	Nickel	$y=1.1784x-6.9210$	0.7812	0.36%
Upper Undifferentiated Sand Soil Type 3	Chromium	$y=0.8087x-3.1212$	0.8207	0.00%
	Cobalt	$y=0.6075x-2.9924$	0.7379	0.87%
	Nickel	$y=0.9165x-3.9961$	0.7951	0.00%
Bay Mud Soil Type 4	Chromium	$y=0.8053x-3.2241$	0.6351	0.00%
	Cobalt	$y=0.7015x-3.9576$	0.7538	0.69%
	Nickel	$y=1.0842x-5.7964$	0.8173	0.00%
Undifferentiated Fill Soil Type 5	Chromium	$y=0.6379x-1.4613$	0.6332	0.38%
	Cobalt	$y=0.4723x-1.4073$	0.6610	1.41%
	Nickel	$y=0.9131x-3.9602$	0.7082	0.47%
All Soil Types	Chromium	$y=0.6894x-1.9999$	0.7167	0.16%
	Cobalt	$y=0.5182x-1.9425$	0.7605	0.82%
	Nickel	$y=0.9486x-4.2997$	0.7939	0.26%

Note:

- y Concentration of chromium, cobalt, or nickel
- x Concentration of magnesium

TABLE 2
CALCULATED AMBIENT LEVELS
SERPENTINITE FILL (SOIL TYPE 1)
HUNTERS POINT ANNEX

Serpentinite Fill - Soil Type 1						
Metal	Total No. of Samples	No. of Ambient Samples	Threshold Limit	Adjusted Mean	Adjusted Standard Deviation	95% UCL of the 95 percentile (Ambient Level)
Antimony	994	936	16.44	4.34	4.26	11.34
Arsenic	1117	1099	16.40	2.98	3.45	8.65
Barium	1123	1042	270.42	115.14	85.86	256.39
Beryllium	1123	All	NA	0.26	0.29	0.75
Cadmium	1123	1014	2.70	0.71	0.86	2.13
Copper	1123	1094	148.40	36.02	31.12	87.21
Lead	1123	1050	33.11	7.26	9.12	22.26
Mercury	1100	1087	12.18	0.36	1.56	2.94
Molybdenum	1123	1073	4.95	0.81	1.21	2.81
Selenium	1072	1067	33.12	0.71	2.73	5.20
Silver	1103	1086	3.32	0.42	0.61	1.43
Thallium	1111	1061	0.61	0.29	0.16	0.56
Vanadium	1123	All	NA	56.48	34.36	113.00
Zinc	1123	All	NA	64.24	186.69	371.69

Notes:

Concentrations reported in mg/kg.

NA - A threshold limit was not assigned, the entire population was used for ambient level estimation.

**TABLE 3
CALCULATED AMBIENT LEVELS
SERPENTINITE BEDROCK (SOIL TYPE 2)
HUNTERS POINT ANNEX**

Serpentinite Bedrock - Soil Type 2						
Metal	Total No. of Samples	No. of Ambient Samples	Threshold Limit	Adjusted Mean	Adjusted Standard Deviation	95% UCL of the 95 percentile (Ambient Level)
Antimony	238	204	7.39	3.57	2.47	8.08
Arsenic	272	156	4.06	3.08	2.80	8.16
Barium	277	146	164.02	151.83	103.02	338.39
Beryllium	278	206	0.41	0.23	0.21	0.61
Cadmium	278	264	1.82	0.48	0.54	1.45
Copper	278	237	54.60	32.10	21.03	70.18
Lead	277	144	4.95	2.03	2.17	5.96
Mercury	274	245	0.22	0.09	0.08	0.24
Molybdenum	277	213	0.55	0.37	0.26	0.85
Selenium	239	181	0.45	0.32	0.14	0.59
Silver	278	175	0.37	0.25	0.21	0.62
Thallium	275	210	0.45	0.30	0.17	0.61
Vanadium	278	261	100.00	55.77	29.41	109.02
Zinc	278	269	109.95	56.26	28.45	107.78

Notes:

Concentrations reported in mg/kg.

NA -- A threshold limit was not assigned, the entire population was used for ambient level estimation.

TABLE 4
CALCULATED AMBIENT LEVELS
UPPER UNDIFFERENTIATED SAND (SOIL TYPE 3)
HUNTERS POINT ANNEX

Upper Undifferentiated Sand - Soil Type 3						
Metal	Total No. of Samples	No. of Ambient Samples	Threshold Limit	Adjusted Mean	Adjusted Standard Deviation	95% UCL of the 95 percentile (Ambient Level)
Antimony	100	73	3.32	2.19	1.57	5.21
Arsenic	115	100	7.39	4.28	2.35	8.76
Barium	115	All	NA	46.34	85.96	210.17
Beryllium	115	110	0.61	0.24	0.19	0.61
Cadmium	115	101	0.67	0.37	0.25	0.85
Copper	113	102	33.12	13.24	11.52	35.23
Lead	115	103	8.17	3.76	2.46	8.46
Mercury	113	103	0.17	0.06	0.05	0.15
Molybdenum	115	107	1.28	0.61	0.44	1.45
Selenium	109	97	0.61	0.36	0.17	0.70
Silver	113	96	1.00	0.37	0.37	1.07
Thallium	115	113	1.42	0.39	0.32	0.99
Vanadium	115	All	NA	39.55	24.90	87.00
Zinc	113	111	90.02	33.24	19.45	70.37

Notes:

Concentrations reported in mg/kg.

NA -- A threshold limit was not assigned, the entire population was used for ambient level estimation.

TABLE 5
CALCULATED AMBIENT LEVELS
BAY MUD (SOIL TYPE 4)
HUNTERS POINT ANNEX

Bay Mud - Soil Type 4						
Metal	Total No. of Samples	No. of Ambient Samples	Threshold Limit	Adjusted Mean	Adjusted Standard Deviation	95% UCL of the 95 percentile (Ambient Level)
Antimony	269	250	14.88	3.22	4.28	10.98
Arsenic	290	69	4.95	7.29	3.26	13.17
Barium	292	All	NA	46.86	34.22	108.60
Beryllium	291	270	0.78	0.37	0.22	0.76
Cadmium	291	269	4.06	0.86	1.18	2.98
Copper	291	285	81.45	29.14	14.38	55.10
Lead	291	261	14.88	7.95	4.13	15.40
Mercury	289	270	0.41	0.10	0.11	0.30
Molybdenum	292	All	NA	1.40	1.60	4.27
Selenium	286	266	1.00	0.43	0.26	0.90
Silver	287	283	1.65	0.38	0.47	1.24
Thallium	287	163	0.30	0.28	0.12	0.50
Vanadium	291	All	NA	54.44	21.98	94.11
Zinc	291	281	115.58	62.53	24.07	105.96

Notes:

Concentrations reported in mg/kg.
 NA -- A threshold limit was not assigned, the entire population was used for ambient level estimation.

**TABLE 6
CALCULATED AMBIENT LEVELS
UNDIFFERENTIATED FILL (SOIL TYPE 5)
HUNTERS POINT ANNEX**

Undifferentiated Fill - Soil Type 5						
Metal	Total No. of Samples	No. of Ambient Samples	Threshold Limit	Adjusted Mean	Adjusted Standard Deviation	95% UCL of the 95 percentile (Ambient Level)
Antimony	931	901	11.02	3.09	2.48	7.17
Arsenic	1053	555	3.00	2.77	1.80	5.73
Barium	1062	All	NA	177.47	252.73	593.21
Beryllium	1062	1053	1.22	0.30	0.25	0.71
Cadmium	1062	1043	4.95	0.58	0.86	2.00
Copper	1062	959	90.02	44.22	28.76	91.54
Lead	1062	1006	54.60	10.28	14.45	34.05
Mercury	1051	1039	7.39	0.26	0.93	1.79
Molybdenum	1061	1028	4.95	0.69	1.02	2.37
Selenium	1018	1004	4.06	0.47	0.67	1.57
Silver	1050	All	NA	0.32	0.45	1.07
Thallium	1043	1028	1.82	0.32	0.32	0.84
Vanadium	1062	All	NA	70.07	35.98	129.26
Zinc	1062	988	134.29	64.88	33.66	120.24

Notes:

Concentrations reported in mg/kg.

NA -- A threshold limit was not assigned, the entire population was used for ambient level estimation.

**TABLE 7
CALCULATED AMBIENT LEVELS
ALL SOIL TYPES
HUNTERS POINT ANNEX**

All Soil Types						
Metal	Total No. of Samples	No. of Ambient Samples	Threshold Limit	Adjusted Mean	Adjusted Standard Deviation	95% UCL of the 95 percentile (Ambient Level)
Antimony	2,532	2,408	13.46	3.56	3.33	9.05
Arsenic	2,848	2,823	24.53	4.04	4.29	11.10
Barium	2,870	2,785	492.75	126.99	113.91	314.36
Beryllium	2,870	2,857	1.49	0.28	0.26	0.71
Cadmium	2,869	2,861	11.02	0.78	1.43	3.14
Copper	2,870	2,842	365.04	42.32	49.85	124.31
Lead	2,869	1,223	4.06	4.42	2.78	8.99
Manganese	11,142	10,380	1636	748.23	415.17	1,431.18
Mercury	2,830	2,807	11.02	0.29	1.21	2.28
Molybdenum	2,870	2,855	5.47	0.80	1.14	2.68
Selenium	2,728	2,675	4.95	0.54	0.86	1.95
Silver	2,832	2,804	3.00	0.35	0.48	1.43
Thallium	2,833	2,793	1.82	0.32	0.29	0.81
Vanadium	2,869	All	NA	60.67	34.35	117.17
Zinc	2,870	2,739	134.29	58.32	31.33	109.86

Notes:

Concentrations reported in mg/kg.

NA -- A threshold limit was not assigned, the entire population was used for ambient level estimation.

**TABLE 8
SUMMARY OF AMBIENT LEVELS
BY SOIL TYPE
HUNTERS POINT ANNEX**

Estimated Ambient Levels - 95 Percent UCL/95th Percentile						
Metal	Serpentinite Fill	Serpentinite Bedrock	Upper Undifferentiated Sand	Bay Mud	Undifferentiated Fill	All Soil Types
Antimony	11.34	8.08	5.21	10.98	7.17	9.05
Arsenic	8.65	8.16	8.76	13.17	5.73	11.10
Barium	256.39	339.23	210.17	108.60	593.21	314.36
Beryllium	0.75	0.61	0.61	0.76	0.71	0.71
Cadmium	2.13	1.45	0.85	2.98	2.00	3.14
Copper	87.21	70.18	35.23	55.10	91.54	124.31
Lead	22.26	5.96	8.46	15.40	34.05	8.99
Mercury	2.94	0.24	0.15	0.30	1.79	2.28
Molybdenum	2.81	0.85	1.45	4.27	2.37	2.68
Selenium	5.20	0.59	0.70	0.90	1.57	1.95
Silver	1.43	0.62	1.07	1.24	1.07	1.43
Thallium	0.56	0.61	0.99	0.50	0.84	0.81
Vanadium	113.00	109.02	87.00	94.11	129.26	117.17
Zinc	371.69	107.78	70.37	105.96	120.24	109.86

Note:

- Concentrations reported in mg/kg.
- Excludes regression related values for cobalt, nickel, and chromium.

TABLE 9
NON-DETECT POPULATION ANALYSIS
SERPENTINITE FILL (SOIL TYPE 1)
HUNTERS POINT ANNEX

Serpentinite Fill - Soil Type 1						
Metal	Total No. of Samples	No. ND Samples	Percentage ND Samples	Average Value for Detected Samples	Average Detection Limit for Detected Samples	Average Detection Limit for ND Samples
Antimony	994	529	53.22%	13.11	1.65	5.23
Arsenic	1117	402	35.99%	7.15	0.51	1.12
Barium	1123	18	1.60%	--	--	--
Beryllium	1123	679	60.46%	0.46	0.07	0.27
Cadmium	1123	627	55.83%	2.10	0.23	0.53
Copper	1123	44	3.92%	--	--	--
Lead	1123	227	20.21%	95.89	0.75	2.40
Mercury	1100	555	50.45%	0.99	0.06	0.08
Molybdenum	1123	954	84.95%	1.98	0.60	1.27
Selenium	1072	991	92.44%	7.37	0.43	0.76
Silver	1103	964	87.40%	1.62	0.64	0.52
Thallium	1111	1090	98.11%	1.51	0.48	0.60
Vanadium	1123	0	0.00%	--	--	--
Zinc	1123	26	2.32%	--	--	--

Notes:

- Concentrations reported in mg/kg.
- Blank cells indicate that the non-detect population was small, no further analysis.

TABLE 10
NON-DETECT POPULATION ANALYSIS
SERPENTINITE BEDROCK (SOIL TYPE 2)
HUNTERS POINT ANNEX

Serpentinite Bedrock - Soil Type 2						
Metal	Total No. of Samples	No. ND Samples	Percentage ND Samples	Average Value for Detected Samples	Average Detection Limit for Detected Samples	Average Detection Limit for ND Samples
Antimony	238	143	60.08%	9.34	1.16	5.43
Arsenic	272	99	36.40%	6.21	0.35	1.80
Barium	277	6	2.17%	--	--	--
Beryllium	278	155	55.76%	0.39	0.03	0.21
Cadmium	278	164	58.99%	1.15	0.09	0.33
Copper	278	23	8.27%	--	--	--
Lead	277	76	27.44%	10.45	0.45	0.61
Mercury	274	108	39.42%	0.16	0.04	0.07
Molybdenum	277	238	85.92%	1.44	0.37	0.82
Selenium	239	208	87.03%	24.26	0.12	1.11
Silver	278	265	95.32%	1.05	0.31	0.42
Thallium	275	265	96.36%	2.65	0.47	0.61
Vanadium	278	0	0.00%	--	--	--
Zinc	278	5	1.80%	--	--	--

Notes:

- Concentrations reported in mg/kg.
- Blank cells indicate that the non-detect population was small, no further analysis.

TABLE 11
NON-DETECT POPULATION ANALYSIS
UPPER UNDIFFERENTIATED SAND (SOIL TYPE 3)
HUNTERS POINT ANNEX

Upper Undifferentiated Sand - Soil Type 3						
Metal	Total No. of Samples	No. ND Samples	Percentage ND Samples	Average Value for Detected Samples	Average Detection Limit for Detected Samples	Average Detection Limit for ND Samples
Antimony	100	70	70.00%	1.22	0.49	4.82
Arsenic	115	10	8.70%	--	--	--
Barium	115	2	1.74%	--	--	--
Beryllium	115	65	56.52%	0.27	0.05	0.47
Cadmium	115	78	67.83%	1.03	0.20	0.64
Copper	113	19	16.81%	17.74	1.24	6.84
Lead	115	13	11.30%	--	--	--
Mercury	113	80	70.80%	0.20	0.05	0.09
Molybdenum	115	97	84.35%	0.85	0.16	1.32
Selenium	109	101	92.66%	0.98	0.48	0.73
Silver	113	113	100.00%	0.00	0.00	0.73
Thallium	115	112	97.39%	2.13	0.41	0.78
Vanadium	115	0	0.00%	--	--	--
Zinc	115	4	3.48%	--	--	--

Notes:

- Concentrations reported in mg/kg.
- Blank cells indicate that the non-detect population was small, no further analysis.

TABLE 12
NON-DETECT POPULATION ANALYSIS
BAY MUD (SOIL TYPE 4)
HUNTERS POINT ANNEX

Bay Mud - Soil Type 4						
Metal	Total No. of Samples	No. ND Samples	Percentage ND Samples	Average Value for Detected Samples	Average Detection Limit for Detected Samples	Average Detection Limit for ND Samples
Antimony	269	128	47.58%	10.88	2.17	4.49
Arsenic	290	11	3.79%	--	--	--
Barium	291	3	1.03%	--	--	--
Beryllium	291	106	36.43%	0.44	0.10	0.50
Cadmium	291	111	38.14%	1.48	0.23	0.66
Copper	291	2	0.69%	--	--	--
Lead	291	29	9.97%	--	--	--
Mercury	289	154	53.29%	0.31	0.14	0.10
Molybdenum	292	164	56.16%	1.77	0.56	2.21
Selenium	286	250	87.41%	1.16	0.54	0.81
Silver	287	274	95.47%	1.03	0.86	0.56
Thallium	287	282	98.26%	0.31	0.31	3.49
Vanadium	291	0	0.00%	--	--	--
Zinc	291	0	0.00%	--	--	--

Notes:

- Concentrations reported in mg/kg.
- Blank cells indicate that the non-detect population was small, no further analysis.

TABLE 13
NON-DETECT POPULATION ANALYSIS
UNDIFFERENTIATED FILL (SOIL TYPE 5)
HUNTERS POINT ANNEX

Undifferentiated Fill - Soil Type 5						
Metal	Total No. of Samples	No. ND Samples	Percentage ND Samples	Average Value for Detected Samples	Average Detection Limit for Detected Samples	Average Detection Limit for ND Samples
Antimony	931	501	53.81%	5.36	1.23	5.18
Arsenic	1053	238	22.60%	5.09	0.47	1.54
Barium	1062	6	0.56%	--	--	--
Beryllium	1062	511	48.12%	0.42	0.07	0.35
Cadmium	1062	650	61.21%	1.28	0.16	0.53
Copper	1062	29	2.73%	--	--	--
Lead	1062	139	13.09%	31.65	0.75	2.53
Mercury	1051	532	50.62%	1.53	0.07	0.09
Molybdenum	1061	908	85.58%	1.25	0.42	1.20
Selenium	1018	933	91.65%	4.27	0.44	0.78
Silver	1050	968	92.19%	1.08	0.48	0.52
Thallium	1043	1024	98.18%	1.71	0.41	0.63
Vanadium	1062	1	0.09%	--	--	--
Zinc	1062	26	2.45%	--	--	--

Notes:

- Concentrations reported in mg/kg.
- Blank cells indicate that the non-detect population was small, no further analysis.

**TABLE 14
NON-DETECT POPULATION ANALYSIS
ALL SOIL TYPES
HUNTERS POINT ANNEX**

All Soil Types						
Metal	Total No. of Samples	No. ND Samples	Percentage ND Samples	Average Value for Detected Samples	Average Detection Limit for Detected Samples	Average Detection Limit for ND Samples
Antimony	2532	1371	54.15%	9.35	1.49	5.14
Arsenic	2848	760	26.69%	4.95	0.39	1.31
Barium	2870	35	1.22%	141.16	1.54	139.70
Beryllium	2869	1516	52.84%	0.44	0.07	0.32
Cadmium	2869	1630	56.81%	1.63	0.19	0.52
Copper	2870	117	4.08%	1.11	0.04	1.11
Lead	2869	484	16.87%	49.15	0.61	1.95
Mercury	2830	1429	50.49%	1.25	0.07	0.09
Molybdenum	2870	954	33.24%	1.97	0.50	1.27
Selenium	2728	2483	91.02%	11.19	0.41	0.80
Silver	2832	2584	91.24%	1.42	0.58	0.52
Thallium	2833	2773	97.88%	19.98	0.43	0.91
Vanadium	2869	1	0.03%	60.47	0.73	1.17
Zinc	2870	61	2.13%	75.12	0.77	74.23

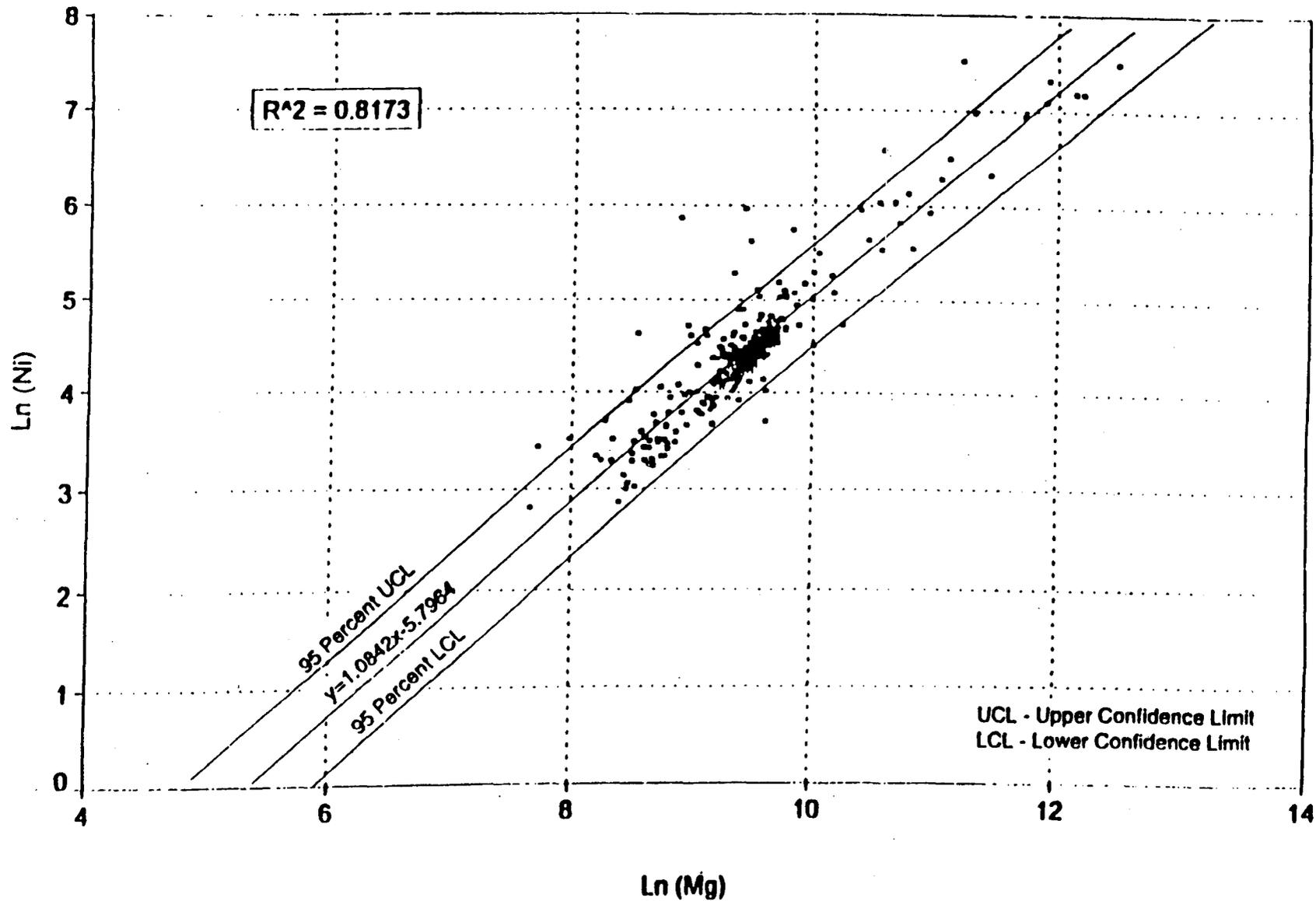
Notes:

- Concentrations reported in mg/kg.

ATTACHMENT A
REGRESSION PLOTS

Nickel/Magnesium Regression - Log Transformed

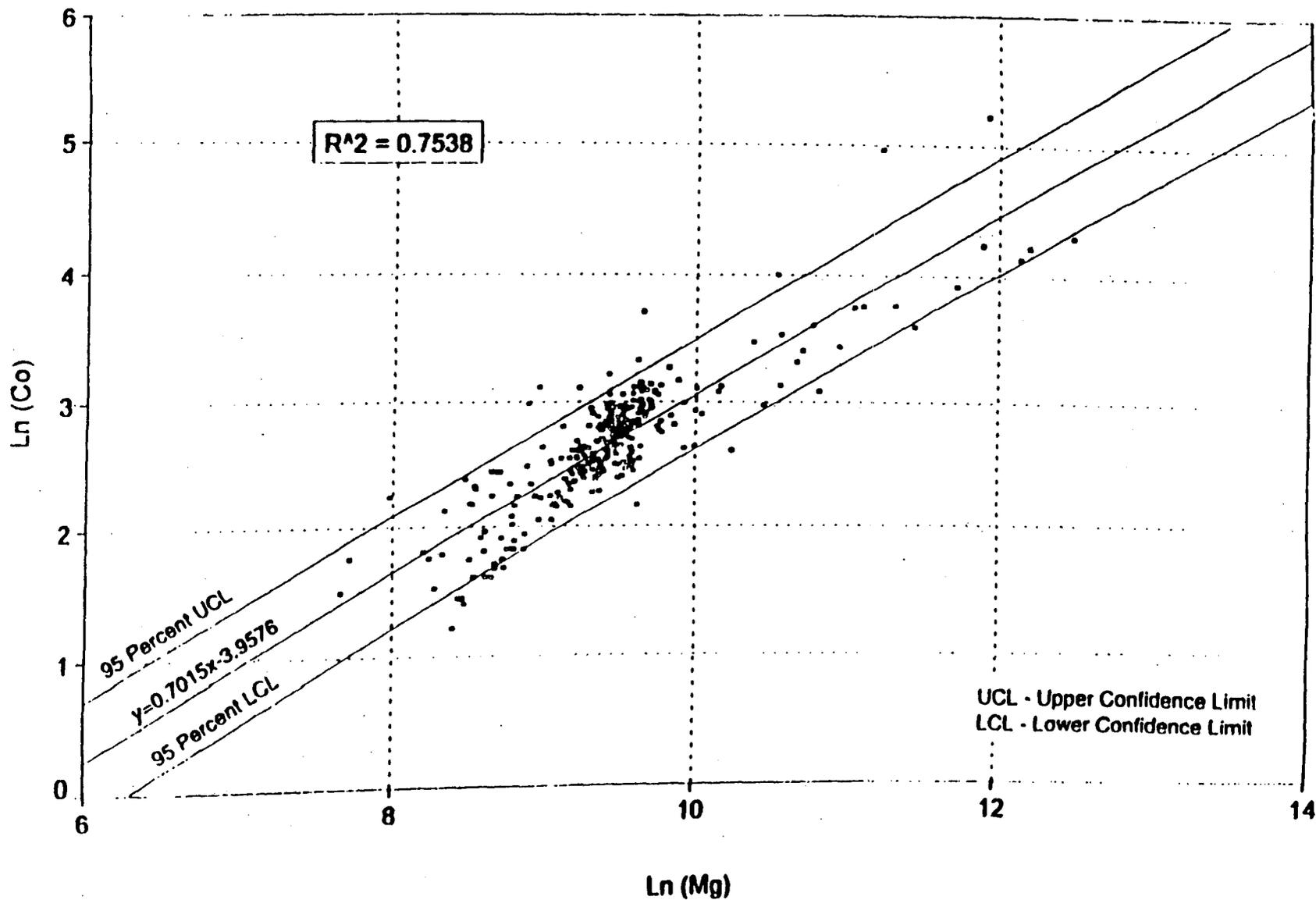
Bay Mud - Soil Type 4



Number of Nondetect Samples: 0 - Percent of Nondetect Samples: 0.00

Cobalt/Magnesium Regression - Log Transformed

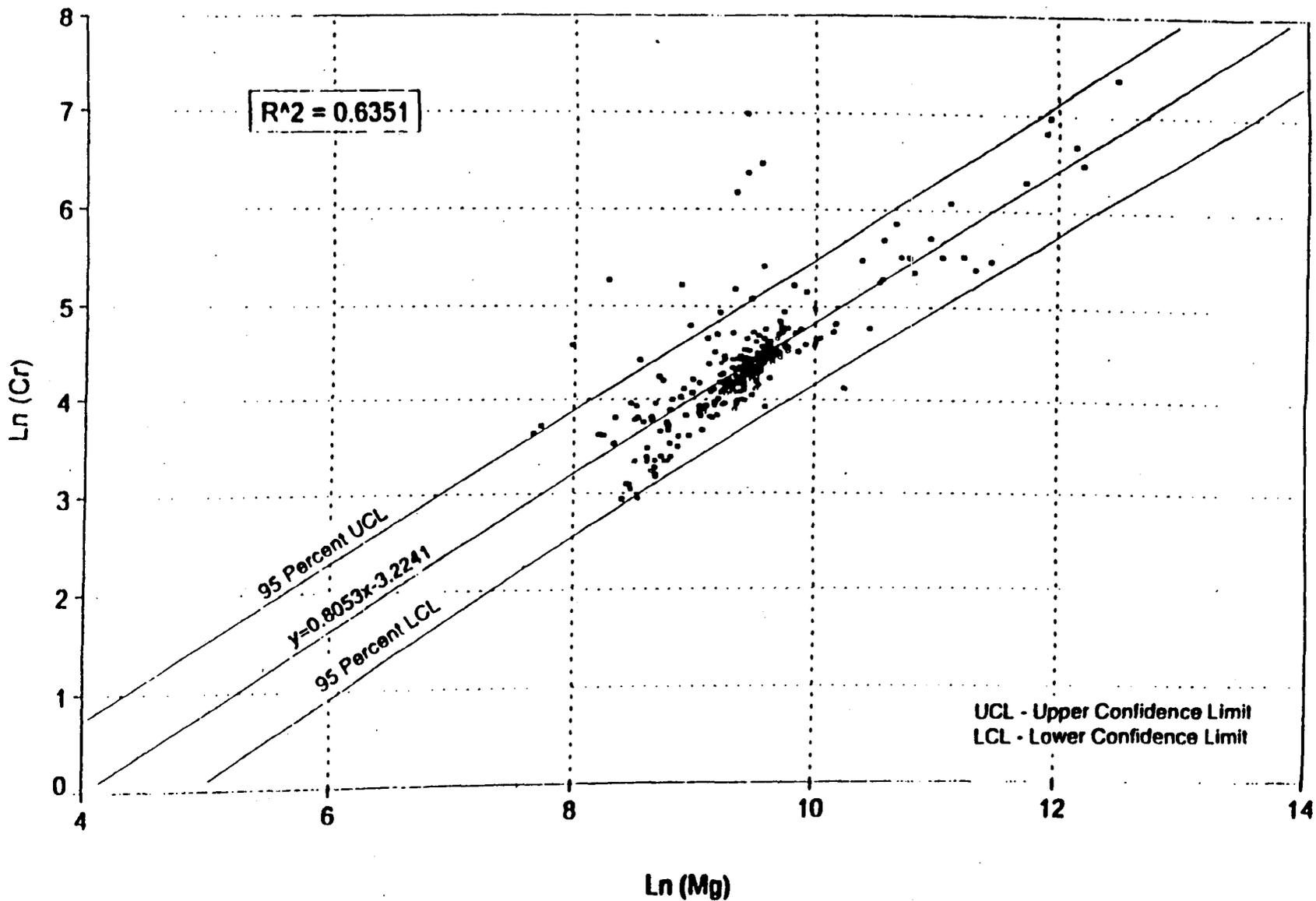
Bay Mud - Soil Type 4



Number of Nondetect Samples: 2 - Percent of Nondetect Samples: 0.69

Chromium/Magnesium Regression - Log Transformed

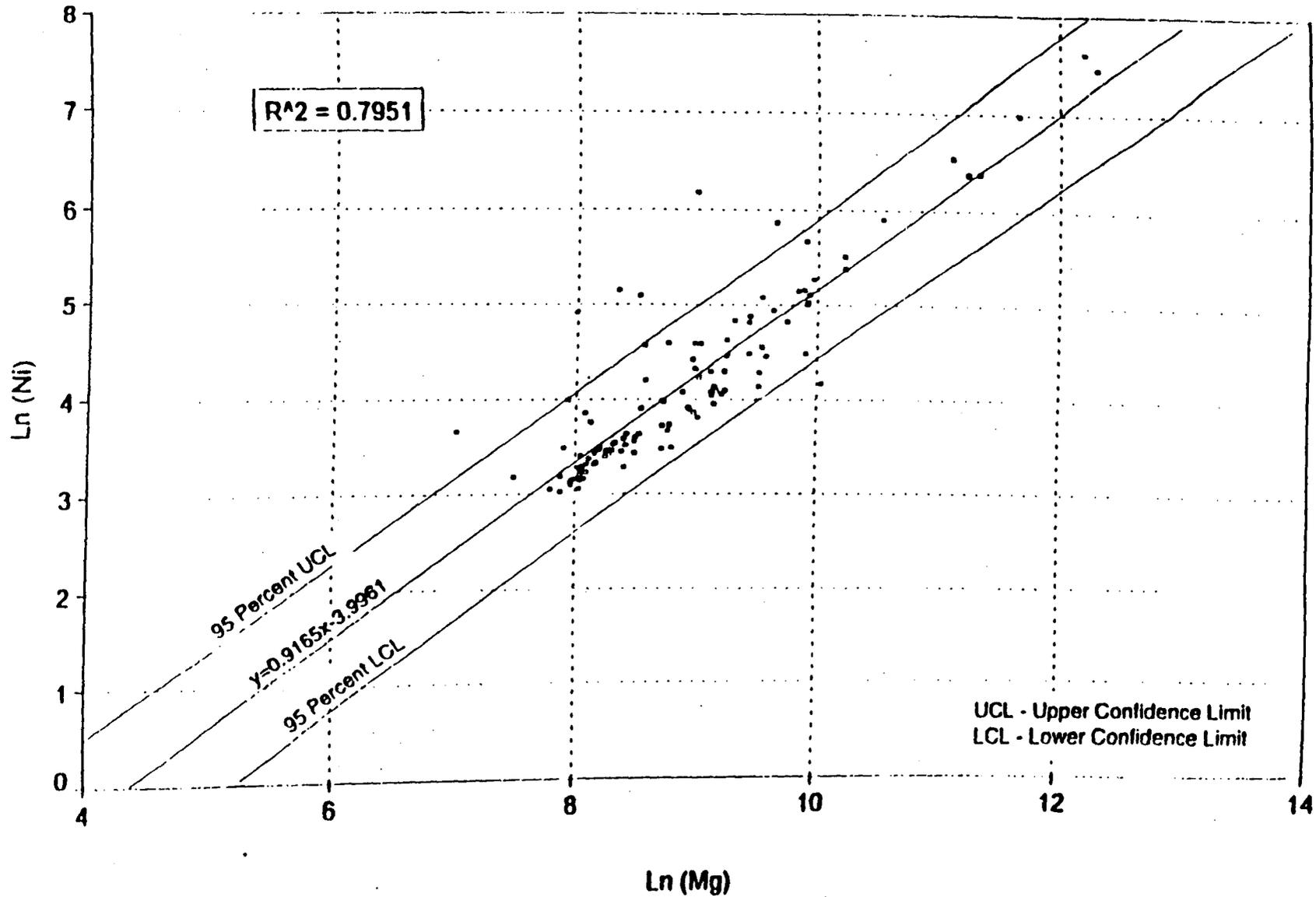
Bay Mud - Soil Type 4



Number of Nondetect Samples: 0 - Percent of Nondetect Samples: 0.00

Nickel/Magnesium Regression - Log Transformed

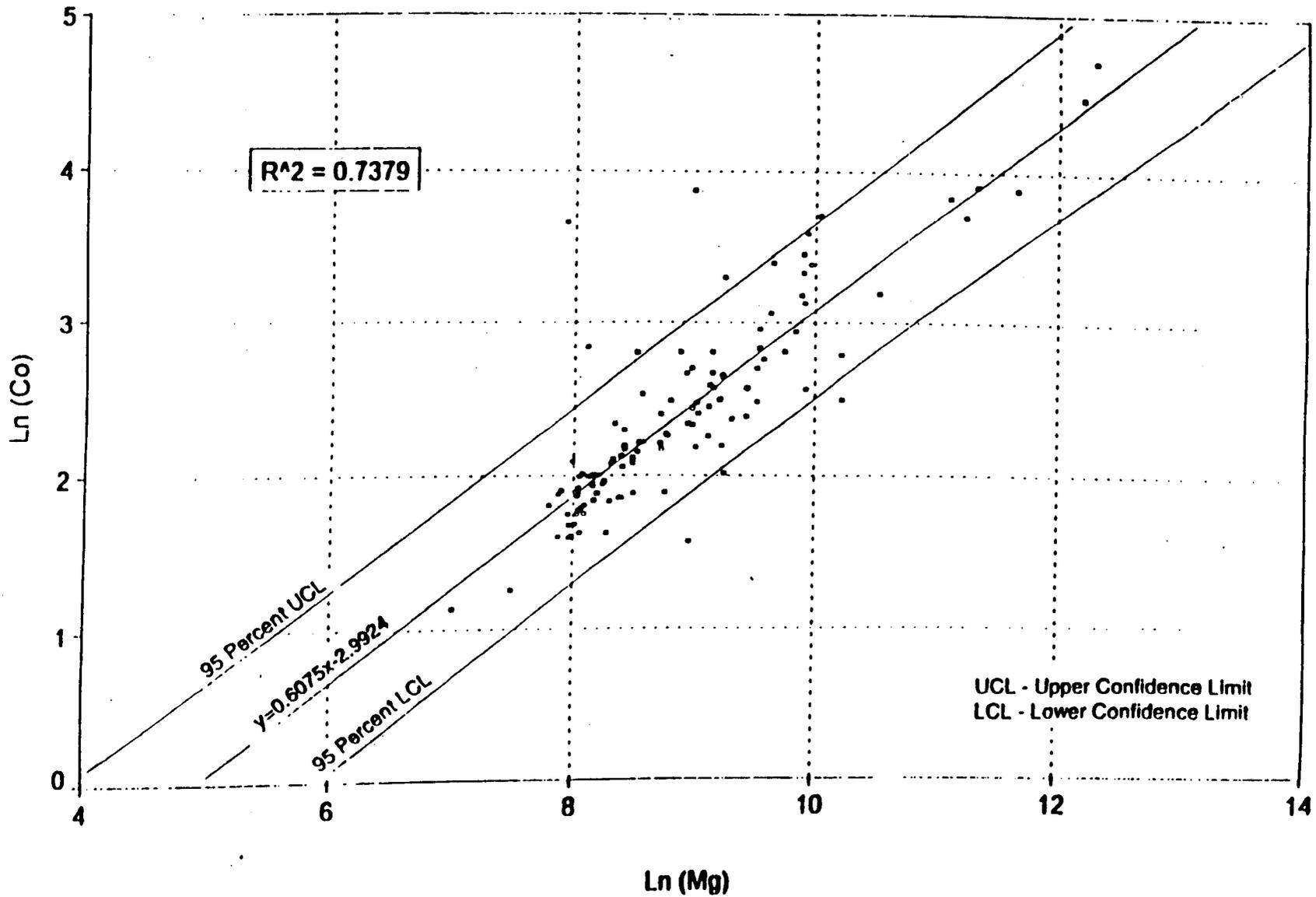
Upper Undifferentiated Sand - Soil Type 3



Number of Nondetect Samples: 0 - F Percent of Nondetect Samples: 0.00

Cobalt/Magnesium Regression - Log Transformed

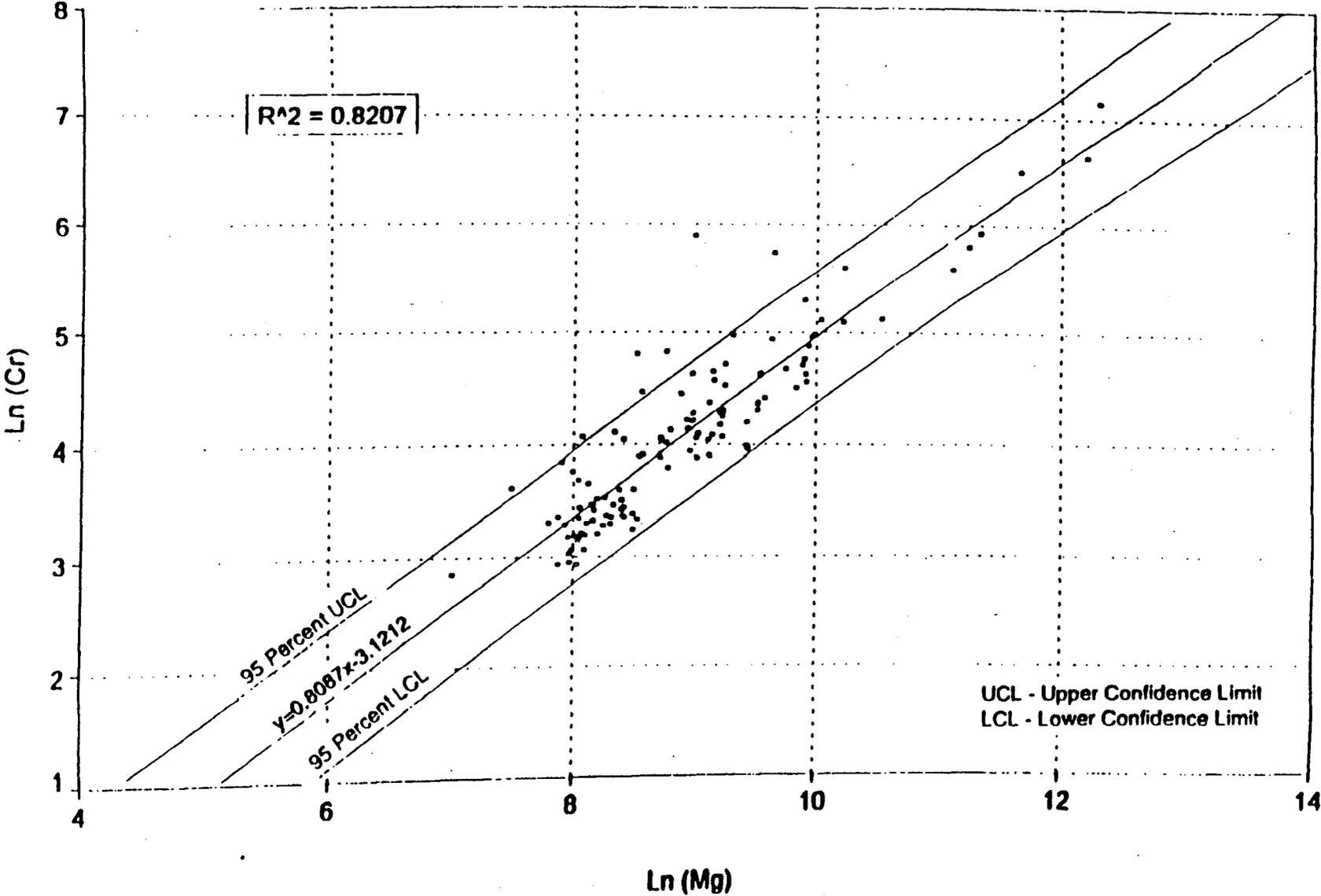
Upper Undifferentiated Sand - Soil Type 3



Number of Nondetect Samples: 1 -- Percent of Nondetect Samples: 0.87

Chromium/Magnesium Regression - Log Transformed

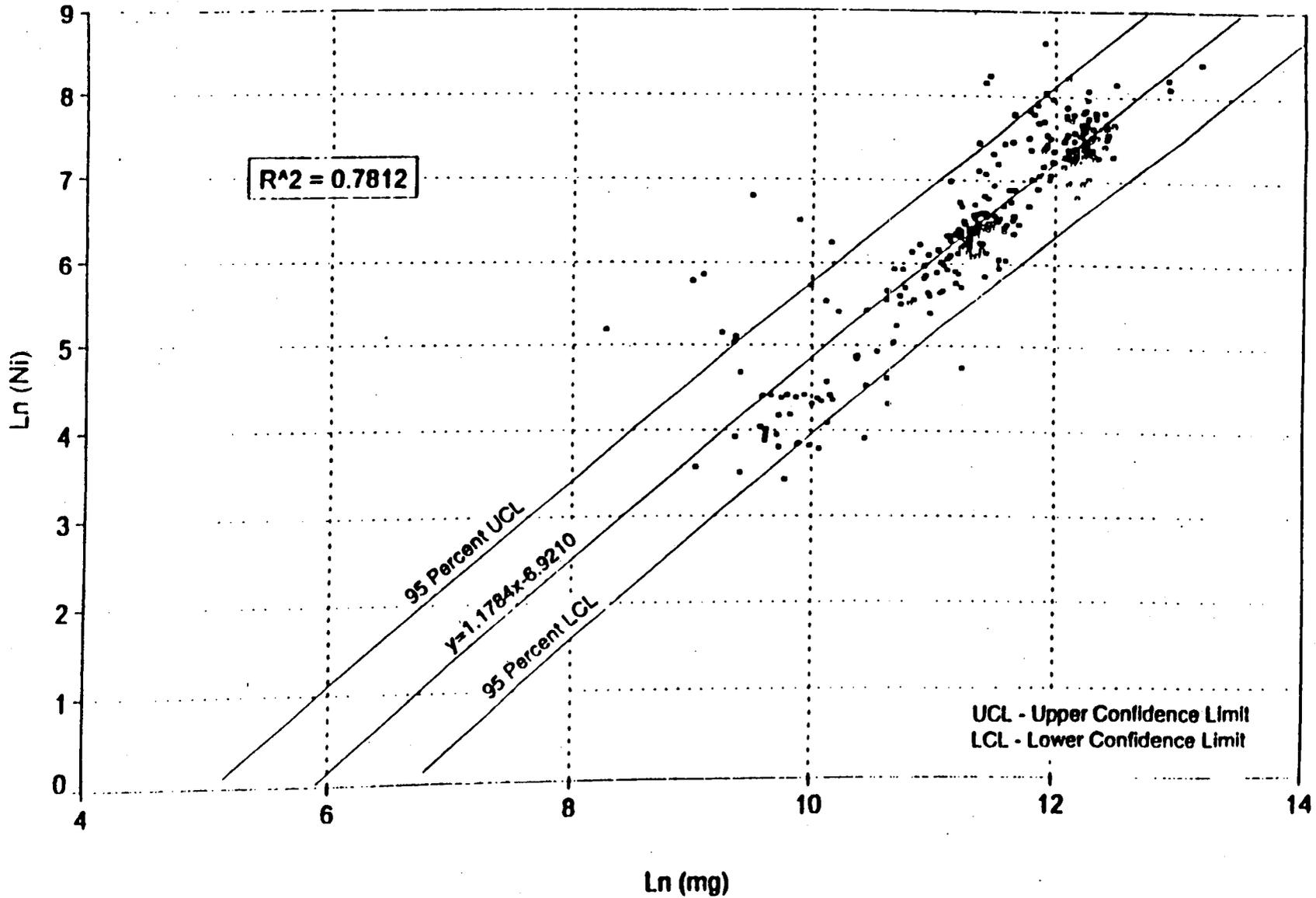
Upper Undifferentiated Sand - Soil Type 3



Number of Nondetect Samples: 0 -- Percent of Nondetect Samples: 0.00

Nickel/Magnesium Regression - Log Transformed

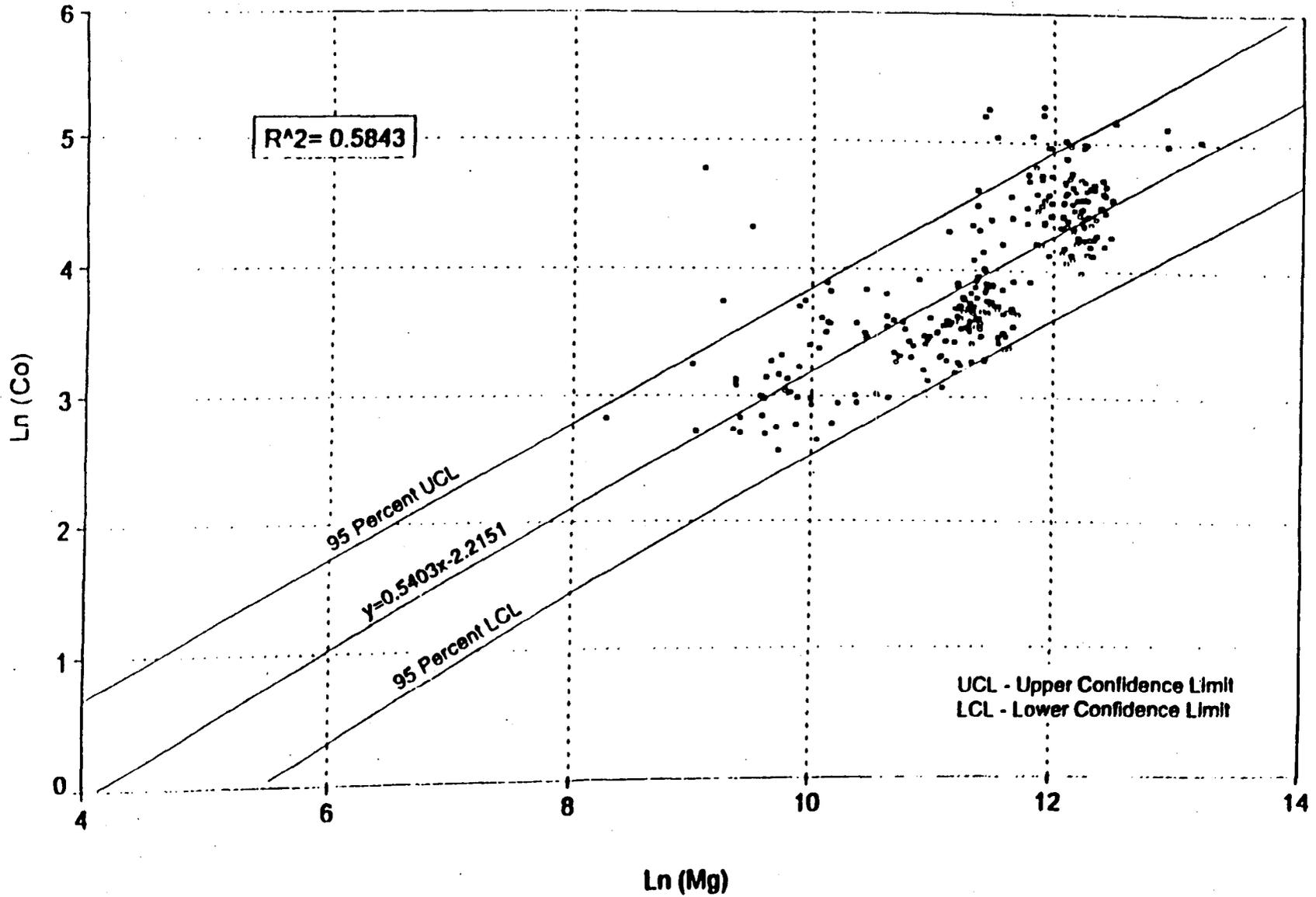
Serpentinite Bedrock - Soil Type 2



Number of Nondetect Samples: 1 -- Percent of Nondetect Samples: 0.36

Cobalt/Magnesium Regression - Log Transformed

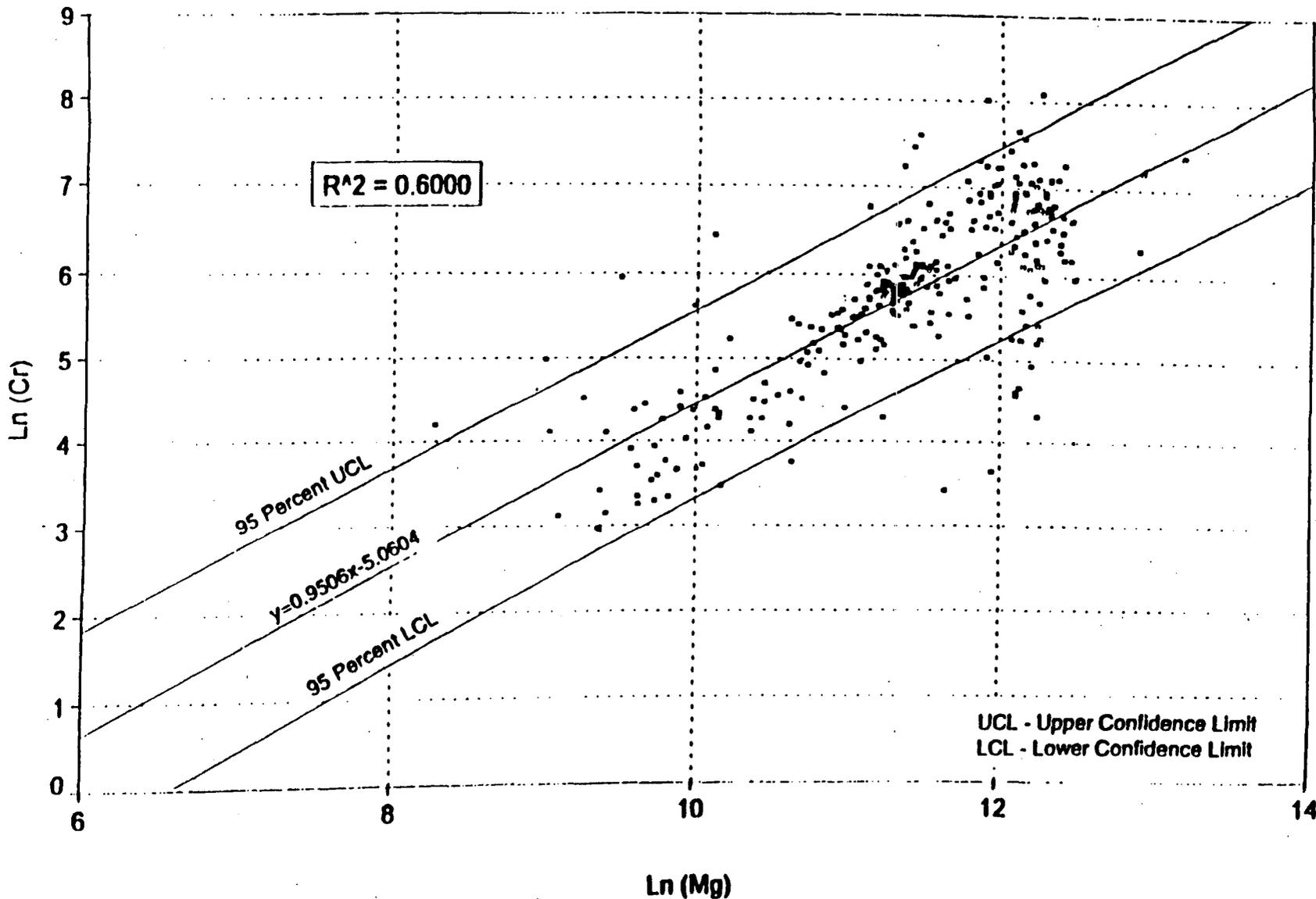
Serpentinite Berdrock - Soil Type 2



Number of Nondetect Samples: 0 - Percent of Nondetect Samples: 0.00

Chromium/Magnesium Regression - Log Transformed

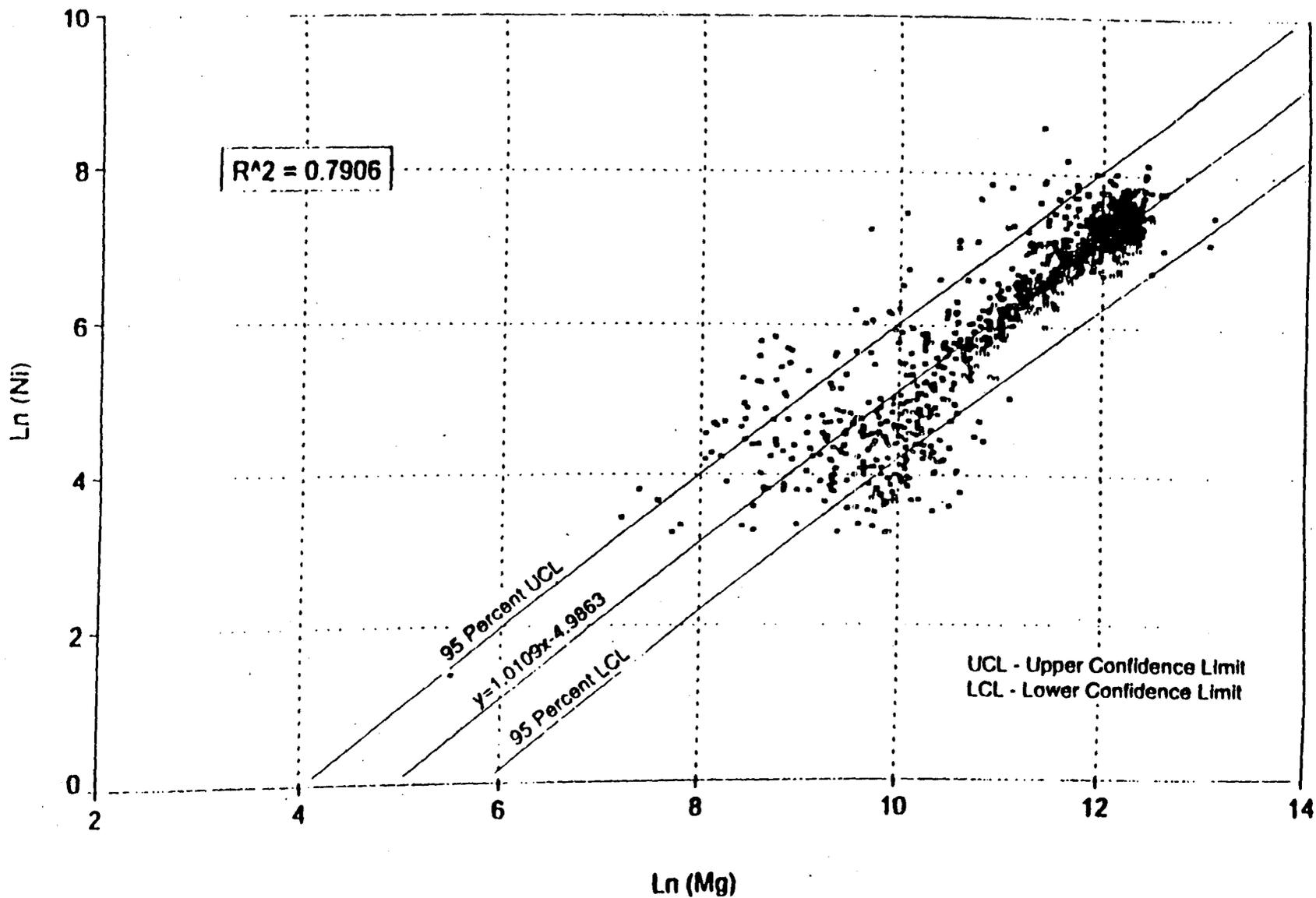
Serpentinite Bedrock - Soil Type 2



Number of Nondetect Samples: 0 – Percent of Nondetect Samples: 0.00

Nickel/Magnesium Regression - Log Transformed

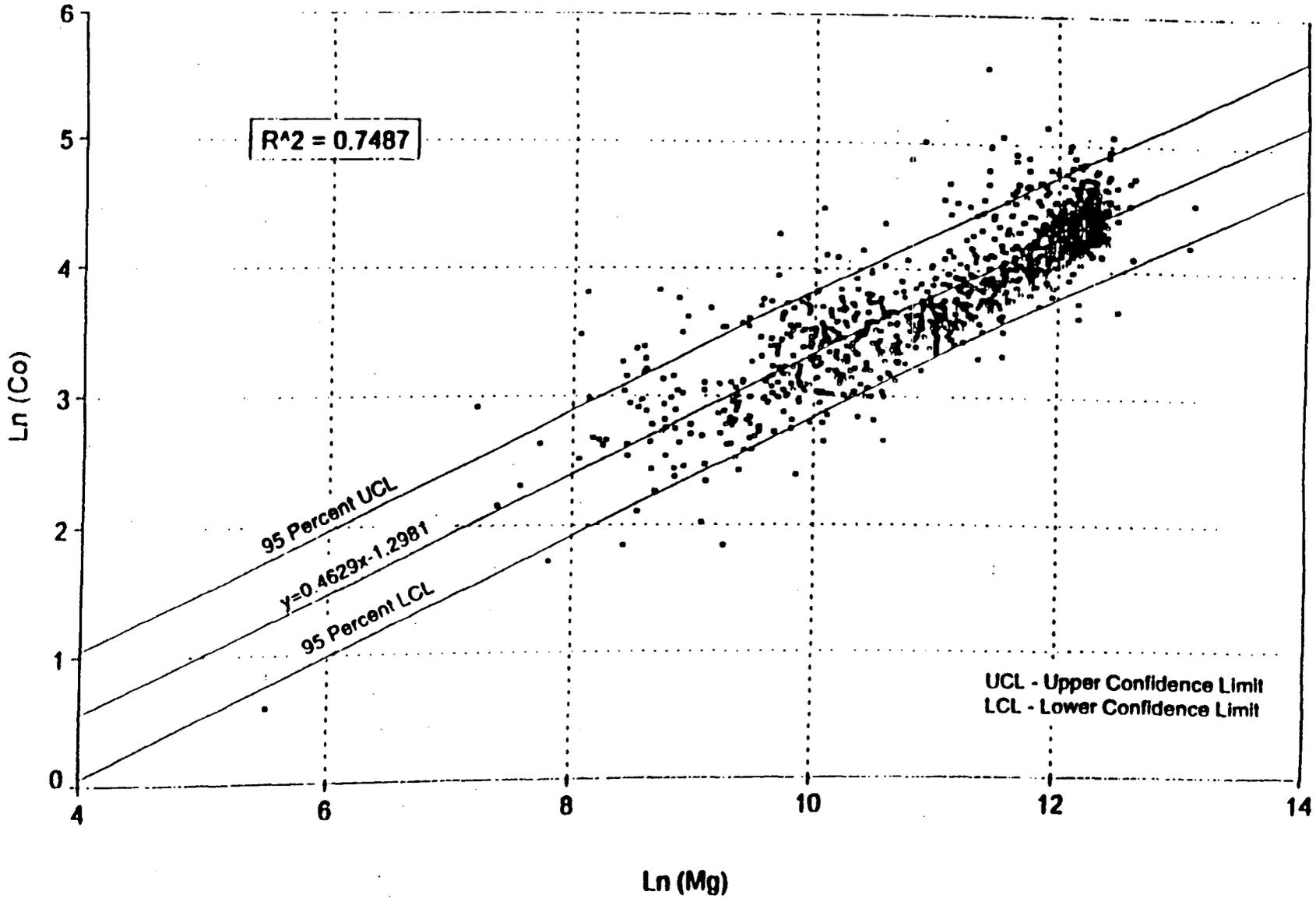
Serpentinite Fill - Soil Type 1



Number of Nondetect Samples: 8 - cent of Nondetect Samples: 0.26

Cobalt/Magnesium Regression - Log Transformed

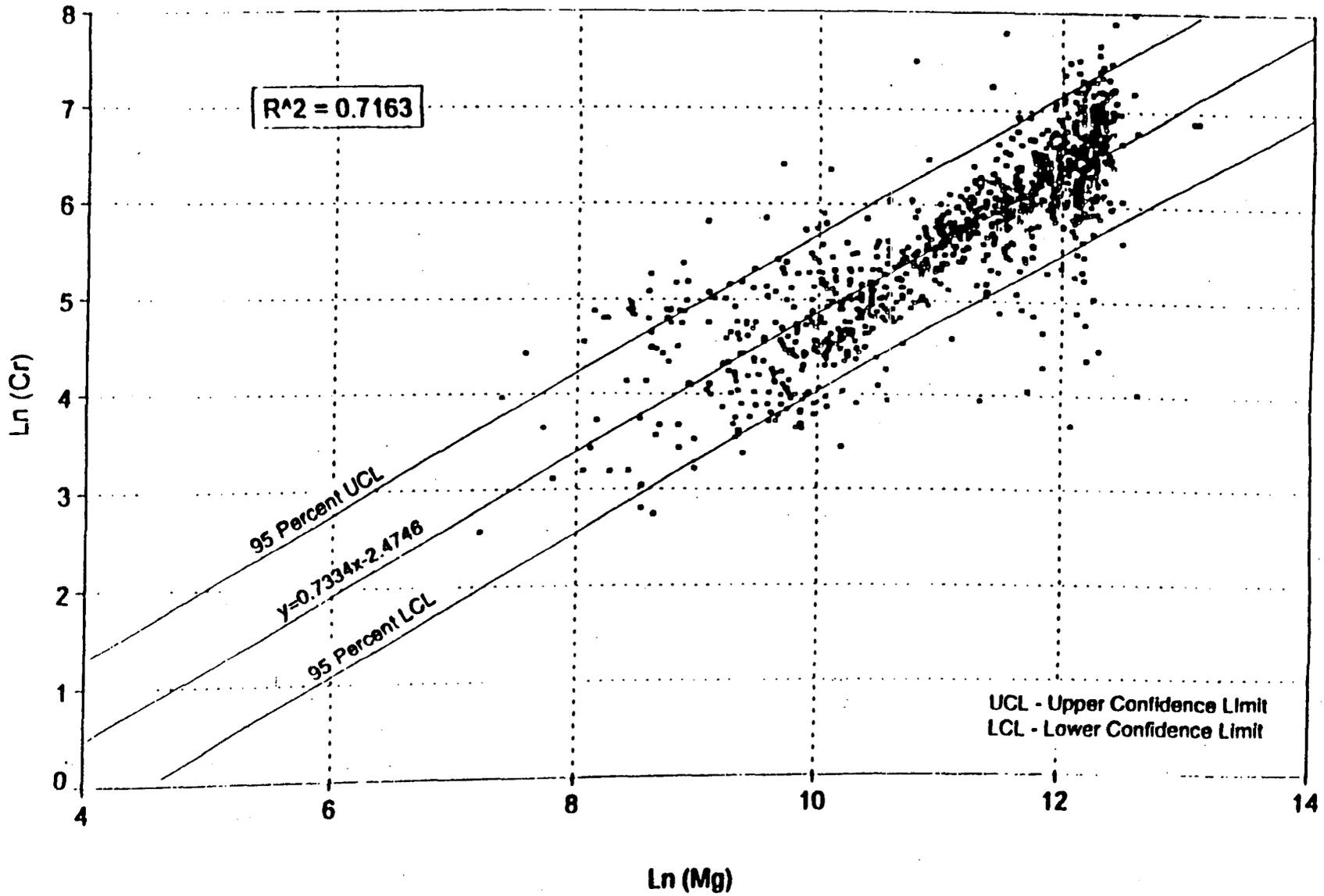
Serpentinite Fill - Soil Type 1



Number of Nondetect Samples: 5 – Percent of Nondetect Samples: 0.45

Chromium/Magnesium Regression - Log Transformed

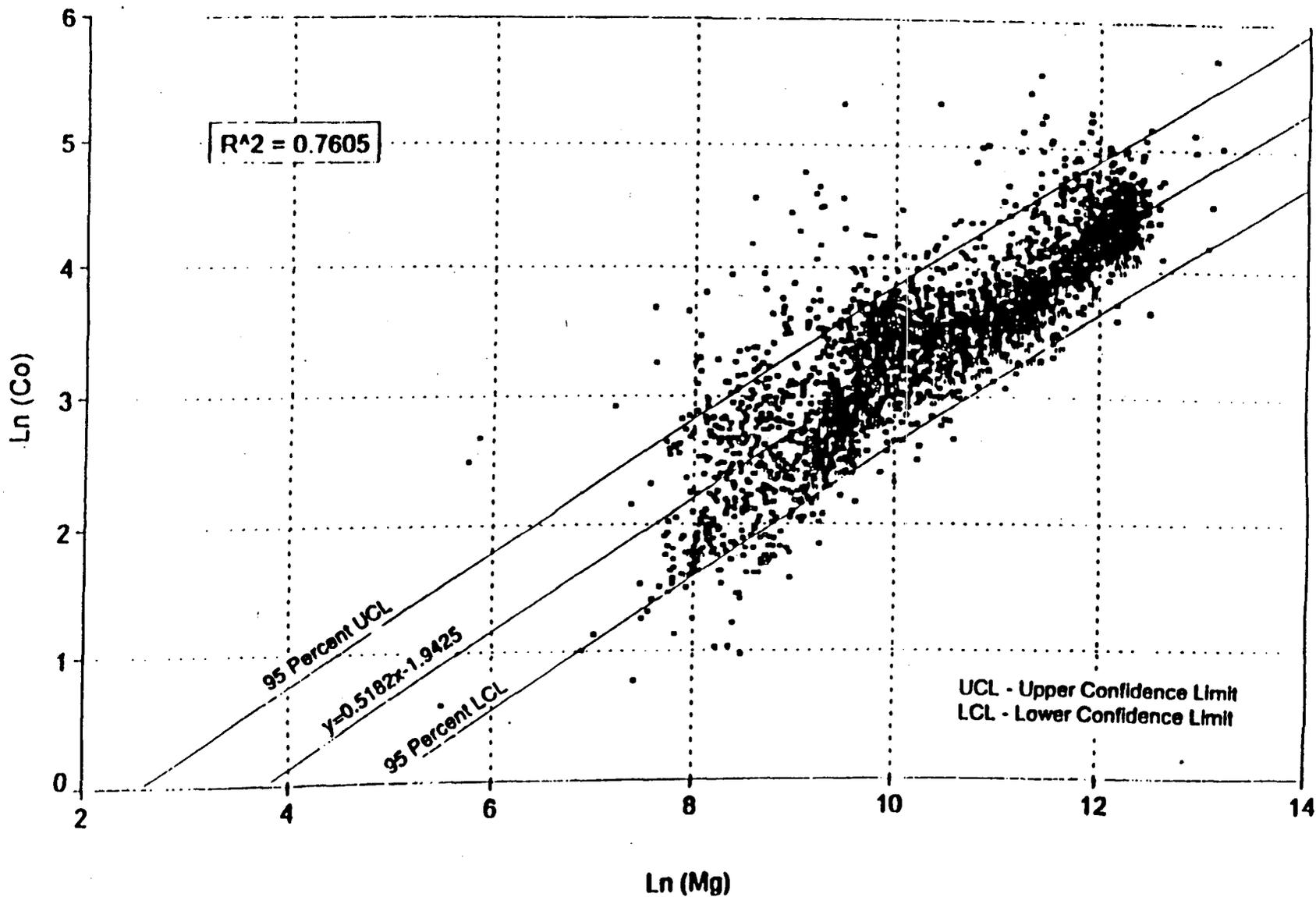
Serpentine Fill - Soil Type 1



Number of Nondetect Samples: 1 - Percent of Nondetect Samples: 0.09

Cobalt/Magnesium Regression - Log Transformed

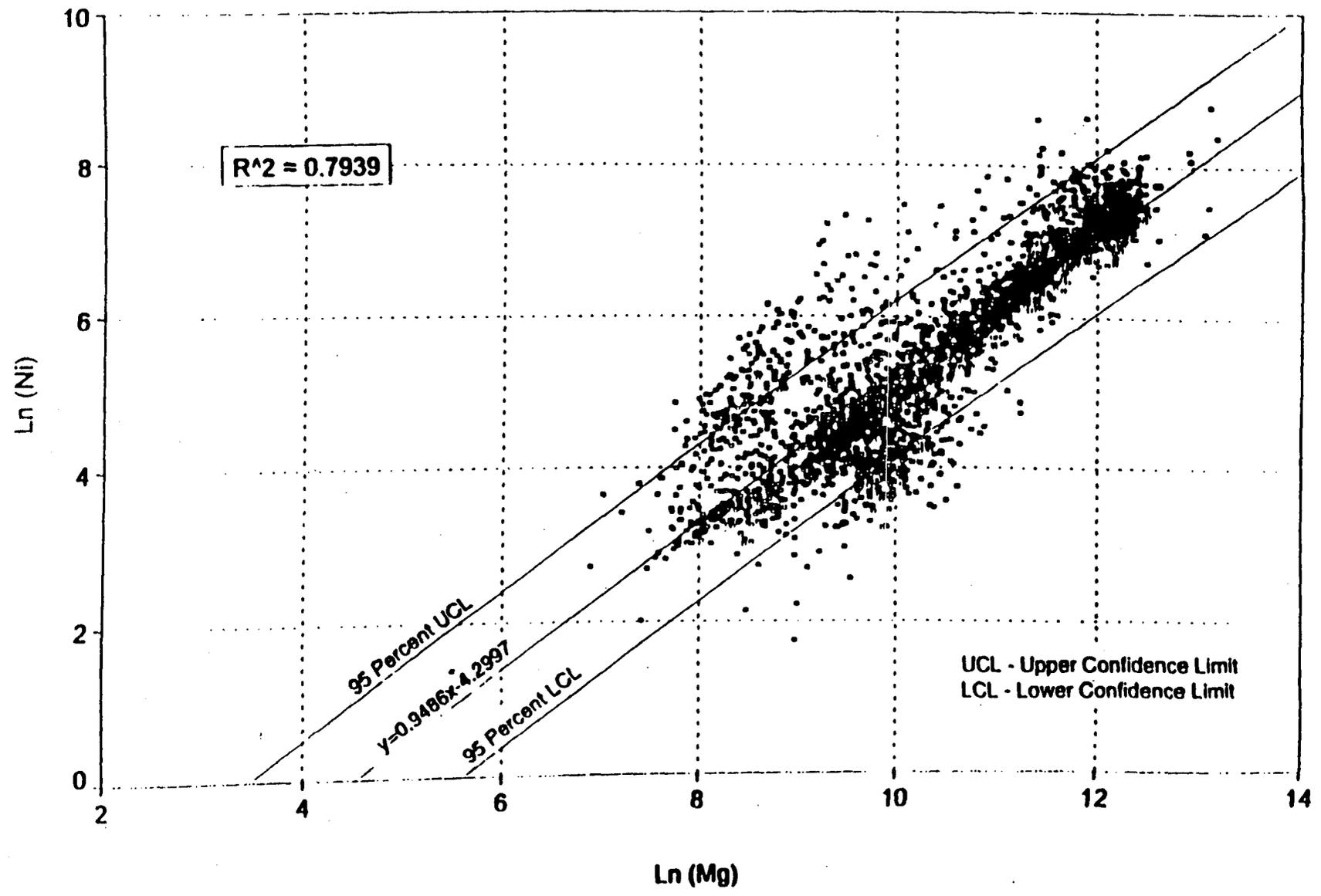
All Soil Types



Number of Nondetect Samples: 25 - Percent of Nondetect Samples: 0.82

Nickel/Magnesium Regression - Log Transformed

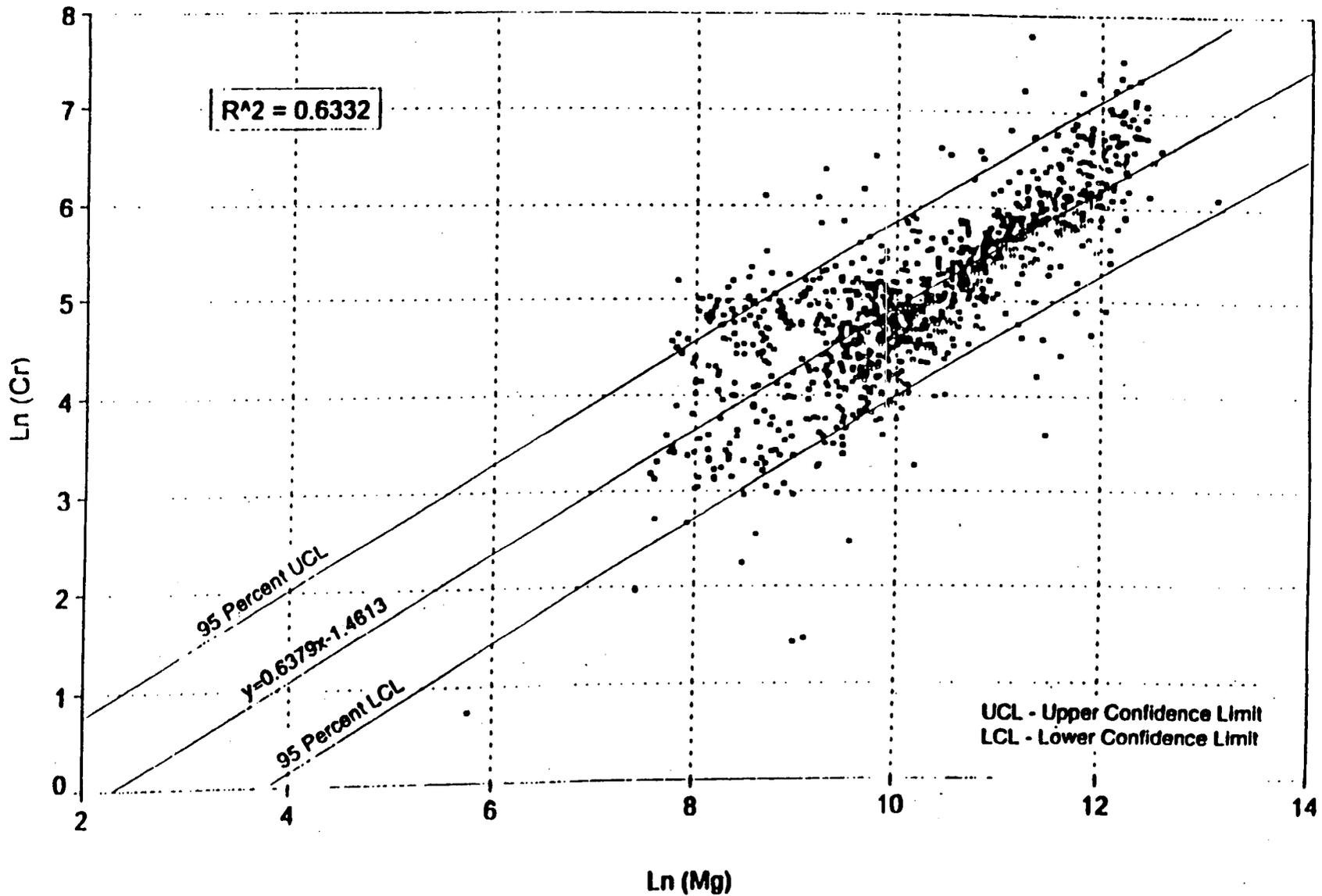
All Soil Types



Number of Nondetect Samples: 8 - Percent of Nondetect Samples: 0.26

Chromium/Magnesium Regression - Log Transformed

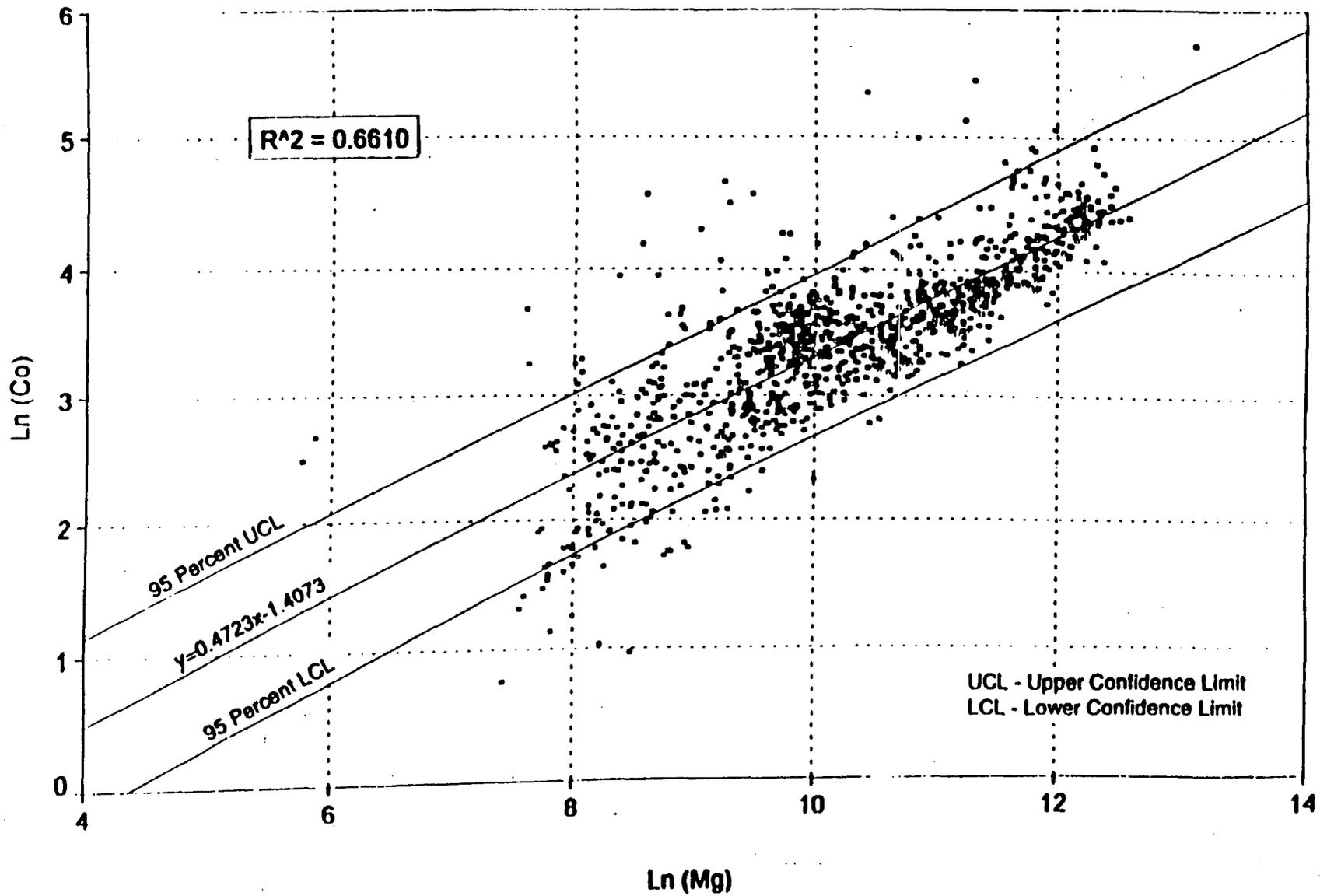
Undifferentiated Fill - Soil Type 5



Number of Nondetect Samples: 4 - Percent of Nondetect Samples: 0.38

Cobalt/Magnesium Regression - Log Transformed

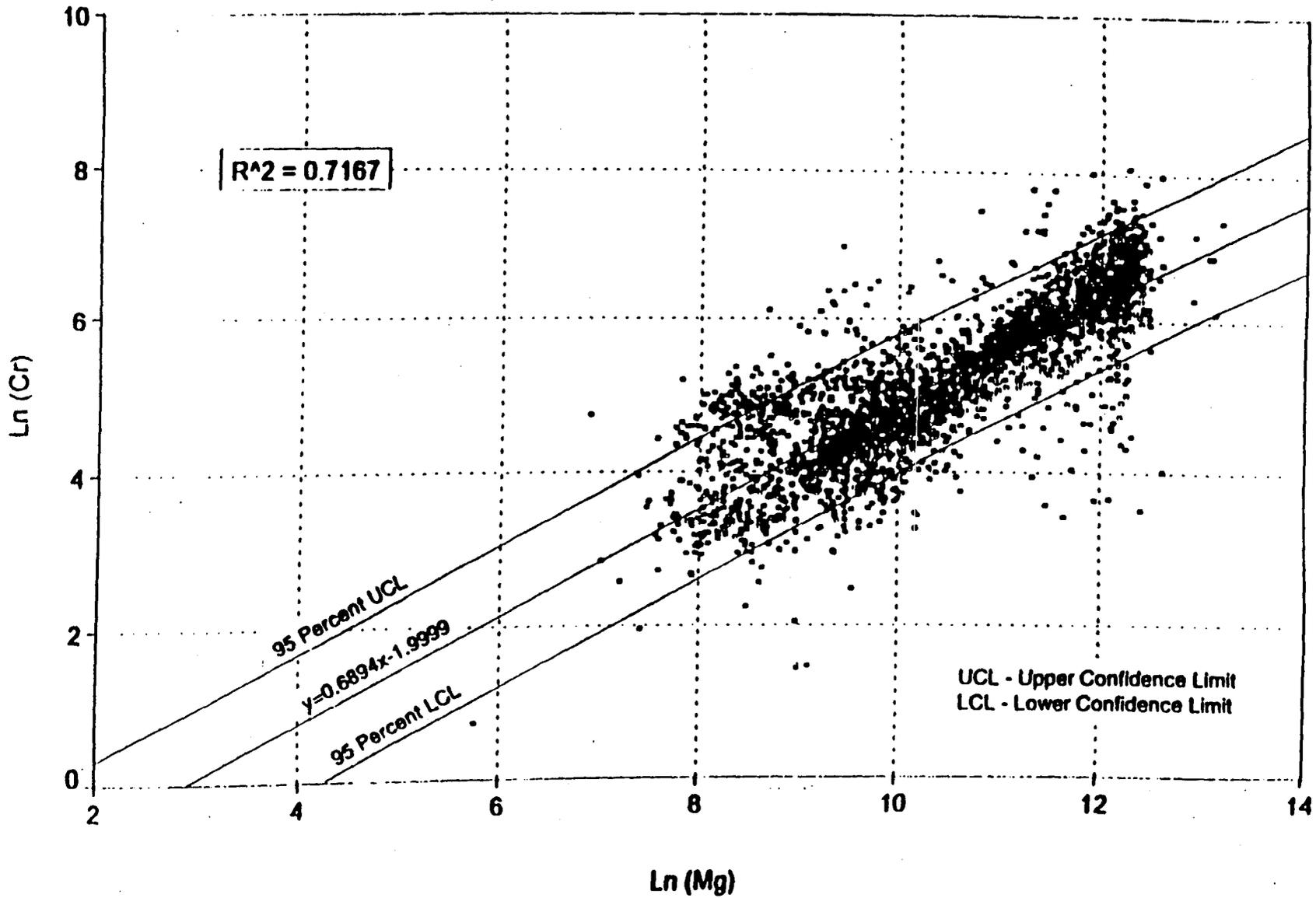
Undifferentiated Fill - Soil Type 5



Number of Nondetect Samples: 15 – Percent of Nondetect Samples: 1.41

Chromium/Magnesium Regression - Log Transformed

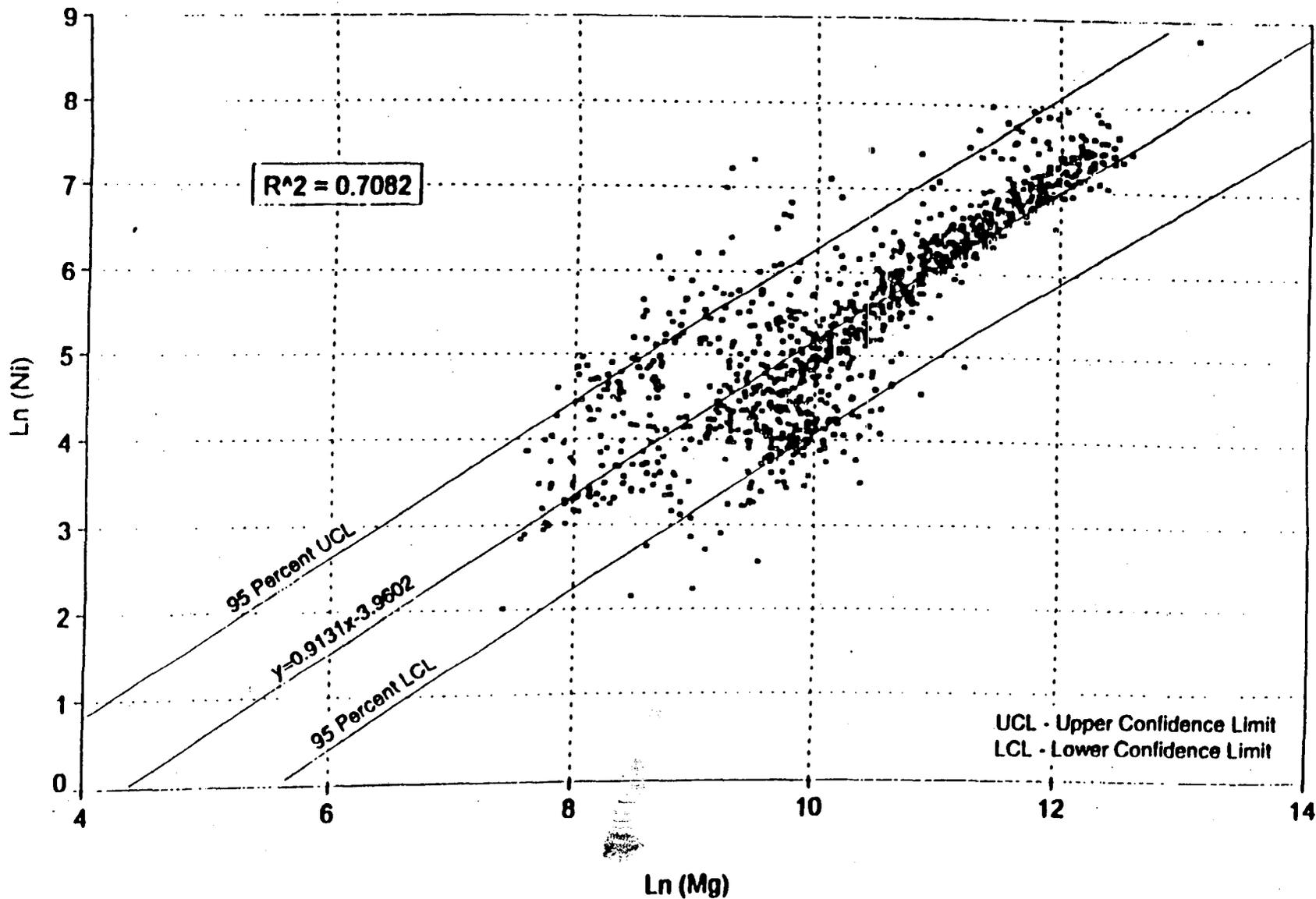
All Soil Types



Number of Nondetect Samples: 5 - Percent of Nondetect Samples: 0.16

Nickel/Magnesium Regression - Log Transformed

Undifferentiated Fill - Soil Type 5



Number of Nondetect Samples: 5 - cent of Nondetect Samples: 0.47

**COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN I)
Northern and Central California, Nevada and Utah
CONTRACT Number N62474-88-D-5086**

Contract Task Order No. 310

Prepared For:

**DEPARTMENT OF THE NAVY
Engineering Field Activity West
Naval Facilities Engineering Command
San Bruno, California**

**ESTIMATION OF
HUNTERS POINT SHIPYARD
GROUNDWATER AMBIENT LEVELS
TECHNICAL MEMORANDUM**

**HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA**

September 16, 1996

Prepared By:

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**HGAL DISCUSSION
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ATTACHMENTS

- A: Statistical Data Used for Hunters Point Shipyard Groundwater Ambient Levels (HGAL) and Miscellaneous Groundwater Ambient Levels (MGAL)
- B: Histograms and Probability Plots of Metals Concentrations and Miscellaneous Parameters

ACRONYMS, SYMBOLS AND ABBREVIATIONS

Ag	Silver
Al	Aluminum
As	Arsenic
Ba	Barium
BCT	BRAC Closure Team
Be	Beryllium
BRAC	Base Realignment and Closure Act of 1988 and Defense Base Closure and Realignment Act of 1990, collectively
Ca	Calcium
Cal/EPA	California Environmental Protection Agency
Cd	Cadmium
Cl	Chloride
CLEAN	Comprehensive Long-term Environmental Action Navy
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
Cr	Chromium
CTO	Contract task order
Cu	Copper
DTSC	Department of Toxic Substances Control
EFA West	Engineering Field Activity (West)
Fe	Iron
GEO-EAS	A geostatistical environmental assessment software developed by the U.S. Environmental Protection Agency
Hg	Mercury
HGAL	Hunters Point Shipyard Groundwater Ambient Level
HLA	Harding Lawson Associates, Inc.
HPALs	Hunters Point Ambient Levels
HPS	Hunters Point Shipyard
K	Potassium
MCL	Maximum contaminant levels
Mg	Magnesium
MGAL	Miscellaneous Groundwater Ambient Levels
mg/L	Milligrams per liter
Mn	Manganese
Mo	Molybdenum
NA	Not available
Na	Sodium
NAWQC	U.S. EPA National Ambient Water Quality Criteria for saltwater aquatic life protection, continuous concentration (4-day average)
Ni	Nickel
NS	No standard
OU	Operating Unit
Pb	Lead

pH	A measure of acidity or alkalinity as the negative logarithm of the effective hydrogen-ion concentration or activity in gram equivalents per liter
PRC	PRC Environmental Management, Inc.
PRG	U.S. EPA Region IX preliminary remedial goal, February 1995
R ²	Coefficient of determination
RI/FS	Remedial Investigation/Feasibility Study
RWQCB	Regional Water Quality Control Board
Sb	Antimony
Se	Selenium
SFWD	San Francisco Water Department
TDS	Total dissolved solids
Tl	Thallium
UCL	Upper confidence level
U.S. EPA	United States Environmental Protection Agency
V	Vanadium
Zn	Zinc
µg/L	Micrograms per liter

1.0 INTRODUCTION

This technical memorandum presents the rationale, technical approach, and results used to establish Hunters Point Shipyard Groundwater Ambient Levels (HGAL) for metals of interest in A-aquifer groundwater at Hunters Point Shipyard (HPS), San Francisco, California. This work was performed by PRC Environmental Management, Inc. (PRC) as part of the remedial investigation/feasibility study (RI/FS) at HPS under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Task Order (CTO) 310 from Engineering Field Activity West (EFA WEST). The HGALs were calculated using filtered groundwater sample results from A-aquifer monitoring wells located outside of contaminant-affected groundwater areas. In addition, ambient levels for several non-metals (total dissolved solids, chloride, and pH) were also estimated. The ambient levels for non-metals are referred to as Miscellaneous Groundwater Ambient Levels (MGAL).

The following subsections present the background and report organization for this technical memorandum.

1.1 Background

On May 7, 1996, the Hunters Point Shipyard (HPS) Base Realignment and Closure Act (BRAC) Closure Team (BCT) met in Berkeley, California and agreed that it was necessary to establish HGALs to identify metals for screening purposes during the feasibility study. As agreed to with the BCT, the methodology to establish HGALs was to be determined by Cal/EPA Department of Toxic Substances Control (DTSC) statistician, Dr. James Frampton. Subsequently, PRC discussed various strategies with Dr. Frampton. To assist Dr. Frampton in his recommendations to estimate HGALs, PRC provided him with the Draft Study of Groundwater Sampling Methods for Metals (HLA 1996a), the Draft OU II Annual Groundwater Monitoring Report (HLA 1996b), time-series plots and analytical results of operating unit (OU) II groundwater data, and tabulated list and location of monitoring wells outside contaminant-affected groundwater areas. The wells outside the contaminant-affected areas were identified in the Draft Facility-Wide Groundwater Monitoring Plan (Tables 4, 5, 6 and 7, and identified in Figure 11 of March 21, 1996; PRC 1996). Monitoring well IR01MW-2 in Parcel E was subsequently considered within the contaminated-affected area because of its elevated levels of chromium, cobalt, and nickel.

On June 24, 1996, PRC provided Dr. Frampton with tables listing the HGALs using distribution dependent methods (Gilbert 1987), as well as the histograms of the data outliers on histograms of frequencies and concentrations of metals, and the histograms and probability distributions of the data used to obtain the HGALs. Dr. Frampton indicated that the calculation of HGALs as the 95 percent upper confidence limit (UCL) on the 95th percentile of the distribution using the nonparametric distribution formula (Gilbert, 1987, equation 11.13) was acceptable. As requested by Dr. Frampton, MGALs were calculated using the same formula. On July 1, 1996, the BCT met to discuss HGALs and concurred that the HGALs, and presumably MGALs, as calculated from this formula were acceptable.

1.2 Report Organization

Section 1.0 of this technical memorandum provides the introduction. Section 2.0 presents the technical approach for establishing HGALs and MGALs. Section 3.0 provides a report summary. A summary of HGALs and MGALs data is presented in Tables 3-1 and 3-2. HGALs are compared to San Francisco-area sources and regulatory standards in Table 3-3. References are provided after Section 3.0.

Appendix A provides tables of HGALs and MGALs. Appendix B contains the histograms and probability plots of metals concentrations and miscellaneous parameters.

2.0 TECHNICAL APPROACH

This section presents the approach and the methodology for estimating ambient levels for metals (HGALs) and miscellaneous non-metal parameters (MGAL) in A-aquifer groundwater at HPS.

2.1 Approach

Ambient groundwater levels for metals in the A-aquifer at HPS could be determined from several approaches, including: (1) use of offsite but nearby analytical data from wells or springs; (2) use of literature values; (3) estimation of groundwater values from water-equilibrium calculations using Hunters Point Ambient Levels (HPAL) for metals in soils and published values for equilibrium coefficients for specific metals; (4) and the drilling and sampling of onsite wells in areas known to be contaminant free. Fortunately, of the over 450 groundwater monitoring wells completed at HPS, several dozen were in areas likely to be outside the contaminant-affected groundwater areas in the A-aquifer, and were likely to have been sampled several times. The proper identification and use of these existing data would allow rapid determination of HGALs.

Therefore, the overall approach for establishing HGALs and MGALs was to use existing groundwater quality data from A-aquifer monitoring wells, and perform statistical analyses similar to those already performed with BCT-approved results for HPALs at HPS (PRC 1995).

The following steps were made to establish HGALs and MGALs:

1. A total of 56 A-aquifer wells were chosen from outside the contaminant-affected groundwater areas shown in Draft Facility-Wide Groundwater Monitoring Plan Figure 11 (PRC 1996). On a parcel basis, there were 8 wells from Parcel B, 9 wells from Parcel C, 17 wells from Parcel D, and 22 wells from Parcel E.

2. The data base for 20 metals was compiled using analytical results from filtered groundwater samples. The operating rules for manipulating the database were as follows: for nondetected metals values, the value used was one-half the analytical detection limit; results of duplicated samples were averaged; and results from multiple sampling events were included as individual results (not averaged). Consequently, the data set ranged from 139 to 182 data points per metal, indicating a range of 2 to 3 sampling events per well. Appendix A provides information on the number of detected and nondetected results for each data set used to calculate HGALs and MGALs.

3. Similar to the calculation of HPALs (PRC 1995) of metals in soils, HGALs and MGALs were calculated as 95 percent Upper Confidence Level (UCL) on the 95th percentile of the distribution using the nonparametric distribution formula (Gilbert, 1987, equation 11.13).

Additionally, there was some initial concern that seasonal or time-series effects, tidal effects, and spectral interference effects might make it difficult to establish HGALs. However, the seasonal or time-series effects, if any, were judged by Dr. Frampton and PRC to be insignificant, based on the OU II time series data. The tidal effects were also judged by Dr. Frampton and PRC to be insignificant based on the histograms and probability plots. Dr. Frampton concurred with PRC that the possible spectral interference effect of iron on antimony could not be evaluated reliably because only five data pairs were available for regression analysis. In addition, the coefficient of determination (squared coefficient of correlation) was only 0.0955.

2.2 Estimation Methodology

Before calculating HGALs and MGALs, histograms and probability plots were prepared for each metal and miscellaneous parameters using a geostatistical environmental assessment software developed by the U.S. Environmental Protection Agency (GEO-EAS 1.2.1). The histograms and probability plots were generated using both original and logarithmically transformed data and helped to identify and eliminate outliers from the data sets.

Ambient levels were estimated as the 95 percent UCL on the 95th percentile using a nonparametric formula (Gilbert 1987) as follows:

Step 1: Rank the data from minimum to maximum.

Step 2: Calculate the upper limit order statistic u:

$$u = p(n + 1) + Z_{1-p} [np(1-p)]^{1/2}$$

where

p = The percentile of interest (0.95)
= The significance level (0.05)
n = The number of values in the data set
Z_{1-p} = A constant obtained from Table A1 (Gilbert, 1987);
Z_{0.05} = 1.645

Step 3: If u is an integer, then the estimated 95 percent UCL on the 95th percentile is the "uth" largest datum among the ranked concentrations in the data set. If u is not an integer, then UCL_{95, 95} is obtained by linear interpolation between the two closest concentrations corresponding to u.

3.0

SUMMARY

The HGALs results are shown in Table 3-1. The MGALs results are shown in Table 3-2. Table 3-3 shows a comparison of HGALs to Albion Springs, San Francisco water and recycled water, and maximum contaminant levels (MCL; U.S. EPA, 1994), tap water preliminary remedial goals (PRG; U.S. EPA, 1995), and National Ambient Water Quality Criteria (NAWQC; RWQCB, 1995).

Table 3-3 indicates that lead, mercury, and nickel exceed their NAWQC for saltwater aquatic life protection by 1.8, 20, and 12 times, respectively. Additionally, the table shows that copper and silver exceed their NAWQC for saltwater aquatic life protection by 12 and 8.1 times, respectively.

Table 3-3 also indicates that NAWQCs are not available for chromium, thallium, iron, and manganese, in terms of continuous concentrations (4-day average). However, chromium III has an "additional toxicity information value for acute exposure" of 10,300 g/L based on eastern oyster embryos (while chromium VI has an NAWQC of 50 g/L); thallium has an additional toxicity information value for acute exposure of 2,130 g/L; and manganese has a NAWQC value as an instantaneous maximum of 100 g/L. The HGALs for chromium III and thallium are well below the "toxicity information" values for these metals, by 2 to 3 orders of magnitude for chromium III (or by 656 times) and by 2 orders of magnitude for thallium (or by 163 times). The HGAL for manganese is 81 times higher than the instantaneous maximum for manganese. Iron also has a NAWQC of 1,000 g/L for freshwater aquatic life protection; so that the HGAL for iron is 2.28 times its freshwater NAWQC.

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TABLE 3-1

**HUNTERS POINT SHIPYARD GROUNDWATER AMBIENT LEVELS (HGAL),
HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA**

Metal	Number of Samples	50th Percentile Concentrations (µg/L)	75th Percentile Concentrations (µg/L)	95th Percentile Concentrations (µg/L)	95 UCL of the 95th Percentile (µg/L)
Antimony, Sb	161	9.68	15.50	32.98	43.26
Arsenic, As	162	2.10	4.38	15.50	27.34
Barium, Ba	162	81.10	129.50	405.60	504.20
Beryllium, Be	162	0.18	0.25	0.83	1.40
Cadmium, Cd	162	0.90	1.40	2.53	5.08
Chromium, Cr	185	1.25	1.50	10.25	15.66
Cobalt, Co	162	3.50	5.20	18.00	20.80
Copper, Cu	162	1.75	3.85	17.14	28.04
Iron, Fe	162	5.80	11.87	865.00	2,380.00
Lead, Pb	162	0.80	1.28	7.29	14.44
Magnesium, Mg	162	275,000.00	625,250.00	1,026,429.00	1,440,000.00
Manganese, Mn	162	484.00	1,460.00	4,756.00	8,140.00
Mercury, Hg	162	0.10	0.10	0.20	0.60
Molybdenum, Mo	154	4.13	7.50	39.55	61.90
Nickel, Ni	182	11.32	37.00	79.11	96.48
Potassium, K	162	22,850.00	111,500.00	328,667.00	448,000.00
Selenium, Se	146	0.37	1.09	12.50	14.50
Silver, Ag	162	0.75	1.00	2.45	7.43
Sodium, Na	162	940,500.00	2,802,500.00	7,430,333.00	9,242,000.00
Thallium, Tl	136	1.00	4.00	9.57	12.97
Vanadium, V	162	2.15	5.90	13.23	26.62
Zinc, Zn	162	6.08	9.02	37.70	75.68

Notes:

HGAL Hunters Point Groundwater Ambient Levels for metals in A-aquifer groundwater
µg/L Micrograms per liter

TABLE 3-2

**MISCELLANEOUS GROUNDWATER AMBIENT LEVELS (MGAL),
HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA**

Miscellaneous Parameter	Number of Samples	50th Percentile Concentrations (µg/L)	75th Percentile Concentrations (µg/L)	95th Percentile Concentrations (µg/L)	95 UCL of the 95th Percentile (µg/L)
Total dissolved solids, TDS	114	3,670,000.00	10,800,000.00	28,733,333.00	33,720,000.00
Chloride, Cl	102	1,405,000.00	4,626,000.00	12,100,000.00	16,450,000.00
pH	104	7.30	7.43	8.40	8.58

Notes:

MGALs Miscellaneous groundwater ambient levels for parameters in A-aquifer groundwater
µg/L Micrograms per liter

TABLE 3-3

COMPARISON OF HUNTERS POINT SHIPYARD GROUNDWATER AMBIENT LEVELS (HGAL) WITH ALBION SPRINGS, SAN FRANCISCO WATER AND RECYCLED WATER, AND MAXIMUM CONTAMINANT LEVELS, TAP WATER PRELIMINARY REMEDIAL GOALS, NATIONAL AMBIENT WATER QUALITY CRITERIA, HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA

Water Quality Parameter	Albion Springs Raw Water ⁽¹⁾ (g/L)	Treated SFWD Water ^(2a) (g/L)	Treated SFWD Recycled Water ^(2b) (g/L)	MCL (g/L)	Tap Water PRG (g/L)	NAWQC as continuous concentration (g/L)	HGALs for A-aquifer Groundwater (g/L)
Primary Maximum Contaminant Levels for Inorganic Chemicals							
Aluminum, Al	NA	61	<200	1,000	NA	NA	NA
Antimony, Sb	NA	<5	<60	6	15	500	43.3
Arsenic (III), As	NA	<2	<5.0	50	0.045	36	27.3
Barium, Ba	NA	14	<10	1,000	2,600	NA	504
Beryllium, Be	NA	<1	<2.0	4	0.016	NA	1.40
Cadmium, Cd	NA	<1	<2.0	5	18	9.3	5.08
Chromium (total), Cr ⁽⁴⁾	NA	<2	<10	50	NA	NA ⁽⁴⁾	15.7 ⁽⁴⁾
Lead, Pb	1	<1	<3.0	50	4	8.1	14.4 (1.8X)
Mercury, Hg	NA	<1	<0.20	2	11	0.025	0.60 (20X)
Nickel, Ni	NA	<3	<20	100	730	8.2	96.5 (12X)
Selenium, Se	1	<5	<5.0	10	180	71	14.5
Thallium, Tl ⁽⁴⁾	NA	<1	<5.0	2	NA	NA ⁽⁴⁾	13.0 ⁽⁴⁾
Secondary Maximum Contaminant Levels Consumer Acceptance Limits							
Copper, Cu	NA	1	10.4	1,000	1,400	2.4	28.0 (12X)
Iron, Fe ⁽⁴⁾	NA	20	127	300	NA	NA ⁽⁴⁾	2,380 ⁽⁴⁾
Manganese, Mn ⁽⁴⁾	NA	6	27	50	180	NA ⁽⁴⁾	8,140 ⁽⁴⁾
Silver, Ag	NA	<1	<10	50	180	0.92	7.43 (8.1X)
Total Dissolved Solids, TDS	402,000	67,000	394,000	500,000	NA	NA	33,720,000

TABLE 3-3 (continued)

Water Quality Parameter	Albion Springs Raw Water ⁽¹⁾ (g/L)	Treated SFWD Water ^(2a) (g/L)	Treated SFWD Recycled Water ^(2b) (g/L)	MCL (g/L)	Tap Water PRG (g/L)	NAWQC as continuous concentration (g/L)	HGALs for A-aquifer Groundwater (g/L)
Zinc, Zn	NA	4	37	5,000	11,000	81	75.7
Additional Constituents							
Calcium, Ca	72,200 ⁽³⁾	8,900	15,200	NS	NA	NA	NA
Cobalt, Co	NA	NA	NA	NS	NA	NA	20.8
Magnesium, Mg	35,400	3,400	11,600	NS	NA	NA	1,440,000
Molybdenum, Mo	NA	NA	NA	NS	180	NA	61.9
Potassium, K	1,400	530	14,000	NS	NA	NA	448,000
Sodium, Na	20,000	9,200	110,200	NS	NA	NA	9,242,000
Vanadium, V	NA	NA	NA	NS	260	NA	26.6

Notes:

- (1) Courtesy of Albion Water Company, 1994 Water Analysis
- (2a) From San Francisco Water Department, March 1996, Water Quality Report, Issue No. 1, Vol. 1.
- (2b) From Table 4-2, SFWD, September 1995. Draft (Updated) Recycled Water Master Plan.
- (3) From Total Hardness of 326 mg/L and Magnesium (Mg) of 35.5 mg/L, Calcium (Ca) = [Total Hardness - 4.1 (Mg)] / 2.5, where all units are mg/L
- (4) NAWQCs are not available for these metals in terms of continuous concentrations (4-day average). See text for discussion (Section 3.0).
- HGAL Hunters Point Groundwater Ambient Level for metals in A-aquifer groundwater, based on 95 UCL/95th Percentile from nonparametric distribution method (Gilbert, 1987). Values in parentheses indicate increase over NAWQC so that 7.43 (8.1X) means that the HGAL is 1.43 and it exceeds the NAWQC by 8.1 times. For the purposes of this comparative table, the Miscellaneous Groundwater Ambient Level (MGAL) for Total Dissolved Solids, TDS, is presented.
- MCL U.S. EPA or Cal/EPA maximum contaminant level, whichever is lower, in mg/L (U.S. EPA 1994)
- mg/L Milligrams per liter, 1 mg/L = 1,000 g/L
- NA Not available
- NAWQC U.S. EPA National Ambient Water Quality Criteria for saltwater aquatic life protection, continuous concentrations (4-day average) (RWQCB 1995)
- NS No standard
- PRG U.S. EPA Region IX preliminary remedial goal, February 1995 (U.S. EPA 1995)
- SFWD San Francisco Water Department
- UCL Upper confidence level
- g/L Micrograms per liter, 1 g/L = 0.001 mg/L

**ATTACHMENT A
STATISTICAL DATA USED FOR HUNTERS POINT
SHIPYARD GROUNDWATER AMBIENT LEVELS
(HGAL) AND MISCELLANEOUS GROUNDWATER
AMBIENT LEVELS (MGAL)**

**RESTORATION ADVISORY BOARD (RAB)
MEETING HANDOUTS OF 23 MARCH 2000
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**ATTACHMENT B
HISTOGRAMS AND PROBABILITY PLOTS OF
METALS CONCENTRATIONS AND
MISCELLANEOUS PARAMETERS**

**RESTORATION ADVISORY BOARD (RAB)
MEETING HANDOUTS OF 23 MARCH 2000
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MEMORANDUM FOR THE CHIEF OF NAVAL OPERATIONS (N4)
COMMANDANT OF THE MARINE CORPS (L)

Subj: DEPARTMENT OF THE NAVY ENVIRONMENTAL POLICY MEMORANDUM
98-03; IMPLEMENTATION GUIDANCE FOR TECHNICAL ASSISTANCE FOR
PUBLIC PARTICIPATION (TAPP) FOR COMMUNITY MEMBERS OF
RESTORATION ADVISORY BOARDS (RABs) AND TECHNICAL REVIEW
COMMITTEES (TRCs)

Ref: (a) OPNAVINST 5090.1B
(b) 1997 Navy/Marine Corps Installation Restoration Manual
(c) Technical Assistance for Public Participation (TAPP) Final Rule, 32 CFR Part 203,
dated 2 February 1998

Encl: (1) DD Form 2749, Technical Assistance for Public Participation (TAPP)
Application, Dec 96

Background. Section 324 of the National Defense Authorization Act of Fiscal Year 1996 authorized the Department of Defense (DoD) to develop a program to provide technical assistance for RAB and TRC community members. Pursuant to this revised authority, DoD promulgated a final rule codified as a new subsection (e) of 10 USC Section 2705, Technical Assistance for Public Participation (TAPP). Community members of a RAB or TRC are now eligible to request technical assistance from private-sector sources. References (a) and (b) provide public participation requirements, including the characteristics, composition and establishment of RABs at DoN installations with environmental restoration programs. This memorandum compliments and augments policy contained in references (a) and (b), and will be incorporated in the next update of those references. Reference (c) provides the full text of the final TAPP rule.

Criteria. The purpose of the TAPP program is to assist RAB and TRC community members in obtaining independent assistance in interpreting scientific and engineering data related to environmental hazards and restoration activities at an installation. The goal of the program is to enhance the public's ability to participate in the decision-making process by improving their understanding of overall conditions and response activities. Community members may request that an installation commander, commanding officer, or Base Transition Coordinator (BTC) procure an independent technical assistance provider to act as a consultant or advisor on technical matters, provided that one of the following criteria is met:

- the RAB or TRC demonstrates that the federal, state and local agencies responsible for overseeing environmental restoration at the installation and DoN/DoD personnel do not have

the technical expertise necessary for achieving the objective for which the technical assistance is to be obtained; or

- the technical assistance is demonstrated to contribute to the efficiency, effectiveness, or timeliness of the environmental restoration activities at the installation, and is likely to contribute to community acceptance of these activities.

Applicability. For purposes of this memorandum, the term environmental restoration includes site assessments, investigations, characterizations, cleanups and related management activities at both active and closing bases. The term environmental restoration activities involving both petroleum (past releases only) and hazardous substances performed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and applicable state laws. It does not include clearance of unexploded ordnance or building demolition and debris removal, which are otherwise authorized under the Defense Environmental Restoration Program (DERP). Environmental compliance issues are not addressed by RABs/TRCs and are not included in the TAPP program.

Eligible Activities. The following types of activities are eligible for technical assistance funding:

- Interpretation of technical documents – review of installation restoration site investigations, decision documents, and engineering plans. Examples include site characterizations, alternative remedy analyses, and health and ecological risk assessments.
- Assessment of technologies – assistance to community members in understanding the functions, tradeoffs and implications of technologies proposed to investigate or clean up sites.
- Participation in relative risk site evaluations – assistance to community members in understanding and contributing to DoD’s relative risk site evaluation process.
- Understanding health implications – assistance to community members in interpreting the potential health risks of site contaminants, exposure scenarios, cleanup levels or remedial technologies.
- Training - providing technical training on specific restoration issues where the community needs supplemental information, e.g., evaluating alternative technologies, risk assessment procedures and sampling plans.

Ineligible Activities. The following types of activities are not eligible for technical assistance funding:

- Payment of attorney’s fees, preparation for litigation or underwriting of any legal actions.
- Political activity or lobbying as defined by the Office of Management and Budget (OMB) Circular A-122, “Cost principles for Non-Profit Organizations”.
- Other activities inconsistent with the cost principles stated in OMB Circular A-122.
- Generation of new primary data, including split sampling.
- Reopening final DoN/DoD decisions, or conducting disputes with the DoN/DoD.
- Epidemiological or health studies such as blood and urine testing.
- Community outreach activities.

Eligible Applicants. Only RAB or TRC community members are eligible to apply for the TAPP program. Further, the RAB/TRC must be comprised of at least three community members and recognized by the DoN. In situations where community members are also employees of the federal, state or local government, their participation in the TAPP process would not be excluded, provided they are not expressing opinions derived from their status as government employees. The request for assistance must be approved by the majority of the RAB community members, and must be so certified on the application (enclosure (1)).

Funding. The TAPP program is centrally managed by CNO (N453), and will be funded from the Environmental Restoration, Navy (ER,N) account for active bases, or the Base Realignment and Closure (BRAC) account for closing bases. CNO (N453) will direct COMNAVFACENGCOM to release BRAC or ER,N funding promptly upon receipt of a completed and approved TAPP application accompanied by a detailed draft statement of work and government cost estimate. (See section on Commander Decision below.)

The TAPP funds are categorized as a "program administration" cost within available ER,N and BRAC funds. TAPP funds will not be held in reserve and will be offset from ER,N or BRAC project funding allocated to the requesting installation. In the event installation project funds are not available, the cognizant Engineering Field Division/Activity will provide resources from overall funding targets. Installation Commanders or Commanding Officers shall not use base operating support (BOS) or other resources to provide or to augment funding for the TAPP program.

TAPP funding may not exceed the following:

- (1) \$25,000 per fiscal year, or one (1) percent of the installation's total projected environmental restoration cost to complete, whichever is less, and
- (2) \$100,000 over the life of the environmental restoration program at the installation.

Note that these limitations refer to the maximum allowable technical assistance funding per RAB or TRC. Resources available each fiscal year will vary and will be balanced against funding for investigations and cleanup. RABs are encouraged to identify TAPP requirements as early as possible so they may be accommodated within the budget process.

Waivers. Waivers to the \$100,000 total and \$25,000 annual funding limits will be considered on a case by case basis. The following considerations may affect the granting of such a waiver:

- (1) the size and complexity of the restoration project.
- (2) the nature and extent of the contamination.
- (3) the level of restoration activity at the installation.
- (4) the size and diversity of the affected community, and
- (5) the ability of the TAPP recipient to identify and raise funds from other sources, such as EPA Technical Assistance Grants (TAG) for National Priority Listed (NPL) bases or Technical Outreach Services to Communities (TOSC) for non-NPL bases.

Requests for waivers are initiated by the RAB or TRC community members and forwarded by endorsement with recommendations by the Installation Commander or Commanding Officer via the Chain of Command to CNO (N453) who will then forward the waiver request to the Deputy Assistant Secretary of the Navy (Environment and Safety) for waiver determination.

TAPP Process. The RAB Co-chair, or in the case of a TRC a DoN official designated by the installation commander, will inform the RAB community members of the availability of the TAPP program as soon as possible but not later than 30 June 1998. The following describes the steps in the TAPP Process:

a. Identification of Need. The RAB or TRC community members must determine whether assistance is needed. It is the community members' responsibility to decide what type of assistance would best enable them to participate in the restoration program. As part of this process, community members should evaluate whether avenues of assistance other than TAPP might be available. Assistance may be available from volunteer services by local universities or other community experts, from state and local health and environmental organizations, from the installation's restoration contractor, or from other grant funding (TAG or TOSC). If none are available or suitable, then community members may seek assistance through the TAPP program.

b. TAPP Application. The community completes the application (enclosure (1)) with the assistance of the Installation RAB co-chair and submits it to the installation commander or commanding officer. As part of this process, the community must identify a single point of contact for communication with the DoN regarding the TAPP procurement process, describe the project, desired product, and timetable for deliverables. If possible, the community should nominate potential technical assistance providers with qualifications.

c. Commander's Decision. The installation commander will consider the TAPP request and approve or reject the TAPP application. At closing bases, the Commander/Commanding Officer of the Naval Facilities Engineering Field Division/Activity (EFD/EFA) or his/her designee acts in this capacity. The geographical EFD/EFA, in collaboration with the DoN RAB Co-chair and the contracting officer, will support the installation commander in confirming that the proposed project is eligible, that the community has exhausted other avenues of assistance prior to applying for the TAPP, that funding is available, and that provider(s) possess proper qualifications and other technical aspects. If other avenues for assistance exist, but the community members desire an independent provider, the installation commander must assess whether providing assistance will enhance the restoration program and improve community support. Other considerations include the installation's National Priorities List (NPL) status, the level of community interest, and whether or not EPA has provided a TAG/TOSC or other funding. If approved, the installation commander will forward the request to CNO (N453), via the chain of command for funding authorization. If the application is rejected, the installation commander must inform the RAB or TRC, indicate the reason(s) for disapproval, and recommend alternatives for achieving the desired assistance. The RAB/TRC may decide to correct application deficiencies and reapply or appeal.

d. DoN procures assistance for RAB/TRC community members. Upon release of funds by COMNAVFACENGCOM, as directed by CNO (N453), the supporting EFD/EFA or installation contracting officer will use the simplified acquisition procedures (SAP) to obtain assistance from private sector sources on a competitive basis (Federal Acquisition Regulations (FAR) (48 CFR Part 13)). These small purchase orders of \$25,000 or less are generally reserved for small businesses.

e. Providing desired technical assistance. The technical assistance provider will work with the community members of the RAB/TRC to provide the requested assistance. The DoN RAB co-chair, or other DoN/DoD employee, must act as the Contracting Officer's Technical Representative (COTR) to issue task orders to the assistance provider to perform the desired work. Task orders cannot be issued by community members.

Disputes and Appeals. It is DoN policy to foster an open environment and atmosphere of cooperation between the RAB/TRC and the installation. In the event of a dispute, the RAB/TRC may appeal the installation's decision. Appeals will be addressed via the chain-of-command. The installation commander will forward the appeal to the major claimant. The major claimant should consult with CNO (N453), as the TAPP program manager, prior to elevation of the dispute to the Deputy Assistant Secretary (Environment and Safety). In general, all disputes should be resolved at the lowest possible level.

Situations in which disputes may occur are:

- The RAB/TRC may dispute the findings of the installation commander that the proposed TAPP project is ineligible, either from the eligibility criteria established or for failure to consider alternative sources of funding.
- The RAB/TRC may dispute the findings of the contracting officer that the preferred provider is inadequate, the provider is not cost effective, or other providers identified in the acquisition process more clearly meet the requirements of the task.
- The RAB/TRC and the contracting officer do not agree that the provider has met the terms of the procurement (FAR (48 CFR Part 46)).

Inherently governmental functions, such as records of decision, are not subject to appeal, and issues regarding contracting are governed by the FAR (48 CFR Part 37).

Responsibilities.

a. The DoN RAB Co-chair will:

- Inform the RAB/TRC of the TAPP program and application process by 30 June 1998, and provide appropriate certification to CNO (N453).
- Assist the RAB in completing the TAPP application.
- Work in coordination with the contracting officer to develop a detailed statement of work for the TAPP project and government cost estimate.
- Serve as the Contracting Officer's Technical Representative (COTR), unless the installation commander designates another DoN employee.
- Keep the installation commander informed of the community's desire for TAPP and the status of the TAPP.
- Fulfill reporting requirements.
- Assist the EFD/EFA and CNO in identifying funds when a TAPP request is anticipated, or received.

b. The Installation Commander will:

- Approve or disapprove the TAPP application by evaluating whether the proposed project meets eligibility criteria, whether other avenues of assistance have been sought by the community, and whether funding is available from ER,N or BRAC.
- Forward to CNO (N453) a completed, approved TAPP application package accompanied by a detailed scope of work and government cost estimate, with a request for release of funds.
- Where a project is approved, direct the contracting officer to procure the requested assistance.
- Where a project is disapproved, provide a rationale to the RAB/TRC community members and inform them of alternatives for obtaining the requested technical assistance; give them the opportunity to reapply; or consider request(s) for a waiver of funding limitations; forward appeals through the chain of command.

c. The Contracting Officer will:

- Use the rules and regulations for purchase orders as outlined in FAR (48 CFR Part 13).

- Consider the qualifications of the proposed provider(s) if any are indicated on the application form.
- Competitively bid and select the provider after coordination with the DoN RAB Co-chair, and consultation with the RAB/TRC community members.
- Administer the purchase order to ensure that the provider provides the quality of service and/or provides the deliverables requested.

Training. The EFDs/EFAs are responsible for providing TAPP training to installation commanders, BTCs, Contracting Officers and RAB community members as soon as possible, but not later than 30 June 1998 and prior to the acceptance of any TAPP application. Installation commanders, contracting officers and DoN RAB co-chairs should be trained prior to training RAB community members.

Reporting. DoN RAB co-chairs will submit a report annually on the use of TAPP funding to CNO (N453) via the chain of command. The report should include a summary of funds expended and a statement regarding the overall satisfaction of the RAB community members with the quality of the service and/or products received. DoN RAB co-chairs will also support CNO (N453) in responding to requests for information from higher headquarters.

The point of contact in CNO (N453) for TAPP is Ms. Cindy Turlington, (703) 602-5330. The point of contact in this office for environmental restoration policy matters is Mr. Paul Yaroschak, (703) 588-6684.

ROBERT B. PIRIE, JR.

Copy to:
AGC (I&E)

**PARCEL 'B' UPDATE
HUNTERS POINT SHIPYARD**

March 23, 2000



Parcel B Update

- David B DeMars
- Lead Remedial Project Manager
- (619) 532-0912
- demarsdb@efds.w.navy.mil



ROD Goals

- Prevent Ingestion, Direct Contact or Inhalation of Hazardous Substances in Soil
- Excavate Contaminated Soil to Residential Scenario and Protective to 10^{-6} Risk
- Unrestricted Reuse (Produce)



ESD

- Incorporate New (1999) Preliminary Remediation Goals (PRGs)
- Revise Cleanup Values (ROD Table 8)
- Recalculate Ambient Values for Nickel

TR

History

- Formal Proposal to BCT Jan 27
- BCT Written Comments Feb 2-10
- Follow-on Meeting Feb 15
- Revised Proposal Mar 10
- EPA concurs ESD Mar 31

TR

What's Next

- Prepare ESD to ROD - May
- Prepare Amendment to RD (Sampling & Analysis Plan) - July
- Re-Mobilize, Continue Cleanup - Aug

TR
