Trihydro
CORPORATION

January 5, 2010

Mr. Ed Riege
Environmental Superintendent
Western Refining – Gallup Refinery
Route 3 Box 7
Gallup, NM 87301

RE: Land Treatment Unit Soil Sampling Report, Western Refining, Gallup Refinery, Gallup, New Mexico

Dear Mr. Riege:

Trihydro Corporation (Trihydro) was selected to conduct Resource Conservation and Recovery Act (RCRA) required soil sampling at Gallup Refinery's (Gallup) Land Treatment Unit (LTU). The LTU soil sampling was conducted during the week of December 7, 2009. This report is being submitted to Gallup to document the LTU soil sampling activities.

Trihydro was provided with Section 5 of Gallup's LTU Post-Closure Monitoring Plan dated May 2000 to guide the LTU soil sampling. With the exceptions noted below, LTU sampling was conducted in accordance with this document.

Pre Sampling Activities

Per the Post-Closure Monitoring Plan, the LTU cells were divided into 6 foot by 6 foot grids. A total of 6 of the 8,625 grids were selected for sampling utilizing a random integer generator provided by Random.Org. Documentation of the random integer selection is provided as Attachment 1. The Post-Closure Monitoring Plan requires that a minimum of one sample location be located within each of the two LTU cells. However, there are currently three LTU cells. Therefore, sets of random integers were generated until at least one sample location was located within each of the three LTU cells. A map illustrating the sample locations is provided as Attachment 2.

Trihydro personnel arrived on site on December 8, 2009. Sample locations were located by Trihydro personnel utilizing a measuring tape and the corners of the berms dividing the LTU cells as reference points. Sample locations were staked and photographed. Photographs of the sample locations are included as photos 1 through 6 of the photo documentation provided as Attachment 3.

According to the Post-Closure Monitoring Plan, LTU soil samples were to be collected utilizing a hollow-stem auger drill rig equipped with a 5-foot, 2.5-inch diameter split core barrel advanced with the lead auger. However, upon arrival, Trihydro was informed by Gallup that accessing the soil sampling

locations with a hollow-stem auger drill rig would not be possible due to muddy conditions caused by recent precipitation events. Hope Monzeglio of the New Mexico Environment Department (NMED) was contacted by Grant Price of Trihydro on December 8, 2009 to discuss possible alternative sampling procedures. Ms. Monzeglio confirmed that collecting samples utilizing a hand auger equipped with stainless steel sleeves or a manual slide-hammer sampling probe would be acceptable.

LTU Soil Sampling

Zone of Incorporation (ZOI) samples were collected at five of the six sample locations utilizing the hand auger on December 8 and 9, 2009. At location 7544, the hand auger was not able to be advanced deep enough to collect the ZOI sample due to the presence of gravel. This sample was collected using a direct push drill rig as described below. A photograph of the hand auger and stainless steel sleeves is provided as photo 7 in Attachment 3. The auger and the sleeves were decontaminated between each sample interval and location. A photograph of the decontamination station is provided as photo 8 of Attachment 3.

In accordance with the Post-Closure Monitoring Plan, ZOI samples were to be collected from approximately 1 foot beneath the topsoil-ZOI surface (interface). The topsoil-ZOI interface was identified at depths ranging from 8 to 12 inches below ground surface (bgs). Therefore, ZOI samples were collected from approximately 2 feet bgs. The hand auger was advanced to the desired sample interval and samples were extracted onto clean plastic sheeting to allow for sample collection as illustrated in photos 9 through 11 in Attachment 3. Exact sample depths varied from location to location due to the varying depth of the topsoil-ZOI interface. Sample depths are documented on the Field Boring Logs provided as Attachment 4.

The Treatment Zone (TZ) is identified by the Post-Closure Permit as the top 5 feet of soil. Section 5 of the Post-Closure Permit does not specify the depth within the TZ from which to collect the TZ samples. Therefore, based on conversations with Gallup, it was determined that TZ samples should be collected from the bottom of the TZ. Accordingly, TZ samples were collected from approximately 5 feet bgs. Exact sample depths are documented on the Field Boring Logs provided as Attachment 4.

Trihydro personnel attempted to collect TZ samples utilizing a manual slide-hammer sampling probe. However, the subsurface proved to be too hard and the sampling probe could not be advanced deep enough to collect the TZ samples. Plans were made with Enviro-Drill of Albuquerque, New Mexico to conduct the soil sampling utilizing a pickup truck mounted direct push rig. This type of rig is capable of accessing locations that the larger hollow-stem auger drill rig cannot. Samples were collected on December 11, 2009 utilizing 2-foot split core barrels advanced with the direct push drill rig. Split core barrels were decontaminated between each sample interval and location. Both 2.5-inch and 1.5-inch core barrels were utilized. The 2.5-inch core barrel was preferred as it is able to collect a larger volume of soil.

However, at some locations, refusal was met with the 2.5-inch core barrel before the desired sample interval was encountered. At these locations, the 1.5-inch core barrel was used. Photographs of the core barrels are provided as photos 12 and 13 in Attachment 3. The ZOI sample at location 7544, which could not be collected with the hand auger, was also collected using the direct push drill rig.

QAQC and Laboratory Analysis

Quality Assurance/Quality Control (QAQC) samples were collected in accordance with the Section 4 of the Post-Closure Permit. QAQC samples included a blind duplicate, a matrix spike and matrix spike duplicate (MS/MSD), a field blank, an equipment blank, and a trip blank per each ice chest. As noted on the Field Boring Logs provided as Attachment 4, the blind duplicate was collected from the ZOI interval at location 4129 and the MS/MSD was collected from the ZOI interval at location 8334. The equipment blank was collected by pouring distilled water through one of the stainless steel hand auger sleeves. Trip blanks and the field blank were also collected with distilled water.

Per the Post-Closure Permit, samples are to be analyzed for the analytes and reporting limits listed in the LTU Modified Skinner List. This list was attached to the Chain-of-Custodies (COCs) submitted to the lab. A copy of the COCs and attached LTU Modified Skinner List is provided as Attachment 5. The samples were shipped to Hall Environmental of Albuquerque, New Mexico for analyses. The samples were shipped in two sets in order to meet holding times. As noted in the "Relinquished by" sections of the COCs, the first set was shipped by Trihydro, and the second set was shipped by Gallup.

As per the LTU Soil Sampling Proposal and Cost Estimate dated November 16, 2009, this report does not include an evaluation of the laboratory data or the data itself. If you have any questions or comments, please do not hesitate to call us at (307) 745-7474.

Sincerely
Trihydro Corporation

Grant Price
Project Geologist

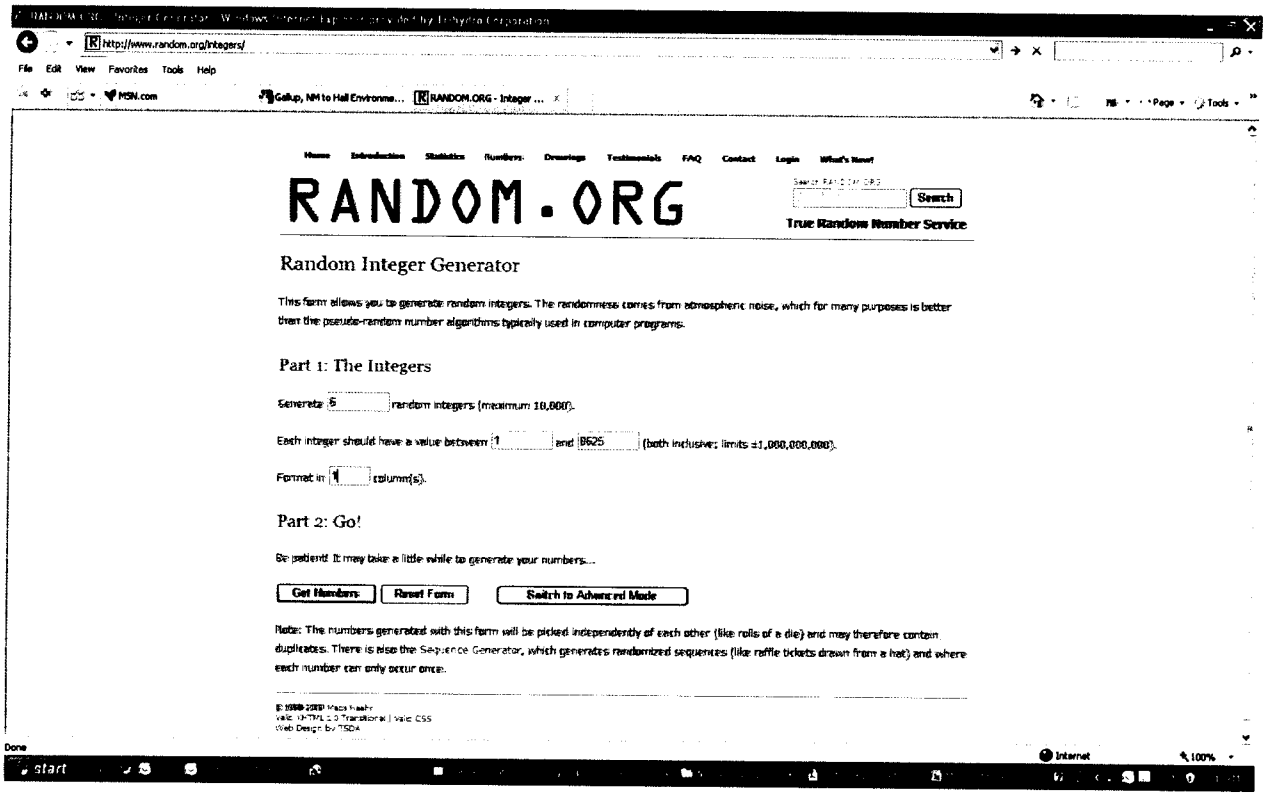
Regina Mitchell
Project Manager

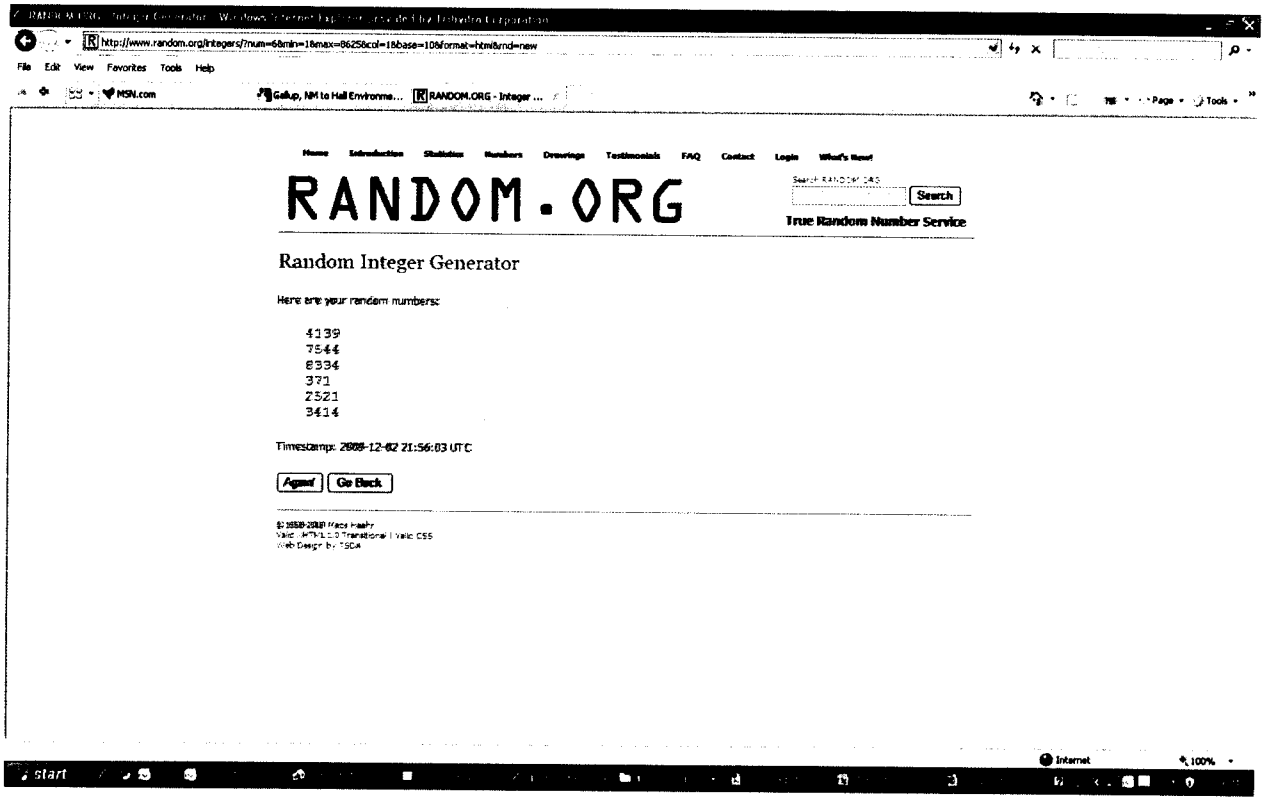
697-038-001

Attachments

ATTACHMENT 1

RANDOM INTEGER GENERATOR DOCUMENTATION


http://www.random.org/integers/
File Edit View Favorites Tools Help
Home Introduction Statistics Numbers Drawings Testimonials FAQ Contact Login What's New!
RANDOM.ORG
Search
True Random Number Service
Random Integer Generator
This form allows you to generate random integers. The randomness comes from atmospheric noise, which for many purposes is better than the pseudo-random number algorithms typically used in computer programs.
Part 1: The Integers
Generate 5 random integers (maximum 10,000).
Each integer should have a value between 1 and 9625 (both inclusive; limits ±1,000,000,000).
Format in 1 column(s).
Part 2: Go!
Be patient! It may take a little while to generate your numbers...
Get Numbers
Reset Form
Switch to Advanced Mode
Note: The numbers generated with this form will be picked independently of each other (like rolls of a die) and may therefore contain duplicates. There is also the Sequence Generator, which generates randomized sequences (like raffle tickets drawn from a hat) and where each number can only occur once.
Valid XHTML 1.0 Transitional | Valid CSS
Web Design by TSDA
Done
start
Internet
100%


http://www.random.org/integers/?num=6&min=1&max=9625&col=1&base=10&format=html&rnd=new
File Edit View Favorites Tools Help
Home Introduction Statistics Numbers Drawings Testimonials FAQ Contact Login What's New!
RANDOM.ORG
Search
True Random Number Service
Random Integer Generator
Here are your random numbers:
4139
7544
8334
371
2321
3414
Timestamp: 2008-12-02 21:56:03 UTC
Again!
Go Back
Valid XHTML 1.0 Transitional | Valid CSS
Web Design by TSDA
start
Internet
100%

ATTACHMENT 2

LTU SAMPLE LOCATIONS

TO VIEW THE MAP AND/OR MAPS WITH THIS DOCUMENT, PLEASE CALL THE HAZARDOUS WASTE BUREAU AT 505-476-6000 TO MAKE AN APPOINTMENT