



ENTERED

Environmental Protection Division
Water Quality & RCRA Group (ENV-RCRA)
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666/FAX: (505) 667-5224

Date: June 23, 2008
Refer To: ENV-RCRA-08-118

Ms. Rebecca Kay
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303



Dear Ms. Kay:

SUBJECT: REQUEST FOR EXTENSIONS OF MILESTONE COMPLIANCE ACTIVITY DATES IN THE COMPLIANCE PLAN VOLUME (CPV), SITE TREATMENT PLAN (STP), LOS ALAMOS NATIONAL LABORATORY (LANL)

The purpose of this letter is to request extensions from the New Mexico Environment Department (NMED) for Los Alamos National Laboratory's Site Treatment Plan (STP) compliance milestones for the treatability groups LA-W917, *Compressed gases requiring scrubbing*, LA-W918, *Compressed gases requiring oxidation*, LA-W925 *Mercury Wastes TBD* and LA-934 *High Activity wastes*. In the FY07 Site Treatment Plan (STP) Update, Revision 18, dated May 1, 2008, Los Alamos National Security, LLC (LANS) and the National Nuclear Security Administration proposed the milestone activity dates in the STP Compliance Plan Volume (CPV) Sections 3.1.8(A) and 3.1.9(A) for the LA-W917 and LA-W918 waste treatability groups be extended from August 28, 2008 to August 28, 2009 and STP CPV Section 3.2(J) for the LA-W925 and LA-W934 waste treatability groups be extended from December 31, 2008 to December 31, 2010. A letter dated May 2, 2008, from James Bearzi of NMED stated:

"Should the Respondents wish to request an extension of the milestone activities for FY07, they may propose it in the STP Update Revision 18.0 due July 7, 2008. In order for NMED to consider the request, the Respondents must be sure to provide in Revision 18.0 the information previously requested by NMED (bullets 1-7 and 1-5 on pp. 2-3 of this letter)."

Please note the FY07 STP Annual update and Revision 18.0 which proposes extensions to the milestone activity dates was delivered to NMED on April 29, 2008 and prior to receipt of Mr. Bearzi's May 2, 2008 letter. Therefore, the information requested for NMED to consider the extension requests is provided in this letter. Bullets 1-7 specified on page 2 of Mr. Bearzi's May 2, 2008 letter are as follows:



- 2-1. "A description of gases in the two previously mentioned treatability groups;"
- 2-2. "A list of the EPA hazardous waste numbers associated with those gases;"
- 2-3. "A description of the treatment processes required for the two treatability groups"
- 2-4. "Accurate volumes comparable to the CPV, Revision 17.0 for the two treatability groups;"
- 2-5. "A full list of all commercial facilities the Respondents contacted requesting treatment and acceptance of the two treatability groups;"
- 2-6. "All correspondence, formal or otherwise, between the commercial facilities identified in items above including the reasons for their denial of acceptance and treatment of the two treatability groups; and"
- 2-7. "All correspondence, formal or otherwise, between Lawrence Livermore National Laboratory and the Respondents regarding possible treatment and acceptance of these two treatability groups."

and bullets 1-5 specified on page 3 are:

- 3-1. "A description of the waste in the treatability group(s);"
- 3-2. "A list of the EPA hazardous waste numbers associated with those wastes;"
- 3-3. "A description of the treatment processes required for the treatability group(s);"
- 3-4. "A full list of all commercial facilities the Respondents contacted requesting treatment and acceptance of the treatability group(s);"
- 3-5. "All correspondence, formal or otherwise, between the commercial facilities identified in item 4 above including the reasons for their denial of acceptance and treatment of the two treatability group(s)."

The information NMED requested for bulleted items 2-1 to 2-5 and items 3-1 to 3-4 is detailed in the table enclosed as Enclosure A. The table includes a description of the waste items in treatability groups LA-W917, LA-W918, LA-W925 and LA-W934; the EPA hazardous waste codes associated with the wastes; descriptions of the treatment processes required for the waste items; volumes of the waste items; and a full list of all commercial and DOE facilities contacted for each waste treatability group, including names and telephone numbers of points of contact and descriptions of possible treatment options for each treatability group at each facility contacted.

For bullet item 2-6 and item 3-5, the LANS Hazardous and Mixed Waste Operations Group responsible for contacting and securing waste treatment options for mixed low level waste typically does not use formal written correspondence when contacting off-site treatment facilities. Instead, the facility representatives are contacted by telephone, email or by personal meetings at waste treatment conferences. HMWO does not maintain telephone logs on calls to treatment facilities. HMWO does have some informal email correspondence on contacts with treatment facility representatives and copies of those are included in Enclosure B. In lieu of copies of formal correspondence, a signed affidavit by the HMWO

Mixed Waste Team Leader Charles (Chris) Duy which details his efforts to secure treatment options for the mixed low-level waste is included in Enclosure C.

For item 2-7, Enclosure D provides copies of email correspondence between LANS and Lawrence Livermore National Laboratory (LLNL). As noted in the email correspondence, LLNL representatives are not currently interested in conducting treatability studies on the LA-W917 and LA-W918 gas cylinders.

Included as Enclosure E is a Certification Statement prepared in accordance with the requirements of Section XX, "Documents, Information, and Reporting Requirements," of the FFCO.

Please contact me at (505) 667-4715 or by email at dyea@lanl.gov if you have any questions or if additional information is needed for NMED to consider these extensions requests. Mr. Duy is also available to meet with you to explain his efforts to secure treatments options for LANL's mixed low level waste.

Sincerely,



Albert Dye
STP Project Manager
Water Quality & RCRA Group (ENV-RCRA)

AD/lm

Enclosures: a/s

Cy: James Bearzi, NMED/HWB, Santa Fe, NM, w/enc.
Gene Turner, LASO-EO, w/enc., A316
Michael B. Mallory, PADOPS, w/o enc., A102
Richard S. Watkins, ADESHQ, w/o enc., K491
Tori George, ENV-DO, w/o enc., J978
Gerald O'Leary, WDP-DO, w/o enc., J595
Paul Newberry, WDP-HMWO, w/o enc., J595
Chris Duy, WDP-HMWO, w/enc., J595
Ellen Louderbough, LC-LESH, w/enc., A187
ENV-RCRA, File, w/enc., K490
IRM-RMMSO, w/enc., A150

Enclosure A
“Difficult Waste to Treat” Table

DISPOSITION OF DIFFICULT STP ITEMS

Last modified: 6/17/2008

| STP items, below, versus Contacted facilities, across | | Permafex of Florida (they also own the following TSDFs: M&EC in TN, DSSI in TN and PFNW in WA) | Waste Control Specialists (WCS), Texas | Energy Solutions of Utah | Bear Creek Operations in TN (now owned by Energy Solutions) | Nuclear Fuel Services (NFS), TN | Lawrence Livermore (LLNL), CA | Integrated Environmental Services (IES), TN | NSSI, TX | Commercial and DOE facilities with previous successes treating LANL STP waste: WERF, IT Corp/TSCA, LANL, ARS, CUA/VSL, CMRI/ADA, NFS, PECO | Commercial and DOE facilities contacted but unable so far to give more than advice: ORNL, NTS, Sandia, Hazen Research, StataG, Argonne/Chicago Office, Portsmouth DOE facility. |
|---|---|---|--|---|---|--|--|--|---|---|---|
| Current TA-54 Inventory of Difficult STP items (from LA-W917, 918, 925 and 934) | Container numbers (Treatability Group, RCRA codes and net waste volume in cubic meters) | Primary contacts are Stacey McNamara (865-599-0211) and Tammy Monday (865-813-1309) | Primary contact is Sherrod Reavis (972-488-1495) | Primary contact is Jose Jerez (801-243-3506) | Primary contact is now Jose Jerez (801-243-3506) | Primary contact is Norm Jacobs (423-743-2503) | Primary contact is Charley Hunt (925-422-3813) | Primary contact is Jeff Gold (404-863-8175) | Primary contact is Bob Gallagher (713-641-0391) | Contacts, in order: David Wise, Thomas Klason, Jacek Dziejewski/Alice Barr, Elvin Chavez, Isabell Muller, Andrea Faucette, Norm Jacobs, Dave Dalton | Dave Eaton (INEEL), Gary Patterson (DOE HQ), Phylis Peterson (Sandia Nat. Lab.), Greg Hulet (DOE-MWFA) and Louis Guidell (Portsmouth), Rick Kenny(Hazen) and others. |
| LA-W934 - Very high tritium with very reactive Lithium (requires sorting, reacting of LIH, recapture and recycle of tritium, or other options.) | 89485400(LA-W934, D003, 0.1136) 89485500(LA-W934, D003, 0.1136) 91007768(LA-W934, D003, 0.1136) 91007769(LA-W934, D003, 0.1136) 91007770(LA-W934, D003, 0.1136) C93034678(LA-W934, D003, 0.1136) C06186549(LA-W934, D001/D003, 0.1136) C06186550(LA-W934, D001/D003, 0.1136) | Informal bid of \$4,000,000, contingent upon facility modifications, which could take until 2010. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | New Part B Permit allows them to treat - developing process and costs for bid. Development of process could take 6 months to one year. | Not compatible with their NRC license or RCRA Permit | Not Permitted for treatment of haz waste | Not compatible with their NRC license, no RCRA Permit | Possible treatment/recycle options under discussion - contingent upon license and permit modifications. Audit and LASO approval needed for exception to DOE 435.1 | | |
| LA-W917, 918 - Gas cylinders with internal radioactive contamination (requires scrubbing or oxidation, reaction to strip and recycle H3 or other options.) | C94042517(LA-W918, D001, 0.0602) C98100432(LA-W917, D001, 0.0020) C98100433(LA-W917, D001, 0.0030) C98100434(LA-W917, D001, 0.0030) | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | New Part B Permit allows them to treat - developing process and costs for bid. Development of process could take 6 months to one year. | Not compatible with their NRC license or RCRA Permit | Can no longer accept this waste for treatability study - "maybe later" (from email from C. Hunt, early 2008) | No Part B permit, but could do a treatability study - working through Permafex | Possible treatment/recycle options under discussion - contingent upon license and permit modifications. Audit and LASO approval needed for exception to DOE 435.1 | | |
| LA-W934 - Tritium traps and tritiated squib assemblies with very high tritium (up to 50,000 Curies - requires reacting and recapture or destruction of tritium. Transported by Road Closure - Not DOT shippable in current form.) | C93033648(LA-W934, D001/D009, 0.1893) C00130818(LA-W934, D009, 0.0125) C00130819(LA-W934, D009, 0.0100) C00130820(LA-W934, D008, 0.0010) C00130821(LA-W934, D008, 0.0010) | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Not Permitted for treatment of haz waste | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Possible treatment/recycle options under discussion - contingent upon license and permit modifications. Audit and LASO approval needed for exception to DOE 435.1. Also contingent upon repackaging or DOT exception to Road Closure. | | |
| LA-W934 - Lead-lined Gloveboxes (Possibly TRU when lead is removed - requires decon of Plutonium, shredding of metal or stripping of lead for macroencapsulation.) Many of these coming over next few years. | C01144644(LA-W934, D008, 7.9000) C03158872(LA-W934, D008, 7.0800) C03158895(LA-W934, D008, 4.7578) C05179323(LA-W934, D008, 19.3900 - stored at TA-55) | Profiled to them - may take at PFNW with further characterization. Informal bid of \$450,000 contingent upon facility modifications, which could take until 2010. | Will not take any non-routine items until done with their permitting process (Spring of 2010) | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Could decon or macro, contingent on development of process. Informal bid of \$300,000, contingent upon development of process, which can take 6 months to one year. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Not Permitted for treatment of haz waste | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | | |
| LA-W925 - Tritiated items with mercury contamination (requires disassembly, sorting of debris, removal and treatment of the mercury by amalgamation and stabilization, and macroencapsulation of the debris.) | 908448(LA-W925, D009, 0.1136) 908476(LA-W925, D009, 0.1136) 908477(LA-W925, D009, 0.1136) | Recent bid of \$400,000, contingent upon facility modifications, which could take until 2010. | Will not take any non-routine items until done with their permitting process (Spring of 2010) | Requires further characterization - Sampling scheduled for July, 2008. Expected to ship with other mercury waste in January, 2009 | New Part B Permit allows them to treat - developing process and costs for bid. Development of process could take 6 months to one year. | Will work with WCS to treat by DeMerc, when WCS can accept them (Spring of 2010) | Not Permitted for treatment of haz waste | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Possible treatment/recycle options under discussion - contingent upon license and permit modifications. Audit and LASO approval needed for exception to DOE 435.1 | | |
| LA-W934 - Portsmouth Debris (requires sorting, stabilization of the 5NM and Tc99, and micro or macroencapsulation of the solids.) | C01136479(LA-W934, D004/7/8, 0.2082) C01136480(LA-W934, D004/7/8, 0.2082) C05180336(LA-W934, D007/8, 0.2082) | Successfully profiled - DOT regulatory change requires repackaging. Contingent upon development of new contracting mechanism. Scheduled for January 2009. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | Won't build a special facility or won't get necessary exceptions or changes to their RCRA Permit or NRC license. | New Part B Permit allows them to treat - developing process and costs for bid. Development of process could take 6 months to one year. | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | | |
| LA-W934 - Copper solder joints, could be segregated at LANL of shipped to Bear Creek (requires sorting of high Plutonium items for WIPP and low items for macro at Energy Solutions.) Sorting this year, shipping to ESU or Bear Creek in early 2009. | C02151368(LA-W934, D008, 0.2082) C01143673(LA-W934, D008, 0.2082) | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | New Part B Permit allows them to treat - developing process and costs for bid. Development of process could take 6 months to one year. | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | | |
| Hydrogen sulfide compressed gas cylinder with tritium contamination | C00130822(LA-W934, D001/D003, 0.0100) | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | New Part B Permit allows them to treat - developing process and costs for bid. Development of process could take 6 months to one year. | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | Disposal option developed - in process | | |
| Recent addition to STP - Mercury debris (LA-W925) awaiting approval of next annual STP revision. | C06188348(LA-W925, D009, 0.0379) | Routinely treated at M&EC | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | | |
| Recent additions to STP - MLLW treated sludges from TRU program (LA-W934) awaiting approval of next annual STP revision. | C07190323(LA-W934, D009/F001/F002, 0.8496) | Similar profile already approved at M&EC | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | Disposal option developed - awaiting approval of next STP Revision. | | |

This table is a true and accurate summarization of the correspondence since 1996 regarding difficult STP items, and is routinely updated. Successful treatments have been well documented and are on file.

There is little documentation of exchanges on treatment options for current waste, as most exchanges have become outdated or were informal conversations.

Emails and Profiles submitted to certain facilities have recently been forwarded to the STP Manager.

Other DOE sites and commercial facilities are informally contacted at Rad or Haz Waste conferences such as: DOECAP, DOE Mixed Waste Focus Area, Waste Management, NTS, FedRad, TSDF Users conferences and others.

Enclosure B
Email Correspondence

Date sent: **Mon, 05 May 2008 13:41:18 -0600**
To: **dyea@lanl.gov**
From: **Chris Duy <cduy@lanl.gov>**
Subject: **Fwd: tritium waste**

X-Sieve: CMU Sieve 2.2
From: "Stacey McNamara" <smcnamara@perma-fix.com>
To: "Chris Duy" <cduy@lanl.gov>
Cc: <jkelly@perma-fix.com>
Subject: tritium waste
Date: Wed, 24 Oct 2007 14:57:02 -0400
X-Mailer: Microsoft Office Outlook 11
Thread-Index: AcgWb6irzzBq3nDnTe+RGitdiD7ZoQ==
X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.5502:2.3.11,1.2.37,4.0.164
definitions=2007-10-24_03:2007-10-21,2007-10-24,2007-10-24 signatures=0
X-Proofpoint-Spam: 0
X-CTN-5-MailScanner-Information: Please see <http://network.lanl.gov/email/virus-scan.php>
X-CTN-5-MailScanner: Found to be clean
X-CTN-5-MailScanner-From: smcnamara@perma-fix.com
X-Spam-Status: No

Chris - Here is our budgetary estimate:

1 - Lithium/tritium waste from glovebox operations - 6 drums - \$ 2 - 3 million. The reason for this price is that the tritium (100,000 curies) is several hundred times our license limit and therefore, will require special approval and will restrict us from accepting other tritium contaminated waste into the facility during the same calendar year.

2 - Miscellaneous equipment including pumps and tubing with mercury and high tritium - 3 drums - \$400,000.

3 - Lithium hydride with high tritium - 2 drums - \$900,000 - 1 million. The reason for this price is that the tritium (600 curies) is approximately twice our license limit and therefore, will require special approval and will restrict us from accepting other tritium contaminated waste into the facility while this waste is onsite. This is also reactive waste requiring special handling.

I hope this helps. All pricing is contingent upon profile approval and in some cases regulatory approval.

Let me know if you need anything else.

Stacey

NOTE NEW EMAIL: smcnamara@perma-fix.com

Stacey Rathke McNamara
Regional Sales Manager
Perma-Fix Environmental Services
701 Scarboro Road, Suite 300
Oak Ridge, TN 37830
Telephone: 865-813-1318
Mobile: 865-599-0211
Fax: 865-813-1301

Chris Duy

*Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854*

Date sent: Thu, 08 May 2008 16:14:59 -0600
To: dya@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Fwd: RE: WCS Update

Date: Thu, 20 Dec 2007 13:46:21 -0700
To: "Sherrod SR. Reavis" <sreavis@wctexas.com>
From: Chris Duy <cduy@lanl.gov>
Subject: RE: WCS Update

Thank you! Talk to ya next year.....

/

/

At 01:27 PM 12/20/2007, you wrote:

We have returned all of LANLs waste. We do not have any on-site!! FINALLY!!

Everyone is still running from the tritium/lithium drums as of right now but I am still working on it.

We can take Class B and C for treatment and storage now. We will be able to dispose of Class B and C in a couple of years.

Merry Christmas and Happy New Year!!

Sherrod Reavis
Technical Support Manager
Waste Control Specialists LLC
(c) 432-631-5652
(o) 505-394-4300 ext. 160

-----Original Message-----

From: Chris Duy [mailto:cduy@lanl.gov]
Sent: Thursday, December 20, 2007 1:45 PM
To: Sherrod SR. Reavis
Subject: WCS Update

Hey Sherrod - Happy Holidays!

I'm headed out for a week - be back January 2nd, but wanted an update on three things:

LANL waste status?

Tritium/lithium waste?

Are you guys able to accept Class B and C waste soon?

Check back with me next month - have a happy New Year!

Chris Duy
Mixed Waste Team Lead
Hazardous and Mixed Waste Ops
(505) 667-5854

Chris Duy
Mixed Waste Team Lead
Hazardous and Mixed Waste Ops
(505) 667-5854

Chris Duy
Mixed Waste Team Leader

Hazardous and Mixed Waste Ops
(505) 667-5854

Date sent: Thu, 29 May 2008 17:27:02 -0600
To: dya@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: FW: LANL difficult waste

X-Sieve: CMU Sieve 2.2
From: <smcnamara@perma-fix.com>
To: "Chris Duy" <cduy@lanl.gov>
Subject: FW: LANL difficult waste
Date: Tue, 26 Feb 2008 10:22:04 -0500
X-Mailer: Microsoft Office Outlook, Build 11.0.5510
Thread-Index: Ach3/aZE3pWP6OOSR1CfktUKsLpK/AAjVVjQ
X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.7020:2.3.11,1.2.37,4.0.164
definitions=2008-02-26_05:2008-02-21,2008-02-26,2008-02-26 signatures=0
X-Proofpoint-Spam: 0
X-CTN-5-MailScanner-Information: Please see <http://network.lanl.gov/email/virus-scan.php>
X-CTN-5-MailScanner: Found to be clean
X-CTN-5-MailScanner-From: smcnamara@perma-fix.com
X-Spam-Status: No

Chris – M&EC can take the below listed containers. If you can get us profiles for those I can route them for approval and get you a price. It looks like between these and the PFNW ones we can take most of them. I will continue to work on the other 10 that we don't have a home for yet.

Thanks!

NOTE NEW EMAIL: smcnamara@perma-fix.com

Stacey Rathke McNamara
Regional Sales Manager
Perma-Fix Environmental Services
701 Scarboro Road, Suite 300
Oak Ridge, TN 37830
Telephone: 865-813-1318
Mobile: 865-599-0211
Fax: 865-813-1301

From: Ben Crocker [mailto:bcrocker@ettp.net]
Sent: Monday, February 25, 2008 5:35 PM
To: smcnamara@perma-fix.com; rgrondin@perma-fix.com
Cc: Ralph Sheffield
Subject: RE: LANL difficult waste

Greetings:

I have reviewed the spreadsheet and I believe the only items M&EC would want to deal with are the Mercury items and the Lithium and Lithium hydride items. Con IDs:

89485400, 89485500, 91007768, 91007769, 91007770, C93034678, 908448, 908476, 908477, C06187569, C06188348, C06186549, C06186550.

I don't think we want any of the lead-lined glove boxes that could become TRU when the lead is removed. Also, we are not interested in any gas cylinders.

Ben Crocker

-----Original Message-----

From: smcnamara@perma-fix.com [mailto:smcnamara@perma-fix.com]

Sent: Friday, February 22, 2008 11:28 AM

To: bcrocker@ettp.net; rgrondin@perma-fix.com

Subject: FW: LANL difficult waste

Hey guys – any word on these? They have money and want to treat some portion of these wastes. I need to know what you can take, fairly easily, and then we will quote them a price. Some pricing notes are already at the bottom of the spreadsheet.

Thanks,

Stac

NOTE NEW EMAIL: smcnamara@perma-fix.com

Stacey Rathke McNamara
Regional Sales Manager
Perma-Fix Environmental Services
701 Scarboro Road, Suite 300
Oak Ridge, TN 37830
Telephone: 865-813-1318
Mobile: 865-599-0211
Fax: 865-813-1301

From: smcnamara@perma-fix.com [mailto:smcnamara@perma-fix.com]

Sent: Tuesday, February 19, 2008 3:42 PM

To: 'rgrondin@perma-fix.com'; 'bcrocker@ettp.net'

Subject: FW: LANL difficult waste

Richard/Ben – Chris Duy is getting some money to get rid of some of their legacy waste. This is the list of waste that we are pretty familiar with. So, can both of you please take a look at the list and let me know which ones we “really” can take in the near future (i.e., within a couple of months) for treatment? Past pricing notes are at the bottom of the spreadsheet.

Thanks,

Stac

NOTE NEW EMAIL: smcnamara@perma-fix.com

Stacey Rathke McNamara
Regional Sales Manager
Perma-Fix Environmental Services

701 Scarboro Road, Suite 300
Oak Ridge, TN 37830
Telephone: 865-813-1318
Mobile: 865-599-0211
Fax: 865-813-1301

From: Chris Duy [<mailto:cduy@lanl.gov>]
Sent: Tuesday, February 05, 2008 1:14 PM
To: smcnamara@perma-fix.com; jkelly@perma-fix.com
Subject: LANL difficult waste

Hi guys. I asked for money to get rid of some of our nasty old legacy MLLW, described in the attached spreadsheet. It looks like I might actually get some funding. Please let me know your thoughts, informal cost estimates and comments - thanks.

Chris Duy
Mixed Waste Team Lead
Hazardous and Mixed Waste Ops
(505) 667-5854

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*Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854*

Date: Wed, 02 Apr 2008 12:23:04 -0600
To: Charles Hunt <hunt18@llnl.gov>
From: Chris Duy <cduy@lanl.gov>
Subject: Re: Hydrogen Cylinders

Oh well, I sure appreciate you're trying to help!

/

/

At 11:54 AM 4/2/2008, you wrote:
Hello Chris,

I talked to management again after our phone conversation this morning. We unfortunately can not treat the hydrogen cylinders. This is a transition year for us with the new contract with LLNS and we are in an adjustment phase now.

Next year we will be in better shape.

I'm sure we will have the chance to work together on other waste projects in the future.

Regards, Charlie

Hi Charlie - anything yet?

/

/

At 12:44 PM 3/18/2008, you wrote:
Hello Chris,

I appreciate this additional information. I'll be in touch.
Charlie

Thanks, Charlie. If you can do the treatability study, I'll need a description of the process, a timeline, costs, assurance that the residues will be treated and disposed, not returned, and contacts for setting up the contract. It's okay to return the empty bottles to us, with the valves removed, for disposal as low level waste, but we prefer not to get anything back. Since we will need to go through a lengthy process of permissions from the State, the sooner we start, the better. Please send the info to me and to Albert Dye, our STP Manager, at dyea@lanl.gov.
Thanks!

/

/

At 09:26 AM 3/14/2008, you wrote:
Hello Chris,

Good to hear from you. I'll check and see.

Charlie

Hi Charlie. It's time to resurrect the gas cylinder treatability study. Can you still do it?

/

/

Date: Wed, 25 Jul 2007 07:13:54 -0600
To: Charles Hunt <hunt18@llnl.gov>
From: Chris Duy <cduy@lanl.gov>
Subject: Re: Hydrogen Cylinders with Tritium - 2007

Thanks, Charlie.

/
/
At 02:25 PM 7/24/2007, you wrote:
Hello Chris,

thank you for the update on the cylinder funding. It will be nice to have the Dep-U project behind us, all of us.

I'll keep you informed on the progress on the cylinder treatment proposal from this end.
Charlie

Charlie, it looks like funding is being gathered from all sources to rescue a project, so there will not be any funding for the cylinder project until I get approval for my special projects proposal in October. We can still start preparation, but the priority is low, since it probably can't ship until November. Guess what project is siphoning off all the funds? Can we say DU?

/

Date: Tue, 26 Jun 2007 16:33:26 -0600
To: Charles Hunt <hunt18@llnl.gov>
From: Chris Duy <cduy@lanl.gov>
Subject: Re: Hydrogen Cylinders with Tritium - 2007

Hey Charlie - sounds like a most excellent vacation.

/

At 10:17 AM 6/26/2007, you wrote:
Hello Chris,

I'll be optimistic and say I think so - but let me run it up the chain again to make sure.

I'll get back to you on this by the end of the week.

I was on vacation this past week Chris. My family and I went to Oregon where we visited the University of Oregon and Oregon State University. Beautiful campuses with excellent facilities. I was impressed. We then went to central Oregon and rafted the Dechutes River. My son Kenny caught a 20" rainbow on a nymph. He was pumped.

Take care, Charlie
Hi Charlie! - hope you're doing well.....

Remember these four gas cylinders? If I can get my hands on about \$50,000, can LLNL take them off our hands? Let's talk.....

/

At 02:10 PM 11/23/2005, you wrote:
Hello Chris,

we have been looking at the spreadsheet and the Waste Data Forms on each of the cylinders. Are we interpreting the column: STP m3 correctly when we read:

| | |
|--------------------|---|
| cylinder C94042517 | .0602 m3 (60.2 liters) of deuterium gas remaining in the cylinder |
| cylinder C98100432 | .002 m3 (2 liters) of deuterium gas remaining in the cylinder |
| cylinder C98100433 | .002 m3 (2 liters) of deuterium gas remaining in the cylinder |
| cylinder C98100434 | .003 m3 (2 liters) of deuterium gas remaining in the cylinder |

In other words, from your records it looks like the treatability study would involve the treatment of

~70 liters of deuterium. Is this correct?

Have a good Thanksgiving.

Charlie

Hi Charlie

Attached is my spreadsheet and pictures of the four cylinders.

Chris

/

/

At 02:26 PM 10/27/2005 -0700, you wrote:

Hello Chris,

the Waste Treatment Group would like to collect as much information on the 4 hydrogen/deuterium cylinders as possible. If you could provide:

1. digital photos of the cylinders and valves
2. cylinder specification sheets, valve specification sheets
3. use records, waste records, drawings

This information will be beneficial to us in presenting a case to Stephanie Goodwin, the RHWM Division Leader, on pursuing a RCRA treatability study with our California regulators.

Thank you Chris.

Charlie

925-422-3813

Attachment converted: Big Stuff:06 Gas cylinders wit#177F74.xls (XLS4/XCEL) (00177F74)

Attachment converted: Big Stuff:06 Green Cylinder.jpg (JPEG/JVWR) (00177F79)

Attachment converted: Big Stuff:06 Red Cylinders.jpg (JPEG/JVWR) (00177F7E)

Attachment converted: Big Stuff:06 Tall Cylinder.jpg (JPEG/JVWR) (00177F82)

Chris Duy

Mixed Waste Team Lead

Hazardous and Mixed Waste Ops

(505) 667-5854

Chris Duy

Mixed Waste Team Lead

Hazardous and Mixed Waste Ops

(505) 667-5854

Chris Duy

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Hazardous and Mixed Waste Ops

(505) 667-5854

Chris Duy

Mixed Waste Team Leader

Hazardous and Mixed Waste Ops

(505) 667-5854

Date sent: Thu, 22 May 2008 07:35:22 -0600
To: dya@lanl.gov, etl@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Fwd: RE: LANL difficult waste items

X-Sieve: CMU Sieve 2.2
X-CTN-5-Virus-Scanner: amavisd-new at mailrelay1.lanl.gov
X-YMail-OSG:
5eBcCWsVM1I6OAI0V5Hinz4iSP59zrQlgWk2Rlfq05LIEp.eLyJa.TNI9BcMdCLtzyT5wOFoSaHT06m
E8kuZNJZBgNYsF1NehmtVfLB_T45PuqMtHlvoys3vJ3wD2dwSCzc-
X-Yahoo-Newman-Property: ymail-3
From: "Robert D Gallagher" <rdgallagher@nssihouston.com>
To: "Chris Duy" <cduy@lanl.gov>
Subject: RE: LANL difficult waste items
Date: Mon, 12 May 2008 11:05:43 -0500
X-Mailer: Microsoft Outlook IMO, Build 9.0.6604 (9.0.2911.0)
X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.7161:2.4.4,1.2.40,4.0.164
definitions=2008-05-12_04:2008-05-09,2008-05-12,2008-05-12 signatures=0
X-Proofpoint-Spam: 0
X-CTN-5-MailScanner-Information: Please see <http://network.lanl.gov/email/virus-scan.php>
X-CTN-5-MailScanner: Found to be clean
X-CTN-5-MailScanner-From: rdgallagher@nssihouston.com
X-Spam-Status: No

Sorry to take so long getting this to you. I wrote it up right after getting your email but lost the file on the computer. If you can get me the additional information, I can get you ballpark pricing.

Bob Gallagher
NSSI
713 641-0391

-----Original Message-----

From: Chris Duy [<mailto:cduy@lanl.gov>]
Sent: Monday, May 05, 2008 2:30 PM
To: rdgallagher@nssihouston.com
Subject: LANL difficult waste items

Bob, nice talking with you.....

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854

*Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854*

May 7, 2008

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Operations
Los Alamos National Lab
Los Alamos, NM

TEL 505 667-5854

cduy@lanl.gov

Dear Mr. Duy:

I looked at the list of Deuterium gas cylinders contaminated with Tritium. Based on the information, they range from fullsize 3A to half size 4" X 12".

I do have some questions:

C98100432 The pressure rating is shown as 240ET. What does that mean? Is this something other than a metal cylinder? All the other cylinders are 2000 psi cylinders.

C98100432, C98100433, C98100434 The pressure rating on one is 240et and the other two are 2015 psi but the pressure relief valve shows 165. That value must be temperature and not pressure. Is that correct? Or do you know?

Any additional information will be helpful.

The proposed treatment would be one of two treatments:

1. If analysis shows the contents to be useable purity Deuterium with minimal contaminants, we will simply bleed the Deuterium into the process we are currently operating for Savannah River. In this process we electrolyze heavy water and flow the Deuterium up a CECE column containing down flowing Tritium contaminated heavy water. The Deuterium replaces the Tritium in the heavy water and the Tritium continues up the column and is recombined. The Tritium water is continuously drawn off for further processing to recover the Tritium content. Over time the Tritium content of the heavy water approaches zero.

With this process, both the Deuterium and the Tritium are recovered for reuse. Since the water process is being done for DOE Savannah River and the water being processed is owned by DOE and will be returned to DOE at the end of the process, this is true recycling and none of the recycled material leaves the DOE system. None of the recovered Tritium is released to the environment.

2. If DOE has concerns about the recycling and reuse issue, the other approach would be to pass the Hydrogen/Deuterium/Tritium over a heated oxidizer catalyst. This would convert all of the Hydrogen, Deuterium, and Tritium to water. The water would then be stabilized using concrete and the concrete shipped for land disposal at Energy Solutions. With proper encapsulation, none of the contained tritium is released to the environment.

I am still working on pricing for each of these treatments and will complete the quote as soon as you can provide answers to the questions.

If you need any additional information or clarification, please contact me.

Sincerely,

**Robert D. Gallagher
President NSSI**

Date sent: Thu, 22 May 2008 07:35:34 -0600
To: dya@lanl.gov, etl@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Fwd: RE: LANL difficult waste items

X-Sieve: CMU Sieve 2.2
X-CTN-5-Virus-Scanner: amavisd-new at mailrelay1.lanl.gov
X-YMail-OSG:
J7zWl0YVM1kWmMCMVe2Ng_XjhpFfMA6DI8OQDp6psYxaG9hVZODxjz2s65Xr.F.b1gmJ9HY1NX
GocDo0RR.YNm481bto70sQZJXaqekjWA--
X-Yahoo-Newman-Property: ymail-3
From: "Robert D Gallagher" <rdgallagher@nssihouston.com>
To: "Chris Duy" <cduy@lanl.gov>
Subject: RE: LANL difficult waste items
Date: Mon, 12 May 2008 11:21:03 -0500
X-Mailer: Microsoft Outlook IMO, Build 9.0.6604 (9.0.2911.0)
X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.7161:2.4.4,1.2.40,4.0.164
definitions=2008-05-12_04:2008-05-09,2008-05-12,2008-05-12 signatures=0
X-Proofpoint-Spam: 0
X-CTN-5-MailScanner-Information: Please see <http://network.lanl.gov/email/virus-scan.php>
X-CTN-5-MailScanner: Found to be clean
X-CTN-5-MailScanner-From: rdgallagher@nssihouston.com
X-Spam-Status: No

again, I have a few questions but this gives you an idea of how we would propose to approach the various problem materials. NSSI is also licensed for transuranics but I didn't spend any time on that as our conversation had been strictly on Tritium work

As I didn't know the exact status of the various wastes, I haven't tried to put any numbers on these waste treatments. There will be some license issues as the Tritium activities are very high and would require some additional hardware and permitting.

Before addressing the permitted activity issue, I think we need to make sure you agree on the suitability of the suggested treatments and ballpark some costs before we go to the regulatory people.

[Robert D Gallagher]
713 641-0391

-----Original Message-----

From: Chris Duy [<mailto:cduy@lanl.gov>]
Sent: Monday, May 05, 2008 2:30 PM
To: rdgallagher@nssihouston.com
Subject: LANL difficult waste items

Bob, nice talking with you.....

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops

(505) 667-5854

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854

May 7, 2008

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Operations
Los Alamos National Lab
Los Alamos, NM

TEL 505 667-5854

cduy@lanl.gov

Dear Mr. Duy:

I looked at the listing of the miscellaneous mixed wastes at your facility. I have identified a number that would appear to be treatable at the NSSI facility. This is based on a very quick look. I am sure others could be treated once more information is provided.

Tritium/Lithium (89485400, 89485500, C06186549, C06186550)

NSSI routinely processes reactive metals in a closed system. We would oxidize the Lithium with gaseous reaction product effluent routed to a oxidation system to generate a waste water (Tritium) stream. This stream could then be put through electrolysis and isotope separation to remove the Tritium content for reuse. This would avoid release of most of the Tritium contaminated reaction products to the environment

Diffusion pump, piping with Hg (908448, 908476, 908477, C00130819)

NSSI would cut the metal into sizes that could be placed inside a retort unit. The unit would be heated and a stream of oxygen fed to the process. The temperature would be increased slowly with any vaporized mercury trapped in a cool Copper trap followed by a Copper Oxide furnace to convert any Tritium gas to water. This stream could then be put through electrolysis and isotope separation to remove the Tritium content for reuse. This would avoid release of most of the Tritium contaminated reaction products to the environment. The temperature would continue to be increased to boil off and trap any remaining Mercury. The small amount of Mercury would be amalgamated for disposal as a mixed waste treatment residue. The retorted metal would be disposed as DAW at Energy Solutions as well.

Cryotrap (C00130818)

With the limited information available, it would appear that the cylinders are sealed but not pressurized cylinders contained within a common container. It would appear that the cylinders could be removed from the outer container and each of the inner cylinders drilled and tapped. After tapping, the cylinders would be placed inside a pressure vessel and connected to an oxygen supply. The pressure vessel will be heated and an oxygen flow established through the inner cylinders. Initially, the heat will desorb some Tritium. As heating increases, the oxygen will combine with the Tritium to form water. All effluent will be passed through a Copper Oxide furnace to convert all Tritium to Tritiated water. This stream could then be put

through electrolysis and isotope separation to remove the Tritium content for reuse. This would avoid release of most of the Tritium contaminated reaction products to the environment

Squib Assembly (C00130820, C001308210)

Squibs are normally explosive. NSSI does not treat or accept explosives.

I should also point out that the NSSI radioactive material license allows NSSI to conduct almost any work we need to do as a "research and development" project without the need to get regulatory approval before proceeding with the work.

I do have a concern with respect to the Tritium levels indicated. NSSI's current manufacturing license allows Tritium possession to 9,999 Ci. On the waste license, we are authorized for an additional 3-5000 Ci.

We can probably help with some of the other wastes as well but the alpha emitters will take some major consideration as we probably cant find a disposal option even if we could do the processing.

It would appear that before we proceed with designing equipment and methodology, I would suggest that you visit the NSSI facility and see what we are doing with Tritium so you will be comfortable when you start pushing the issue with your purchasing people. I would also suggest that you begin to assemble whatever data you have available on the streams that are of prime importance to you.

Hopefully you will have more data than appears on the Excel printout.

This letter is just to suggest how NSSI perceives a treatment strategy for some of the streams.

If you need any additional information or clarification or would like to discuss a specific waste and its treatment, please contact me.

Sincerely,

**Robert D. Gallagher
President NSSI
05078A3**

Date sent: **Thu, 29 May 2008 17:30:19 -0600**
To: **dyea@lanl.gov**
From: **Chris Duy <cduy@lanl.gov>**
Subject: **Fwd: Treatability study**

Date: Wed, 28 May 2008 15:38:02 -0600
To: jacek@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Treatability study

Hey Jacek - you still there? Any interest in doing treatability studies on some hot waste?

*Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854*

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854

Date sent: Thu, 29 May 2008 17:30:00 -0600
To: dyea@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Fwd: Re: Meeting Last week

/
At 04:20 PM 5/28/2008, you wrote:

Chris

Thank You for taking the time to meet with me last week. I just wanted to follow up with you on the discussion that we had on the Glove Boxes and the data you were going to send to me.

- 1- Dimensions on the Glove Boxes
- 2- Analytical Data on the Glove Boxes
- 3- Number of Glove Boxes

When you get a chance, could you send me this data so we can work on getting pricing to you for treatment and disposal of the GB's you have in your inventory and we discussed last week.

Hope all is well, let me know if you need anything else.

Jose C. Jerez

Account Executive
Government Programs
423 West 300 South, Suite 200
Salt Lake City, Utah 84101
Office: (801)649-2053
Cell: (801)243-3506
Fax: (801)413-5659

jjerez@energysolutions.com
www.energysolutions.com

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(505) 667-5854*

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops

(505) 667-5854

Date sent: Thu, 29 May 2008 17:26:24 -0600
To: dyea@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Fwd: RE: cylinders

Date: Wed, 28 May 2008 17:43:14 -0600
To: <smcnamara@perma-fix.com>
From: Chris Duy <cduy@lanl.gov>
Subject: RE: cylinders

Thanks, though, for trying.

/

/

At 05:01 PM 5/28/2008, you wrote:

Well, I have had no success at finding an outlet for these cylinders. I have found one company that will come onto your site to treat them, but nobody that can take them to their own sites to treat them. I found one company that will take non-rad cylinders only. So, I hate to say this but we can't help you with the cylinders. Sorry. I really wish we would get into that business since there is a need.

I am so glad her show was a success. I had no doubt - she has amazing talent. It sounds like you both are having a blast....

Stac

NOTE NEW EMAIL: smcnamara@perma-fix.com

Stacey Rathke McNamara

Regional Sales Manager

Perma-Fix Environmental Services

701 Scarboro Road, Suite 300

Oak Ridge, TN 37830

Telephone: 865-813-1318

Mobile: 865-599-0211

Fax: 865-813-1301

From: Chris Duy [<mailto:cduy@lanl.gov>]
Sent: Wednesday, May 28, 2008 11:00 AM
To: smcnamara@perma-fix.com
Subject: Re: cylinders

The only reason we are still sitting on these cylinders is that the original generators described them as having definable amounts of tritium inside the bottles. Probably assumed that a certain percentage of the "deuterium" is tritium.

Will happily hug Jo for you. Her New York show was a success and we also enjoyed Portland Oregon this last weekend.

/

At 02:06 PM 5/23/2008, you wrote:

Chris - can these cylinders be decontaminated on the outside and then declared non-rad contaminated? I guess my question is, if we decon the outside of the cylinder, verify the valves are intact, can we assume the contents of the cylinders are clean? I am not sure how rad contamination would actually enter a cylinder since they are pressurized. Just thinking out loud.

Have a great weekend and give Jo a hug from me.

Stac

NOTE NEW EMAIL: smcnamara@perma-fix.com <?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

Stacey Rathke McNamara

Regional Sales Manager

Perma-Fix Environmental Services

701 Scarboro Road, Suite 300

Oak Ridge, TN 37830

Telephone: 865-813-1318

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Chris Duy
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Date sent: Thu, 29 May 2008 17:26:11 -0600
To: dya@lanl.gov
From: Chris Duy <cduy@lanl.gov>
Subject: Fwd: RE: gloveboxes

X-Sieve: CMU Sieve 2.2
X-CTN-5-Virus-Scanner: amavisd-new at mailrelay1.lanl.gov
Reply-To: <smcnamara@perma-fix.com>
From: <smcnamara@perma-fix.com>
To: "Chris Duy" <cduy@lanl.gov>
Subject: RE: gloveboxes
Date: Wed, 28 May 2008 19:06:03 -0400
X-Mailer: Microsoft Office Outlook, Build 11.0.5510
Thread-Index: AcjA0d2v7kDDObqzSn+9f2KkVnE0vwAQPfxQ
X-Proofpoint-Virus-Version: vendor=fsecure engine=4.65.7161:2.4.4,1.2.40,4.0.164
definitions=2008-05-28_07:2008-05-27,2008-05-28,2008-05-28 signatures=0
X-Proofpoint-Spam: 0
X-CTN-5-MailScanner-Information: Please see <http://network.lanl.gov/email/virus-scan.php>
X-CTN-5-MailScanner: Found to be clean
X-CTN-5-MailScanner-From: smcnamara@perma-fix.com
X-Spam-Status: No

Yep - better descriptions will help. We can then determine what treatment will be necessary. We can use NTS which will help our price too.

NOTE NEW EMAIL: smcnamara@perma-fix.com <?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

Stacey Rathke McNamara

Regional Sales Manager

Perma-Fix Environmental Services

701 Scarboro Road, Suite 300

Oak Ridge, TN 37830

Telephone: 865-813-1318

Mobile: 865-599-0211

Fax: 865-813-1301

From: Chris Duy [<mailto:cduy@lanl.gov>]
Sent: Wednesday, May 28, 2008 10:48 AM
To: smcnamara@perma-fix.com
Subject: RE: gloveboxes

Bear Creek Operations (BCO) might decon or macro them. Some or all of these gloveboxes contain things like huge lathes welded to the flooring. Better descriptions will help you refine the estimates.
/

/
At 10:45 AM 5/23/2008, you wrote:

We would base it on the glovebox dimensions, not the sealant you package them in. Who is BCO? What are they quoting? WOW - 8 Million. Good luck. Let us know if you need anything from us to get approval.

NOTE NEW EMAIL: smcnamara@perma-fix.com <?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

Stacey Rathke McNamara
Regional Sales Manager
Perma-Fix Environmental Services
701 Scarboro Road, Suite 300
Oak Ridge, TN 37830
Telephone: 865-813-1318
Mobile: 865-599-0211
Fax: 865-813-1301

From: Chris Duy [<mailto:cduy@lanl.gov>]
Sent: Thursday, May 22, 2008 7:55 PM
To: smcnamara@perma-fix.com
Subject: RE: gloveboxes

Are you counting the big metal sealant type A containers as the volume? It seems high. BCO is quoting lower, but we need to define the dimensions of the actual gloveboxes, and their contents. For now, all I need is rough estimates so I can go after the money for the legacy items. Looks like I'll be asking for about 8 million. We'll see.....

/

/

At 02:42 PM 5/22/2008, you wrote:

Is there anything we can do to help push this? Is this about the price you were expecting?

NOTE NEW EMAIL: smcnamara@perma-fix.com <?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

Stacey Rathke McNamara
Regional Sales Manager
Perma-Fix Environmental Services
701 Scarboro Road, Suite 300

Oak Ridge, TN 37830

Telephone: 865-813-1318

Mobile: 865-599-0211

Fax: 865-813-1301

From: Chris Duy [mailto:cduy@lanl.gov]

Sent: Thursday, May 22, 2008 4:27 PM

To: smcnamara@perma-fix.com

Subject: Re: gloveboxes

Going after the funding, but it's not likely anytime soon.

The first four total about 30 m3. Expecting two more soon, which would be about 40 m3 total for six of them.

/

/

At 02:55 PM 5/20/2008, you wrote:

Hey Chris - our typical price for this type of material is \$15,000/cubic meter. I know you all have about 100 of these gloveboxes total, but for now you are ready with 4. It will take some doing to get the treatment chain set up, but once we do, we might be able to come down on price if you are looking at getting rid of all 100. In looking at your profile it appears to be around 40 cubic meters which equates to \$600K.

What do you think? We really would love to get these this FY if at all possible. If you have any questions please call.

Thanks,

Stacey

NOTE NEW EMAIL: smcnamara@perma-fix.com

Stacey Rathke McNamara

Regional Sales Manager

Perma-Fix Environmental Services

701 Scarboro Road, Suite 300

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(505) 667-5854

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854

Date sent: **Mon, 02 Jun 2008 16:18:20 -0600**
To: **dyea@lanl.gov**
From: **Chris Duy <cduy@lanl.gov>**
Subject: **Fwd: LANL mixed waste**

Albert - finally re-established contact with Hazen Research in Colorado. I visited them years ago on doing treatability studies. Per our phone conversation, Rick Kenney doesn't think they can help, but he's looking into it.....

/

Date: Mon, 02 Jun 2008 16:14:50 -0600
To: kenneycw@hazenusa.com
From: Chris Duy <cduy@lanl.gov>
Subject: LANL mixed waste

Rick - attached is the promised spreadsheet describing our high-tritium waste items. Thanks for your consideration - let me know if you have any interest,

*Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854*

Chris Duy
Mixed Waste Team Leader
Hazardous and Mixed Waste Ops
(505) 667-5854

Enclosure C
Charles Duy Affidavit

AFFIDAVIT

1. I, Charles W. Duy (Chris), am an employee of Los Alamos National Security, LLC, at Los Alamos National Laboratory (LANL). I have been employed at LANL since July 1994
2. I am currently the Mixed Waste Team Leader of the Laboratory's Waste Disposition Project's Hazardous and Mixed Waste Operations Group. I have held this position since 2007.
3. The information in this affidavit reflects my personal knowledge of acceptable Mixed Low Level Waste (MLLW) treatment options, the actions I have taken to develop disposition paths for waste in the LANL Site Treatment Plan (STP), and my knowledge of and familiarity with mixed low-level waste treatment facilities.
4. I am familiar with the disposition of mixed low-level items identified in the Laboratory's STP including the "difficult to treat" stored items in the STP waste treatability groups LA-917 "Compressed Gases Requiring Scrubbing", LA-W918 "Compressed Gases Requiring Oxidation", LA-925 "Mercury Wastes" and LA-W934 "High Activity Waste."
5. From October, 1996 through the present, as an employee of the Laboratory's mixed low-level program, I have been responsible for: characterization of the Lab's mixed waste streams; contacting operators of mixed waste treatment facilities to discuss available treatment options for low-level mixed waste; and arranging for waste shipment.
6. I routinely contact operators of mixed waste treatment facilities by phone, e-mail, or in person to discuss treatment and disposal options as described more specifically in the paragraphs below. I do not routinely document these conversations. Rather, I maintain and frequently update a matrix of waste disposal sites with contact information and information on the ability of each site to manage particular waste streams. The current matrix is attached to this affidavit as Exhibit 1.
7. I have consulted with commercial and Department of Energy (DOE) facilities that have had previous successes with treating LANL waste including: the Idaho National Energy Lab's Waste Experimental Reduction facility (WERF), the Toxic Substances Control Act Incinerator at Oak Ridge (TSCAI), researchers here at LANL, American Radiation Services (ARS), Catholic University's Vitreous State Laboratory (CUA/VSL), Colorado Minerals Research Institute (CMRI), Nuclear Fuel Services (NFS), and Pacific Eco Solutions (PEcoS).
8. I also have sought advice on treatment options from commercial and DOE facilities including: Oak Ridge National Laboratory, Nevada Test Site, Sandia National Laboratory, Hazen Research, StataG, Argonne/Chicago Office, and Portsmouth DOE Facility.

The following describes my efforts to secure treatment options for the "difficult to treat" waste items:

- For the LA-W917 and LA-W918 compressed deuterium gas cylinders with internal radioactive contamination, I contacted officials at PermaFix of Florida, Waste Control Specialists (WCS) of Texas and Energy Solutions –Utah and was told they were each unwilling to construct special facilities and obtain permit exceptions necessary to treat these waste items. Bear Creek

Operations of Tennessee has recently received a RCRA part B permit, and is developing a process to treat the waste. The process development will require 6 months to a year to complete. NNSI of Texas cannot accept the waste for recycling of the tritium because it lacks a required DOE approval. My initial discussions with Lawrence Livermore National Laboratory (LLNL) officials indicated LLNL is not permitted to treat hazardous wastes but could conduct treatability studies on the waste. In March 2008 LLNL officials notified me they currently cannot accept the waste. Integrated Environmental Services (IES) does not have a RCRA Part B permit but may be able to do a treatability study on the waste. I am working through PermaFix to determine whether this is feasible. I have been informed by contacts at Nuclear Fuel Services (NFS) that the waste is not compatible with their NRC license or RCRA permit.

- For the LA-W925 tritiated items (pump, piping, and other materials) contaminated with mercury, WCS officials indicated they cannot accept the items until their regulatory permitting process has been completed, currently anticipated in 2010. My contacts with Energy Solutions indicate they can accept the waste but will require further characterization, currently scheduled for July 2008. PermaFix cannot accept the waste unless it modifies its facility; Bear Creek has recently received a new Part B RCRA permit and is developing a process to treat this waste; NFS can work with WCS to treat when WCS completes its permitting process; LLNL does not have a permit to treat the waste; the waste is not compatible with the NRC license or RCRA permit at IES; NNSI cannot accept the waste without modifying its NRC license and RCRA permit and obtaining DOE approval.
- For the LA-W934 "High Activity Waste" very high tritium with reactive lithium waste items, PermaFix cannot accept the waste unless it modifies its facility and WCS officials declined to consider accepting the waste for treatment at this time. My contacts at Energy Solutions said they were unwilling to construct special facilities and obtain permit exceptions necessary to treat these waste item; Bear Creek has recently received a new Part B RCRA permit and is developing a process to treat this waste; NFS and IES informed me that the waste is not compatible with their NRC license or RCRA permit. NNSI cannot accept the waste without modifying its NRC license and RCRA permit and obtaining DOE approval.
- For the LA-W934 "High Activity Waste" tritium traps and squib assemblies with very high tritium (requiring reaction or recapture of tritium.), I contacted these facilities: Permafix, WCS, Energy Solutions, Bear Creek, NFS, and IES. I have been informed by contacts at each facility that the waste is not compatible with their NRC license or RCRA permit. NNSI cannot accept the waste without modifying its NRC license and RCRA permit and obtaining DOE approval.
- For the LA-W934 "High Activity Waste" lead-lined gloveboxes (requiring lead removal and decon of plutonium with subsequent possible reclassification as TRU waste), I contacted PermaFix officials and was told their Northwest facility may accept the waste after further characterization and their Florida facility would require a facility modification. WCS officials indicated they cannot accept the items until their regulatory permitting process has been completed, currently projected to be in 2010. I contacted Energy Solutions, NFS, IES and NNSI was told that the waste is not compatible with their NRC license or RCRA permit. Bear Creek has recently received a new Part B RCRA permit and my contacts there said they may be able to develop a process to decontaminate or macroencapsulate this waste;
- For the LA-W934 "High Activity Waste" Portsmouth Debris (requiring sorting, stabilization of the special nuclear material and Technetium 99, and micro or macro-encapsulation of the solids.) I successfully profiled this waste with PermaFix, but recent changes in the department of Transportation regulations require the waste to be re-packaged. After a contract mechanism is developed and approved, I will schedule this waste for shipment to PermaFix. My contacts at WCS and Energy Solutions said they were unwilling to construct special facilities and obtain

Enclosure D
Lawrence Livermore National Laboratory Email Correspondence

Date: Wed, 02 Apr 2008 12:23:04 -0600
To: Charles Hunt <hunt18@llnl.gov>
From: Chris Duy <cduy@lanl.gov>
Subject: Re: Hydrogen Cylinders

Oh well, I sure appreciate you're trying to help!

/

/

At 11:54 AM 4/2/2008, you wrote:
Hello Chris,

I talked to management again after our phone conversation this morning. We unfortunately can not treat the hydrogen cylinders. This is a transition year for us with the new contract with LLNS and we are in an adjustment phase now.

Next year we will be in better shape.

I'm sure we will have the chance to work together on other waste projects in the future.

Regards, Charlie

Hi Charlie - anything yet?

/

/

At 12:44 PM 3/18/2008, you wrote:
Hello Chris,

I appreciate this additional information. I'll be in touch.
Charlie

Thanks, Charlie. If you can do the treatability study, I'll need a description of the process, a timeline, costs, assurance that the residues will be treated and disposed, not returned, and contacts for setting up the contract. It's okay to return the empty bottles to us, with the valves removed, for disposal as low level waste, but we prefer not to get anything back. Since we will need to go through a lengthy process of permissions from the State, the sooner we start, the better. Please send the info to me and to Albert Dye, our STP Manager, at dyea@lanl.gov.
Thanks!

/

/

At 09:26 AM 3/14/2008, you wrote:
Hello Chris,

Good to hear from you. I'll check and see.

Charlie

Hi Charlie. It's time to resurrect the gas cylinder treatability study. Can you still do it?

/

/

Date: Wed, 25 Jul 2007 07:13:54 -0600
To: Charles Hunt <hunt18@llnl.gov>
From: Chris Duy <cduy@lanl.gov>
Subject: Re: Hydrogen Cylinders with Tritium - 2007

Thanks, Charlie.

/

At 02:25 PM 7/24/2007, you wrote:
Hello Chris,

thank you for the update on the cylinder funding. It will be nice to have the Dep-U project behind us, all of us.

I'll keep you informed on the progress on the cylinder treatment proposal from this end.
Charlie

Charlie, it looks like funding is being gathered from all sources to rescue a project, so there will not be any funding for the cylinder project until I get approval for my special projects proposal in October. We can still start preparation, but the priority is low, since it probably can't ship until November. Guess what project is siphoning off all the funds? Can we say DU?

/

Date: Tue, 26 Jun 2007 16:33:26 -0600
To: Charles Hunt <hunt18@llnl.gov>
From: Chris Duy <cduy@lanl.gov>
Subject: Re: Hydrogen Cylinders with Tritium - 2007

Hey Charlie - sounds like a most excellent vacation.

/

At 10:17 AM 6/26/2007, you wrote:
Hello Chris,

I'll be optimistic and say I think so - but let me run it up the chain again to make sure.

I'll get back to you on this by the end of the week.

I was on vacation this past week Chris. My family and I went to Oregon where we visited the University of Oregon and Oregon State University. Beautiful campuses with excellent facilities. I was impressed. We then went to central Oregon and rafted the Dechutes River. My son Kenny caught a 20" rainbow on a nymph. He was pumped.

Take care, Charlie
Hi Charlie! - hope you're doing well.....

Remember these four gas cylinders? If I can get my hands on about \$50,000, can LLNL take them off our hands? Let's talk.....

/

At 02:10 PM 11/23/2005, you wrote:
Hello Chris,

we have been looking at the spreadsheet and the Waste Data Forms on each of the cylinders. Are we interpreting the column: STP m3 correctly when we read:

| | |
|--------------------|---|
| cylinder C94042517 | .0602 m3 (60.2 liters) of deuterium gas remaining in the cylinder |
| cylinder C98100432 | .002 m3 (2 liters) of deuterium gas remaining in the cylinder |
| cylinder C98100433 | .002 m3 (2 liters) of deuterium gas remaining in the cylinder |
| cylinder C98100434 | .003 m3 (2 liters) of deuterium gas remaining in the cylinder |

In other words, from your records it looks like the treatability study would involve the treatment of

~70 liters of deuterium. Is this correct?

Have a good Thanksgiving.

Charlie

Hi Charlie

Attached is my spreadsheet and pictures of the four cylinders.

Chris

/

/

At 02:26 PM 10/27/2005 -0700, you wrote:

Hello Chris,

the Waste Treatment Group would like to collect as much information on the 4 hydrogen/deuterium cylinders as possible. If you could provide:

1. digital photos of the cylinders and valves
2. cylinder specification sheets, valve specification sheets
3. use records, waste records, drawings

This information will be beneficial to us in presenting a case to Stephanie Goodwin, the RHWM Division Leader, on pursuing a RCRA treatability study with our California regulators.

Thank you Chris.

Charlie

925-422-3813

Attachment converted: Big Stuff:06 Gas cylinders wit#177F74.xls (XLS4/XCEL) (00177F74)

Attachment converted: Big Stuff:06 Green Cylinder.jpg (JPEG/JVWR) (00177F79)

Attachment converted: Big Stuff:06 Red Cylinders.jpg (JPEG/JVWR) (00177F7E)

Attachment converted: Big Stuff:06 Tall Cylinder.jpg (JPEG/JVWR) (00177F82)

Chris Duy

Mixed Waste Team Lead

Hazardous and Mixed Waste Ops

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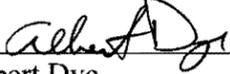
Hazardous and Mixed Waste Ops

(505) 667-5854

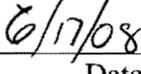
Enclosure E
Certification Statement

**REQUEST FOR EXTENSIONS OF MILESTONE COMPLIANCE ACTIVITY
DATES IN THE COMPLIANCE PLAN VOLUME (CPV), SITE TREATMENT
PLAN (STP), LOS ALAMOS NATIONAL LABORATORY (LANL)**

I certify that I am the project manager responsible for overseeing the implementation of the Site Treatment Plan for the Los Alamos National Laboratory. To the best of my knowledge and belief, the information in this document is true, accurate, and complete.



Albert Dye
STP Project Manager
Water Quality & RCRA
Los Alamos National Laboratory
Operator



Date Signed