Denkenberger, Erika

From: Elizabeth Butler [Butler.Elizabeth@epamail.epa.gov]
Sent: Thursday, May 10, 2012 12:05 PM
To: McIntyre, Kimberlee
Cc: Kellems, Barry; Romagnoli, Bob; Bowman, Matthew; Spadaro, Philip; Paul J Bluestein; Reed, Rob; Dunn, Shannon
Subject: Re: Addendum to the Construction Quality Assurance Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area

Hi Kimberlee & Paul,
The attached addendum to the CQAP is hereby approved. Any questions please let me know.
Thanks,
Elizabeth

-----"McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA
From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Date: 03/30/2012 02:26PM
Cc: "'Paul J. Bluestein'" <pjbluestein@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>
Subject: Addendum to the Construction Quality Assurance Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area

Attached is an addendum to the Construction Quality Assurance Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area. This purpose of this addendum is to present the modifications to the air monitoring activities described in Section 12 of the CQAP. These modifications were made to align with the Preconstruction Permit and Certificate to Operate (PCP100001) issued by the New Jersey Department of Environmental Protection on March 16, 2012.In addition, updates have been made to Section 14 and Section 16.3 of the CQAP and include modifications to the weather monitoring and odor monitoring activities, respectively.

This document is also posted on the SharePoint site at the following location:

https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fConstruction%20Quality%20Assurance%20Plan%20%28CQAP%29%2fConstruction%20Quality%20Assurance%20Plan%20%2d%20Addendum%20%2d%20March%202012&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

Please let us know if you have comments or questions regarding these changes.

Regards,

Kimberlee McIntyre | Principal Communications Specialist, Technical Communications Resource Leader |
kimberlee.mcintyre@arcadis-us.com

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T: 425 379 0938 | M: 425 293 6137

www.arcadis-us.com

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Please consider the environment before printing this email.

[attachment "CQAP Addendum.pdf" removed by Elizabeth Butler/R2/USEPA/US]

Denkenberger, Erika

From: Elizabeth Butler [Butler.Elizabeth@epamail.epa.gov]
Sent: Thursday, January 19, 2012 3:47 PM
To: McIntyre, Kimberlee
Cc: pjbluestein@tierra-inc.com; Reed, Rob; Dunn, Shannon
Subject: RE: Final Documents for Review and Approval

Kimberlee & Paul,
The CQAP is now approvable. I will send out an official approval letter in the near future, hopefully, to cover this, the RAWP Part 2 and the RAWP QAPP. Just as an FYI, I have a meeting set up with Pat and the RCRA folks on Monday so hopefully we'll get the final decision on how to proceed with the comments on the WCQAPP and the disposal of the tieback cuttings. The SRCAP is still outstanding but Pat will be stuck in DC all week next week so she intends to spend her evenings there finishing up her review so we can wrap that up.
Any questions, please let me know.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, "pjbluestein@tierra-inc.com" <pjbluestein@tierra-inc.com>
Cc: "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>
Date: 01/18/2012 06:30 PM
Subject: RE: Final Documents for Review and Approval

Elizabeth,

Attached is the Final CQAP with the change made to Section 15.2. Please send me an email that indicates your approval and I'll move forward with production and delivery.

We're working on your comments on the RAWP QAPP and will get back to you later on those.

Regards,
Kimberlee

Kimberlee McIntyre | Principal Scientist, Technical Communications Resource Leader | kimberlee.mcintyre@arcadis-us.com
ARCADIS U.S., Inc. | 2300 Eastlake Avenue East, Suite 200 | Seattle, WA 98102
T. 425.379.0938 | M. 425.293.6137
www.arcadis-us.com

From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Wednesday, January 18, 2012 7:34 AM
To: McIntyre, Kimberlee; pjbluestein@tierra-inc.com
Subject: Re: Final Documents for Review and Approval

Hi Paul.

Since I'm still waiting on Pat for feedback on the f-listing determination, which will feed into my WCQAPP final review and the SRCAP, I'm going ahead with providing my limited feedback on the RAWP QAPP and CQAP, so at least we can finalize those 2 documents.

Regarding the CQAP:
I hate to do this, but I still don't like how that last sentence in Section 15.2, p 15-1 of the CQAP reads, therefore please change it to the following:
"A memorandum included in Appendix F presents a deterrence plan to reduce the likelihood of birds utilizing the Phase I Work Area."

Regarding the RAWP QAPP, I have 2 additional thoughts:
1. Add the full VOC suite analyses in for the backfill in Worksheet 15-1
2. Although the RTC #3 to the 12/1/11 comments correction was made, I went back to the original and I can't find reference to the EDDs in Worksheet 29-2 either. If I'm looking at the wrong version please let me know or change the reference to one that mentions EDDs.

Please let me know if you have any questions on these.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, Ray Basso/R2/USEPA/US@EPA
Cc: '"Paul J. Bluestein"' <pjbluestein@tierra-inc.com>, '"Paul S. Brzozowski"' <paul.brzozowski@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Beaver, James" <James.Beaver@arcadis-us.com>, "Moody, Chris" <Chris.Moody@arcadis-us.com>, "Bonkoski, Brooke" <Brooke.Bonkoski@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "King, Coleman" <Coleman.King@arcadis-us.com>
Date: 12/16/2011 02:38 PM
Subject: Final Documents for Review and Approval

Elizabeth,

We have completed incorporating changes in response to your last rounds of comments on the Construction Quality Assurance Plan (CQAP), Removal Action Work Plan Quality Assurance Project Plan (RAWP QAPP), and Waste Characterization Quality Assurance Plan (WC QAPP).

Final PDFs of each document (changed pages only) have been posted on SharePoint in the following locations:

CQAP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fConstruction%20Quality%20Assurance%20Plan%20%28CQAP%29%2fFinal%20Construction%20Quality%20Assurance%20Plan%2c%20Revision%202%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

RAWP QAPP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPhase%20I%20Removal%20Action%20Work%20Plan%20%28RAWP%29%2fRAWP%20QAPP%2c%20Revision%201%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

WC QAPP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPre%2dInvestigation%20Studies%2fWaste%20Characterization%2fWaste%20Characterization%20QAP

P%2c%20Revision%201%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

Please let us know if you have additional comments on any of these documents. We'll wait to begin production on these until we receive your final approval.

Best regards,

Kimberlee McIntyre | Senior Scientist, Technical Communications Practice Leader | kimberlee.mcintyre@arcadis-us.com
ARCADIS U.S., Inc. | 2300 Eastlake Avenue East, Suite 200 | Seattle, WA 98102
T. 425.379.0938 | M. 425.293.6137
www.arcadis-us.com

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Please consider the environment before printing this email.

 [attachment "Construction Quality Assurance Plan, Revision 2.pdf" deleted by Elizabeth Butler/R2/USEPA/US]

Denkenberger, Erika

Subject: FW: DAR, drawings and specs

From: Butler.Elizabeth@epamail.epa.gov [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Friday, September 23, 2011 11:07 AM
To: Paul J. Bluestein
Subject: DAR, drawings and specs

Paul,
Just wanted to give you the head's up that I will be conditionally approving the DAR, drawings and specs, but I'm still working out the language to be in the formal letter with Pat and Ray. Unfortunately, since I'm leaving this afternoon I'm not going to get the formal letter out today. I will get it to you next week but in case you wanted to go ahead with production, I figured I'd at least put this in writing. I also sent Rob the # of copies info.
If you need to reach me call me on my cell. I'll be back in the office on Wednesday.
Have a good weekend,
Elizabeth

From: "Butler, Elizabeth" <Butler.Elizabeth@epa.gov>
Date: March 14, 2013, 12:36:52 PM EDT
To: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
Cc: "Hick, Patricia" <Hick.Patricia@epa.gov>
Subject: FW: CQAP - Demobilization (As-built survey of UPF)

Paul,

Although your original request proposes doing a visual survey in lieu of an as-built survey for the UPF, through subsequent discussions and emails shared on this topic, EPA is of the understanding that both surveys were employed in combination to provide coverage of the area. EPA also understands that the above information, along with drawings of the hexavalent chromium and VOC impacted soil areas in relation to the excavated soil areas at the UPF, was requested by and provided to the UPF property owner.

EPA approves of modifying the Post-Construction Closeout requirements in Section 17.2 of the EPA-approved CQAP to this use of the combination of visual and as-built surveys to provide coverage of the UPF. If you have any questions on this please let me know.

Thanks,

Elizabeth

From: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
To: Elizabeth Butler/R2/USEPA/US@EPA
Cc: Rob Reed <Rob.Reed@arcadis-us.com>, Matthew Bowman <Matthew.Bowman@arcadis-us.com>, Bob Romagnoli <Bromagnoli@intell-group.com>, "Paul S. Brzozowski" <paul.brzozowski@tierra-inc.com>
Date: 01/07/2013 09:28 AM
Subject: CQAP - Demobilization (As-built survey of UPF)

Elizabeth,

In lieu of preparing an as-built survey of the restored UPF as described in the CQAP (pdf of relevant section attached), Tierra would instead propose conducting a visual survey presented by way of photo-documentation. Please let me know if you find this acceptable. Thanks in advance.

(See attached file: Demob and Inspection.pdf)(See attached file: ATT00001.c)

From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Tuesday, May 22, 2012 10:06 AM
To: Bowman, Matthew
Cc: Romagnoli, Bob; King, Coleman; Molina, Joe; Paul J Bluestein
Subject: Re: Dredge Depth and Location Confirmation Approach

Matt & Paul,
Technically, I'm OK with the proposal, but in line with the Corps' technical comments I've copied below, it would be good to see some of the #'s showing how the 3 pieces of evidence correlate so far. Please note, however, as I relayed in our meeting this morning, we do need to consider the language from the July 2011 land use PE, page 4, #13. It doesn't speak to the 12' bathy but the post-backfill bathy's. Let's discuss more when you've had a chance to process this so I know whether I need to reach out to DEP.
Thanks,
Elizabeth

Ken,

How are the manual readings that Matt mentions correlating with the Hypack readings so far?
If you've got good validation of the Hypack...the concept is sound. He mentions that the readings
are taken but doesn't relate that the two agree.

For the multi-beam reading the survey "cells" are either 3'x3' or 5'x5' averages. That is certainly better
resolution than they are proposing. Considering that we are typically chasing rock pinnacles that
can literally sink a ship versus your soft bottom, I think we could live with the difference but it
wouldn't hurt to tighten up the spacing on the ranges.

Kucera

-----"Bowman, Matthew" <Matthew.Bowman@arcadis-us.com> wrote: -----
To: Elizabeth Butler/R2/USEPA/US@EPA
From: "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>
Date: 05/21/2012 09:43AM
Cc: "Molina, Joe" <Joe.Molina@arcadis-us.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "'Paul J. Bluestein'" <pjbluestein@tierra-inc.com>, "King, Coleman" <Coleman.King@arcadis-us.com>
Subject: Dredge Depth and Location Confirmation Approach

Elizabeth,

As a follow-up to the meeting conducted during the week of May 7, 2012 between ARCADIS field staff, Tierra, and the USEPA, the team requests approval to rely on manual sounding and dredge software data collection for dredge depth and location confirmation in lieu of single beam or multi-beam bathymetry survey for interim and final dredge elevation measurements. Site

constraints and technology limitations make the single beam and multi-beam surveys less practical for the following reasons:

- Space limitations due to the presence of a considerable quantity of floating equipment within the enclosure
- Potential signal interference with structures and barges within the enclosure that further exacerbate the accuracy limitations of bathymetric surveys
- Timing limitations associated with the scheduling and lack of real-time feedback from data collected

ARCADIS is proposing to use multiple alternate lines of evidence to confirm dredge depth and locations throughout the dredging process. These alternate lines of evidence are comprised of three distinct and common accepted methods for confirming final grade elevations. These three methods are as follows:

- Week's dredge guidance software (Hypack) - equipped with RTK-GPS capability, verified at a minimum once per day on known targets, produces accurate mapping and is equipped with alarms based on depth /location conditions
- Weeks is performing a manual sounding technique based on each dredge barge movement (typically every 15 to 25 feet) wherein 11 readings utilizing a surveyor's rod totaling 50 feet are taken. This results in a survey point approximately every 85 square feet. This survey work is compared to Hypack work each day.
- ARCADIS is performing independent manual soundings based on a transect spacing of every 25 feet east to west . 0+00 commences in the west corner of the enclosure and moves in an easterly direction ending at 7+48. North south spacing is based on 10 foot intervals commencing along the floodwalls. A specially equipped surveyor's rod with a reinforced plastic plate that provides a uniform measuring point and wide surface is utilized. Data collection is recorded in the surveyor's log book and submitted to Syracuse office for independent verification.

ARCADIS has included procedures for the approach to each of these dredge confirmation approaches as discussed. Thank you for your consideration in this matter.

Matthew Bowman

ARCADIS

[attachment "Manual Sounding Technique.pdf" removed by Elizabeth Butler/R2/USEPA/US]
[attachment "Barge Sounding Technique.pdf" removed by Elizabeth Butler/R2/USEPA/US]
[attachment "Weeks Dredge Demo and Alarm Addition.pdf" removed by Elizabeth Butler/R2/USEPA/US]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

July 28, 2011

Paul J. Bluestein, P.E.
Project Coordinator
Tierra Solutions, Inc.
(On behalf of Occidental Chemical Corporation)
2 Tower Center Blvd., 10th Floor
East Brunswick, NJ 08816

RE: Administrative Settlement Agreement and Order on Consent for Removal Action, U.S. EPA Region 2 CERCLA Docket No. 02-2008-2020 – Phase I Removal Action Enclosure Design documents and Removal Action Work Plan Part 1, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, July 2011

Dear Mr. Bluestein:

The U.S. Environmental Protection Agency (EPA) has reviewed Tierra Solutions, Inc.'s (TSI) submittal entitled "Final Removal Action Work Plan Part 1 – Sediment Excavation Enclosure Component - Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, July 2011" (Phase I RAWP Part 1) and the following TSI submittals constituting the Phase I Final Enclosure Design:

- "Final Enclosure Design Drawings and Technical Specifications – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 2, July 2011",
- "Interim Community Health and Safety Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, June 2011", and
- "Interim Construction Quality Assurance Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, July 2011".

Pursuant to Paragraph 31 of the Administrative Settlement Agreement and Order on Consent for Removal Action, the EPA hereby approves the Phase I Final Enclosure Design and Phase I RAWP Part 1. Please note that approval of the Phase I Final Enclosure Design and Phase I RAWP Part 1 is only applicable to the construction of the sheet pile enclosure and related elements, since the Design of the Upland Processing Facility, dredging, processing and

backfilling are not yet complete. Furthermore, if any items beyond the scope of work for the sheet pile enclosure construction that are contained in any of the above-mentioned documents are modified during the review and approval process of the remaining Design, amendments shall be created and copies provided in a timely manner reflecting those revisions, such that a complete up-to-date hard copy of the Design documents can be maintained on-site. In addition, please note that this approval reflects conditions at the current time and that as the work proceeds conditions encountered in the field may necessitate subsequent revisions.

We appreciate your cooperation and we look forward to continuing to work in this cooperative manner. If you have any questions, feel free to contact me at 212-637-4396.

Sincerely yours,

Elizabeth Butler
Remedial Project Manager
Emergency and Remedial Response Division

cc: P. Hick, EPA
R. Basso, EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

March 13, 2013

Paul J. Bluestein, P.E.
Project Coordinator
Tierra Solutions, Inc.
(On behalf of Occidental Chemical Corporation)
2 Tower Center Blvd., 10th Floor
East Brunswick, NJ 08816

RE: Administrative Settlement Agreement and Order on Consent for Removal Action, U.S. EPA Region 2 CERCLA Docket No. 02-2008-2020 – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area Final Inspection and Completion of the Phase I Removal Action

Dear Mr. Bluestein:

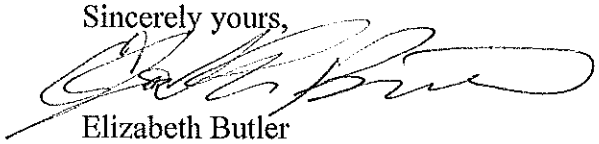
This letter documents the final inspections of the Phase I Removal Action at the Diamond Alkali Superfund Site. The inspections were conducted by the U.S. Environmental Protection Agency (EPA), Tierra Solutions, Inc. and ARCADIS. The inspection of the Phase I Work Area located in the Passaic River immediately adjacent to the former Diamond Alkali Facility at 80 and 120 Lister Avenue in Newark, NJ was conducted on November 28, 2012; the inspection of the Upland Processing Facility at 117 Blanchard Street, Newark, NJ was conducted on January 22, 2013. Walkthroughs of both sites were done during those inspections to evaluate the completeness of construction efforts and consistency with the final EPA-approved design documents.

Two outstanding documentation issues concerning the Phase I Removal Action were identified during the inspections relating to the submittal of the final bathymetry surveys and the data from the Upland Processing Facility surrogate sampling. Those documentation requirements were met when EPA received from Tierra Solutions, Inc. the *Upland Processing Facility Demobilization – Surrogate Sampling: Request for issuance of "Letter of Satisfactory Demobilization"* and the *Summary of Bathymetry Measurements – Lower Passaic River, Phase I Work Area* on January 31, 2013 and February 1, 2013, respectively.

EPA reviewed those two documents and, in conjunction with the results of the two inspections, has determined that the Phase I Work, as defined in Paragraph 9.n. of the Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) is considered complete. Please proceed with submittal of the Phase I Removal Action Final Report pursuant to Paragraph 29 of the AOC.

If you have any questions, feel free to contact me at 212-637-4396.

Sincerely yours,



Elizabeth Butler
Remedial Project Manager
Emergency and Remedial Response Division

McIntyre, Kimberlee

From: Elizabeth Butler <Butler.Elizabeth@epamail.epa.gov>
Sent: Monday, May 14, 2012 6:19 AM
To: McIntyre, Kimberlee
Cc: Paul J Bluestein; Reed, Rob
Subject: RE: Community Health and Safety Plan

Paul,
The attached mark-up of the CHASP is approved. Therefore, please finalize this version and consider it final.
Any questions please let me know.
Thanks,
Elizabeth

-----"McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA, Paul J Bluestein <pjbluestein@tierra-inc.com>
From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Date: 05/10/2012 03:20PM
Subject: RE: Community Health and Safety Plan

Elizabeth,

Thank you for your additional editorial review. Much appreciated. In response to these changes, please review and approve the attached version.

Regards,

Kimberlee

Kimberlee McIntyre | Principal Communications Specialist, Technical Communications Resource Leader | kimberlee.mcintyre@arcadis-us.com

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From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Thursday, May 10, 2012 9:14 AM
To: McIntyre, Kimberlee; Paul J Bluestein
Subject: Re: Community Health and Safety Plan

Hi Kimberlee,

There are a few lingering minor corrections, which I would like made, before this is finally approved. Please see the below comments and let me know if you have any questions.

Thanks,

Elizabeth

1. Sec 2.4.1, p 13, 1st full para, last sentence - revise the verbs to "begins", "floats" and "terminates"

2. Sec 4.2.1, p 25, 2nd bullet - revise to "...truck transport began"

3. Sec 4.2.2, p 26, 3rd bullet - change "is" to "are"

4. Sec 5.8, p 39, 2nd sentence - change "are" to "is" or delete the parentheses

5. Sec 5.10.3, p 40, last para - add "and NJDEP" after "EPA"

6. Sec 6.1.2, p 46, 1st para, last sentence - change "is" to "was"

7. Sec 6.3.3, p 49, new para - add "and NJDEP" after "EPA"

8. Sec 10.2, p 76 - delete Lucia Gamba's contact info. No need to replace it with Matt's - just leave it with Ken's alone

-----"McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA
From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Date: 04/09/2012 12:40PM
Cc: "'Paul J. Bluestein'" <pjbluestein@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Perry, Steven" <Steven.Perry@arcadis-us.com>
Subject: Community Health and Safety Plan

Elizabeth,

Attached is the revised final Community Health and Safety Plan. Your previous comments were addressed in this document and updates of verb tense have occurred throughout to be the status of activities to present status. Changes are shown in both redline/strikeout (RLSO) as well as highlighting. This approach was taken because of the unique formatting. Too much RLSO would have thrown figure and box placement off and would have been distracting.

Please let us know if you'd like any other changes or if this document is ready for approval/distribution.

Regards,

Kimberlee

Kimberlee McIntyre | Principal Communications Specialist, Technical Communications Resource Leader |
kimberlee.mcintyre@arcadis-us.com

ARCADIS U.S., Inc. | 2300 Eastlake Avenue East, Suite 200 | Seattle, WA 98102
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www.arcadis-us.com

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Please consider the environment before printing this email.

[attachment "Final CHASP April 2012_Rev 3.pdf" removed by Elizabeth Butler/R2/USEPA/US]

[attachment "Final CHASP May 2012_Rev 4.pdf" removed by Elizabeth Butler/R2/USEPA/US]

Herman, Megan

From: Elizabeth Butler [Butler.Elizabeth@epamail.epa.gov]
Sent: Monday, May 21, 2012 2:02 PM
To: Herman, Megan
Cc: Romagnoli, Bob; McIntyre, Kimberlee; Spadaro, Philip; Paul J Bluestein; Reed, Rob; Berceli-Boyle, Tina
Subject: Re: Revised SRCAP

Paul,
The attached revisions to the SRCAP are approved. Therefore, please incorporate them and finalize this version, which can now be considered approved.
Any questions please let me know.
Thanks,
Elizabeth

-----"Herman, Megan" <Megan.Herman@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA
From: "Herman, Megan" <Megan.Herman@arcadis-us.com>
Date: 05/18/2012 03:33PM
Cc: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Berceli-Boyle, Tina" <Tina.Berceli-Boyle@arcadis-us.com>, "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Subject: Revised SRCAP

Please find attached the revised SRCAP pages that were made based on your most recent discussion with Tina. I have highlighted all the most recent changes. Please note that some of the changes are deletions; therefore, the highlighting is on the far right hand side. Please let us know if you have any other revisions or approve the changes.

Many thanks,

Megan Herman

Megan Herman | Staff Scientist - Environmental Communications | megan.herman@arcadis-us.com

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[attachment "Final SRCAP_May 2012_Rev 5.pdf" removed by Elizabeth Butler/R2/USEPA/US]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

June 29, 2012

Paul J. Bluestein, P.E.
Project Coordinator
Tierra Solutions, Inc.
(On behalf of Occidental Chemical Corporation)
2 Tower Center Blvd., 10th Floor
East Brunswick, NJ 08816

RE: Administrative Settlement Agreement and Order on Consent for Removal Action, U.S. EPA Region 2 CERCLA Docket No. 02-2008-2020 – Phase I Removal Action Final Design documents, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area

Dear Mr. Bluestein:

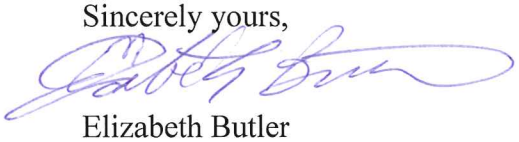
This letter is to formally summarize the U.S. Environmental Protection Agency's (EPA) final approvals, pursuant to Paragraph 31 of the Administrative Settlement Agreement and Order on Consent for Removal Action, of the remaining documents that constitute the complete Phase 1 Final Design. The following Tierra Solutions, Inc.'s (TSI) submittals have previously been approved via email either in full or conditionally, pending modifications which have subsequently also been approved, and are included below immediately following the original documents they amended:

- "Removal Action Work Plan Part 2 – Remaining Removal Action Components – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, September 2011" – approved on November 1, 2011,
- "Removal Action Work Plan Quality Assurance Project Plan, Revision 1, December 2011, Appendix C to the Final Removal Action Work Plan Part 2 – Remaining Removal Action Components – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, December 2011" approved on January 31, 2012,
- "Removal Action Work Plan Quality Assurance Project Plan, Modification #001, May 2012, Appendix C to the Final Removal Action Work Plan Part 2 – Remaining Removal Action Components – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, September 2011" approved on May 15, 2012

- "Removal Action Work Plan Quality Assurance Project Plan, Modification #002, May 2012, Appendix C to the Final Removal Action Work Plan Part 2 – Remaining Removal Action Components – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 1, September 2011" approved on May 31, 2012
- "Construction Quality Assurance Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 2, September 2011" approved on January 19, 2012,
- "Addendum to the Construction Quality Assurance Plan, March 2012 - Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 2, September 2011" approved on May 10, 2012,
- "Waste Characterization Quality Assurance Project Plan – Diamond Alkali Superfund Site, Operable Unit 1/CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area and Newark Bay Study Area, Revision 1, December 2011" approved on April 2, 2012
- "Community Health and Safety Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 4, May 2012" approved on May 14, 2012
- "Substantive Requirements Compliance Action Plan – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 5, May 2012" approved on May 21, 2012

If you have any questions, feel free to contact me at 212-637-4396.

Sincerely yours,



Elizabeth Butler
Remedial Project Manager
Emergency and Remedial Response Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

September 29, 2011

Paul J. Bluestein, P.E.
Project Coordinator
Tierra Solutions, Inc.
(On behalf of Occidental Chemical Corporation)
2 Tower Center Blvd., 10th Floor
East Brunswick, NJ 08816

RE: Administrative Settlement Agreement and Order on Consent for Removal Action, U.S. EPA Region 2 CERCLA Docket No. 02-2008-2020 – Phase I Removal Action Final Design documents, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 2, July 2011

Dear Mr. Bluestein:

The U.S. Environmental Protection Agency (EPA) has reviewed Tierra Solutions, Inc.'s (TSI) submittals entitled "Design Analysis Specifications – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 2, July 2011", "Technical Design Drawings – Lower Passaic River, Phase I CERCLA Non-Time-Critical Removal Action, July 2011" and the "Design Analysis Report – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area, Revision 2, July 2011". Pursuant to Paragraph 31 of the Administrative Settlement Agreement and Order on Consent for Removal Action, the EPA hereby conditionally approves the Phase I Final Design. Tierra has not yet obtained an air permit equivalency from the New Jersey Department of Environmental Protection (NJDEP). EPA expects that Tierra will work with NJDEP to obtain the permit equivalency and will incorporate any modifications into the design that may be necessary in meeting the substantive requirements of the state's rules. In addition, please note that this approval reflects conditions at the current time and that as the work proceeds conditions encountered in the field may necessitate subsequent revisions.

We appreciate your cooperation and we look forward to continuing to work in this cooperative manner. If you have any questions, feel free to contact me at 212-637-4396.

Sincerely yours,

Elizabeth Butler
Remedial Project Manager
Emergency and Remedial Response Division

Denkenberger, Erika

Subject: FW: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

From: Butler.Elizabeth@epamail.epa.gov [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Tuesday, November 01, 2011 11:27 AM
To: Paul J. Bluestein
Subject: RE: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Sorry for the delay on responding to that. DEP still has concerns, so I needed to speak with Ray and just finally got to do that. We've decided we will approve it with the condition that we need further dialogue on the backfill placement and that a memo should be submitted detailing the process before operations begin, namely we'd like to see where it will begin and how it will progress through the enclosure.
Any questions on this please let me know.

From: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
To: Elizabeth Butler/R2/USEPA/US@EPA
Date: 11/01/2011 07:36 AM
Subject: RE: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Elizabeth,

Apologies if you've already responded to this. Is Brooke's most recent response on this matter (below), acceptable? Thanks.

From: Bonkoski, Brooke [mailto:Brooke.Bonkoski@arcadis-us.com]
Sent: Friday, October 14, 2011 1:27 PM
To: Butler.Elizabeth@epamail.epa.gov
Cc: Paul J. Bluestein; Michael.Burlingame@dep.state.nj.us; McIntyre, Kimberlee; Romagnoli, Bob; Reed, Rob; Dunn, Shannon
Subject: RE: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Elizabeth:

Below is our response to your email regarding additional proposed revisions to the backfill placement methods.

A review of the in-situ sediment data indicates an increase in sediment shear strength within the Phase I Work Area at or slightly above 10 feet below sediment surface (bss). The Enclosure Design Analysis Memorandum (July 2011) presents the sediment data and a discussion of the sediment shear strength in sections 3.5 and 3.6. Because the shear strength is still relatively low as compared to the deeper sediments, indicating that the material is still relatively soft, the design accounts for the placement of an initial 2-foot layer of backfill material. The thickness of this layer, and the methods for placing it as described in the design documents, are intended to mitigate resuspension and mixing of the underlying sediments into the 10 feet of backfill material above the initial 2-foot layer. We recognize that there may be some mixing of underlying material with the initial 2-foot layer, but do not see the potential significant movement of underlying material, for the creation of mudwaves, or for underlying material to migrate upwards into the backfill column.

Given these facts, we recognize that EPA continues to have a concern regarding the potential for mudwaves to develop. However, the approach that EPA has proposed would likely not address the concern that material from the mudwave has the potential to be trapped against the riverside walls. When backfilling begins, in one corner of the enclosure, if mudwaves are expected to propagate

from the placement of backfill, the material is just as likely to move up against the riverside walls as in towards the floodwall. Mudwaves would be better controlled through controlled placement of material as described in the revised RAWP.

Thanks—
Brooke

Brooke Bonkoski, PE | Civil Engineer, Sediment and Waterfront Group | brooke.bonkoski@arcadis-us.com
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Professional Registration/PE-OR, #80156PE

From: Butler.Elizabeth@epamail.epa.gov [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Wednesday, October 12, 2011 11:43 AM
To: McIntyre, Kimberlee; pjbluestein@tierra-inc.com
Cc: Michael.Burlingame@dep.state.nj.us
Subject: RE: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Paul,
The below revisions are acceptable, so please go ahead with finalizing the RAWP Part 2. Although we're pleased with the edits made to clarify the backfill placement procedures for the initial 2 foot lift, we have one additional suggestion we would like you to consider for inclusion in either this RAWP Part 2 or perhaps the revised CQAP. Namely, sequencing the locations for placement of backfill should be considered to help alleviate any concerns regarding mudwaves. If placement started on the river-side of the enclosure and eventually worked its way landward towards the floodwall then any movement of sediment should be trapped against the floodwall rather than against the sheetpile walls.
Any questions, please let me know.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA
Cc: "pjbluestein@tierra-inc.com" <pjbluestein@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Beaver, James" <James.Beaver@arcadis-us.com>, "Moody, Chris" <Chris.Moody@arcadis-us.com>, "Bonkoski, Brooke" <Brooke.Bonkoski@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>
Date: 10/10/2011 12:24 PM
Subject: RE: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Elizabeth,
Thank you for your comments. Attached is the updated response to comments document that adds your latest comments and responses to those comments. Also attached are the PDF pages showing changes reflected in response to comments.

Please let us know if you have further comments/questions or if we can proceed with production of the final RAWP Part 2.

Regards,
Kimberlee

Kimberlee McIntyre | Senior Scientist, Technical Communications Practice Leader | kimberlee.mcintyre@arcadis-us.com
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From: Butler.Elizabeth@epamail.epa.gov [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Wednesday, September 28, 2011 1:56 PM
To: McIntyre, Kimberlee
Cc: pjbluestein@tierra-inc.com
Subject: Re: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Paul,
I've reviewed the below and have a few minor comments.
1. The edit made pursuant to comment 3 seems to be missing mention of the RAWP Part 1. That should be added in.
2. The response to comment for comment 9 should be clarified to answer the following questions:
- The first sentence of the response is unclear. How is proper disposal and flushing related? How will it be verified that flushing has properly decontaminated the pipe? What if further decon is needed beyond flushing?
3. Text should be added to section 2.7.3, p 2-30 noting that the 2 types of documentation required in comment 18 need to be provided before dredging begins.
4. The response to comment for comment 19 should be clarified to answer the following questions:
- Because Tierra is not removing all of the highly contaminated sediment within the box to firm bottom, there is a potential that backfilling, if not performed correctly, may result in sediment finding its way to the surface. The mechanism for this is discussed in the initial comment. Simply stating that backfill will be done to minimize resuspension does not address the comment, which concerns creation of a mud wave. Detailed procedures/Work Plan for secure capping of the highly contaminated sediments are requested so the River is protected upon removal of the sheetpile.
5. Although the edit was made for comment 21, the new edit still says a wale will be removed. I didn't think there was a wale there. Please provide clarification.
6. The response to comment for comment 31 should be added to the text in Section 2.0, p 2-1 for clarification.
Any questions on the above please let me know.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, Ray Basso/R2/USEPA/US@EPA
Cc: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>, "'Paul S. Brzozowski'" <paul.brzozowski@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Beaver, James" <James.Beaver@arcadis-us.com>, "Moody, Chris" <Chris.Moody@arcadis-us.com>, "Bonkoski, Brooke" <Brooke.Bonkoski@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "Walker, Sarah" <Sarah.Walker@arcadis-us.com>, "Berceli-Boyle, Tina" <Tina.Berceli-Boyle@arcadis-us.com>
Date: 09/14/2011 02:45 PM
Subject: Phase I Removal Action, Removal Action Work Plan Part 2, revised per USEPA comments dated August 30, 2011

Elizabeth and Ray,

Attached is a PDF file that comprises all changed pages of the Final Removal Action Work Plan Part 2. Also attached is your comments document with our responses. Please let us know if you have questions or need to discuss responses/changes prior to

providing your final approval.

Regards,
Kimberlee

Kimberlee McIntyre | Senior Scientist, Technical Communications Practice Leader | kimberlee.mcintyre@arcadis-us.com
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Please consider the environment before printing this email.

McIntyre, Kimberlee

From: Butler.Elizabeth@epamail.epa.gov
Sent: Tuesday, January 31, 2012 6:55 AM
To: McIntyre, Kimberlee
Cc: Paul J Bluestein
Subject: RE: Final Documents for Review and Approval

Kimberlee & Paul,
The RAWP QAPP is now approvable. I will send out an official approval letter in the near future, covering this, the RAWP Part 2 and the CQAP. Just as an FYI, it will include some kind of caveat for the air issues, similar to my previous formal approval. Also, I have a meeting with Pat and the RCRA folks now so hopefully we'll get the final decision on how to proceed with the comments on the WCQAPP and the disposal of the tieback cuttings. That should leave the SRCAP as the last outstanding document, but I'll get Pat's schedule for that now as well. I'll touch base after our meeting.
Any questions, please let me know.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, Paul J Bluestein <pjbluestein@tierra-inc.com>
Date: 01/30/2012 06:49 PM
Subject: RE: Final Documents for Review and Approval

Elizabeth,

SOP 5 is the only SOP that needed changing. Actually, it had a change that just needed to be rejected. See attached. I also checked the SOPs in Attachments 2 (Analytical Methods) and 3 (Verification). Reference to any #29 worksheets only appear in the Attachment 3 SOPs and they appear to be correct as is.

Kimberlee

Kimberlee McIntyre | Principal Scientist, Technical Communications Resource Leader | kimberlee.mcintyre@arcadis-us.com
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From: Butler.Elizabeth@epamail.epa.gov [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Monday, January 30, 2012 2:17 PM
To: McIntyre, Kimberlee; Paul J Bluestein
Subject: RE: Final Documents for Review and Approval

Paul,
The changed pages look good, but my recollection was that there was reference to the EDDs and worksheet 29-2 in at least one of the SOPs as well. My notes say to check SOP 5, section 2.1.3.2. Could you please confirm whether that universal check on the EDD references included the SOPs? Once I know it's all straight in the SOPs as well, then this will be approvable.
Thanks,
Elizabeth

-----"McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com> wrote: -----
To: Elizabeth Butler/R2/USEPA/US@EPA, "pjbluestein@tierra-inc.com" <pjbluestein@tierra-inc.com>
From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Date: 01/19/2012 08:09PM
Cc: "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Shatt, Ryan" <Ryan.Shatt@arcadis-us.com>, "Herman, Megan" <Megan.Herman@arcadis-us.com>
Subject: RE: Final Documents for Review and Approval

Elizabeth,

Attached are the changed pages of the RAWP QAPP in response to your comments. Changes have been made to Worksheet 15-1 (full VOC suite analyses) as well as changes throughout the document related to the EDD issue. I cannot determine a clear reason for it, but somehow Worksheet #29-4 was left out. This is the worksheet that covers EDDs. All references to any of the #29 worksheets have been checked and revised as needed throughout the document. Please send me an email that indicates your approval and I'll move forward with production and delivery.

Regards,
Kimberlee

Kimberlee McIntyre | Principal Scientist, Technical Communications Resource Leader | kimberlee.mcintyre@arcadis-us.com
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From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Wednesday, January 18, 2012 7:34 AM
To: McIntyre, Kimberlee; pjbluestein@tierra-inc.com
Subject: Re: Final Documents for Review and Approval

Hi Paul.

Since I'm still waiting on Pat for feedback on the f-listing determination, which will feed into my WCQAPP final review and the SRCAP, I'm going ahead with providing my limited feedback on the RAWP QAPP and CQAP, so at least we can finalize those 2 documents.

Regarding the CQAP:
I hate to do this, but I still don't like how that last sentence in Section 15.2, p 15-1 of the CQAP reads, therefore please change it to the following:
"A memorandum included in Appendix F presents a deterrence plan to reduce the likelihood of birds utilizing the Phase I Work Area."

Regarding the RAWP QAPP, I have 2 additional thoughts:
1. Add the full VOC suite analyses in for the backfill in Worksheet 15-1
2. Although the RTC #3 to the 12/1/11 comments correction was made, I went back to the original and I can't find reference to the EDDs in Worksheet 29-2 either. If I'm looking at the wrong version please let me know or change the reference to one that mentions EDDs.

Please let me know if you have any questions on these.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, Ray Basso/R2/USEPA/US@EPA
Cc: "'Paul J. Bluestein'" <pjbluestein@tierra-inc.com>, "'Paul S. Brzozowski'" <paul.brzozowski@tierra-inc.com>, "Romagnoli, Bob"

<Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Beaver, James" <James.Beaver@arcadis-us.com>, "Moody, Chris" <Chris.Moody@arcadis-us.com>, "Bonkoski, Brooke" <Brooke.Bonkoski@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "King, Coleman" <Coleman.King@arcadis-us.com>
Date: 12/16/2011 02:38 PM
Subject: Final Documents for Review and Approval

Elizabeth,

We have completed incorporating changes in response to your last rounds of comments on the Construction Quality Assurance Plan (CQAP), Removal Action Work Plan Quality Assurance Project Plan (RAWP QAPP), and Waste Characterization Quality Assurance Plan (WC QAPP).

Final PDFs of each document (changed pages only) have been posted on SharePoint in the following locations:

CQAP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fConstruction%20Quality%20Assurance%20Plan%20%28CQAP%29%2fFinal%20Construction%20Quality%20Assurance%20Plan%2c%20Revision%202%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

RAWP QAPP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPhase%20I%20Removal%20Action%20Work%20Plan%20%28RAWP%29%2fRAWP%20QAPP%2c%20Revision%201%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

WC QAPP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPre%2dInvestigation%20Studies%2fWaste%20Characterization%2fWaste%20Characterization%20QAPP%2c%20Revision%201%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

Please let us know if you have additional comments on any of these documents. We'll wait to begin production on these until we receive your final approval.

Best regards,

Kimberlee McIntyre | Senior Scientist, Technical Communications Practice Leader | kimberlee.mcintyre@arcadis-us.com
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[attachment "RLSO 011912.pdf" removed by Elizabeth Butler/R2/USEPA/US][attachment "SOP 5 Data Management Revision 1.pdf" deleted by Elizabeth Butler/R2/USEPA/US] [attachment "RAWP QAPP Appendix C - Verification SOPs.pdf" deleted by Elizabeth Butler/R2/USEPA/US]

Herman, Megan

From: Elizabeth Butler [Butler.Elizabeth@epamail.epa.gov]
Sent: Thursday, May 31, 2012 5:16 PM
To: Herman, Megan; Paul J Bluestein
Subject: Re: RAWP QAPP, Modification 002, May 2012

Follow Up Flag: Follow up
Flag Status: Flagged

Paul,
The below revisions are approved. Please go ahead and finalize.
Thanks,
Elizabeth

-----"Herman, Megan" <Megan.Herman@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA
From: "Herman, Megan" <Megan.Herman@arcadis-us.com>
Date: 05/31/2012 01:43PM
Cc: "Houser, Joe" <Joe.Houser@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Shatt, Ryan" <Ryan.Shatt@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>, "Moody, Chris" <Chris.Moody@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "Beaver, James" <James.Beaver@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
Subject: RAWP QAPP, Modification 002, May 2012

The RAWP QAPP, Modification 002, May 2012 has been uploaded to the USEPA SharePoint site for your review and approval. You can access the file by clicking on the link below.

https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPhase%20I%20Removal%20Action%20Work%20Plan%20%28RAWP%29%2fRAWP%20QAPP%2c%20Modification%20002%2c%20May%202012&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

Thanks!

Megan Herman

***** Please note new phone number*****

Megan Herman | Staff Scientist - Environmental Communications | megan.herman@arcadis-us.com

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From: Elizabeth Butler
To: Dunn, Shannon
Cc: Kellems, Barry; Romagnoli, Bob; King, Coleman; Bowman, Matthew; Michael Hoppe; Spadaro, Philip; Paul J. Bluestein; Parmelee, Rhiannon; Reed, Rob; Shatt, Ryan; Michael.Burlingame@dep.state.nj.us
Subject: Re: Phase I Removal Action Reduction of Influent Water Treatment Sampling
Date: Thursday, May 03, 2012 11:24:19 AM

Shannon & Paul,
The proposed reductions to the influent water monitoring to biweekly are hereby approved. Any questions please let me know.
Thanks,
Elizabeth

From: "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, Michael Hoppe/R2/USEPA/US@EPA
Cc: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Parmelee, Rhiannon" <Rhiannon.Parmelee@arcadis-us.com>, "Shatt, Ryan" <Ryan.Shatt@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "King, Coleman" <Coleman.King@arcadis-us.com>
Date: 04/25/2012 10:26 AM
Subject: Phase I Removal Action Reduction of Influent Water Treatment Sampling

---

Elizabeth –

Attached are the first four weeks of water treatment compliance monitoring data, including:

- Table 1 - Daily TSS/turbidity monitoring
- Table 2 - Weekly effluent monitoring for compounds with discharge limits
- Table 3 - Weekly influent/effluent monitoring (without limits)

Per the Surface Water Discharge Permit Equivalent, the frequency of weekly influent monitoring may be reduced to biweekly after review of the first four weeks of data. We recommend reducing the frequency because the following lines of evidence indicate that the water treatment system is operating as designed:

1. The influent and effluent data show good removal of chemicals in the water treatment system, with removal rates above 90% and generally higher when the influent concentrations are greater.
2. The influent concentrations measured to date are similar to (and generally less than) the anticipated influent concentrations estimated during design.
3. The weekly effluent compliance monitoring results have been consistently less than the discharge limits.

Please let us know if you agree with this assessment and approve the reduction of influent monitoring frequency to biweekly (i.e., every two weeks).

Thanks.

Shannon Dunn | Geochemist | shannon.dunn@arcadis-us.com
ARCADIS U.S., Inc. | 2300 Eastlake Avenue East, Suite 200 | Seattle, WA 98102
T. 206.726.4708 | M. 206.399.5307 | F. 206.325.8218

www.arcadis-us.com

Registered Geologist/ WA | OR | MN | ID

Denkenberger, Erika

From: Elizabeth Butler [Butler.Elizabeth@epamail.epa.gov]
Sent: Monday, March 05, 2012 3:05 PM
To: Romagnoli, Bob
Cc: Bowman, Matthew; Paul J. Bluestein (pjbluestein@tierra-inc.com); Reed, Rob
Subject: Re: Batch Testing Period - Discharge to Enclosure

Ok, thanks.
Elizabeth

From: "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA
Cc: "Paul J. Bluestein (pjbluestein@tierra-inc.com)" <pjbluestein@tierra-inc.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>
Date: 03/05/2012 09:31 AM
Subject: Batch Testing Period - Discharge to Enclosure

Elizabeth,

As previously discussed with you, a modification to the original batch sampling process associated with the Lower Passaic River Phase I CERCLA Non-Time-Critical Removal Action has been developed to have treated water from the water treatment system be discharged to the enclosure (using the hydraulic pipeline) prior to receiving laboratory analytical results confirming successful treatment during the two batch testing events. This change will facilitate a more efficient use of the startup period for dredging and processing, which should have a positive impact to the overall dredging schedule. As suggested above, this same procedure will be followed as we transition to dredging of HAZ material.

The water treatment system batch tie-in will be equipped with multiple shut off valves and a backflow preventer as precaution. The tie-in location will be disconnected and blind flanged after batch operations are complete so that sediment slurry cannot be pumped into the water treatment system during normal operations. If you have any questions or concerns with this approach, please feel free to contact me or Matt Bowman directly.

Thanks
Bob

Bob Romagnoli | Sr. Vice President | bob.romagnoli@arcadis-us.com
ARCADIS U.S., Inc. | 6723 Towpath Rd, Box 66, Syracuse, NY 13214
T: 315 671-9250
www.arcadis-us.com

ARCADIS, Imagine the result
Please consider the environment before printing this email.

Denkenberger, Erika

From: Elizabeth Butler [Butler.Elizabeth@epamail.epa.gov]
Sent: Tuesday, April 10, 2012 10:05 PM
To: King, Coleman
Cc: Michael Hoppe; Bowman, Matthew; Paul J. Bluestein
Subject: Re: dredge sequence

Hi Coleman.
EPA has reviewed the revised dredge sequence, and the modification is hereby approved. The sequence was designed such that any sloughing of material would occur from EM into HAZ & not vice versa, so any revisions should ensure that continues to be the case. Any questions please let Mike or me know.
Thanks, Elizabeth

-----"King, Coleman" <Coleman.King@arcadis-us.com> wrote: -----

==========
To: Elizabeth Butler/R2/USEPA/US@EPA, Michael Hoppe/R2/USEPA/US@EPA
From: "King, Coleman" <Coleman.King@arcadis-us.com>
Date: 04/10/2012 02:48PM
Cc: "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
Subject: dredge sequence
==========

Coleman P. King, CHMM
ARCADIS US, INC.
10 Friends Lane, Suite 200
Newtown, PA 18940
Cell 732.570.7012
Email: coleman.king@arcadis-us.com<mailto:coleman.king@arcadis-us.com>
ü Please consider the environment before printing this email

[attachment(s) "DREDGE01.PDF" removed by Elizabeth Butler/R2/USEPA/US]

McIntyre, Kimberlee

From: Elizabeth Butler <Butler.Elizabeth@epamail.epa.gov>
Sent: Tuesday, May 15, 2012 2:14 PM
To: Paul J Bluestein
Cc: BLeff@BrwnCald.com; Romagnoli, Bob; King, Coleman; Bowman, Matthew; Michael Hoppe; NMucci@BrwnCald.com; Shatt, Ryan; Dunn, Shannon
Subject: Re: Request to modify perimeter air monitoring program (DDT and PCBs)

Paul,
Just to close the loop on the below, EPA approves of discontinuing perimeter air sampling for DDT and PCBs at the 7 non-residential locations for the remainder of the project. However, sampling for those two parameters should be continued at the 2 residential locations at a reduced sampling frequency. This was the request of the CAG chairs. They did not believe that the dailies or even the weeklies were necessary but they didn't want them discontinued completely. I would suggest maybe keeping it in one of the weeklies once we're back in EM on the east side targeting a few dates during the HAZ when the higher concentrations will be dredged/processed. Based on my quick look, of the remaining cells, the top three highest concentrations are in 8-04, 9-05, and 9-06.
Please let me know if you have any questions on this.
Thanks,
Elizabeth

-----"Paul J. Bluestein" <pjbluestein@tierra-inc.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA
From: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
Date: 05/08/2012 10:16AM
Cc: "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, Michael Hoppe/R2/USEPA/US@EPA, "King, Coleman" <Coleman.King@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, Ryan Shatt <Ryan.Shatt@arcadis-us.com>, Benjamin Leff <BLeff@BrwnCald.com>, Nick Mucci <NMucci@BrwnCald.com>
Subject: Request to modify perimeter air monitoring program (DDT and PCBs)

Elizabeth,

Given the results to date Tierra is requesting to discontinue DDT and PCB Aroclor perimeter air sampling/analyses for the remainder of the project. We're available to discuss further at your convenience. Thanks in advance.

Paul J. Bluestein, P.E.
Project Manager
Tierra Solutions, Inc.
2 Tower Center Boulevard, 10th Floor
East Brunswick, New Jersey 08816

Phone: 732 246 3091
Cell: 732 312 7547

Thank You.

Sent From My iPad

On May 7, 2012, at 3:09 PM, "Shatt, Ryan" <Ryan.Shatt@arcadis-us.com> wrote:

> Attached are the air monitoring results updated through week ending April 28, 2012. This table provides two additional days of DDT/PCB data (April 27 and 28).
>
> Thanks,
>
> Ryan
>
> Ryan Shatt | Project Geologist | ryan.shatt@arcadis-us.com<mailto:firstname.lastname@arcadis-us.com>
>
> ARCADIS U.S., Inc. | 2300 Eastlake Avenue East, Suite 200 | Seattle, WA 98102
> T: 206.726.4713 | F: 206.325.8218
> www.arcadis-us.com<http://www.arcadis-us.com/>
>
> Registered Geologist/ WA | PA
> Registered Hydrogeologist/ WA
>
> ARCADIS, Imagine the result
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> _____
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>
> <Tierra Air Monitoring - week ending 4-28-12_updated 05-7-12_through 4-28-12.pdf>

McIntyre, Kimberlee

From: Reed, Rob
Sent: Thursday, March 29, 2012 11:27 AM
To: Dunn, Shannon; Shatt, Ryan
Subject: FW: Phase I Removal Action - Request to modify Perimeter Air Monitoring Program

Not sure if this came your way…similar to what we discussed during our call yesterday.

I did see that EPA/DEP are wanting all locations done daily for HAZ through processing and loading…

Rob

From: Romagnoli, Bob
Sent: Thursday, March 29, 2012 1:19 PM
To: Reed, Rob
Subject: FW: Phase I Removal Action - Request to modify Perimeter Air Monitoring Program

From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Thursday, March 29, 2012 11:23 AM
To: Paul J Bluestein
Cc: Romagnoli, Bob; Michael Hoppe; paul.brzozowski@tierra-inc.com; Ray Basso
Subject: Re: Phase I Removal Action - Request to modify Perimeter Air Monitoring Program

Paul,

EPA, in consultation with NJDEP, has evaluated the request to reduce the air sampling frequency, and has determined that a reduction in frequency can be made starting Monday, April 2nd. The conditions regarding that reduction are as follows:

- Daily sampling for TCDD will be continued at the residential locations, until further notice.
- Sampling at the non-residential locations can be reduced to weekly for the full list of COCs, until further notice. The week requirement begins at the end of the sample collection day and must be completed with another round of sampling within 7 calendar days of that day. In addition, daily sampling is required when wind is forecasted from the N, NE, or ENE. In those instances, weekly sampling can be then calculated on a rolling basis from the days when these wind situations are encountered. These modifications will be subject to re-evaluation in the case of exceedances of "concern" levels at the non-residential locations.
- During Hazardous Material dredging, handling, processing and loading, all monitoring locations must again be sampled for all COCs.

Any questions on the above, please let Mike or me know.
Thanks,
Elizabeth

-----"Paul J. Bluestein" <pjbluestein@tierra-inc.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA, Michael Hoppe/R2/USEPA/US@EPA, Ray Basso/R2/USEPA/US@EPA
From: "Paul J. Bluestein" <pjbluestein@tierra-inc.com>

Date: 03/22/2012 09:46AM
Cc: "Paul S. Brzozowski" <paul.brzozowski@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>
Subject: Phase I Removal Action - Request to modify Perimeter Air Monitoring Program

Please see below for general findings to date from the perimeter air monitoring program. We will continue to update the attached tables on a daily basis and share with you. Based upon the current results we request that starting the week of 3/26 we go to a weekly sampling frequency. We'll be prepared to resort back to more frequent sampling if the results of daily sampling thru 3/24 or the weekly sampling starting 3/26 warrants such an action. We'd also request that consideration be made to eliminate all analytes with the exception of TCDD until we complete the dredging/processing of the top 6' of sediment. Once we commence dredging/processing of HAZ material we would resort back to daily sampling for all analytes until such time that evidence suggests less frequent sampling is warranted.

[Note: As you'll see below there is a weight of evidence that suggests an alternate source of emissions. This should be discussed further and NJDEP should be notified immediately]

General Findings from samples collected between 3/9 and 3/14:

Aroclor PCBs – non-detect and/or 3 orders of magnitude below the concern levels

DDT – non-detect and/or 4 orders of magnitude below the concern levels

Chlorobenzene – non-detect and/or 2-3 orders of magnitude below the concern levels (the only detections have occurred at location 01, adjacent to construction activities on former Sherwin Williams property). Based on site data from SW, it is known that they have chlorobenzene contamination.

TCDD TEQ – 1-3 orders of magnitude below the concern level [on days when winds were generally from the south (3/12, 3/13) location 01 concentrations were generally 2 orders of magnitude greater than all other locations signifying a source upgradient from our operations; on the day when winds were generally from the north (3/14) the location 01 concentration was lower than the previous days (when wind was from the south) and location 09 (residential) was higher than the previous days. Further, the results at location 01 between 3/12 and 3/14 have been 1-2 orders of magnitude greater than the results from 3/9 (first day of dredging and no activity on SW property)]

The air monitoring location figure is attached for your convenience.

Paul J. Bluestein, P.E.

Project Manager

Tierra Solutions, Inc.

2 Tower Center Boulevard, 10th Floor

East Brunswick, New Jersey 08816

Phone: 732 246 3091

Cell: 732 312 7547

Fax: 732 246 5858

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
image001.jpg
which may be a computer program. This attached computer program could
contain a computer virus which could cause harm to EPA's computers,
network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced
into the EPA network. EPA is deleting all computer program attachments
sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

[attachment "Air Monitoring Locations_updated 032012.pdf" removed by Elizabeth Butler/R2/USEPA/US]
[attachment "Tierra Air Monitoring - week ending 3-17-12_updated through 3-15.pdf" removed by Elizabeth Butler/R2/USEPA/US]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

July 28, 2011

Paul J. Bluestein, P.E.
Project Coordinator
Tierra Solutions, Inc.
(On behalf of Occidental Chemical Corporation)
2 Tower Center Blvd., 10th Floor
East Brunswick, NJ 08816

RE: Administrative Settlement Agreement and Order on Consent for Removal Action, U.S. EPA Region 2 CERCLA Docket No. 02-2008-2020 – Proposed Subcontractors – Phase I Removal Action, CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area

Dear Mr. Bluestein:

Pursuant with the requirements of Section VII, Paragraph 14 of the above mentioned Administrative Order on Consent (AOC), I hereby approve of your selection of the proposed subcontractors to support the performance of the work to be conducted under the AOC.

If you have any questions, please contact me at 212-637-4396.

Sincerely,

Elizabeth Butler
Remedial Project Manager
Emergency and Remedial Response Division

cc: P. Hick, EPA
R. Basso, EPA

TIERRA SOLUTIONS, INC.

Transmitted Via Federal Express

July 25, 2011

Ms. Elizabeth Butler
U.S. Environmental Protection Agency, Region 2
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: Administrative Settlement Agreement and Order on Consent for Removal Action, USEPA Region 2 CERCLA Docket No. 02-2008-2020 – **Proposed Subcontractors – Phase I Removal Action,** *CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area*

Dear Ms. Butler:

Tierra Solutions, Inc. [funding and performing, on behalf of Occidental Chemical Corporation, the subject Administrative Order on Consent (Removal Action AOC)] (Respondent) hereby submits this correspondence along with qualifications packages pursuant to Paragraph 14 of the above referenced AOC proposing the following major subcontractors (conducting work under contract to ARCADIS on behalf of Respondent) for your review and approval:

- Attachment 1 – Abscope Environmental Inc., Construction of Upland Processing Facility, Canastota, NY
- Attachment 2 – Clean Harbors Environmental Services, Waste Transportation and Disposal Services, Newark, NJ
- Attachment 3 – DPK Consulting, LLC, Professional Land Surveying Services, Middlesex, NJ
- Attachment 4 – Ocean Surveys, Inc., Specialists in Marine and Freshwater Site Surveys, Old Saybrook, CT
- Attachment 5 – Stuyvesant Environmental Contracting Inc., Operation of Sediment Processing Equipment, Princeton, NJ
- Attachment 6 – Weeks Marine Inc., Construction of Enclosure and Dredging Services, Cranford, NJ

As Respondent/ARCADIS elects to secure additional major subcontractors to perform Work under this AOC, requests to retain said subcontractors will be submitted to USEPA in accordance with Paragraph 14 of the AOC. If you have any questions, please contact me at (732) 246-3091.

Sincerely,

Tierra Solutions, Inc.

Paul J. Bluestein
Project Coordinator
On behalf of Occidental Chemical Corporation
(as successor to Diamond Shamrock Chemicals Company)

Copies:

1c: ARCADIS U.S., Inc.
6723 Towpath Road
P.O. Box 66 — 2 hard copies; 1 electronic copy
Syracuse, New York 13214-0066
Attn: Bob Romagnoli

Copies (letter only):

1c: ARCADIS U.S., Inc.
6723 Towpath Road
P.O. Box 66
Syracuse, New York 13214-0066
Attn: Rob Reed

1c: ARCADIS U.S., Inc.
251 E. Ohio Street
Suite 800
Indianapolis, Indiana 46204
Attn: Matt Bowman

Attachment 1

Abscope Environmental Inc.

Company Information

Part A: Company Profile

Addresses:

1 Commercial Drive
Canastota, NY 13032

1565 North Williamson Rd.
Covington, PA 16917

Federal ID Number: 16-1352765
Company Type: Corporation formed in NY State
Year Established: 1989

Web Address: www.abscope.com

Primary Business Activity: Environmental Remediation

Point of Contact: Robert Gray
Telephone 315-697-8437
Fax 315-697-9391
e-mail rgray@abscope.com

Business Classification: Small Business
DUNS Number: 61-250-1577
CAGE Code: 0J988
Primary NAICS: 562910 - Environmental Remediation
CCR Registered

Licenses:
Asbestos Licenses, NY, CT, MA, PA
Waste Transporter Permit 7A-369
MSHA Contractor ID S385
Florida Contractors ID CGC1517140

Part B - Health and Safety

Abscope Environmental, Inc. maintains:

Isnet World certified with an "A" grade;
company wide drug and alcohol testing program;
monthly company wide safety meetings;
LPS, E Rail Safe, MSHA, OSHA 40 hr, RAD and Asbestos trained workforce;

Experience Modification Ratio (EMR)

2008	0.77
2009	0.77
2010	0.78

OSHA Recordable Incident Rate

2008	3.2
2009	3.4
2010	1.38

Part C - Services

Abscope performs Asbestos Remediation throughout NY State (excluding NYC), MA and CT.
Abscope performs Hazardous Remediation Work throughout NY State (excluding NY City) and in the following states: MA, CT, RI, VT, ME, NH, OH, PA, NJ, DE, MD, DC, FL

Capabilities and Services:

Mass excavation of impacted soil
Installation of Sheet Pile Barrier Walls
Construction of Landfill Cells and Landfill Caps
Installation of SVE Systems and Treatment Equipment
Installation of Soil Gas Vapor Systems
UST and AST Removal
Extensive Dewatering and Treatment of Impacted Water
Soil Mixing/Soil Stabization
Asbestos Abatement
Mold Remediation
Site/Civil Construction

Staffing: 75 Full Time Employees

Management	12
Technical	3
Field Forces	58
Administrative	2

Part D - Finacial Information

Banking Institution:
Oneida Savings Bank
104 South Peterboro Street
Canastota, NY 13032

POC: Diane Karan, VP
315-697-7450

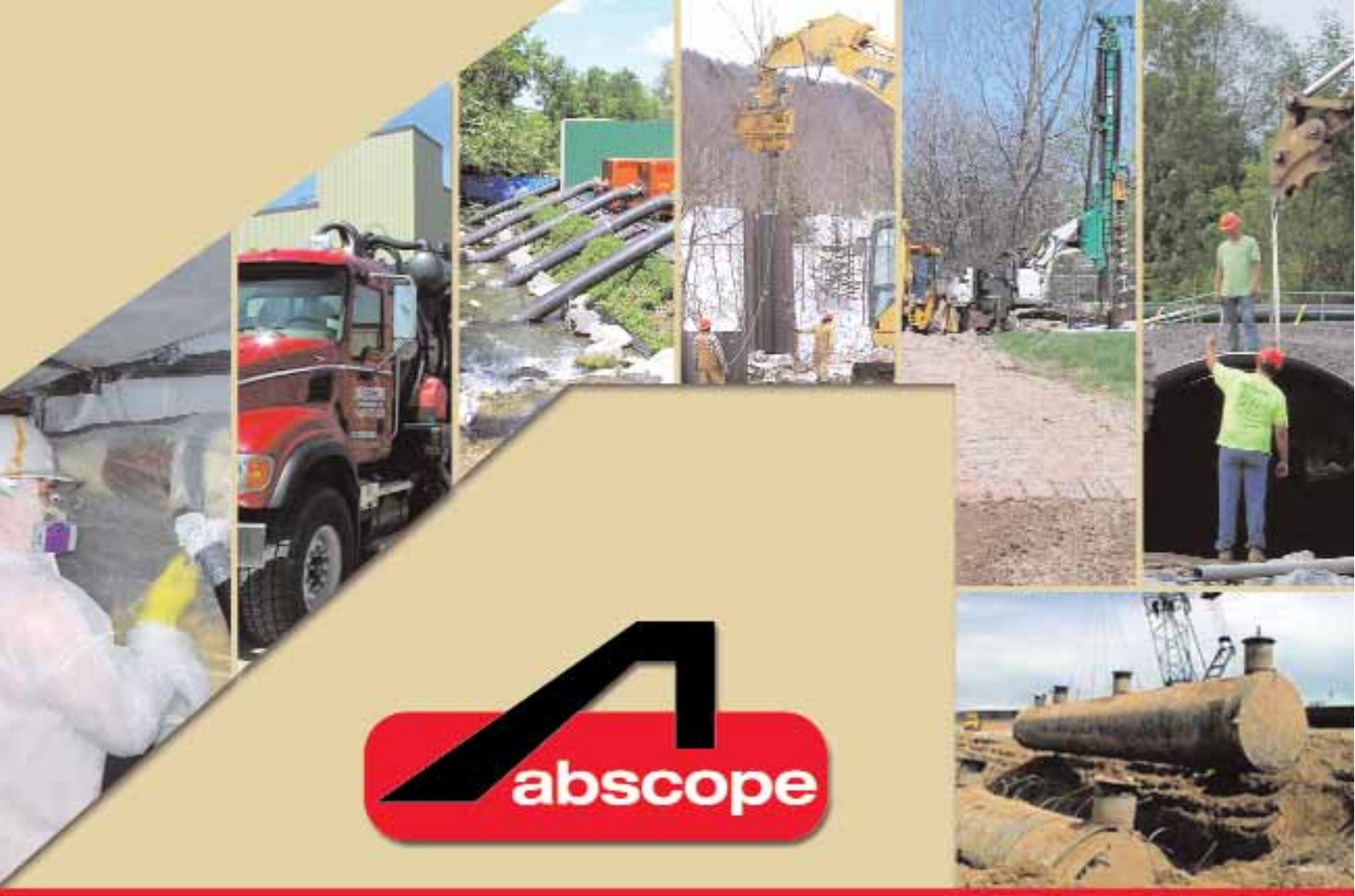
Insurance Agent:
Bailey Haskell and LaLonde
169 Main Street
Oneida, NY 13421

POC: John Haskell, President
315-363-2100

Bonding Agent:
Reagan Agency
8 East Main Street
Marcellus, NY 13108

POC: Fran Lowther
315-673-2094

Average Annual Sales: $20,000,000



abscope

Innovative Solutions to Environmental Needs

www.abscope.com
315-697-8437

INNOVATIVE SOLUTIONS TO ENVIRONMENTAL NEEDS FOR NEARLY TWO DECADES

Abscope Environmental Inc. is a full-service environmental contracting company founded in 1989 with one main principle: “only customer satisfaction determines our success.” Abscope provides innovative technology and state of the art systems to meet our clients’ needs.

Our resources, including management, equipment, and field personnel are fully dedicated to environmental contracting. A solid reputation, repeat clients, and relationships built on quality workmanship and trust have become the cornerstone of our business and future growth.

By maintaining this philosophy, we have become one of the top environmental contracting firms in the Northeast.

REPRESENTATIVE CLIENT LIST

Engineering Firms

Arcadis
Blasland, Bouck, and Lee
Enviro-logic of New York
Flour-Daniel GTI
Foster Wheeler
Groundwater Environmental Services
GZA Environmental
O'Brien and Gere Engineers
Parsons Engineering
Plumley Engineering
Shaw E & I
SPEC Consulting
Stearns and Wheler Engineers

Energy

Exxon/Mobil Oil Corporation
New York State Power Authority
National Grid
Northeast Utilities
Shell Oil Corporation
Sun Oil Corporation
Sprague Energy

Government

US Army Corps of Engineers
US Department of Energy
NYSDEC
NYSDOT
NYS Thruway Authority
NYS Dormitory Authority
US Air Force

Industry

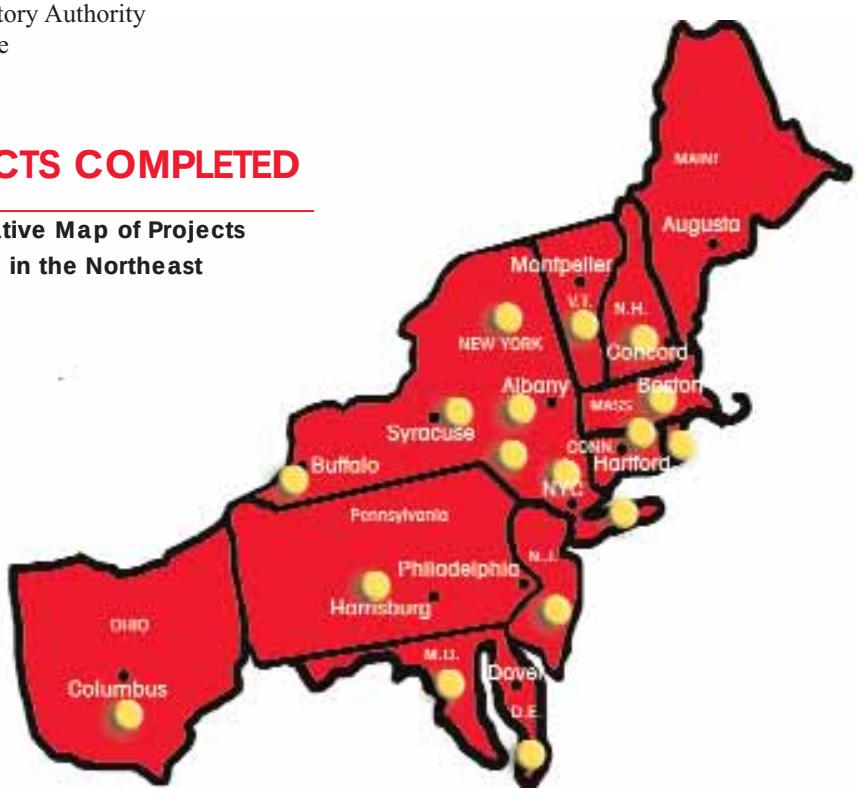
Conrail
General Electric
Kraft Foods
Lockheed Martin
Oneida Limited
Cooper, Crouse Hinds
United Parcel Service
Verizon Communications
HP Hood
Astra Zeneca Pharmaceuticals
Bristol Meyers Squib Pharmaceuticals
United Technologies

Hospitals & Universities

St. Joseph's Hospital
St. Elizabeth's Hospital
Crouse Hospital
Oswego Hospital
Fox Memorial Hospital
Hamilton College
Colgate Universtity
Syracuse University
Suny Oswego
Suny Buffalo
Suny Binghamton

PROJECTS COMPLETED

Representative Map of Projects Completed in the Northeast



ENVIRONMENTAL SERVICES

- Installation of soil vapor extraction systems
- Installation of groundwater pump and treat systems
- INSTU and EXSITU bioremediation
- Installation of waterproof sheet pile barrier walls
- Impacted soil excavation, transportation and disposal
- Soil mixing and soil stabilization
- Stream management and sediment recovery
- Phase I and Phase II environmental site assessments within NY state
- Subsurface investigations

REMEDIATION SERVICES

- Superfund site remediation
- Brownfield site remediation
- Construction of single phase and multi-phase treatment systems
- Tank closures and new tank installations
- Excavation and relocation of impacted soils
- Waterproof sheeting and barrier wall installation
- Geosynthetic and HDPE liner installation
- Landfill and surface impoundment capping
- Characterization, transportation and disposal of hazardous & non-hazardous waste
- Facility/building decommissioning
- Stream Dredging
- Lagoon services

ASBESTOS / LEAD / MOLD SERVICES

- Identification and sample collection
- Sample analysis and reporting
- Project management and work plan development
- Abatement / Removal / Encapsulation
- Transportation and disposal

VACUUM TRUCK SERVICES

- Tank closures
- Manhole and sump clean outs
- Site / drummed fluids transfer
- Excavation Dewatering

SITE / CIVIL SERVICES

- Soil solidification and stabilization
- Sheet piling and shoring
- Mass Earthmoving
- Utility installation
- Site development

SAFETY

Our employees are our greatest asset. Therefore we strive to provide a safe work environment for their well being. Abscope's health and safety plan is incorporated into our everyday business operation. The company considers accident prevention an important and integral part of every task undertaken. Our employees receive orientation training, daily safety meetings, and client/project specific training. Abscope successfully implemented a company wide drug and alcohol testing policy to further facilitate a safe work place, for all employees.

CONCLUSION

Abscope Environmental has developed this qualifications package as a venue to increase the awareness of our clients to the diversified service matrix our organization has been performing over the last decade.

Whether you desire remediation services, environmental services, or site/civil services, Abscope Environmental is capable and responsive. While we take pride in our solid corporate growth, there is a greater pride in the reputation we have built among clients and associates for consistently excellent performance.

PROJECTS

Location: **Dewitt, NY**
Project: **Asbestos Abatement of Former Diesel House.** Removed and disposed of over 160,000 sq. feet of asbestos containing transite panels and building components; 4,000 linear feet of asbestos containing insulation; 4,000 sq. feet of asbestos containing floor tiles; and 1,200 sq. feet of miscellaneous asbestos containing materials from the former diesel house.
Owner: **Conrail**
Engineer: **Watts Engineering**
Project Total: **$320,000**

Location: **East Pharsalia-NY**
Project: **NYSDEC Listed Site (East Pharsalia).** Cleared 25 acres of wooded site; stripped and stockpiled topsoil; constructed access roads; installed underground utility lines; cut and filled 30,000 cubic yards of soil to develop staging/ treatment area; paved soil staging area; excavated, blended and backfilled contaminated soil areas; installed in-situ bioremediation/SVE system; restored site.
Owner: **Stauffer Management Company**
Engineer: **Fluor-Daniel GTI**
Project Total: **$900,000**

Location: **Oswego, NY**
Project: **Asbestos Abatement.** Removed and disposed of approximately 8,000 linear feet of asbestos containing pipe insulation; 30,000 sq. feet of asbestos containing floor tile and mastic, roofing, and window caulk.
Owner: **Oswego Hospital**
Engineer: **Enviro-logic of New York**
Project Total: **$700,000**

Location: **Skaneateles, NY**
Project: **NYSDEC Listed Site (Skaneateles Falls).** Excavated approximately 400,000 tons of contaminated soils and disposed of offsite; designed and implemented water diversion system capable of pumping 40,000 GPM to enable creek remediation; constructed and operated a dewatering system that operated in conjunction with site waste water treatment system; installed a free product interceptor trench; demolished the former manufacturing plant; over-packed drums as encountered; installed 10,000 sq. feet of sheet pile for safe excavation adjacent to creek.
Owner: **Stauffer Management Company**
Engineer: **SPEC Consulting, LLC**
Project Total: **$10,000,000**

Location: **Syracuse, NY**
Project: **Term contract for Asbestos Abatement.** Over 500 projects completed since 1990. Removed and disposed of various types of asbestos-containing materials including floor tile and mastic, pipe insulation, roofing, duct insulation, electrical components, etc. Integrated environmental pollution including petroleum spills, lead based paint and pigeon waste. Developed asbestos removal work plans.
Owner: **Lockheed Martin**
Engineer: **Colden Corporation**
Project Total: **$6,000,000**

Location: **Former Griffiss AFB, Rome, NY**
Project: **Source Removal and Remediation.** Relocated and consolidated 30,000 cubic yards of existing on-site petroleum contaminated soils; screened soil through Trommel screen removing all debris. Added fertilizer and lime to the soils during screening process; constructed (6) 5,000 cubic yard bioremediation cells with the treated soils and installed (3) layers of 2" P.V.C. vent pipes in each pile.
Owner: **The U.S. Air Force**
Engineer: **The U.S. Army Corps of Engineers**
Project Total: **$500,000**

KEY CODE:

- Soil Excavation
- Asbestos Abatement
- Groundwater Barriers and Sheet Piling
- In-Situ Treatment System Installation and Ex-Situ Treatment System Installation
- SVE System Installation
- Tank Removal & Fuel Tank Installation
- Dewatering
- Industrial Cleaning

PROJECTS (CONTINUED)

Location: **Various Locations Across New York State**
Project: **Term contract for Asbestos Abatement.** Over 800 projects completed Since 1994; removed and disposed of various types of asbestos containing materials including floor tile and mastic, pipe insulation, roofing, duct installation, electrical components, etc.
Owner: **Verizon**
Engineer: **Hygienetics Environmental Services**
Project Total: **$2,000,000**

Location: **Lakeland, NY**
Project: **NYSDEC Listed Site (Mastri).** Developed access roads and constructed water treatment building. Erected 50,000 sq. foot temporary dome structure over impacted soil area; excavated 17,000 cubic yards of contaminated soils. Soils were screened and mixed with lime for PH control and with wood chips to provide a medium for air entrainment. Installed sheet piling at adjacent property boundaries, constructed biocells with HDPE liners, operated and maintained groundwater treatment system and soil vapor extraction system. Backfilled and restored site.
Owner: **Stauffer Management**
Engineer: **Fluor-Daniel GTI**
Project Total: **$560,000**

Location: **Baltimore, MD**
Project: **Closure of 1.5 Million Gallon Oil/Water Separator**; Terminated existing inlets and outlets; dewatered and treated 750,000 gallons of impacted storm water with activated carbon; consolidated and stabilized sediment using vermiculite and removed sediment from separator; pressure washed separator walls and floors; collected and treated rinse water; repaired damaged concrete; removed internal structures; backfilled separator with 10,000 cubic yards of fill and capped separator with 12" clay cap.
Owner: **Exxon/Mobil**
Engineer: **SPEC Consulting**
Project Total: **$600,000**

Location: **Cicero, NY**
Project: **Site Remediation of Former Dry Cleaning Facility.** Demolished and disposed of existing building including foundations; excavated and segregated soils based on concentration and staged soil within constructed staging area. Loaded, transported and disposed of TCE impacted soils based on LDR limits; installed groundwater recovery well; backfilled excavation; set up and operated groundwater treatment system.
Owner: **Monroe Muffler**
Engineer: **Plumley Engineering**
Project Total: **$150,000**

Location: **Elmira, NY**
Project: **Ward 57 Remediation.** Performed closure of 20 dry wells; removed and demolished (1) 10'x10'x6' concrete vault; excavated and disposed of (1) 10,000 gallon rail car; (1) 5,000 gallon fuel tank; abandoned in place (2) 1,000 gallon gasoline USTs; excavated and staged 2,700 yards of contaminated soils related to dry wells. Furnished and installed 2,800 tons of granular backfill. Loaded, transported and disposed of 3,840 tons of petroleum and metal impacted soils. Sampled and analyzed 220 soil samples for volatiles, metals, and semi-volatiles.
Owner: **Village of Elmira Heights**
Engineer: **Fagan Engineering**
Project Total: **$160,000**

Location: **Windsor, CT**
Project: **Soil Remediation of Formerly Utilized Sites, Remedial Action Program (FURAP).** Assisted the engineer with development of site specific work plan. Excavated, backfilled and disposed of 60,000 tons of impacted soil within a 20 day window; installed 8,000 sq. feet of sheeting for safe excavation; provided dust control; provided decontamination for all vehicles and equipment on site.
Owner: **Confidential**
Engineer: **O'Brien and Gere Engineers**
Project Total: **$1,350,000**

KEY CODE:

- Soil Excavation
- Asbestos Abatement
- Groundwater Barriers and Sheet Piling
- In-Situ Treatment System Installation and Ex-Situ Treatment System Installation
- SVE System Installation
- Tank Removal & Fuel Tank Installation
- Dewatering
- Industrial Cleaning

PROJECTS (CONTINUED)

Location: Rochester, NY
Project: **Remediation of Dinaburg Site.** Excavated and disposed of TCE impacted soils and backfilled; installed groundwater and multi-phase extraction wells; constructed MPE treatment system; installed piping system from groundwater and vapor extraction wells to MPE treatment system; installed HDPE liner over unpaved areas and placed gravel over liner; provided system start-up, operation, and maintenance of MPE treatment system.
Owner: NYSDEC
Engineer: URS Corporation
Project Total: $868,000

Location: Rensselaer, NY
Project: **Installation of Interceptor Trench.** Installed visual barrier along site perimeter; removed existing groundwater trench manholes and mechanical equipment; excavated new interception trench utilizing shoring for safe trenching; dewatered excavation through FRAC tanks and pumped to on-site water treatment system; installed claymax bentomat ™ and geo-fabric in trench; installed perforated HDPE groundwater collection pipe in trench; installed precast collection manhole; installed piezometers; disposed of impacted soils; restored surface area with asphalt, topsoil, seed.
Owner: Organichem, LLC
Engineer: SPEC Consulting
Project Total: $200,000

Location: Utica, NY
Project: **Asbestos Abatement.** Removed and disposed of approximately 2,000 linear feet and 1,000 square feet of asbestos containing thermal system insulation from boilers and pipes.
Owner: USEPA
Engineer: Earth Tech, Inc.
Project Total: $100,000

Location: Tonawanda, NY
Project: **Rehabilitation of Containment Berms for Tank Farm.** Constructed access roads and HDPE overflow pipes; placed and compacted 10,000 cubic yards of clay to re-grade existing dikes; constructed over a mile of drainage trench. Re-graded 12,500 square feet of inner dike wall; installed 65,000 sq. feet of Claymax Bentomat ™ liner; placed stone to ballast liner.
Owner: NOCO Energy
Engineer: SPEC Consulting
Project Total: $500,000

Location: Burlington, VT
Project: **Site Remediation of National Guard Facility.** Excavated and disposed of 30 yards of petroleum impacted soil; excavated, backfilled and installed bioventing and product recovery system including (13) air injection wells, (20) product recovery wells; 400 linear feet of PVC piping (13) well hatches and concrete aprons; restored surface area.
Owner: The U.S. Government
Engineer: Stone and Webster
Project Total: $51,000

Location: Oneida, NY
Project: **Manufactured Gas Plant Remediation.** Constructed soil staging areas and decon areas; performed community air monitoring; performed vibration monitoring during construction; installed sheet piling to facilitate excavation in designated areas; excavated 7,000 cubic yards of MPG impacted soils prior to backfilling; set up and operated groundwater treatment system.
Owner: National Grid
Engineer: Blasland, Bouck and Lee
Project Total: $750,000

Location: Former Griffiss AFB, Rome, NY
Project: **Jet Fuel Tank Decommissioning.** Demolished pump house and OCB transformer. Removed, cleaned and disposed of (4) 50,000 gallon jet fuel underground storage tanks; removed and disposed of 20,000 gallons of jet fuel on static water level; transferred impacted liquids into Frac tanks for settling and characterization; disposed of water into sanitary system, disposed of fuel; cleaned approximately 3,000 linear feet of jet fuel piping; removed and disposed of 25,000 gallons of 150-propyl alcohol; restored site including concrete runway.
Owner: The U.S. Government
Engineer: The U.S. Army Corp. of Engineers
Project Total: $1,400,000

KEY CODE:

- Soil Excavation
- Asbestos Abatement
- Groundwater Barriers and Sheet Piling
- In-Situ Treatment System Installation and Ex-Situ Treatment System Installation
- SVE System Installation
- Tank Removal & Fuel Tank Installation
- Dewatering
- Industrial Cleaning

PROJECTS (CONTINUED)

Location: Various Locations in New York State
Project: **Asbestos Abatement.** Removed and disposed of various types of asbestos containing materials including floor tile and mastic, pipe insulation, roofing, duct insulation, and electrical components.
Owner: Cooper-Crouse Hinds
Engineer: Various
Project Total: $1,000,000

Location: North Adams, MA
Project: **Remediation of PCB Soils.** Cleared and grubbed approximately 5 acres along Hoosick River bank; paved site access roads; constructed 70 foot truck scale station for weighing loaded disposal trucks; installed 250 linear feet of sheeting to segregate impacted soils; excavated and disposed of 10,000 cubic yards of PCB soils (each truck loaded to within 500 lbs of gross vehicle weight prior to disposal); screened soils for PCB containing capacitors. Capacitors were manually cleaned and packaged for disposal; backfilled channel while controlling water displacement; installed 50,000 square foot HDPE liner; restored site.
Owner: The American Annuity Group
Engineer: Blasland, Bouck and Lee
Project Total: $850,000

Location: Albany, NY
Project: **Upgrade of Equipment Storage Area and Storm Sewer.** Constructed decon slab and soil staging areas. Excavated PCB impacted soils and staged for off-site disposed, removed and abandoned the existing storm sewer and drainage structures. Installed new HDPE storm sewer; restored trench and disturbed areas with asphalt paving.
Owner: National Grid
Engineer: Blasland, Bouck and Lee
Project Total: $135,000

Location: Various Locations in Western New York
Project: **2005 Fuel Storage Program.** Fuel storage tank removals, upgrades, and replacements; installed temporary fuel systems; removed and disposed of existing USTs; excavated, transported and disposed of impacted soils; dewatered, stored, and disposed of impacted groundwater. Obtained samples, analyzed and prepared tank closure reports; backfilled and compacted excavations. Removed and decommissioned existing fuel system; prepared and poured concrete slab for new above ground water storage tank. Installed new above ground fuel storage systems.
Owner: National Grid
Engineer: National Grid
Project Total: $850,00

Location: Medina, NY
Project: **Bioventing System.** Installed (4) air injection wells; one passive vent well and retrofitted one existing well; installed six shallow and two monitoring points; excavated transported and disposed of impacted soils and site waste; installed 300linear feet of vent well, injection well, and sub floor headers. Constructed treatment enclosure with (20) blowers, air filters, silencers, pressure switches, and required gauges.
Owner: Mattel Co.
Engineer: Blasland, Bouck and Lee
Project Total: $60,000

Location: Oil City, PA
Project: **Installation of Groundwater Barrier.** Waterproof sheet pile installation; developed work plan to protect adjacent river; installed 400 linear feet of turbidity curtain to mitigate impact to river; installed 250 linear feet of Waterloo ™ barrier to a depths of 25'. Installed specialized grout at joints to make wall impermeable.
Owner: Confidential
Engineer: C3Environmental
Project Total: $145,000

Location: Syracuse, NY
Project: **Site Remediation.** Developed work plan to excavate and dispose of 2,000 tons of contaminated soil and abandoned fuel tank; backfilled concurrently while excavating; provided dust control and traffic control during high volume traffic hours within the city.
Owner: Queri Development
Engineer: Clough Harbour Engineers
Project Total: $150,000

KEY CODE:

- Soil Excavation
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- Industrial Cleaning

PROJECTS (CONTINUED)

Location: Syracuse, NY
Project: **Asbestos Abatement.** Developed work plan for the removal of asbestos pipe and boiler insulation within 61 basements. Worked with EPA, DOL, OSHA, and NYSDEC on all aspects of the project. Coordinated all removal activities with building occupants and managers.
Owner: Confidential
Engineer: Envirologic
Project Total: $3,000,000

Location: New England
Project: **Lagoon Reclamation Blanket Contract.** Developed a plan to excavate 2,000 cubic yards of bottom ash material, on a yearly basis, from energy generation process using fossil fuels. Developed a plan to excavate while protecting lagoon liner. Repaired, re-graded and relined a portion of the lagoon that had previously failed.
Owner: Confidential
Engineer: The Owner
Project Total: $125,000

Location: Beardsley, NY
Project: **Remediation of Beardsley Station.** Removed 600 gallons of PCB impacted water from collection pits: manually collected 3 (55) gallon drums of debris from pits; pressure washed and cleaned 250 sq. feet of transformer pad and 400 sq. feet of collection troughs. Scarified and repaired transformer slabs; transported and disposed of (24) drums of non-hazardous solids and 1,300 gallons of non-hazardous liquids.
Owner: National Grid
Engineer: Foster Wheeler Corporation
Project Total: $31,000

Location: Oswego, NY
Project: **Asbestos Abatement.** Removed asbestos tile, mastic and pipe insulation.
Owner: SUNY-Oswego
Engineer: EnviroControl Technologies
Project Total: $256,000

Location: Oswego, NY
Project: **Oswego Castings, Unit #2.** Constructed decon and soil staging areas; performed air monitoring; excavated and consolidated PCB impacted soil generated from site activities into former cooling water pond; transferred low level PCB impacted water into new pond; installed site utilities; backfilled yard area with clean soils; installed 36,000 sq. feet reinforced concrete slab; installed monitoring wells; restored disturbed areas with asphalt and wetland vegetation; loaded, transported, and disposed of PCB soil off-site, constructed reinforced concrete slab; installed monitoring wells; restored disturbed areas with asphalt and wetland vegetation; loaded, transported, and disposed of PCB soil off-site.
Owner: NYSDEC
Engineer: NYSDEC
Project Total: $510,000

Location: Plainvillle, CT
Project: **Installation of Groundwater Barrier.** Constructed 350 lf of 80 mil HDPE groundwater barrier at a depth of 10' to contain flow of contaminated groundwater. Fabricated installation mandrel to install panels utilizing a vibratory hammer, thus eliminating the need for excavation and disposal of contaminated soils. "Gundwall"™ panels 4' wide by 10' deep were fabricated by GSE Environmental Products. Joints were sealed with a hydrophilic seal during installation.
Owner: Confidential
Engineer: O'Brien and Gere Engineering
Project Total: $59,000

Location: St. Louis, MO
Project: **Rehabilitation of Wastewater Settling Basin.** Systematically dewatered settling basin to effectively remove built up sludge and sediments while leaving the plant in operation. Excavated and stabilized sludge and sediment by mixing with portland cement. Transported and disposed of stabilized waste. Restored settling basin boundaries.
Owner: Saint Gobain Containers
Engineer: O'Brien and Gere Engineering
Project Total: $105,000

KEY CODE:

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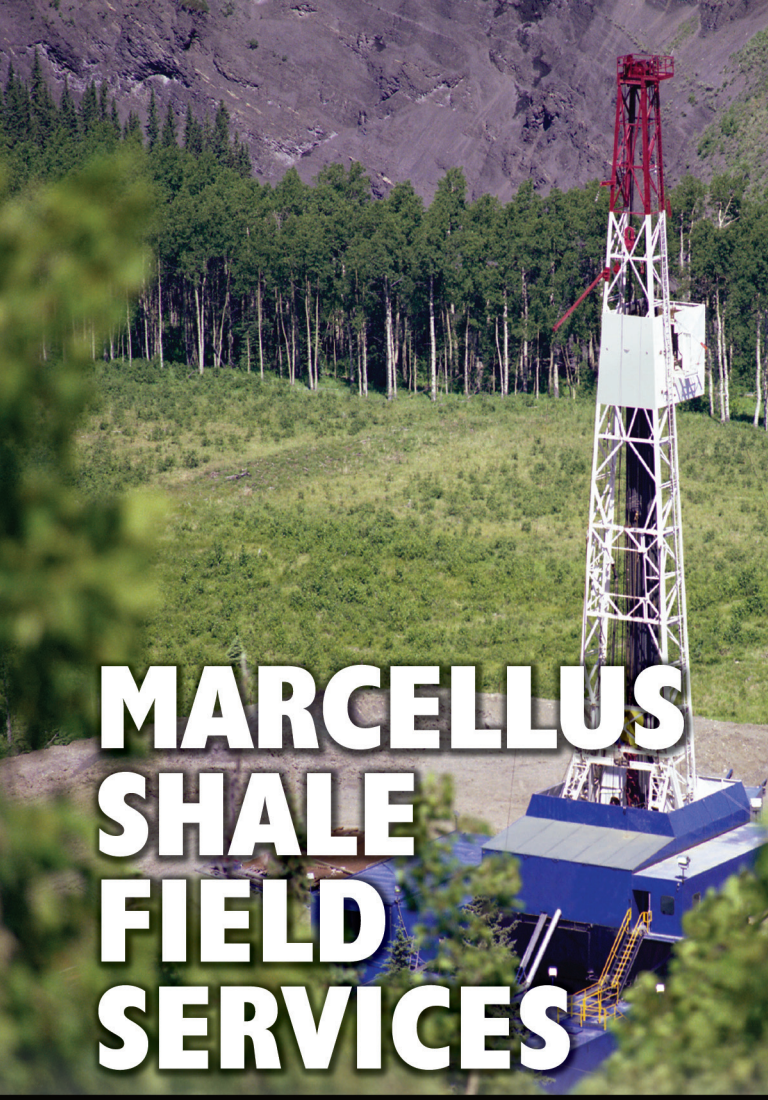

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MGP Remediation

Abscope excels at delivering safe and efficient remedial construction services at former manufactured gas plant (MGP) sites. We know how to address the health, safety, and regulatory issues affecting these sites that contain coal by-products and other hazardous wastes. Abscope's professional approach, based on 20 years of environmental remediation construction, recognizes the need to work with utility owner representatives, environmental consultants, and regulatory officials. In doing so, we provide services that respect the health and safety of our workers and the community, both in the short term and long term.

Expert and Experienced

Abscope's MGP project experience ranges from New York State to Illinois. Over the past 10 years, we have performed significant construction activities at seven MGP sites. These remedial construction services have involved:

- installing more than 100,000 vertical square feet (vsf) of steel sheetpiling
- excavation, on-site management, and staging of more than 75,000 tons of MGP-impacted soils, including soils deemed benzene hazardous (D018)
- transportation and disposal of MGP debris at permitted landfills or thermal treatment facilities
- dewatering; installation and O&M of temporary and/or permanent groundwater treatment systems; collection and treatment of more than 8 million gallons of contaminated groundwater
- erecting temporary enclosures and installing air-handling equipment for odor and vapor control; implementing personal and community air monitoring programs
- performing pre- and post-construction building surveys and conducting vibration monitoring during construction

Safety First – and Always

Our safety record over the course of these projects has been excellent. In fact, Abscope is proud of maintaining an excellent Experience Modification Rating (EMR). We foster safe practices through extensive employee monitoring and training. Training programs include 40-hour HAZWOPER, respiratory protection, hazard communication, lockout/tagout, heat stress, electrical safety, hearing protection, PPE, and forklift/industrial-powered trucks. In addition, Abscope is adept at incorporating the necessary benefits of OSHA-mandated and other written programs such as site-specific health and safety plans (HASPs), emergency action plans, contingency plans, a company drug and alcohol prevention program, and employee craft training.

www.abscope.com

MGP Project Overview

Abscope's rich portfolio of MGP projects includes the following highlights from projects in Oneida, NY; Gloversville, NY; Rome, NY; North Albany, NY; Bloomington, IL; Utica, NY, and Glens Falls, NY:

- excavation of 7,000 tons of MGP-impacted soils and debris; dewatering and groundwater treatment; sheetpiling for excavation protection; air and vibration monitoring; site restoration (Oneida, NY)
- $2.2 million project; installation of groundwater and stormwater collection manholes and piping; construction of permanent on-site groundwater treatment facility; coordinated closely with site staff to maintain seamless daily operations of active service center (Gloversville, NY)
- installed 20,000 vsf of vertical containment barrier; developed specialized driving mandrel for installation of GundWall deep into clay soils (Bloomington, IL)
- $3.1 million project; regraded 8-acre site and installed 40-mil HDPE liner cover; performed deep-soil mixing (DSM) to repair 250 lf SB slurry wall to a depth of 44 ft; placed clay cap over existing barrier wall; installed two 12-inch-diameter extraction wells to a depth of 60 ft (Utica, NY)
- excavated 1,000 tons of MGP soils; performed innovative Interim Remedial Measure in canal that consisted of capping coal-tar sediment with clay-bentonite-AquaBlok layer (Glens Falls, NY)

A Closer Look

For National Grid in Rome, NY, Abscope's $5.5 million remedial construction effort began in 2007 and consists of the following elements at National Grid's Kingsley Avenue former MGP site:

- excavation to a depth of 28 feet to remove ~12,000 cubic yards of impacted soils and transport offsite for thermal treatment and disposal
- installation of nearly 50,000 vsf of watertight steel sheeting
- demolition and removal of underground reinforced concrete MGP structures, including tar wells, distribution holder, and relief holder foundations
- erection of temporary enclosure system (200 ft x 120 ft) and installation of four 20,000 cfm air-handling units with activated carbon for odor control and ventilation during excavation
- construction of a groundwater treatment plant with treated groundwater properly discharged to the local POTW
- implemented odor control measures using patented Rusmar Foam Technology
- executed site-specific Health and Safety Plan and Community Air Monitoring Plan throughout project duration

Contact Us

Call or email Abscope today for help on your next MGP project:

315.697.8437
1.800.273.5318
remediation@abscope.com
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PO Box 487
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Attachment 2

Clean Harbors Environmental Services

Waste Transportation and Disposal Services

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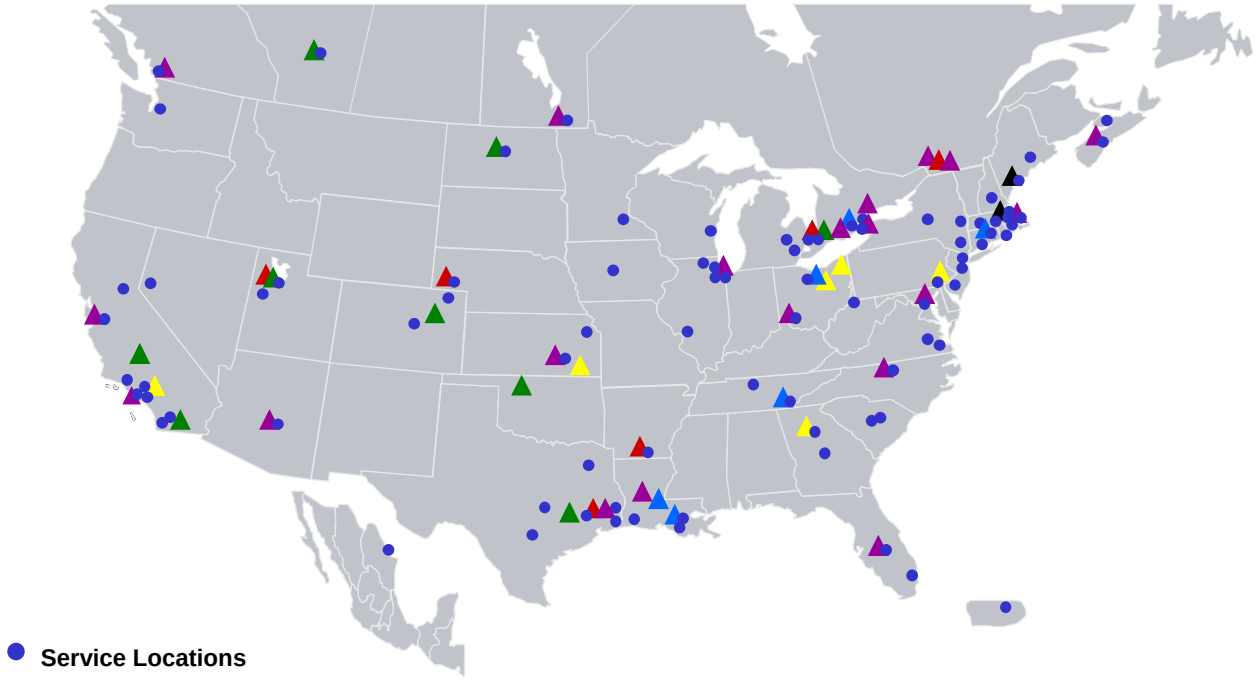
1.0 CLEAN HARBORS ENVIRONMENTAL SERVICES OVERVIEW

Clean Harbors Environmental Services, Inc. is North America's leading provider of environmental and hazardous waste management services. With an unmatched infrastructure of 49 waste management facilities, including nine landfills, six incineration locations and six wastewater treatment centers, the Company provides essential services to more than 45,000 customers, including more than 325 Fortune 500 companies, thousands of smaller private entities and numerous governmental agencies. Headquartered in Norwell, Massachusetts, Clean Harbors has more than 100 locations strategically positioned throughout North America in 36 U.S. states, six Canadian provinces, Mexico and Puerto Rico.

For more information about Clean Harbors, view our company overview video online at Clean Harbors Company Overview Video

MAP OF CLEAN HARBORS SERVICE LOCATIONS AND WASTE MANAGEMENT FACILITIES



2.0 WASTE DISPOSAL SERVICES

Clean Harbors provides incineration, waste treatment, recycling and landfill disposal, to more specialized services such as fuel blending and explosives management, we employ the most advanced technologies to treat or dispose of your waste materials.

Regardless of the waste type a company generates, Clean Harbors provides the convenience of single sourcing. From solid wastes and wastewater to simple oils and paints to PCBs and cyanides, we can effectively manage the waste. Since our operations are completely networked, the entire process is easier, safer and more cost-effective.

All of our waste management facilities uphold rigorous quality assurance programs to meet the highest standards of both internal and external audits. We maintain constant vigilance over all facilities to identify and minimize long-term liabilities that minimize customer exposure to risk.

Form more information click to download the Overview: Transportation & Disposal Services Fact Sheet

Click on a facility name below to launch a facility fact sheet:

INCINERATION FACILITIES

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Clean Harbors El Dorado, LLC	El Dorado Incineration Facility	309 American Circle	El Dorado	AR	71730	US	ARD069748192
Clean Harbors Environmental Services, Inc.	Kimball Incineration Facility	2247 South Highway 71	Kimball	NE	69145	US	NED981723513
Clean Harbors Canada, Inc.	Lambton (Sarnia) Incineration Facility	4090 Telfer Road, Rural Route #1	Corunna	ON	N0N 1G0	CN	Receiver A031813 / Generator ON0039017 / Carrier A8581
Clean Harbors Mercier, Inc.	Mercier Incineration Facility	1294 boule. Ste-Marguerite	Ville Mercier	PQ	J6R 2L1	CN	Generator/Receiver 1142749697
Clean Harbors Deer Park, L.P.	Deer Park Incineration Facility	2027 Battleground Road	La Porte	TX	77571	US	TXD055141378
Clean Harbors Aragonite, LLC	Aragonite Incineration Facility	11600 North Aptus Road	Aragonite	UT	84029	US	UTD981552177

LANDFILL FACILITIES

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Clean Harbors Canada, Inc.	Ryley Landfill	2 km No. of Hwy.14 on 2ndary Rd.854	Ryley	AB	T0B 4A0	CN	Receiver ABR1089 / Generator ABG5498 / Carrier ABC2214
Clean Harbors Buttonwillow, LLC	Buttonwillow Landfill	2500 West Lokern Road	Buttonwillow	CA	93206	US	CAD 980 675 276
Clean Harbors Westmorland, LLC	Westmorland Landfill	5295 South Garvey Road	Westmorland	CA	92281	US	CAD 000 633 164
Clean Harbors Deer Trail, LLC	Deer Trail Landfill	108555 East Highway 36	Deer Trail	CO	80105	US	COD 991 300 484
Sawyer Disposal Services, LLC	Sawyer Landfill	12400 247th Ave S.E.	Sawyer	ND	58781	US	ND0000351270
Clean Harbors Lone Mountain, LLC	Lone Mountain Landfill	Route 2 Box 170	Waynoka	OK	73860	US	OKD 065 438 376
Clean Harbors Canada, Inc.	Lambton (Sarnia) Landfill	4090 Telfer Road, Rural Route #1	Corunna	ON	N0N 1G0	CN	Receiver A031806 / Generator ON0039017 / Carrier A8581
Altair Disposal Services, LLC	Altair Landfill	2 Miles North of Altair Left Side of Hwy. 71	Altair	TX	77412	US	TXD 980 624 274
Clean Harbors Grassy Mountain, LLC	Grassy Mountain Landfill	Exit 41 Off I-80 3 Miles East 7 miles North of Knolls	Grassy Mountain	UT	84029	US	UTD 991 301 748

WASTEWATER TREATMENT

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Clean Harbors of Connecticut, Inc.	Bristol Facility	51 Broderick Road	Bristol	CT	06010	US	CTD000604488
Clean Harbors White Castle, LLC	White Castle Facility	52735 Clarke Road	White Castle	LA	70788	US	LAD982549636
Clean Harbors Baton Rouge, LLC	Baton Rouge Facility	13351 Scenic Highway	Baton Rouge	LA	70807	US	LAD010395127
Clean Harbors Environmental Services, Inc.	Cleveland Facility	2900 Rockefeller Avenue	Cleveland	OH	44115	US	OHD000724153
Clean Harbors Canada, Inc.	Guelph Facility	520 Southgate Drive	Guelph	ON	N1G 4P5	CN	Receiver A170115 / Generator ON0039018
Clean Harbors Chattanooga, LLC	Chattanooga Facility	3300 Cummings Road	Chattanooga	TN	37419	US	TND982141392

PCB, NON-PCB, TRANSFORMER RECYCLING AND PROCESSING FACILITIES (PPM)

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Clean Harbors Los Angeles, LLC	Los Angeles PPM Facility	5756 Alba Street	Los Angeles	CA	90058	US	CAD 050 806 850
Clean Harbors PPM, LLC	Tucker PPM Facility	1875 Forge Street	Tucker	GA	30084	US	GAD 980 839 187
Clean Harbors PPM, LLC	Coffeyville PPM Facility	Highway 169 North - Industrial Park	Coffeyville	KS	67337	US	KSD 981 506 025
Clean Harbors PPM, LLC	Ashtabula PPM Facility	1302 West 38th Street	Ashtabula	OH	44004	US	OHD 981 093 420
Clean Harbors PPM, LLC	Twinsburg PPM Facility	1672 E. Highland Road	Twinsburg	OH	44087	US	OHD 986 975 399
Clean Harbors PPM, LLC	Philadelphia PPM Facility	4105 Whitaker Ave.	Philadelphia	PA	19124	US	PAD 981 113 749

TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF)

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Clean Harbors Arizona, LLC	Phoenix Facility	1340 West Lincoln Street	Phoenix	AZ	85007	US	AZD049318009
Clean Harbors Canada, Inc.	Delta Facility	7842 Progress Way	Delta	BC	V4G 1A4	CN	Receiver PS8388 / Generator BCG06111 / Carrier LT0249
Clean Harbors of San Jose, LLC	San Jose Facility	1021 Berryessa Road	San Jose	CA	95133	US	CAD059494310
Clean Harbors Wilmington, LLC	Wilmington Facility	1737 East Denni Street	Wilmington	CA	90744	US	CAD044429835
Clean Harbors Florida, LLC	Bartow Facility	170 Bartow Municipal Airport	Bartow	FL	33830	US	FLD980729610
Clean Harbors Environmental Services, Inc.	Chicago Facility	11800 South Stony Island Avenue	Chicago	IL	60617	US	ILD000608471
Clean Harbors Kansas, LLC	Wichita Facility	2549 N. New York Street	Wichita	KS	67219	US	KSD007246846
Clean Harbors Colfax, LLC	Colfax Facility	3763 Highway 471	Colfax	LA	71417	US	LAD981055791
Clean Harbors of Braintree, Inc.	Braintree Facility	1 Hill Ave.	Braintree	MA	02184	US	MAD05342637
Clean Harbors Canada, Inc.	Winnipeg Facility	1147 Henry Avenue	Winnipeg	MB	R3E 1V6	CN	Receiver MBR07393 / Generator MBG07391 / Carrier MBC07392
Clean Harbors of Baltimore, Inc.	Baltimore Facility	1910 Russell Street	Baltimore	MD	21230	US	MDD980555189
Clean Harbors Reidsville, LLC	Reidsville Facility	208 Watlington Industrial Drive	Reidsville	NC	27320	US	NCD000648451
Clean Harbors Canada, Inc.	Debert Facility	640 McElmon Road	Debert	NS	B0M 1G0	CN	Receiver NSR000102 / Generator NSG001199 / Carrier NSC000159
Spring Grove Resources Recovery, Inc.	Cincinnati (Spring Grove) Facility	4879 Spring Grove Avenue	Cincinnati	OH	45232	US	OHD000816629
Clean Harbors La Porte, L.P.	La Porte Facility	500 Battleground Road	La Porte	TX	77571	US	TXD 982 290 140

TREATMENT, STORAGE AND DISPOSAL FACILITIES (TSDF) (CONT'D)

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Clean Harbors Canada, Inc.	London Facility	2258 River Road	London	ON	N5W 6C2	CN	Receiver A041603 / Genrator ON0039012 / Carrier A8581
Clean Harbors Canada, Inc.	Mississauga Facility	551 Avonhead Rd	Mississauga	ON	L5J 4B1	CN	Receiver A220106 / Generator ON0039015 / Carrier A8581
Clean Harbors Canada, Inc.	Thorold (Niagara) Facility	1829 Allanport Road	Thorold	ON	L2V 3Y9	CN	Receiver A121026 / Generator ON0039016 / Carrier A8581
Clean Harbors Quebec, Inc.	Ville Ste-Catherine Facility	6785 Route 132	Ville Ste-Catherine	PQ	J0L 1E0	CN	Receiver/Generator/Carrier 1145021615
Clean Harbors Quebec, Inc.	Thurso Facility	Rang 5 East 400 Galipeau St.	Thurso	PQ	J0X 3B0	CN	Receiver/Generator/Carrier 1145021615-01

OIL RECYCLING FACILITIES

Manifest Name	Common Name (Click Name to View Facility Fact Sheet)	Address	City	State / Province	Zip Code / Postal Code	Country	Federal / Provincial ID Numbers
Murphy's Waste Oil Service, Inc.	Woburn Oil Facility	252 Salem Street	Woburn	MA	01801	US	MAD066588005
Clean Harbors Environmental Services, Inc.	South Portland Oil Facility	37 Rummery Road	South Portland	ME	04106	US	MED980672182

3.0 WASTE TRANSPORTATION SERVICES

Through a highly coordinated transportation fleet of more than 3,000 vehicles, Clean Harbors provides reliable, cost-effective waste transportation to customers across North America. Dispatched from over 100 locations throughout North America, Clean Harbors provides routine pick ups of drum and bulk waste, in liquid, solid and sludge form. Customers who have recurring drum waste pick needs can be set up on "milkrun" schedules ensuring they stay within their 90 day storage requirements. Bulk and large quantity containerized waste pickups are scheduled as required.

For customers with large volume disposal needs, Clean Harbors offers a variety of options including truck, rolloff and rail transportation. Clean Harbors also provides turnkey offsite transportation and disposal solutions for soil and other contaminated media generated from remediation activities, handling all aspects of logistics from truck to rail, to disposal.

Transportation & Disposal of Remediated Soil & Other Media Fact Sheet

Truck-to-Rail Transloading Fact Sheet

Disposable Container Fact Sheet

4.0 INSURANCE

Clean Harbors presently carries general liability and auto liability insurance providing coverage in the aggregate amount of $30 million per year. The Company has excess pollution liability insurance coverage in the amount of $29 million which insures the Company against liability for sudden and accidental occurrences from the time waste is picked up from a customer, while being handled at the Company's treatment and transfer facilities, through its delivery to a disposal site. Click a link below to view Clean Harbors' Facility Closure Certificate and Certificate of Liability Insurance:

Facility Closure Certificate

Certificate of Liability Insurance

For more detail concerning Clean Harbors' coverage, please contact the Clean Harbors Risk Management Department at 781.792.5000.

Willis

Website: www.willis.com

Direct Line: 617 351 7542
Direct Fax: 617 351 7430
E-mail: paul.maloney@willis.com

October 29, 2010

To Whom It May Concern:

RE: Clean Harbors Environmental Services, Inc.
2010-2011 Workers' Compensation Experience Modification (EMR)

The following experience modification ratings (EMR) apply to the Clean Harbors Workers' Compensation insurance program:

State	Year 2010-2011	Year 2009-2010
All State (Interstate EMR)	.53	.58
Intrastate		
New Jersey	.66	.58
Pennsylvania	.70	.69
Michigan	.85	.79
California	.74	.67

Sincerely,

Paul T. Maloney

Paul T. Maloney
Senior Vice President
Senior Client Manager

Willis of Massachusetts Inc.
Three Copley Place, Suite 300
Boston, MA 02116-6501

Willis

Telephone: 617.437.6900
Fax: 617.351.7430
Website: www.willis.com

Direct Line: 617 351-7541
Direct Fax: 617 351-7430
E-mail: chely.vergara@willis.com

October 15, 2009

To Whom It May Concern:

Re: Clean Harbors Environmental Services, Inc.
2009-2010 Workers' Compensation Experience Modification Rating (EMR)

The following experience modification ratings (EMR) apply to the Clean Harbors Workers' Compensation insurance program:

State	Year 2009-10	Year 2008-09
All State (Interstate EMR)	.58	.53
Intrastate:		
New Jersey	.58	.62
Pennsylvania	.69	.68
Michigan	.79	.81
California	.67	.67

Please contact the Clean Harbors Risk Management department with any questions or concerns.

Sincerely,

Chely Vergara
Client Manager

Willis of Massachusetts, Inc.
3 Copley Place, Suite 300
Boston, MA 02116-6501

Attachment 3

DPK

PROFESSIONAL QUALIFICATIONS

STATE OF NEW JERSEY

BUSINESS REGISTRATION CERTIFICATE

DEPARTMENT OF TREASURY/
DIVISION OF REVENUE
PO BOX 252
TRENTON, N J 08646-0252

TAXPAYER NAME:

DPK CONSULTING, LLC

TRADE NAME:

TAXPAYER IDENTIFICATION#:

223-636-194/000

SEQUENCE NUMBER:

0730616

ADDRESS:

147 UNION AVE SUITE 1C
MIDDLESEX NJ 08846

ISSUANCE DATE:

10/05/04

EFFECTIVE DATE:

02/02/99

Acting Director

FORM-BRC(08-01)

This Certificate is NOT assignable or transferable. It must be conspicuously displayed at above address.

THIS DOCUMENT IS PRINTED ON A WATERMARKED PAPER WITH A MULTI-COLORED BACKGROUND AND MULTIPLE SECURITY FEATURES. PLEASE VERIFY AUTHENTICITY

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE

Board of Prof. Engineers & Land Surveyors

HAS LICENSED

STEVEN D. PARENT
2022 HOLLAND BROOK RD WEST
BRANCHBURG NJ 08876-3811

FOR PRACTICE IN NEW JERSEY AS A(N): Professional Land Surveyor

02/22/2010 TO 04/30/2012
VALID

Signature of Licensee/Registrant/Certificate Holder

24GS03626900
LICENSE/REGISTRATION/CERTIFICATION #

ACTING DIRECTOR

New Jersey Office of the Attorney General
Division of Consumer Affairs
THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors
HAS LICENSED
STEVEN D. PARENT
Professional Land Surveyor
02/22/2010 TO 04/30/2012
VALID
SIGNATURE
24GS03626900
License/Registration/Certificate #
ACTING DIRECTOR

PLEASE DETACH HERE

IF YOUR LICENSE/REGISTRATION/ CERTIFICATE ID CARD IS LOST PLEASE NOTIFY:

Board of Prof. Engineers & Land Sur
P.O. Box 45015
Newark, NJ 07101

PLEASE DETACH HERE

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE
Board of Prof. Engineers & Land Surveyors

HAS LICENSED

DAVID R. AVERY
7 Elmer Avenue
Bernardsville NJ 07924

FOR PRACTICE IN NEW JERSEY AS A(N): Professional Land Surveyor

02/18/2010 TO 04/30/2012
VALID

24GS03964600
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

ACTING DIRECTOR

DISPLAY THIS CERTIFICATE PROMINENTLY - NOTIFY AGENCY WITHIN 10 DAYS OF ANY CHANGE

Commonwealth of Pennsylvania
Department of State
Bureau of Professional and Occupational Affairs
PO Box 2649 Harrisburg PA 17105-2649

08 0066361

License Type

Professional Land Surveyor

License Status

Active

Initial License Date

06/28/2010

DAVID ROBERT AVERY
7 ELMER AVENUE
BERNARDSVILLE NJ 07924

License Number

SU075272

Expiration Date

09/30/2011

Commissioner of Professional and Occupational Affairs

Signature

ALTERATION OF THIS DOCUMENT IS A CRIMINAL OFFENSE UNDER 18 PA.C.S.§. 4911

RESUMES OF LICENSED PROFESSIONALS

DPK CONSULTING, L.L.C.
LAND SURVEYING AND CIVIL ENGINEERING

Christian M. Kastrud, N.J.P.E., C.M.E.
Steven D. Parent, N.J.P.L.S.

Steven D. Parent, P.L.S.

EDUCATION:

Bachelor of Science, Geology, University of Rhode Island, 1984
Surveying I, New Jersey Institute of Technology, 1989

LICENSES:

Professional Land Surveyor, New Jersey License #24GS03626900
OSHA's 29CFR1910.120 Hazardous Waste Operations and Emergency Response (40 hour training)

WORK EXPERIENCE:

DPK Consulting, LLC. Middlesex, New Jersey
March 1999 - Present; Chief of Surveys/Principal
Development of Surveying and Engineering company in central New Jersey. Company services to include but be not limited to all aspects of Civil, Municipal Engineering and Land Surveying.

Warren Township, Somerset County, New Jersey
January 2003 – Present,
Responsible for oversight of tax map preparation and various land surveying projects throughout the Township.

Borough of Chatham, Morris County, New Jersey
January 2008 – December 2009
Responsible for oversight of tax map preparation and various land surveying projects throughout the Township.

Ronald W. Post Surveying, Inc. Toms River, New Jersey
November 1995 - March 1999; Chief of Surveys/ General Manager
Overall management of company including hiring of employees, employee yearly review, supervision of bookkeeping department as well as clerical personnel. Other experience included preliminary site estimates; office/client liaison; supervision of field crews daily activities; conducting in-house training seminars; computer calculation and survey/deed analysis

Ferriero Engineering, Inc. Chester, New Jersey
July 1995 - November 1995; Chief of Surveys
Developed survey department in established engineering company. Responsible for hiring of survey field and office personnel, oversaw all aspects of land surveying projects from field work through drafting of final product.

Murphy & Hollows Associates, Inc. Stirling, New Jersey
August 1985 - July 1995; Chief of Surveys
Experience includes: preliminary site estimates; office/client liaison; supervision of field crews daily activities; conducting in-house training seminars; computer calculation and analysis; drafting of preliminary working maps; final sketch plats for major and minor subdivisions; road calculations (including sanitary and storm drainage profiles); road way easements and deed preparation. Complete "field to finish" of all survey and deed analysis.

PROFESSIONAL AFFILIATIONS:

New Jersey Society of Professional Land Surveyors
Garden State Land Surveyors Alliance

DPK CONSULTING, L.L.C.
LAND SURVEYING AND CIVIL ENGINEERING

Christian M. Kastrud, N.J.P.E., C.M.E.
Steven D. Parent, N.J.P.L.S.

David R. Avery, P.L.S.

Employment

DPK Consulting, L.L.C. Middlesex, NJ Jan. 2010-pres.
Professional Land Surveyor
Responsibilities:

- Field Crews – instruct crews on specific project needs, develop and implement field procedures
- Construction Stakeout – assemble construction plans, prepare stakeout data and cut sheets
- Boundary Analysis – have extensive experience resolving conflicted boundaries
- Preparation of Major and Minor Subdivisions and Site Plans
- Proposals – discuss needs with client, prepare proposal
- Survey Reports – report addressing survey findings
- Billing – assist staff in billing of projects

SmithSurveying, Inc. Morristown, NJ 1999-Nov. 2009
Director of Office and Field Operations
Responsibilities:

- Proposals – discuss needs with client, prepare proposal
- Client Development
- Scheduling of field crews and office staff
- Project Management – addressing client schedules and needs
- Boundary Analysis – have extensive experience resolving conflicted boundaries
- Preparation of Major and Minor Subdivisions and Site Plans
- Construction Stakeout – assemble construction plans, prepare stakeout data and cut sheets
- Survey Reports – report addressing survey findings, typically for boundary disputes and court cases
- Review of Billing Reports – transmitting information to bookkeeper for appropriate project billings
- IT Manager – advise owner regarding new purchases, management of network and workstation issues

Employment (cont.)

Control Point Associates Watchung, NJ 1996-1999
Project Manager
Responsibilities:

- Proposals – discuss needs with client, prepare proposal
- Project Management – addressing client schedules and needs
- Boundary Analysis
- Review of Billing Reports – transmitting information to bookkeeper for appropriate project billings

Richard F. Smith, Jr. Morristown, NJ 1994-1995
Party Chief/Boundary Analyst

Richard F. Smith, Jr. Morristown, NJ 1984-1988
Party Chief / Rod Person / Office and Field Assistant

Education

Oregon Institute of Technology, Klamath Falls, OR 1993
Bachelor of Science in Surveying

Paul Smith's College, Paul Smiths, NY 1990
Associate of Arts and Science in Surveying

I have attended numerous seminars focused on Surveying, Land Development, Contracts and Business Development including:

- Evidence and Boundaries by Walter G. Robillard, PLS, Esq. (1988)
- Easements by Knud Hermansen, PLS, PE, Esq. (1994)
- Monumentation and Lines of Possession by Knud Hermansen, PLS, PE, Esq. (1994)
- Evidence by Judge Robert C. Shelton, Jr. (Ret.) and Walter G. Robillard, PLS, Esq. (1994)
- Contracts by Eddie Pagan, Jr., Esq. (1995)
- Geodetic Control by Michael Cline (1995)
- Ethics and the Administrative Code by Lewis H. Conley, Jr., PLS (1995)
- Tidelands by James Johnson and Joseph Clayton, Esq. (1995)
- FEMA and Flood Plain Issues by Wendy Lathrop, PLS (1996)
- Survey Liability in New Jersey by Bill Beardslee, PLS, PE, PP (1997)
- Records Research and Documents by Knud Hermansen, PLS, PE, Esq. (1997)

- GPS: Practical Applications and Processing by Stephen Crowfoot (1998)
- The Wetlands Boundary & How It Impacts Your Project by Vincent Creevy, PLS (1998)
- Introduction to Geographic Information Systems for Surveyors, Engineers and Municipal Managers by Milton Denny (1999)
- Planning & Zoning: Municipal Land Use Law/Residential Site Improvement Standards by Theodore Ritter, Nicholas Wunner and Timothy Brill (1999)
- Demons of the Profession by Walter G. Robillard, PLS, Esq., and Judge Robert C. Shelton, Jr. (Ret.) (2000)
- The Administrative Code: The Surveyor's Guide to Surveying by Lewis Conley, Jr., PLS and Bruce Blair, PLS (2000) (2005) (2006)
- Technical Introduction to Aerial Analytical Bridging by Lawrence J. Socha (2000)
- Understanding Colonial Surveying by Walter G. Robillard, PLS, Esq. (2001)
- GIS Opportunities for Surveyors in New Jersey by Dr. Joshua Greenfeld (2001)
- Real World Implementation of GIS by Dr. Joshua Greenfeld (2002)
- Riparian Boundaries by Knud Hermansen, PLS, PE, PhD, Esq. (2003)
- Tidelands by Edward C. Eastman, Esq. (2003)
- Retracement Surveys by Richard F. Smith, Jr. PLS (2004)
- Zoning, Subdivision and Land Development Law presented by Lorman Business Center, Inc. (2008)
- Olde English Law and the Modern Surveyor by Walter G. Robillard, PLS, Esq. (2008)
- The Doctrine of Merger – Analysis and Case Law Study by Ed Pagan, Jr., Esq. (2008)
- Preparing and Presenting Land Use Projects by Glenn C. Kienz, Esq., Weiner Lesniak, LLP and William Beardslee, PLS, PP, PE (2009)
- Boundary Surveyor by Jeffery N. Lucas, JD, PLS (2010)
- Riparian Doctrines, Boundaries and Rights by Walter G. Robillard, PLS, PSM, Esq. (2010)

Professional Licenses and Affiliations

- Licensed to practice land surveying in New Jersey and Pennsylvania
- New Jersey Society of Professional Land Surveyors
  NJSPLS North Jersey Chapter Director
- National Society of Professional Surveyors
- American Congress on Surveying and Mapping

EQUIPMENT LISTING

2011 Equipment List

Total Stations

- Trimble 5605 Series Robots (2)
- Leica 1200 TPS Robot
- Topcon GTS 211D Total Station

GPS

- Leica 1200 Static and RTK System
- Leica RTK Smartnet System

Vehicles

- Dodge Ram 2500 Trucks (2)
- Ford 250 Van

Water Craft

- 12-foot Jon Boat with trailer and motor

INSURANCE QUALIFICATIONS

DPKCONS-01 SAKE

ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 4/25/2011

PRODUCER (973) 731-0806
Herbert L. Jamison & Co., LLC
100 Executive Drive
West Orange, NJ 07052-3362

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED DPK Consulting, LLC
147 Union Avenue
Middlesex, NJ 08846-

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: National Fire Ins. Co. of Hartford (CNA)	
INSURER B: Continental Insurance Co.	
INSURER C: Continental Casualty Co.	20443C
INSURER D: Transportation Insurance Company	
INSURER E: Hanover Insurance Co.	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	X	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC	3010006410	4/1/2011	4/1/2012	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 300,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
B		AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS	3010006441	4/1/2011	4/1/2012	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
		GARAGE LIABILITY [ ] ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
C		EXCESS/UMBRELLA LIABILITY [X] OCCUR [ ] CLAIMS MADE [ ] DEDUCTIBLE [X] RETENTION $ 10,000	3010009968	4/1/2011	4/1/2012	EACH OCCURRENCE AGGREGATE	$ 1,000,000 $ 1,000,000 $ $ $
D		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	WC 2 99550691	4/1/2011	4/1/2012	[X] WC STATU-TORY LIMITS [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
E		OTHER Architects & Engineers E & O	LHY-8184962-01	4/15/2011	4/15/2012		$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

ARCADIS U.S., Inc. is included as an Additional Insured under General Liability with respect to operations of the named insured, if required by written contract or agreement, subject to policy terms, conditions and exclusions, as their interests may appear.

CERTIFICATE HOLDER

ARCADIS U.S., Inc.
630 Plaza Drive
Suite 600
Highlands Ranch, CO 80129-

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

SAFETY CERTIFICATIONS

CERTIFICATE OF TRAINING

This is to certify that

Steven Parent

has successfully completed a course in the requirements for the:

LPS Initial 8-hour Training

ARCADIS
Infrastructure, environment, facilities

Patricia Vollertsen
Instructor

October 9, 2008
Date of Completion

31475

National Asbestos & Environmental Training Institute

CERTIFICATE OF COMPLETION

This is to certify that

Steve Parent

Successfully completed the course entitled

8-Hour Hazardous Worker/Supervisor Waste Operations Emergency Response Annual Refresher as per OSHA 29 CFR 1910.120 on December 3, 2010

Expiration Date on December 3, 2011

Doris L. Adler
President, NAETI

Language: English

ABIH 1 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712 Phone (732) 531-5571 Fax (732) 531-5956 www.naeti.com

LITHO. IN U.S.A.

EMILCOTT ASSOCIATES, INC.

HEALTH, SAFETY AND ENVIRONMENTAL TRAINING PROGRAM

This Certifies That

STEVEN O. PARENT

Has Successfully Completed

Advanced Health and Safety Training Course for Hazardous Waste Operations and meets the 40 Hour initial training requirements pursuant to OSHA 1910.120

Date **JULY 25, 1991** Location **CONVENT STATION, N. J.**

Bruce D Groves

BRUCE D. GROVES, CIH
Course Director

CERTIFICATE OF TRAINING

This is to certify that

Douglas Connor

has successfully completed a course in the requirements for the:

LPS Initial 8-hour Training

ARCADIS
Infrastructure, environment, facilities

Patricia Vollertsen

Instructor

October 9, 2008

Date of Completion

03062040Hr-005
CERTIFICATE

ENVIROGENICS

HEALTH AND SAFETY TRAINING INSTITUTE
3812B Quakerbridge Road, Suite 208, Mercerville, NJ 08619

THIS IS TO CERTIFY THAT

Douglas Connor

HAS SUCCESSFULLY COMPLETED THE TRAINING REQUIREMENTS FOR
OSHA 1910.120 40-HOUR HAZARDOUS WASTE OPERATIONS (e)(3)(i), up to Level B HEALTH AND SAFETY TRAINING

Jeffrey L. Ostroff
INSTRUCTOR

June 20, 2004
EXPIRATION DATE

LITHO. IN U.S.A.

31481

National Asbestos & Environmental Training Institute

CERTIFICATE OF COMPLETION

This is to certify that

Doug Connor

Successfully completed the course entitled

8-Hour Hazardous Worker/Supervisor Waste Operations Emergency Response Annual Refresher as per OSHA 29 CFR 1910.120 on December 3, 2010

Expiration Date on December 3, 2011

Doris L. Adler
President, NAETI

Language: English

ABIH 1 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712 Phone (732) 531-5571 Fax (732) 531-5956 www.naeti.com

LITHO. IN U.S.A.

CERTIFICATE OF TRAINING

This is to certify that

James Heiser

has successfully completed a course in the requirements for the:

LPS Initial 8-hour Training

ARCADIS
Infrastructure, environment, facilities

Patricia Vollertsen
Instructor

October 9, 2008
Date of Completion

Loss Prevention System Training Certification

James Heiser / Summit Drilling Co., Inc.

Trainee Name / Company

Denis Crayon/Summit Drilling Co., Inc./12-1-10

Trainer Name / Company / Training Date

- [ ] LPS Train-the-Trainer
- [ ] LPS Full Training
- [ ] LPS Condensed Training
- [ ] LPS Awareness Training
- [X] LPS Refresher Training

SHE

GLOBAL REAL ESTATE & FACILITIES
SAFETY, HEALTH & ENVIRONMENT

31474

National Asbestos & Environmental Training Institute

CERTIFICATE OF COMPLETION

This is to certify that

James Heiser

Successfully completed the course entitled

8-Hour Hazardous Worker/Supervisor Waste Operations Emergency Response Annual Refresher as per OSHA 29 CFR 1910.120 on December 3, 2010

Expiration Date on December 3, 2011

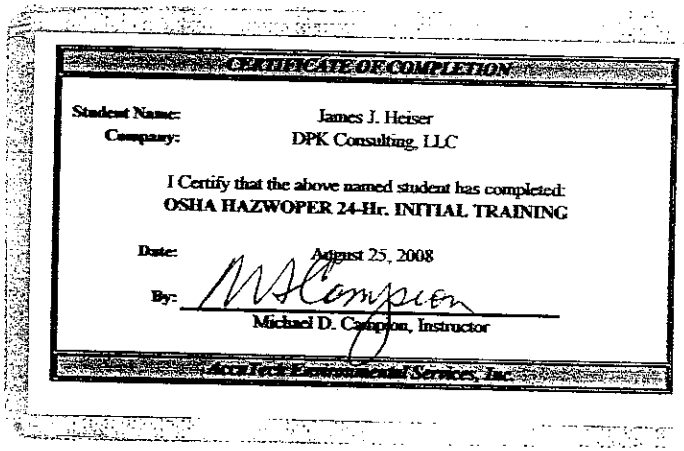
Doris L. Adler
President, NAETI

Language: English

ABIH 1 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712 Phone (732) 531-5571 Fax (732) 531-5956 www.naeti.com

LITHO. IN U.S.A.



CERTIFICATE OF COMPLETION

Student Name: James J. Heiser
Company: DPK Consulting, LLC

I Certify that the above named student has completed:
OSHA HAZWOPER 24-Hr. INITIAL TRAINING

Date: August 25, 2008

By: _____
Michael D. Campion, Instructor

AccuTech Environmental Services, Inc.

CERTIFICATE OF TRAINING

This is to certify that

James Neumann

has successfully completed a course in the requirements for the:

LPS Initial 8-hour Training

ARCADIS
Infrastructure, environment, facilities

Patricia Vollertsen

Instructor

October 9, 2008

Date of Completion

Loss Prevention System Training Certification

James Neumann / Summit Drilling Co., Inc.

Trainee Name / Company

Denis Crayon/Summit Drilling Co., Inc./12-1-10

Trainer Name / Company / Training Date

- [ ] LPS Train-the-Trainer
- [ ] LPS Full Training
- [ ] LPS Condensed Training
- [ ] LPS Awareness Training
- [X] LPS Refresher Training

SHE

GLOBAL REAL ESTATE & FACILITIES
SAFETY, HEALTH & ENVIRONMENT

31473

National Asbestos & Environmental Training Institute

CERTIFICATE OF COMPLETION

This is to certify that

James Neumann

Successfully completed the course entitled

8-Hour Hazardous Worker/Supervisor Waste Operations Emergency Response Annual Refresher as per OSHA 29 CFR 1910.120 on December 3, 2010

Expiration Date on December 3, 2011

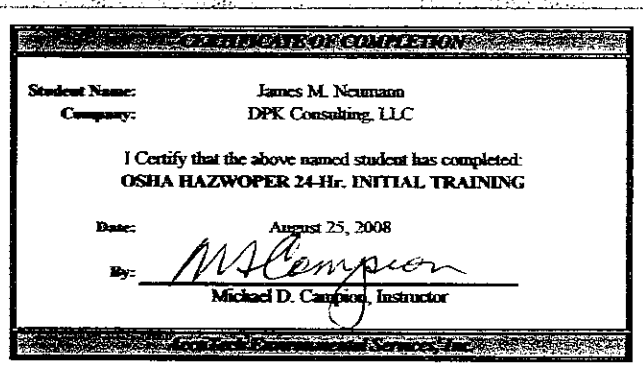
Doris L. Adler
President, NAETI

Language: English

ABIH 1 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712 Phone (732) 531-5571 Fax (732) 531-5956 www.naeti.com

LITHO. IN U.S.A.



CERTIFICATE OF COMPLETION

Student Name: James M. Neumann
Company: DPK Consulting, LLC

I Certify that the above named student has completed:
OSHA HAZWOPER 24-Hr. INITIAL TRAINING

Date: August 25, 2008

By: M D Campion
Michael D. Campion, Instructor

CERTIFICATE OF TRAINING

This is to certify that

Kenneth DeLuca

has successfully completed a course in the requirements for the:

LPS Initial 8-hour Training

ARCADIS
Infrastructure, environment, facilities

Patricia Vollertsen
Instructor

October 9, 2008
Date of Completion

31471

National Asbestos & Environmental Training Institute

CERTIFICATE OF COMPLETION

This is to certify that

Ken DeLuca

Successfully completed the course entitled

8-Hour Hazardous Worker/Supervisor Waste Operations Emergency Response Annual Refresher as per OSHA 29 CFR 1910.120 on December 3, 2010

Expiration Date on December 3, 2011

Doris L. Adler
President, NAETI

Language: English

ABIH 1 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712 Phone (732) 531-5571 Fax (732) 531-5956 www.naeti.com

LITHO. IN U.S.A.

Certificate of Completion

this is to certify that

KENNETH DeLUCA

has successfully completed the

Chemical Waste Management, Inc.

Safety Training Program on

40 HOURS BASIC SAFETY TRAINING
IN ACCORDANCE WITH OSHA 29 CFR 1910.120

on this 16TH day of NOVEMBER, 1990

Instructor

General Manager

Jamison

HERBERT L. JAMISON & CO., L.L.C.
D/B/A IN CA & IL as
HERBERT L. JAMISON & CO. INSURANCE SERVICES, L.L.C.

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June 24, 2011

Ms. Judi Skalak
DPK Consulting, LLC
147 Union Avenue
Middlesex, NJ 08846

RE: DPK Consulting, LLC
2011 – 2012 Experience Modification Rating

Dear Judi:

On January 13, 2011, the New Jersey Compensation Rating and Inspection Bureau issued your Experience Modification Rating for the 2011-2012 policy term at 1.098%.

Please feel free to contact me with any questions or concerns.

Sincerely,
Herbert L. Jamison & Co., LLC

Kevin Sayle
Account Executive

CC: Diane Barreiro
Vice President

Attachment 4

Ocean Surveys, Inc.

OCEAN SURVEYS, INC.

Specialists in Marine & Freshwater Site Surveys

129 MILL ROCK ROAD EAST
OLD SAYBROOK, CT 06475

CORPORATE PROFILE

OSI is a highly responsive physical oceanographic and geophysical surveying company staffed with scientists, engineers, and technicians having a broad range of experience working in both freshwater and marine environments. Company headquarters and OSI's Eastern Regional office are located in Old Saybrook, Connecticut. A Southeast area office is located in Metairie, LA, and a Midwest area office is located in Northbrook, IL.

Founded in 1965, OSI has successfully completed more than 3,000 site investigations in 37 states and 40 countries located throughout six continents. OSI annually conducts more than 150 hydrographic, high-resolution multi-sensor geophysical, oceanographic and sediment sampling projects supporting the marine design, coastal and professional engineering, environmental site assessment, marine archaeological and construction community worldwide. Our experience ranges from inland reservoirs and lakes to major rivers, bays and open water coastal environments.

Types of projects that OSI has supported include:

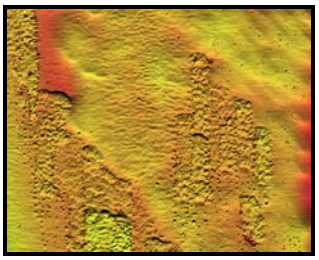
- Port and harbor development
- Charting navigable waterways
- Coastal engineering
- Wastewater treatment and disposal
- Power generation and distribution
- Submarine cable and pipeline routing
- Dredging and disposal
- Hazardous materials investigations
- Bridge design and inspection
- Reservoir safe yield analysis
- Archaeological investigations

OSI owns, operates, and maintains an extensive inventory of state-of-the-art electronic positioning, oceanographic, geophysical and a wide range of sediment sampling equipment for supporting domestic and worldwide field data acquisition activities. Subsequent data reduction and analytical efforts employ either dedicated in-house computer assisted processing or remote site work station processing systems for analysis of acquired data in the most cost-effective manner based upon individual project and client requirements.

OSI's integrated marine survey capability and over 40 years of domestic and international project experience, coupled with local knowledge and support from OSI area offices and our international affiliates located throughout the world, result in the provision of extremely cost-effective surveys for all our Clients.

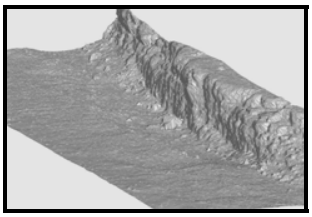
Hydrographic Surveys

Hydrographic surveys precisely measure water depth. OSI employs the following technologies for this purpose: DGPS · inertial navigation, automated navigation and data logging · single and dual-frequency depth sounding · multibeam sonar · towed sea sled profiling. Representative hydrographic services and capabilities include:



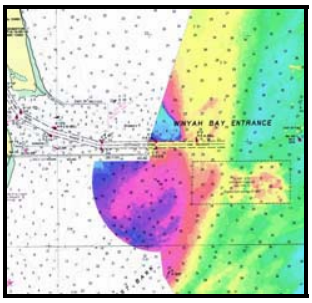
Pre- and Post-Dredge Surveys

Single beam or multibeam techniques can be used to monitor dredge activity related to contaminated sediment removal or channel and berth deepening. High-resolution mapping along with accurate horizontal and vertical references ensures that dredge design objectives are achieved.



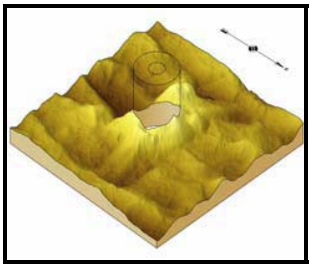
Breakwater and Seawall Inspection

Using high-resolution multibeam sonar techniques, inspection of structures including breakwaters, dam faces, and rock cut channels can be evaluated quickly and efficiently to identify problematic areas where structural failures have occurred or have a higher potential of occurring.



Charting

Mapping using single or multibeam echosounding, often coupled with side scan sonar techniques, is performed to characterize water bodies to provide safe navigation prior to other activities. Any clearance obstructions identified can be investigated in more detail using similar techniques coupled with video or diver inspection.



Scour Assessment

Multibeam coupled with inertial navigation equipment allows accurate data acquisition under bridges where DGPS signals are unreliable. Surface mapping generated using these data indicates areas of scour around critical support structures. Multiple mappings can provide insight into sediment movement under different flow conditions.

Ocean Surveys, Inc. · 129 Mill Rock Road E. · Old Saybrook, Connecticut 06475
phone 860-388-4631 · fax 860-388-5879
www.oceansurveys.com

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Site Assessment, Gamesa Wind Energy Project, Lower Chesapeake Bay, Offshore Cape Charles Harbor, VA	Multibeam Hydrographic, Side Scan Sonar, Magnetometer, Subbottom Profiling Surveys and Vibratory Coring	ESS Wellesley, MA	2011
Condition Survey, Coddington Cove, Naval Station Newport, Newport, RI	Multibeam Hydrographic Survey	Tetra Tech Wilmington, MA	2011
Reservoir Capacity, Safe Yield and Sedimentation Analysis, Appomattox River, Lake Chesdin, VA	Single-Beam Hydrographic Survey	Black & Veatch Virginia Beach, VA	2011
Pre-Construction Installation Surveys, Captree Island 35kV Cable Project, Great South Bay, Long Island, NY	Single-Beam Hydrographic and Magnetometer Survey and Jet Probing	Durocher Marine Cheboygan, MI	2011
Condition Survey and Diver Inspection, Lake Konomoc, New London County, CT	Multibeam Hydrographic and Underwater Diver/Video Survey	Arcadis, U.S., Inc. Middletown, CT	2011
Site Assessment, Former Portage Canal MGP site, Ripley, MI	Multibeam Hydrographic, Side Scan Sonar, Underwater Video Survey And Sediment Sampling	Haley & Aldrich Burlington, MA	2011
Pre- and Post-Blast Surveys, PPL Holtwood Forebay Floor & Skimmer Wall Structures, Holtwood, PA	Multibeam Hydrographic Surveys	Contract Drilling & Blasting, LLC Bayonne, NJ	2011
Debris Location, GSOE Clump Weight Site, Offshore Block Island, RI	Multibeam Hydrographic and Side Scan Sonar Survey	Deepwater Wind Hoboken, NJ	2011
Government Cut and Miami Main Channel Navigation Range Light Structures Design, Miami, FL	Single-Beam Hydrographic and Side Scan Sonar Survey	Appledore Marine Engineering Portsmouth, NH	2011
Pre-Construction Remediation Survey, Calumet River, WSW South Barge Slip, Chicago, IL	Multibeam Hydrographic and Side Scan Sonar Survey	Arcadis, U.S., Inc. Chicago, IL	2011
Post-Demolition Condition Survey, Susquehanna River, PPL Holtwood Dam Forebay Skimmer Wall Debris Field, PA	Multibeam Hydrographic Survey	Contract Drilling & Blasting, LLC Bayonne, NJ	2011
Dredge Borrow Area Investigation, Mississippi River Sediment Delivery System, Bayou Dupont (BA-39), near Myrtle Grove, LA	Multibeam Hydrographic, Subbottom Profiling and Vibratory Coring	Moffatt & Nichol Engineers New York, NY	2011
Condition Survey, Spectra Energy NY/NJ Expansion Project,Kill Van Kull (Bergen Point) and Arthur Kill Crossing, NY and NJ	Multibeam Hydrographic Survey (Kill Van Kull) and Magnetometer Survey (Arthur Kill)	J.D. Hair & Associates, Inc. Tulsa, OK	2011
Eastchester Extension Pipeline Expanded Corridor Annual Inspection, Y49/Y50 Monitoring Long Island Sound, Northport, NY	Multibeam Hydrographic and Side Scan Sonar Survey	Iroquois Gas Shelton, CT	2010-2011
Archaeological Survey, Bridge Replacement Project, Lake Quinsigamond, Worcester-Shrewsbury, MA	Single-Beam Hydrographic, Side Scan Sonar, Subbottom Profiling, and Magnetometer Surveys	Fathom Research New Bedford, MA	2010
Site Assessment, Indian Point Power Station, Hudson River, Budhanan, NY	Single-Beam Hydrographic and Subbottom Profiling Surveys, and Vibratory Coring	GZA GeoEnvironmental Providence, RI	2010
Condition Survey, USCG Academy Waterfront, Thames River, New London, CT	Single-Beam Hydrographic Survey	Appledore Marine Engineering Portsmouth, NH	2010

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Marine Survey Investigation, PHI Mid Atlantic Project, Chesapeake Bay and Choptank River Route, Calvert Cliffs to Vienna, MD	Multibeam Hydrographic, Side Scan Sonar, Subbottom Profiling and Marine Magnetometer Surveys	Entrix, Inc. New Castle, DE	2010
Condition Survey, Chicago Sanitary and Ship Canal, Romeoville, IL	Multibeam Hydrographic Survey	E.P. Doyle & Son, LLC Wheaton, IL	2010
Marine Survey Investigation, PHI Mid Atlantic Project, Nanticoke River Route, Vienna to Delaware State Line	Multibeam Hydrographic, Side Scan Sonar, Subbottom Profiling and Marine Magnetometer Surveys	Entrix, Inc. New Castle, DE	2010
Equipment Testing Program Connecticut River, Old Saybrook, CT	Single-Beam Hydrographic Survey	Arete Associates Arlington, VA	2010
Peace Bridge Scour Monitoring, Niagara River, Buffalo, NY	Multibeam Hydrographic Survey	Parsons Transportation Group of NY Buffalo, NY	2010
Shoreline Monitoring, Elm Road Generating Station, Oak Creek, WI	Single-Beam Hydrographic and Subbottom Profiling Survey	Baird Madison, WI	2010
Condition Survey, Spectra Energy NY/NJ Expansion Project,Kill Van Kull and Arthur Kill Crossing, Newark Bay, Newark, NJ	Single-Beam Hydrographic Survey	J.D. Hair & Associates, Inc. Tulsa, OK	2010
Condition Survey, Schoharie Reservoir, Gilboa, NY	Multibeam Hydrographic Survey	Hazen & Sawyer New York, NY	2010
Condition Survey, Spectra Energy NY/NJ Expansion Project, Hudson River Crossing NY and NJ	Multibeam and Single-Beam Hydrographic Survey	J.D. Hair & Associates, Inc. Tulsa, OK	2010
Cooling Pond Inspection LaSalle County Station, Marseilles, IL	Single-Beam Hydrographic Survey	Underwater Construction Stevensville, MI	2010
Alternate Landfall and Reroute Surveys, Champlain Power Express Project, Long Island Sound, NY and Bridgeport, CT	Multibeam Hydrographic, Side Scan Sonar, Subbottom Profiling, Magnetometer Surveys, Benthic Sampling and Vibratory Coring	TDI Toronto, Ontario	2010
Cable Monitoring, Long Island Sound Cable Replacement, Norwalk, CT to Northport, NY	Multibeam Hydrographic Survey	ESS Wellesley, MA	2010
Nautical Charting Support, Pensacola and Alabama Safety Fairways, FL	Multibeam Hydrographic and Side Scan Sonar Surveys	NOAA Silver Spring, MD	2010
Confirmation Surveys, Design Effort, Hudson River Dredging, Fort Edward, NY	Multibeam Hydrographic Surveys	Clilent Confidential	2010
Site Evaluation, Magnetic Measurement Range, Naval Submarine Base, Hood Canal, Bremerton, WA	Multibeam Hydrographic, Side Scan Sonar, Subbottom Profiling, and Magnetometer Surveys	Collins Engineers, Inc. Chicago, IL	2010
Characterize HAZMAT Capping, Penobscot River, Bangor, ME	Multibeam Hydrographic Survey	RMT, Inc. Madison, WI	2010
Marine Route Survey, Champlain Hudson Power Express Project, Long Island Sound, East River and Harlem River, NY and CT	Multibeam Hydrographic, Side Scan Sonar, Subbottom Profiling, Magnetometer Surveys, Benthic Sampling and Vibratory Coring	TDI Toronto, Ontario	2010
Nearshore Marine Survey Investigations , PHI Mid Atlantic Project, Chesapeake Bay and Choptank River Crossing, Cambridge, MD	Multibeam Hydrographic, Side Scan Sonar, Subbottom Profiling, and Magnetometer Surveys	Entrix, Inc. New Castle, DE	2010
Condition Survey, Bulkhead Replacement Project, Harlem River, New York, NY	Multibeam Hydrographic and Subbottom Profiling Survey	Parsons Brinckerhoff New York, NY	2010

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Three Mile Island Condition Survey, Susquehanna River, Middletown, PA	Multibeam Hydrographic Survey	Exelon Chicago, IL	2010
Condition Survey, Hub Island Pier Reconstruction Project, Berth Survey, Georges Island, Boston Harbor, MA	Multibeam Hydrographic Survey	VHB Williamsburg, VA	2010
Concrete Mats Survey, Long Island Sound Cable Replacement, Norwalk, CT	Multibeam Hydrographic Survey, Underwater Video and Benthic Biology Sampling	ESS Wellesley, MA	2009-2010
Post-Construction Installation Surveys, Cable Replacement Project, Long Island Sound, Manresa & Sheffield Islands, Norwalk, CT	Multibeam Hydrographic Survey and Hand Cores	ESS Wellesley, MA	2009-2010
Nautical Charting Support, Gulf of Mexico, Offshore Pensacola, FL	Multibeam Hydrographic and Side Scan Sonar Surveys	NOAA Silver Spring, MD	2009-2010
Site Assessment, Submarine Cable Route, Chesapeake Bay and Choptank River Crossing, Cambridge, MD	Multibeam Hydrographic, Subbottom Profiling, Side Scan Sonar and Magnetometer Surveys, Grab Sampling and Current Profiling	Entrix, Inc. New Castle, DE	2009
Site Characterization, Four Confined Aquatic Disposal (CAD) Cells, Hyannis Harbor, MA; Norwalk Harbor and Thames River, CT; and Providence River, RI	Multibeam Hydrographic Survey	AECOM Westford, MA	2009
Lakebed and Subsurface Geologic Mapping, Proposed Intake Tunnel, Donald C. Cook Nuclear Power Plant, Lake Michigan, Bridgeman, MI	Single-Beam Hydrographic, Side Scan Sonar, Seismic Reflection and Refraction Surveys	LimnoTech Ann Arbor, MI	2009
Pre-Dredge Condition Survey, Brayton Point Station, Fall River, Somerset, MA	Single-Beam Hydrographic Survey	Dominion Energy New England, Inc. Somerset, MA	2009
Design Data and Utility Location Search, Schuylkill River, Philadelphia, PA	Multibeam Hydrographic Suvey and Subbottom Profiling	Malcolm Pirnie, Inc. Middletown, CT	2009
Condition Survey of the mainline in support of the Iroquois LIS Crossing Pipeline Inspection, Long Island Sound, Milford, CT to Northport, NY	Multibeam Hydrographic, Side Scan Sonar and ROV Survey	Iroquois Gas Shelton, CT	2009
Wind Farm Development Site Assessment, Offshore the RI Coast and in an area around Block Island	Multibeam Hydrographic, Side Scan Sonar, Magnetometer and Subbottom Profiling Surveys	Client Confidential	2009
Marine Geophysical Survey and Archaeological Site Evaluation, Proposed Met Tower Installation, Atlantic Ocean, Offshore Atlantic City, NJ	Multibeam Hydrographic, Side Scan Sonar, Magnetometer and Subbottom Profiling Surveys	Client Confidential	2009
LIPA/Keyspan Abandoned and New Power Cables, Long Island Sound, Northport, NY	Multibeam Hydrographic Survey and Grab Sampling	ESS Wellesley, MA	2009
LI Sound sites New Haven, CT	Multibeam Hydrographic and Side Scan Sonar Survey	Cross Sound Cable Co. Westborough, MA	2009
USACE Hydraulic Flow Model Support, Mississippi River, Fort Jackson, LA	Single-Beam Hydrographic Survey	Michael Baker, Jr. Jackson, MS	2009
Site Remediation, Passaic River, Newark, NJ	Multibeam Hydrographic and Geophysical Survey	Tierra Solutions East Brunswick, NJ	2009
Annual Survey Eastchester Extension Long Island Sound, Northport, NY	Multibeam Hydrographic and Side Scan Sonar Survey	Iroquois Gas Shelton, CT	2009

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Identification of Possible Drag Features, Norwalk Harbor, Norwalk, CT	Multibeam Hydrographic Survey	Pramer Oyster Company, Inc. Wilton, CT	2009
Post-Dredge Condition Survey, Schiller Station Terminal Berth and North of Pier, Portsmouth, NH	Multibeam Hydrographic Survey	Public Service Company of NH Manchester, NH	2009
Condition Survey, Lake Montauk Harbor, NY	Single-Beam Hydrographic Survey	New York District U.S. Department of the Army	2009
Condition Survey, Flushing Bay and Creek, New York, NY	Single-Beam Hydrographic Survey	New York District U.S. Department of the Army	2009
Post-Dredge Condition Confirmation Magellan Terminals, New Haven Harbor, New Haven, CT	Multibeam Hydrographic Survey	Triton Environmental Guilford, CT	2009
Post-Dredge Condition Surveys and Volumes, Portsmouth Naval Shipyard, Seavey Island, Kittery, ME	Multibeam Hydrographic Survey and Subbottom Profiling	Watermark Environmental, Inc. Lowell, MA	2009
Nautical Charting Support, Atlantic Ocean, Offshore the Florida Coast, Miami, Port Everglades, and West Palm Beach, FL	Multibeam Hydrographic and Side Scan Sonar Surveys	NOAA Silver Spring, MD	2009
Newark Bay Confined Disposal Facility, Newark Bay, NJ	Multibeam Hydrographic Survey	Malcolm Pirnie, Inc. White Plains, NY	2009
Contaminated Sediments Remediation, Bakers Falls Tailrace, Hudson River, Hudson Falls, NY	Single-Beam Hydrographic Survey	GeoTrans, Inc. Schuylerville, NY	2009
Neptune LNG Deepwater Port, Massachusetts Bay, Gloucester, MA	Multibeam and Single-Beam Hydrographic, Side Scan Sonar and Magnetometer Surveys	Neptune LNG, LLC Houston, TX	2008-2009
Nautical Charting Support, Atlantic Ocean, Offshore Florida Coast, Miami, Port Everglades, and West Palm Beach	Multibeam Hydrographic and Side Scan Sonar Surveys	NOAA Silver Spring, MD	2008-2009
Pre- and Post-Dredge Condition Surveys, Rocky Hill-Glastonbury Ferry Terminals, Connecticut River, CT	Multibeam Hydrographic Surveys	Guerrera Construction, Inc. Oxford, CT	2008
Proposed Refuge Gateway Fishing Pier, Trenton Channel, Detroit River, MI	Single-Beam Hydrographic Survey	CDM Cambridge, MA	2008
Proposed Magnetic Measurement Range, Apra Harbor, Guam	Multibeam Hydrographic Survey, Subbottom Profiling, Side Scan Sonar and Magnetometer Surveys	EG&G Technical Services, Inc. Ijamsville, MD	2008
Dredge Plan Design, USCG Station Portland, ME	Single-Beam Hydrographic Survey	Appledore Marine Engineering Portsmouth, NH	2008
Pipeline Remediation Project, Eastchester Extension, Long Island Sound, NY	Multibeam Hydrographic Survey, and Navigation Services	Iroquois Gas Shelton, CT	2008
Drill Barge Monitoring, Eastchester Extension Pipeline, Throgs Neck Bridge, New York, NY	Multibeam Hydrographic Survey and Navigation Services	Iroquois Gas Shelton, CT	2008
Hydraulic Modeling Support, Pike Island and New Cumberland Dams, Ohio River, OH-WV	Single-Beam Hydrographic Survey and Current Measurements	Alden Research Laboratory, Inc. Holden, MA	2008
Condition Survey, Chicago River, Chicago, IL	Multibeam Hydrographic Survey	Gourdie-Fraser, Inc. Traverse City, MI	2008

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Equipment Testing Program Connecticut River, Old Saybrook, CT	Single-Beam Hydrographic Survey	Arete Associates Arlington, VA	2008
Keyspan/NU Cable Replacement Project Long Island Sound, Norwalk, CT	Multibeam Hydrographic Survey	Nexans Hauppauge, NY	2008
Condition Survey, Tarrytown Harbor, Tarrytown, NY	Single-Beam Hydrographic Survey	New York District U.S. Department of the Army	2008
Condition Survey, Raritan Bay Reaches, NJ Coast	Single-Beam Hydrographic Survey	New York District U.S. Department of the Army	2008
Condition Survey, Sequine Point to Outerbridge Crossing, NJ Coast	Single-Beam Hydrographic Survey	New York District U.S. Department of the Army	2008
Proposed Underwater Intake Siting Study, Design and Permitting, Hudson River, Haverstraw and Stoney Point, NY	Single-Beam Hydrographic Survey, Subbottom Profiling, Vibratory Coring, Jet Probing, Side Scan Sonar, Current Velocities and Water Quality Vertical Profiling	Black & Veatch Kansas City, MO	2008
Sixth Street Turning Basin Saginaw River, MI	Multibeam Hydrographic Survey	Environ Chicago, IL	2008
Cooling Pond Inspection LaSalle County Station, Marseilles, IL	Single-Beam Hydrographic Survey	Underwater Construction Stevensville, MI	2008
Condition Survey, Portsmouth Naval Shipyard, Berth Areas, Portsmouth, NH	Multibeam Hydrographic Survey	Appledore Marine Portsmouth, NH	2008
Condition Survey, Axel Carlson Reef, NJ Coast	Multibeam Hydrographic Survey	New York District U.S. Department of the Army	2008
Condition Survey, Burns Harbor, Indiana Harbor, Calumet Harbor and Calumet River, Chicago, IL	Multibeam Hydrographic Survey	Gourdie-Fraser, Inc. Traverse City, MI	2008
Slip Siting Assessment, Hounsfield Wind Farm, Proposed Underwater Cable Crossing, Lake Ontario, Galloo Island-Henderson, NY	Multibeam Hydrographic and Geophysical Survey and Vibratory Coring	ESS Wellesley, MA	2008
Liberty Natural Gas Deepwater Port, Raritan Bay to Offshore New Jersey Coast, NY/NJ	Multibeam Hydrographic, Geophysical and ROV Surveys and Vibratory Coring	Client Confidential	2008
PHI Mid-Atlantic Power Project, Potomac and Patuxent River Crossings, MD	Single-Beam Hydrographic, Side Scan Sonar and Magnetometer Surveys	Entrix, Inc. New Castle, DE	2008
Site Study, New Pier and Approach, Belize Harbor, Belize City, Belize	Subbottom and Single-Beam Hydrographic Survey	Belize Ports, Ltd. Belize City, Belize	2008
ADCP Investigation, Waukegan Station, Lake Michigan, Waukegan, IL	Single-Beam Hydrographic Survey Sediment Sampling and Current Velocity Monitoring	Natural Resources Technology, Inc. Pewaukee, WI	2008
Calais LNG, St. John's River Calais, ME	Multibeam Hydrographic, Geophysical, Oceanographic and Geotechnical Surveys	Confidential	2008
East River Manhatten, NY	Multibeam Hydrographic and Geophysical Survey	ENSR Westford, MA	2008
Condition Survey, Lower Fox River Menasha, WI	Single beam Hydrographic Survey	Gourdie Fraser Traverse City, MI	2008

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Pre- and Post-Construction Surveys, Hudson River, Poughkeepsie, NY	Multibeam Hydrographic Survey	Stamford Wrecking Stamford, CT	2008
Mapping, Chicago Sanitary and Ship Canal Romeoville, IL	Multibeam Hydrographic Survey	Bollinger, Lach & Associates Itasca, IL	2008
As-Built Location, Long Island Sound Northport, NY	Multibeam Hydrography and Side Scan Sonar Survey	Nexans Hauppauge, NY	2008
Pre- and Post-Directional Drill Surveys, New Haven Harbor, Mill River, New Haven, CT	Multibeam Hydrographic Survey	Middlesex Corporation Littleton, MA	2008
Pre- and Post-Dredge Surveys, Connecticut River, Middletown, CT	Multibeam Hydrographic Survey and Vibratory Coring	Middletown Power, LLC Middletown, CT	2008
Annual Survey Eastchester Extension Long Island Sound, Northport, NY	Multibeam Hydrographic and Side Scan Sonar Survey	Iroquois Gas Shelton, CT	2008
Condition Survey, Lake Montauk Montauk, NY	Single-Beam Hydrographic Survey	New York District U.S. Department of the Army	2008
Hudson River New York, NY	Hydrographic, Side Scan Sonar, Subbottom Profiling and Magnetometer Surveys	Client Confidential	2008
New York Harbor Brooklyn, NY	Hydrographic, Side Scan Sonar, Subbottom Profiling and Magnetometer Surveys	ESS Group Wellesley, MA	2008
Connecticut River West Springfield-Springfield, MA	Hydrographic, Side Scan Sonar, Subbottom Profiling and Magnetometer Surveys	Haley & Aldrich Boston, MA	2008
Smith Cove Waterford, CT	Hydrographic Survey	Town of Waterford Waterford, CT	2008
Calumet River Chicago, IL	Multibeam Hydrographic Survey	Chicago District US Army Corps of Engineers	2007
Contaminated site characterization Penobscot River, Bangor, ME	Multibeam and Single beam Hydrographic Surveys and ADCP	RMT Madison, WI	2007
Provide full bottom coverage of area Charleston, MA	Multibeam Hydrographic Survey	International Salt Company East Hampton, MA	2007
Reaches N, O and P, Tittabawassee River, Midland, MI	Multibeam and Single-Beam Hydrographic surveys and Hand Soundings	Client Confidential	2007
DTE Chicago Fuels Terminal Chicago, IL	Multibeam Hydrographic Survey	Calumet Transload Railroad Chicago, IL	2007
Site Investigation, Hudson River Newburgh, NY	Multibeam Hydrography, Side Scan Sonar and Magnetometer Surveys	Arcadis Syracuse, NY	2007
Condition survey, Barge Wharf, Portsmouth, NH	Multibeam Hydrographic Survey	Appledore Marine Portsmouth, NH	2007
Cable installation monitoring Norwalk, CT	Multibeam Hydrographic Survey, Side Scan Sonar and Benthic Studies	ESS Group Wellesley, MA	2007
Hydrodynamic Modeling Support Saginaw River, Saginaw, MI	Multibeam Hydrographic Survey	Client Confidential	2007
Construction Support Massachusetts Bay, MA	Multibeam Hydrography and ROV Survey	Spectra Waltham, MA	2007
Schoharie Reservoir Intake Siting	Geophysics and Multibeam Survey	Hazen and Sawyer	2007

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Gilboa, NY		New York, NY	
Mackinac Bridge St. Ignace, MI	Multibeam Hydrographic Survey	Collins Engineering Holland, MI	2007
New London Disposal Site Survey Long Island Sound, CT	Multibeam Hydrographic Survey	ENSR AECOM Westford, MA	2007
Bridge Scour Survey in the vicinity of Peace Bridge piers, Buffalo, NY	Multibeam Hydrographic Survey	Parsons Transportation Group Buffalo, NY	2007
Berth/Pier Inspection, Thule Air Base, Delong Pier, Thule, Greenland	Multibeam Hydrographic Survey	Appledore Marine Portsmouth, NH	2007
In Situ Current Measurements Taunton, MA	Multibeam/ADCP Survey	Gunderboom Scarborough, ME	2007
LI Sound sites New Haven, CT	Multibeam Hydrographic Survey	Cross Sound Cable Co. Westborough, MA	2007
East River sites Manhattan, NY	Multibeam Hydrographic Survey and Current Study	Gunderboom Scarborough, ME	2007
Route Survey Atlantic Ocean, New York, NY	Geophysical and Multibeam Hydrographic Survey	ASIG New York, NY	2007
Annual Survey Eastchester Extension IGTS Pipeline, Northport, NY to Hunts Point, NY	Multibeam Hydrographic Survey and Side Scan Sonar	Iroquois Gas Transmission System Shelton, CT	2007
Post Dredge Condition Everett, MA	Multibeam Hydrographic Survey	Sevenson Dredging Niagara Falls, NY	2007
Hereford Inlet and shoreline protection Inspection, Wildwood, NJ	Multibeam Hydrographic Survey	Philadelphia District US Army Corps of Engineers	2007
Hudson River Power Cable- Edgewater, NJ to Manhattan, NY Manhattan, NY	Multibeam Hydrographic and Geophysical Surveys	Caldwell Marine Int'l, LLC Farmingdale, NJ	2007
Norfolk Magnetic silencing facility Norfolk, VA	Multibeam Hydrographic Survey	Collins Engineering Savannah, GA	2007
Multibeam training for COE personnel Cape May, NJ	Multibeam Training	Philadelphia District US Army Corps of Engineers	2007
Schiller Station Terminal Post Dredge Condition Survey, Portsmouth, NH	Multibeam Hydrographic Survey	Prock Marine Rockland, ME	2007
Lovett Generating Station Tomkins Cove, NY	Multibeam Hydrographic Survey	Gunderboom Scarborough, ME	2007
Naval Station berths for USCG Newport, RI	Multibeam Hydrographic Survey	Appledore Marine Portsmouth, NH	2007
Beazer East Kobbers, Inc. plant Follansbee, WV	Multibeam Hydrographic Survey	Arcadis Annapolis, MD	2007
Becks Run Pump Station, Pittsburgh, PA	Single-Beam Hydrographic Survey	Gannett Fleming Harrisburg, PA	2007
Race Street Hazmat Site Baltimore, MD	Single-Beam Hydrographic Survey	CH2M Hill Houston, TX	2007

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Northern portions of SA7, Jersey City, NJ	Single-Beam Hydrographic Survey	Environ Emeryville, CA	2007
Single Beam Survey of USCG site, Hull, MA	Single-Beam Hydrographic Survey	Appledore Marine Portsmouth, NH	2007
Pre-Construction Condition Survey Hackensack River, Moonachie, NJ	Single-Beam Hydrographic Survey	Northeast Remsco Construction Farmingdale, NJ	2007 2007
Pre- and Post-construction Conditions, Smith Cove, Waterford, CT	Single-Beam Hydrographic Survey	Wright-Pierce Middletown, CT	2007
Pre-Construction Design Survey, Buffington Harbor Gaming Site, Gary, IN	Single beam hydrography and topographic Survey	Baird Madison, WI	2007
Hudson River PCB project Ft. Edwards To Troy, NY, Ft. Edwards, NY	Single-Beam Hydrographic Survey	GE Waterford, NY	2007
City of Elyfia Water Intake Study Lorain, OH	Hydrographic, Geophysical and Oceanographic Survey	Metcalf and Eddy, Inc. Cleveland, OH	2007
Pompton Lakes, Pompton Lake, NY	Single beam hydrography and oceanographic	Dupont Pompton Lakes, NJ	2007
Three Line Survey, joining with T Baker Smith, Waveland, MS	Single-Beam Hydrographic Survey	CDM Baton Rouge, LA	2007
Mattabassett Outfall Post Construction Survey, Cromwell, CT	Single-Beam Hydrographic Survey	Manafort Brothers Plainville, CT	2007
Condition Survey, Middletown Power LLC Connecticut River, Middletown, CT	Multibeam Hydrographic Survey	NRG Energy Middletown, CT	2006
Calcasieu Lock Drainage Study Cameron Parish, LA	Single-Beam Hydrographic Survey	Michael Baker Corporation Alexandria, VA	2006
Dundalk Marine Terminal Site Investigation Baltimore Harbor, Baltimore, MD	Hydrographic and Geophysical Surveys, Sediment Core Sampling	CH2M Hill Denver, CO	2006
Contaminated Sediments Remediation Hudson River, Glens Falls, NY	Multibeam Hydrographic Survey	General Electric Albany, NY	2006
V.C. Summer Nuclear Station Lake Monticello/Parr Reservoir Columbia, SC	Single-Beam Hydrographic Survey	Bechtel Frederick, MD	2006
Sixth Street and Ojibway Turning Basin Saginaw River, Saginaw, MI	Multibeam Hydrographic Survey	Environ Emeryville, CA	2006
Island End Site Island End River, Everett, MA	Multibeam Hydrographic Survey	Sevenson Environmental Services Niagara Falls, NY	2006
Reservoir Sediment Study Claytor Lake, Roanoke, VA	Multibeam Hydrographic and Subbottom Profiling Survey	American Electric Power Columbus, OH	2006
Airport Expansion Study Dutch Harbor, Unalaska, AK	Hydrographic Survey, Underwater TV, Grab Sampling	CH2M Hill Essex, CT	2006
Flagship Marina Pre-Dredge Survey Housatonic River, Milford, CT	Single-Beam Hydrographic Survey	Clarence Blair Associates New Haven, CT	2006
Site Investigation	Hydrographic and Side Scan Sonar Survey	Ocean and Coastal Consultants Trumbull, CT	2006
Channel Investigation Frog Mortar Creek, Rossville, MD	Hydrographic and Control Survey	Woolpert Dayton, OH	2006
BICC Cable Routing	Hydrographic and Side Scan Sonar	H2M	2006

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Hudson River, Yonkers, NY	Survey, Vibratory Coring	Melville, NY	
Condition Survey, Pfizer Fuel Dock Thames River, Groton, CT	Single-Beam Hydrographic Survey	Pfizer Groton, CT	2006
Annual Cooling Pond Inspection LaSalle County Station, Marseilles, IL	Single-Beam Hydrographic Survey	Underwater Construction Stevensville, MI	2006
MGP Investigation Cumberland Bay, Plattsburg, NY	Hydrographic Survey, Sediment Probing, Benthic Grab Sampling	GEI Consultants Glastonbury, CT	2006
Site Characterization James River, Richmond, VA	Hydrographic Survey, Vibratory Coring, ADCP Current Monitoring	Dupont Wilmington, DE	2006
Condition Survey Cheesequake Harbor, Clifton, NJ	Single-Beam Hydrographic Survey	New York District U.S. Army Corps of Engineers	2006
Dredge Borrow Area Ordnance Search Offshore Bethany Beach, NJ	Hydrographic, Side Scan Sonar and Magnetometer Survey, Vibratory Coring	Philadelphia District U.S. Army Corps of Engineers	2006
Horizontally Directional Drill Cable Route Survey Malden River, Malden, MA	Hydrographic Surveys, Vibratory Coring	Black & Veatch Kansas City, MO	2006
Container Terminal Study Shooter's Island, Staten Island, NY	Single-Beam Hydrographic Survey	DMJM Harris New York, NY	2006
Condition Survey Lake Montauk, Montauk, NY	Single-Beam Hydrographic Survey	New York District U.S. Army Corps of Engineers	2006
Connecticut Yankee Discharge Canal Connecticut River, Hadam Neck, CT	Hydrographic Survey, Sediment Core Sampling	Connecticut Yankee Hadam Neck, CT	2006
Post-Dredge Survey Portland Harbor, Portland, ME	Multibeam Hydrographic Survey	Portland Pipeline Company Portland, ME	2006
Motiva Terminal New Haven Harbor, New Haven, CT	Multibeam Hydrographic Survey	Triton Environmental North Haven, CT	2006
Hubline Armor Placement Massachusetts Bay, Great Island, MA	Multibeam Hydrographic Survey	Burnham Associates Salem, MA	2006
Northeast Utilities Replacement Cable Norwalk, CT	Hydrographic and Subbottom Profiling Survey, Sediment Probing	ESS Wellesley, MA	2005
Bulkhead Collapse Mapping Kill Van Kull, Bayonne, NJ	Multibeam Hydrographic Survey	Ocean & Coastal Consultants Trumbull, CT	2005
Tappan Zee Bridge Replacement Study Hudson River, Tarrytown, NY	Multibeam and Single-Beam Hydrographic Survey	Earth Tech New York, NY	2005
GE Silicones Site Investigation Hudson River, Waterford, NY	Hydrographic and Geophysical Survey, ADCP, Sediment Coring	Blasland Bouck & Lee Syracuse, NY	2005
Gowanus Canal Site Characterization Brooklyn, NY	Hydrographic and Geophysical Survey, Vibratory Coring, UWTV	Keyspan Energy Brooklyn, NY	2005
Sprague Terminal Condition Survey Piscataqua River, Portsmouth, NH	Multibeam Hydrographic Survey	Appledore Engineering Portsmouth, NH	2005
Reservoir Sedimentation Study Smith Mountain & Leesville Lake Pittsville, VA	Multibeam Hydrographic and Geophysical Survey	American Electric Power Columbus, OH	2005

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Remedial Investigation Newark Bay, Newark, NJ	Hydrographic and Subbottom Survey, Sediment Core Sampling	Tierra Solutions East Brunswick, NJ	2005
Arkema Site Investigation Detroit River	Hydrographic and Geophysical Surveys	Conestoga-Rover Niagara Falls, NY	2005
Contaminated Sediments Remediation Hackensack River, Jersey City, NJ	Hydrographic and Geophysical Surveys, Vibratory Coring	Environ Emeryville, CA	2005
Three Mile Island Condition Survey Susquehanna River, York Haven, PA	Single-Beam Hydrographic Survey	AmerGen Energy Kennett Square, PA	2005
Hydroelectric Project Site Investigation Susquehanna River, Holtwood, PA	Hydrographic Survey and ADCP	Kleinschmidt Essex, CT	2005
BASF-Firestone Steel-MC Sites Detroit River, Detroit, MI	Hydrographic and Side Scan Sonar Survey	Blasland Bouck & Lee Syracuse, NY	2005
Contaminated Sediments Remediation Hackensack River, Jersey City, NJ	Hydrographic and Side Scan Sonar Survey	Blasland Bouck & Lee Syracuse, NY	2005
Inlet Jetty Scour Mapping Indian River Inlet, Indian Beach, DE	Multibeam and Single-Beam Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	2005
Breakwater Inspection Lewes, DE	Multibeam Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	2004
Hubline Seafloor Restoration Massachusetts Bay, Salem to Weymouth, MA	Multibeam Hydrographic Survey	Burnham Associates Salem, MA	2004
Mid Bay Project Chesapeake Bay, Barren Island, VA	Hydrographic Survey	PBSJ (for Baltimore District, USACE) Atlanta, GA	2004
Lovett Station Fish Screen Tompkins Cove, NY	Multibeam Hydrographic Survey	Gunderboom Anchorage, AK	2004
USCG Stations, Grand Isle, VA, Venice, LA	Hydrographic and Side Scan Sonar Survey	Casbarian Engineering, LLC New Orleans, LA	2004
Condition Survey, Middletown Generating Station, Middletown, CT	Hydrographic Survey	NRG Energy Middletown, CT	2004
Condition Survey, Brayton Point Station, MA	Hydrographic Survey	NEG&T Fall River, MA	2004
Power Cable Reburial, New Haven Harbor, New Haven, CT	Vessel Navigation and Hydrographic Survey	Cross Sound Cable Company Westborough, MA	2004
Beach Replenishment, Lake Michigan, Allegan, MI	Hydrographic and Topographic	Detroit District U.S. Army Corps of Engineers	2004
Pre-Dredge Survey, Seabrook, NH	Hydrographic Survey	Appledore Engineering Portsmouth, NH	2004
Pipeline Monitoring, Long Island Sound	Multibeam Hydrographic and Geophysical Surveys	Iroquois Gas Shelton, CT	2004
Brooklyn Bridge Park, East River, Brooklyn, NY	Multibeam Hydrographic Survey	DMJM Harris New York, NY	2004
Schiller Station Terminal Berth, Portsmouth, NH	Multibeam Hydrographic Survey	Appledore Engineering Portsmouth, NH	2004
Replacement Railroad Bridge, Niantic River Niantic, CT	Hydrographic and Side Scan Sonar Survey	Diversified Technology Corp. North Haven, CT	2004

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Beach Replenishment, Stone Harbor, Ocean City, Atlantic City, Cape May, Sea Isle, Long Beach Island, NJ	Hydrographic and Topographic Beach Profiling Surveys	Philadelphia District U.S. Army Corps of Engineers	2004
Inlet Condition Surveys, Barnegat Inlet, Corson's Inlet, Indian River Inlet, NJ	Multibeam Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	2004
Condition Survey, Lovett Station, Tompkins Cove, NY	Multibeam Hydrographic Survey	Gunderboom Portland, ME	2004
Post-Dredge Survey, East Haven, CT	Hydrographic Survey	Triton Environmental North Haven, CT	2004
Pipeline and Cable Monitoring, Long Island Sound	Multibeam Hydrographic Survey	Con Edison New York, NY	2004
Pre- and Post-Dredge Surveys, Barrington River, Barrington, RI	Hydrographic Survey	Shire Corporation Providence, RI	2004
Condition Survey, Bath Iron Works, Kennebeck, ME	Hydrographic Survey	Bath Iron Works Bath, ME	2004
Marsh Condition Surveys, Lake Ontario, NY	Hydrographic Surveys	Detroit District U.S. Army Corps of Engineers	2004
Jamestown Bridge, Narragansett Bay, RI	Multibeam Hydrographic Survey	Conusub Newport, RI	2004
Dredge Monitoring in Discharge Canal, Haddam, CT	Periodic Hydrographic Surveys	Connecticut Yankee Haddam, CT	2003
Berth and Channel, Pre- and Post-Dredge	Multibeam Hydrographic Surveys	Portland Pipeline Portland, ME	2003
Harbor Condition Evaluation, Bridgeport Harbor and Tributaries	Hydrographic Surveys	New England District U.S. Army Corps of Engineers	2003
Dredge Disposal Site, New Haven, CT	Hydrographic Survey and Sediment Profile Imagery	ENSR Westford, MA	2003
Fish Barrier Installation, Chicago Sanitary Canal, Chicago, IL	Multibeam Hydrographic Survey	Bollinger, Lach & Associates Oak Brook, IL	2003
Beach Renourishment, Michigan City, MI	Hydrographic and Geophysical Surveys	Detroit District U.S. Army Corps of Engineers	2003
Lake Michigan Water Intake Siting, Chicago, IL	Hydrographic, Side Scan Sonar and Underwater TV Surveys	MWH Americas Chicago, IL	2003
Breakwater Inspection, Montrose Harbor, Chicago, IL	Multibeam Hydrographic Survey and ROV Inspection	Chicago District U.S. Army Corps of Engineers	2003
Detroit River Shoreline Rehabilitation, Detroit, MI	Hydrographic Survey	Detroit District U.S. Army Corps of Engineers	2003
Hydrodynamic Modeling Input, St. Mary's River and Lake George, MI	Hydrographic Surveys	Detroit District U.S. Army Corps of Engineers	2003
Locks, Mohawk River, Amsterdam, NY	Hydrographic Survey	Blasland, Bouck & Lee Syracuse, NY	2003
Pier Condition, Thames River, Groton, CT	Multibeam Hydrographic Survey	General Dynamics Groton, CT	2003
Contaminated Site Investigation, Silver Lake, Pittsfield, MA	Hydrographic Survey	Blasland, Bouck & Lee Syracuse, NY	2003
Submarine Cable Routing, Hudson River	Hydrographic and Side Scan	DMJM Harris	2003

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
	Sonar Surveys	Iselin, NJ	
Shipping Berth Evaluation, Gloucester, MA	Hydrographic and Side Scan Sonar Surveys	Americold Logistics Gloucester, MA	2003
Moses Wheeler Bridge, Stratford, CT	Hydrographic Survey	AI Engineering Middletown, CT	2003
Beach Replenishment, Onslow Bay, NC Sand Borrow Site	Hydrographic and Geophysical Surveys	Greenhorne & O'Mara Raleigh, NC	2003
US Coast Guard Station, New London, CT	Hydrographic and Topographic Surveys; Vibratory Coring	Appledore Engineering Portsmouth, NH	2003
Submarine Pipeline Support, Long Island Sound, CT	Multibeam Hydrographic and Side Scan Sonar Surveys	Iroquois Gas Shelton, CT	2003
Submarine Cable Routing, Hudson River, NY	Hydrographic and Marine Geophysical Surveys	ESS Wellesley, MA	2003
Navigation Range Light Structure, Delaware River, DE	Multibeam Hydrographic and Side Scan Sonar Surveys	Moffatt and Nichol Engineers Raleigh, NC	2003
Post Construction Condition Survey Windsor Tunnel, US-Canada	Hydrographic Survey	Parsons Brinckerhoff Detroit, MI	2002
Breakwater Inspection Burns Harbor, Gary, IN	Multibeam Hydrographic and Topographic Surveys	Chicago District U.S. Army Corps of Engineers	2002
Condition Survey St. Mary's River Sault Ste. Marie, MI	Hydrographic Survey	Detroit District U.S. Army Corps of Engineers	2002
Nautical Charting Pamlico Sound, NC	Hydrographic and Side Scan Sonar Surveys	NOAA Rockville, MD	2002
Condition Survey Salem Harbor & Brayton Station, MA	Hydrographic Survey	PG&E Brayton Point Foxboro, MA	2002
Lovett Generation Station Tompkin Cove, NY	Multibeam Hydrographic Surveys	PN&D Engineering Anchorage, AK	2002
Bowline Pond West Haverstraw, NY	Multibeam and Side Scan Sonar Surveys	PN&D Engineering Anchorage, AK	2002
Capacity Survey Lago Garzas Reservoir Adjuntas, Puerto Rico	Hydrographic Survey	GeoCim Hato Rey, PR	2001
Offshore Disposal Site Condition Survey Beaufort, NC	Hydrographic Survey	Wilmington District U.S. Army Corps of Engineers	2001
Offshore Hydrographic and Beach Profiling Milwaukee to Kewanee, WI	Hydrographic and Beach Profiling Surveys	Gordie Fraser Traverse City, MI	2001
Remedial Investigation Troy, NY	Hydrographic Survey	Blasland, Bouck & Lee Syracuse, NY	2001
Drydock Basin Bath, ME	Hydrographic Survey	Bath Iron Works Bath, ME	2001
Remedial Investigation Thompson Island Pool Hudson River, Fort Edwards, NY	Hydrographic Survey	QEA Syracuse, NY	2001
Breakwater Inspection Lake Champlain	Multibeam Hydrographic Survey	Parsons Brinckerhoff New York, NY	2001

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Plattsburg, NY			
Pre- and Post-Construction Inspection East Chester Creek, Bronx, NY	Hydrographic Survey	John C. Picone Lawrence, NY	2001 & 2002
Submarine Cable Route Survey Rinman Canal, Cape Ann, MA	Hydrographic Survey	Haley & Aldrich Boston, MA	2001
Shoreline Landscaping Detroit River, Detroit, MI	Hydrographic Survey	Smith Group Ann Arbor, MI	2001
Condition Surveys Portsmouth Naval Shipyard Portsmouth, NH	Hydrographic Survey	Tetra Tech Pittsburg, PA	2001
Beach Profiling Six Coastal Michigan Sites	Hydrographic Survey	Detroit District U.S. Army Corps of Engineers	2001
Quarry Inspection Old Stone Quarry Sturgeon Bay, WI	Hydrographic and Side Scan Sonar Survey	Detroit District U.S. Army Corps of Engineers	2001
Canal Side Wall Inspection Chicago Shipping and Sanitary Canal Chicago, IL	Multibeam Hydrographic Survey	Rock Island District U.S. Army Corps of Engineers	2001
Condition Survey Jones Inlet, Long Island, NY	Hydrographic Survey	Parsons Brinckerhoff New York, NY	2001
Post Dredge Survey Bath Iron Works, Bath, ME	Hydrographic Survey	Atkinson Construction Bath, ME	2000
Beach Circulation Study Rochester, NY	Hydrographic Survey	URS Corporation Buffalo, NY	2000
Bridge Pier Scour Investigation Mackinac Bridge Straits of Mackinac, MI	Multibeam Hydrographic Survey	Mackinac Bridge Authority St. Ignace, MI	2000
Condition Survey Detroit & St. Mary's River, MI	Multibeam Hydrographic Survey	Detroit District U.S. Army Corps of Engineers	2000
Safe Yield Analysis Seven Reservoirs Leominster Water Supply, MA	Hydrographic Surveys	Maguire Group Foxboro, MA	2000
Coney Island WPCP Sludge Dock Brooklyn, NY	Hydrographic Survey	Hazen & Sawyer New York, NY	2000
Sedimentation Study Smith Cove, Waterford, CT	Hydrographic Survey	Town of Waterford Waterford, CT	2000
Condition Surveys Poe Reef, Round Island and Grays Reef, MI	Hydrographic Survey	Detroit District U.S. Army Corps of Engineers	2000
Condition Survey Wisvest Plant, Bridgeport, CT	Hydrographic Survey	Triton Environmental North Haven, CT	2000
Grand St. Bridge Removal Bridgeport, CT	Hydrographic Survey	Mark IV Construction Bridgeport, CT	2000
Pre-Dredge Survey U.S. Navy Submarine Base, Pier 15	Hydrographic Survey	U.S. Navy Groton, CT	2000

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Chicago Lock Wing Wall Design Chicago, IL	Hydrographic Survey	CTE Engineers Chicago, IL	2000
Pre-Dredge Survey USCG Station, New London, CT	Multibeam Hydrographic Survey	Appledore Engineering Portsmouth, NY	2000
Peck Bridge Construction Bridgeport, CT	Multibeam Hydrographic Surveys	Balfour Beatty Bridgeport, CT	2000
Safe Yield Analysis Lake Chesdin, Petersburg, VA	Hydrographic Survey and Capacity Calculations	Appomattox River Water Authority Petersburg, VA	2000
Beach Profiling Kure Beach, NC	Hydrographic and Beach Profiling Surveys	Dames & Moore Charlotte, NC	2000
Beach Profiling Hattaras and Ocracoke, NC	Hydrographic and Beach Profiling Surveys	Wilmington District U.S. Army Corps of Engineers	2000
Breakwater Inspection Shinnecock Inlet, NY	Multibeam Hydrographic Survey	Parsons Brinckerhoff New York, NY	2000
Reservoir Safe Yield Analysis Rockwell, LaDue and East Branch Reservoirs, Akron, OH	Hydrographic Survey	City of Akron Akron, OH	2000
Transfer Station Condition Survey Arthur Kill, NJ	Hydrographic Survey	F. R. Harris New York, NY	2000
Remedial Investigation Paerdegat Basin Brooklyn, NY	Hydrographic Survey	Hazen & Sawyer New York, NY	2000
Post-Dredge Survey Winthrop, MA	Hydrographic Survey	Massachusetts DEM Hingham, MA	2000
Terminal & Groin Inspection Coney Island, Brooklyn, NY	Multibeam and Topographic Surveys	Parsons Brinckerhoff New York, NY	2000
Condition Survey Koontz Lake, Starks Co., IN	Hydrographic and Topographic Surveys	Detroit District U.S. Army Corps of Engineers	2000
Cooling Reservoir Condition Survey Ultimate Heat Sink Wolf Creek Station, KS	Hydrographic Survey	Sargent & Lundy Engineers Chicago, IL	2000
Cooling Reservoir Condition Survey Ultimate Heat Sink La Salle Station, IL	Hydrographic Survey	Commonwealth Edison Oakbrook, IL	2000
Sediment Transport Study Kitty Hawk, NC	Hydrographic Survey	Wilmington District U.S. Army Corps of Engineers	2000
Nautical Charting Winyah Bay, SC	Multibeam Hydrographic and Side Scan Sonar Surveys	NOAA Rockville, MD	2000
Borrow Area Survey Great Gull Bank Ocean City, MD	Hydrographic Survey	Ocean & Coastal Technologies, Inc. Chadds Ford, PA	1999
Offshore Beach Profiles Bald Head Beach & Brunswick Beach, NC	Hydrographic Surveys	Davis, Martin & Powell High Point, NC	1999
Pre-Dredge Survey New Haven Harbor, CT	Hydrographic Survey	Triton Environmental North Haven, CT	1999

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Chicago Shoreline Project Belmont & Diversey Harbors Chicago, IL	Multibeam Hydrographic and Side Scan Sonar Surveys	Chicago District U.S. Army Corps of Engineers	1999
Condition Survey Intracoastal Waterway, NC	Hydrographic Survey	Wilmington District US Army Corps of Engineers	1999
Breakwater Inspection Burns Harbor, Gary, IN	Multibeam Hydrographic Survey	Chicago District US Army Corps of Engineers	1999
Pre-Dredge Survey Oregon Inlet, NC	Hydrographic Survey	Wilmington District US Army Corps of Engineers	1999
Hydrologic Model Input Grand Calumet River Gary, IN	Hydrographic and Acoustic Acoustic Doppler Current Profiling Surveys	QEA Mahwah, NJ	1999
Navigation Condition Survey CT Yankee Discharge Canal Haddam, CT	Hydrographic and Side Scan Sonar Surveys	Bechtel Corp. Gaithersburg, MD	1999
Bridge Scour Investigation Newport, Jamestown and Mt. Hope Bridges, RI	Multibeam and Side Scan Sonar Surveys	Earth Tech Concord, NHY	1999
Condition Survey Chicago Harbor, IL	Hydrographic Survey	Chicago District US Army Corps of Engineers	1999
Chicago Shoreline Project Reach 2, Chicago, IL	Multibeam and Side Scan Sonar Surveys	Chicago District US Army Corps of Engineers	1999
Breakwater Inspection Burlington, VT	Multibeam Hydrographic Survey	Parsons Brinckerhoff New York, NY	1999
Condition Survey Pfizer Ferry Dock New London – Groton, CT	Hydrographic Survey	DiCesare Bentley Groton, CT	1999
Condition Survey Palmas Del Mar Resort	Hydrographic Survey	Palmas Del Mar Humacao, Puerto Rico	1999
Cooling Reservoir Capacity Survey La Salle Station, Marseilles, IL	Hydrographic Survey	Commonwealth Edison Oakbrook, IL	1999
Post Construction Survey Peck Bridge Bridgeport, CT	Multibeam Hydrographic Survey	Balfour Beatty Bridgeport, CT	1999
Post Dredge Inspection Mobil Terminal Chelsea River, Boston, MA	Multibeam Hydrographic and Side Scan Sonar Survey	Ocean & Coastal Consultants Trumbull, CT	1999
Pre-Dredge Survey Brayton Power Station Falls River, MA	Hydrographic Survey	US Generating New England Somerset, MA	1999
Offshore Beach Profiles Fort Fisher, NC	Hydrographic Survey	Wilmington District US Army Corps of Engineers	1999
Condition Survey Calumet Harbor Chicago, IL	Hydrographic Survey	Illinois International Port Authority Chicago, IL	1999

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
East China Water Plant St. Clair River, MI	Hydrographic Survey	Wade-Trim Detroit, MI	1998
Condition Survey, Calumet Harbor Chicago, IL	Multibeam Hydrographic Survey	Chicago District U.S. Army Corps of Engineers	1998
Pre-Dredge Hydrographic Surveys United Illuminating, New Haven, CT	Hydrographic Survey	Triton Environmental, Inc. New Haven, CT	1998
Post-Construction Inspection Detroit-Windsor Tunnel Detroit River, USA & Canada	Hydrographic Survey	Dean Construction Windsor, Ontario	1998
Replacement Outfall Design National Steel Outfall Detroit River, Detroit, MI	Hydrographic Survey	Lakeshore Engineering Detroit, MI	1998
Beach Profiling Fort Fisher, NC	Hydrographic and Topographic Surveys	Wilmington District U.S. Army Corps of Engineers	1998
Post-Dredge Survey, Peck Street Bridge, Bridgeport, CT	Hydrographic Survey	Balfour Beatty Bridgeport, CT	1998
Shoreline Reconstruction, Reach 4, Chicago, IL	Multibeam Hydrographic Survey	Chicago District U.S, Army Corps of Engineers	1998
Condition Survey, Boston Edison Plant, Weymouth Fore River, MA	Hydrographic Survey	Stone & Webster Boston, MA	1998
Breakwater Inspection, Eleven Sites, WI & MI	Multibeam Hydrographic Surveys	Detroit District U.S. Army Corps of Engineers	1998
Condition Survey, Waukegan Harbor, IL	Multibeam Hydrographic Survey	Chicago District U.S. Army Corps of Engineers	1998
Sedimentation Surveys, Four Reservoir Sites, El Salvador	Hydrographic Surveys	Harza International Chicago, IL	1998
Cooling Reservoir Capacity Survey, Braidwood Station, Will County, IL	Hydrographic Survey and Capacity Computations	Commonwealth Edison Oakbrook, IL	1998
Breakwater Design, Knife River, MN	Hydrographic Survey	Wade-Trim Detroit, MI	1998
Benthic Habitat Mapping, Fox River, Menasha-Green Bay, WI	Hydrographic and Side Scan Sonar Surveys	Exponent Waltham, MA	1998
Condition Surveys, Plymouth Harbor, MA	Hydrographic and Topographic Surveys	Massachusetts DEM Hingham, MA	1998
Model Calibration, Pews Creek, Monmouth, NJ	Hydrographic Survey and Tide Monitoring	URS Greiner Paramus, NJ	1998
Condition Survey, Longport Bridge, Great Egg Harbor Inlet, MD	Hydrographic Survey	Han Padron Associates New York, NY	1998
Port Development, Yabucoa Harbor, Puerto Rico	Hydrographic Survey	Martel Management Group Guaynabo, Puerto Rico	1997
Beach Profiling, Corson-Townsend Inlet, Ludlam Island, NJ	Towed Sea Sled, Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	1997
Intake and Discharge Site Survey United Illuminating, Bridgeport, CT	Hydrographic Survey	CH2M Hill Atlanta, GA	1997

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Condition Survey, Oak Point Transfer Station, Bronx, NY	Hydrographic Survey	Han Padron Associates New York, NY	1997
Pre- and Post-Dredge Surveys, Carraizo Reservoir, Puerto Rico	Hydrographic Survey	Black & Veatch Kansas City, MO	1997
Condition Survey, Intra Coastal Waterway, NC	Hydrographic Survey	Wilmington District U.S. Army Corps of Engineers	1997
Oak Bluffs Terminal, Martha's Vineyard, MA	Hydrographic and Side Scan Sonar Surveys	Steamship Authority Hyannis, MA	1997
Sedimentation Investigations John Kerr and Falls Lake Reservoirs, VA/NC	Hydrographic and Topographic Surveys	Wilmington District U.S. Army Corps of Engineers	1997
Beach Profiling, Indian River Inlet, DE	Towed Sea Sled, Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	1997
Beach Profiling, Ocean City & Cape May, NJ	Towed Sea Sled, Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	1997
Condition Survey, Ocean City, MD	Hydrographic Survey	Baltimore District U.S. Army Corps of Engineers	1997
Pre-Construction Survey, USCG Station Rockland, Rockland, ME	Hydrographic Survey	Woodward-Clyde Associates Gaithersburg, MD	1996
Pre-Dredge Survey, Hudson Asphalt, Providence, RI	Hydrographic Survey	Triton Environmental North Haven, CT	1996
Sedimentation Investigation, Loyalhanah Reservoir, PA	Hydrographic Survey	Pittsburgh District U.S. Army Corps of Engineers	1996
Beach Replenishment Profiling Cape May, NJ	Towed Sea Sled Hydrographic Survey	Gulf Coast Trailing Co. New Orleans, LA	1996
Condition Survey, USCG Station Woods Hole, MA	Hydrographic Survey	The Maguire Group Foxborough, MA	1996
Water Quality Investigations, Paerdegat Basin, Jamaica Bay, NY	Hydrographic Survey	Hazen & Sawyer New York, NY	1996
Condition Surveys, Five Berths, New Haven Harbor, CT	Hydrographic Survey	Triton Environmental North Haven, CT	1996
Breakwater Condition Surveys Manasquam Inlet, NJ	Multibeam Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	1996
Port Condition Survey, Ohio River, Weirton, West Virginia	Hydrographic Survey	Pittsburgh District U.S. Army Corps of Engineers	1996
Onshore and Offshore Beach Profiling, Barnegat Inlet, Cap May, Ocean City, NJ and Indian River, DE	Towed Sea Sled Hydrographic Survey	Philadelphia District U.S. Army Corps of Engineers	1996
Condition Surveys, Moriches Inlet	Hydrographic Survey	New York District U.S. Army Corps of Engineers	1996
Condition Surveys, Passaic and Hackensack Rivers	Hydrographic Survey	New York District U.S. Army Corps of Engineers	1996
Condition Surveys, Bay Ridge & Red Hook, Lower Harbor, NY	Hydrographic Survey	New York District U.S. Army Corps of Engineers	1996

Hydrographic Survey Experience

PROJECT/ LOCATION	SERVICES PROVIDED	CLIENT	DATE
Cogeneration Outfall Alignment, Wallabout Bay, Brooklyn, NY	Hydrographic Survey	Hazen & Sawyer New York, NY	1996
Ocean Outfall Design, Alexandria, Egypt	Hydrographic and Marine Geophysical Surveys, and Oceanographic Monitoring	Metcalf & Eddy Boston, MA	1996
Environmental Assessment, US Navy Submarine Base, Groton, CT	Hydrographic Survey	TAMS New York, NY	1995-1996
Bridge Inspection, NYSDOT Regions 10 & 11, New York	Hydrographic Survey	McLaren Engineers West Nyack, NY	1995-1996
Reservoir Safe Yield Analysis, Triadelphia, Rocky Gorge and Little Seneca Reservoirs, MD	Hydrographic Survey	Washington Suburban Sanitary Commission, Laurel, MD	1995-1996
Offshore Porofiles, Ocean City, MD	Hydrographic Survey	Baltimore District U.S. Army Corps of Engineers	1995
Post-Dredge Survey, USCG Academy, New London, CT	Hydrographic Survey	The Maguire Group of Connecticut New Britain, CT	1995
Inlet Condition Survey, Shinnecock Inlet, Long Island, NY	Hydrographic Survey	Moffatt & Nichol Baltimore, MD	1995
Condition Surveys, Various New York District Locations	Hydrographic Survey	New York District U.S. Army Corps of Engineers	1995
Beach Erosion Control, Elk Creek, PA	Hydrographic and Beach Profiling Surveys, and Grab Sampling	Black & Veatch Kansas City, MO	1995
Beach Replenishment Monitoring, Sea Bright, NJ	Hydrographic Survey	T. L. James New Orleans, LA	1995
Pre-Dredge Survey	Hydrographic Survey	Gulf Oil	1995
Condition Survey	Multibeam Hydrographic Survey	Chicago District U.S. Army Corps of Engineers	1995
Safe Yield Analysis, Cambridge Water Dept. Cambridge, MA	Hydrographic and Subbottom Profiling Surveys	Fugro East Northborough, MA	1995
Water Intake Design, Shenango River, Sharon, PA	Hydrographic Survey	Gannett-Fleming Harrisburg, PA	1995
Condition Surveys, Hutchinson River, NY	Hydrographic Survey	New York Bus Service Bronx, NY	1995

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Kill Van Kull, Bayonne, NJ, Phase II Sampling, Remedial Investigation	Vibratory coring	Cornerstone Environmental Middletown, NY	2011
Former Portage Canal MGP Site, Remedial investigation	Sediment sampling, multibeam hydrographic, side scan sonar and underwater video survey	Haley & Aldrich, Inc. Manchester, NH	2011
Calumet River, WSW South Barge Slip Study Area, Chicago, IL, Pre-construction remediation	Multibeam hydrographic and side scan sonar survey	Arcadis, U.S., Inc. Chicago, IL	2011
Delaware River, Florence, NJ Sediment remediation	Vibratory coring	AECOM Piscataway, NJ	2011
Gowanus Canal and Bay, Brooklyn, NY, Site remediation	Sediment grab and water sampling and multbeam survey	GEI Consultants, Inc. Glastonbury, CT	2010
Hudson River, Jersey City, NJ, Sediment characterization study	Vibratory coring	Arcadis U.S., Inc. Cranbury, NJ	2010
Arlington Channel, Turning Basin, USCG Station, Mobile, AL Pre-dredge site assessment	Vibratory coring	Arcadis, U.S., Inc. Highlands Ranch, CO	2010
Remote Pond, Clinton, MD, Site assessment	Piston core and grab sampling	Environ Arlington, VA	2010
Hudson River, BICC Cable Plant, Yonkers, NY, Contaminated sediment characterization study	Vibratory core sediment sampling, geophysics and oceanography	H2M Group Totowa, NJ	2008-2010
Seneca-Cayuga Canal, Dow Chemical Facility, Waterloo, NY, Sediment contamination delineation	Vibratory coring and sediment grab sampling	CH2M Hill Denver, CO	2010
Hudson River, Indian Point Nuclear Station, Buchanan, NY, Site remediation	Sediment sampling, hydrographic and subbottom profiling survey	GZA GeoEnvironmental, Inc. Providence, RI	2010
Long Island Sound, East River and Harlem River, NY and CT, Marine Route Survey, Champlain Hudson Power Express Project Site characterization	Vibratory coring, multibeam hydrographic, side scan sonar, subbottom proifiling and magnetometer surveys	TDI Toronto Ontario	2010
Seneca-Cayuga Canal, Waterloo, NY, Sediment contamination delineation	Vibratory coring and surficial sediment grab sampling	CH2M Hill Dayton, OH	2009
Eastchester Creek, Pelham Manor, NY, Remedial investigation	Jet probing and vibratory coring	Parsons Boston, MA	2009
East River, Williamsburg Works MGP, Brooklyn, NY, Remedial investigation	Vibratory coring	GEI Consultants Glastonbury, CT	2009
Delaware River, Chambers Works Site, Deepwater, NJ, Site remediation	Current profiling	DuPont Deepwater, NJ	2009
Lower Passaic River, NJ, Pre-design investigation	Vibratory coring	Tierra Solutions East Brunswick, NJ	2009
Passaic River, Lister Avenue Site, NJ, Removal action design studies	Vibratory core sediment sampling, multibeam hydrographic and geophysical surveys	Tierra Solutions East Brunswick, NJ	2009
Delaware River, Chambers Works Site, Deepwater, NJ, Site remediation	Sediment and groundwater sampling	DuPont Deepwater, NJ	2008-2009

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Hudson River, Quanta Resources Site, Edgewater, NJ, Remedial investigation	Grab sampling and current velocity mapping	CH2M Hill Philadelphia, PA	2008
East River, New York, NY, Contaminated sediment characterization study	Sediment sampling, vibratory coring and Gravity coring	ENSR Nyack, NY	2008
Hackensack River, NJ, Contaminated sediment remedial investigation	Vibratory coring and sediment sampling	Environ Princeton, NJ	2008
Stillman Pond, Bridgeport, CT, Environmental remediation investigation	Piston coring and vane shear testing	Environ Portland, ME	2008
Saginaw River, 6th Street Turning Basin, MI, contaminated sediment evaluation	Multibeam hydrographic survey	Environ Chicago, IL	2008
Kanawha River, Union Carbide Site, Charleston, WV, Contaminated sediment characterization study	Vibratory coring and grab sampling	CH2M Hill Milwaukee, WI	2008
Patapsco River, Baltimore, MD, Environmental remediation	Vibratory coring, grab sampling, water sampling, jet probing	CH2M Hill Boston, MA	2008
Newark Bay and Passaic River, NJ, Test sampling program, Sediment remediation	Vibratory coring	ENSR Westford, MA	2008
Hackensack River, NJ, Contaminated sediment remedial investigation	Tide monitoring	Environ Emeryville, CA	2008
Baltimore Harbor, MD, Dundalk Marine Terminal, Site characterization	Oceanographic data collection, sediment sampling, water sampling, vibratory coring	CH2M Hill Philadelphia, PA	2008-2007
Patapsco River, MD, Contaminated sediment site characterization	Single-beam hydrography	CH2M Hill Philadelphia, PA	2007
Tittabawassee River, Midland, MI, Contaminated sediment evaluation	Hydrographic survey	Environ Emeryville, CA	2007
Abandoned Mine (CERCLA) Brookville, ME	Vibratory coring	MacTec Portland, ME	2007
Delaware River, Gloucester City, DE, Site remediation	Vibratory coring	DuPont Deepwater, NJ	2007
Delaware River, Gloucester City, DE, Site remediation	Groundwater sampling	DuPont Deepwater, NJ	2007
Tittabawassee River, MI, Vibratory Coring Contaminated sediment evaluation	Vibratory coring	Environ Emeryville, CA	2007
Saginaw River, MI Hydrodynamic modeling support	Geophysical and hydrographic remote sensing	Environ Emeryville, CA	2007
Hackensack River, NJ, Sediment Remediation	Single-beam hydrography	Environ Emeryville, CA	2007
Penobscot River, Contaminated sediment remediation, Bangor, ME	Side scan sonar, single and multi-beam hydrography, tidal current measurement	RMT Madison, WI	2007
Lake Onandaga (CERCLA) sediment remediation, Syracuse, NY	Vibratory coring	Parsons Engineering Science Syracuse, NY	2007

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Lake Onandaga (CERCLA) remediation design, Syracuse, NY	Box coring	Parsons Engineering Science Syracuse, NY	2007
Pompton Lake, NJ, Contaminated sediment investigation	Vibratory coring	DuPont Pompton Lakes, NJ	2007
Pompton Lake, NJ, Hydrodynamic modeling support	Single-beam hydrography, ADCP currents, dye-tracer study	DuPont Pompton Lakes, NJ	2007
Newark Bay, NJ, Remedial investigation	Vibratory coring,	Tierra Solutions East Brunswick, NJ	2007
Hudson River, Fort Edwards to Troy, NY	Single-beam hydrography	General Electric Albany, NY	2007
Hudson River, NewBurgh, NY Site investigation	Multibeam hydrography, geophysical remote sensing	Arcadis Syracuse, NY	2007
Merrimac River, Manchester, NH Sediment Investigation	Subbbottom profiling, jet probing	Anchor Environemental	2007
Saginaw River, MI, Vibratory Coring Contaminated sediment evaluation	Vibratory coring, sediment profile imagery	Environ Emeryville, CA	2007
Baltimore Harbor, MD, Dundalk Marine Terminal, Site characterization	Marine geophysical and hydrographic surveys	CH2M Hill Philadelphia, PA	2006
Ashtabula River, OH, Contaminated sediment remediation	Vibratory coring	Battelle Columbus, OH	2006
Hackensack River, NJ, Contaminated sediment remedial investigation	Vibratory coring	Environ Emeryville, CA	2006
Grasse River, Massena, NY, Sediment capping	Multibeam hydrography	Blasland, Bouck & Lee Syracuse, NY	2006
Fox River, Green Bay, WI, Site characterization	Vibratory coring	HydroQual, Inc. Mahwah, NJ	2006
Onandaga Lake, Syracuse, NY, Site remediation	Vibratory coring	Parsons Syracuse, NY	2006
Hackensack River, NJ, Contaminated sediment remediation	Vibratory coring	Peninsular Group East Brunswick, NJ	2006
Delaware River, Gloucester City, DE, Site remediation	Geophysical survey and coring	Dupont Deepwater, NJ	2006
Silver Lake, Pittsfield, MA, Site Characterization	Multibeam hydrography	Blasland, Bouck & Lee Syracuse, NY	2006
James River, Richmond, VA, Contaminated sediment investigations	Current velocity monitoring and vibratory coring	Dupont Spruance, VA	2006
Hudson River, Fort Edwards to Troy, NY	High resolution acoustic subbottom profiling, side scan sonar mapping and sediment jet probes	General Electric Albany, NY	2002-2006
Hackensack River, Jersey City, NJ, Remedial investigation, contaminated sediments	Vibratory coring, hydraulic jet probing, peeper installation	HydroQual Mawwah, NJ	2005
Mining site contaminant sampling Brookville, ME	Vibratory coring	MacTec Portland, ME	2005
Gowanus Canal, Brooklyn, NY Remedial investigation/feasibility study	Marine geophysical and hydrographic surveys, coring, underwater TV	Keyspan Energy Brooklyn, NY	2005

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Newark Bay, NJ, Remedial investigation	Sediment profile imagery, hydrographic survey, coring	Tierra Solutions East Brunswick, NJ	2005
Lake Onondaga, Syracuse, NY, Remedial investigation	Vibratory coring	Parsons Liverpool, NY	2005
Detroit River, Riverside, MI, Contaminated sediment investigation	Multibeam hydrographic and geophysical surveys	Conestoga-Rover & Assoc. Plymouth, MI	2005
Newtown Creek, Brooklyn, NY, Resuspension and transport of contaminated sediments	Vibratory coring	Anchor Environmental Seattle, WA	2005
Lake Superior, Ashland, WI, Superfund site investigations	Current velocity and wave monitoring, grab sampling, turbidity measurements, underwater TV	URS Corporation Salem, NH	2005
Monogahela River, Fairmont, WV Remedial investigation, feasibility study, superfund site	Sediment sampling, current velocity and water quality monitoring	Tetra Tech Christiana, DE	2005
Detroit River, ME, chemical disposal area dredging	Hydrographic and side scan sonar surveys	Blasland, Bouck & Lee Annapolis, MD	2005
Hackensack River, NJ, Site characterization, contaminated sediments	Hydrographic and side scan sonar surveys	Blasland, Bouck & Lee Syracuse, NY	2005
Cayuga and Seneca Canals, NY, Contaminated sediment investigations	Vibratory coring and grab sampling	Malcolm Pirnie, Inc. Albany, NY	2005
Pompton Lake, NJ, Contaminated sediment investigation	Vibratory coring	DuPont Pompton Lakes, NJ	2004-2005
Welch Creek, Plymouth, NC, Pilot capping study	Geophysical surveys and vibratory coring	RMT, Inc. Madison, WI	2004
Newtown Creek, NY, Superfund site	Current velocity monitoring	Anchor Environmental Seattle, WA	2004
Contaminated riverine sediment cleanup, Confidential Site, NJ	Hydrographic, geophysical and oceanographic surveys; jet probing	Confidential	2003-2005
Fox River, WI, Contaminated sediment remediation	Acquisition of 900 vibratory cores of riverine sediments	CH2M Hill Milwaukee, WI	2003
Passaic River, NJ Sediment investigations	Vibratory coring	Tierra Solutions East Brunswick, NJ	2003
Anacostia River, Washington, DC, Navy Yard, Contaminated site investigation	Geophysical remote sensing survey and sediment profile imagery	Earth Resources Technology Jessup, MD	2003
Mohawk River, Schenechtady, NY, Environmental Impact Study	Hydrographic surveys and boat-mounted ADCP current velocity profiling	Earth Tech Portland, ME	2002
Hudson River, Mechanicsville, NY Coal tar site	Vibratory coring	URS Corporation Clifton Park, NY	2002
Salem Harbor, Salem, MA, MGP Site investigation	Vibratory coring	Hart Crowser Beverly, MA	2002
Hudson River, Hudson, NY, MGP Site investigation	Geophysical remote sensing and cable location surveys	Blasland Bouck & Lee Syracuse, NY	2002

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Grasse River, Massena, NY, Contaminated materials cap assessment	Current velocity monitoring, benthic sediment classification and hydrographic surveys	QEA Montale, NJ	2001-2002
Arco remediation, Hudson River, Hastings-on-the-Hudson, NY	Boat-mounted ADCP current velocity surveys and CTD-turbidity profiling	Earth Tech Albany, NY	2001
Harris Lake, Pontiac, MI	Vibratory coring and vane shear investigation	Blasland Bouck & Lee Syracuse, NY	2001
Hudson River, Troy, NY, PCB site investigation	Hydrographic surveys	Blasland Bouck & Lee Syracuse, NY	2001
Collins Cove, MGP plant, Salem, MA	Vibratory coring	Hart Crowser Beverly, MA	2001
Thompson Island Pool, Hudson River, Fort Edwards, NY	Hydrographic surveys	QEA Syracuse, NY	2001
Narragansett Bay, Bristol, RI, MGP study	Vibratory coring	Hart Crowser Beverly, MA	2001
Mississippi River, Burlington, IA, MGP study	Geophysical remote sensing survey and subbottom profiling	Black & Veatch Kansas City, MO	2001
Boston Harbor, Boston, MA, CAD cells	Vibratory coring	SAIC Newport, RI	2001
Hudson River, Haverstraw, NY, MGP study	Vibratory coring and probing	GEI Consultants Colchester, CT	2001
Grasse River, Massena, NY, Cap evaluation	Pre- and post-capping, side scan sonar and hydrographic surveys	Blasland Bouck & Lee Syracuse, NY	2001
Long Island Sound, USACE New London disposal site	Vibratory coring	SAIC Newport, RI	2001
Hudson River, Nyack, NY, MGP study	Vibratory coring and probing	Thermo-Retec Ithaca, NY	2001
Roanoke River, Plymouth, NC, Weyerhouser site	Vibratory coring and hydrographic surveys	RMT, Inc. Madison, WI	2001
Lake Michigan, Chicago, IL, Lincoln Park Gun Club	Vibratory coring	MW Harza Chicago, IL	2001
Narragansett Bay, Bristol, RI, MGP study	Vibratory coring	VHB Providence, RI	2000
Fox River, Green Bay, WI	Current monitoring, sediment sampling and turbidity monitoring	Limno-Tech Ann Arbor, MI	2002
Mystic River, Bosotn, MA, CAD cell cap evaluation	Geophysical surveys and vibratory coring	Great Lakes Dredge & Dock East Boston, MA	2000
Penobscot River, Bangor, ME, Coal gasification plant	Vibratory coring	RMT, Inc. Madison, WI	2000
Kalamazoo River, Kalamazoo, MI, PCB contamination	Geophysical remote sensing studies	Blasland Bouck & Lee Syracuse, NY	2000
Onondaga Lake, Syracuse, NY	Vibratory coring and vane shear investigation	Exponent Natick, MA	2000
Providence River, Providence, RI, CAD cell investigation	Vibratory coring	Battelle Ocean Sciences Duxbury, MA	2000

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Elizabeth Town Creek, Elizabeth, NJ, Contaminated sediment study	Vibratory coring	GEI Consultants Colchester, CT	2000
Delaware River, Delaware City, DE, Mohiva refinery site	Dye tracer study, side scan sonar mapping, and sediment grab sampling	Najarian Associates Eatontown, NJ	2000
Fox River, Green Bay, WI	Vibratory coring	Blasland Bouck & Lee Syracuse, NY	1999
Taunton River, Dighton, MA, Hazardous materials investigation	Vibratory coring	ENSR Acton, MA	1999
Fox River, Menasha-Green Bay, WI	Hydrographic and side scan sonar survey, and sediment grab sampling	Exponent Bellevue, WA	1998
Grass River, Massena, NY, Alcoa site	Marine geophysical investigtion and sediment sampling	Blasland Bouck & Lee Syracuse, NY	1998
Christina River, Wilmington, DE, Dupont superfund site	Vibratory coring	Black & Veatch Philadelphia, PA	1997
Central Hudson Gas & Electric Newburgh, NY	Coal tar sampling using vibratory corer	Blasland Bouck & Lee Syracuse, NY	1997
Troy Lock remedial investigation, Troy, NY	Vibratory coring	Foster Wheeler Livingston, NJ	1997
Christina River, Wilmington, DE	Vibratory coring	Dupont Wilmington, DE	1996
Passaic River, NJ, Remedial Investigation feasibility study	Vibratory coring, hydrographic survey and tide monitoring	Confidential	1995
Remedial investigation, feasibility study; Wilmington, DE	Hydrographic and geophysical surveys, and sediment sampling	Confidential	1995
Hazardous materials site reconnaissance; Upjohn Corp., North Haven facility	Vibratory and gravity coring, and jet probing requiring Level "B" PPE	Earth Tech Concord, MA	1994
BROS Lagoon, Bridgeport, NJ, Remedial investigation, feasibility study	Vibratory coring	Ebasco Lyndhurst, NJ	1994
GM site, Massena, NY, Remedial action pre-dredge investigation	Hydrographic survey and current monitoring	OHM Remediation Services Trenton, NJ	1994
Ford Motor Company, Monroe, MI, Remedial investigation, feasibility study	High resolution acoustic subbottom profiling and ground penetrating	Metcalf & Eddy Detroit, MI	1994
Remedial investigation, feasibility study; New Jersey project site	Hydrographic survey and vibratory coring	Confidential	1993
Determine extent of PCB contam-ination at various CT sites along the Housatonic River	Obtain sediment core samples at 6 sites by diving	Lawler, Matusky & Skelly Pearl River, NY	1992
Hudson River, NY, Remedial investigation, feasibility study	Side scan sonar and subbottom profiling surveys, and vibratory coring	TAMS Bloomfield, NJ	1991
Delaware River/Bay, DE, Pre-dredge environmental assessment	Vibratory coring	Louis Berger International East Orange, NJ	1991
Delaware River/Bay, DE, Pre-dredge environmental assessment	Vibratory coring	Buchart-Horn York, PA	1991
Merrimack River, MA, Hydrogeological study of landfill	Subbottom and hydrographic surveys	Dames & Moore Crannford, NJ	1991

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Environmental permitting, papermill contamination; Versailles Pond, CT	Vibratory coring	Malcolm Pirnie, Inc. White Plains, NY	1991
Quinnipiac River, New Haven, CT, Remedial investigation, feasibility study	Subbottom profiling survey	Richardson & Assoc. Raleigh, NC	1991
Superfund remedial action design, Cold Spring, NY	Hydrographic survey, vibratory coring, current velocity profiling	Malcolm Pirnie, Inc. White Plains, NY	1990
Hudson River, NY, Remedial investigation, feasibility study	Navigation services to position vibratory coring operations	O'Brien & Gere Engineers Syracuse, NY	1990
Tennessee River, Calvert, KY,; Hydrogeological site investigation	Subbottom profiling and hydrographic surveys	Dames & Moore Cranford, NJ	1990
Naval facility renovation; US Submarine Base, Groton, CT	Vibratory coring	Morrison Geotechnical Engineers Waterville, ME	1990
Naval facility renovation; Groton, CT	Vibratory coring	Morrison Geotechnical Engineers Waterville, ME	1989
Hazardous materials studies; Wilmington, DE	Vibratory coring	Duffield Associates Wilmington, DE	1989
Merrimack River, MA, Hydrogeological study of river side of landfill	Hydrographic survey	Dames & Moore Cranford, NJ	1989
Hazardous material study; Wilmington, DE	Vibratory coring	Duffield Associates Wilmington, DE	1989
Saginaw River and Saginaw Bay, MI, Hazardous waste dispersal study	Vibratory coring	HydroQual, Inc. Mahwah, NJ	1987
Schuykill River, Philadelphia, PA, Hazardous waste dispersal studies	Vibratory coring	Environmental Resources Management, Inc. West Chester, PA	1986
Lake Lapari, NJ, Superfund site investigation	Obtain sediment samples of the lake bottom by vibratory coring	Camp, Dresser & McKee Edison, NJ	1986
Determine extent of PCB contamination in the vicinity of several hydroelectric dam sites along the Housatonic River	Collect sediment cores at 8 sites	Lawler, Matusky & Skelly Pearl River, NY	1986
New Bedford Harbor, MA Superfund site investigation	Provide precision positioning services for geotechnical sampling	Woodward Clyde Consultants	1986
Housatonic River, CT, Determine Level of PCB contamination in sediments to be excavated for bridge foundation replacement.	Collect cores of river bottom sediments	Greiner Engineering Wallingford, CT	1986
Clean up and assessment of dioxin residues from former chemical plant on the Passaic River, NJ. Products included insecticides, 245T and agent orange.	Obtain vibratory cores thoughout affected area of the Passaic River	IT Corporation Carteret, NJ	1986
Dredge engineering and spoil dispersal planning for New Bedford Harbor, MA and the seaward approach channel	Bathymetric survey, vibratory core sampling, gravity core sampling and grab sampling of New Bedford Harbor and approach channel	Balsam Environmental Salem, NH	1986

Hazardous Material Site Studies

PROJECT	SERVICES PROVIDED	CLIENT	DATE
Determine PCB pollutant dispersal patterns in New Bedford Harbor and the approaches	Continuous monitoring of current velocities, water temperature and salinity in Buzzards Bay over a 5-month period	Battelle NE Marine Research Laboratory Duxbury, MA	1985
Hydroelectric power plants licensing, Mechanicville, NY and Bakers Falls, NY	Obtain vibratory core samples of the river bottom and dry land contiguous areas	Normandeau Assoc. Bedford, NH	1985
Ascertain extent of chemical pollutant dispersal in Upper Delaware Bay	Obtain 20 foot long continuous vibratory core samples of the bay floor for chemical analysis	Woodward-Clyde Consultants Wayne, NJ	1985
Evaluation of hazardous waste disposal sites near Burlington, NJ and design of remedial actions	Conduct detailed magnetic surveys to ascertain the presence of any metal containers in the sites	S. A. Alsup & Associates, Inc. Gloucester, MA	1985
Determine extent and concentrations of PCB contamination in dry land, marshland and river bottom areas	Bathymetric, subbottom and side scan sonar surveys of river bottom. Vibratory core samples of dry land, marshland and river bottom areas. Surficial samples of river and marshland areas	RMT, Inc. Madison, WI	1985

Survey Platforms

Ocean Surveys, Inc. (OSI) owns and maintains a fleet of over a dozen coastal survey vessels ranging in length from 15-45 feet and leases offshore vessels 80-200 feet in length as needed. A suitable survey platform takes into consideration a number of project factors including water depths, expected sea conditions, accommodations, survey systems, data acquisition needs, work schedule, and project time constraints.

Research Vessels

Ocean Surveys, Inc. · 129 Mill Rock Road E. · Old Saybrook, Connecticut 06475
phone 860-388-4631 · fax 860-388-5879
www.oceansurveys.com

Facilities and Equipment

OCEAN SURVEYS, INC.
Specialists in Marine & Freshwater Site Surveys

Headquarters: Old Saybrook, Connecticut

- 5.6-acre site
- 4 commercial buildings
- 35,000 square feet of office and shop space including calibration and electronics laboratories, drafting, and data processing center
- 48 Full-time staff

Survey Vessels

2	Zodiac hard bottom inflatable (10-16') with 35 HP outboard power
5	Aluminum boats (16') with up to 20 HP outboard power
1	Zodiac inflatables (19') each with canvas cuddy and 35 HP outboard power
2	Shallow draft (6") survey/sampling vessels (19-21')
8	Special survey vessels with enclosed cabin and twin outboard power (24-27')
2	Pontoon barges (28-32') for coring
1	Quad-hulled coastal coring vessel enclosed cabin with twin 150 HP O/Bs (37')
2	Lobster style with cabin, geophysical towing winches and coring frame (42')
1	Aluminum offshore survey vessel (61')

Hydrographic Equipment

1	Odom Hydrotrac
1	Odom Echotrac DF3200 MK II with Dual-Frequency Recording Capability
1	Odom Echotrac DF3200 MK III with Dual-Frequency Recording Capability
6	Innerspace Model 448 Digital Survey Depth Sounders
1	Reson SeaBat 9001 Multibeam Sounding System
2	Reson SeaBat 8125 Multibeam Sounding System
1	Reson SeaBat 7101 Multibeam Sounding System
3	Applanix POS/MV Inertial Reference System
3	TSS DMS-05 Heave/Pitch/Roll Position and Orientation System
2	TSS Meridian Gyrocompasses
2	Beach Profiling Sleds (14-43')

Tide Gauges

16	Coastal MicroTide Solid State Pressure Recording Tide Gauge
2	Hazen Telemetry Tide Gauge
2	OSI Paroscientific Precision Depth Recorder
1	Coastal MiniTide Paroscientific Precision Depth Sounder

Vessel Positioning Systems

6	Trimble MS-750 RTK GPS
8	Trimble 4000 RS & DS DGPS Receiver
8	Trimble 7400 RTK OTF GPS Receiver
1	Trimble 5700 RTK GPS Receiver
1	Trimble R7 GNSS Receiver
2	Laser Technology, Inc. "Hydro II" Range-Azimuth Vessel Positioning System
2	TrackLink 1500 USBL Acoustic Tracking System
3	Trimble DSM -212
1	Trimble DSM-232
3	Applanix POS MV Version 4

Automated Navigation and Data Logging Systems

26	HYPACK, Inc. “HYPACK” Data Acquisition System
1	Triton Isis Modular Data Acquisition System
10	Hewlett Packard Plotters usable with the above system
30	Laptop/notebook Pentium Data Logger/Work Station
14	HYPACK, Inc. “HYSWEEP” Data Acquisition System
2	OIC Sonar Collection/Processing Platform
10	KVH C100 Flux Gate Compass
2	TSS Meridian Surveyor Gyrocompass
4	KVH C1000 Flux Gate Compass

Side Scan Sonar Systems

2	Marine Sonic Technology Sea Scan PC
2	Benthos SIS 1500 digital Seafloor Mapping System
1	Klein 595 Dual-Channel Side Scan Sonar w/Slant Range and Speed Correction (dual-frequency)
2	Klein 3000 Dual-Frequency Side Scan Sonar
1	Klein 5000 Side Scan
2	OIC Sonar Collection/Processing Platform

Ground Penetrating Radar (GPR) Systems

1	GSSI SIR-10 Ground Penetrating Radar w/100, 200, 500, mHz Antenna
1	Mala Geoscience RAMAC Ground Penetrating Radar w/250 mHz Antenna

Subbottom Systems

1	Edge Tech 3200 Chirp System
5	EPC 1086 Printers
1	ORE Geopulse System
3	EdgeTech GeoStar Chirp Systems with 4-24 and 2-16 kHz Transducers
1	Raytheon RTT-1000 Dual-Frequency Depth Sounder/Subbottom Profiler
4	OSI 300 joule Boomer System
1	EG&G 500 joule Boomer System or larger
2	OSI 10k joule sparker System
1	EG&G Geometrics Strataview Marine Seismic Refraction System with Bolt Airgun
2	Octopus 760 Side Scan Sonar/Subbottom Processor

Magnetometers & Cable Detectors

1	Geometrics 881 Magnetometer
2	EG&G Geometrics 882 Microprocessor based Cesium Magnetometer
2	EG&G Geometrics 856 Proton Precession Magnetometer
1	OSI ST2000 Submarine Cable Detection System

Wave Gauges

3	Teledyne RD Instruments ADCP Directional Wave Gauge
1	Coastal MiniSpec Non-Directional Wave and Current Meter

ROV and Underwater Television

1 Deep Ocean Phantom HD 2+2 ROV w/Video Overlay, Laser Scale Altimeter
2 Simrad UWTV Systems with Sleds and Video Overlay
1 Lyyn 38 Video Enhancement System

Current Meters

12 Teledyne RD Instruments ADCP Current Profilers (300, 600 & 1200 kHz) Boat Mounted and In Situ
2 Sontek ADV Acoustic Doppler Velocimeter
15 Digicourse Acoustic Release
1 Aanderaa Acoustic Doppler Sensor 3500

Meteorological Equipment

1 Coastal Environment Weatherpak 2000

CTD Profilers

22 YSI UPG 6920 Multi-Parameter In Situ STD-DO-Turbidity-pH-ORP Monitor
9 YSI UPG 6000 Multi-Parameter In Situ STD-DO-Turbidity-pH-ORP Monitors
3 Sea-Bird Model SBE 19 "SeaCat" Profiler w/DO and pH
2 Sea-Bird SBE 19 Plus V2
3 Sea-Bird SBE 37
1 ODIM Brooke Ocean MVP30 Self-Contained Profiling System
40 HOBO U22 Water Temperature Sensor ProV2

Dye Study Equipment

3 Turner Fluorometers
1 Master Flex Parastalic Pump

Jet Probing

1 18 HP Hale Jet Pump
1 11 HP Hale Jet Pump
5 4 HP Honda Pump

Vibratory Corers

1 OSI Model 1500 Pneumatic Vibratory Corer-with Penetrometer, 3.5" Diameter Core to 40'
1 OSI Model 1400 Pneumatic Vibratory Corer-with Penetrometer, 3.5" Diameter Core to 40'
2 OSI Model 1200 Pneumatic Vibratory Corer with Penetrometer, 2.625" Diameter Core to 20'
1 OSI Model 1000 Pneumatic Vibratory Corer-with Penetrometer, 2.625" Diameter Core to 15'
5 OSI M-DRI 500 Gas Powered Vibratory Corer, 3” Diameter Core to 15’

Gravity Corers

1 Benthos Model 2171 Gravity Corer, 5' x 3" Diameter Barrel
1 Benthos Model 2172 Utility Piston Corer, 5' x 3" Diameter Barrel
1 Benthos Model 2175 Medium Weight Piston Corer, 10' x 3" Diameter Barrel
1 Phlegar ½”=$^{1}/_{8}$” Diameter Barrel
1 OSI Hand Piston Corer 6” ID
2 OSI Hand Piston Corers 3 5/8” Diameter Barrel

Samplers

1	Shipek Model 860, 8" x 8" Sample Area (1/25 sq. meter)
2	Van Veen Grab, 12" x 12" Sample Area (1/10 sq. meter)
1	Ekman box sampler 12" x 12" x 12"
1	Smith McIntyre Sampler
1	Ponar
1	Box Core
1	Pipe Dredge
1	Geonor H-70 Vane Shear
1	Geoprobe SP-15 Groundwater Sampler
10	5-34L Water Bottle (various makes)
1	OSI Peristaltic Pump Model M3000

Soil Testing Equipment

1	KEL Soil pH Tester
1	Oakton-Eutech Con II Soil Conductivity
1	Pocket Soil Penetrometer
1	Grain Size Analysis System

Office Equipment

50	PC Work Station
2	Hewlett Packard 1055CM Color Ink Jet Plotter
11	Hewlett Packard Color Ink Jet Printer

Software

3	Chesapeake Technology, Inc. SonarWiz.MAP
2	Intergraph MicroStation
1	Intergraph MicroStation InRoads Modules; SiteWorks and FieldWorks
3	Autodesk AutoCad Release
1	Quick Surf Digital Terrain Modeling
26	HYPACK
14	HYSWEEP
1	ESRI Arc GIS
1	Reflexw Seismic Processing Package
1	GeoDAS Side Scan Sonar Processing Package
1	CARIS HIPS/SIPS
1	Global Mapper
1	Triton ISIS Data Fusion
1	MATLAB

Vehicles

7	Ford E350 Cargo Van
1	Ford E450 Box Truck
1	Freight Liner Flat Bed
1	Ford F350 Flat Bed 4WD DRW
2	Ford F350 Pickup 4WD DRW

Attachment 5

Stuyvesant Environmental Contracting Inc.

To	From	Date
Whom it may concern	SECI	2011

Copy	Reference
-	-

Memo

Subject: Company and project information

-- CONFIDENTIAL AND BUSINESS PROPRIETARY --

Introduction

Stuyvesant Environmental Contracting (SECI) is an affiliated North American company of Boskalis Dolman, based in the Netherlands. SECI is an experienced contractor providing in-house design, installation and operation of contaminated sediment/soil management and processing equipment and facilities. Boskalis Dolman supports SECI with engineering and equipment services. Both companies are part of the Royal Boskalis Westminster Group of companies.

Together these companies have over 30 years of directly relevant experience in the management, treatment and beneficial use of contaminated sediments/soils in the United States of America, Canada, the Netherlands and many other European countries. Over these years the companies have treated a total quantity of more than 13 million tons of sediments and soils.

The aim of our soil- and sediment management technology is the reduction of the contaminated volume by beneficial reuse of separated sand and coarse material and the (mechanical) dewatering of the contaminated fine fraction. For this purpose our company designs, constructs and operates processing plants in as well mobile and fixed applications. These plants can both be used for the management and treatment of soils and sediments. Sediments can be loaded into the processing plant both from a hydraulic as well a mechanical dredging process. Further in this document there is a presentation of some of our experiences on recent projects in North America.

The basic principle of this process is the well-documented fact that contaminants are mostly adhered to the fine and organic particles in soil or sediment. This principle is valid for a wide range of contaminant types and can therefore be used in a large number of applications. For this reason our processing plants are designed to make a cut point between a fine, contaminated fraction (< 63 um) and various (supposed clean) fractions + 63 um. This soil washing plant is set-up in 3 general steps:

1) Pre-Conditioning
2) Sand Separation and Polishing
3) Mechanical Dewatering.

Certifications

SECI is certified according to the following standards:

- ISO 9001: 2008; Quality Management Systems
- ISO 14001: 2004; Environmental Management System
- OSHAS 08001: 2007; Occupational Health and Safety

Project References

Reference 1: Miami River 15 feet maintenance dredging project (2004 – 2008)
Located in Miami, Florida, the Miami River project is an example of a successful full scale, ex-situ sediment management project. The project included the dredging, processing, and disposal of sediments from a 5.5 mile stretch of the Miami River. The total volume dredged was approximately 720,000 cubic yards. The sediments were contaminated with low levels of primarily arsenic. The project was divided into 15 acceptance areas. Areas 1 through 6 where dredged in 2004/2005. The second phase of the project started in February 2008 and was completed in November 2008.

The operational responsibility of SECI on this project included the unloading of barges, and sediment separation and mechanical dewatering. Further, SECI was heavily involved in the project design during the pre-proposal and technical development phase of the project. The project was carried out in accordance with the proven integrated approach where the focus is on the entire “project chain” of dredging, processing and transport & disposal.

SECI’s work began with an intensive sediment pre-investigation. Based on the analysis of these samples, four basic sediment types where determined, varying in fine, solid and organic matter content and density.

Once the sediment types were characterized, equipment and system configurations were selected. Production rates of the dredge, the processing plant and the transport and disposal were designed to match each other. The overall project design production rate was 1,750 in-situ cubic yards per day, based on an operating schedule of 24 hours per day, seven days per week, with a plant efficiency (uptime) of greater than 80%.

Based on the sediment data, and required production rates, SECI mobilized one of the Mobile Separation & Dewatering Plants (MSDP). A detailed description of these plants is given in the MSDP section of this website. Each of these plants consists of three major process functions: (a) sediment pre-conditioning, (b) sand separation and (c) mechanical dewatering.

(*a) Sediment Pre-Conditioning*
Sediments were mechanically dredged with a precision hydraulic excavator (backhoe) dredge with mounted environmental bucket. Dredged sediments were transported by barge to the processing facility on a waterfront property along the river. Here sediments were offloaded with a mechanical excavator from the barges into the input hopper of the processing plant. A stationary grizzly screen on top of the input hopper removed the oversized fraction (>1 foot) from the sediments. Material <1 foot was placed in a rotary trommel screen where process water was added to slurry the sediments. In this rotary screen, materials between one inch and one foot were separated and stockpiled for further handling. Material smaller than one inch was pumped to the shaker screen where materials between one inch and 0.12 inch are separated.

(b) Sand Separation
Material passing the shaker screen (<0.12mm) was pumped to the sand separation unit. The hydrocyclones separate the sand (63µm – 0.12”) from the fines (<63 µm). The separated sand was deposited from the cyclones into the upflow classifier. This classifier washes out all the remaining fine and organic particles from the sand, ensuring a clean sand fraction. The washed sand is deposited on a sand dewatering screen and stockpiled. The separated fine and organic particles are collected from the

hydrocyclones and the upstream classifier in a slurry holding tank.

(c) Dewatering
Dewatering of the fines in the overflow of the hydrocyclone process were deposited in the slurry holding tank as the start of the dewatering process. The average density of the slurry mixture was measured on a continuous basis. From this tank, the slurry was pumped to the pre-thickener tank. Based on the flow to the pre-thickener tank and the density measurements, polymer demand was automatically calculated and adjusted. Polymer was injected in-line before the slurry entered the pre-thickener tank. The pre-thickener tank separated the sediments from the process water and increased the dry solids content to about 20%. From the pre-thickener tank the slurry was pumped to a series of belt filter presses, where polymer was added for a second time. The belt filter presses dewatered the slurry into a filter cake with a dry solids content of approximately 55%.

Separated water from the pre-thickener tank and the belt filter presses were collected in the process water tanks and re-used in the process. Surplus water was discharged from the process water tanks into the river after clarification through a series of sand filters. Most of the water was recycled in the processing plant. The surplus water fluctuated depending on the dredge area, sediment composition, bank thickness of removal and other factors. The processing plant was capable of buffering these fluctuations and discharging the surplus water in a controlled manner.

After processing, the produced materials -- including rock, sand, and filter cake -- were ready for transportation by trucks to their final destinations. Since the materials could be transported directly from stockpiles, the required processing footprint was minimized. The trucking capacity met the production of the processing plant.
The following final mass balance on the Miami River project was achieved: 29% oversized, 34% sand and 37% dewatered filtercake (by weight).

More information can also be found on www.miamirivercommission.org

Reference 2: Fox River Cleanup Project (current)
The Fox River Cleanup Project aims to remediate PCB impacted sediments from a 13.3 mile stretch of the Lower Fox River between Little Rapids Dam and the mouth of the Fox River at Green Bay, Wisconsin. The cleanup project is designed to reduce risk to human health and the environment due to the presence of PCBs in Fox River sediment. The client is the Lower Fox River Remediation LLC. The regulatory agencies consist of a consortium representing the U.S. Environmental Protection Agency, the Wisconsin Department of Natural Resources and prominent members from private industry, collectively the Agencies/Oversight Team (A/OT).

This is a multi-year cleanup effort that includes dredging, capping with coarse sand, gravel and quarry stone, the separation of clean sand and dewatering of the fine sediments with membrane presses. It is currently one of the largest cleanup projects of its kind in the world and its unique project approach will remove approximately 3.8 million cubic yards (CY) of PCB contaminated sediments and will place a protective cap or sand cover over 600 acres. In addition, billions of gallons of water removed from the river will be treated and returned.

The project approach is unique due to the single stream process where dredged sediments from three hydraulic dredges are directly piped to the land-based processing facility. Dewatering with eight membrane filter presses has been selected as the most economical and efficient means of dewatering the sediment prior to off-site disposal. The design of the sediment desanding and dewatering system required careful balancing of the flow of solids and water through the entire system, from the point of dredging through final production of sand and filter cake and water treatment.

The Lower Fox River OU 2-5 cleanup is being executed as a fast track design-build project. Design of the processing facility began in March 2008. Process site clearing and earthwork activities were initiated in July of that year.

Mechanical construction was complete by April 2009, followed by several weeks of pre-operational testing and start-up.

A six-acre building encloses substantially all of the process operations. Deep concrete foundations and floor slabs, the building superstructure and all of the process equipment, piping and electrical systems were erected in about nine months time. Operations on this complex project officially started with dredging and processing on April 28, 2009, ahead of the mandated target of May 1.

In terms of dredging productivity, the ambitious first season goals were exceeded by about 16% with nearly 545,000 CY of impacted sediment removed from the river. After the winter shutdown and maintenance period, operations re-started in early April 2010 for the second season of this cleanup project. As of late August dredge productivity was on track to exceed that accomplished during the first season, with more than 700,000 CY of sediment expected to be removed from the river by mid-November 2010. Thus about one-third of the total amount of sediment expected to be dredged over the life of the project will be accomplished by the end of the second season.

The objective of the Fox River processing facility is to minimize the contaminated volume disposed of at the landfill by using a three-stage separation approach. The process facility screens, conditions, and de-waters the slurry. During this process the volume of the hydraulic dredge slurry is reduced and portions are prepared for beneficial use (e.g., separated sand) or recycle to the river (treated water), significantly reducing transportation and disposal costs. This is particularly important with regard to the hazardous TSCA dredged material, which must be transported to Michigan with higher disposal costs than the non-TSCA material.

Sediment is being hydraulically dredged using three dredging units and pumped directly to the de-sanding and dewatering facility. The facility is designed to accommodate a maximum flow of 6,000 gallons per minute at approximately five to 10% dry solids. Marine operations are able to dredge 250 in-situ cubic yards per hour. Sediment from OUs 2 – 5 typically contains 30-40 percent sand, which is separated from the sediment and beneficially re-used. Coarse and fine sand separation units separate sand in the range of 63 microns to 150 microns. Silt and clay fines removed during de-sanding operations are pumped to the dewatering process equipment, which includes pre-thickener tanks, polymer dosage equipment, sludge holding tanks, and membrane filter presses.

The processing plant and the water treatment plant are installed within a 250,000 square foot building that was erected for the purpose of this project. The building also has a large area for indoor storage and handling of the filter cake and houses administrative office space for project staff. SECI designed, mobilized and constructed the plant within a short 8-month period to meet the overall project schedule. In order to ensure a safe working environment within the building and minimize operator exposure to airborne PCBs, the interior volume of the building is exchanged eight times per day. The air drawn from the building is treated using many vapor phase filters containing activated carbon so that PCBs will not be discharged to the surrounding environment. Sediment hydraulically dredged by the three dredges is pumped directly to the sediment desanding and dewatering facility. The processing plant is designed to accommodate a maximum flow of 6,000 gallons per minute (gpm) with approximately five percent to ten percent solids. The dredge pipeline routes the sediments on a vibrating screen that removes oversized particles larger than 6 mm. Particles smaller than 6 mm pass through the scalping screen and are pumped to a slurry thickener system that separates the sand size fraction from the finer sediment using cyclonic action provided by several hydrocyclones..

Fox River sediment typically contains at least 25 percent sand, which is separated from the sediment bearing the PCBs and can be beneficially reused. Coarse and fine sand separation units then separate sand in the ranges of 150 microns to 6 mm and 63 microns to 150 microns. Sand separation is performed by using various sizes of hydrocyclones. Separated sand is polished in upstream classifiers. The fines (silt and clay) removed during desanding operations are pumped to the dewatering process equipment, which includes pre-thickener tanks, sludge holding tanks, and membrane plate and frame filter presses.

The filter presses designed for the Fox River are sized to process approximately 14 cubic yards of solids per hour per press, with a compression factor of 1.3 and a cycle time of 75 minutes. The number of presses needed was calculated based on the anticipated range of flow rates through the dewatering system, an assumed uptime for the presses ranging from 75 to 100 percent, a range of 20 percent to 40 percent sand removal, and the hourly production rate for each press. It was determined that eight presses will be needed; however, space has been allocated and foundations installed for two additional presses.

Process water is re-used in the operation. Surplus water from the processing plant is treated and analyzed before being discharged to the river or re-used in the processing facility. Some of the treated water is used for dust control purposes on the large sand storage piles outdoors.
The water treatment plant consists of three treatment trains each capable of handling 3,000 GPM. Treatment includes sand filtration, carbon filtration and bag filtration. After treatment the water is returned to the river under regulations set by the State of Wisconsin. These include treatment goals or goal ranges for PCBs, TSS, pH, mercury, ammonia and biochemical oxygen demand (BOD). The treated water is returned to the river through a multi-port diffuser, which was modeled to assure acceptable dilution characteristics based on the expected flow rate range and concentration goal for ammonia in the effluent.

More information in the Fox River project can be found on www.foxrivercleanup.com

Project Comparison

	Miami River	**Fox River**
Location	Miami, Florida	Green Bay, Wisconsin
Time frame	2004 – 2008; in two phases, approx. 1 year operations	Start 2008; ongoing
Purpose	Maintenance dredging	Clean-up
Focus	To minimize the contaminated volume by beneficial use of non-contaminated materials and dewatering of the fine and contaminated fraction	
Contamination	Heavy metals (Arsenic)	PCB's
Contamination reduction *	70 – 90%	> 90%
Volume	~ 720.000 CY	~ 3.900.000 CY
Production Rates	1.750 CY per day	4.000 – 5.000 CY per day
Duration	~ 1 year	8 years (max)
Dredging	Mechanical	Hydraulic
Processing	Standardized mobile plant	Purpose designed and built fixed plant
Dewatering	Belt filter presses	Membrane plate presses
Disposal and beneficial use	Separated coarse material and sand (meeting residential standards) was re-used at the landfill at a significantly reduced tipping fee. The contaminated filter cake was disposed at the landfill.	Separated sand is beneficial used at a local infrastructure project (highway widening). The contaminated filter cake is disposed at a local landfill (non-TSCA) or at a TSCA landfill out of state.
* Contamination reduction is calculated as concentration of a certain contaminant in the input (untreated) sediment and the concentration of the same contaminant in the separated and treated sand.		

Other

Various project sheets are attached to this document. On request, copies of certificates, project information and reference letters can be made available.

Green Bay (WI), USA

Fox River Cleanup

Stuyvesant's affiliated company Boskalis Dolman designed and constructed the processing plant within an expedited one year period. The project is following the proven integrated approach that incorporates the different project components like dredging, processing, dewatering, beneficial use, and transport and disposal.

The Stuyvesant companies are working as a partner subcontractor to Tetra Tech. JF Brennan is responsible for the marine construction and dredging scope of the project. Together these 3 companies form the Fox River Cleanup Group. The project started in 2008 and is expected to last 8 years. It is expected that a total of 4 million CY of PCB contaminated sediments will be dredged from the Lower Fox River in Wisconsin. Three hydraulic dredges are pumping the dredged sediments directly to the processing plant. The plant is designed to process hydraulically dredged sediments with a production rate of 250 in-situ CY per hour or 6,500 gpm. Treatment includes over size debris screening (+ 6 mm), two sizes of sand separation and polishing, followed by mechanical dewatering of the fine contaminated fraction using large Membrane Plate and Frame Presses. A total of 8 of these presses are operated on this project. The aim of the project is to minimize contaminated volume by sand separation for beneficial use and mechanical dewatering of the contaminated fine fraction.

Integrated Approach

Fox River Cleanup Group

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Stuyvesant ECO

Papendrecht, The Netherlands

Laboratory

For the support of projects Stuyvesant Environmental Contracting has the availability of a full scale geotechnical and environmental laboratory in Papendrecht, The Netherlands.

Laboratory services are provided both in the Headquarters office as well as on project locations where temporary laboratories are established. Services include geotechnical analyses, treatability tests for sand separation and mechanical dewatering, polymer screenings, additives screening, physical analyses, rock sampling and (geotechnical) quality control during active projects. A mobile treatability test plant can be used to determine the feasibility of sand separation and mechanical dewatering. For more information please visit our website.

Besides conducting physical analyses, the laboratory also maintains good contacts with external (certified) analytical laboratories and research firms for the purposes of soil surveys and a wide range of chemical analyses.

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Regional Sediment Management Facilities

Boskalis Dolman, the affiliated company of Stuyvesant Environmental Contracting operates six Regional Soil Management Facilities in The Netherlands and Belgium.

Annually, these combined facilities process a total of more than 800,000 ton of contaminated soil and aggregates. The primary aim of these facilities is to minimize contaminated volume by extracting aggregates for beneficial re-use and by dewatering the contaminated fine fraction. Third parties deliver the contaminated soils to the facilities. The operator of the facility becomes the 'owner' of the contaminated soil and thereby accepts the associated risks and liabilities. Techniques used include different types of screening, hydro-cyclones, upstream classifying, and the mechanical dewatering of the contaminated fraction. Although the main treatment in these facilities is based on enhanced soil washing techniques, other remedial techniques can also be implemented such as biological treatment and stabilization or solidification depending on the specific contaminants and associated cleanup levels.

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Miami (FL), USA

Miami River 15' Maintenance Dredging

This maintenance dredging project was performed in the period from 2005 until 2008 for the US Army Corps of Engineers, Jacksonville District. Stuyvesant worked as a subcontractor to the Weston-Bean Joint Venture.

The heavy metals contaminated sediments were mechanically dredged from the Miami River and transported by barge to the upland processing facility. A Mobile Separation & Dewatering Plant (MSDP) was mobilized to treat the sediments in this 24/7 operation. The project was designed following the integrated approach between dredging and processing, andhad a design capacity of 2,000 (in-situ) CY per day. The aim was to minimize contaminated volume by sand separation and mechanical dewatering. Treatment included screening of oversize materials (+ 2 mm), sand separation and polishing (63 µm – 2 mm), followed by mechanical dewatering of the fine contaminated fraction. All the separated sand met the standards for residential re-use.

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Mobile Separation and Dewatering Plant (MSDP®)

The mobile processing plants have been used by the Stuyvesant companies since 2004. The design of the enhanced mobile plants is based on 25 years of fixed-based treatment of 7.5 million tons of (contaminated) soils and sediments. Boskalis Dolman, a Stuyvesant affiliated company is responsible for the design and construction of these mobile plants. Currently the MSDP's find applications worldwide.

The MSDP can be used on Regional Sediment Management Facilities but also on project locations for the management of contaminated soils or dredged sediments. MSDP's are designed in standardized container frames for optimum flexibility and mobility. The process parts can easily be transported to the processing location by trucks. On a footprint of about 50 by 50 meters the MSDP can be set-up in minimum time. Process automation is an integrated part of the process control. All standard safety measures are incorporated in the plant design. These combined features result in a very efficient plant with extremely high production rates of up to 120 tons per hour. The applied techniques are based on enhanced soil washing techniques and include coarse and fine separation, sand separation and polishing and mechanical dewatering.

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Stuyvesant E.C.O

(Mechanical) Dewatering Equipment

Stuyvesant Environmental Contracting offers the availability of different company owned (mechanical) dewatering technologies such as Membrane Plate & Frame Presses and Belt Filter Presses. This dewatering equipment can be used on soil- and sediment management projects to dewater the finest (contaminated) fraction after fraction separation.

The long term experience of the Stuyvesant group of companies is incorporated in the design of these presses. The engineering and design of these presses is performed in-house. Actual dewatering methods are determined based on the 'integrated approach' and are customized to meet the specific project needs. The 'integrated approach' considers the total project including removal, treatment, beneficial re-use and transport and disposal. The final selection of the press type is made based on the project aim (for example disposal, re-use or further treatment), geotechnical characteristics and production estimates.

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Stuyvesant E.C.O

Beneficial Re-use

Through our European network Stuyvesant Environmental Contracting has gained extensive experience in the beneficial use of aggregates on a project scale basis, generating major logistical benefits.

For this work, Stuyvesant Environmental Contracting has developed a range of digital testing modules for determining soil quality - and therefore the optimal disposal options quickly and accurately. Stuyvesant Environmental Contracting has set up soil banks (placement management facilities) for various infrastructure projects. In addition to its extensive experience with the beneficial use of soil and sand, Stuyvesant Environmental Contracting also owes its distinctive profile to its ability to process and re-use dredged material. Stuyvesant Environmental Contracting manages the entire process: from acquisition, deposit inspection and consultation with the competent authorities up to and including transportation and definitive disposal at the re-use sites. Beneficial use of (contaminated) soils and sediments has been widely implemented and accepted in Europe. Recent projects in the United States and Canada have proven the possibilities of re-using separated sand from (contaminated) soils and dredged sediments. Separated sand has been beneficially used on both the Miami River and Lower Fox River.

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Stuyvesant ECO

Gouderak, The Netherlands

Zellingwijk Brownfield Development

Stuyvesant's affiliate, Boskalis Dolman worked in a joint venture together with Heijmans on the redevelopment of the Zelling Area. This multidisciplinary, design and construct project started in 2005 with remediation and redevelopment of the area will be concluded in 2010.

The original outer dike area was raised with waste fill material in the 1950's. The elevation of the area was followed by the development of houses. In the 1980's it was proven that the waste used for elevating the area contained various chemicals (mainly petroleum and pesticides) that caused health problems. The corrective actions that followed included demolition of the houses and closing of the area. The joint venture is responsible for the remediation of the area and the development of a mixed use area consisting of modern housing and natural areas along the river side. The remediation included the integrated removal of the fill material as well part of the river sediments. The removed material was transported by barge and disposed in contained disposal facilities.

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Stuyvesant E.C.O

Separation and Dewatering Research and Test Unit

Stuyvesant Environmental Contracting offers the availability of two research and test units. One is used for research and testing the separation process. The second container is used for research and testing the dewatering process. The two units allow total pilot testing for sediment separation and dewatering characteristics and simulate full scale operation at proven treatment plants.

Each of the units are designed in a 20-foot standard container equipped with separation equipment (screens, cyclones and counter-current washers) and dewatering equipment (pre-thickening and mechanical dewatering) to perform both on-site and/or off-site treatability studies. The units are part of SECI's integrated approach, helping clients to determine the best solution for their project. The Separation and Dewatering Research and Test Unit was engineered in-house based on SECI's extensive experience. Its compact and standard dimensions make the Test Unit mobile and easy to transport globally. The dewatering research and test unit comprises a combined residue/pre-thickener tank, process water tanks, polymer dosing system and a small membrane filter press. The setup allows for quick exchanges (i.e. of filter cloths and polymer). The entire system operates with a PLC-automated system, giving the process the flexibility to perform tests with different set points to determine the dewatering characteristics of the material to be treated. The results of the tests will be interpreted and the best-fit solution can be established for the client's project/problem.

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Stuyvesant ECO

Attachment 6

Weeks Marine Inc.

WEEKS MARINE, INC.

DREDGING - MARINE CONTRACTORS
STEVEDORING - EQUIPMENT RENTALS
TOWING - HEAVY LIFT - SALVAGE

Project References Contact Information

PROJECT LOCATION	PROJECT DESCRIPTION	CLIENT ADDRESS	CONTACT PHONE NUMBER
NW Earle Pier Replacement U.S. Navy - Raritan Bay Leonardo, New Jersey	Upgrade Pier # 2 and demo Pier # 3; removal of 8890 timber piles. Disposal of 35K tons debris off-shore. Dredging w/upland disposal of 302K m3 contaminated materials. Installed 365 steel piles and concrete superstructure with very large PC concrete elements and CIP concrete; crane rail and railroad tracks. Electrical and Mechanical installations. Six buildings with a total area of 16,200 sf.	NAVFAC - EFA Northeast 10 Industrial Highway Lester, PA 19113	Lee Garrett, ROICC P: 732-866-7115 F: 732-866-7113
Tappen Zee Bridge **Pier Protection System** Hudson River, New York	Demolition of existing steel and timber fender system. Installation of ninety six 48" dia. Pipe piles up to 160'. Install post tensioned precast concrete fender structure.	N.Y.S. Thruway Authority 200 Southern Blvd. Albany, New York 12201	Arthur O'Donnell 518-436-2810
Delaware River Tram Camden, New Jersey	New caisson supported concrete tower foundation. Steel sheet pile cellular dolphin with concrete cap. Site work, dredging and stone scour protection.	Delaware River Port Authority 2 Riverside Drive Camden, New Jersey 08101	William Brooks 856-968-2000
Bath Iron Works **Transfer Facility** Bath, Maine	Install 27 cellular cofferdams; dredge 500,000 CY sinking basin and use as fill for land level transfer facility. Spread and vibroprobe compaction of fill.	Clark / Atkinson 505 Washington St. Bath, Maine	Phil Sheridan 310-333-6840
NuStar Energy, L.P. **Linden Terminal, LLC** Linden, New Jersey	Demolition and rehabilitation of an existing 37' Dia. sheet pile cell @ Linden Terminal. The work included removal of the existing 4' thick (350 tons) cap, re-ringing with new sheet pile, fill placement inside cell, pour new reinforced concrete cap and the installation of deck fixtures and hardware. The work was performed on schedule working two shifts for four weeks with no incidents or injuries.	NuStar Energy, L.P. Linden Terminal, LLC 4501 Tremley Point Road Linden, NJ 07036	Mike Raikos, Project Super. 856-224-8136 (F) 201-918-5797 Mike.Raikos@nustar energy.com
Brooklyn Navy Yard Brooklyn, NY	Repair to Berths 6, 7 & 7A Demolition and removal of concrete apron; installation of 650 lf of combi wall sheetpile	Brooklyn Navy Yard Development Corp. 63 Flushing Avenue, Unit 300 Brooklyn, NY 11205	James Corley 718-907-5942; 917-734-1801

WEEKS MARINE, INC.
DREDGING - MARINE CONTRACTORS
STEVEDORING - EQUIPMENT RENTALS
TOWING - HEAVY LIFT - SALVAGE

4 COMMERCE DRIVE, CRANFORD, NEW JERSEY 07016-3598 (908) 272-4010
CONSTRUCTION DIVISION FAX: (908) 272-8957

Behavioral Based Safety Program

Yes, IIF (Incident and Injury Free) is Weeks Marine, Inc. behavioral based safety program.

In June 2008, Weeks Marine examined several behavior-based safety options and chose Incident and Injury-Free (IIF) offered through JMJ Associates of Austin, TX. The IIF program requires a commitment, both personal and organizational, to create an existence absent of incidents and injuries, and Weeks Marine and its employees have made this commitment. Under IIF, safety is not a goal, a result, or a priority. Instead, safety is a value. It is a mindset intolerant of any level, frequency, or severity of incident or injury. Safety is now seen at Weeks Marine as an inseparable element of every project, just as is honesty, efficiency, quality, productivity, or any other criteria of excellence. The motivation for safety under IIF is not compliance or avoidance of punishment, but the protection of each worker. All of us at Weeks Marine watch out for ourselves and for those around us. We speak up and stop work when it is unsafe or there is a safer way to perform the work. Relationship is the foundation of all accomplishment and the foundation of IIF. Under IIF, anything that "goes wrong" is responded to positively because it is an opportunity to make IIF work even better. Weeks Marine will always be looking for safer ways to keep all us incident and injury free.

ACORD CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)

PRODUCER

FRENKEL & CO., INC.
New York, NY 10019
350 Hudson Street – 4th Floor
New York, New York 10014
Phone No. 212-488-1828
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THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	**GENERAL LIABILITY** ☒ COMMERCIAL GENERAL LIABILITY ☐ ☐ CLAIMS MADE ☒ OCCUR. ☐ OWNER'S & CONTRACTOR'S PROT. ☐ ☐	N00971327-004	03/31/09	03/31/10	GENERAL AGGREGATE PRODUCTS-COMP/OP AGG. PERSONAL & ADV. INJURY EACH OCCURRENCE FIRE DAMAGE (Any one Fire) MED. EXPENSE (Any one person)	$2,000,000. $1,000,000. $1,000,000. $1,000,000. $ 250,000. $ 5,000.
B	**AUTOMOBILE LIABILITY** ☒ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS ☐ GARAGE LIABILITY	1337275827	03/31/09	03/31/10	COMBINED SINGLE LIMIT BODILY INJURY (Per Person)) BODILY INJURY (Per Accident) PROPERTY DAMAGE	$1,000,000. $ $ $
C	**EXCESS LIABILITY** ☐ **UMBRELLA FORM** ☒ **OTHER THAN UMBRELLA FORM**	09/916	03/31/09	03/31/10	EACH OCCURRENCE AGGREGATE	$50,000,000. $
D	**WORKER'S COMPENSATION AND EMPLOYERS LIABILITY**	21WEOB4294	03/31/09	03/31/10	☒ STATUTORY LIMITS EACH ACCIDENT DISEASE-POLICY LIMIT DISEASE-EACH EMPLOYEE	 $1,000,000. $1,000,000. $1,000,000.
E F F G G H I J K	**OTHER** Hull, Machinery Protection & Indemnity Crew Pollution Liability Contractors Equipment Excess Automobile Liability USL&H Excess Liability Contractors Pollution Legal	09/914 & H 764 64 14-11 09/915 09/915 H 348 99 01-11 H 764 64 74-11 531-745130-7 A73059001-02 09/917 CPL2776089	03/31/09 03/31/09 03/31/09 03/31/09 03/31/09 03/31/09 03/31/09 03/31/09 3/31/09	03/31/10 03/31/10 03/31/10 03/31/10 03/31/10 03/31/10 03/31/10 03/31/10 3/31/10	Max.Sum Ins. $15,000,000. Limit: $5,000,000. CSL Limit: $3,000,000. CSL Limit: $5,000,000. Limit: $2,000,000 Max Limit: $1,000,000. Limit: $2,000,000 $50,000,000 Excess of Primary $50,000,000 Limit: $5,000,000. Occ./ $5,000,000. Agg.	

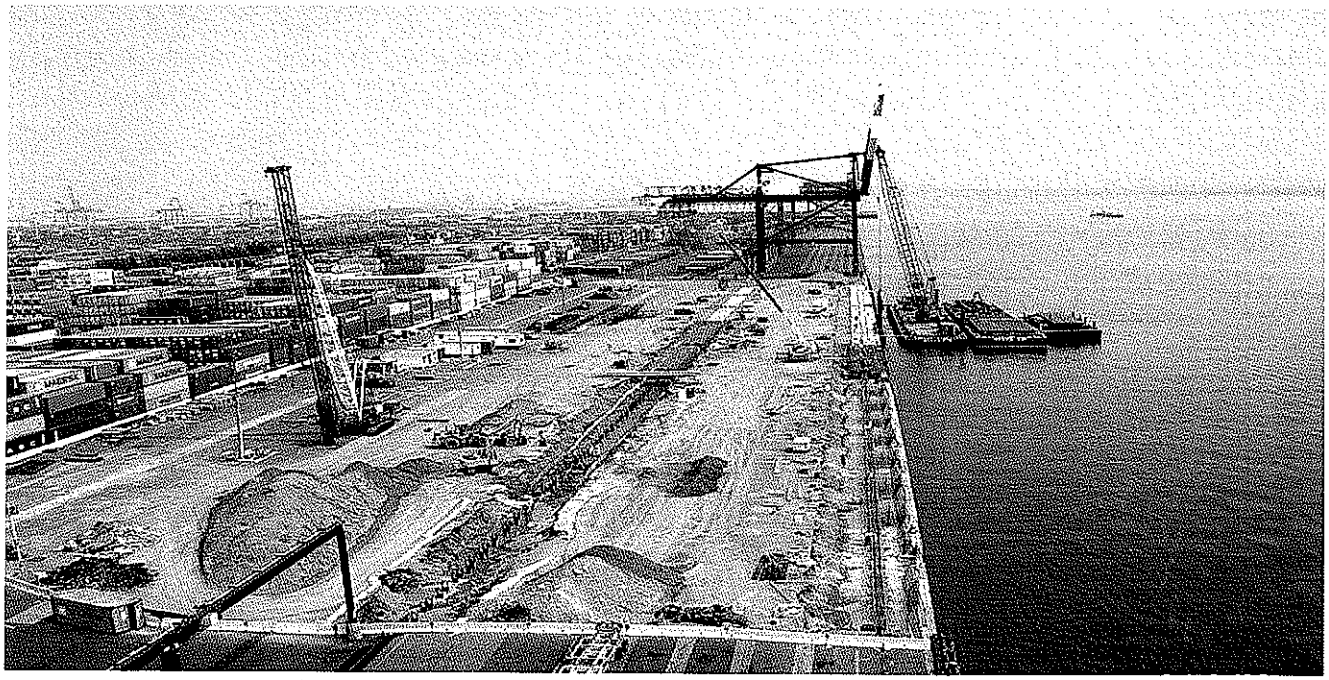
CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY.

AUTHORIZED REPRESENTATIVE

WEEKS MARINE



WHARF IMPROVEMENTS

Port Elizabeth, NJ.

Owner/Client:
A.P.M.Terminals

Year Complete:
2004

Scope of Work:
Pile driving, Rock drilling, Concrete work

Project Cost:
$ 30,600,000

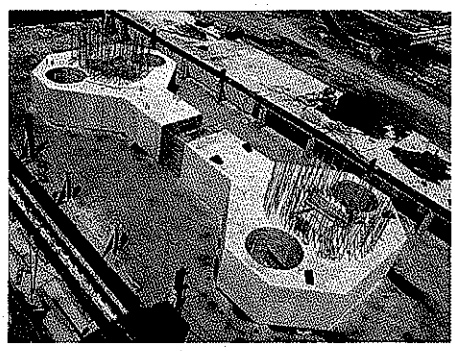
Project Description:

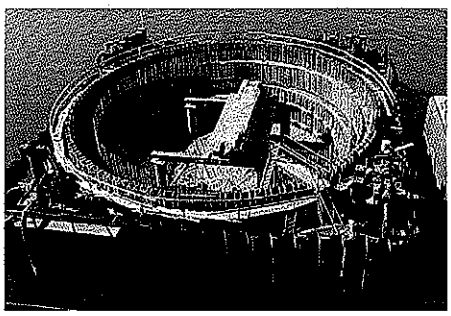
Modifications and strengthening of 2020 lf of existing container wharf to accommodate Post- Panamax container ships. Installation of under water sheetpile cut-off wall to allow future deepening. Demolition of existing waterside cranerail and driving of additional piles under that rail. New landside crane rail to accommodate new 100' gauge container cranes. In total 482 piles were installed: in the crane tie-down areas the piles received drilled rock sockets.The existing fender system was removed and replaced with state of the art fenders. Sitework consisted of excavation and backfilling and new pavement. A new substation and associated duct banks brought power to the cable trench.

4 Commerce Drive, Cranford, N.J. 07016 (908) 272-4010 Fax: (908) 272-4740

www.weeksmarine.com

WEEKS MARINE





DELAWARE RIVER TRAM: NEW JERSEY TOWER FOUNDATION

Camden, New Jersey

Owner:
Delaware River Port Authority of Pennsylvania and New Jersey

Year Complete:
2002

Scope of Work:
Drilled Shafts
Redesign to Precast Construction
Stone Placement

Project Cost:
$5.3 Million

Project Description:

Weeks Marine was contracted by Turner Construction to install a tower foundation and a circular Dolphin structure, which protects it against vessel collisions. An underwater utility duct bank was installed from shore to both structures, and the base area around each was covered with a 5 ft deep rock scour protection apron.

The design of the foundation called for the 80 ft long x 8 ft high concrete "dog bone" cap to be cast-in-place, within the tide zone, supported by four-7 ft diameter x 140 ft drilled shafts. To improve project delivery and quality, Weeks Marine redesigned the foundation cap as two 500 ton precast halves and used the Weeks 533 floating crane to set them in place.

The circular Dolphin structure was built "in the dry" within a square temporary steel cofferdam. The sides of the Dolphin cap required 250 cy of concrete pumped between concave and convex radial forms to create the 54ft diameter x 4 ft wide walls. The top slab of the Dolphin cap varied in thickness up to 8 ft, which Weeks Marine pumped and screed finished in a single 500 cy pour.

4 Commerce Drive Cranford, NJ 07016-3598 (908) 272-4010 Fax (908) 272-4740
www.weeksmarine.com

WEEKS MARINE

TAPPEN ZEE BRIDGE – MAIN CHANNEL PIER PROTECTION

Sleepy Hollow, New York

Owner/Client:
New York State
Thruway Authority

Year Completed:
2000

Scope of Work:
Construction

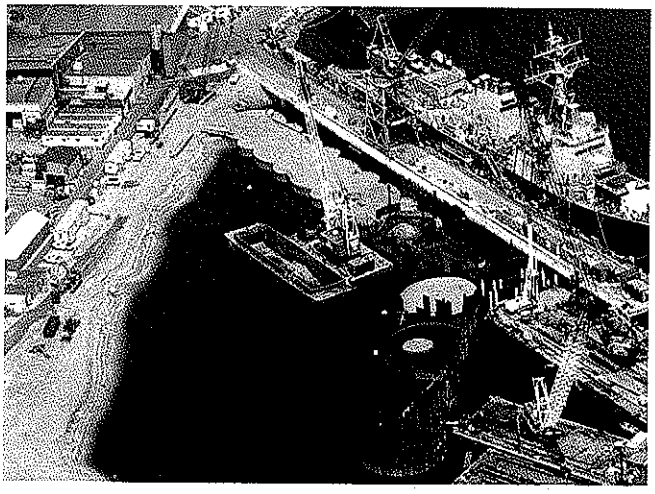
Project Cost:
$33 Million

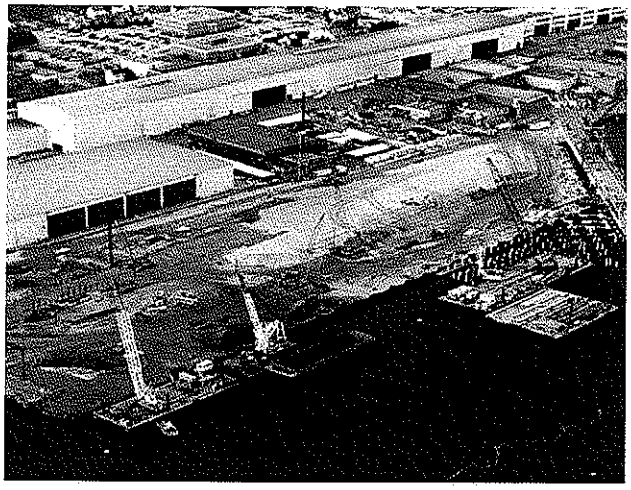
Project Description:

Weeks Marine, Inc. with joint venture partner Grow Tunneling was awarded a contract to construct a new bridge pier protection system. The fender design by URS Greiner called for a precast T-Beam ring supported by pipe piles. Ninety-six 48" dia. Pipe piles were driven in lengths up to 140'. The final bearing capacity of the piles ranged between 500 and 750 tons. 56 T-Beam units were cast, ranging in weight from 90 to 280 tons. The Weeks 533 was outfitted with a short boom so the units could be set under the upper deck of the bridge. Once all of the precast was in place, cip concrete closures were poured between the units. Watertight cofferdams were placed around the post tensioning ducts and bundled tendons up to 361' long were pulled and jacked by Weeks Marine. A barge mounted, mini batch plant was used to grout the tendons. The project was completed with the installation of handrails, ladders, stairs and UHMW PE facing on the concrete fender ring.

4 Commerce Drive Cranford, NJ 07016-3598 (908) 272-4010 Fax (908) 272-4740
www.weeksmarine.com

WEEKS MARINE





LAND LEVEL TRANSFER FACILITY
BATH, MAINE

Owner/Client:
Bath Iron Works /
Atkinson Corporation

Year Complete:
1999

Scope of Work:
Construction, Dredging

Project Cost:
$13 million

Project Description:
This facility is to be used to launch ships from a horizontal position directly onto a floating drydock from which the ship after outfitting will eventually be floated from. Building the facility first required dredging the site footprint of 150,000 cy of unsuitable silt which was barged down river and offloaded to trucks for upland disposal. Weeks then installed twenty-seven cellular cofferdams with interconnecting arcs. Of these cofferdams, twenty were 64 feet in diameter with rest being 42 feet. With the variability of the depth and slope of the underlying rock, steel sheet pile lengths varied from 12 to 105 feet with a total driven length in excess of 200,000 feet. Over 500,000 cy of sand was dredged from the Kennebec River by the Weeks 500 to be used to fill the cells and the inshore area. Once filled, the cells were compacted to a depth of 50 feet using a 30 inch diameter ribbed vibroprobe with a vibratory hammer.

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www.weeksmarine.com

WEEKS MARINE, INC.
DREDGING - MARINE CONTRACTORS
STEVEDORING - EQUIPMENT RENTALS
TOWING - HEAVY LIFT - SALVAGE

4 COMMERCE DRIVE, CRANFORD, NEW JERSEY 07016-3598 (908) 272-4010
CONSTRUCTION DIVISION FAX: (908) 272-8957

Project Approach

Lower Passaic River Study Area Sediment Removal Phase 1

Mobilization

Weeks Marine, Inc is anticipating performing all construction and dredging work from barges with the exception of debris decontamination. The debris decontamination will be performed at the northeast corner of the OU-1 site. The decontamination will be performed inside a cast in place concrete slab pitched to a sump. The sump will contain the contaminated water which will be pumped into the on-site water treatment system. The decontaminated debris will be stockpiled in a delineated area lined with a PVC liner to prevent leaching.

Weeks anticipates staging an excavator on land at the northeast section of the OU-1 property. The excavator will be set on crane mats to prevent any damage to the existing cap. This excavator allow for both the unloading of contaminated debris from barges and the loading out of decontaminated debris into trucks provided by others for upland disposal by others. Some sections of permanent floodwall fence will have to be removed, but a temporary fall protection system will be implemented in lieu of the permanent fence.

Marine Construction

The 31-monopiles located at the northeast and northwest corners of the enclosure will be installed first. The monopiles will be installed utilizing a barge mounted 100 Ton crane and a vibratory hammer. The 3 each 24" diameter dolphins will not be installed due to the sediment being pumped to the upland disposal facility in lieu of being barged and are not part of the scope of this proposal.

The southwest and riverside enclosure sections will be installed utilizing a 100 Ton crane and a vibratory hammer. The installation of the enclosure wall will begin working the tides due to the barge draft at Station 0+00 at the southwest section of the Sherwin Williams bulkhead and will proceed up station. Weeks' logic is that completing the southwest and riverside sections first will allow for raising the water elevation inside the enclosure wall prior to installing the temporary sheeting in front of the OU-1 floodwall. A work boat will be assigned to the project for both shifting around equipment/barges and functioning as a safety boat. The work boat, 4-mini scow barges and the 100 Ton crane will be located inside the cofferdam prior to closing the enclosure sheeting and will remain inside for the duration of the dredging as well.

The enclosure will be flooded utilizing three Godwin Sub-Prime® Model GSP80HV 4"pumps capable of 660 GPM. The pumps will be connected to a control panel which will be activated by a float located inside the enclosure. The pumps will draw water from the river into the enclosure to maintain the desired water surface elevation of +4.00 feet. The pumps and accompanying generator will be manned by an operator 24 hours/Day. The operator will ensure that the enclosure water level is at the correct elevation. The operator will be responsible for monitoring the water level and will utilize the two weirs for emergency release of water only.

Currently, the sheeting in front of the OU-1 floodwall is planned to be installed utilizing the ARCADIS recommended ABI Mobilram Hydropress. The ABI TM20/25 attached with the HPZ 500-720 Hydro attachment will be operated from Flexi Float Barge(s). The Flexi Floats will allow the Hydropress to work efficiently by positioning the machine in the proper location vertically and horizontally for pressing the sheets. The 100 Ton crane used for driving the riverside & southwest sheets will support the Hydropress by unloading and supplying sheetpiles.
Upon completion of the enclosure wall, Weeks' 566 (110 Ton) crane will be mobilized for picking/swapping the Hydropress/Flexi Floats/100 Ton crane and the 385 Excavator to be utilized for dredging. The picks will be made from outside of the cofferdam which will allow the enclosure to stay intact and maintain the interior water level.

Mechanical Dredging
A hydrographic survey will be performed prior to starting the dredging operation. The hydrographic survey will utilize a combination of sidescan sonar and multibeam echosounder equipment, in tandem with a "rover" Real Time Kinematic (RTK) Differential GPS positioning, which will provide 100% coverage of the riverbed with an accuracy of +/- 1 cm horizontally and +/- 2cm vertically. In addition, debris will also be located and identified by assigned numbers. An example of the sidescan and multibeam survey data is shown below in Figure 1.

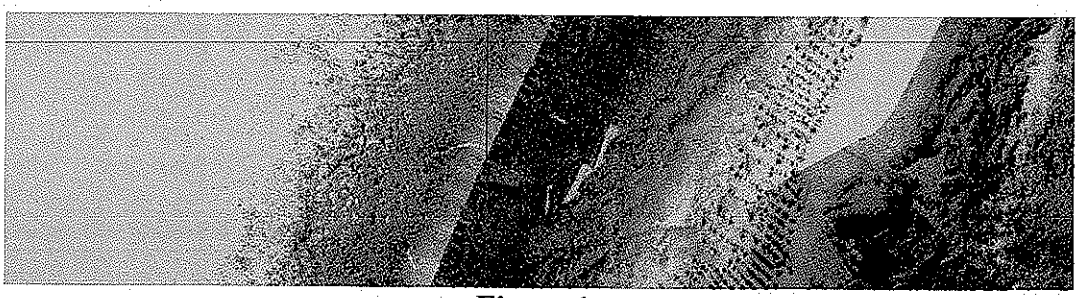

Figure 1.

Weeks Marine, Inc. is proposing to mechanically dredge the sediment utilizing a Caterpillar 385 Excavator equipped with a clam shell bucket mounted on Weeks' 65 Spudbarge. Upon completion of the pre-dredge survey, the Weeks 65 Spudbarge will be equipped with a dual receiver DPGS system and HydroPro graphical interface software, which will have the hydrogaphical survey containing the 72 grid locations preloaded into the software system. A surveyor on the barge will oversee the position of the barge within the enclosure to any given grid location. The barge will be located into position utilizing a work boat and/or winches on the barge. The 65 Barge will remain in position during the dredging process by way of either spuds or winches.

The 385 excavator will be equipped with a separate RTK differential GPS system at the boom tip. This antenna, in combination with an angle inclinometer and drum counter will provide real time location of the bucket at all times. The excavator operator's display will provide the dynamic location of the excavator's bucket and the previously established grid parameters in both plan and elevation view to assist in dredging. Weeks has previously utilized the RTK Differential GPS positioning system successfully on other projects.

The screening of the dredged sediment will be performed utilizing a passive screener. Weeks feels that a mechanical screener is not ideal for this process due the saturated sate of the material. A mechanical screener will throw the sediment in all directions, including outside of the enclosure. The passive screener will consist of two screens mounted onto a steel housing. The screener will be mounted inside one of three "sediment barges" at any given time which will consist of the Weeks Mini Scow Barges which measures 30' X 90'. The dredged material will be excavated from the riverbed and placed directly through the screener. The screener will have the capability of being jet spray with water. The finer sediment passing through the screens will settle into the bottom of the sediment barges while the larger debris will remain on the screens. The larger debris will be removed from the screens utilizing the 385 excavator and placed in a separate Mini Scow "debris barge" (See Enclosed Sediment Excavation Plan).

The screened sediment can be pumped directly from the sediment barge to the upland disposal facility location utilizing a Toyo pump (by others). The Toyo pump can be mounted on a either a platform, or barge located outside of the enclosure wall. Therefore, the process of unloading dredge barges by another barge mounted excavator is eliminated. The elimination of the additional excavator/pump barge will allow for more efficient maneuvering of the dredge barge within the enclosure. The debris barge will be unloaded by the land based excavator at the northeast corner of the OU-1 Site. The process will be repeated until the 12 Feet of cut is achieved generating approximately 40,000 CY of dredge material. The assumed daily dredging production is 500 CY/Day working 24 Hrs/Day 5-Days/Week.

The dredging of the sediment located between the temporary sheeting and the south bulkheads will be achieved by utilizing a jet pump equipped with an appropriate length lance and a submersible pump placed between the structures. The sediment will be displaced by the jet pump and pumped into one of the 30' X 90' barges via the submersible pump. Depth control of the linear space dredging will be monitored by a surveyor per elevation readings taken on the jet pump lance.

Backfill

The backfilling process will proceed once the third party surveying of the dredging limits is completed. The equipment performing the mechanical backfilling process inside the enclosure will consist of the 385 Excavator and the Weeks Mini Scow Barges. The barges will be filled by Weeks' 524 Stevedoring Crane equipped with a clam shell bucket situated outside of the enclosure. The Weeks 524 will transfer sand from Amboy Aggregate supplied barges into the barges (See Enclosed Backfill Placement Plan). The 385 excavator will place the sand from the 30' X 90' barges inside the enclosure for backfilling the first two feet. The remaining ten feet of backfill will be performed by a combination of Weeks 524 bailing directly into either the enclosure, or the 30' X 90' barges assisted by the 385 Excavator located inside the enclosure. The approximate backfill daily productions will be 1,000 CY/Day for the first two feet and 1,800

CY/Day for the remaining ten based upon working 5-8 Hr Day/Week. Therefore, Amboy Aggregates will have to maintain a maximum daily supply of two barges which would be feasible. The 385 excavator will work in conjunction with a surveyor performing soundings during the backfilling process. The surveyor will monitor the backfilling process to ensure that the pre-removal riverbed elevations are reestablished accordingly. Therefore, the 385 Excavator will be utilized for establishing final riverbed elevations inside the enclosure within the +/- 6" tolerance.

During backfilling, the water level inside the enclosure needs to be maintained by a series of pumps and floats. However, the pumps located inside the enclosure will be utilized for water removal water during the backfilling process. The water inside the enclosure will need to be maintained at Elevation +4.00 feet via a float. The water removed during the backfilling process will need to be pumped to the upland disposal facility. However, Weeks is concerned that the upland disposal facility will not be equipped to handle that volume of water. As stated in the RFP, a final decision is pending the remaining design process.

Removals

Weeks 566 crane will be mobilized again for picking/swapping the 385 Excavator and the Hydropress/100 Ton Crane/Flexi from within the enclosure. The Hydropress will be utilized for removing the sheets located at the OU-1 wall. The 100 Ton crane equipped with a vibratory hammer will be utilized for removing the remaining enclosure wall and monopiles. The crane will be set on the same barge that the 385 Excavator was utilizing. This will allow for the water to be maintained at Elevation +4.00 feet during the removal of the sheets located at the OU-1 Flood Wall. Once again, maintaining a water level at Elevation +4.00 feet is crucial for working at the OU-1 wall.

Removal of the riverside enclosure wall and monopiles will proceed upon the completed removal of the south portion. The sheets and monopiles will be staged on deck barges for transportation to Weeks' Jersey City Yard for unloading. Decontamination of the sheets (if required) is assumed to be performed by others at an offsite location. Sheet pile decontamination at the OU-1 site will be extremely labor intensive and the sheets will be too heavy for the capped site.

Environmental Impact

Weeks Marine Inc. is aware of the environmental sensitivity and high profile of this project. Weeks will take every precaution to prevent sediment from leaching out of the enclosure during the course of the work. This approach is consistent with Weeks' recommendation of utilizing a passive in lieu of a mechanical sediment screener. In addition, Weeks will stop operations immediately and address any leaks if plumes are discovered outside of the enclosure. Weeks' is a full service marine contractor that self performs dive work. Therefore, divers will be utilized to discover and repair enclosure leaks while maintaining enclosure integrity.

Weeks Marine, Inc. will assist in the sustainability of the project as well. Weeks' approach to the project has eliminated the use of two pieces of power equipment, i.e. one excavator and a mechanical screener. Weeks is a local contractor with an equipment yard located in Jersey City, NJ which is less than 10 miles away from the project site. In addition, Weeks' Corporate Office nlocated in Cranford, NJ is 15 miles away from the project site. Weeks will utilize New Jersey based trade unions with which Weeks has longstanding relationships and New Jersey based on site management personnel. In addition, Weeks will utilize ultra low sulfur diesel in all project equipment. Therefore, Weeks' consumption of fuel for transporting project equipment and personnel will be considerably lower than other contractors.

TIERRA SOLUTIONS, INC.

Transmitted Via Federal Express

November 5, 2012

U.S. Environmental Protection Agency, Region 2
290 Broadway, 19th Floor
New York, New York 10007-1866
Attn: Elizabeth Butler

Re: Administrative Settlement Agreement and Order on Consent for Removal Action, USEPA Region 2 CERCLA Docket No. 02-2008-2020 – **Final Bathymetry Survey,** *CERCLA Non-Time-Critical Removal Action – Lower Passaic River Study Area*

Dear Ms. Butler:

Tierra Solutions, Inc. [funding and performing, on behalf of Occidental Chemical Corporation, the subject Administrative Order on Consent (Removal Action AOC)] is hereby providing an update to the U.S. Environmental Protection Agency regarding the planned Final Bathymetry Survey to be conducted as per the Land Use Permit Equivalency (Land Use PE) issued by the New Jersey Department of Environmental Protection (NJDEP) on July 21, 2011 for the Phase I Removal Action. As described in the Land Use PE, the Final Bathymetry Survey is required to be completed within 5 days following completion of removal of the sheet pile enclosure. The sheet pile enclosure removal was completed on October 8, 2012, approximately 3 weeks ahead of schedule. To maintain data consistency, Ocean Surveys, Inc. (OSI), who has performed the bathymetry surveys to date, has been utilized to perform the final bathymetry survey. Due to scheduling conflicts, OSI was not able to conduct this work to meet the 5-day requirement described above. The Final Bathymetry Survey is planned to commence during the week of November 5, 2012. Due to Hurricane Sandy, the schedule was postponed until conditions allowed the work to be conducted safely.

Sincerely,

Tierra Solutions, Inc.

Paul J. Bluestein
Project Coordinator
On behalf of Occidental Chemical Corporation
(as successor to Diamond Shamrock Chemicals Company)

10th Floor
TwoTowerCenterBlvd.EastBrunswick,NewJersey**08816**

McIntyre, Kimberlee

From: Paul J. Bluestein [pjbluestein@tierra-inc.com]
Sent: Wednesday, August 17, 2011 3:01 PM
To: Reed, Rob; McIntyre, Kimberlee; Romagnoli, Bob
Subject: Fwd: UPF Civil Design Drawings and Technical Specifications

Paul J Bluestein
732-312-7547

Begin forwarded message:

> **From:** "Butler.Elizabeth@epamail.epa.gov" <Butler.Elizabeth@epamail.epa.gov>
> **Date:** August 17, 2011 5:49:03 PM EDT
> **To:** "Paul J. Bluestein" <pjbluestein@tierra-inc.com>
> **Subject: UPF Civil Design Drawings and Technical Specifications**
>
> Paul,
> Pursuant to the AOC, the Final UPF Civil Design Drawings and Technical Specifications - Phase I Removal Action, Revision 2, August 2011 is hereby approved. Please let em know if you have any questions.
> Thanks,
> Elizabeth

McIntyre, Kimberlee

From: Elizabeth Butler <Butler.Elizabeth@epamail.epa.gov>
Sent: Monday, April 02, 2012 7:46 AM
To: McIntyre, Kimberlee
Cc: Paul J Bluestein; Dunn, Shannon
Subject: RE: Final Documents for Review and Approval

Great, thanks. The WCQAPP is now approvable. Please proceed with production of the final documents. I will include this in the letter I'll be writing to wrap up the approvals for the various documents with the caveat for those documents that need addendums for the air changes.
Any questions please let me know.
Thanks,
Elizabeth

-----"McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA
From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Date: 03/29/2012 03:45PM
Cc: Paul J Bluestein <pjbluestein@tierra-inc.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>
Subject: RE: Final Documents for Review and Approval

Elizabeth,

Here is the revised Addendum Memo for SOP L-1 with your text added.

Regards,

Kimberlee

Privileged and Confidential Work Product
Prepared at the Request of Legal Counsel
for or in Anticipation of Litigation
and in Connection with Rendering Legal Advice

Kimberlee McIntyre | Principal Communications Specialist, Technical Communications Resource Leader |
kimberlee.mcintyre@arcadis-us.com

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ARCADIS, Imagine the result

Please consider the environment before printing this email.

From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Thursday, March 29, 2012 9:49 AM
To: McIntyre, Kimberlee
Cc: Paul J Bluestein
Subject: RE: Final Documents for Review and Approval

Kimberlee,

I hate to be a pain in the butt, but the change to the Addendum to SOP L-1 has still not been made. The text is supposed to be revised to add in the text that was provided as the response to RTC 3 to my December 1, 2011 email. I've copied the text that should be added in below. Please revise that one page to add the below sentences between what are currently the 2nd and 3rd sentences on that page. The rest looks great. Thanks and let me know if you have any questions.

Elizabeth

The inclusion of pyridine as an analyte in the SOM01.2 method for semivolatile organics, as applied to a water matrix, requires a modification of the continuous liquid/liquid extraction procedure. The modification provides for a 9-hour extraction at pH <2 followed by a 9-hour extraction at pH >11.

-----"McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com> wrote: -----

To: Elizabeth Butler/R2/USEPA/US@EPA, "pjbluestein@tierra-inc.com" <pjbluestein@tierra-inc.com>
From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
Date: 03/22/2012 06:51PM
Cc: "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Shatt, Ryan" <Ryan.Shatt@arcadis-us.com>, "Herman, Megan" <Megan.Herman@arcadis-us.com>
Subject: RE: Final Documents for Review and Approval

Elizabeth,

The last of your changes have been made. Please see attached PDF of those pages. Once we received your final approval letter (or email that it's coming). We'll proceed with hard copy production.

Regards,

Kimberlee

Kimberlee McIntyre | Principal Communications Specialist, Technical Communications Resource Leader |
kimberlee.mcintyre@arcadis-us.com

ARCADIS U.S., Inc. | 2300 Eastlake Avenue East, Suite 200 | Seattle, WA 98102
T: 425 379 0938 | M: 425 293 6137

www.arcadis-us.com

From: Elizabeth Butler [mailto:Butler.Elizabeth@epamail.epa.gov]
Sent: Friday, March 09, 2012 12:11 PM
To: McIntyre, Kimberlee; pjbluestein@tierra-inc.com
Subject: Re: Final Documents for Review and Approval

Paul,
Here are my lingering comments on the WCQAPP. Please make these minor changes and then the document will be approvable.
1. In reference to RTC 2 (which refers to RTC p 17 of 18), make one additional revision to the edits - add "for outcomes" after "10" in both worksheets.
2. In reference to RTC 3 (which refers to RTC p 17 of 18), is the text of this response included in the revised document? If so, please share. If not, please add it to Appendix B, SOP L-1.
3. Optional - the document is fine as is, but if you'd like to include mention of the OU-1 wastes being not f-listed, similar to the sediments, in accordance with our letter to you dated March 1, 2012, feel free to make that universal change to the document.
Any questions please let me know. Have a good weekend.
Thanks,
Elizabeth

From: "McIntyre, Kimberlee" <Kimberlee.McIntyre@arcadis-us.com>
To: Elizabeth Butler/R2/USEPA/US@EPA, Ray Basso/R2/USEPA/US@EPA
Cc: "'Paul J. Bluestein'" <pjbluestein@tierra-inc.com>, "'Paul S. Brzozowski'" <paul.brzozowski@tierra-inc.com>, "Romagnoli, Bob" <Bob.Romagnoli@arcadis-us.com>, "Spadaro, Philip" <Philip.Spadaro@arcadis-us.com>, "Reed, Rob" <Rob.Reed@arcadis-us.com>, "Kellems, Barry" <Barry.Kellems@arcadis-us.com>, "Dunn, Shannon" <Shannon.Dunn@arcadis-us.com>, "Beaver, James" <James.Beaver@arcadis-us.com>, "Moody, Chris" <Chris.Moody@arcadis-us.com>, "Bonkoski, Brooke" <Brooke.Bonkoski@arcadis-us.com>, "Bowman, Matthew" <Matthew.Bowman@arcadis-us.com>, "King, Coleman" <Coleman.King@arcadis-us.com>
Date: 12/16/2011 02:38 PM
Subject: Final Documents for Review and Approval

Elizabeth,

We have completed incorporating changes in response to your last rounds of comments on the Construction Quality Assurance Plan (CQAP), Removal Action Work Plan Quality Assurance Project Plan (RAWP QAPP), and Waste Characterization Quality Assurance Plan (WC QAPP).

Final PDFs of each document (changed pages only) have been posted on SharePoint in the following locations:

CQAP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fConstruction%20Quality%20Assurance%20Plan%20%28CQAP%29%2fFinal%20Construction%20Quality%20Assurance%20Plan%2c%20Revision%202%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

RAWP QAPP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPhase%20I%20Removal%20Action%20Work%20Plan%20%28RAWP%29%2fRAWP%20QAPP%2c%20Revision%201%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

WC QAPP
https://xnet.arcadis-us.com/clients/TSI/USEPA/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fclients%2fTSI%2fUSEPA%2fShared%20Documents%2fPassaic%20River%2fPre%2dInvestigation%20Studies%2fWaste%20Characterization%2fWaste%20Characterization%20QAPP%2c%20Revision%201%20%28RLSO%20121611%29&FolderCTID=&View=%7b8421A235%2d7648%2d4B47%2d9C1E%2d1585519C2FB2%7d

Please let us know if you have additional comments on any of these documents. We'll wait to begin production on these until we receive your final approval.

Best regards,

Kimberlee McIntyre | Senior Scientist, Technical Communications Practice Leader | kimberlee.mcintyre@arcadis-us.com
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[attachment "Waste Characterization QAPP Final Revised Pages.pdf" removed by Elizabeth Butler/R2/USEPA/US]

[attachment "Tierra WC QAPP SOP L-1 Addendum 033012 Rev.pdf" removed by Elizabeth Butler/R2/USEPA/US]