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August 27, 2012

Mr. Salvatore J. D'Angelo
QA and Regulatory Affairs Manager
Niacet Corporation
400 47th Street
Niagara Falls, NY 14304

Subject: Summary of Findings for Characterization Activities at 47th Street Facility

Dear Mr. D'Angelo,

This letter and the corresponding attachments represent a summary of findings for the characterization activities performed on Tuesday and Wednesday July 10 and 11, 2012. A summary of the significant results from the Geoprobe sampling, radiation survey, and laboratory activities are presented below. Details of field work performed are included within LATA daily field reports, subcontractor survey reports, and GIS figures that illustrate the locations where intrusive sampling occurred with associated gamma radiation scanning. Validated laboratory data from radionuclide and chemical analyses are also attached.

This characterization effort represents the third phase of activities completed to address elevated radioactive materials in the subsurface primarily contained within three focus areas at the Niacet Corporation Site. The previous phases included a cursory and detailed gamma walkover survey that established the approximate location of the three areas of concern. Based upon correspondence with Niacet, it was the goal of this mobilization to fully characterize the subsurface radioactive materials, both radiologically and chemically, allowing for a more accurate estimate of costs should the decision be made to remove this material. Secondarily, the use of laboratory results with corresponding field survey results enables Niacet to make sound decisions regarding the health and safety of site personnel.

These characterization activities included a larger field crew than previous mobilizations and consisted of a supervisor/project manager/health physicist with sample collection materials, a radiation technician with appropriate radiation detection equipment, and a truck-mounted Geoprobe rig with operator. It was decided that the most cost effective and practical approach to obtaining representative samples from the subsurface was to use a 3" OD split spoon sampler;

after the initial boring, impacted material was confirmed to be within the initial 2 feet below ground surface (bgs) and it was imperative to obtain as much sample as possible.

Over a two day period, the field crew advanced 36 borings within the "focus" areas identified as (a) asphalt area east of Building #102, (b) the southeast field area, and c) the northeast area near Building #6. Figure 1 illustrates the delineated areas and boring locations (approximately 12 borings per focus area). At each boring location, the following activities were performed: (1) a surface or background gamma measurement, (2) split spoon core gamma measurements, (3) down-hole boring gamma measurement, and (4) collection of a grab or composite sample for the areas observed to contain elevated radioactive materials (See attached field and survey reports for details of field activities). Figures 2 through 4 provide exact boring locations, an indicator of whether or not the location is impacted, and details of pertinent chemical and radionuclide analytical results from the samples collected at that location. The following noteworthy findings were observed:

- Although the three focus areas are relatively large and facilitate delineation of the presence of surface and subsurface gamma radiation, the approximately 10 boring locations per area clearly indicate localized 'pockets' of radioactive material (i.e., impacts are not ubiquitous throughout) that did not exceed 24" bgs.
- Approximately half (i.e., 17 of 36) of the boring locations were observed to contain elevated radioactivity, from which samples were collected. The "background" or unimpacted boring locations helped to reduce the footprint of the impacted area.
- With the exception of boring HSB1 and HSB2 in the SE Focus Area, the field gamma survey data mimicked the laboratory analytical results for radionuclides. HSB1 and HSB2 yielded surface gamma radiation readings (i.e., 32k to 110k cpm) and down-hole readings (i.e., 115k to 430k cpm); however, laboratory results indicated background isotopic concentrations. This data suggests that highly localized hot spots could be present, and impacted material was not collected during sampling.
- As detailed in the attached field reports, approximately 50% of the HSB locations experienced Geoprobe 'refusal' from 5" to 16" bgs. This indicated significant presence of dense rock and gravel that is typical of slag-like material (e.g., Building 102 Area). The remaining hot spots contained a conglomeration of metallic-looking, sandy, rocky non-native material.
- Elevated areas containing very distinctive physical characteristics included the following:
    1. Rock pile near surface foundations in SE Focus area – rip rap characteristics
    2. Surface rock/boulders in SE Focus Area along fence line; main source of activity
    3. Blue-green-gray glassy coated rock east of Building 6
    4. Metallic looking, dark, sandy, granular soil in NE and SE Focus Areas
- A consistent line of hot spots was observed near the Contractor's parking lot along the fence line. Elevated surface gamma radiation readings up to approximately 180k cpm were detected. This additional walkover was performed at the request of Niacet.
- Comparatively significant surface/core/down-hole gamma measurements were observed at the following locations: HSB1, 2, and 3 in Building 102 Area, HSB2 in SE Area, and HSB3 in NE Area. These areas, with the exception of HSB2 in SE Area as noted above, also yielded elevated laboratory results for certain gamma emitting radionuclides.

- There were some instances when a high surface gamma reading did not yield an elevated down-hole gamma measurement and vice versa. This indicates the presence of surface radioactivity versus radioactivity at depth and vice versa.
- Chemical analyses from laboratory data indicated the presence of PCBs in all three focus areas. Mercury and arsenic were detected in NE Focus Area, but below RCRA standards.
- The following table provides a synopsis of the chemical and radionuclide data from the boring locations with elevated gamma radiation:

Boring Location	Surface Gamma Measurement (cpm)	Core Gamma Measurement (cpm)	Down-hole Gamma Measurement (cpm)	Radionuclide Data (pCi/g)	Chemical Data
Bldg. 102					
HSB1*	93k	16k	900k	Pb-214 – 647 Th-232 – 32 U-235 – 2.5 U-238 – 48	NA
HSB2*	25k	11k	485k	Pb-214 – 90 Th-232 – 8.6 U-235 – 0.4 U-238 – 11.2	PCB – 151 µg/kg
HSB3	51k	17k	780k	Comp w/ above	Comp w/ above
HSB4	NA	18k	200k	Comp w/ above	Comp w/ above
SE Area					
HSB1*	32k	7.7k	115k	Pb-214 – 2.28 Th-232 – 0.6 U-235 – 0.1 U-238 – 0.6	NA
HSB2*	110k	7.8k	430k	Pb-214 – ND Th-232 – 0.6 U-235 – 0.1 U-238 – 0.9	PCB – 260 µg/kg
HSB3	45k	12k	75k	Pb-214 – 3.34 Th-232 – 3.14 U-235 – 0.26 U-238 – 6.1	NA
HSB4	27k	12k	35k	Pb-214 – 3.09 Th-232 – 1.22 U-235 – 0.20 U-238 – 2.48	NA
NE Area					
HSB1*	27k	11k	63k	Pb-214 – 7.03 Th-232 – 1.38 U-235 – 0.07	ND

				U-238 – 1.33	
HSB2	40k	13k	140k	Pb-214 – 13.5 Th-232 – 1.49 U-235 – 0.20 U-238 – 2.40	Comp w/ above
HSB3*	45k	20k	74k	Pb-214 – 12.3 Th-232 – 0.60 U-235 – 0.71 U-238 – 13.6	PCB – 123 µg/kg

Notes: (1) Bldg. 102 background was approximately 14k - 17k cpm
(2) High core gamma measurement due to high background at HSB3 in NE Area
(3) Field gamma measurements represent highest reading recorded at location
(4) Radionuclide data represents highest measurement of alpha and gamma spec.
(5) Only significant radionuclides are listed. See full laboratory package for details.
* Multiple borings were advanced at this location
NA – not analyzed
ND – not detected

In summary, Building 102 Area reflected the highest radiation readings in the field and the highest radionuclide concentrations within the corresponding laboratory results. The NE Area also reflected high readings in the field and elevated radionuclide concentrations. Although both areas exceed typical cleanup values for one or more radionuclides, Building 102 area was significantly more elevated (i.e., 15 to over 100x the standard) than the NE Area (i.e., 1 to 3x the standard). The SE Area yielded field and laboratory results that were slightly elevated, but mostly at or below the typical cleanup standard.

Should you have any questions or concerns, please do not hesitate to contact me at your convenience: 716 830 8636 or jbrydges@lata.com. Thank you for the opportunity.

Sincerely,

Jason Brydges, PE
Senior Project Manager

cc: Larry Montani, Managing Director
Rob Pfendler, Department Manager
Ron Voorheis, D&D/Construction Manager

Encl: LATA Field Reports
Site Figures
Survey Field Reports
Laboratory Data

LATA FIELD REPORTS

Field Characterization Effort
at Niacet Corporation
400 47th Street, Niagara Falls, NY 14304

Project Number 11170.003

Field Report

DATE: 7-10-12 **DAY:** Tuesday **COMPILED BY:** Jason Brydges

WEATHER

Morning	Temperature: 70 degrees F. Partly cloudy. No wind.
Afternoon	Temperature: 86 degrees F. Sunny. Slight breeze, 5mph wind.

PERSONNEL

Name	Company	Position	Hours		
			From	To	Total
Jason Brydges	LATA	Program Manager	8:00 am	5:30 pm	8.5 hours
Todd Cleveland	GRD	Radiation Control Technician	8:00 am	5:00 pm	8 hours
Eric	Nature's Way	Geoprobe Operator	8:30 am	5:30 pm	8 hours
				Total Man Hours Worked	24.5 hours

MATERIALS/EQUIPMENT USED ON-SITE:

- Standard level D PPE (i.e., steel toe boots, hard had, and safety glasses) with heavy duty work gloves
- Ludlum 2221 meter with GX-2 gamma radiation scintillation detector. See survey forms for serial numbers and calibration dates.
- Eberline contamination meter (model 12) with alpha/beta/gamma detector (44-9 probe)
- Truck mounted Geoprobe with numerous attachments (e.g., 3" split spoon probe)
- Pickup truck with pin flags, fluorescent paint, latex gloves, sample buckets, and paper towels/rags.
- Sampling station with coolers, sample jars, ice, packaging tape and material, 5 gallon sample pails, stainless steel mixing bowl with spoons, non-phosphate cleanser, and paper towels.

WORK LOG/MINUTES:

8:30 am: Met with John Bielicki to administer site safety training to Eric from Nature's Way and obtain card reader. Todd and Jason already trained. Todd initiated paint markings of Bldg 102 area to map-out probe locations.

9:30 am: Sample bottles already on-site. Had quick meeting with Sal D'Angelo and John Bielicki. Set up sample nomenclature. Performed tailgate safety meeting with field crew explaining anticipated hazards during the day.

10:00 am: Set up at Bldg 102 area with sampling station, marked utilities and hot spots, corrected hand held GPS for proper units, labeled approximately 7 biased hot spots and 7 unbiased pre-survey grid units.

12:00 pm: As requested by Sal, completed walkover of Contractor Parking Area on the south side of the property. This was performed between 10am and noon when there was downtime due to engine repairs of Nature's Way Geoprobe unit.

1:00 pm: After lunch and completion of Geoprobe engine repairs, we began GSU = grid spot unbiased and HSB – hot spot biased borings.

2:00 pm: Completed HSB1 boring at Bldg 102. Had to punch three holes A, B, and C to adequately get to 2' bgs. A lot of refusal in this area at 5" and 16" depths. A very elevated grab sample was collected, in addition to a composite core sample from A, B, and C borings.
Background in area was 17k cpm, surface reading was 93k cpm, split spoon cores read from 9k to 16k cpm, and down-hole readings read from 220k to 900k cpm gamma radiation.
Material characteristics included 3" asphalt followed by soil, brick, and gravel.

2:30 pm: Completed HSB2 boring at Bldg 102. Punched two holes A and B at this location due to refusal at 6" bgs. Boring A was more elevated than B and material was collected for sample.
Surface reading was 25k cpm, cores ranged from 8k to 11k cpm, and down-hole readings read 24k to 485k cpm gamma radiation.
Material characteristics mimicked that of HSB1 – asphalt, soil, brick, and gravel.

3:00 pm: Completed HSB3 boring at Bldg102. Only single boring necessary, as there was no refusal. Collected sample and composited with HSB2.
Surface reading was 51k cpm, core readings ranged from 9k to 17k cpm, and down-hole reading was 780k cpm gamma radiation.
Material was clearly elevated within initial 1' that was metallic granular, rocky soil. Bottom 1' was non elevated natural clay.

3:30 pm: Completed HSB4 boring at Bldg 102. Only single boring necessary – no refusal within railroad tracks. Collected sample and composited with HSB2 and 3 for radionuclide and chemical analyses.
Background in area was 14k cpm, core readings ranged from 8k to 18.5k cpm, and down-hole reading was 200k cpm gamma radiation.
Material was similarly delineated to HSB3 in that initial 1' was elevated and metallic gravelly rock. Bottom 1' was a sandy clayey soil.

3:45 pm: Completed GSU1 boring at Bldg 102. Single boring with no refusal within railroad tracks. No sample collected, as gamma radiation readings were low/background and did not warrant it.
Surface reading was 6800 cpm, core readings ranged from 6200 to 7800 cpm, and down-hole reading was 17k cpm gamma radiation.
Material was similar to HSB4 that was also within railroad tracks – layer of gravel with 18" of black, sandy clayey soil.

4:00 pm: Completed GSU2 boring at Bldg 102. Single boring with no refusal in asphalt. No sample collected – gamma readings low/background.
Surface reading was 8200 cpm, core readings ranged from 7800 to 9000 cpm, and down-hole reading was 14k cpm gamma radiation.
Material beneath 3" of asphalt was black sandy soil.

4:30 pm: Completed GSU3 boring at Bldg 102. Single boring with no refusal in asphalt. No sample collected – gamma readings low/background.
Surface reading was 5100 cpm, core readings ranged from 5100 to 7100 cpm, and down-hole reading was 7900 cpm gamma radiation.
Material beneath 3" of asphalt was identical to GSU2 – black sandy soil.

4:45 pm: Completed GSU4 boring at Bldg 102. Single boring with no refusal in asphalt. No sample collected – low gamma readings.
Surface reading was 5200 cpm, core readings ranged from 6200 to 9500 cpm, and down-hole reading was 25k cpm gamma radiation.
Material beneath 3" of asphalt was a conglomeration of clay, metallic gravelly rock, and fire brick.

5:00 pm: Completed GSU5 boring at Bldg 102. Single boring with no refusal in asphalt. No sample collected – low gamma readings.
Surface reading was 6400 cpm, core readings ranged from 7100 to 9200 cpm, and down-hole reading was 9100 cpm gamma radiation.
Material beneath 3" of asphalt was a black sandy soil with ash-like deposits, very similar to GSU2 and 3. Clay was predominate material at 2' bgs.

GENERAL NOTES:

- Exterior site conditions were favorable for insitu characterization activities. No major negative impacts existed (e.g., standing water, logistics, obstructions, etc.).

- There was an initial delay in the morning due to Nature's Way Geoprobe engine having trouble starting.
- During the morning delay, the contractor parking lot was surveyed with the model 2221 and GX-2 probe. A distinct line of hot spots were found along parking lot fenced area up to 180,000 cpm gamma radiation. In addition, some locations in Southeast Focus Area had large rock-like material with elevated readings.
- It was interesting to discover that no boring location that was background/non-elevated had any refusal due to subsurface rock. Split spoon sampler made it easily to depth in these locations.
- Three inch ID split spoon core sampler was chosen as best methodology to use. Although more difficult to pass through the subsurface, it provided the most material for sampling and scanning.
- The characterization efforts were initiated based upon meetings with Niacet. The purpose of the characterization was to (1) provide specific information of elevated subsurface material, and (2) delineate further extent of contamination.
- The impacted area that was the focus of this effort was the asphalt area near Building #102.
- Background radiation measurements were obtained randomly based upon RSO concerns.
- Samples were only collected from elevated readings that were clearly identified
- All field personnel were surveyed after field activities to check for contamination with a model 12 and 44-9 probe. All personnel frisked at background or <40 cpm alpha/beta/gamma radiation.

ISSUES/OBSERVATIONS/CONFLICTS:

(1) Nature's Way Geoprobe engine malfunctioned early in the day and had to be repaired. This caused approximately 2 hour delay.
(2) Heat of the day melted much of the ice for sample packaging.
(3) Refusal at the elevated boring locations caused some delays and inability to complete full boring.

CORRECTIVE ACTIONS:

(1) To be most productive during morning delay, other two focus areas were walked and painted. In addition, a new area near the contractor parking lot was surveyed.
(2) Unfortunately, the samples were received by the laboratory at elevated temperatures. Although this would have little effect on radionuclide results, the samples were still flagged "J" qualified during LATA validation process.
(3) Multiple boring locations were chosen as close as possible to the initial desired location when refusal was encountered during the split spoon coring process. Although this caused more time for these locations, the multiple boring locations allowed for more thorough characterization/coverage.

Field Characterization Effort
at Niacet Corporation
400 47th Street, Niagara Falls, NY 14304

Project Number 11170.003

Field Report

DATE: 7-11-12 **DAY:** Wednesday **COMPILED BY:** Jason Brydges

WEATHER

Morning	Temperature: 72 degrees F. Partly cloudy. No wind.
Afternoon	Temperature: 84 degrees F. Sunny. Wind at 10 mph.

PERSONNEL

Name	Company	Position	Hours		
			From	To	Total
Jason Brydges	LATA	Program Manager	8:00 am	5:00 pm	8 hours
Todd Cleveland	GRD	Radiation Control Technician	8:00 am	4:30 pm	7.5 hours
Eric	Nature's Way	Geoprobe Operator	8:00 am	4:30 pm	7.5 hours
				Total Man Hours Worked	23 hours

MATERIALS/EQUIPMENT USED ON-SITE:

- Standard level D PPE (i.e., steel toe boots, hard had, and safety glasses) with heavy duty work gloves
- Ludlum 2221 meter with GX-2 gamma radiation scintillation detector. See survey forms for serial numbers and calibration dates.
- Eberline contamination meter (model 12) with alpha/beta/gamma detector (44-9 probe)
- Truck mounted Geoprobe with numerous attachments (e.g., 3" split spoon probe)
- Pickup truck with pin flags, fluorescent paint, latex gloves, sample buckets, and paper towels/rags.
- Sampling station with coolers, sample jars, ice, packaging tape and material, 5 gallon sample pails, stainless steel mixing bowl with spoons, non-phosphate cleanser, and paper towels.

WORK LOG/MINUTES:

8:30 am: Met with Sal D'Angelo to convey the plan of the day, which was to address SE and NE Focus Areas. Field crew completed our tailgate safety meeting, and mapped out the hotspots and grid spots within both areas to be cored for the day. Terrain in back field was too rough to set up sampling station. Used tailgate of pickup truck instead. Labeled at least 6 biased hot spots and 6 unbiased pre-survey grid units in each area. GPS hand held unit and Geoprobe truck working properly and ready to go.

9:00 am: Completed HSB1 boring at SE Area. Punched three holes A, B, and C in this area due to refusal at 9" bgs, large elevated area, and the surface rocks were contributing to most of the elevated readings. Grabbed single composite sample from all three spots along fence line.
Surface readings ranged from 23k to 32k cpm, cores ranged from 5500 to 7700 cpm, and down-hole readings ranged from 12k to 115k cpm gamma radiation. Large surface rocks seemed to be genesis of most of the activity.
Material consisted of sandy rocky soil with large rocks at the surface; some of them 24" boulders.

9:30 am: Completed HSB2 boring at SE Area. Punched two holes A & B in area because we missed the initial 'hot spot'. Top 8" generated most of the activity and asphalt was present. Collected single composite sample from both locations for radionuclide and chemical analyses (seemed to most representative of SE Area).
Surface readings ranged from 33k to 110k cpm, core readings ranged from 6200 cpm to 7800 cpm, and down-hole readings ranged from 22k to 430k cpm gamma radiation.
Material was mostly a fine sandy soil, but there was non-native fill that generated most of the activity consisting of asphalt, man-made rock and clay.

10:00 am: Completed HSB3 boring at SE Area. Single boring, no refusal. Pile of man-made rock in area collocated with concrete foundations. Grab sample collected.
Surface reading was 45k cpm, core ranged from 10k to 12.5k cpm, and down-hole reading was 75k cpm gamma radiation.
Material that possessed elevated readings appeared to be piles of rock around foundations. Coring consisted mainly of rocky and sandy soil beneath piles.

10:30 am: Completed HSB4 boring at SE Area. Single boring, no refusal, along fence line. There was no visible rock in area. Grab sample collected.
Surface reading was 27k cpm, core ranged from 8k to 12.8k cpm, and down-hole reading was 35k cpm gamma radiation.
Material appeared to be non-native sandy soil within initial 1' bgs. A dark, fine soil was beneath sand followed by clay at depth (2' bgs.).

10:50 am: Completed GSU1 boring at SE Area. Single location near elm tree close to concrete foundations. No sample collected as the boring unimpacted.
Surface reading was 11k cpm, core readings ranged from 6k to 7.5k cpm, and down-hole reading was 20k cpm gamma radiation.
Material consisted of a fine sandy soil with dark organic looking lenses.

11:05 am: Completed GSU2 boring in SE Area. Located in the north cleared area behind facility. Low gamma readings throughout coring. No sample collected.
Surface reading was 6k cpm, core readings ranged from 4k to 5.5k cpm, and down-hole reading was 11k cpm gamma radiation.
Material consisted of non-native soil backfill with concrete, brick and building debris.

11:20 am: Completed GSU3 boring in SE Area. Located in trailer area. Single location. No refusal. No elevated readings, so no sample was collected.
Surface reading was 6.5k cpm, core readings ranged from 3.5k cpm to 5.7k cpm, and down-hole reading was 8k cpm gamma radiation.
Material possessed hard fill on top with dark granular, glassy non-native soil beneath it. Clay soil was the bottom 6" bgs.

11:35 am: Completed GSU4 boring in SE Area. Single location with no refusal. No elevated readings. No sample collected.
Surface reading was 6.5k cpm, core readings ranged from 4k cpm to 5.5k cpm, and down-hole reading was 13k cpm gamma radiation.
Material consisted of 6" of gravel with an 18" clay bottom.

11:50 am: Completed GSU5 boring in SE Area. Single location with no refusal. No elevated readings. No sample collected.
Surface reading was 10.2k cpm, core readings ranged from 5k to 7.6k cpm, and down-hole gamma reading was 15.3k cpm gamma radiation.
Material consisted of sandy soil on top, rock and brick in the middle of the core, and 12" of clay on the bottom.

1:20 pm: Completed HSB1 boring in NE Area. Large oddly shaped area. Punched three locations A, B, and C, and collected single composite sample from three locations for radionuclide and chemical analyses.
Surface readings ranged from 25k cpm to 27k cpm, core readings ranged from 7.5k cpm to 11.5k cpm, and down-hole readings ranged from 36k cpm to 63k cpm gamma radiation.
Material consisted of homogeneous sandy soil without much rock. Fine, dark granular metallic looking soil on top with 6" clay bottom. Fire brick was observed in B location at 14" bgs – split spoon refusal.

2:00 pm: Completed HSB2 boring in NE Area. Located near Building 6. Single location without refusal. Grab sample collected for radionuclide analyses, but composite sample collected and mixed with HSB1 for chemical analyses.

Surface reading was 40k cpm, core readings ranged from 9.5k cpm to 13.5k cpm, and down-hole reading was 140k cpm gamma radiation.
Material was very similar to HSB1 and thus, mixed for chemical analyses. Radiation readings were higher and metallic material was deeper (i.e., 2.5' bgs).

2:20 pm: Completed HSB3 boring in NE Area. Also located near Building 6. Multiple hot spots; all borings with refusal at 6" to 10" bgs, so three locations were punched for composite radionuclide analyses. Due to different nature of material, composite sample was sent off-site for chemical analyses as well.
Surface readings ranged from 35k cpm to 45k cpm, core readings ranged from 11k to 20k cpm, and down-hole readings ranged from 49k cpm to 74k cpm gamma radiation.
Material was distinctive blue-gray-green rock with glassy coating. Little fines in the area, thus the refusal at shallow depths.

3:15 pm: Completed GSU1 boring in NE Area. Single location chosen despite refusal at 17" bgs due to subsurface brick. No sample collected due to low readings.
Surface reading was 6800 cpm, core readings ranged from 6k to 7.8k cpm, and down-hole reading was 12.5k cpm gamma radiation.
Material was essentially clay at the surface with brick in the subsurface.

3:30 pm: Completed GSU2 boring in NE Area. Single location. No refusal. No sample collected. Low readings throughout.
Surface reading was 9.8k cpm, core readings were 5k cpm to 6.5k cpm, and down-hole reading was 12k cpm gamma radiation.
Material was sandy dark soil with silvery metallic cinders on top 12" followed by clay for the remainder of the core.

3:45 pm: Completed GSU3 boring in NE Area. Single location. No refusal. No sample collected. Low readings throughout.
Surface reading was 9.5k cpm, core readings were 4k to 6.5k cpm, and down-hole reading was 15k cpm gamma radiation.
Material was layered similar to other NE area locations with sandy dark organic looking soil on top 6", stone and sand in middle and 4" clay bottom.

3:55 pm: Completed GSU4 boring in NE Area. Single location, although refusal in this area was very shallow (i.e., 6"). No sample collected due to little yield of material and low readings throughout.
Surface reading was 8.2k cpm, core readings were 4k cpm to 6k cpm, and down-hole reading was 10k cpm gamma radiation.
Material was surficial rock and sand with hard rock/concrete at 6" bgs.

4:05 pm: Completed GSU5 boring in NE Area. Very close to GSU4, but only single location. Refusal occurred at this boring as well very shallow (i.e., 4"). No sample collected. No elevated readings.

Surface reading was 6.2k cpm, core readings were 5k cpm to 6.2k cpm, and down-hole reading was 7k cpm gamma radiation.
Material identical to GSU4.

GENERAL NOTES:

- Exterior Site conditions were favorable for the second day in a row. Temperature was high, but no obstructions were encountered during Geoprobe and sampling operations.
- HSB1 and 2 locations in NE area were very similar in nature and appearance to HSB4 location form SE area.
- The impacted areas that were the focus of the characterization included the southeast field area and northeast field area near Building #6.
- It was not necessary to obtain new background radiation measurements.
- Like the previous day, 3" ID split spoon core sampler was chosen as best methodology to use. More difficult to penetrate subsurface, but it provided the most material for sampling and scanning.
- Samples were only collected from elevated readings that were clearly identified
- All field personnel were surveyed after field activities to check for contamination with a model 12 and 44-9 probe. All personnel frisked at background or <40 cpm alpha/beta/gamma radiation.
- When elevated readings were clearly identified in the field areas, the area was delineated by pin flags and the approximate footprint was estimated. Again, readings were placed on the hand sketches represented by a single cpm estimate.

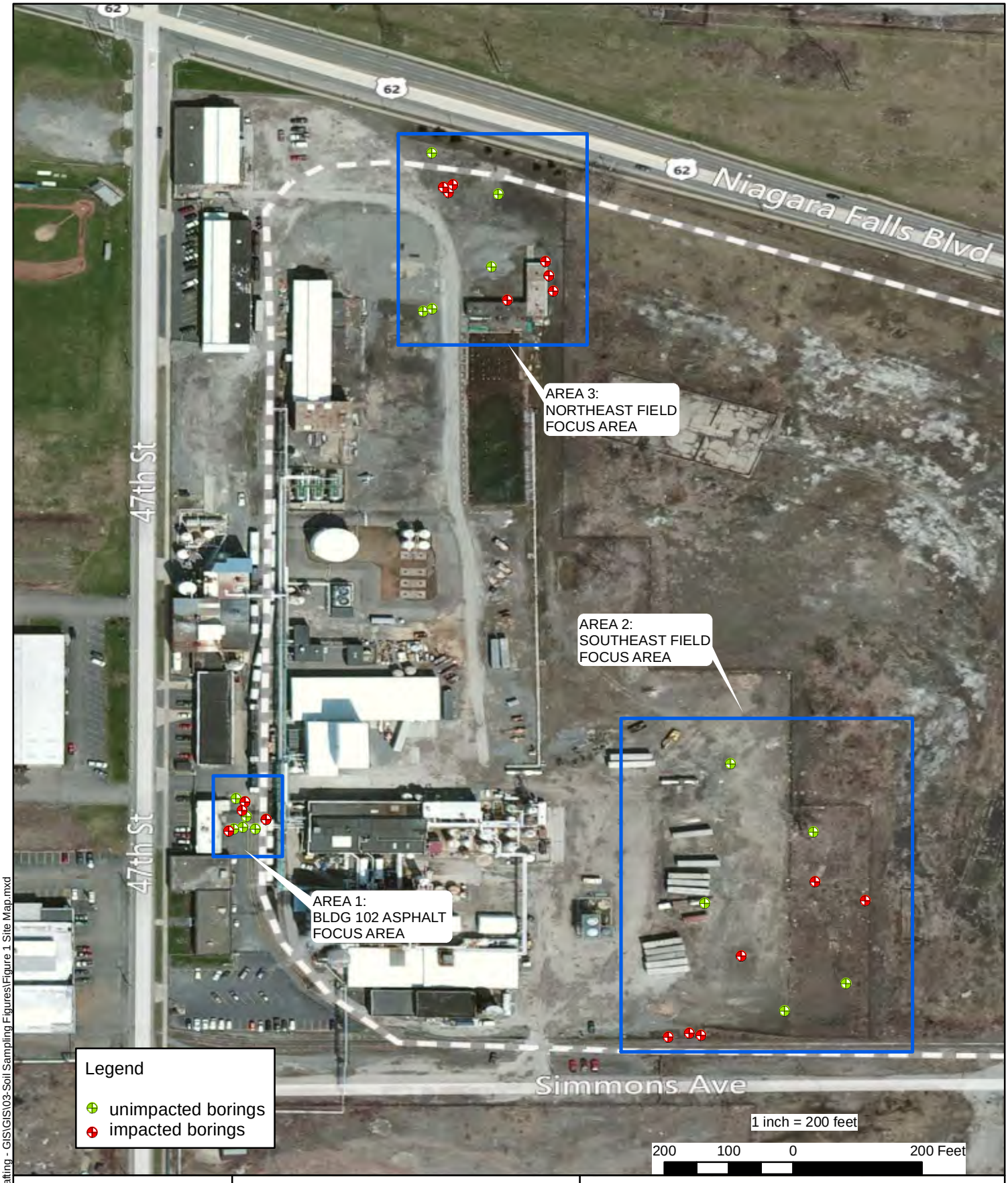
ISSUES/OBSERVATIONS/CONFLICTS:

(1) Location of elevated radioactive material in the subsurface near Building 6 in the NE Area was improperly labeled previously during the walkover surveys. During translation from field notes to GIS figures, an impacted area was originally located on the south side of the building.

CORRECTIVE ACTIONS:

(1) During field Geoprobe and survey efforts on this day, it was confirmed that the subsurface radioactive materials near Building 6 are located on the east side of the building. The elevated hot spot on the north side of the building remained consistent, but the previous readings on the south side of the building do not exist, but rather, they depict the radiation confirmed on the east side of the building.

SITE FIGURES



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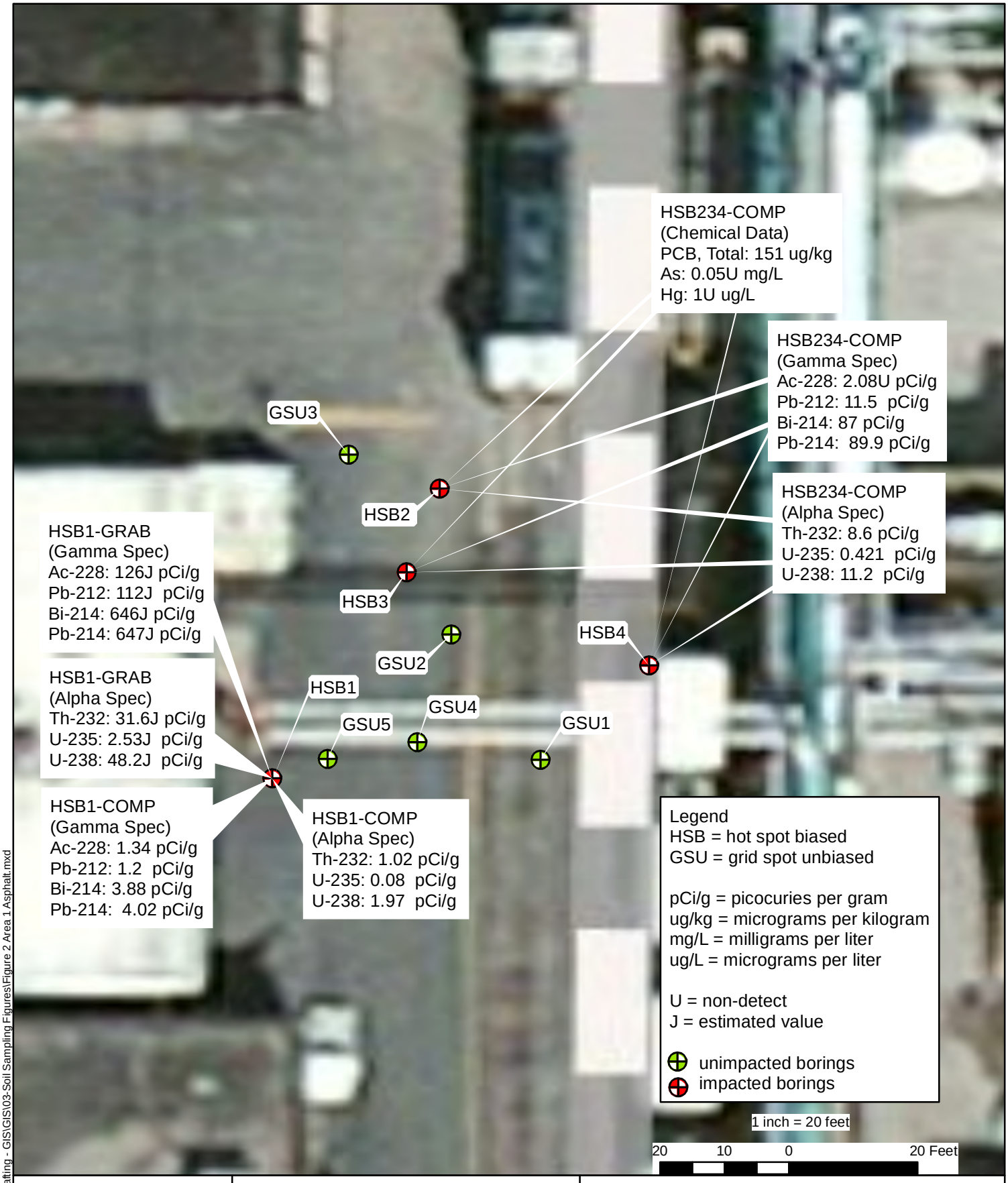
NIACET CORPORATION
400 47TH STREET
NIAGARA FALLS, NEW YORK

FIGURE 1
RADIOACTIVE MATERIAL CHARACTERIZATION
SITE-WIDE GEOPROBE LAYOUT

DATE:	PROJECT NO.:	REVISION:
08/24/12	11170	0



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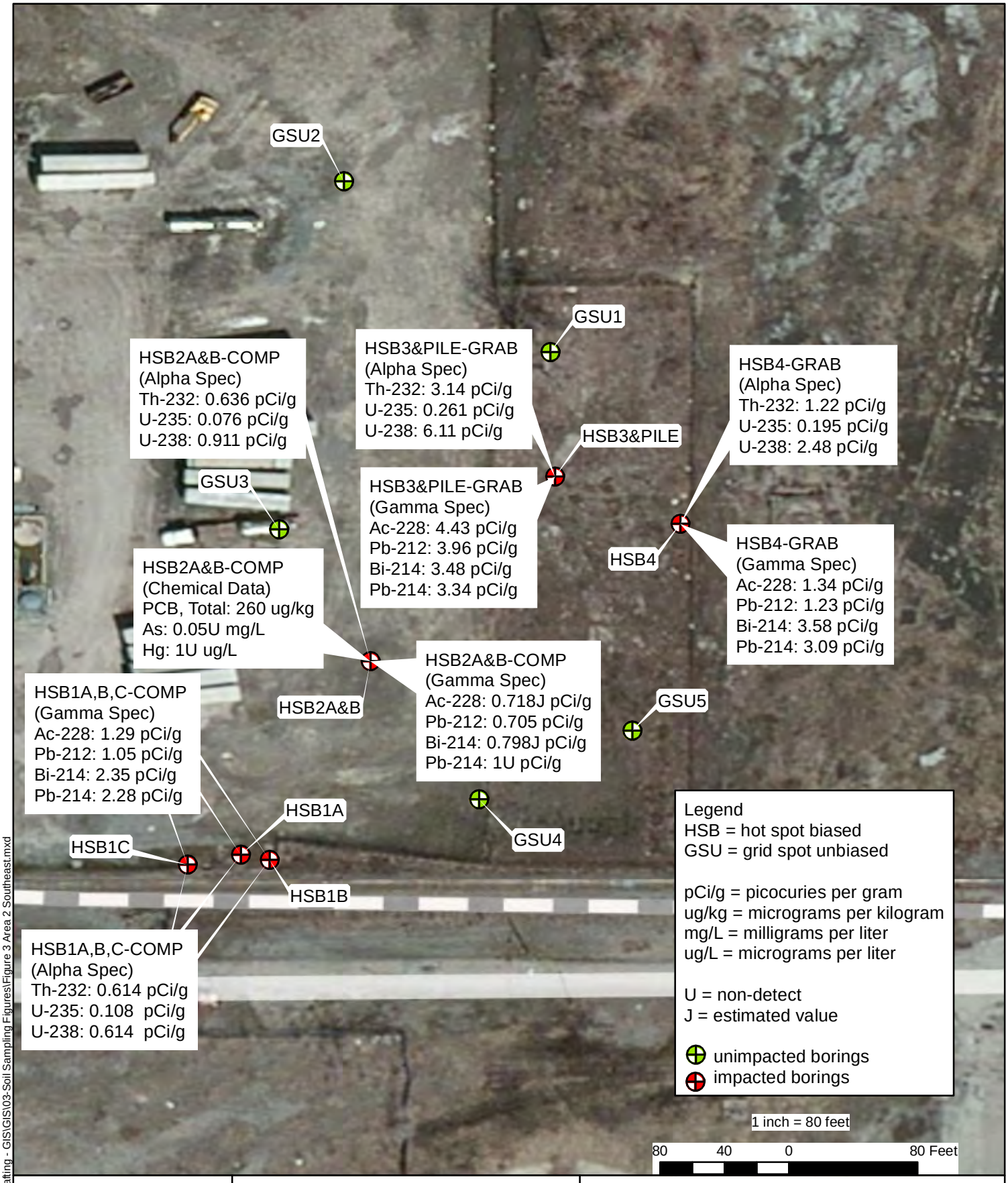
NIACET CORPORATION
400 47TH STREET
NIAGARA FALLS, NEW YORK

FIGURE 2
RADIOACTIVE MATERIAL CHARACTERIZATION
BLDG 102 ASPHALT FOCUS AREA

DATE:	PROJECT NO.:	REVISION:
08/24/12	11170	0



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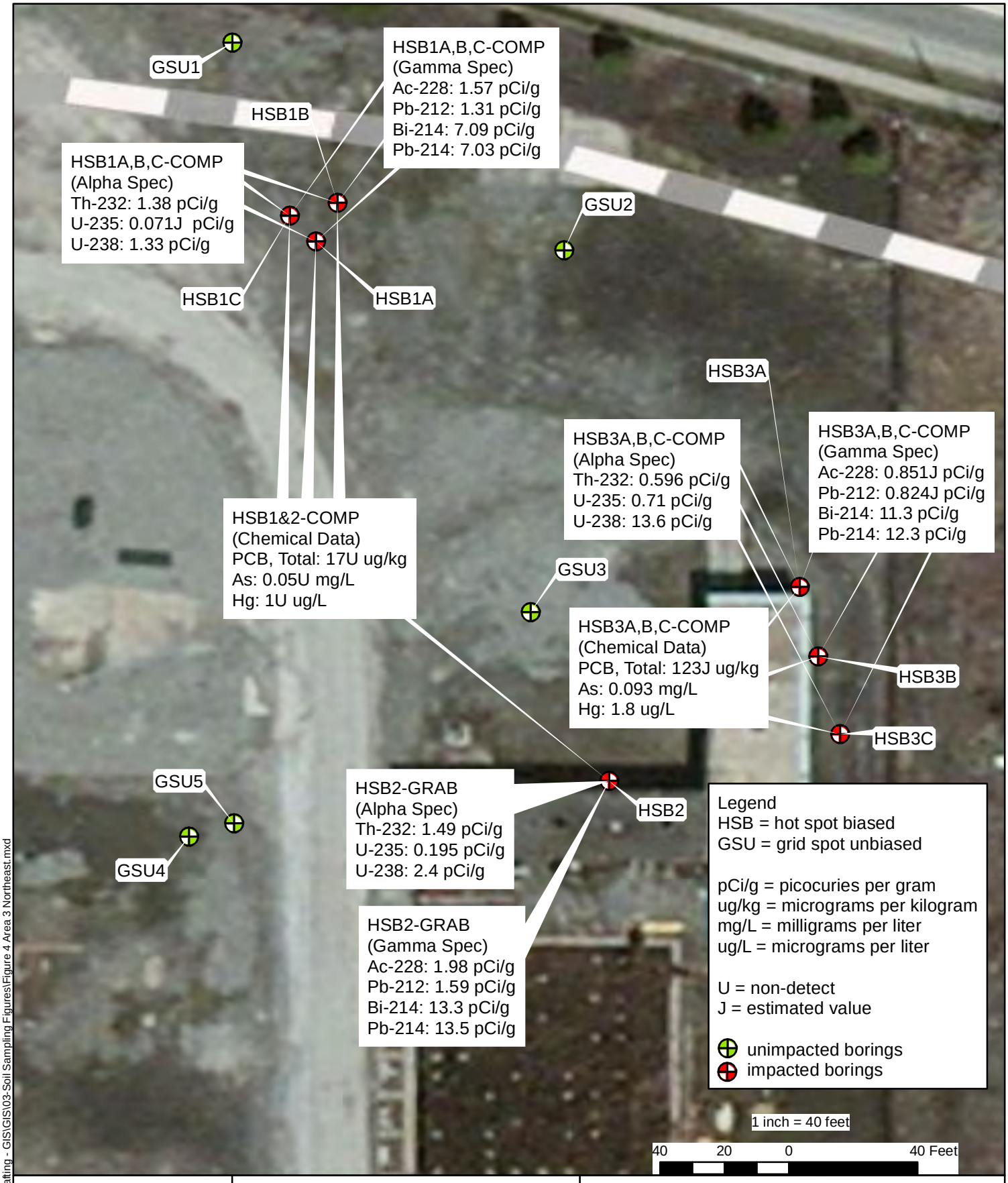
NIACET CORPORATION
400 47TH STREET
NIAGARA FALLS, NEW YORK

FIGURE 3
RADIOACTIVE MATERIAL CHARACTERIZATION
SOUTHEAST FOCUS AREA

DATE:	PROJECT NO.:	REVISION:
08/24/12	11170	0



Path: P:\Niacet Corporation\Drafting - GIS\GIS\03-Soil Sampling Figures\Figure 4 Area 3 Northeast.mxd

NIACET CORPORATION
400 47TH STREET
NIAGARA FALLS, NEW YORK

FIGURE 4
RADIOACTIVE MATERIAL CHARACTERIZATION
NORTHEAST FOCUS AREA

DATE:	PROJECT NO.:	REVISION:
08/24/12	11170	0

SURVEY FIELD REPORTS

GRD INC.
Greater Radiological Dimensions
1527 Ridge Road, Lewiston, NY 716-754-2654 - Office 716-754-2622 - Fax

DAILY FIELD REPORT NO:

FIELD REPORT

PROJECT: Niacet - Geoprobe		DATE: 7/10/12	SHEET 1 OF 1
CLIENT: LATA Inc.		PROJECT #: Niacet - GeoProbe	
CONTRACTOR: GRD Inc.	CONTRACT NO:	DAY OF WEEK: S (M) T W T F S	
REPORT BY: Todd Cleveland	SIGNATURE: Todd Cleveland		
WEATHER: WIND FROM: N NE E SE S SW (W) NW at 5 mph (Sunny) Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms		TEMPERATURE: LOW 83 HIGH 88	

DAILY OBJECTIVE

Gamma survey of GeoProbe locations in previously surveyed locations. Support LATA with material description and Gamma survey of down hole locations & material from spoons.

FIELD NOTES

- performed Gamma survey of material from several geoprobe locations.
- areas of contamination were verified
- Some ~~areas~~ locations in the "southeast" area had large "rock-like" contamination at surface grade

TESTING / SAMPLES

- Sample taken by LATA Inc

NA

SITE VISITORS

NA

Radiological Survey Form

Survey #: 07/012-001
Date: 7/10/12
Project / #: Niacet - Geoprobe

Survey Description: Geoprobe / Test Pit Survey

Model / Probe #	Serial #	Cal. Due
2221 / GX-2	183989 / 12002	1/7/13
2221 / GX-2	147493 / 12005	1/7/13
NA	NA	NA

Comments:
Geoprobe testing at Niacet. (Building 102 Area)
- Direct readings at the surface of hole location, downhole & direct scan of material in the "spoons" were taken (cpm)

* "surf" = surface, "DH" = downhole

Hole #	≈ Gamma Reading (cpm) (Spoon material)	Notes:
HSB1a	9000-11000	1 min. @hole = 93072, 1 min. bkgd = 17048, DH = 900K CPM
HSB1a	9000-11000	≈3in. blacktop, soil, brick & ~~contam @ 18inch., DH = 220 K cpm~~ TC refusal @ 5in
~~HSB2~~ HSB1b	9000-16000	≈3in. blacktop, soil, brick & contam. @ 18inch, DH = 220K cpm
HSB1b	9000-16000	NA
HSB1c	9000-11500	blacktop and refusal @ ≈16inch, DH ≈ 400K cpm
HSB1c	9000-11500	"gravel-like" material in spoon
HSB2a	8000-11000	surf = 25388, DH = 485 K cpm, ≈3" of blacktop.
HSB2a	8000-11000	~~≈3" of blacktop, refusal @ 6 in"~~, TC refusal @ 6 inches
HSB2b	8000-10000	≈3" of blacktop, refusal @ 6 inches, DH = 24 K cpm
HSB3	9000-17000	surf = 51216, DH ≈ 780K, ≈3" blacktop
HSB3	9000-17000	@≈12" metallic looking granular, rocky soil, w/≈1ft. of clay
HSB4	8000-18500	R×R tracks, @≈6" gravelly/metallic/glassy slag w/ sandy soil below.
HSB4	8000-18500	DH ≈ 200K cpm, 1 min. bkgd = 14127
GSU1	6200-7800	DH = 16972, surf = 6817
GSU1	6200-7800	layer of gravel @ surface, ≈18 in of black/sandy soil (R×R tracks)
GSU2	7800-9000	surf = 8210, DH ≈ 14000, black sandy soil
GSU3	5200-7100	surf = 5103, DH = 7912, black, sandy soil after blacktop
GSU4	6200-9500	surf = 5214, DH ≈ 25K
GSU4	6200-9500	blacktop, some clay, non-native soil @ ≈18", metallic looking gravel & fire brick
GSU5	7100-9200	surf = 6391, DH ≈ 9100, blacktop, dark sandy soil
GSU5	7100-9200	"ash-like" material, then clay @ ≈2ft.

Notes:
- Geoprobe equipment and operator "frisked" w/ model 12 & 44-9 probe was ≤ 40cpm (Bkgd)
- Other personell frisked out @ ≤ 40 cpm w/ model 12

Survey Performed by: Todd Cleveland / Todd Cleveland — Print/Sign — 7/10/12 — Date

Survey Reviewed by: George Weissburg / — Print/Sign — 7-31-12 — Date

GRD INC.
Greater Radiological Dimensions
1527 Ridge Road, Lewiston, NY 716-754-2654 - Office 716-754-2622 - Fax

DAILY FIELD REPORT NO:

FIELD REPORT

PROJECT: Niacet - Geoprobe	DATE: 7/11/12 SHEET 1 OF 1
CLIENT: LATA Inc.	PROJECT #: Niacet - Geoprobe
CONTRACTOR: GRD Inc. / CONTRACT NO:	DAY OF WEEK: S M (T) W T F S
REPORT BY: Todd Cleveland	SIGNATURE:
WEATHER: WIND FROM: N NE E SE S (SW) W NW at 10 mph; (Sunny) Partly Cloudy Cloudy Overcast Sprinkles Showers Thunderstorms	TEMPERATURE: LOW 82 HIGH 86

DAILY OBJECTIVE

Perform Gamma survey of Geoprobe locations. Support LATA with material survey and description of material in spoons.

FIELD NOTES

- Survey readings were taken of "downhole" locations and material that was extracted in the GeoProbe spoons.
- several areas of contamination were located and verified via Gamma survey scan w/ model 2221 & GX-2 probe
- several "veins" of sub-surface "slag-like" material were located

NA

TESTING / SAMPLES

- Test samples were collected by LATA Inc

SITE VISITORS

NA

Radiological Survey Form

Survey #: 071112-001
Date: 7/11/12
Project / #: Niacet - Geoprobe

Survey Description: Geoprobe / Test Pit Survey

Model / Probe #	Serial #	Cal. Due
2221 / GX-2	147493 / 12005	1/7/13
12 / 44-9	138749 / PR193570	5/3:/13
NA	NA	NA

Comments: Geoprobe testing in SE area. (South East Area)
- All readings are in CPM (counts / min.)

Hole #	Gamma Reading (cpm) (Spoon)	Notes:
HSB 1a	≈ 5500 - 6700	surf = 30K, DH = 115K, refusal @ 8in, rocky/sandy soil
HSB 1b	≈ 6000 - 7400	Surf = 32K, DH = 110K, rocky, sandy soil, all 24 in
HSB 1c	≈ 6500 - 7700	surf = 23K, DH = 12K, large slag boulder @ surface (refusal @ 12in")
HSB 2a	≈ 6000 - 7500	surf = 33K, DH = 22K, fine, sandy soil
HSB 2b	≈ 6200 - 7800	surf = 110K, DH = 430K, non native fill, asphalt, man-made rock, clay
HSB3	≈ 10500 - 12500	surf = 45K, DH = 75K, fine, pile of man made "slag" at surface, rock, sandy soil below
HSB 4	≈ 8000 - 12800	Surf = 27K, DH = 35K, fine, non-native sandy soil (0-1ft) dark, fine, clay 1-2 ft.
GSU7	≈ 6000 - 7500	Surf = 11K, DH = 20K, fine sandy soil, dark, organic looking
GSU2	≈ 4000 - 5500	surf = 6K, DH = 11K, Non-native fill, brick, concrete, building debris.
GSU3	≈ 3500 - 5700	surf = 6.5K, DH = 8K, hard fill, w/ dark/glossy non-native, some clay
GSU4	≈ 4000 - 5500	Surf = 6.5K, DH = 13.1K, 6in" gravel, 18" clay
GSU5	≈ 5000 - 7600	Surf 10.2K, DH = 15.3K, 6in" hard fill, concrete, brick, @ 16in" of clay
	NA	

Notes:
- Direct readings (Gamma) were taken at surface of hole location ("surf"), downhole (DH) and in the "spoon" full of extracted material.
- Non-impacted area background ≈ 5. - 6 K cpm.

Survey Performed by: Todd Cleveland — Print/Sign — 7/11/12 — Date

Survey Reviewed by: Greg Weissenberger — Print/Sign — 7-31-12 — Date

Radiological Survey Form

Survey #: 071112-002
Date: 7/11/12
Project / #: Nisqeet - Geoprobe

Survey Description: Geoprobe / Test Pit Survey

Model / Probe #	Serial #	Cal. Due
2221 / GX-2	148493 / 12005	1/7/13
12 / 44-9	138749 / PR193570	5/30/13
NA	NA	NA

Comments: - NE Area (North East Area)
- All readings are in cpm (counts / min)

Hole #	Gamma Reading (cpm)	Notes:
HSB 1a	7800 - 10200	surf = 25K, DH = 63K, ~8in, fine, metallic soil, organic looking dark, then clay
HSB 1b	9000 - 11500	surf = 25K, DH = 36K, ~8in dark, fine, metallic soil, refusal at rock ~14"
HSB 1c	7500 - 9000	surf = 27K, DH = 55K, ~8in of dark, fine, soil (metallic), then clay
HSB 2	9500 - 13500	surf = 40K, DH = 140K, ~25 ft metallic, fine, soil/cinders, then clay
HSB 3a	11000 - 13600	surf = 35K, DH = 49K, blue gray slag, glassy, refusal @ 8"
~~HSB4~~ HSB3b	12000 - 14500	surf = 40K, DH = 70K, blue gray slag, refusal @ 6"
HSB3c	18K - 20K	surf = 45, DH = 74K, (high background area), gray slag, refusal @ 9"
GSU1	6000 - 7800	surf = 6780, DH = 125K, clay & brick, refusal @ 17"
GSU 2	5000 - 6500	surf = 9800, DH = 12K, 12" soil, fine cinders, then clay (bottom 12")
GSU 3	4000 - 6500	surf = 9500, DH = 15K, gravel, dark cinders/soil, then sand, clay @ ~20"
GSU 4	4000 - 6000	surf = 8200, DH = 10K, rock & sand 1:6", then refusal
GSU 5	5000 - 6200	surf = 6700, DH = 7000, concrete refusal @ 4"
		NA

Notes:
- Direct readings were taken at the surface of the hole ("surf"), downhole ~12" ("DH") and of the material extracted in the GeoProbe spoons (represented as a "low - high" range under "Gamma Reading" column.

Survey Performed by: Todd Cleveland / TCC — 7/11/12
Print/Sign — Date

Survey Reviewed by: Gregg Weisberg / GW — 7-31-12
Print/Sign — Date

LABORATORY DATA

Quality Assurance Data Review

SDG No. 3073184

Qualifiers in EDD	Jm 8/13/12
EDD Review	Jm 8/13/12
EDD in Site DB	NA

Project Name: Niacet
Sampling Date: 7/11/12
Review Date: 8/13/12
Laboratory: PACE
Reviewer Signature: James A Mack

Review Item	Matrix	Acceptable	Comments / Qualifications
Compare Chain of Custody to Data Received	Soil / Sed/ Air GW / (SW) Other	✓	
Sample Hold Times	Soil / Sed/ Air GW / (SW) Other	✓	
Trip Blank	VOCs only		NA
Sample Reporting Limits	Soil / Sed/ Air GW / (SW) / Other	✓	
Surrogate Compound Recoveries for Organic Analyses	Soil / Sed/ Air GW / (SW) Other	✓	
Method Blank	Soil / Sed/ Air GW / (SW) Other	✓	
Laboratory Control Sample Recoveries	Soil / Sed/ Air GW / (SW) Other	✓	
Matrix Spike/Spike Duplicate Recoveries and RPDs	Soil / Sed/ Air GW / (SW) Other		* Batch QC from a different Project not used to qualify Niacet Data set
Duplicate Sample Relative Percent Difference	Soil / Sed/ Air GW / (SW) / Other		* Batch QC From a different project not used to qualify Niacet Data set
Initial and Continuing Calibration	Soil / Sed/ Air GW / (SW) / Other		NA – Not included with a level 2 report
TICS	Any		NA

Additional Comments:

* Samples received at an elevated temperature (20.1°C). These samples were collected from solid waste open to the environment. It is the reviewers professional opinion that the elevated temperatures will have minimal impact However to err on the side of caution methods were reviewed for temperature preservation. Metals, RRBs, and PCBs do not require temperature preservation Sono qualifications were applied to these. The remaining organics analytes were qualified "J" or estimated based on the temperature upon receipt.

NA = Not Applicable
NR = Not Reported
NSS = Not a Site Sample, lab batch QC used

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

August 08, 2012

Mr. James Moore
Los Alamos Technical Associates, Inc.
756 Park Meadow Road
Westerville, OH 43081

RE: Project: Niacet Characterization
Pace Project No.: 3073184

Dear Mr. Moore:
Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

The samples were subcontracted to Pace Analytical Services, Inc., 1000 Riverbend Blvd., Suite F, St. Rose, LA 70087 for TCLP Herbicides analysis. Results of the analysis are reported on the Pace Analytical, New Orleans data tables.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carin A. Ferris

Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures

cc: Accounts Payable, Los Alamos Technical Associates, Inc.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: Niacet Characterization
Pace Project No.: 3073184

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Niacet Characterization
Pace Project No.: 3073184

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3073184001	**SEAREA-HSB2A&B-Comp**	EPA 8082	SJG	10	PASI-PA
		ASTM D2974-87	AJC	1	PASI-PA
3073184002	**SEAREA-HSB1-Comp**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073184003	**SEAREA-HSB3-Grabpile**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073184004	**SEAREA-HSB2A&B-Comp**	EPA 8081	CWB	8	PASI-PA
		EPA 6010	CTS	7	PASI-PA
		EPA 7470	MJO	1	PASI-PA
		EPA 8270	SPL	18	PASI-PA
		EPA 8260	JAS	13	PASI-PA
3073184005	**SEAREA-HSB4-Grab**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073184006	**SEAREA-HSB2A&B-Comp**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA

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(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 8081**
Description: 8081 GCS Pesticides, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8081. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/12140

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3073396001

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 465909)
  - PCB-1016 (Aroclor 1016)

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Analyte Comments:

QC Batch: OEXT/12140

1c: The response for DCB is high in the closing calibration check standard associated with the analysis of this sample. Recovery may be biased high.

- SEAREA-HSB2A&B-Comp (Lab ID: 3073184001)
  - Decachlorobiphenyl (S)

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 6010**
Description: 6010 MET ICP, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 7470**
Description: 7470 Mercury, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MERP/3729

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3073164001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 465822)
  - Mercury

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 8270**
Description: 8270 MSSV TCLP Sep Funnel
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 8260**
Description: 8260 MSV TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **EPA 901.1m**
Description: 901.1 Gamma Spec
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
4 samples were analyzed for EPA 901.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
4 samples were analyzed for HSL-300m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Cooler temperature 20.1° C upon receipt. Ice was present.

Analyte Comments:

QC Batch: RADC/12675

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 466065)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- SEAREA-HSB1-Comp (Lab ID: 3073184002)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- SEAREA-HSB2A&B-Comp (Lab ID: 3073184006)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073184

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

Analyte Comments:

QC Batch: RADC/12675

N2: The lab does not hold TNI accreditation for this parameter.

- SEAREA-HSB3-Grabpile (Lab ID: 3073184003)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- SEAREA-HSB4-Grab (Lab ID: 3073184005)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073184

Sample: SEAREA-HSB2A&B-Comp **Lab ID: 3073184001** Collected: 07/11/12 10:00 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	12672-29-6	
PCB-1254 (Aroclor 1254)	**117**	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	11097-69-1	
PCB-1260 (Aroclor 1260)	**143**	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	11096-82-5	
PCB, Total	**260**	ug/kg	18.5	1	07/19/12 10:00	07/24/12 00:34	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	49	%	30-150	1	07/19/12 10:00	07/24/12 00:34	877-09-8	
Decachlorobiphenyl (S)	40	%	30-150	1	07/19/12 10:00	07/24/12 00:34	2051-24-3	1c
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**11.2**	%	0.10	1		07/20/12 17:54		

Sample: SEAREA-HSB2A&B-Comp **Lab ID: 3073184004** Collected: 07/11/12 10:00 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides, TCLP	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
gamma-BHC (Lindane)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 05:06	58-89-9	
Chlordane (Technical)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 05:06	57-74-9	
Endrin	ND	ug/L	1.0	1	07/19/12 14:00	07/24/12 05:06	72-20-8	
Heptachlor epoxide	ND	ug/L	0.50	1	07/19/12 14:00	07/24/12 05:06	1024-57-3	
Methoxychlor	ND	ug/L	100	1	07/19/12 14:00	07/24/12 05:06	72-43-5	
Toxaphene	ND	ug/L	50.0	1	07/19/12 14:00	07/24/12 05:06	8001-35-2	
Surrogates								
Decachlorobiphenyl (S)	78	%	30-150	1	07/19/12 14:00	07/24/12 05:06	2051-24-3	
Tetrachloro-m-xylene (S)	66	%	30-150	1	07/19/12 14:00	07/24/12 05:06	877-09-8	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3005							
Arsenic	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:57	7440-38-2	
Barium	ND	mg/L	1.0	1	07/18/12 14:00	07/19/12 08:57	7440-39-3	
Cadmium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:57	7440-43-9	
Chromium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:57	7440-47-3	
Lead	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:57	7439-92-1	
Selenium	ND	mg/L	0.10	1	07/18/12 14:00	07/19/12 08:57	7782-49-2	
Silver	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:57	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	**1.0**	ug/L	1.0	1	07/18/12 14:38	07/19/12 10:30	7439-97-6	

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073184

Sample: SEAREA-HSB2A&B-Comp **Lab ID: 3073184004** Collected: 07/11/12 10:00 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
1,4-Dichlorobenzene	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:51	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:51	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:51	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:51	118-74-1	
Hexachloroethane	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:51	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 21:51	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 21:51		
Nitrobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:51	98-95-3	
Pentachlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 21:51	87-86-5	
Pyridine	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:51	110-86-1	
2,4,5-Trichlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 21:51	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:51	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	83	%	35-114	1	07/20/12 13:00	07/21/12 21:51	4165-60-0	
2-Fluorobiphenyl (S)	89	%	43-116	1	07/20/12 13:00	07/21/12 21:51	321-60-8	
Terphenyl-d14 (S)	99	%	33-141	1	07/20/12 13:00	07/21/12 21:51	1718-51-0	
Phenol-d6 (S)	32	%	10-110	1	07/20/12 13:00	07/21/12 21:51	13127-88-3	
2-Fluorophenol (S)	54	%	21-110	1	07/20/12 13:00	07/21/12 21:51	367-12-4	
2,4,6-Tribromophenol (S)	70	%	10-123	1	07/20/12 13:00	07/21/12 21:51	118-79-6	
8260 MSV TCLP	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	1		07/24/12 05:22	71-43-2	
2-Butanone (MEK)	ND	ug/L	5000	1		07/24/12 05:22	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		07/24/12 05:22	56-23-5	
Chlorobenzene	ND	ug/L	1000	1		07/24/12 05:22	108-90-7	
Chloroform	ND	ug/L	500	1		07/24/12 05:22	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		07/24/12 05:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		07/24/12 05:22	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		07/24/12 05:22	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		07/24/12 05:22	79-01-6	
Vinyl chloride	ND	ug/L	50.0	1		07/24/12 05:22	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		07/24/12 05:22	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		07/24/12 05:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130	1		07/24/12 05:22	460-00-4	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: MERP/3729
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 3073184004

METHOD BLANK: 465819 Matrix: Water
Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	1.0	07/19/12 09:58	

LABORATORY CONTROL SAMPLE: 465820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	101	85-115	

MATRIX SPIKE SAMPLE: 465822

Parameter	Units	3073164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	2.5	3.2	127	85-115	M1

SAMPLE DUPLICATE: 465821

Parameter	Units	3073164001 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	ND	ND		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: MPRP/8712
QC Batch Method: EPA 3005
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 3073184004

METHOD BLANK: 465792 Matrix: Water
Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.050	07/19/12 07:59	
Barium	mg/L	ND	1.0	07/19/12 07:59	
Cadmium	mg/L	ND	0.050	07/19/12 07:59	
Chromium	mg/L	ND	0.050	07/19/12 07:59	
Lead	mg/L	ND	0.050	07/19/12 07:59	
Selenium	mg/L	ND	0.10	07/19/12 07:59	
Silver	mg/L	ND	0.050	07/19/12 07:59	

LABORATORY CONTROL SAMPLE: 465793

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.5	0.49	99	80-120	
Barium	mg/L	.5	.5J	100	80-120	
Cadmium	mg/L	.5	0.50	99	80-120	
Chromium	mg/L	.5	0.49	98	80-120	
Lead	mg/L	.5	0.49	98	80-120	
Selenium	mg/L	.5	0.50	99	80-120	
Silver	mg/L	.25	0.25	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 465795 465796

Parameter	Units	3073164001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	mg/L	ND	.5	.5	0.54	0.53	107	106	80-120	2	
Barium	mg/L	ND	.5	.5	.82J	.81J	95	93	80-120		
Cadmium	mg/L	ND	.5	.5	0.47	0.47	95	94	80-120	1	
Chromium	mg/L	ND	.5	.5	0.47	0.47	94	94	80-120	.5	
Lead	mg/L	ND	.5	.5	0.51	0.51	100	99	80-120	.9	
Selenium	mg/L	ND	.5	.5	0.54	0.55	109	109	80-120	.4	
Silver	mg/L	ND	.25	.25	0.26	0.26	106	104	80-120	1	

MATRIX SPIKE SAMPLE: 465798

Parameter	Units	3073184004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	.5	0.55	107	80-120	
Barium	mg/L	ND	.5	1.0	93	80-120	
Cadmium	mg/L	ND	.5	0.47	94	80-120	
Chromium	mg/L	ND	.5	0.50	95	80-120	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

MATRIX SPIKE SAMPLE: 465798

Parameter	Units	3073184004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	ND	.5	0.51	100	80-120	
Selenium	mg/L	ND	.5	0.54	107	80-120	
Silver	mg/L	ND	.25	0.27	107	80-120	

SAMPLE DUPLICATE: 465794

Parameter	Units	3073164001 Result	Dup Result	RPD	Qualifiers
Arsenic	mg/L	ND	.0037J		
Barium	mg/L	ND	.34J		
Cadmium	mg/L	ND	ND		
Chromium	mg/L	ND	ND		
Lead	mg/L	ND	.0083J		
Selenium	mg/L	ND	ND		
Silver	mg/L	ND	ND		

SAMPLE DUPLICATE: 465797

Parameter	Units	3073184004 Result	Dup Result	RPD	Qualifiers
Arsenic	mg/L	ND	.015J		
Barium	mg/L	ND	.54J		
Cadmium	mg/L	ND	.00062J		
Chromium	mg/L	ND	.024J		
Lead	mg/L	ND	.0074J		
Selenium	mg/L	ND	.0034J		
Silver	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: MSV/13357
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 3073184004

METHOD BLANK: 467531
Matrix: Water
Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	07/24/12 02:18	
1,2-Dichloroethane	ug/L	ND	50.0	07/24/12 02:18	
2-Butanone (MEK)	ug/L	ND	5000	07/24/12 02:18	
Benzene	ug/L	ND	50.0	07/24/12 02:18	
Carbon tetrachloride	ug/L	ND	50.0	07/24/12 02:18	
Chlorobenzene	ug/L	ND	1000	07/24/12 02:18	
Chloroform	ug/L	ND	500	07/24/12 02:18	
Tetrachloroethene	ug/L	ND	50.0	07/24/12 02:18	
Trichloroethene	ug/L	ND	50.0	07/24/12 02:18	
Vinyl chloride	ug/L	ND	50.0	07/24/12 02:18	
1,2-Dichloroethane-d4 (S)	%	103	70-130	07/24/12 02:18	
4-Bromofluorobenzene (S)	%	102	70-130	07/24/12 02:18	
Toluene-d8 (S)	%	100	70-130	07/24/12 02:18	

LABORATORY CONTROL SAMPLE: 467532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	200	192	96	70-130	
1,2-Dichloroethane	ug/L	200	191	95	70-130	
2-Butanone (MEK)	ug/L	200	204J	102	70-130	
Benzene	ug/L	200	179	90	70-130	
Carbon tetrachloride	ug/L	200	192	96	70-130	
Chlorobenzene	ug/L	200	194J	97	70-130	
Chloroform	ug/L	200	180J	90	70-130	
Tetrachloroethene	ug/L	200	181	90	70-130	
Trichloroethene	ug/L	200	179	89	70-130	
Vinyl chloride	ug/L	200	209	104	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: OEXT/12149
QC Batch Method: EPA 3510
Analysis Method: EPA 8081
Analysis Description: 8081 GCS TCLP Pesticides
Associated Lab Samples: 3073184004

METHOD BLANK: 466179 Matrix: Water

Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 00:05	
Endrin	ug/L	ND	1.0	07/24/12 00:05	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 00:05	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 00:05	
Methoxychlor	ug/L	ND	100	07/24/12 00:05	
Toxaphene	ug/L	ND	50.0	07/24/12 00:05	
Decachlorobiphenyl (S)	%	84	30-150	07/24/12 00:05	
Tetrachloro-m-xylene (S)	%	75	30-150	07/24/12 00:05	

METHOD BLANK: 466181 Matrix: Water

Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 05:33	
Endrin	ug/L	ND	1.0	07/24/12 05:33	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 05:33	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 05:33	
Methoxychlor	ug/L	ND	100	07/24/12 05:33	
Toxaphene	ug/L	ND	50.0	07/24/12 05:33	
Decachlorobiphenyl (S)	%	84	30-150	07/24/12 05:33	
Tetrachloro-m-xylene (S)	%	73	30-150	07/24/12 05:33	

METHOD BLANK: 466182 Matrix: Water

Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 06:28	
Endrin	ug/L	ND	1.0	07/24/12 06:28	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 06:28	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 06:28	
Methoxychlor	ug/L	ND	100	07/24/12 06:28	
Toxaphene	ug/L	ND	50.0	07/24/12 06:28	
Decachlorobiphenyl (S)	%	89	30-150	07/24/12 06:28	
Tetrachloro-m-xylene (S)	%	83	30-150	07/24/12 06:28	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

LABORATORY CONTROL SAMPLE: 466180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin	ug/L	1.6	1.4	88	57-112	
gamma-BHC (Lindane)	ug/L	1.6	1.4J	88	66-118	
Heptachlor epoxide	ug/L	1.6	1.2	76	66-114	
Methoxychlor	ug/L	1.6	1.3J	81	50-150	
Decachlorobiphenyl (S)	%			80	30-150	
Tetrachloro-m-xylene (S)	%			66	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 466183 466184

Parameter	Units	3073416001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Endrin	ug/L	ND	1.6	1.6	1.7	1.6	104	102	57-112	2	
gamma-BHC (Lindane)	ug/L	ND	1.6	1.6	1.7J	1.7J	105	104	66-118		
Heptachlor epoxide	ug/L	ND	1.6	1.6	1.4	1.4	90	89	66-114	1	
Methoxychlor	ug/L	ND	1.6	1.6	1.6J	1.5J	98	96	50-150		
Decachlorobiphenyl (S)	%						77	77	30-150		
Tetrachloro-m-xylene (S)	%						80	80	30-150		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: OEXT/12140 Analysis Method: EPA 8082
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3073184001

METHOD BLANK: 465907 Matrix: Solid
Associated Lab Samples: 3073184001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1221 (Aroclor 1221)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1232 (Aroclor 1232)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1242 (Aroclor 1242)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1248 (Aroclor 1248)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1254 (Aroclor 1254)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1260 (Aroclor 1260)	ug/kg	ND	16.7	07/21/12 17:41	
Decachlorobiphenyl (S)	%	76	30-150	07/21/12 17:41	
Tetrachloro-m-xylene (S)	%	61	30-150	07/21/12 17:41	

LABORATORY CONTROL SAMPLE: 465908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	105	63	55-145	
PCB-1260 (Aroclor 1260)	ug/kg	167	128	77	55-145	
Decachlorobiphenyl (S)	%			73	30-150	
Tetrachloro-m-xylene (S)	%			56	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 465909 465910

Parameter	Units	3073396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	172	175	92.1	100	54	57	55-145	9	M3
PCB-1260 (Aroclor 1260)	ug/kg	ND	172	175	113	115	61	62	55-145	2	
Decachlorobiphenyl (S)	%						48	44	30-150		
Tetrachloro-m-xylene (S)	%						46	48	30-150		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: OEXT/12158
QC Batch Method: EPA 3510
Analysis Method: EPA 8270
Analysis Description: 8270 TCLP MSSV
Associated Lab Samples: 3073184004

METHOD BLANK: 466539 Matrix: Water
Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 16:04	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 16:04	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 16:04	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 16:04	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 16:04	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 16:04	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 16:04	
Hexachlorobenzene	ug/L	ND	100	07/21/12 16:04	
Hexachloroethane	ug/L	ND	500	07/21/12 16:04	
Nitrobenzene	ug/L	ND	100	07/21/12 16:04	
Pentachlorophenol	ug/L	ND	5000	07/21/12 16:04	
Pyridine	ug/L	ND	500	07/21/12 16:04	
2,4,6-Tribromophenol (S)	%	72	10-123	07/21/12 16:04	
2-Fluorobiphenyl (S)	%	75	43-116	07/21/12 16:04	
2-Fluorophenol (S)	%	45	21-110	07/21/12 16:04	
Nitrobenzene-d5 (S)	%	74	35-114	07/21/12 16:04	
Phenol-d6 (S)	%	30	10-110	07/21/12 16:04	
Terphenyl-d14 (S)	%	92	33-141	07/21/12 16:04	

METHOD BLANK: 466543 Matrix: Water
Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 20:09	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 20:09	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 20:09	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 20:09	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 20:09	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 20:09	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 20:09	
Hexachlorobenzene	ug/L	ND	100	07/21/12 20:09	
Hexachloroethane	ug/L	ND	500	07/21/12 20:09	
Nitrobenzene	ug/L	ND	100	07/21/12 20:09	
Pentachlorophenol	ug/L	ND	5000	07/21/12 20:09	
Pyridine	ug/L	ND	500	07/21/12 20:09	
2,4,6-Tribromophenol (S)	%	59	10-123	07/21/12 20:09	
2-Fluorobiphenyl (S)	%	79	43-116	07/21/12 20:09	
2-Fluorophenol (S)	%	45	21-110	07/21/12 20:09	
Nitrobenzene-d5 (S)	%	74	35-114	07/21/12 20:09	
Phenol-d6 (S)	%	28	10-110	07/21/12 20:09	
Terphenyl-d14 (S)	%	91	33-141	07/21/12 20:09	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

METHOD BLANK: 466544 Matrix: Water

Associated Lab Samples: 3073184004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 23:13	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 23:13	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 23:13	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 23:13	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 23:13	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 23:13	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 23:13	
Hexachlorobenzene	ug/L	ND	100	07/21/12 23:13	
Hexachloroethane	ug/L	ND	500	07/21/12 23:13	
Nitrobenzene	ug/L	ND	100	07/21/12 23:13	
Pentachlorophenol	ug/L	ND	5000	07/21/12 23:13	
Pyridine	ug/L	ND	500	07/21/12 23:13	
2,4,6-Tribromophenol (S)	%	73	10-123	07/21/12 23:13	
2-Fluorobiphenyl (S)	%	87	43-116	07/21/12 23:13	
2-Fluorophenol (S)	%	50	21-110	07/21/12 23:13	
Nitrobenzene-d5 (S)	%	76	35-114	07/21/12 23:13	
Phenol-d6 (S)	%	31	10-110	07/21/12 23:13	
Terphenyl-d14 (S)	%	98	33-141	07/21/12 23:13	

LABORATORY CONTROL SAMPLE: 466540

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	500	314J	63	10-95	
2,4,5-Trichlorophenol	ug/L	500	255J	51	10-200	
2,4,6-Trichlorophenol	ug/L	500	359	72	42-132	
2,4-Dinitrotoluene	ug/L	500	319	64	10-133	
2-Methylphenol(o-Cresol)	ug/L	500	327J	65	10-200	
3&4-Methylphenol(m&p Cresol)	ug/L	1000	623J	62	10-200	
Hexachloro-1,3-butadiene	ug/L	500	343	69	38-113	
Hexachlorobenzene	ug/L	500	361	72	58-130	
Hexachloroethane	ug/L	500	329J	66	36-96	
Nitrobenzene	ug/L	500	360	72	41-108	
Pentachlorophenol	ug/L	500	304J	61	13-129	
Pyridine	ug/L	500	ND	31	10-200	
2,4,6-Tribromophenol (S)	%			59	10-123	
2-Fluorobiphenyl (S)	%			73	43-116	
2-Fluorophenol (S)	%			47	21-110	
Nitrobenzene-d5 (S)	%			71	35-114	
Phenol-d6 (S)	%			24	10-110	
Terphenyl-d14 (S)	%			88	33-141	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 466541 466542

Parameter	Units	3073396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,4-Dichlorobenzene	ug/L	ND	500	500	359J	361J	72	72	10-95		
2,4,5-Trichlorophenol	ug/L	ND	500	500	365J	306J	73	61	10-200		
2,4,6-Trichlorophenol	ug/L	ND	500	500	403	400	81	80	42-132	.7	
2,4-Dinitrotoluene	ug/L	ND	500	500	357	361	71	72	10-133	1	
2-Methylphenol(o-Cresol)	ug/L	ND	500	500	366J	379J	73	76	10-200		
3&4-Methylphenol(m&p Cresol)	ug/L	ND	1000	1000	669J	673J	67	67	10-200		
Hexachloro-1,3-butadiene	ug/L	ND	500	500	402	408	80	82	38-113	2	
Hexachlorobenzene	ug/L	ND	500	500	398	415	80	83	58-130	4	
Hexachloroethane	ug/L	ND	500	500	373J	385J	75	77	36-96		
Nitrobenzene	ug/L	ND	500	500	422	432	84	86	41-108	3	
Pentachlorophenol	ug/L	ND	500	500	309J	388J	62	78	13-129		
Pyridine	ug/L	ND	500	500	ND	ND	37	32	10-200		
2,4,6-Tribromophenol (S)	%						73	68	10-123		
2-Fluorobiphenyl (S)	%						80	81	43-116		
2-Fluorophenol (S)	%						49	49	21-110		
Nitrobenzene-d5 (S)	%						82	82	35-114		
Phenol-d6 (S)	%						27	27	10-110		
Terphenyl-d14 (S)	%						87	91	33-141		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: PMST/3284
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 3073184001

SAMPLE DUPLICATE: 466978

Parameter	Units	3073184001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	11.2	9.6	15	

SAMPLE DUPLICATE: 466979

Parameter	Units	3073557001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	12.0	12.3	2	

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073184

Sample: SEAREA-HSB1-Comp **Lab ID: 3073184002** Collected: 07/11/12 09:00 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**0.224U ± 0.174 (0.882)**	pCi/g	08/07/12 09:12	14952-40-0	
Actinium-228	EPA 901.1m	**1.29 ± 0.231 (0.161)**	pCi/g	08/07/12 09:12	14331-83-0	
Bismuth-212	EPA 901.1m	**1.23 ± 0.798 (0.806)**	pCi/g	08/07/12 09:12	14913-49-6	
Bismuth-214	EPA 901.1m	**2.35 ± 0.315 (0.276)**	pCi/g	08/07/12 09:12	14733-03-0	
Cesium-137	EPA 901.1m	**0.302J ± 0.0800 (0.0620)**	pCi/g	08/07/12 09:12	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.002U ± 0.0480 (0.0710)**	pCi/g	08/07/12 09:12	10198-40-0	
Lead-210	EPA 901.1m	**-2.800U ± 63.4 (66.7)**	pCi/g	08/07/12 09:12	14255-04-0	
Lead-212	EPA 901.1m	**1.05 ± 0.162 (0.129)**	pCi/g	08/07/12 09:12	15092-94-1	
Lead-214	EPA 901.1m	**2.28 ± 0.307 (0.139)**	pCi/g	08/07/12 09:12	15067-28-4	
Potassium-40	EPA 901.1m	**6.65 ± 1.21 (0.698)**	pCi/g	08/07/12 09:12	13966-00-2	
Protactinium-234M	EPA 901.1m	**0.758U ± 4.10 (7.28)**	pCi/g	08/07/12 09:12	15100-28-4	
Radium-226	EPA 901.1m	**2.37 ± 0.290 (0.125)**	pCi/g	08/07/12 09:12	13982-63-3	
Radium-228	EPA 901.1m	**1.29 ± 0.231 (0.161)**	pCi/g	08/07/12 09:12	15262-20-1	
Thallium-208	EPA 901.1m	**0.362J ± 0.0870 (0.0680)**	pCi/g	08/07/12 09:12	14913-50-9	
Thorium-234	EPA 901.1m	**0.150U ± 3.01 (5.09)**	pCi/g	08/07/12 09:12	15065-10-8	
Uranium-235	EPA 901.1m	**0.295J ± 0.106 (0.101)**	pCi/g	08/07/12 09:12	15117-96-1	
Thorium-228	HSL-300m	**0.805 ± 0.184 (0.104)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**1.08 ± 0.224 (0.053)**	pCi/g	07/27/12 13:09	14269-63-7	N2
Thorium-232	HSL-300m	**0.614 ± 0.144 (0.017)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**0.681 ± 0.176 (0.146)**	pCi/g	07/26/12 16:07	13966-29-5	N2
Uranium-235	HSL-300m	**0.108 ± 0.062 (0.054)**	pCi/g	07/26/12 16:07	15117-96-1	N2
Uranium-238	HSL-300m	**0.730 ± 0.171 (0.077)**	pCi/g	07/26/12 16:07		N2

Sample: SEAREA-HSB3-Grabpile **Lab ID: 3073184003** Collected: 07/11/12 10:33 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**1.20 ± 0.520 (0.714)**	pCi/g	08/07/12 09:45	14952-40-0	
Actinium-228	EPA 901.1m	**4.43 ± 0.614 (0.242)**	pCi/g	08/07/12 09:45	14331-83-0	
Bismuth-212	EPA 901.1m	**5.22 ± 1.52 (1.18)**	pCi/g	08/07/12 09:45	14913-49-6	
Bismuth-214	EPA 901.1m	**3.48 ± 0.459 (0.468)**	pCi/g	08/07/12 09:45	14733-03-0	
Cesium-137	EPA 901.1m	**0.306J ± 0.0830 (0.0690)**	pCi/g	08/07/12 09:45	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.006U ± 0.0870 (0.0830)**	pCi/g	08/07/12 09:45	10198-40-0	
Lead-210	EPA 901.1m	**17.6U ± 32.1 (53.4)**	pCi/g	08/07/12 09:45	14255-04-0	
Lead-212	EPA 901.1m	**3.96 ± 0.471 (0.188)**	pCi/g	08/07/12 09:45	15092-94-1	
Lead-214	EPA 901.1m	**3.34 ± 0.438 (0.204)**	pCi/g	08/07/12 09:45	15067-28-4	
Potassium-40	EPA 901.1m	**9.17 ± 1.48 (0.687)**	pCi/g	08/07/12 09:45	13966-00-2	
Protactinium-234M	EPA 901.1m	**4.93U ± 5.93 (9.71)**	pCi/g	08/07/12 09:45	15100-28-4	
Radium-226	EPA 901.1m	**3.24 ± 0.412 (0.167)**	pCi/g	08/07/12 09:45	13982-63-3	
Radium-228	EPA 901.1m	**4.43 ± 0.614 (0.242)**	pCi/g	08/07/12 09:45	15262-20-1	
Thallium-208	EPA 901.1m	**1.35 ± 0.195 (0.0920)**	pCi/g	08/07/12 09:45	14913-50-9	
Thorium-234	EPA 901.1m	**7.67 ± 2.14 (6.07)**	pCi/g	08/07/12 09:45	15065-10-8	
Uranium-235	EPA 901.1m	**0.688J ± 0.163 (0.149)**	pCi/g	08/07/12 09:45	15117-96-1	
Thorium-228	HSL-300m	**3.12 ± 0.568 (0.132)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**2.94 ± 0.535 (0.063)**	pCi/g	07/27/12 13:09	14269-63-7	N2

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073184

Sample: SEAREA-HSB3-Grabpile **Lab ID: 3073184003** Collected: 07/11/12 10:33 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Thorium-232	HSL-300m	**3.14 ± 0.566 (0.040)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**5.50 ± 0.876 (0.112)**	pCi/g	07/26/12 16:07	13966-29-5	N2
Uranium-235	HSL-300m	**0.261 ± 0.103 (0.059)**	pCi/g	07/26/12 16:07	15117-96-1	N2
Uranium-238	HSL-300m	**6.11 ± 0.963 (0.018)**	pCi/g	07/26/12 16:07		N2

Sample: SEAREA-HSB4-Grab **Lab ID: 3073184005** Collected: 07/11/12 10:30 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**0.116U ± 0.102 (0.651)**	pCi/g	08/07/12 10:19	14952-40-0	
Actinium-228	EPA 901.1m	**1.34 ± 0.257 (0.242)**	pCi/g	08/07/12 10:19	14331-83-0	
Bismuth-212	EPA 901.1m	**1.82 ± 0.762 (0.697)**	pCi/g	08/07/12 10:19	14913-49-6	
Bismuth-214	EPA 901.1m	**3.58 ± 0.652 (0.337)**	pCi/g	08/07/12 10:19	14733-03-0	
Cesium-137	EPA 901.1m	**0.0980J ± 0.0440 (0.0430)**	pCi/g	08/07/12 10:19	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.013U ± 0.339 (0.0750)**	pCi/g	08/07/12 10:19	10198-40-0	
Lead-210	EPA 901.1m	**6.19U ± 22.7 (38.4)**	pCi/g	08/07/12 10:19	14255-04-0	
Lead-212	EPA 901.1m	**1.23 ± 0.184 (0.143)**	pCi/g	08/07/12 10:19	15092-94-1	
Lead-214	EPA 901.1m	**3.09 ± 0.386 (0.144)**	pCi/g	08/07/12 10:19	15067-28-4	
Potassium-40	EPA 901.1m	**7.54 ± 1.28 (0.662)**	pCi/g	08/07/12 10:19	13966-00-2	
Protactinium-234M	EPA 901.1m	**0.847U ± 4.46 (7.88)**	pCi/g	08/07/12 10:19	15100-28-4	
Radium-226	EPA 901.1m	**2.83 ± 0.356 (0.173)**	pCi/g	08/07/12 10:19	13982-63-3	
Radium-228	EPA 901.1m	**1.34 ± 0.257 (0.242)**	pCi/g	08/07/12 10:19	15262-20-1	
Thallium-208	EPA 901.1m	**0.420J ± 0.0840 (0.0570)**	pCi/g	08/07/12 10:19	14913-50-9	
Thorium-234	EPA 901.1m	**2.69U ± 1.31 (4.30)**	pCi/g	08/07/12 10:19	15065-10-8	
Uranium-235	EPA 901.1m	**0.418J ± 0.119 (0.111)**	pCi/g	08/07/12 10:19	15117-96-1	
Thorium-228	HSL-300m	**1.20 ± 0.267 (0.136)**	pCi/g	07/27/12 13:10	14274-82-9	N2
Thorium-230	HSL-300m	**2.77 ± 0.514 (0.091)**	pCi/g	07/27/12 13:10	14269-63-7	N2
Thorium-232	HSL-300m	**1.22 ± 0.263 (0.081)**	pCi/g	07/27/12 13:10	7440-29-1	N2
Uranium-234	HSL-300m	**2.76 ± 0.477 (0.117)**	pCi/g	07/26/12 16:07	13966-29-5	N2
Uranium-235	HSL-300m	**0.195 ± 0.085 (0.023)**	pCi/g	07/26/12 16:07	15117-96-1	N2
Uranium-238	HSL-300m	**2.48 ± 0.433 (0.062)**	pCi/g	07/26/12 16:07		N2

Sample: SEAREA-HSB2A&B-Comp **Lab ID: 3073184006** Collected: 07/11/12 09:30 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**0.150U ± 0.170 (0.459)**	pCi/g	08/07/12 10:55	14952-40-0	
Actinium-228	EPA 901.1m	**0.718J ± 0.207 (0.154)**	pCi/g	08/07/12 10:55	14331-83-0	
Bismuth-212	EPA 901.1m	**0.504U ± 0.530 (0.856)**	pCi/g	08/07/12 10:55	14913-49-6	
Bismuth-214	EPA 901.1m	**0.798J ± 0.147 (0.410)**	pCi/g	08/07/12 10:55	14733-03-0	
Cesium-137	EPA 901.1m	**0.0940J ± 0.0440 (0.0610)**	pCi/g	08/07/12 10:55	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.001U ± 0.0370 (0.0680)**	pCi/g	08/07/12 10:55	10198-40-0	
Lead-210	EPA 901.1m	**-1.600U ± 38.8 (27.2)**	pCi/g	08/07/12 10:55	14255-04-0	

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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073184

Sample: SEAREA-HSB2A&B-Comp **Lab ID: 3073184006** Collected: 07/11/12 09:30 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Lead-212	EPA 901.1m	**0.705J ± 0.121 (0.0960)**	pCi/g	08/07/12 10:55	15092-94-1	
Lead-214	EPA 901.1m	**1.000 ± 0.173 (0.112)**	pCi/g	08/07/12 10:55	15067-28-4	
Potassium-40	EPA 901.1m	**8.06 ± 1.27 (0.539)**	pCi/g	08/07/12 10:55	13966-00-2	
Protactinium-234M	EPA 901.1m	**1.19U ± 3.44 (6.07)**	pCi/g	08/07/12 10:55	15100-28-4	
Radium-226	EPA 901.1m	**0.953J ± 0.156 (0.104)**	pCi/g	08/07/12 10:55	13982-63-3	
Radium-228	EPA 901.1m	**0.718J ± 0.207 (0.154)**	pCi/g	08/07/12 10:55	15262-20-1	
Thallium-208	EPA 901.1m	**0.235J ± 0.0670 (0.0590)**	pCi/g	08/07/12 10:55	14913-50-9	
Thorium-234	EPA 901.1m	**1.04 ± 0.888 (3.13)**	pCi/g	08/07/12 10:55	15065-10-8	
Uranium-235	EPA 901.1m	**0.102J ± 0.0510 (0.0620)**	pCi/g	08/07/12 10:55	15117-96-1	
Thorium-228	HSL-300m	**0.966 ± 0.220 (0.107)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**0.840 ± 0.199 (0.108)**	pCi/g	07/27/12 13:09	14269-63-7	N2
Thorium-232	HSL-300m	**0.636 ± 0.158 (0.016)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**0.787 ± 0.182 (0.075)**	pCi/g	07/26/12 16:04	13966-29-5	N2
Uranium-235	HSL-300m	**0.076 ± 0.051 (0.023)**	pCi/g	07/26/12 16:04	15117-96-1	N2
Uranium-238	HSL-300m	**0.911 ± 0.200 (0.054)**	pCi/g	07/26/12 16:04		N2

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: RADC/12641 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3073184002, 3073184003, 3073184005, 3073184006

METHOD BLANK: 464107 Matrix: Solid
Associated Lab Samples: 3073184002, 3073184003, 3073184005, 3073184006

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Actinium-227	0.203 ± 0.227 (0.274)	pCi/g	08/05/12 18:35	
Actinium-228	0.0210 ± 0.0360 (0.239)	pCi/g	08/05/12 18:35	
Bismuth-212	0.191 ± 0.454 (0.790)	pCi/g	08/05/12 18:35	
Bismuth-214	-0.107 ± 2.38 (0.445)	pCi/g	08/05/12 18:35	
Cesium-137	0.0200 ± 0.0360 (0.0600)	pCi/g	08/05/12 18:35	
Cobalt-60	-0.019 ± 0.0940 (0.0650)	pCi/g	08/05/12 18:35	
Lead-210	5.11 ± 14.3 (24.7)	pCi/g	08/05/12 18:35	
Lead-212	-0.044 ± 18.9 (0.0970)	pCi/g	08/05/12 18:35	
Lead-214	0.0990 ± 0.0750 (0.114)	pCi/g	08/05/12 18:35	
Potassium-40	-0.117 ± 0.553 (0.767)	pCi/g	08/05/12 18:35	
Protactinium-234M	1.73 ± 3.37 (5.83)	pCi/g	08/05/12 18:35	
Radium-226	0.0200 ± 0.0220 (0.165)	pCi/g	08/05/12 18:35	
Radium-228	0.0210 ± 0.0360 (0.239)	pCi/g	08/05/12 18:35	
Thallium-208	-0.011 ± 0.0720 (0.0580)	pCi/g	08/05/12 18:35	
Thorium-234	0.148 ± 1.14 (2.01)	pCi/g	08/05/12 18:35	
Uranium-235	0.000 ± 0.0370 (0.0660)	pCi/g	08/05/12 18:35	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073184

QC Batch: RADC/12675 Analysis Method: HSL-300m
QC Batch Method: HSL-300m Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 3073184002, 3073184003, 3073184005, 3073184006

METHOD BLANK: 466065 Matrix: Solid
Associated Lab Samples: 3073184002, 3073184003, 3073184005, 3073184006

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Thorium-228	0.152 ± 0.076 (0.099)	pCi/g	07/27/12 13:09	N2
Thorium-230	0.009 ± 0.034 (0.071)	pCi/g	07/27/12 13:09	N2
Thorium-232	-0.004 ± 0.021 (0.034)	pCi/g	07/27/12 13:09	N2
Uranium-234	0.040 ± 0.045 (0.076)	pCi/g	07/26/12 16:04	N2
Uranium-235	0.008 ± 0.032 (0.020)	pCi/g	07/26/12 16:04	N2
Uranium-238	0.017 ± 0.025 (0.016)	pCi/g	07/26/12 16:04	N2

Quality Control Sample Performance Assessment

RCDU Upload

Analyst:	LAL		
Date:	7/30/2012	**Method:**	HSL-300m
Worklist:	12675	**SOP:**	PGH-R-008
Matrix:	Soil	**MB Sample ID:**	466065

Method Blank Assessment

Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Uranium-234	0.0402	0.0451	0.0760	0.02810		
Uranium-235	0.0075	0.0319	0.0204	0.00000		
Uranium-238	0.0173	0.0246	0.0157	0.00000		

Laboratory Control Sample Assessment

	LCS	LCSD	LCS	LCSD	LCS	LCSD
Analyte:	Uranium-234		Uranium-238			
Count Date:	7/27/12 7:56	7/27/12 7:56	7/27/12 7:56	7/27/12 7:56		
Spike I.D.:	11-041U234	11-041U234	11-041U238	11-041U238		
Spike Concentration (pCi/L):	46.300	46.300	47.250	47.250		
Volume Used (mL):	0.100	0.100	0.100	0.100		
Aliquot Volume (L, g, F):	0.500	0.500	0.500	0.500		
Target Conc. (pCi/L, g, F):	9.260	9.260	9.450	9.450		
1.96 Sigma Uncertainty (Calculated):	0.327	0.327	0.333	0.333		
Result (pCi/L, g, F):	9.770	9.780	10.200	9.810		
1.96 Sigma Unc:	1.800	1.770	1.860	1.770		
% Recovery:	105.51%	105.62%	107.94%	103.81%		
Assessment:	Pass	Pass	Pass	Pass		
Upper % Recovery Limits:	125.00%	125.00%	125.00%	125.00%		
Lower % Recovery Limits:	75.00%	75.00%	75.00%	75.00%		

Duplicate Sample Assessment

LCS/LCSD Y or N?:	Y	Y				
Analyte:	Uranium-234	Uranium-238				
Sample I.D.:	LCS12675	LCS12675				
Duplicate Sample I.D.	LCSD12675	LCSD12675				
Sample Result (pCi/L, g, F):	9.7700	10.2000				
1.96 Sigma Unc:	1.8000	1.8600				
Sample Duplicate Result (pCi/L, g, F):	9.7800	9.8100				
Duplicate Sample 1.96 Sigma Unc.	1.7700	1.7700				
Either results below MDC?	N	N				
Relative Percent Difference:	0.10%	3.90%				
Assessment:	Pass	Pass				
% RPD Limit:	25.00%	25.00%				

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Sample Matrix Spike Control Assessment

Analyte:			
Sample Collection Date:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Spike I.D.:			
MS/MSD Decay Corrected Spike Conc. (pCi/L):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc.(pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike uncertainty (calculated):			
MSD Spike uncertainty (calculated):			
Sample Result:			
Sample 1.96 Sigma Unc.:			
Sample Matrix Spike Result:			
Sample MS 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample MSD 1.96 Sigma Unc.:			
MS % Recovery:			
MSD % Recovery:			
MS Assessment:			
MSD Assessment:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Analyte:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Sample Matrix Spike Result:			
Sample Matrix Spike 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:			
MS/MSD Relative Percent Difference:			
MS/ MSD RPD Assessment:			
% RPD Limit:			

Comments:

8/9/12

Quality Control Sample Performance Assessment

RCDU Upload

Analyst:	LAL		
Date:	7/30/2012	**Method:**	HSL-300m
Worklist:	12675	**SOP:**	PGH-R-008
Matrix:	Soil	**MB Sample ID:**	466065

Method Blank Assessment

Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Thorium-232	-0.0036	0.0214	0.0336	0.00930		
Thorium-230	0.0090	0.0344	0.0710	0.02670		
Thorium-228	0.1520	0.0757	0.0986	0.03950		

Laboratory Control Sample Assessment

	LCS	LCSD	LCS	LCSD	LCS	LCSD
Analyte:	Thorium-230					
Count Date:	7/27/12 13:11	7/27/12 13:11				
Spike I.D.:	12-018	12-018				
Spike Concentration (pCi/L):	26.497	26.497				
Volume Used (mL):	0.100	0.100				
Aliquot Volume (L, g, F):	0.500	0.500				
Target Conc. (pCi/L, g, F):	5.299	5.299				
1.96 Sigma Uncertainty (Calculated):	0.312	0.312				
Result (pCi/L, g, F):	4.780	4.810				
1.96 Sigma Unc:	0.830	0.832				
% Recovery:	90.20%	90.77%				
Assessment:	Pass	Pass				
Upper % Recovery Limits:	125.00%	125.00%				
Lower % Recovery Limits:	75.00%	75.00%				

Duplicate Sample Assessment

LCS/LCSD Y or N?:	Y					
Analyte:	Thorium-230					
Sample I.D.:	LCS12675					
Duplicate Sample I.D.	LCSD12675					
Sample Result (pCi/L, g, F):	4.7800					
1.96 Sigma Unc:	0.8300					
Sample Duplicate Result (pCi/L, g, F):	4.8100					
Duplicate Sample 1.96 Sigma Unc.	0.8320					
Either results below MDC?	N					
Relative Percent Difference:	0.63%					
Assessment:	Pass					
% RPD Limit:	25.00%					

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Sample Matrix Spike Control Assessment

Analyte:			
Sample Collection Date:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Spike I.D.:			
MS/MSD Decay Corrected Spike Conc. (pCi/L):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc.(pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike uncertainty (calculated):			
MSD Spike uncertainty (calculated):			
Sample Result:			
Sample 1.96 Sigma Unc.:			
Sample Matrix Spike Result:			
Sample MS 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample MSD 1.96 Sigma Unc.:			
MS % Recovery:			
MSD % Recovery:			
MS Assessment:			
MSD Assessment:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Analyte:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Sample Matrix Spike Result:			
Sample Matrix Spike 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:			
MS/MSD Relative Percent Difference:			
MS/ MSD RPD Assessment:			
% RPD Limit:			

Comments:

8/9/12

Gamma Spec Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Analyst: Hoover
Date: 8/8/2012
Worklist: 12641
Matrix: Soil

Geometry: 8 Oz Can
Activity Units: pCi
Aliquot Units: Gram

Method Blank Assessment

Analytes of Interest	MB Result	2 Sigma CSU	MB MDC	Numerical Indicator	MB Evaluation
Potassium-40	-0.117	0.553	0.767	0.415	Pass
Cobalt-60	-0.019	0.0940	0.0650	0.396	Pass
Cesium-137	0.0200	0.0360	0.0600	1.089	Pass
Thallium-208	-0.011	0.0720	0.0580	0.299	Pass
Lead-210	5.11	14.3	24.7	0.700	Pass
Bismuth-214	-0.107	2.38	0.445	0.088	Pass
Lead-214	0.0990	0.0750	0.114	2.587	Pass
Radium-223	0.001000	0.00200	0.342	0.980	Pass
Radium-226	0.0200	0.0220	0.165	1.782	Pass
Actinium-228	0.0210	0.0360	0.239	1.143	Pass
Protactinium-231	-0.733	1.56	2.65	0.921	Pass
Protactinium-234	1.73	3.37	5.83	1.006	Pass
Protactinium-234M	1.73	3.37	5.83	1.006	Pass
Uranium-235	0.000	0.0370	0.0660	0.000	Pass
Radium-228	0.0210	0.0360	0.239	1.143	Pass
Bismuth-212	0.191	0.454	0.790	0.825	Pass
Lead-212	-0.044	18.9	0.0970	0.005	Pass
Thorium-234	0.148	1.14	2.01	0.254	Pass
Actinium-227	0.203	0.227	0.274	1.753	Pass

Duplicate Sample Precision Assessment

		Sample ID:		Duplicate Sample ID:			
Analytes of Interest	Sample Results	Sample 2 Sigma CSU	Duplicate Results	Duplicate 2 Sigma CSU	Numerical Indicator	% RPD	Evaluation
Potassium-40					#DIV/0!	#DIV/0!	#DIV/0!
Cobalt-60					#DIV/0!	#DIV/0!	#DIV/0!
Cesium-137					#DIV/0!	#DIV/0!	#DIV/0!
Thallium-208					#DIV/0!	#DIV/0!	#DIV/0!
Lead-210					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-214					#DIV/0!	#DIV/0!	#DIV/0!
Lead-214					#DIV/0!	#DIV/0!	#DIV/0!
Radium-223					#DIV/0!	#DIV/0!	#DIV/0!
Radium-226					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-228					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-231					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234M					#DIV/0!	#DIV/0!	#DIV/0!
Uranium-235					#DIV/0!	#DIV/0!	#DIV/0!
Radium-228					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-212					#DIV/0!	#DIV/0!	#DIV/0!
Lead-212					#DIV/0!	#DIV/0!	#DIV/0!
Thorium-234					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-227					#DIV/0!	#DIV/0!	#DIV/0!

Duplicate LCS Precision Assessment

Analyte	LCS Concentration	LCS 2 Sigma CSU	LCSD Concentration	LCSD 2 Sigma CSU	Numerical Indicator	Percent RPD	Precision Evaluation
Am-241	1.022	0.525	1.109	0.508	-0.233	8.1%	Pass
Cs-137	5.524	0.581	5.549	0.583	-0.060	0.5%	Pass
Co-60	3.886	0.406	3.868	0.406	0.060	0.5%	Pass

Laboratory Control Sample Assessment

	Analyte	Am-241	Cs-137	Co-60
	Count Date	8/5/2012	8/5/2012	8/5/2012
	Reference ID	09-039Am	09-039Cs	09-039Co
Volume or Mass of Reference Geometry	Reference Concentration	1.044	4.931	3.632
	Reference Uncertainty	0.059	0.059	0.059
	LCS Concentration	1.0222	5.5237	3.8859
	LCS 2 Sigma CSU	0.525	0.581	0.406
	Numerical Indicator	0.08	-1.99	-1.21
	Percent Recovery	98.0%	112.0%	107.0%
	LCS Evaluation	Pass	Pass	Pass

Laboratory Control Sample Duplicate Assessment

Analyte	Am-241	Cs-137	Co-60
Count Date	8/6/2012	8/6/2012	8/6/2012
Reference ID	09-039Am	09-039Cs	09-039Co
Reference Concentration	1.044	4.931	3.632
Reference Uncertainty	0.059	0.059	0.059
LCSD Concentration	1.109	5.549	3.8684
LCSD 2 Sigma CSU	0.508	0.583	0.406
Numerical Indicator	-0.25	-2.07	-1.13
Percent Recovery	106.3%	112.5%	106.5%
LCSD Evaluation	Pass	Pass	Pass

Evaluation: If the sample or Duplicate sample activity is below the associated MDC, the %RPD evaluation is not applicable and the sample duplicate precision criteria is acceptable.

8/9/12

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: Niacet Characterization
Pace Project No.: 3073184

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

WORKORDER QUALIFIERS

WO: 3073184

[1]	Cooler temperature 20.1° C upon receipt. Ice was present.

ANALYTE QUALIFIERS

1c	The response for DCB is high in the closing calibration check standard associated with the analysis of this sample. Recovery may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
N2	The lab does not hold TNI accreditation for this parameter.

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Niacet Characterization
Pace Project No.: 3073184

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3073184004	**SEAREA-HSB2A&B-Comp**	EPA 3510	OEXT/12149	EPA 8081	GCSV/4671
3073184001	**SEAREA-HSB2A&B-Comp**	EPA 3546	OEXT/12140	EPA 8082	GCSV/4666
3073184004	**SEAREA-HSB2A&B-Comp**	EPA 3005	MPRP/8712	EPA 6010	ICP/8162
3073184004	**SEAREA-HSB2A&B-Comp**	EPA 7470	MERP/3729	EPA 7470	MERC/3584
3073184004	**SEAREA-HSB2A&B-Comp**	EPA 3510	OEXT/12158	EPA 8270	MSSV/4145
3073184004	**SEAREA-HSB2A&B-Comp**	EPA 8260	MSV/13357		
3073184001	**SEAREA-HSB2A&B-Comp**	ASTM D2974-87	PMST/3284		
3073184002	**SEAREA-HSB1-Comp**	EPA 901.1m	RADC/12641		
3073184003	**SEAREA-HSB3-Grabpile**	EPA 901.1m	RADC/12641		
3073184005	**SEAREA-HSB4-Grab**	EPA 901.1m	RADC/12641		
3073184006	**SEAREA-HSB2A&B-Comp**	EPA 901.1m	RADC/12641		
3073184002	**SEAREA-HSB1-Comp**	HSL-300m	RADC/12675		
3073184003	**SEAREA-HSB3-Grabpile**	HSL-300m	RADC/12675		
3073184005	**SEAREA-HSB4-Grab**	HSL-300m	RADC/12675		
3073184006	**SEAREA-HSB2A&B-Comp**	HSL-300m	RADC/12675		

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

July 23, 2012

Carin Ferris
PASI Pittsburgh
1638 Roseytown Road
Greensburg, PA 15601

RE: Project 20141444
Project ID: 3073184/LOS ALAMOS

Dear Carin Ferris:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karen Brown
karen.brown@pacelabs.com

REPORT OF LABORATORY ANALYSIS

Laboratory Certifications

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141444

Client: PASI Pittsburgh

Project ID: 3073184/LOS ALAMOS

Washington Department of Ecology C2078

Oregon Environmental Laboratory Accreditation - LA200001

U.S. Dept. of Agriculture Foreign Soil Import P330-10-00119

Pennsylvania Dept. of Env Protection (NELAC) 68-04202

Texas Commission on Env. Quality (NELAC) T104704405-09-TX

Kansas Department of Health and Environment (NELAC) E-10266

Florida Department of Health (NELAC) E87595

Oklahoma Department of Environmental Quality - 2010-139

Illinois Environmental Protection Agency - 0025721

California Env. Lab Accreditation Program Branch - 11277CA

Louisiana Dept. of Environmental Quality (NELAC/LELAP) 02006

REPORT OF LABORATORY ANALYSIS

Sample Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141444

Client: PASI Pittsburgh

Project ID: 3073184/LOS ALAMOS

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
SEAREA-HSB2A&B-COMP/307318	201004971	Other	11-Jul-12 10:00	14-Jul-12 08:20

Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141444

Sample Receipt Condition:

All samples were received in accordance with EPA protocol.

Holding Times:

All holding times were met.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogates:

All surrogate recoveries were within QC limits.

QC Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141444

Analytical Method	Batch	Sample used for QC
EPA 8151	188683	Batch sample from another client

Narrative1 7/23/2012 13:12:30

For the sample used as the original for the DUP or MS/MSD for the batch:

Project sample means a sample from this project was used.
Client sample means a sample from the same client but in a different project was used.
Batch sample means a sample from a different client was used.

Sample Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Client: PASI Pittsburgh

Client ID: SEAREA-HSB2A&B-COMP/3073184004
Project: 20141444
Project ID: 3073184/LOS ALAMOS
Site: None
Lab ID: 201004971 (TCLP)
Matrix: Other
% Moisture: n/a
Description: None
Prep Level: TCLP
Batch: 188683
Method: EPA 8151 (TCLP)
8151 Herbs TCLP
Collected: 11-Jul-12
Received: 14-Jul-12
Prepared: 19-Jul-12

Units: mg/L

CAS No.	Analyte	Dilution	Result	Qu	Reporting Limit	Reg Limit	Analysis	
94-75-7	2,4-D	1	ND		0.0200	10.0	20-Jul-12 19:50	SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	1.00	20-Jul-12 19:50	SPP1

2 compound(s) reported

Protocol 7/23/2012 13:12:31

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 188683 **Project:** 20141444

Method: TCLP GC Semivolatile Organics

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
201006296	188683 BLANK 1		53	52						
201006479	188683 BLANK 2		90	87						
201006297	188683 LCS 1		135	128						
201006298	PUMA-SV-12 MS 1		44	44						
201006299	PUMA-SV-12 MSD 1		101	102						
201004971	SEAREA-HSB2A&B-COMP/307		99	98						
	QC limits:		10-166	10-166						

Sur 1: 2,4-DCPA (Conf)(S)
Sur 2: 2,4-DCPA (S)

*** denotes surrogate recovery outside of QC limits.**

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Quality Control

Batch: 188683 **Project:** 20141444 **LCS:** 20100629 20-Jul-12 17:41

Method: TCLP GC Semivolatile Organics **MS:** 20100629 20-Jul-12 18:45

Units: mg/L **MSD:** 20100629 20-Jul-12 19:07

Original for MS: Batch Sample 201005267

Parameter Name	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
2,4-D	0.200	0.178	89	0.200		0.0691	0.169	35	85	84 *	10-159	10-167	27	
2,4,5-TP (Silvex)	0.0200	0.0187	93	0.0200		0.00763	0.0182	38	91	82 *	30-165	31-168	20	

2 compound(s) reported

QC Protocol 7/23/2012 13:12:34

*** denotes recovery outside of QC limits.**
MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.

Blank Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 188683 BLANK 1 **Project:** 20141444

Lab ID: 201006296

Prep Level: TCLP **Batch:** 188683

Method: TCLP GC Semivolatile Organics

Prepared: 19-Jul-12

Units: mg/L

CAS Numb	Analyte	Dilution	Result	Qu	Reporting Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	20-Jul-12 16:58 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	20-Jul-12 16:58 SPP1

2 compound(s) reported

Protocol Blank 7/23/2012 13:12:35

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Blank Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 188683 BLANK 2 **Project:** 20141444

Lab ID: 201006479

Prep Level: TCLP **Batch:** 188683

Method: TCLP GC Semivolatile Organics

Prepared: 19-Jul-12

Units: mg/L

CAS Numb	Analyte	Dilution	Result	Qu	Reporting Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	20-Jul-12 17:19 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	20-Jul-12 17:19 SPP1

2 compound(s) reported

Protocol Blank 7/23/2012 13:12:35

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141444

Value	Description
J	This estimated value for the analyte is below the adjusted reporting limit but above the instrument reporting limit.
U	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
B	This analyte was detected in the method blank.
E	The sample concentration is above the linear calibrated range of the analysis.
LCS	Laboratory Control Sample.
MS(D)	Matrix Spike (Duplicate).
DUP	Sample Duplicate.
RPD	Relative Percent Difference.

Pace Analytical Services, In
1000 Riverbend Blvd. Suite F
St. Rose, LA 7008
(504) 469-033

Chains of Custody

20141444 PASI-PITT

Chain of Custody

Workorder: 3073184 **Workorder Name:** Niacet Characterization **Owner Received Date:** 7/12/2012 **Results Requested By:** 7/26/2012

Report To	Subcontract To
Carin Ferris Pace Analytical Services, Inc. 1638 Roseytown Road Greensburg, PA 15601 Phone (724)850-5600 Fax (999)999-9999	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone 1(504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP Herbicides	2,4-D	2,4,5-TP	LAB USE ONLY
1	SEAREA-HSB2A&B-Comp	PS	7/11/2012 10:00	3073184004	Solid	1	✓	✓	✓	201000071
2										
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7/13/12 1400	[signature]	7/14/12 0820
2				
3				

Comments

Cooler Temperature on Receipt 5.0 °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condit

Courier: ☑ Pace Courier ☐ Hackbarth ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals Intact:** ☑Yes ☐No

Therometer Used:	☑ Therm Fisher IR 1 ☐ Therm Fisher IR 2 ☐ Therm Fisher IR 4

Type of Ice: Wet Blue None **Samples on ice:** [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and initials of person examining contents: AD 7/19/12

Temp must be measured from Temperature blank when present

			Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1	
Chain of Custody Present:	☑Yes ☐No ☐N/A	2	
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3	
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4	
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	5	
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6	
Sufficient Volume:	☑Yes ☐No ☐N/A	7	
Correct Containers Used:	☑Yes ☐No ☐N/A	8	
Filtered vol. Rec. for Diss. tests	☐Yes ☑No ☐N/A	9	
Sample Labels match COC:	☑Yes ☐No ☐N/A	10	
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11	
All containers needing preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13	If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Samples checked for dechlorination:	☐Yes ☑No ☐N/A	14	
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	14	
Trip Blank Present:	☐Yes ☑No ☐N/A	16	
Trip Blank Custody Seals Present	☐Yes ☑No ☐N/A	17	
Pace Trip Blank Lot # (if purchased): N/A		18	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

ALLC003rev.06, 28Jul2010 - mod

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Picture

Page: of

1231597

Section A Required Client Information:
Company: LATA
Address: 33 WASHINGTON BLVD AMHERST, NY 14226
Email To: JMOORE@LATA.COM
Phone: 716 830 8636 Fax:
Requested Due Date/TAT:

Section B Required Project Information:
Report To: JAMES MOORE
Copy To: JASON BEYDLER
Purchase Order No.:
Project Name: NIAGET CHARACTERIZATION
Project Number: 11170.003

Section C Invoice Information:
Attention: JAMES MOORE
Company Name: LATA
Address: 756 PARK MEADOWS DR WESTERVILLE OH 43081 (WESTERVILLE)
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Full GAMMA	ALPHA 150 U	ALPHA 150 Th	Full TCLP-VOC/SVOC/Metals	PCB	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	SEAREA-HSB2 A+B -comp	SL	C	7-11-12	10AM			80°F	1	X									X	X	X		X			001
2	SEAREA-HSB1 -COMP	SL	C	7-11-12	9AM			80°F	1	X									X	X	X					002
3	SEAREA-HSB3 -GRAB DUP	SL	G	7-11-12	10:33AM			80°F	1	X									X	X	X					003
4	SEAREA-HSB2A+B-comp	SL	C	7-11-12	10AM			80°F	1	X												X				004
5	SEAREA-HSB4 -GRAB	SL	G	7-11-12	10:30AM			80°F	1	X									X	X	X					005
6	SEAREA-HSB2A+B-comp	SL	C	7-11-12	9:30AM			80°F	1	X									X	X	X					006
7																										
8																										
9																										
10																										
11																										
12																										

3073184

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
					7-12-12	0910	20.1	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: JASON BEYDLER
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 7-11-12

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: LATA Project # 50731814

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 795764330490

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 5 6 7 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 20-1 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 7-12-12

Temp should be above freezing to 6°C very minimal melted ice Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☐Yes	☒No	☐N/A	2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A	7.
Sufficient Volume:	☒Yes	☐No	☐N/A	8.
Correct Containers Used:	☒Yes	☐No	☐N/A	9.
-Pace Containers Used:	☒Yes	☐No	☐N/A	
Containers Intact:	☒Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A	11.
Sample Labels match COC:	☒Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL				
All containers needing preservation have been checked.	☐Yes	☐No	☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☐No		Initial when completed: XX Lot # of added preservative:
Samples checked for dechlorination:	☐Yes	☐No	☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A	15.
Trip Blank Present:	☐Yes	☐No	☒N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☐N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: James Moore Date/Time: 7/13/12

Comments/ Resolution: Analyze samples and note temperature on the report (qualifier)

Project Manager Review: Anna Fenio **Date:** 7/13/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 3073184

Client Name:

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	1	250																					
002	↓	1																						
003		1																						
004		1																						
005		1																						
006		1																						

Quality Assurance Data Review

SDG No. 3073183

Qualifiers in EDD	JM 8/13/12
EDD Review	JM 8/13/12
EDD in Site DB	

Project Name: Viacet
Sampling Date: 7/11/12
Review Date: 8/13/12
Laboratory: Pace
Reviewer Signature: James A Moore

Review Item	Matrix	Acceptable	Comments / Qualifications
Compare Chain of Custody to Data Received	Soil / Sed/ Air GW / SW / Other	✓	one sample jar of HSB-1,2-comp received broken. Analysis performed from second container received.
Sample Hold Times	Soil / Sed/ Air GW / SW / Other	✓	
Trip Blank	VOCs only		N/A
Sample Reporting Limits	Soil / Sed/ Air GW / SW / Other	✓	
Surrogate Compound Recoveries for Organic Analyses	Soil / Sed/ Air GW / SW / Other	✓	
Method Blank	Soil / Sed/ Air GW / SW / Other	✓	
Laboratory Control Sample Recoveries	Soil / Sed/ Air GW / SW / Other	✓	
Matrix Spike/Spike Duplicate Recoveries and RPDs	Soil / Sed/ Air GW / SW / Other		* Batch QC from a different project not used to qualify Viacet data set
Duplicate Sample Relative Percent Difference	Soil / Sed/ Air GW / SW / Other		* Batch QC from a different project not used to qualify Viacet data set.
Initial and Continuing Calibration	Soil / Sed/ Air GW / SW / Other		N/A - Not included in a level 2 Data report
TICS	Any		N/A

Additional Comments:

(1.) Samples received at an elevated temperature (18.5°C). These are solid waste samples. It is the reviewers professional opinion that the elevated temperature will have minimal impact. However to err on the side of caution methods were reviewed for temperature requirements. Metals, RAD, and PCB's do not require temp. preservation and have not been qualified. The remaining organics samples were qualified estimated based on the temperature upon receipt.

NA = Not Applicable
NR = Not Reported
NSS = Not a Site Sample, lab batch QC used

(2) The case narrative indicates that there was a >40% difference for the RPD result of VERAFA-HSB3ABC-Comp. The RPD and subsequently the total PCB results for this sample are qualified as estimated based on this difference.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

August 10, 2012

Mr. James Moore
Los Alamos Technical Associates, Inc.
756 Park Meadow Road
Westerville, OH 43081

RE: Project: Niacet Characterization
Pace Project No.: 3073183

Dear Mr. Moore:
Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

The samples were subcontracted to Pace Analytical Services, Inc., 1000 Riverbend Blvd., Suite F, St. Rose, LA 70087 for TCLP Herbicides analysis. Results of the analysis are reported on the Pace Analytical, New Orleans data tables.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carin A. Ferris

Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures

cc: Accounts Payable, Los Alamos Technical Associates, Inc.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: Niacet Characterization
Pace Project No.: 3073183

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: Niacet Characterization
Pace Project No.: 3073183

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3073183001	**NEAREA-HSB1,2-Comp**	EPA 8081	CWB	8	PASI-PA
		EPA 8082	SJG	10	PASI-PA
		EPA 6010	CTS	7	PASI-PA
		EPA 7470	MJO	1	PASI-PA
		EPA 8270	SPL	18	PASI-PA
		EPA 8260	JAS	13	PASI-PA
		ASTM D2974-87	AJC	1	PASI-PA
3073183002	**NEAREA-HSB2-Grab**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073183003	**NEAREA-HSB1-Comp**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 8081	CWB	8	PASI-PA
		EPA 8082	SJG	10	PASI-PA
		EPA 6010	CTS	7	PASI-PA
		EPA 7470	MJO	1	PASI-PA
		EPA 8270	SPL	18	PASI-PA
		EPA 8260	JAS	13	PASI-PA
		ASTM D2974-87	AJC	1	PASI-PA
		EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 8081**
Description: 8081 GCS Pesticides, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
2 samples were analyzed for EPA 8081. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
2 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/12140

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3073396001

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 465909)
  - PCB-1016 (Aroclor 1016)

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

Analyte Comments:

QC Batch: OEXT/12140

1c: The response for DCB is high in the closing calibration check standard associated with the analysis of this sample. Recovery may be biased high.

- NEAREA-HSB3ABC-Comp (Lab ID: 3073183005)
  - Decachlorobiphenyl (S)

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

Analyte Comments:

QC Batch: OEXT/12140

C3: Relative percent difference between results from each column was greater than 40%. The higher of the two results was reported.

- NEAREA-HSB3ABC-Comp (Lab ID: 3073183005)
  - PCB-1260 (Aroclor 1260)

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 6010**
Description: 6010 MET ICP, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 7470**
Description: 7470 Mercury, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
2 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MERP/3729

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3073164001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 465822)
  - Mercury

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 8270**
Description: 8270 MSSV TCLP Sep Funnel
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
2 samples were analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 8260**
Description: 8260 MSV TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
2 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **EPA 901.1m**
Description: 901.1 Gamma Spec
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
3 samples were analyzed for EPA 901.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

General Information:
3 samples were analyzed for HSL-300m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Workorder Comments:

Sample NEAREA-HSB1,2-Comp was received broken.

Analyte Comments:

QC Batch: RADC/12675

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 466065)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- NEAREA-HSB1-Comp (Lab ID: 3073183003)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- NEAREA-HSB2-Grab (Lab ID: 3073183002)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238

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PROJECT NARRATIVE

Project: Niacet Characterization
Pace Project No.: 3073183

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Los Alamos Technical Associates, Inc
Date: August 10, 2012

Analyte Comments:

QC Batch: RADC/12675

N2: The lab does not hold TNI accreditation for this parameter.

- NEAREA-HSB3ABC-Comp (Lab ID: 3073183005)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073183

Sample: NEAREA-HSB1,2-Comp **Lab ID: 3073183001** Collected: 07/11/12 14:30 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides, TCLP	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
gamma-BHC (Lindane)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 04:11	58-89-9	
Chlordane (Technical)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 04:11	57-74-9	
Endrin	ND	ug/L	1.0	1	07/19/12 14:00	07/24/12 04:11	72-20-8	
Heptachlor epoxide	ND	ug/L	0.50	1	07/19/12 14:00	07/24/12 04:11	1024-57-3	
Methoxychlor	ND	ug/L	100	1	07/19/12 14:00	07/24/12 04:11	72-43-5	
Toxaphene	ND	ug/L	50.0	1	07/19/12 14:00	07/24/12 04:11	8001-35-2	
Surrogates								
Decachlorobiphenyl (S)	85	%	30-150	1	07/19/12 14:00	07/24/12 04:11	2051-24-3	
Tetrachloro-m-xylene (S)	75	%	30-150	1	07/19/12 14:00	07/24/12 04:11	877-09-8	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	11096-82-5	
PCB, Total	ND	ug/kg	17.0	1	07/19/12 10:00	07/24/12 00:10	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	37	%	30-150	1	07/19/12 10:00	07/24/12 00:10	877-09-8	
Decachlorobiphenyl (S)	31	%	30-150	1	07/19/12 10:00	07/24/12 00:10	2051-24-3	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3005							
Arsenic	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:51	7440-38-2	
Barium	ND	mg/L	1.0	1	07/18/12 14:00	07/19/12 08:51	7440-39-3	
Cadmium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:51	7440-43-9	
Chromium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:51	7440-47-3	
Lead	**0.091**	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:51	7439-92-1	
Selenium	ND	mg/L	0.10	1	07/18/12 14:00	07/19/12 08:51	7782-49-2	
Silver	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:51	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	1.0	1	07/18/12 14:38	07/19/12 10:21	7439-97-6	
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
1,4-Dichlorobenzene	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:10	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:10	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:10	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:10	118-74-1	
Hexachloroethane	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:10	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 21:10	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 21:10		
Nitrobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:10	98-95-3	
Pentachlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 21:10	87-86-5	

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073183

Sample: NEAREA-HSB1,2-Comp **Lab ID: 3073183001** Collected: 07/11/12 14:30 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
Pyridine	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:10	110-86-1	
2,4,5-Trichlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 21:10	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:10	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	83	%	35-114	1	07/20/12 13:00	07/21/12 21:10	4165-60-0	
2-Fluorobiphenyl (S)	89	%	43-116	1	07/20/12 13:00	07/21/12 21:10	321-60-8	
Terphenyl-d14 (S)	98	%	33-141	1	07/20/12 13:00	07/21/12 21:10	1718-51-0	
Phenol-d6 (S)	28	%	10-110	1	07/20/12 13:00	07/21/12 21:10	13127-88-3	
2-Fluorophenol (S)	42	%	21-110	1	07/20/12 13:00	07/21/12 21:10	367-12-4	
2,4,6-Tribromophenol (S)	73	%	10-123	1	07/20/12 13:00	07/21/12 21:10	118-79-6	
8260 MSV TCLP	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	1		07/24/12 04:30	71-43-2	
2-Butanone (MEK)	ND	ug/L	5000	1		07/24/12 04:30	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		07/24/12 04:30	56-23-5	
Chlorobenzene	ND	ug/L	1000	1		07/24/12 04:30	108-90-7	
Chloroform	ND	ug/L	500	1		07/24/12 04:30	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		07/24/12 04:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		07/24/12 04:30	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		07/24/12 04:30	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		07/24/12 04:30	79-01-6	
Vinyl chloride	ND	ug/L	50.0	1		07/24/12 04:30	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		07/24/12 04:30	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		07/24/12 04:30	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130	1		07/24/12 04:30	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**2.9**	%	0.10	1		07/20/12 17:53		

Sample: NEAREA-HSB3ABC-Comp **Lab ID: 3073183005** Collected: 07/11/12 15:00 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides, TCLP	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
gamma-BHC (Lindane)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 04:39	58-89-9	
Chlordane (Technical)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 04:39	57-74-9	
Endrin	ND	ug/L	1.0	1	07/19/12 14:00	07/24/12 04:39	72-20-8	
Heptachlor epoxide	ND	ug/L	0.50	1	07/19/12 14:00	07/24/12 04:39	1024-57-3	
Methoxychlor	ND	ug/L	100	1	07/19/12 14:00	07/24/12 04:39	72-43-5	
Toxaphene	ND	ug/L	50.0	1	07/19/12 14:00	07/24/12 04:39	8001-35-2	
Surrogates								
Decachlorobiphenyl (S)	84	%	30-150	1	07/19/12 14:00	07/24/12 04:39	2051-24-3	
Tetrachloro-m-xylene (S)	73	%	30-150	1	07/19/12 14:00	07/24/12 04:39	877-09-8	

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073183

Sample: NEAREA-HSB3ABC-Comp **Lab ID: 3073183005** Collected: 07/11/12 15:00 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	12672-29-6	
PCB-1254 (Aroclor 1254)	**48.2**	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	11097-69-1	
PCB-1260 (Aroclor 1260)	**75.1**	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	11096-82-5	C3
PCB, Total	**123**	ug/kg	17.6	1	07/19/12 10:00	07/24/12 00:18	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	60	%	30-150	1	07/19/12 10:00	07/24/12 00:18	877-09-8	
Decachlorobiphenyl (S)	58	%	30-150	1	07/19/12 10:00	07/24/12 00:18	2051-24-3	1c
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3005							
Arsenic	**0.093**	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:54	7440-38-2	
Barium	ND	mg/L	1.0	1	07/18/12 14:00	07/19/12 08:54	7440-39-3	
Cadmium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:54	7440-43-9	
Chromium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:54	7440-47-3	
Lead	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:54	7439-92-1	
Selenium	ND	mg/L	0.10	1	07/18/12 14:00	07/19/12 08:54	7782-49-2	
Silver	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:54	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	**1.8**	ug/L	1.0	1	07/18/12 14:38	07/19/12 10:22	7439-97-6	
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
1,4-Dichlorobenzene	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:31	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:31	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:31	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:31	118-74-1	
Hexachloroethane	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:31	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 21:31	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 21:31		
Nitrobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:31	98-95-3	
Pentachlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 21:31	87-86-5	
Pyridine	ND	ug/L	500	1	07/20/12 13:00	07/21/12 21:31	110-86-1	
2,4,5-Trichlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 21:31	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	100	1	07/20/12 13:00	07/21/12 21:31	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	89	%	35-114	1	07/20/12 13:00	07/21/12 21:31	4165-60-0	
2-Fluorobiphenyl (S)	92	%	43-116	1	07/20/12 13:00	07/21/12 21:31	321-60-8	
Terphenyl-d14 (S)	102	%	33-141	1	07/20/12 13:00	07/21/12 21:31	1718-51-0	
Phenol-d6 (S)	34	%	10-110	1	07/20/12 13:00	07/21/12 21:31	13127-88-3	
2-Fluorophenol (S)	57	%	21-110	1	07/20/12 13:00	07/21/12 21:31	367-12-4	
2,4,6-Tribromophenol (S)	72	%	10-123	1	07/20/12 13:00	07/21/12 21:31	118-79-6	

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073183

Sample: NEAREA-HSB3ABC-Comp **Lab ID: 3073183005** Collected: 07/11/12 15:00 Received: 07/12/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	1		07/24/12 04:56	71-43-2	
2-Butanone (MEK)	ND	ug/L	5000	1		07/24/12 04:56	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		07/24/12 04:56	56-23-5	
Chlorobenzene	ND	ug/L	1000	1		07/24/12 04:56	108-90-7	
Chloroform	ND	ug/L	500	1		07/24/12 04:56	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		07/24/12 04:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		07/24/12 04:56	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		07/24/12 04:56	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		07/24/12 04:56	79-01-6	
Vinyl chloride	ND	ug/L	50.0	1		07/24/12 04:56	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		07/24/12 04:56	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		07/24/12 04:56	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130	1		07/24/12 04:56	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**5.9**	%	0.10	1		07/20/12 17:53		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: MERP/3729 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 3073183001, 3073183005

METHOD BLANK: 465819 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	1.0	07/19/12 09:58	

LABORATORY CONTROL SAMPLE: 465820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	101	85-115	

MATRIX SPIKE SAMPLE: 465822

Parameter	Units	3073164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	2.5	3.2	127	85-115	M1

SAMPLE DUPLICATE: 465821

Parameter	Units	3073164001 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	ND	ND		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: MPRP/8712 Analysis Method: EPA 6010
QC Batch Method: EPA 3005 Analysis Description: 6010 MET TCLP
Associated Lab Samples: 3073183001, 3073183005

METHOD BLANK: 465792 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.050	07/19/12 07:59	
Barium	mg/L	ND	1.0	07/19/12 07:59	
Cadmium	mg/L	ND	0.050	07/19/12 07:59	
Chromium	mg/L	ND	0.050	07/19/12 07:59	
Lead	mg/L	ND	0.050	07/19/12 07:59	
Selenium	mg/L	ND	0.10	07/19/12 07:59	
Silver	mg/L	ND	0.050	07/19/12 07:59	

LABORATORY CONTROL SAMPLE: 465793

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.5	0.49	99	80-120	
Barium	mg/L	.5	.5J	100	80-120	
Cadmium	mg/L	.5	0.50	99	80-120	
Chromium	mg/L	.5	0.49	98	80-120	
Lead	mg/L	.5	0.49	98	80-120	
Selenium	mg/L	.5	0.50	99	80-120	
Silver	mg/L	.25	0.25	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 465795 465796

Parameter	Units	3073164001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	mg/L	ND	.5	.5	0.54	0.53	107	106	80-120	2	
Barium	mg/L	ND	.5	.5	.82J	.81J	95	93	80-120		
Cadmium	mg/L	ND	.5	.5	0.47	0.47	95	94	80-120	1	
Chromium	mg/L	ND	.5	.5	0.47	0.47	94	94	80-120	.5	
Lead	mg/L	ND	.5	.5	0.51	0.51	100	99	80-120	.9	
Selenium	mg/L	ND	.5	.5	0.54	0.55	109	109	80-120	.4	
Silver	mg/L	ND	.25	.25	0.26	0.26	106	104	80-120	1	

MATRIX SPIKE SAMPLE: 465798

Parameter	Units	3073184004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	.5	0.55	107	80-120	
Barium	mg/L	ND	.5	1.0	93	80-120	
Cadmium	mg/L	ND	.5	0.47	94	80-120	
Chromium	mg/L	ND	.5	0.50	95	80-120	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

MATRIX SPIKE SAMPLE: 465798

Parameter	Units	3073184004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	ND	.5	0.51	100	80-120	
Selenium	mg/L	ND	.5	0.54	107	80-120	
Silver	mg/L	ND	.25	0.27	107	80-120	

SAMPLE DUPLICATE: 465794

Parameter	Units	3073164001 Result	Dup Result	RPD	Qualifiers
Arsenic	mg/L	ND	.0037J		
Barium	mg/L	ND	.34J		
Cadmium	mg/L	ND	ND		
Chromium	mg/L	ND	ND		
Lead	mg/L	ND	.0083J		
Selenium	mg/L	ND	ND		
Silver	mg/L	ND	ND		

SAMPLE DUPLICATE: 465797

Parameter	Units	3073184004 Result	Dup Result	RPD	Qualifiers
Arsenic	mg/L	ND	.015J		
Barium	mg/L	ND	.54J		
Cadmium	mg/L	ND	.00062J		
Chromium	mg/L	ND	.024J		
Lead	mg/L	ND	.0074J		
Selenium	mg/L	ND	.0034J		
Silver	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: MSV/13357 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 3073183001, 3073183005

METHOD BLANK: 467531 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	07/24/12 02:18	
1,2-Dichloroethane	ug/L	ND	50.0	07/24/12 02:18	
2-Butanone (MEK)	ug/L	ND	5000	07/24/12 02:18	
Benzene	ug/L	ND	50.0	07/24/12 02:18	
Carbon tetrachloride	ug/L	ND	50.0	07/24/12 02:18	
Chlorobenzene	ug/L	ND	1000	07/24/12 02:18	
Chloroform	ug/L	ND	500	07/24/12 02:18	
Tetrachloroethene	ug/L	ND	50.0	07/24/12 02:18	
Trichloroethene	ug/L	ND	50.0	07/24/12 02:18	
Vinyl chloride	ug/L	ND	50.0	07/24/12 02:18	
1,2-Dichloroethane-d4 (S)	%	103	70-130	07/24/12 02:18	
4-Bromofluorobenzene (S)	%	102	70-130	07/24/12 02:18	
Toluene-d8 (S)	%	100	70-130	07/24/12 02:18	

LABORATORY CONTROL SAMPLE: 467532

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	200	192	96	70-130	
1,2-Dichloroethane	ug/L	200	191	95	70-130	
2-Butanone (MEK)	ug/L	200	204J	102	70-130	
Benzene	ug/L	200	179	90	70-130	
Carbon tetrachloride	ug/L	200	192	96	70-130	
Chlorobenzene	ug/L	200	194J	97	70-130	
Chloroform	ug/L	200	180J	90	70-130	
Tetrachloroethene	ug/L	200	181	90	70-130	
Trichloroethene	ug/L	200	179	89	70-130	
Vinyl chloride	ug/L	200	209	104	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: OEXT/12149 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081 GCS TCLP Pesticides
Associated Lab Samples: 3073183001, 3073183005

METHOD BLANK: 466179 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 00:05	
Endrin	ug/L	ND	1.0	07/24/12 00:05	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 00:05	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 00:05	
Methoxychlor	ug/L	ND	100	07/24/12 00:05	
Toxaphene	ug/L	ND	50.0	07/24/12 00:05	
Decachlorobiphenyl (S)	%	84	30-150	07/24/12 00:05	
Tetrachloro-m-xylene (S)	%	75	30-150	07/24/12 00:05	

METHOD BLANK: 466181 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 05:33	
Endrin	ug/L	ND	1.0	07/24/12 05:33	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 05:33	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 05:33	
Methoxychlor	ug/L	ND	100	07/24/12 05:33	
Toxaphene	ug/L	ND	50.0	07/24/12 05:33	
Decachlorobiphenyl (S)	%	84	30-150	07/24/12 05:33	
Tetrachloro-m-xylene (S)	%	73	30-150	07/24/12 05:33	

METHOD BLANK: 466182 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 06:28	
Endrin	ug/L	ND	1.0	07/24/12 06:28	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 06:28	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 06:28	
Methoxychlor	ug/L	ND	100	07/24/12 06:28	
Toxaphene	ug/L	ND	50.0	07/24/12 06:28	
Decachlorobiphenyl (S)	%	89	30-150	07/24/12 06:28	
Tetrachloro-m-xylene (S)	%	83	30-150	07/24/12 06:28	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

LABORATORY CONTROL SAMPLE: 466180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin	ug/L	1.6	1.4	88	57-112	
gamma-BHC (Lindane)	ug/L	1.6	1.4J	88	66-118	
Heptachlor epoxide	ug/L	1.6	1.2	76	66-114	
Methoxychlor	ug/L	1.6	1.3J	81	50-150	
Decachlorobiphenyl (S)	%			80	30-150	
Tetrachloro-m-xylene (S)	%			66	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 466183 466184

Parameter	Units	3073416001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Endrin	ug/L	ND	1.6	1.6	1.7	1.6	104	102	57-112	2	
gamma-BHC (Lindane)	ug/L	ND	1.6	1.6	1.7J	1.7J	105	104	66-118		
Heptachlor epoxide	ug/L	ND	1.6	1.6	1.4	1.4	90	89	66-114	1	
Methoxychlor	ug/L	ND	1.6	1.6	1.6J	1.5J	98	96	50-150		
Decachlorobiphenyl (S)	%						77	77	30-150		
Tetrachloro-m-xylene (S)	%						80	80	30-150		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: OEXT/12140 Analysis Method: EPA 8082
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3073183001, 3073183005

METHOD BLANK: 465907 Matrix: Solid
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1221 (Aroclor 1221)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1232 (Aroclor 1232)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1242 (Aroclor 1242)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1248 (Aroclor 1248)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1254 (Aroclor 1254)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1260 (Aroclor 1260)	ug/kg	ND	16.7	07/21/12 17:41	
Decachlorobiphenyl (S)	%	76	30-150	07/21/12 17:41	
Tetrachloro-m-xylene (S)	%	61	30-150	07/21/12 17:41	

LABORATORY CONTROL SAMPLE: 465908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	105	63	55-145	
PCB-1260 (Aroclor 1260)	ug/kg	167	128	77	55-145	
Decachlorobiphenyl (S)	%			73	30-150	
Tetrachloro-m-xylene (S)	%			56	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 465909 465910

Parameter	Units	3073396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	172	175	92.1	100	54	57	55-145	9	M3
PCB-1260 (Aroclor 1260)	ug/kg	ND	172	175	113	115	61	62	55-145	2	
Decachlorobiphenyl (S)	%						48	44	30-150		
Tetrachloro-m-xylene (S)	%						46	48	30-150		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: OEXT/12158 Analysis Method: EPA 8270
QC Batch Method: EPA 3510 Analysis Description: 8270 TCLP MSSV
Associated Lab Samples: 3073183001, 3073183005

METHOD BLANK: 466539 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 16:04	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 16:04	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 16:04	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 16:04	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 16:04	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 16:04	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 16:04	
Hexachlorobenzene	ug/L	ND	100	07/21/12 16:04	
Hexachloroethane	ug/L	ND	500	07/21/12 16:04	
Nitrobenzene	ug/L	ND	100	07/21/12 16:04	
Pentachlorophenol	ug/L	ND	5000	07/21/12 16:04	
Pyridine	ug/L	ND	500	07/21/12 16:04	
2,4,6-Tribromophenol (S)	%	72	10-123	07/21/12 16:04	
2-Fluorobiphenyl (S)	%	75	43-116	07/21/12 16:04	
2-Fluorophenol (S)	%	45	21-110	07/21/12 16:04	
Nitrobenzene-d5 (S)	%	74	35-114	07/21/12 16:04	
Phenol-d6 (S)	%	30	10-110	07/21/12 16:04	
Terphenyl-d14 (S)	%	92	33-141	07/21/12 16:04	

METHOD BLANK: 466543 Matrix: Water
Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 20:09	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 20:09	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 20:09	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 20:09	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 20:09	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 20:09	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 20:09	
Hexachlorobenzene	ug/L	ND	100	07/21/12 20:09	
Hexachloroethane	ug/L	ND	500	07/21/12 20:09	
Nitrobenzene	ug/L	ND	100	07/21/12 20:09	
Pentachlorophenol	ug/L	ND	5000	07/21/12 20:09	
Pyridine	ug/L	ND	500	07/21/12 20:09	
2,4,6-Tribromophenol (S)	%	59	10-123	07/21/12 20:09	
2-Fluorobiphenyl (S)	%	79	43-116	07/21/12 20:09	
2-Fluorophenol (S)	%	45	21-110	07/21/12 20:09	
Nitrobenzene-d5 (S)	%	74	35-114	07/21/12 20:09	
Phenol-d6 (S)	%	28	10-110	07/21/12 20:09	
Terphenyl-d14 (S)	%	91	33-141	07/21/12 20:09	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

METHOD BLANK: 466544 Matrix: Water

Associated Lab Samples: 3073183001, 3073183005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 23:13	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 23:13	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 23:13	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 23:13	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 23:13	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 23:13	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 23:13	
Hexachlorobenzene	ug/L	ND	100	07/21/12 23:13	
Hexachloroethane	ug/L	ND	500	07/21/12 23:13	
Nitrobenzene	ug/L	ND	100	07/21/12 23:13	
Pentachlorophenol	ug/L	ND	5000	07/21/12 23:13	
Pyridine	ug/L	ND	500	07/21/12 23:13	
2,4,6-Tribromophenol (S)	%	73	10-123	07/21/12 23:13	
2-Fluorobiphenyl (S)	%	87	43-116	07/21/12 23:13	
2-Fluorophenol (S)	%	50	21-110	07/21/12 23:13	
Nitrobenzene-d5 (S)	%	76	35-114	07/21/12 23:13	
Phenol-d6 (S)	%	31	10-110	07/21/12 23:13	
Terphenyl-d14 (S)	%	98	33-141	07/21/12 23:13	

LABORATORY CONTROL SAMPLE: 466540

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	500	314J	63	10-95	
2,4,5-Trichlorophenol	ug/L	500	255J	51	10-200	
2,4,6-Trichlorophenol	ug/L	500	359	72	42-132	
2,4-Dinitrotoluene	ug/L	500	319	64	10-133	
2-Methylphenol(o-Cresol)	ug/L	500	327J	65	10-200	
3&4-Methylphenol(m&p Cresol)	ug/L	1000	623J	62	10-200	
Hexachloro-1,3-butadiene	ug/L	500	343	69	38-113	
Hexachlorobenzene	ug/L	500	361	72	58-130	
Hexachloroethane	ug/L	500	329J	66	36-96	
Nitrobenzene	ug/L	500	360	72	41-108	
Pentachlorophenol	ug/L	500	304J	61	13-129	
Pyridine	ug/L	500	ND	31	10-200	
2,4,6-Tribromophenol (S)	%			59	10-123	
2-Fluorobiphenyl (S)	%			73	43-116	
2-Fluorophenol (S)	%			47	21-110	
Nitrobenzene-d5 (S)	%			71	35-114	
Phenol-d6 (S)	%			24	10-110	
Terphenyl-d14 (S)	%			88	33-141	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 466541 466542

Parameter	Units	3073396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,4-Dichlorobenzene	ug/L	ND	500	500	359J	361J	72	72	10-95		
2,4,5-Trichlorophenol	ug/L	ND	500	500	365J	306J	73	61	10-200		
2,4,6-Trichlorophenol	ug/L	ND	500	500	403	400	81	80	42-132	.7	
2,4-Dinitrotoluene	ug/L	ND	500	500	357	361	71	72	10-133	1	
2-Methylphenol(o-Cresol)	ug/L	ND	500	500	366J	379J	73	76	10-200		
3&4-Methylphenol(m&p Cresol)	ug/L	ND	1000	1000	669J	673J	67	67	10-200		
Hexachloro-1,3-butadiene	ug/L	ND	500	500	402	408	80	82	38-113	2	
Hexachlorobenzene	ug/L	ND	500	500	398	415	80	83	58-130	4	
Hexachloroethane	ug/L	ND	500	500	373J	385J	75	77	36-96		
Nitrobenzene	ug/L	ND	500	500	422	432	84	86	41-108	3	
Pentachlorophenol	ug/L	ND	500	500	309J	388J	62	78	13-129		
Pyridine	ug/L	ND	500	500	ND	ND	37	32	10-200		
2,4,6-Tribromophenol (S)	%						73	68	10-123		
2-Fluorobiphenyl (S)	%						80	81	43-116		
2-Fluorophenol (S)	%						49	49	21-110		
Nitrobenzene-d5 (S)	%						82	82	35-114		
Phenol-d6 (S)	%						27	27	10-110		
Terphenyl-d14 (S)	%						87	91	33-141		

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: PMST/3284
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 3073183001, 3073183005

SAMPLE DUPLICATE: 466978

Parameter	Units	3073184001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	11.2	9.6	15	

SAMPLE DUPLICATE: 466979

Parameter	Units	3073557001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	12.0	12.3	2	

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073183

Sample: NEAREA-HSB2-Grab **Lab ID: 3073183002** Collected: 07/11/12 14:10 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**0.0270U ± 0.703 (1.17)**	pCi/g	08/07/12 08:03	14952-40-0	
Actinium-228	EPA 901.1m	**1.98 ± 0.370 (0.294)**	pCi/g	08/07/12 08:03	14331-83-0	
Bismuth-212	EPA 901.1m	**2.27 ± 0.744 (0.995)**	pCi/g	08/07/12 08:03	14913-49-6	
Bismuth-214	EPA 901.1m	**13.3 ± 1.40 (0.527)**	pCi/g	08/07/12 08:03	14733-03-0	
Cesium-137	EPA 901.1m	**-0.060U ± 0.0800 (0.130)**	pCi/g	08/07/12 08:03	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.011U ± 0.936 (0.0850)**	pCi/g	08/07/12 08:03	10198-40-0	
Lead-210	EPA 901.1m	**12.6U ± 32.7 (54.3)**	pCi/g	08/07/12 08:03	14255-04-0	
Lead-212	EPA 901.1m	**1.59 ± 0.224 (0.194)**	pCi/g	08/07/12 08:03	15092-94-1	
Lead-214	EPA 901.1m	**13.5 ± 1.46 (0.247)**	pCi/g	08/07/12 08:03	15067-28-4	
Potassium-40	EPA 901.1m	**4.35 ± 1.23 (0.891)**	pCi/g	08/07/12 08:03	13966-00-2	
Protactinium-234M	EPA 901.1m	**1.01U ± 5.11 (8.79)**	pCi/g	08/07/12 08:03	15100-28-4	
Radium-226	EPA 901.1m	**13.4 ± 1.39 (0.194)**	pCi/g	08/07/12 08:03	13982-63-3	
Radium-228	EPA 901.1m	**1.98U ± 0.370 (2.94)**	pCi/g	08/07/12 08:03	15262-20-1	
Thallium-208	EPA 901.1m	**0.573J ± 0.136 (0.113)**	pCi/g	08/07/12 08:03	14913-50-9	
Thorium-234	EPA 901.1m	**0.000U ± 3.61 (6.06)**	pCi/g	08/07/12 08:03	15065-10-8	
Uranium-235	EPA 901.1m	**1.03 ± 0.203 (0.179)**	pCi/g	08/07/12 08:03	15117-96-1	
Thorium-228	HSL-300m	**1.77 ± 0.370 (0.128)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**9.26 ± 1.56 (0.090)**	pCi/g	07/27/12 13:09	14269-63-7	N2
Thorium-232	HSL-300m	**1.49 ± 0.318 (0.052)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**2.34 ± 0.415 (0.105)**	pCi/g	07/26/12 16:06	13966-29-5	N2
Uranium-235	HSL-300m	**0.195 ± 0.086 (0.056)**	pCi/g	07/26/12 16:06	15117-96-1	N2
Uranium-238	HSL-300m	**2.40 ± 0.420 (0.061)**	pCi/g	07/26/12 16:06		N2

Sample: NEAREA-HSB1-Comp **Lab ID: 3073183003** Collected: 07/11/12 13:30 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**0.218U ± 0.282 (1.01)**	pCi/g	08/07/12 08:37	14952-40-0	
Actinium-228	EPA 901.1m	**1.57 ± 0.299 (0.230)**	pCi/g	08/07/12 08:37	14331-83-0	
Bismuth-212	EPA 901.1m	**2.29 ± 0.975 (0.871)**	pCi/g	08/07/12 08:37	14913-49-6	
Bismuth-214	EPA 901.1m	**7.09 ± 0.786 (0.474)**	pCi/g	08/07/12 08:37	14733-03-0	
Cesium-137	EPA 901.1m	**-0.043U ± 0.0620 (0.1000)**	pCi/g	08/07/12 08:37	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.014U ± 0.719 (0.0720)**	pCi/g	08/07/12 08:37	10198-40-0	
Lead-210	EPA 901.1m	**15.6U ± 25.7 (42.5)**	pCi/g	08/07/12 08:37	14255-04-0	
Lead-212	EPA 901.1m	**1.31 ± 0.186 (0.146)**	pCi/g	08/07/12 08:37	15092-94-1	
Lead-214	EPA 901.1m	**7.03 ± 0.784 (0.177)**	pCi/g	08/07/12 08:37	15067-28-4	
Potassium-40	EPA 901.1m	**5.18 ± 1.10 (0.671)**	pCi/g	08/07/12 08:37	13966-00-2	
Protactinium-234M	EPA 901.1m	**9.62 ± 4.86 (4.55)**	pCi/g	08/07/12 08:37	15100-28-4	
Radium-226	EPA 901.1m	**7.05 ± 0.753 (0.170)**	pCi/g	08/07/12 08:37	13982-63-3	
Radium-228	EPA 901.1m	**1.57 ± 0.299 (0.230)**	pCi/g	08/07/12 08:37	15262-20-1	
Thallium-208	EPA 901.1m	**0.461J ± 0.0840 (0.0640)**	pCi/g	08/07/12 08:37	14913-50-9	
Thorium-234	EPA 901.1m	**-0.063U ± 2.78 (4.69)**	pCi/g	08/07/12 08:37	15065-10-8	
Uranium-235	EPA 901.1m	**0.606J ± 0.157 (0.143)**	pCi/g	08/07/12 08:37	15117-96-1	
Thorium-228	HSL-300m	**1.47 ± 0.306 (0.088)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**3.85 ± 0.687 (0.085)**	pCi/g	07/27/12 13:09	14269-63-7	N2

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ANALYTICAL RESULTS

Project: Niacet Characterization
Pace Project No.: 3073183

Sample: NEAREA-HSB1-Comp **Lab ID: 3073183003** Collected: 07/11/12 13:30 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Thorium-232	HSL-300m	**1.38 ± 0.286 (0.017)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**1.48 ± 0.289 (0.126)**	pCi/g	07/26/12 16:06	13966-29-5	N2
Uranium-235	HSL-300m	**0.071J ± 0.057 (0.077)**	pCi/g	07/26/12 16:06	15117-96-1	N2
Uranium-238	HSL-300m	**1.33 ± 0.261 (0.059)**	pCi/g	07/26/12 16:06		N2

Sample: NEAREA-HSB3ABC-Comp **Lab ID: 3073183005** Collected: 07/11/12 15:00 Received: 07/12/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**0.978J ± 0.594 (0.770)**	pCi/g	08/10/12 07:09	14952-40-0	
Actinium-228	EPA 901.1m	**0.851J ± 0.358 (0.520)**	pCi/g	08/10/12 07:09	14331-83-0	
Bismuth-212	EPA 901.1m	**1.06U ± 1.01 (1.61)**	pCi/g	08/10/12 07:09	14913-49-6	
Bismuth-214	EPA 901.1m	**11.3 ± 1.56 (0.855)**	pCi/g	08/10/12 07:09	14733-03-0	
Cesium-137	EPA 901.1m	**-0.074U ± 0.115 (0.187)**	pCi/g	08/10/12 07:09	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.032U ± 3.53 (0.167)**	pCi/g	08/10/12 07:09	10198-40-0	
Lead-210	EPA 901.1m	**-1.620U ± 87.8 (66.4)**	pCi/g	08/10/12 07:09	14255-04-0	
Lead-212	EPA 901.1m	**0.824J ± 0.199 (0.222)**	pCi/g	08/10/12 07:09	15092-94-1	
Lead-214	EPA 901.1m	**12.3 ± 1.68 (0.290)**	pCi/g	08/10/12 07:09	15067-28-4	
Potassium-40	EPA 901.1m	**5.07 ± 1.57 (1.37)**	pCi/g	08/10/12 07:09	13966-00-2	
Protactinium-234M	EPA 901.1m	**13.9U ± 11.3 (17.6)**	pCi/g	08/10/12 07:09	15100-28-4	
Radium-226	EPA 901.1m	**11.8 ± 1.56 (0.310)**	pCi/g	08/10/12 07:09	13982-63-3	
Radium-228	EPA 901.1m	**0.851J ± 0.358 (0.520)**	pCi/g	08/10/12 07:09	15262-20-1	
Thallium-208	EPA 901.1m	**0.157J ± 0.1000 (0.155)**	pCi/g	08/10/12 07:09	14913-50-9	
Thorium-234	EPA 901.1m	**6.42 ± 3.90 (4.93)**	pCi/g	08/10/12 07:09	15065-10-8	
Uranium-235	EPA 901.1m	**1.29 ± 0.270 (0.213)**	pCi/g	08/10/12 07:09	15117-96-1	
Thorium-228	HSL-300m	**0.719 ± 0.174 (0.122)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**12.7 ± 2.08 (0.068)**	pCi/g	07/27/12 13:09	14269-63-7	N2
Thorium-232	HSL-300m	**0.596 ± 0.141 (0.032)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**14.4 ± 2.15 (0.106)**	pCi/g	07/26/12 16:04	13966-29-5	N2
Uranium-235	HSL-300m	**0.710 ± 0.186 (0.058)**	pCi/g	07/26/12 16:04	15117-96-1	N2
Uranium-238	HSL-300m	**13.6 ± 2.04 (0.056)**	pCi/g	07/26/12 16:04		N2

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: RADC/12641 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3073183002, 3073183003

METHOD BLANK: 464107 Matrix: Solid
Associated Lab Samples: 3073183002, 3073183003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Actinium-227	0.203 ± 0.227 (0.274)	pCi/g	08/05/12 18:35	
Actinium-228	0.0210 ± 0.0360 (0.239)	pCi/g	08/05/12 18:35	
Bismuth-212	0.191 ± 0.454 (0.790)	pCi/g	08/05/12 18:35	
Bismuth-214	-0.107 ± 2.38 (0.445)	pCi/g	08/05/12 18:35	
Cesium-137	0.0200 ± 0.0360 (0.0600)	pCi/g	08/05/12 18:35	
Cobalt-60	-0.019 ± 0.0940 (0.0650)	pCi/g	08/05/12 18:35	
Lead-210	5.11 ± 14.3 (24.7)	pCi/g	08/05/12 18:35	
Lead-212	-0.044 ± 18.9 (0.0970)	pCi/g	08/05/12 18:35	
Lead-214	0.0990 ± 0.0750 (0.114)	pCi/g	08/05/12 18:35	
Potassium-40	-0.117 ± 0.553 (0.767)	pCi/g	08/05/12 18:35	
Protactinium-234M	1.73 ± 3.37 (5.83)	pCi/g	08/05/12 18:35	
Radium-226	0.0200 ± 0.0220 (0.165)	pCi/g	08/05/12 18:35	
Radium-228	0.0210 ± 0.0360 (0.239)	pCi/g	08/05/12 18:35	
Thallium-208	-0.011 ± 0.0720 (0.0580)	pCi/g	08/05/12 18:35	
Thorium-234	0.148 ± 1.14 (2.01)	pCi/g	08/05/12 18:35	
Uranium-235	0.000 ± 0.0370 (0.0660)	pCi/g	08/05/12 18:35	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: RADC/12666 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3073183005

METHOD BLANK: 465563 Matrix: Solid
Associated Lab Samples: 3073183005

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Actinium-227	0.000 ± 0.247 (0.436)	pCi/g	08/07/12 16:20	
Actinium-228	0.0310 ± 0.197 (0.371)	pCi/g	08/07/12 16:20	
Bismuth-212	0.0390 ± 0.769 (1.39)	pCi/g	08/07/12 16:20	
Bismuth-214	-0.008 ± 0.449 (0.768)	pCi/g	08/07/12 16:20	
Cesium-137	-0.012 ± 0.0610 (0.0890)	pCi/g	08/07/12 16:20	
Cobalt-60	-0.049 ± 0.584 (0.117)	pCi/g	08/07/12 16:20	
Lead-210	8.67 ± 15.7 (26.7)	pCi/g	08/07/12 16:20	
Lead-212	0.001000 ± 0.00200 (0.154)	pCi/g	08/07/12 16:20	
Lead-214	-0.145 ± 3.79 (0.228)	pCi/g	08/07/12 16:20	
Potassium-40	-0.232 ± 1.06 (1.36)	pCi/g	08/07/12 16:20	
Protactinium-234M	-1.060 ± 8.44 (10.6)	pCi/g	08/07/12 16:20	
Radium-226	-0.036 ± 0.223 (0.273)	pCi/g	08/07/12 16:20	
Radium-228	0.0310 ± 0.197 (0.371)	pCi/g	08/07/12 16:20	
Thallium-208	-0.011 ± 0.0180 (0.103)	pCi/g	08/07/12 16:20	
Thorium-234	-0.050 ± 3.55 (6.02)	pCi/g	08/07/12 16:20	
Uranium-235	0.0360 ± 0.0580 (0.0920)	pCi/g	08/07/12 16:20	

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QUALITY CONTROL DATA

Project: Niacet Characterization
Pace Project No.: 3073183

QC Batch: RADC/12675 Analysis Method: HSL-300m
QC Batch Method: HSL-300m Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 3073183002, 3073183003, 3073183005

METHOD BLANK: 466065 Matrix: Solid
Associated Lab Samples: 3073183002, 3073183003, 3073183005

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Thorium-228	0.152 ± 0.076 (0.099)	pCi/g	07/27/12 13:09	N2
Thorium-230	0.009 ± 0.034 (0.071)	pCi/g	07/27/12 13:09	N2
Thorium-232	-0.004 ± 0.021 (0.034)	pCi/g	07/27/12 13:09	N2
Uranium-234	0.040 ± 0.045 (0.076)	pCi/g	07/26/12 16:04	N2
Uranium-235	0.008 ± 0.032 (0.020)	pCi/g	07/26/12 16:04	N2
Uranium-238	0.017 ± 0.025 (0.016)	pCi/g	07/26/12 16:04	N2

Gamma Spec Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Analyst: Hoover
Date: 8/10/2012
Worklist: 12666
Matrix: Soil

Geometry: 2 Oz Can
Activity Units: pCi
Aliquot Units: Gram

Method Blank Assessment

Analytes of Interest	MB Result	2 Sigma CSU	MB MDC	Numerical Indicator	MB Evaluation
Potassium-40	-0.232	1.06	1.36	0.429	Pass
Cobalt-60	-0.049	0.584	0.117	0.164	Pass
Cesium-137	-0.012	0.0610	0.0890	0.386	Pass
Thallium-208	-0.011	0.0180	0.103	1.198	Pass
Lead-210	8.67	15.7	26.7	1.082	Pass
Bismuth-214	-0.008	0.449	0.768	0.035	Pass
Lead-214	-0.145	3.79	0.228	0.075	Pass
Radium-226	-0.036	0.223	0.273	0.316	Pass
Actinium-228	0.0310	0.197	0.371	0.308	Pass
Protactinium-234M	-1.060	8.44	10.6	0.246	Pass
Uranium-235	0.0360	0.0580	0.0920	1.217	Pass
Radium-228	0.0310	0.197	0.371	0.308	Pass
Bismuth-212	0.0390	0.769	1.39	0.099	Pass
Lead-212	0.001000	0.00200	0.154	0.980	Pass
Thorium-234	-0.050	3.55	6.02	0.028	Pass
Actinium-227	0.000	0.247	0.436	0.000	Pass

Duplicate Sample Precision Assessment

	Sample ID:		Duplicate Sample ID:				
Analytes of Interest	Sample Results	Sample 2 Sigma CSU	Duplicate Results	Duplicate 2 Sigma CSU	Numerical Indicator	% RPD	Evaluation
Potassium-40					#DIV/0!	#DIV/0!	#DIV/0!
Cobalt-60					#DIV/0!	#DIV/0!	#DIV/0!
Cesium-137					#DIV/0!	#DIV/0!	#DIV/0!
Thallium-208					#DIV/0!	#DIV/0!	#DIV/0!
Lead-210					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-214					#DIV/0!	#DIV/0!	#DIV/0!
Lead-214					#DIV/0!	#DIV/0!	#DIV/0!
Radium-226					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-228					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234M					#DIV/0!	#DIV/0!	#DIV/0!
Uranium-235					#DIV/0!	#DIV/0!	#DIV/0!
Radium-228					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-212					#DIV/0!	#DIV/0!	#DIV/0!
Lead-212					#DIV/0!	#DIV/0!	#DIV/0!
Thorium-234					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-227					#DIV/0!	#DIV/0!	#DIV/0!

Duplicate LCS Precision Assessment

Analyte	LCS Concentration	LCS 2 Sigma CSU	LCSD Concentration	LCSD 2 Sigma CSU	Numerical Indicator	Percent RPD	Precision Evaluation
Cs-137	9.925	1.294	9.897	1.291	0.030	0.3%	Pass
Co-60	2.866	0.388	2.775	0.380	0.327	3.2%	Pass

Laboratory Control Sample Assessment

	Analyte	Cs-137	Co-60	
	Count Date	8/7/2012	8/7/2012	
	Reference ID	0508-0125Cs	0508-0125Co	
Volume or Mass of	Reference Concentration	10.079	3.048	
Reference Geometry	Reference Uncertainty	0.059	0.059	
	LCS Concentration	9.9249	2.8656	
	LCS 2 Sigma CSU	1.294	0.388	
	Numerical Indicator	0.23	0.91	#VALUE!
	Percent Recovery	98.5%	94.0%	#VALUE!
	LCS Evaluation	Pass	Pass	#VALUE!

Laboratory Control Sample Duplicate Assessment

Analyte	Cs-137	Co-60
Count Date	8/7/2012	8/7/2012
Reference ID	0508-0125Cs	0508-0125Co
Reference Concentration	10.079	3.048
Reference Uncertainty	0.059	0.059
LCSD Concentration	9.8967	2.775
LCSD 2 Sigma CSU	1.291	0.380
Numerical Indicator	0.28	1.39
Percent Recovery	98.2%	91.0%
LCSD Evaluation	Pass	Pass

Evaluation: If the sample or Duplicate sample activity is below the associated MDC, the %RPD evaluation is not applicable and the sample duplicate precision criteria is acceptable.

Gamma Spec Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Analyst: Hoover
Date: 8/8/2012
Worklist: 12641
Matrix: Soil

Geometry: 8 Oz Can
Activity Units: pCi
Aliquot Units: Gram

Method Blank Assessment

Analytes of Interest	MB Result	2 Sigma CSU	MB MDC	Numerical Indicator	MB Evaluation
Potassium-40	-0.117	0.553	0.767	0.415	Pass
Cobalt-60	-0.019	0.0940	0.0650	0.396	Pass
Cesium-137	0.0200	0.0360	0.0600	1.089	Pass
Thallium-208	-0.011	0.0720	0.0580	0.299	Pass
Lead-210	5.11	14.3	24.7	0.700	Pass
Bismuth-214	-0.107	2.38	0.445	0.088	Pass
Lead-214	0.0990	0.0750	0.114	2.587	Pass
Radium-223	0.001000	0.00200	0.342	0.980	Pass
Radium-226	0.0200	0.0220	0.165	1.782	Pass
Actinium-228	0.0210	0.0360	0.239	1.143	Pass
Protactinium-231	-0.733	1.56	2.65	0.921	Pass
Protactinium-234	1.73	3.37	5.83	1.006	Pass
Protactinium-234M	1.73	3.37	5.83	1.006	Pass
Uranium-235	0.000	0.0370	0.0660	0.000	Pass
Radium-226	0.0210	0.0360	0.239	1.143	Pass
Bismuth-212	0.191	0.454	0.790	0.825	Pass
Lead-212	-0.044	18.9	0.0970	0.005	Pass
Thorium-234	0.148	1.14	2.01	0.254	Pass
Actinium-227	0.203	0.227	0.274	1.753	Pass

Duplicate Sample Precision Assessment

	Sample ID:		Duplicate Sample ID:				
Analytes of Interest	Sample Results	Sample 2 Sigma CSU	Duplicate Results	Duplicate 2 Sigma CSU	Numerical Indicator	% RPD	Evaluation
Potassium-40					#DIV/0!	#DIV/0!	#DIV/0!
Cobalt-60					#DIV/0!	#DIV/0!	#DIV/0!
Cesium-137					#DIV/0!	#DIV/0!	#DIV/0!
Thallium-208					#DIV/0!	#DIV/0!	#DIV/0!
Lead-210					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-214					#DIV/0!	#DIV/0!	#DIV/0!
Lead-214					#DIV/0!	#DIV/0!	#DIV/0!
Radium-223					#DIV/0!	#DIV/0!	#DIV/0!
Radium-226					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-228					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-231					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234M					#DIV/0!	#DIV/0!	#DIV/0!
Uranium-235					#DIV/0!	#DIV/0!	#DIV/0!
Radium-228					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-212					#DIV/0!	#DIV/0!	#DIV/0!
Lead-212					#DIV/0!	#DIV/0!	#DIV/0!
Thorium-234					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-227					#DIV/0!	#DIV/0!	#DIV/0!

Duplicate LCS Precision Assessment

Analyte	LCS Concentration	LCS 2 Sigma CSU	LCSD Concentration	LCSD 2 Sigma CSU	Numerical Indicator	Percent RPD	Precision Evaluation
Am-241	1.022	0.525	1.109	0.508	-0.233	8.1%	Pass
Cs-137	5.524	0.581	5.549	0.583	-0.060	0.5%	Pass
Co-60	3.886	0.406	3.868	0.406	0.060	0.5%	Pass

Laboratory Control Sample Assessment

	Analyte	Am-241	Cs-137	Co-60
	Count Date	8/5/2012	8/5/2012	8/5/2012
	Reference ID	09-039Am	09-039Cs	09-039Co
Volume or Mass of	Reference Concentration	1.044	4.931	3.632
Reference Geometry	Reference Uncertainty	0.059	0.059	0.059
	LCS Concentration	1.0222	5.5237	3.8859
	LCS 2 Sigma CSU	0.525	0.581	0.406
	Numerical Indicator	0.08	-1.99	-1.21
	Percent Recovery	98.0%	112.0%	107.0%
	LCS Evaluation	Pass	Pass	Pass

Laboratory Control Sample Duplicate Assessment

Analyte	Am-241	Cs-137	Co-60
Count Date	8/6/2012	8/6/2012	8/6/2012
Reference ID	09-039Am	09-039Cs	09-039Co
Reference Concentration	1.044	4.931	3.632
Reference Uncertainty	0.059	0.059	0.059
LCSD Concentration	1.109	5.549	3.8684
LCSD 2 Sigma CSU	0.508	0.583	0.406
Numerical Indicator	-0.25	-2.07	-1.13
Percent Recovery	106.3%	112.5%	106.5%
LCSD Evaluation	Pass	Pass	Pass

Evaluation: If the sample or Duplicate sample activity is below the associated MDC, the %RPD evaluation is not applicable and the sample duplicate precision criteria is acceptable.

Quality Control Sample Performance Assessment

RCDU Upload

Analyst:	LAL		
Date:	7/30/2012	Method:	HSL-300m
Worklist:	12675	SOP:	PGH-R-008
Matrix:	Soil	MB Sample ID:	466065

Method Blank Assessment

Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Thorium-232	-0.0036	0.0214	0.0336	0.00930		
Thorium-230	0.0090	0.0344	0.0710	0.02670		
Thorium-228	0.1520	0.0757	0.0986	0.03950		

Laboratory Control Sample Assessment

	LCS	LCSD	LCS	LCSD	LCS	LCSD
Analyte:	Thorium-230					
Count Date:	7/27/12 13:11	7/27/12 13:11				
Spike I.D.:	12-018	12-018				
Spike Concentration (pCi/L):	26.497	26.497				
Volume Used (mL):	0.100	0.100				
Aliquot Volume (L, g, F):	0.500	0.500				
Target Conc. (pCi/L, g, F):	5.299	5.299				
1.96 Sigma Uncertainty (Calculated):	0.312	0.312				
Result (pCi/L, g, F):	4.780	4.810				
1.96 Sigma Unc:	0.830	0.832				
% Recovery:	90.20%	90.77%				
Assessment:	Pass	Pass				
Upper % Recovery Limits:	125.00%	125.00%				
Lower % Recovery Limits:	75.00%	75.00%				

Duplicate Sample Assessment

LCS/LCSD Y or N?:	Y					
Analyte:	Thorium-230					
Sample I.D.:	LCS12675					
Duplicate Sample I.D.	LCSD12675					
Sample Result (pCi/L, g, F):	4.7800					
1.96 Sigma Unc:	0.8300					
Sample Duplicate Result (pCi/L, g, F):	4.8100					
Duplicate Sample 1.96 Sigma Unc.	0.8320					
Either results below MDC?	N					
Relative Percent Difference:	0.63%					
Assessment:	Pass					
% RPD Limit:	25.00%					

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Sample Matrix Spike Control Assessment

Analyte:			
Sample Collection Date:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Spike I.D.:			
MS/MSD Decay Corrected Spike Conc. (pCi/L):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc.(pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike uncertainty (calculated):			
MSD Spike uncertainty (calculated):			
Sample Result:			
Sample 1.96 Sigma Unc.:			
Sample Matrix Spike Result:			
Sample MS 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample MSD 1.96 Sigma Unc.:			
MS % Recovery:			
MSD % Recovery:			
MS Assessment:			
MSD Assessment:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Analyte:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Sample Matrix Spike Result:			
Sample Matrix Spike 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:			
MS/MSD Relative Percent Difference:			
MS/ MSD RPD Assessment:			
% RPD Limit:			

Comments:

Quality Control Sample Performance Assessment

RCDU Upload

Analyst:	LAL		
Date:	7/30/2012	Method:	HSL-300m
Worklist:	12675	SOP:	PGH-R-008
Matrix:	Soil	MB Sample ID:	466065

Method Blank Assessment

Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Uranium-234	0.0402	0.0451	0.0760	0.02810		
Uranium-235	0.0075	0.0319	0.0204	0.00000		
Uranium-238	0.0173	0.0246	0.0157	0.00000		

Laboratory Control Sample Assessment

	LCS	LCSD	LCS	LCSD	LCS	LCSD
Analyte:	Uranium-234		Uranium-238			
Count Date:	7/27/12 7:56	7/27/12 7:56	7/27/12 7:56	7/27/12 7:56		
Spike I.D.:	11-041U234	11-041U234	11-041U238	11-041U238		
Spike Concentration (pCi/L):	46.300	46.300	47.250	47.250		
Volume Used (mL):	0.100	0.100	0.100	0.100		
Aliquot Volume (L, g, F):	0.500	0.500	0.500	0.500		
Target Conc. (pCi/L, g, F):	9.260	9.260	9.450	9.450		
1.96 Sigma Uncertainty (Calculated):	0.327	0.327	0.333	0.333		
Result (pCi/L, g, F):	9.770	9.780	10.200	9.810		
1.96 Sigma Unc:	1.800	1.770	1.860	1.770		
% Recovery:	105.51%	105.62%	107.94%	103.81%		
Assessment:	Pass	Pass	Pass	Pass		
Upper % Recovery Limits:	125.00%	125.00%	125.00%	125.00%		
Lower % Recovery Limits:	75.00%	75.00%	75.00%	75.00%		

Duplicate Sample Assessment

LCS/LCSD Y or N?:	Y	Y				
Analyte:	Uranium-234	Uranium-238				
Sample I.D.:	LCS12675	LCS12675				
Duplicate Sample I.D.	LCSD12675	LCSD12675				
Sample Result (pCi/L, g, F):	9.7700	10.2000				
1.96 Sigma Unc:	1.8000	1.8600				
Sample Duplicate Result (pCi/L, g, F):	9.7800	9.8100				
Duplicate Sample 1.96 Sigma Unc.	1.7700	1.7700				
Either results below MDC?	N	N				
Relative Percent Difference:	0.10%	3.90%				
Assessment:	Pass	Pass				
% RPD Limit:	25.00%	25.00%				

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Sample Matrix Spike Control Assessment

Analyte:			
Sample Collection Date:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Spike I.D.:			
MS/MSD Decay Corrected Spike Conc. (pCi/L):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc.(pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike uncertainty (calculated):			
MSD Spike uncertainty (calculated):			
Sample Result:			
Sample 1.96 Sigma Unc.:			
Sample Matrix Spike Result:			
Sample MS 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample MSD 1.96 Sigma Unc.:			
MS % Recovery:			
MSD % Recovery:			
MS Assessment:			
MSD Assessment:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Analyte:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Sample Matrix Spike Result:			
Sample Matrix Spike 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:			
MS/MSD Relative Percent Difference:			
MS/ MSD RPD Assessment:			
% RPD Limit:			

Comments:

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: Niacet Characterization
Pace Project No.: 3073183

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

WORKORDER QUALIFIERS

WO: 3073183

[1]	Sample NEAREA-HSB1,2-Comp was received broken.

ANALYTE QUALIFIERS

1c	The response for DCB is high in the closing calibration check standard associated with the analysis of this sample. Recovery may be biased high.
C3	Relative percent difference between results from each column was greater than 40%. The higher of the two results was reported.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
N2	The lab does not hold TNI accreditation for this parameter.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Niacet Characterization
Pace Project No.: 3073183

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3073183001	**NEAREA-HSB1,2-Comp**	EPA 3510	OEXT/12149	EPA 8081	GCSV/4671
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 3510	OEXT/12149	EPA 8081	GCSV/4671
3073183001	**NEAREA-HSB1,2-Comp**	EPA 3546	OEXT/12140	EPA 8082	GCSV/4666
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 3546	OEXT/12140	EPA 8082	GCSV/4666
3073183001	**NEAREA-HSB1,2-Comp**	EPA 3005	MPRP/8712	EPA 6010	ICP/8162
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 3005	MPRP/8712	EPA 6010	ICP/8162
3073183001	**NEAREA-HSB1,2-Comp**	EPA 7470	MERP/3729	EPA 7470	MERC/3584
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 7470	MERP/3729	EPA 7470	MERC/3584
3073183001	**NEAREA-HSB1,2-Comp**	EPA 3510	OEXT/12158	EPA 8270	MSSV/4145
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 3510	OEXT/12158	EPA 8270	MSSV/4145
3073183001	**NEAREA-HSB1,2-Comp**	EPA 8260	MSV/13357		
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 8260	MSV/13357		
3073183001	**NEAREA-HSB1,2-Comp**	ASTM D2974-87	PMST/3284		
3073183005	**NEAREA-HSB3ABC-Comp**	ASTM D2974-87	PMST/3284		
3073183002	**NEAREA-HSB2-Grab**	EPA 901.1m	RADC/12641		
3073183003	**NEAREA-HSB1-Comp**	EPA 901.1m	RADC/12641		
3073183005	**NEAREA-HSB3ABC-Comp**	EPA 901.1m	RADC/12666		
3073183002	**NEAREA-HSB2-Grab**	HSL-300m	RADC/12675		
3073183003	**NEAREA-HSB1-Comp**	HSL-300m	RADC/12675		
3073183005	**NEAREA-HSB3ABC-Comp**	HSL-300m	RADC/12675		

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

July 23, 2012

Carin Ferris
PASI Pittsburgh
1638 Roseytown Road
Greensburg, PA 15601

RE: Project 20141447
Project ID: 3073183 / Los Alamos

Dear Carin Ferris:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karen Brown
karen.brown@pacelabs.com

REPORT OF LABORATORY ANALYSIS

Cover No Results 7/23/2012 13:14

Laboratory Certifications

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141447

Client: PASI Pittsburgh

Project ID: 3073183 / Los Alamos

Washington Department of Ecology C2078

Oregon Environmental Laboratory Accreditation - LA200001

U.S. Dept. of Agriculture Foreign Soil Import P330-10-00119

Pennsylvania Dept. of Env Protection (NELAC) 68-04202

Texas Commission on Env. Quality (NELAC) T104704405-09-TX

Kansas Department of Health and Environment (NELAC) E-10266

Florida Department of Health (NELAC) E87595

Oklahoma Department of Environmental Quality - 2010-139

Illinois Environmental Protection Agency - 0025721

California Env. Lab Accreditation Program Branch - 11277CA

Louisiana Dept. of Environmental Quality (NELAC/LELAP) 02006

REPORT OF LABORATORY ANALYSIS

Sample Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141447

Client: PASI Pittsburgh

Project ID: 3073183 / Los Alamos

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
NEAREA-HSB1,2-COMP	201004997	Other	11-Jul-12 14:30	14-Jul-12 08:20
NEAREA-HSB3ABC-COMP	201004998	Other	11-Jul-12 15:00	14-Jul-12 08:20

Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141447

Sample Receipt Condition:

All samples were received in accordance with EPA protocol.

Holding Times:

All holding times were met.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogates:

All surrogate recoveries were within QC limits.

QC Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141447

Analytical Method	Batch	Sample used for QC
EPA 8151	188683	Batch sample from another client

Narrative1 7/23/2012 13:15:26

For the sample used as the original for the DUP or MS/MSD for the batch:

Project sample means a sample from this project was used.
Client sample means a sample from the same client but in a different project was used.
Batch sample means a sample from a different client was used.

Sample Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Client: PASI Pittsburgh

Client ID: NEAREA-HSB1,2-COMP
Project: 20141447
Project ID: 3073183 / Los Alamos
Site: None
Lab ID: 201004997 (TCLP)
Matrix: Other
% Moisture: n/a
Description: None
Prep Level: TCLP
Batch: 188683
Method: EPA 8151 (TCLP)
8151 Herbs TCLP
Collected: 11-Jul-12
Received: 14-Jul-12
Prepared: 19-Jul-12

Units: mg/L

CAS No.	Analyte	Dilution	Result	Qu	Reporting Limit	Reg Limit	Analysis	
94-75-7	2,4-D	1	ND		0.0200	10.0	20-Jul-12 20:54	SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	1.00	20-Jul-12 20:54	SPP1

2 compound(s) reported

Protocol 7/23/2012 13:15:27

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Sample Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Client: PASI Pittsburgh

Client ID: NEAREA-HSB3ABC-COMP
Project: 20141447
Project ID: 3073183 / Los Alamos
Site: None
Lab ID: 201004998 (TCLP)
Matrix: Other
% Moisture: n/a
Description: None
Prep Level: TCLP
Batch: 188683
Method: EPA 8151 (TCLP)
8151 Herbs TCLP
Collected: 11-Jul-12
Received: 14-Jul-12
Prepared: 19-Jul-12

Units: mg/L

CAS No.	Analyte	Dilution	Result	Qu	Reporting Limit	Reg Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	10.0	20-Jul-12 21:16 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	1.00	20-Jul-12 21:16 SPP1

2 compound(s) reported

Protocol 7/23/2012 13:15:27

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Surrogate Recovery

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Batch: 188683 **Project:** 20141447

Method: TCLP GC Semivolatile Organics

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
201006296	188683 BLANK 1		53	52						
201006479	188683 BLANK 2		90	87						
201006297	188683 LCS 1		135	128						
201004997	NEAREA-HSB1,2-COMP		107	92						
201004998	NEAREA-HSB3ABC-COMP		92	92						
201006298	PUMA-SV-12 MS 1		44	44						
201006299	PUMA-SV-12 MSD 1		101	102						
	QC limits:		10-166	10-166						

Sur 1: 2,4-DCPA (Conf)(S)
Sur 2: 2,4-DCPA (S)

*** denotes surrogate recovery outside of QC limits.**

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Quality Control

Batch: 188683 **Project:** 20141447 **LCS:** 20100629 20-Jul-12 17:41

Method: TCLP GC Semivolatile Organics **MS:** 20100629 20-Jul-12 18:45

Units: mg/L **MSD:** 20100629 20-Jul-12 19:07

Original for MS: Batch Sample 201005267

Parameter Name	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
2,4-D	0.200	0.178	89	0.200		0.0691	0.169	35	85	84 *	10-159	10-167	27	
2,4,5-TP (Silvex)	0.0200	0.0187	93	0.0200		0.00763	0.0182	38	91	82 *	30-165	31-168	20	

2 compound(s) reported

QC Protocol 7/23/2012 13:15:30

*** denotes recovery outside of QC limits.**
MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.

Blank Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 188683 BLANK 1 **Project:** 20141447

Lab ID: 201006296

Prep Level: TCLP **Batch:** 188683

Method: TCLP GC Semivolatile Organics

Prepared: 19-Jul-12

Units: mg/L

CAS Numb	Analyte	Dilution	Result	Qu	Reporting Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	20-Jul-12 16:58 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	20-Jul-12 16:58 SPP1

2 compound(s) reported

Protocol Blank 7/23/2012 13:15:31

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Blank Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 188683 BLANK 2 **Project:** 20141447

Lab ID: 201006479

Prep Level: TCLP **Batch:** 188683

Method: TCLP GC Semivolatile Organics

Prepared: 19-Jul-12

Units: mg/L

CAS Numb	Analyte	Dilution	Result	Qu	Reporting Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	20-Jul-12 17:19 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	20-Jul-12 17:19 SPP1

2 compound(s) reported

Protocol Blank 7/23/2012 13:15:31

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141447

Value	Description
J	This estimated value for the analyte is below the adjusted reporting limit but above the instrument reporting limit.
U	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
B	This analyte was detected in the method blank.
E	The sample concentration is above the linear calibrated range of the analysis.
LCS	Laboratory Control Sample.
MS(D)	Matrix Spike (Duplicate).
DUP	Sample Duplicate.
RPD	Relative Percent Difference.

Pace Analytical Services, In
1000 Riverbend Blvd. Suite F
St. Rose, LA 7008
(504) 469-033

Chains of Custody

20141447 PASI-PITT

Chain of Custody

Workorder: 3073183 **Workorder Name:** Niacet Characterization **Owner Received Date:** 7/12/2012 **Results Requested By:** 7/26/2012

Report To	Subcontract To
Carin Ferris Pace Analytical Services, Inc. 1638 Roseytown Road Greensburg, PA 15601 Phone (724)850-5600 Fax (999)999-9999	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone 1(504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: 1-TCLP Herbicides, 2-2,4-D, 3-2,4,5-TP	LAB USE ONLY
1	NEAREA-HSB1,2-Comp	PS	7/11/2012 14:30	3073183001	Solid	1		2,01004997
2	NEAREA-HSB3ABC-Comp	PS	7/11/2012 15:00	3073183005	Solid	1		4998
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7-13-12 1400	[signature]	7/14/12 0820
2				
3				

Comments

Cooler Temperature on Receipt 3.0 °C **Custody Seal** (Y) or N **Received on Ice** (Y) or N **Samples Intact** (Y) or N

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Condition

201411447 PASI-PITT

Courier: ☐ Pace Courier ☐ Hackbarth ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals Intact:** ☑Yes ☐No

Therometer Used: ☑ Therm Fisher IR 1 ☐ Therm Fisher IR 2 ☐ Therm Fisher IR 4

Type of Ice: Wet Blue None Samples on ice: [see COC]

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Date and initials of person examining contents: LW 7/14/12

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☑No ☐N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Samples checked for dechlorination:	☐Yes ☑No ☐N/A	14
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	14
Trip Blank Present:	☐Yes ☑No ☐N/A	16
Trip Blank Custody Seals Present	☐Yes ☑No ☐N/A	17
Pace Trip Blank Lot # (if purchased): N/A		18

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

ALLC003rev.06, 28Jul2010 - mod

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

1581819

Section A Required Client Information:

Company: LATA
Address: 33 WASHINGTON Hwy AMHERST, NY 14226
Email To: JMOORE@LATA.COM
Phone: 716 830 9636 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: JAMES MOORE
Copy To: JASON BEYDLES
Purchase Order No.:
Project Name: NIAGARA CHARACTERIZATION
Project Number: 11170.003

Section C Invoice Information:

Attention: JAMES MOORE
Company Name: LATA
Address: 756 PARK MEADOW RD
Pace Quote Reference: WESTERVILLE, OH
Pace Project Manager: 43081
Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER

Site Location
STATE:

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: FULL GAMMA	ALPHA ISO TH	FULL TCLP - SVOC/VOC/Metals	PCB	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	NEARea - HSB1,2 - COMP	SL	C	7-11-12	2:30pm			50°F	1	X									X			X			001
2	NEARea - HSB2 - GRAB	SL	G	7-11-12	2:11pm			50°F	1	X									XXX						002
3	NEARea - HSB1 - COMP	SL	C	7-11-12	1:30pm			50°F	1	X									XXX						003
4	NEARea - HSB1,2 - COMP	SL	C	7-11-12	2:30pm			50°F	1	X											X				~~004~~
5	NEARea - HSB3ABC - Comp	SL	C	7-11-12	3pm			50°F	1	X									XXX						005
6	NEARea - HSB3ABC - Comp	SL	C	7-11-12	3pm			50°F	1	X											X				
7	NEARea - HSB3ABC - Comp	SL	C	7-11-12	3pm			50°F	1	X											X				
8																									
9																									
10																									
11																									
12																									

3073183

Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
					7-12-12	0910	18.5	Y	Y	X N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JASON BEYDLES

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 7-11-12

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

picture

Sample Condition Upon Receipt

Pace Analytical

Client Name: LATA Project # 3073163

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other ____

Tracking #: 870246081821 MSTR

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other ____

Thermometer Used: 5 (6) 7 Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature: 18.5 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: [illegible] 7-12-12

Temp should be above freezing to 6°C Very minimal melted Comments:

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☒No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☐Yes ☒No ☐N/A	10. HSB 1, 2 - comp received broken
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed: [illegible] Lot # of added preservative:
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: James Moore Date/Time: 7/13/12

Comments/ Resolution:

emailed James about broken sample, use portion of sample 001 for PCBs

Project Manager Review: Carla Senia **Date:** 7/13/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 3073183

Client Name:

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	1 - 250																						
002		1																						
003		1																						
~~004~~		~~1~~																						
~~005~~		~~1~~		SMS 4/12																				
~~006~~	↓	~~1 - 250~~																						
005	↓	3																						

Quality Assurance Data Review

SDG No. 30731114

Qualifiers in EDD	JM 8/13/12
EDD Review	JM 8/13/12
EDD in Site DB	

Project Name: Niacet
Sampling Date: 7/10/12
Review Date: 8/13/12
Laboratory: Pace
Reviewer Signature: James A. Moore

Review Item	Matrix	Acceptable	Comments / Qualifications
Compare Chain of Custody to Data Received	Soil / Sed/ Air GW / SW / Other	✓	Sample BLD6102-HSB1-Grab was received broken inside a bubble bag (1) The laboratory salvaged the sample
Sample Hold Times	Soil / Sed/ Air GW / SW / Other	✓	
Trip Blank	VOCs only		N/A
Sample Reporting Limits	Soil / Sed/ Air GW / SW / Other	✓	
Surrogate Compound Recoveries for Organic Analyses	Soil / Sed/ Air GW / SW / Other	✓	
Method Blank	Soil / Sed/ Air GW / SW / Other	✓	
Laboratory Control Sample Recoveries	Soil / Sed/ Air GW / SW / Other	✓	
Matrix Spike/Spike Duplicate Recoveries and RPDs	Soil / Sed/ Air GW / SW / Other		* Batch QC analyzed from a different sample set is not used to qualify the Niacet Data Set
Duplicate Sample Relative Percent Difference	Soil / Sed/ Air GW / SW / Other		* Batch QC from a different project not used to qualify the Niacet Data Set.
Initial and Continuing Calibration	Soil / Sed/ Air GW / SW / Other		N/A - Not included with a level 2 report
TICS	Any		N/A

Additional Comments:

(1) From the bubble wrap bag - However, it was cross contaminated with cooler water. This sample was scheduled for RAD analysis. The wet ice used to cool the samples was from a food grade source, so it should not cause any elevated RAD readings. ~~However because the outside of the~~ However, to err on the side of caution, the reviewer has qualified the RAD data for this sample as estimated!

NA = Not Applicable
NR = Not Reported
NSS = Not a Site Sample, lab batch QC used

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

August 08, 2012

Mr. James Moore
Los Alamos Technical Associates, Inc.
756 Park Meadow Road
Westerville, OH 43081

RE: Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Dear Mr. Moore:
Enclosed are the analytical results for sample(s) received by the laboratory on July 11, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

The samples were subcontracted to Pace Analytical Services, Inc., 1000 Riverbend Blvd., Suite F, St. Rose, LA 70087 for TCLP Herbicides analysis. Results of the analysis are reported on the Pace Analytical, New Orleans data tables.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carin A. Ferris

Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures

cc: Accounts Payable, Los Alamos Technical Associates, Inc.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4 Greensburg, PA 15601
ACLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/TNI Certification #: LA080002
Louisiana/TNI Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3073114001	**BLD6102-HSB1-COMP**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073114002	**BLD6102-HSB1-GRAB**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073114003	**BLD6102-HSB234-COMP**	EPA 901.1m	AEH	16	PASI-PA
		HSL-300m	LAL	6	PASI-PA
3073114004	**BLD6102-HSB234-COMP**	EPA 8081	CWB	8	PASI-PA
		EPA 8082	SJG	10	PASI-PA
		EPA 6010	CTS	7	PASI-PA
		EPA 7470	MJO	1	PASI-PA
		EPA 8270	SPL	18	PASI-PA
		EPA 8260	JAS	13	PASI-PA
		ASTM D2974-87	AJC	1	PASI-PA

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 8081**
Description: 8081 GCS Pesticides, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8081. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 8082**
Description: 8082 GCS PCB
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/12140

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3073396001

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 465909)
  - PCB-1016 (Aroclor 1016)

Additional Comments:

Analyte Comments:

QC Batch: OEXT/12140

1c: The response for DCB is high in the closing calibration check standard associated with the analysis of this sample. Recovery may be biased high.

- BLD6102-HSB234-COMP (Lab ID: 3073114004)
  - Decachlorobiphenyl (S)

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 6010**
Description: 6010 MET ICP, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 7470**
Description: 7470 Mercury, TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MERP/3729

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 3073164001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 465822)
  - Mercury

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 8270**
Description: 8270 MSSV TCLP Sep Funnel
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 8260**
Description: 8260 MSV TCLP
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: MSV/13346

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 466778)
  - Vinyl chloride

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/13346

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **EPA 901.1m**
Description: 901.1 Gamma Spec
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
3 samples were analyzed for EPA 901.1m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

General Information:
3 samples were analyzed for HSL-300m. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: RADC/12675

N2: The lab does not hold TNI accreditation for this parameter.

- BLANK (Lab ID: 466065)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- BLD6102-HSB1-COMP (Lab ID: 3073114001)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- BLD6102-HSB1-GRAB (Lab ID: 3073114002)
  - Thorium-228
  - Thorium-230
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238
- BLD6102-HSB234-COMP (Lab ID: 3073114003)
  - Thorium-228
  - Thorium-230

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PROJECT NARRATIVE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Method: **HSL-300m**
Description: HSL300(AS) Actinides
Client: Los Alamos Technical Associates, Inc
Date: August 08, 2012

Analyte Comments:

QC Batch: RADC/12675

N2: The lab does not hold TNI accreditation for this parameter.

- BLD6102-HSB234-COMP (Lab ID: 3073114003)
  - Thorium-232
  - Uranium-234
  - Uranium-235
  - Uranium-238

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Sample: BLD6102-HSB234-COMP **Lab ID: 3073114004** Collected: 07/10/12 15:30 Received: 07/11/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides, TCLP	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
gamma-BHC (Lindane)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 03:44	58-89-9	
Chlordane (Technical)	ND	ug/L	10.0	1	07/19/12 14:00	07/24/12 03:44	57-74-9	
Endrin	ND	ug/L	1.0	1	07/19/12 14:00	07/24/12 03:44	72-20-8	
Heptachlor epoxide	ND	ug/L	0.50	1	07/19/12 14:00	07/24/12 03:44	1024-57-3	
Methoxychlor	ND	ug/L	100	1	07/19/12 14:00	07/24/12 03:44	72-43-5	
Toxaphene	ND	ug/L	50.0	1	07/19/12 14:00	07/24/12 03:44	8001-35-2	
Surrogates								
Decachlorobiphenyl (S)	83	%	30-150	1	07/19/12 14:00	07/24/12 03:44	2051-24-3	
Tetrachloro-m-xylene (S)	73	%	30-150	1	07/19/12 14:00	07/24/12 03:44	877-09-8	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	12672-29-6	
PCB-1254 (Aroclor 1254)	**84.3**	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	11097-69-1	
PCB-1260 (Aroclor 1260)	**66.6**	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	11096-82-5	
PCB, Total	**151**	ug/kg	17.4	1	07/19/12 10:00	07/23/12 23:53	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	43	%	30-150	1	07/19/12 10:00	07/23/12 23:53	877-09-8	
Decachlorobiphenyl (S)	37	%	30-150	1	07/19/12 10:00	07/23/12 23:53	2051-24-3	1c
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3005							
Arsenic	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:48	7440-38-2	
Barium	ND	mg/L	1.0	1	07/18/12 14:00	07/19/12 08:48	7440-39-3	
Cadmium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:48	7440-43-9	
Chromium	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:48	7440-47-3	
Lead	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:48	7439-92-1	
Selenium	ND	mg/L	0.10	1	07/18/12 14:00	07/19/12 08:48	7782-49-2	
Silver	ND	mg/L	0.050	1	07/18/12 14:00	07/19/12 08:48	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	1.0	1	07/18/12 14:38	07/19/12 10:29	7439-97-6	
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
1,4-Dichlorobenzene	ND	ug/L	500	1	07/20/12 13:00	07/21/12 20:50	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 20:50	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 20:50	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 20:50	118-74-1	
Hexachloroethane	ND	ug/L	500	1	07/20/12 13:00	07/21/12 20:50	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 20:50	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2000	1	07/20/12 13:00	07/21/12 20:50		
Nitrobenzene	ND	ug/L	100	1	07/20/12 13:00	07/21/12 20:50	98-95-3	
Pentachlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 20:50	87-86-5	

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ANALYTICAL RESULTS

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Sample: BLD6102-HSB234-COMP **Lab ID: 3073114004** Collected: 07/10/12 15:30 Received: 07/11/12 09:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
Pyridine	ND	ug/L	500	1	07/20/12 13:00	07/21/12 20:50	110-86-1	
2,4,5-Trichlorophenol	ND	ug/L	5000	1	07/20/12 13:00	07/21/12 20:50	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	100	1	07/20/12 13:00	07/21/12 20:50	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	82	%	35-114	1	07/20/12 13:00	07/21/12 20:50	4165-60-0	
2-Fluorobiphenyl (S)	82	%	43-116	1	07/20/12 13:00	07/21/12 20:50	321-60-8	
Terphenyl-d14 (S)	99	%	33-141	1	07/20/12 13:00	07/21/12 20:50	1718-51-0	
Phenol-d6 (S)	33	%	10-110	1	07/20/12 13:00	07/21/12 20:50	13127-88-3	
2-Fluorophenol (S)	47	%	21-110	1	07/20/12 13:00	07/21/12 20:50	367-12-4	
2,4,6-Tribromophenol (S)	69	%	10-123	1	07/20/12 13:00	07/21/12 20:50	118-79-6	
8260 MSV TCLP	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	1		07/22/12 06:50	71-43-2	
2-Butanone (MEK)	ND	ug/L	5000	1		07/22/12 06:50	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		07/22/12 06:50	56-23-5	
Chlorobenzene	ND	ug/L	1000	1		07/22/12 06:50	108-90-7	
Chloroform	ND	ug/L	500	1		07/22/12 06:50	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		07/22/12 06:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		07/22/12 06:50	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		07/22/12 06:50	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		07/22/12 06:50	79-01-6	
Vinyl chloride	ND	ug/L	50.0	1		07/22/12 06:50	75-01-4	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		07/22/12 06:50	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		07/22/12 06:50	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130	1		07/22/12 06:50	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**6.2**	%	0.10	1		07/20/12 17:39		

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: MERP/3729
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 3073114004

METHOD BLANK: 465819 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	1.0	07/19/12 09:58	

LABORATORY CONTROL SAMPLE: 465820

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	101	85-115	

MATRIX SPIKE SAMPLE: 465822

Parameter	Units	3073164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	ND	2.5	3.2	127	85-115	M1

SAMPLE DUPLICATE: 465821

Parameter	Units	3073164001 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	ND	ND		

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: MPRP/8712
QC Batch Method: EPA 3005
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 3073114004

METHOD BLANK: 465792 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.050	07/19/12 07:59	
Barium	mg/L	ND	1.0	07/19/12 07:59	
Cadmium	mg/L	ND	0.050	07/19/12 07:59	
Chromium	mg/L	ND	0.050	07/19/12 07:59	
Lead	mg/L	ND	0.050	07/19/12 07:59	
Selenium	mg/L	ND	0.10	07/19/12 07:59	
Silver	mg/L	ND	0.050	07/19/12 07:59	

LABORATORY CONTROL SAMPLE: 465793

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.5	0.49	99	80-120	
Barium	mg/L	.5	.5J	100	80-120	
Cadmium	mg/L	.5	0.50	99	80-120	
Chromium	mg/L	.5	0.49	98	80-120	
Lead	mg/L	.5	0.49	98	80-120	
Selenium	mg/L	.5	0.50	99	80-120	
Silver	mg/L	.25	0.25	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 465795 465796

Parameter	Units	3073164001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	mg/L	ND	.5	.5	0.54	0.53	107	106	80-120	2	
Barium	mg/L	ND	.5	.5	.82J	.81J	95	93	80-120		
Cadmium	mg/L	ND	.5	.5	0.47	0.47	95	94	80-120	1	
Chromium	mg/L	ND	.5	.5	0.47	0.47	94	94	80-120	.5	
Lead	mg/L	ND	.5	.5	0.51	0.51	100	99	80-120	.9	
Selenium	mg/L	ND	.5	.5	0.54	0.55	109	109	80-120	.4	
Silver	mg/L	ND	.25	.25	0.26	0.26	106	104	80-120	1	

MATRIX SPIKE SAMPLE: 465798

Parameter	Units	3073184004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	ND	.5	0.55	107	80-120	
Barium	mg/L	ND	.5	1.0	93	80-120	
Cadmium	mg/L	ND	.5	0.47	94	80-120	
Chromium	mg/L	ND	.5	0.50	95	80-120	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

MATRIX SPIKE SAMPLE: 465798

Parameter	Units	3073184004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	ND	.5	0.51	100	80-120	
Selenium	mg/L	ND	.5	0.54	107	80-120	
Silver	mg/L	ND	.25	0.27	107	80-120	

SAMPLE DUPLICATE: 465794

Parameter	Units	3073164001 Result	Dup Result	RPD	Qualifiers
Arsenic	mg/L	ND	.0037J		
Barium	mg/L	ND	.34J		
Cadmium	mg/L	ND	ND		
Chromium	mg/L	ND	ND		
Lead	mg/L	ND	.0083J		
Selenium	mg/L	ND	ND		
Silver	mg/L	ND	ND		

SAMPLE DUPLICATE: 465797

Parameter	Units	3073184004 Result	Dup Result	RPD	Qualifiers
Arsenic	mg/L	ND	.015J		
Barium	mg/L	ND	.54J		
Cadmium	mg/L	ND	.00062J		
Chromium	mg/L	ND	.024J		
Lead	mg/L	ND	.0074J		
Selenium	mg/L	ND	.0034J		
Silver	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: MSV/13346 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 3073114004

METHOD BLANK: 466777 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	07/20/12 12:09	
1,2-Dichloroethane	ug/L	ND	50.0	07/20/12 12:09	
2-Butanone (MEK)	ug/L	ND	5000	07/20/12 12:09	
Benzene	ug/L	ND	50.0	07/20/12 12:09	
Carbon tetrachloride	ug/L	ND	50.0	07/20/12 12:09	
Chlorobenzene	ug/L	ND	1000	07/20/12 12:09	
Chloroform	ug/L	ND	500	07/20/12 12:09	
Tetrachloroethene	ug/L	ND	50.0	07/20/12 12:09	
Trichloroethene	ug/L	ND	50.0	07/20/12 12:09	
Vinyl chloride	ug/L	ND	50.0	07/20/12 12:09	
1,2-Dichloroethane-d4 (S)	%	123	70-130	07/20/12 12:09	
4-Bromofluorobenzene (S)	%	90	70-130	07/20/12 12:09	
Toluene-d8 (S)	%	96	70-130	07/20/12 12:09	

LABORATORY CONTROL SAMPLE: 466778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	200	188	94	70-130	
1,2-Dichloroethane	ug/L	200	188	94	70-130	
2-Butanone (MEK)	ug/L	200	168J	84	70-130	
Benzene	ug/L	200	152	76	70-130	
Carbon tetrachloride	ug/L	200	223	112	70-130	
Chlorobenzene	ug/L	200	161J	80	70-130	
Chloroform	ug/L	200	175J	87	70-130	
Tetrachloroethene	ug/L	200	191	96	70-130	
Trichloroethene	ug/L	200	179	89	70-130	
Vinyl chloride	ug/L	200	267	134	70-130	L0
1,2-Dichloroethane-d4 (S)	%			128	70-130	
4-Bromofluorobenzene (S)	%			91	70-130	
Toluene-d8 (S)	%			95	70-130	

LABORATORY CONTROL SAMPLE: 467395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	200	216	108	70-130	
1,2-Dichloroethane	ug/L	200	225	112	70-130	
2-Butanone (MEK)	ug/L	200	188J	94	70-130	
Benzene	ug/L	200	228	114	70-130	
Carbon tetrachloride	ug/L	200	203	102	70-130	
Chlorobenzene	ug/L	200	225J	113	70-130	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

LABORATORY CONTROL SAMPLE: 467395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	200	218J	109	70-130	
Tetrachloroethene	ug/L	200	223	112	70-130	
Trichloroethene	ug/L	200	223	111	70-130	
Vinyl chloride	ug/L	200	198	99	70-130	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			101	70-130	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: OEXT/12149 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081 GCS TCLP Pesticides
Associated Lab Samples: 3073114004

METHOD BLANK: 466179 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 00:05	
Endrin	ug/L	ND	1.0	07/24/12 00:05	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 00:05	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 00:05	
Methoxychlor	ug/L	ND	100	07/24/12 00:05	
Toxaphene	ug/L	ND	50.0	07/24/12 00:05	
Decachlorobiphenyl (S)	%	84	30-150	07/24/12 00:05	
Tetrachloro-m-xylene (S)	%	75	30-150	07/24/12 00:05	

METHOD BLANK: 466181 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 05:33	
Endrin	ug/L	ND	1.0	07/24/12 05:33	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 05:33	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 05:33	
Methoxychlor	ug/L	ND	100	07/24/12 05:33	
Toxaphene	ug/L	ND	50.0	07/24/12 05:33	
Decachlorobiphenyl (S)	%	84	30-150	07/24/12 05:33	
Tetrachloro-m-xylene (S)	%	73	30-150	07/24/12 05:33	

METHOD BLANK: 466182 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlordane (Technical)	ug/L	ND	10.0	07/24/12 06:28	
Endrin	ug/L	ND	1.0	07/24/12 06:28	
gamma-BHC (Lindane)	ug/L	ND	10.0	07/24/12 06:28	
Heptachlor epoxide	ug/L	ND	0.50	07/24/12 06:28	
Methoxychlor	ug/L	ND	100	07/24/12 06:28	
Toxaphene	ug/L	ND	50.0	07/24/12 06:28	
Decachlorobiphenyl (S)	%	89	30-150	07/24/12 06:28	
Tetrachloro-m-xylene (S)	%	83	30-150	07/24/12 06:28	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

LABORATORY CONTROL SAMPLE: 466180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin	ug/L	1.6	1.4	88	57-112	
gamma-BHC (Lindane)	ug/L	1.6	1.4J	88	66-118	
Heptachlor epoxide	ug/L	1.6	1.2	76	66-114	
Methoxychlor	ug/L	1.6	1.3J	81	50-150	
Decachlorobiphenyl (S)	%			80	30-150	
Tetrachloro-m-xylene (S)	%			66	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 466183 466184

Parameter	Units	3073416001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Endrin	ug/L	ND	1.6	1.6	1.7	1.6	104	102	57-112	2	
gamma-BHC (Lindane)	ug/L	ND	1.6	1.6	1.7J	1.7J	105	104	66-118		
Heptachlor epoxide	ug/L	ND	1.6	1.6	1.4	1.4	90	89	66-114	1	
Methoxychlor	ug/L	ND	1.6	1.6	1.6J	1.5J	98	96	50-150		
Decachlorobiphenyl (S)	%						77	77	30-150		
Tetrachloro-m-xylene (S)	%						80	80	30-150		

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: OEXT/12140 Analysis Method: EPA 8082
QC Batch Method: EPA 3546 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 3073114004

METHOD BLANK: 465907 Matrix: Solid
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1221 (Aroclor 1221)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1232 (Aroclor 1232)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1242 (Aroclor 1242)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1248 (Aroclor 1248)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1254 (Aroclor 1254)	ug/kg	ND	16.7	07/21/12 17:41	
PCB-1260 (Aroclor 1260)	ug/kg	ND	16.7	07/21/12 17:41	
Decachlorobiphenyl (S)	%	76	30-150	07/21/12 17:41	
Tetrachloro-m-xylene (S)	%	61	30-150	07/21/12 17:41	

LABORATORY CONTROL SAMPLE: 465908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	105	63	55-145	
PCB-1260 (Aroclor 1260)	ug/kg	167	128	77	55-145	
Decachlorobiphenyl (S)	%			73	30-150	
Tetrachloro-m-xylene (S)	%			56	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 465909 465910

Parameter	Units	3073396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	172	175	92.1	100	54	57	55-145	9	M3
PCB-1260 (Aroclor 1260)	ug/kg	ND	172	175	113	115	61	62	55-145	2	
Decachlorobiphenyl (S)	%						48	44	30-150		
Tetrachloro-m-xylene (S)	%						46	48	30-150		

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: OEXT/12158
QC Batch Method: EPA 3510
Analysis Method: EPA 8270
Analysis Description: 8270 TCLP MSSV
Associated Lab Samples: 3073114004

METHOD BLANK: 466539 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 16:04	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 16:04	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 16:04	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 16:04	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 16:04	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 16:04	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 16:04	
Hexachlorobenzene	ug/L	ND	100	07/21/12 16:04	
Hexachloroethane	ug/L	ND	500	07/21/12 16:04	
Nitrobenzene	ug/L	ND	100	07/21/12 16:04	
Pentachlorophenol	ug/L	ND	5000	07/21/12 16:04	
Pyridine	ug/L	ND	500	07/21/12 16:04	
2,4,6-Tribromophenol (S)	%	72	10-123	07/21/12 16:04	
2-Fluorobiphenyl (S)	%	75	43-116	07/21/12 16:04	
2-Fluorophenol (S)	%	45	21-110	07/21/12 16:04	
Nitrobenzene-d5 (S)	%	74	35-114	07/21/12 16:04	
Phenol-d6 (S)	%	30	10-110	07/21/12 16:04	
Terphenyl-d14 (S)	%	92	33-141	07/21/12 16:04	

METHOD BLANK: 466543 Matrix: Water
Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 20:09	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 20:09	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 20:09	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 20:09	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 20:09	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 20:09	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 20:09	
Hexachlorobenzene	ug/L	ND	100	07/21/12 20:09	
Hexachloroethane	ug/L	ND	500	07/21/12 20:09	
Nitrobenzene	ug/L	ND	100	07/21/12 20:09	
Pentachlorophenol	ug/L	ND	5000	07/21/12 20:09	
Pyridine	ug/L	ND	500	07/21/12 20:09	
2,4,6-Tribromophenol (S)	%	59	10-123	07/21/12 20:09	
2-Fluorobiphenyl (S)	%	79	43-116	07/21/12 20:09	
2-Fluorophenol (S)	%	45	21-110	07/21/12 20:09	
Nitrobenzene-d5 (S)	%	74	35-114	07/21/12 20:09	
Phenol-d6 (S)	%	28	10-110	07/21/12 20:09	
Terphenyl-d14 (S)	%	91	33-141	07/21/12 20:09	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

METHOD BLANK: 466544 Matrix: Water

Associated Lab Samples: 3073114004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	500	07/21/12 23:13	
2,4,5-Trichlorophenol	ug/L	ND	5000	07/21/12 23:13	
2,4,6-Trichlorophenol	ug/L	ND	100	07/21/12 23:13	
2,4-Dinitrotoluene	ug/L	ND	100	07/21/12 23:13	
2-Methylphenol(o-Cresol)	ug/L	ND	2000	07/21/12 23:13	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	07/21/12 23:13	
Hexachloro-1,3-butadiene	ug/L	ND	100	07/21/12 23:13	
Hexachlorobenzene	ug/L	ND	100	07/21/12 23:13	
Hexachloroethane	ug/L	ND	500	07/21/12 23:13	
Nitrobenzene	ug/L	ND	100	07/21/12 23:13	
Pentachlorophenol	ug/L	ND	5000	07/21/12 23:13	
Pyridine	ug/L	ND	500	07/21/12 23:13	
2,4,6-Tribromophenol (S)	%	73	10-123	07/21/12 23:13	
2-Fluorobiphenyl (S)	%	87	43-116	07/21/12 23:13	
2-Fluorophenol (S)	%	50	21-110	07/21/12 23:13	
Nitrobenzene-d5 (S)	%	76	35-114	07/21/12 23:13	
Phenol-d6 (S)	%	31	10-110	07/21/12 23:13	
Terphenyl-d14 (S)	%	98	33-141	07/21/12 23:13	

LABORATORY CONTROL SAMPLE: 466540

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	500	314J	63	10-95	
2,4,5-Trichlorophenol	ug/L	500	255J	51	10-200	
2,4,6-Trichlorophenol	ug/L	500	359	72	42-132	
2,4-Dinitrotoluene	ug/L	500	319	64	10-133	
2-Methylphenol(o-Cresol)	ug/L	500	327J	65	10-200	
3&4-Methylphenol(m&p Cresol)	ug/L	1000	623J	62	10-200	
Hexachloro-1,3-butadiene	ug/L	500	343	69	38-113	
Hexachlorobenzene	ug/L	500	361	72	58-130	
Hexachloroethane	ug/L	500	329J	66	36-96	
Nitrobenzene	ug/L	500	360	72	41-108	
Pentachlorophenol	ug/L	500	304J	61	13-129	
Pyridine	ug/L	500	ND	31	10-200	
2,4,6-Tribromophenol (S)	%			59	10-123	
2-Fluorobiphenyl (S)	%			73	43-116	
2-Fluorophenol (S)	%			47	21-110	
Nitrobenzene-d5 (S)	%			71	35-114	
Phenol-d6 (S)	%			24	10-110	
Terphenyl-d14 (S)	%			88	33-141	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 466541 466542

Parameter	Units	3073396001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,4-Dichlorobenzene	ug/L	ND	500	500	359J	361J	72	72	10-95		
2,4,5-Trichlorophenol	ug/L	ND	500	500	365J	306J	73	61	10-200		
2,4,6-Trichlorophenol	ug/L	ND	500	500	403	400	81	80	42-132	.7	
2,4-Dinitrotoluene	ug/L	ND	500	500	357	361	71	72	10-133	1	
2-Methylphenol(o-Cresol)	ug/L	ND	500	500	366J	379J	73	76	10-200		
3&4-Methylphenol(m&p Cresol)	ug/L	ND	1000	1000	669J	673J	67	67	10-200		
Hexachloro-1,3-butadiene	ug/L	ND	500	500	402	408	80	82	38-113	2	
Hexachlorobenzene	ug/L	ND	500	500	398	415	80	83	58-130	4	
Hexachloroethane	ug/L	ND	500	500	373J	385J	75	77	36-96		
Nitrobenzene	ug/L	ND	500	500	422	432	84	86	41-108	3	
Pentachlorophenol	ug/L	ND	500	500	309J	388J	62	78	13-129		
Pyridine	ug/L	ND	500	500	ND	ND	37	32	10-200		
2,4,6-Tribromophenol (S)	%						73	68	10-123		
2-Fluorobiphenyl (S)	%						80	81	43-116		
2-Fluorophenol (S)	%						49	49	21-110		
Nitrobenzene-d5 (S)	%						82	82	35-114		
Phenol-d6 (S)	%						27	27	10-110		
Terphenyl-d14 (S)	%						87	91	33-141		

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: PMST/3283
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 3073114004

SAMPLE DUPLICATE: 466967

Parameter	Units	3073229001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	65.0	65.1	.05	

SAMPLE DUPLICATE: 466968

Parameter	Units	3073229003 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	66.8	66.2	.9	

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ANALYTICAL RESULTS

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Sample: BLD6102-HSB1-COMP **Lab ID: 3073114001** Collected: 07/10/12 13:30 Received: 07/11/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**-0.726U ± 0.433 (0.691)**	pCi/g	08/03/12 13:30	14952-40-0	
Actinium-228	EPA 901.1m	**1.34 ± 0.261 (0.167)**	pCi/g	08/03/12 13:30	14331-83-0	
Bismuth-212	EPA 901.1m	**1.69 ± 0.488 (0.611)**	pCi/g	08/03/12 13:30	14913-49-6	
Bismuth-214	EPA 901.1m	**3.88 ± 0.442 (0.337)**	pCi/g	08/03/12 13:30	14733-03-0	
Cesium-137	EPA 901.1m	**0.116J ± 0.0400 (0.0420)**	pCi/g	08/03/12 13:30	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.011U ± 0.114 (0.0470)**	pCi/g	08/03/12 13:30	10198-40-0	
Lead-210	EPA 901.1m	**11.3U ± 20.4 (33.8)**	pCi/g	08/03/12 13:30	14255-04-0	
Lead-212	EPA 901.1m	**1.20 ± 0.157 (0.106)**	pCi/g	08/03/12 13:30	15092-94-1	
Lead-214	EPA 901.1m	**4.02 ± 0.455 (0.113)**	pCi/g	08/03/12 13:30	15067-28-4	
Potassium-40	EPA 901.1m	**8.90 ± 1.23 (0.500)**	pCi/g	08/03/12 13:30	13966-00-2	
Protactinium-234M	EPA 901.1m	**0.164U ± 5.96 (5.18)**	pCi/g	08/03/12 13:30	15100-28-4	
Radium-226	EPA 901.1m	**3.94 ± 0.429 (0.124)**	pCi/g	08/03/12 13:30	13982-63-3	
Radium-228	EPA 901.1m	**1.34 ± 0.261 (0.167)**	pCi/g	08/03/12 13:30	15262-20-1	
Thallium-208	EPA 901.1m	**0.453J ± 0.0780 (0.0500)**	pCi/g	08/03/12 13:30	14913-50-9	
Thorium-234	EPA 901.1m	**-0.773U ± 2.28 (3.80)**	pCi/g	08/03/12 13:30	15065-10-8	
Uranium-235	EPA 901.1m	**0.375J ± 0.0840 (0.0800)**	pCi/g	08/03/12 13:30	15117-96-1	
Thorium-228	HSL-300m	**1.28 ± 0.267 (0.068)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**4.41 ± 0.767 (0.043)**	pCi/g	07/27/12 13:09	14269-63-7	N2
Thorium-232	HSL-300m	**1.02 ± 0.221 (0.016)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**1.77 ± 0.336 (0.154)**	pCi/g	07/26/12 16:05	13966-29-5	N2
Uranium-235	HSL-300m	**0.080 ± 0.058 (0.070)**	pCi/g	07/26/12 16:05	15117-96-1	N2
Uranium-238	HSL-300m	**1.97 ± 0.359 (0.074)**	pCi/g	07/26/12 16:05		N2

Sample: BLD6102-HSB1-GRAB **Lab ID: 3073114002** Collected: 07/10/12 14:00 Received: 07/11/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**12.5 ± 2.55 (3.58)**	pCi/g	08/04/12 21:02	14952-40-0	
Actinium-228	EPA 901.1m	**126 ± 12.8 (1.92)**	pCi/g	08/04/12 21:02	14331-83-0	
Bismuth-212	EPA 901.1m	**139 ± 15.4 (5.94)**	pCi/g	08/04/12 21:02	14913-49-6	
Bismuth-214	EPA 901.1m	**646 ± 65.2 (3.35)**	pCi/g	08/04/12 21:02	14733-03-0	
Cesium-137	EPA 901.1m	**-0.040U ± 0.456 (0.743)**	pCi/g	08/04/12 21:02	10045-97-3	
Cobalt-60	EPA 901.1m	**0.0610U ± 0.0620 (0.472)**	pCi/g	08/04/12 21:02	10198-40-0	
Lead-210	EPA 901.1m	**227U ± 187 (237)**	pCi/g	08/04/12 21:02	14255-04-0	
Lead-212	EPA 901.1m	**112 ± 11.7 (1.01)**	pCi/g	08/04/12 21:02	15092-94-1	
Lead-214	EPA 901.1m	**647 ± 66.9 (1.38)**	pCi/g	08/04/12 21:02	15067-28-4	
Potassium-40	EPA 901.1m	**13.1 ± 4.46 (3.87)**	pCi/g	08/04/12 21:02	13966-00-2	
Protactinium-234M	EPA 901.1m	**0.000U ± 32.4 (53.6)**	pCi/g	08/04/12 21:02	15100-28-4	
Radium-226	EPA 901.1m	**645 ± 65.2 (1.07)**	pCi/g	08/04/12 21:02	13982-63-3	
Radium-228	EPA 901.1m	**126 ± 12.8 (1.92)**	pCi/g	08/04/12 21:02	15262-20-1	
Thallium-208	EPA 901.1m	**36.9 ± 3.76 (0.473)**	pCi/g	08/04/12 21:02	14913-50-9	
Thorium-234	EPA 901.1m	**48.1 ± 17.3 (24.4)**	pCi/g	08/04/12 21:02	15065-10-8	
Uranium-235	EPA 901.1m	**44.3 ± 4.64 (0.917)**	pCi/g	08/04/12 21:02	15117-96-1	
Thorium-228	HSL-300m	**31.6 ± 5.06 (0.069)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**196 ± 31.2 (0.047)**	pCi/g	07/27/12 13:09	14269-63-7	N2

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ANALYTICAL RESULTS

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Sample: BLD6102-HSB1-GRAB **Lab ID: 3073114002** Collected: 07/10/12 14:00 Received: 07/11/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Thorium-232	HSL-300m	**31.6 ± 5.07 (0.026)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**47.1 ± 7.54 (0.357)**	pCi/g	07/26/12 16:05	13966-29-5	N2
Uranium-235	HSL-300m	**2.53 ± 0.605 (0.143)**	pCi/g	07/26/12 16:05	15117-96-1	N2
Uranium-238	HSL-300m	**48.2 ± 7.71 (0.137)**	pCi/g	07/26/12 16:05		N2

Sample: BLD6102-HSB234-COMP **Lab ID: 3073114003** Collected: 07/10/12 15:00 Received: 07/11/12 09:10 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Actinium-227	EPA 901.1m	**2.08U ± 0.871 (2.44)**	pCi/g	08/05/12 08:03	14952-40-0	
Actinium-228	EPA 901.1m	**2.08U ± 0.871 (2.44)**	pCi/g	08/05/12 08:03	14331-83-0	
Bismuth-212	EPA 901.1m	**14.9 ± 2.75 (2.21)**	pCi/g	08/05/12 08:03	14913-49-6	
Bismuth-214	EPA 901.1m	**87.0 ± 8.83 (1.21)**	pCi/g	08/05/12 08:03	14733-03-0	
Cesium-137	EPA 901.1m	**-0.019U ± 0.0930 (0.149)**	pCi/g	08/05/12 08:03	10045-97-3	
Cobalt-60	EPA 901.1m	**-0.058U ± 0.208 (0.193)**	pCi/g	08/05/12 08:03	10198-40-0	
Lead-210	EPA 901.1m	**79.3U ± 75.9 (96.3)**	pCi/g	08/05/12 08:03	14255-04-0	
Lead-212	EPA 901.1m	**11.5 ± 1.24 (0.388)**	pCi/g	08/05/12 08:03	15092-94-1	
Lead-214	EPA 901.1m	**89.9 ± 9.32 (0.500)**	pCi/g	08/05/12 08:03	15067-28-4	
Potassium-40	EPA 901.1m	**8.00 ± 2.29 (1.71)**	pCi/g	08/05/12 08:03	13966-00-2	
Protactinium-234M	EPA 901.1m	**0.000U ± 12.9 (21.7)**	pCi/g	08/05/12 08:03	15100-28-4	
Radium-226	EPA 901.1m	**87.2 ± 8.85 (0.394)**	pCi/g	08/05/12 08:03	13982-63-3	
Radium-228	EPA 901.1m	**12.3 ± 1.36 (0.615)**	pCi/g	08/05/12 08:03	15262-20-1	
Thallium-208	EPA 901.1m	**4.19 ± 0.490 (0.209)**	pCi/g	08/05/12 08:03	14913-50-9	
Thorium-234	EPA 901.1m	**15.2 ± 4.48 (10.6)**	pCi/g	08/05/12 08:03	15065-10-8	
Uranium-235	EPA 901.1m	**6.37 ± 0.734 (0.341)**	pCi/g	08/05/12 08:03	15117-96-1	
Thorium-228	HSL-300m	**8.72 ± 1.44 (0.104)**	pCi/g	07/27/12 13:09	14274-82-9	N2
Thorium-230	HSL-300m	**56.9 ± 9.08 (0.053)**	pCi/g	07/27/12 13:09	14269-63-7	N2
Thorium-232	HSL-300m	**8.60 ± 1.42 (0.035)**	pCi/g	07/27/12 13:09	7440-29-1	N2
Uranium-234	HSL-300m	**11.1 ± 1.68 (0.105)**	pCi/g	07/26/12 16:05	13966-29-5	N2
Uranium-235	HSL-300m	**0.421 ± 0.138 (0.075)**	pCi/g	07/26/12 16:05	15117-96-1	N2
Uranium-238	HSL-300m	**11.2 ± 1.70 (0.066)**	pCi/g	07/26/12 16:05		N2

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: RADC/12641 Analysis Method: EPA 901.1m
QC Batch Method: EPA 901.1m Analysis Description: 901.1 Gamma Spec
Associated Lab Samples: 3073114001, 3073114002, 3073114003

METHOD BLANK: 464107 Matrix: Solid
Associated Lab Samples: 3073114001, 3073114002, 3073114003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Actinium-227	0.203 ± 0.227 (0.274)	pCi/g	08/05/12 18:35	
Actinium-228	0.0210 ± 0.0360 (0.239)	pCi/g	08/05/12 18:35	
Bismuth-212	0.191 ± 0.454 (0.790)	pCi/g	08/05/12 18:35	
Bismuth-214	-0.107 ± 2.38 (0.445)	pCi/g	08/05/12 18:35	
Cesium-137	0.0200 ± 0.0360 (0.0600)	pCi/g	08/05/12 18:35	
Cobalt-60	-0.019 ± 0.0940 (0.0650)	pCi/g	08/05/12 18:35	
Lead-210	5.11 ± 14.3 (24.7)	pCi/g	08/05/12 18:35	
Lead-212	-0.044 ± 18.9 (0.0970)	pCi/g	08/05/12 18:35	
Lead-214	0.0990 ± 0.0750 (0.114)	pCi/g	08/05/12 18:35	
Potassium-40	-0.117 ± 0.553 (0.767)	pCi/g	08/05/12 18:35	
Protactinium-234M	1.73 ± 3.37 (5.83)	pCi/g	08/05/12 18:35	
Radium-226	0.0200 ± 0.0220 (0.165)	pCi/g	08/05/12 18:35	
Radium-228	0.0210 ± 0.0360 (0.239)	pCi/g	08/05/12 18:35	
Thallium-208	-0.011 ± 0.0720 (0.0580)	pCi/g	08/05/12 18:35	
Thorium-234	0.148 ± 1.14 (2.01)	pCi/g	08/05/12 18:35	
Uranium-235	0.000 ± 0.0370 (0.0660)	pCi/g	08/05/12 18:35	

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QUALITY CONTROL DATA

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

QC Batch: RADC/12675 Analysis Method: HSL-300m
QC Batch Method: HSL-300m Analysis Description: HSL300(AS) Actinides
Associated Lab Samples: 3073114001, 3073114002, 3073114003

METHOD BLANK: 466065 Matrix: Solid
Associated Lab Samples: 3073114001, 3073114002, 3073114003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Thorium-228	0.152 ± 0.076 (0.099)	pCi/g	07/27/12 13:09	N2
Thorium-230	0.009 ± 0.034 (0.071)	pCi/g	07/27/12 13:09	N2
Thorium-232	-0.004 ± 0.021 (0.034)	pCi/g	07/27/12 13:09	N2
Uranium-234	0.040 ± 0.045 (0.076)	pCi/g	07/26/12 16:04	N2
Uranium-235	0.008 ± 0.032 (0.020)	pCi/g	07/26/12 16:04	N2
Uranium-238	0.017 ± 0.025 (0.016)	pCi/g	07/26/12 16:04	N2

Quality Control Sample Performance Assessment

RCDU Upload

Analyst:	LAL		
Date:	7/30/2012	Method:	HSL-300m
Worklist:	12675	SOP:	PGH-R-008
Matrix:	Soil	MB Sample ID:	466065

Method Blank Assessment						
Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Uranium-234	0.0402	0.0451	0.0760	0.02810		
Uranium-235	0.0075	0.0319	0.0204	0.00000		
Uranium-238	0.0173	0.0246	0.0157	0.00000		

Laboratory Control Sample Assessment						
	LCS	LCSD	LCS	LCSD	LCS	LCSD
Analyte:	Uranium-234		Uranium-238			
Count Date:	7/27/12 7:56	7/27/12 7:56	7/27/12 7:56	7/27/12 7:56		
Spike I.D.:	11-041U234	11-041U234	11-041U238	11-041U238		
Spike Concentration (pCi/L):	46.300	46.300	47.250	47.250		
Volume Used (mL):	0.100	0.100	0.100	0.100		
Aliquot Volume (L, g, F):	0.500	0.500	0.500	0.500		
Target Conc. (pCi/L, g, F):	9.260	9.260	9.450	9.450		
1.96 Sigma Uncertainty (Calculated):	0.327	0.327	0.333	0.333		
Result (pCi/L, g, F):	9.770	9.780	10.200	9.810		
1.96 Sigma Unc:	1.800	1.770	1.860	1.770		
% Recovery:	105.51%	105.62%	107.94%	103.81%		
Assessment:	Pass	Pass	Pass	Pass		
Upper % Recovery Limits:	125.00%	125.00%	125.00%	125.00%		
Lower % Recovery Limits:	75.00%	75.00%	75.00%	75.00%		
Duplicate Sample Assessment						
LCS/LCSD Y or N?:	Y	Y				
Analyte:	Uranium-234	Uranium-238				
Sample I.D.:	LCS12675	LCS12675				
Duplicate Sample I.D.	LCSD12675	LCSD12675				
Sample Result (pCi/L, g, F):	9.7700	10.2000				
1.96 Sigma Unc:	1.8000	1.8600				
Sample Duplicate Result (pCi/L, g, F):	9.7800	9.8100				
Duplicate Sample 1.96 Sigma Unc.	1.7700	1.7700				
Either results below MDC?	N	N				
Relative Percent Difference:	0.10%	3.90%				
Assessment:	Pass	Pass				
% RPD Limit:	25.00%	25.00%				

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Sample Matrix Spike Control Assessment			
Analyte:			
Sample Collection Date:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Spike I.D.:			
MS/MSD Decay Corrected Spike Conc. (pCi/L):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc.(pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike uncertainty (calculated):			
MSD Spike uncertainty (calculated):			
Sample Result:			
Sample 1.96 Sigma Unc.:			
Sample Matrix Spike Result:			
Sample MS 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample MSD 1.96 Sigma Unc.:			
MS % Recovery:			
MSD % Recovery:			
MS Assessment:			
MSD Assessment:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			
Matrix Spike/Matrix Spike Duplicate Sample Assessment			
Analyte:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Sample Matrix Spike Result:			
Sample Matrix Spike 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:			
MS/MSD Relative Percent Difference:			
MS/ MSD RPD Assessment:			
% RPD Limit:			

Comments:

8/9/12

Quality Control Sample Performance Assessment

RCDU Upload

Analyst: LAL
Date: 7/30/2012 Method: HSL-300m
Worklist: 12675 SOP: PGH-R-008
Matrix: Soil MB Sample ID: 466065

Method Blank Assessment

Analyte	Activity	1.96 Sig Unc.	MDC	Critical Value	Flag	Assessment
Thorium-232	-0.0036	0.0214	0.0336	0.00930		
Thorium-230	0.0090	0.0344	0.0710	0.02670		
Thorium-228	0.1520	0.0757	0.0986	0.03950		

Laboratory Control Sample Assessment

	LCS	LCSD	LCS	LCSD	LCS	LCSD
Analyte:	Thorium-230					
Count Date:	7/27/12 13:11	7/27/12 13:11				
Spike I.D.:	12-018	12-018				
Spike Concentration (pCi/L):	26.497	26.497				
Volume Used (mL):	0.100	0.100				
Aliquot Volume (L, g, F):	0.500	0.500				
Target Conc. (pCi/L, g, F):	5.299	5.299				
1.96 Sigma Uncertainty (Calculated):	0.312	0.312				
Result (pCi/L, g, F):	4.780	4.810				
1.96 Sigma Unc:	0.830	0.832				
% Recovery:	90.20%	90.77%				
Assessment:	Pass	Pass				
Upper % Recovery Limits:	125.00%	125.00%				
Lower % Recovery Limits:	75.00%	75.00%				

Duplicate Sample Assessment

LCS/LCSD Y or N?:	Y					
Analyte:	Thorium-230					
Sample I.D.:	LCS12675					
Duplicate Sample I.D.	LCSD12675					
Sample Result (pCi/L, g, F):	4.7800					
1.96 Sigma Unc:	0.8300					
Sample Duplicate Result (pCi/L, g, F):	4.8100					
Duplicate Sample 1.96 Sigma Unc.	0.8320					
Either results below MDC?	N					
Relative Percent Difference:	0.63%					
Assessment:	Pass					
% RPD Limit:	25.00%					

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Sample Matrix Spike Control Assessment

Analyte:			
Sample Collection Date:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Spike I.D.:			
MS/MSD Decay Corrected Spike Conc. (pCi/L):			
Spike Volume Used in MS (mL):			
Spike Volume Used in MSD (mL):			
MS Aliquot (L, g, F):			
MS Target Conc.(pCi/L, g, F):			
MSD Aliquot (L, g, F):			
MSD Target Conc. (pCi/L, g, F):			
MS Spike uncertainty (calculated):			
MSD Spike uncertainty (calculated):			
Sample Result:			
Sample 1.96 Sigma Unc.:			
Sample Matrix Spike Result:			
Sample MS 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample MSD 1.96 Sigma Unc.:			
MS % Recovery:			
MSD % Recovery:			
MS Assessment:			
MSD Assessment:			
MS/MSD Upper % Recovery Limits:			
MS/MSD Lower % Recovery Limits:			

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Analyte:			
Sample I.D.			
Sample MS I.D.			
Sample MSD I.D.			
Sample Matrix Spike Result:			
Sample Matrix Spike 1.96 Sigma Unc.:			
Sample Matrix Spike Duplicate Result:			
Sample Matrix Spike Duplicate 1.96 Sigma Unc.:			
MS/MSD Relative Percent Difference:			
MS/ MSD RPD Assessment:			
% RPD Limit:			

Comments:

8/9/12

Gamma Spec Quality Control Sample Performance Assessment

Pace Analytical
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Analyst: Hoover
Date: 8/8/2012
Worklist: 12641
Matrix: Soil

Geometry: 8 Oz Can
Activity Units: pCi
Aliquot Units: Gram

Method Blank Assessment

Analytes of Interest	MB Result	2 Sigma CSU	MB MDC	Numerical Indicator	MB Evaluation
Potassium-40	-0.117	0.553	0.767	0.415	Pass
Cobalt-60	-0.019	0.0940	0.0650	0.396	Pass
Cesium-137	0.0200	0.0360	0.0600	1.089	Pass
Thallium-208	-0.011	0.0720	0.0580	0.299	Pass
Lead-210	5 11	14.3	24.7	0.700	Pass
Bismuth-214	-0.107	2.38	0.445	0.088	Pass
Lead-214	0.0990	0.0750	0.114	2.587	Pass
Radium-223	0.001000	0.00200	0.342	0.980	Pass
Radium-226	0.0200	0.0220	0.165	1.782	Pass
Actinium-228	0.0210	0.0360	0 239	1.143	Pass
Protactinium-231	-0.733	1.56	2.65	0.921	Pass
Protactinium-234	1.73	3.37	5.83	1.006	Pass
Protactinium-234M	1.73	3.37	5.83	1.006	Pass
Uranium-235	0.000	0.0370	0.0660	0.000	Pass
Radium-228	0.0210	0.0360	0.239	1.143	Pass
Bismuth-212	0.191	0.454	0.790	0.825	Pass
Lead-212	-0.044	18.9	0.0970	0.005	Pass
Thorium-234	0.148	1.14	2.01	0.254	Pass
Actinium-227	0.203	0.227	0.274	1.753	Pass

Duplicate Sample Precision Assessment

	Sample ID:		Duplicate Sample ID:				
Analytes of Interest	Sample Results	Sample 2 Sigma CSU	Duplicate Results	Duplicate 2 Sigma CSU	Numerical Indicator	% RPD	Evaluation
Potassium-40					#DIV/0!	#DIV/0!	#DIV/0!
Cobalt-60					#DIV/0!	#DIV/0!	#DIV/0!
Cesium-137					#DIV/0!	#DIV/0!	#DIV/0!
Thallium-208					#DIV/0!	#DIV/0!	#DIV/0!
Lead-210					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-214					#DIV/0!	#DIV/0!	#DIV/0!
Lead-214					#DIV/0!	#DIV/0!	#DIV/0!
Radium-223					#DIV/0!	#DIV/0!	#DIV/0!
Radium-226					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-228					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-231					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234					#DIV/0!	#DIV/0!	#DIV/0!
Protactinium-234M					#DIV/0!	#DIV/0!	#DIV/0!
Uranium-235					#DIV/0!	#DIV/0!	#DIV/0!
Radium-228					#DIV/0!	#DIV/0!	#DIV/0!
Bismuth-212					#DIV/0!	#DIV/0!	#DIV/0!
Lead-212					#DIV/0!	#DIV/0!	#DIV/0!
Thorium-234					#DIV/0!	#DIV/0!	#DIV/0!
Actinium-227					#DIV/0!	#DIV/0!	#DIV/0!

Duplicate LCS Precision Assessment

Analyte	LCS Concentration	LCS 2 Sigma CSU	LCSD Concentration	LCSD 2 Sigma CSU	Numerical Indicator	Percent RPD	Precision Evaluation
Am-241	1.022	0.525	1.109	0.508	-0.233	8.1%	Pass
Cs-137	5.524	0.581	5.549	0.583	-0.060	0.5%	Pass
Co-60	3.886	0.406	3.868	0.406	0.060	0.5%	Pass

Laboratory Control Sample Assessment

	Analyte	Am-241	Cs-137	Co-60
	Count Date	8/5/2012	8/5/2012	8/5/2012
	Reference ID	09-039Am	09-039Cs	09-039Co
Volume or Mass of	Reference Concentration	1.044	4.931	3.632
Reference Geometry	Reference Uncertainty	0.059	0.059	0.059
	LCS Concentration	1.0222	5.5237	3.8859
	LCS 2 Sigma CSU	0.525	0.581	0.406
	Numerical Indicator	0.08	-1.99	-1.21
	Percent Recovery	98.0%	112.0%	107.0%
	LCS Evaluation	Pass	Pass	Pass

Laboratory Control Sample Duplicate Assessment

Analyte	Am-241	Cs-137	Co-60
Count Date	8/6/2012	8/6/2012	8/6/2012
Reference ID	09-039Am	09-039Cs	09-039Co
Reference Concentration	1.044	4.931	3.632
Reference Uncertainty	0.059	0.059	0.059
LCSD Concentration	1.109	5.549	3.8684
LCSD 2 Sigma CSU	0.508	0.583	0.406
Numerical Indicator	-0.25	-2.07	-1 13
Percent Recovery	106.3%	112.5%	106.5%
LCSD Evaluation	Pass	Pass	Pass

Evaluation: If the sample or Duplicate sample activity is below the associated MDC, the %RPD evaluation is not applicable and the sample duplicate precision criteria is acceptable.

8/9/12

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QUALIFIERS

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA	Pace Analytical Services - Greensburg

BATCH QUALIFIERS

Batch: MSV/13346

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1c	The response for DCB is high in the closing calibration check standard associated with the analysis of this sample. Recovery may be biased high.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
N2	The lab does not hold TNI accreditation for this parameter.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NIACET CHARACTERIZATION
Pace Project No.: 3073114

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
3073114004	**BLD6102-HSB234-COMP**	EPA 3510	OEXT/12149	EPA 8081	GCSV/4671
3073114004	**BLD6102-HSB234-COMP**	EPA 3546	OEXT/12140	EPA 8082	GCSV/4666
3073114004	**BLD6102-HSB234-COMP**	EPA 3005	MPRP/8712	EPA 6010	ICP/8162
3073114004	**BLD6102-HSB234-COMP**	EPA 7470	MERP/3729	EPA 7470	MERC/3584
3073114004	**BLD6102-HSB234-COMP**	EPA 3510	OEXT/12158	EPA 8270	MSSV/4145
3073114004	**BLD6102-HSB234-COMP**	EPA 8260	MSV/13346		
3073114004	**BLD6102-HSB234-COMP**	ASTM D2974-87	PMST/3283		
3073114001	**BLD6102-HSB1-COMP**	EPA 901.1m	RADC/12641		
3073114002	**BLD6102-HSB1-GRAB**	EPA 901.1m	RADC/12641		
3073114003	**BLD6102-HSB234-COMP**	EPA 901.1m	RADC/12641		
3073114001	**BLD6102-HSB1-COMP**	HSL-300m	RADC/12675		
3073114002	**BLD6102-HSB1-GRAB**	HSL-300m	RADC/12675		
3073114003	**BLD6102-HSB234-COMP**	HSL-300m	RADC/12675		

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

July 23, 2012

Carin Ferris
PASI Pittsburgh
1638 Roseytown Road
Greensburg, PA 15601

RE: Project 20141448
Project ID: 3073114 / Los Alamos

Dear Carin Ferris:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karen Brown
karen.brown@pacelabs.com

REPORT OF LABORATORY ANALYSIS

Cover No Results 7/23/2012 13:16

Laboratory Certifications

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141448

Client: PASI Pittsburgh

Project ID: 3073114 / Los Alamos

Washington Department of Ecology C2078

Oregon Environmental Laboratory Accreditation - LA200001

U.S. Dept. of Agriculture Foreign Soil Import P330-10-00119

Pennsylvania Dept. of Env Protection (NELAC) 68-04202

Texas Commission on Env. Quality (NELAC) T104704405-09-TX

Kansas Department of Health and Environment (NELAC) E-10266

Florida Department of Health (NELAC) E87595

Oklahoma Department of Environmental Quality - 2010-139

Illinois Environmental Protection Agency - 0025721

California Env. Lab Accreditation Program Branch - 11277CA

Louisiana Dept. of Environmental Quality (NELAC/LELAP) 02006

REPORT OF LABORATORY ANALYSIS

Sample Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141448

Client: PASI Pittsburgh

Project ID: 3073114 / Los Alamos

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
BLD6102-HSB234-COMP	201004999	Other	10-Jul-12 15:30	14-Jul-12 08:20

Project Narrative

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141448

Sample Receipt Condition:

All samples were received in accordance with EPA protocol.

Holding Times:

All holding times were met.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogates:

All surrogate recoveries were within QC limits.

QC Cross Reference

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141448

Analytical Method	Batch	Sample used for QC
EPA 8151	188683	Batch sample from another client

Narrative1 7/23/2012 13:17:26

For the sample used as the original for the DUP or MS/MSD for the batch:

Project sample means a sample from this project was used.
Client sample means a sample from the same client but in a different project was used.
Batch sample means a sample from a different client was used.

Sample Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Client: PASI Pittsburgh

Client ID: BLD6102-HSB234-COMP
Project: 20141448
Project ID: 3073114 / Los Alamos
Site: None
Lab ID: 201004999 (TCLP)
Matrix: Other
% Moisture: n/a
Description: None
Prep Level: TCLP
Batch: 188683
Method: EPA 8151 (TCLP)
8151 Herbs TCLP
Collected: 10-Jul-12
Received: 14-Jul-12
Prepared: 19-Jul-12

Units: mg/L

CAS No.	Analyte	Dilution	Result	Qu	Reporting Limit	Reg Limit	Analysis	
94-75-7	2,4-D	1	ND		0.0200	10.0	20-Jul-12 21:37	SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	1.00	20-Jul-12 21:37	SPP1

2 compound(s) reported

Protocol 7/23/2012 13:17:27

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Pace Analytical Services, Inc.
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(504) 469-0333

Surrogate Recovery

Batch: 188683 **Project:** 20141448

Method: TCLP GC Semivolatile Organics

Lab ID	Sample ID	Qu	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
201006296	188683 BLANK 1		53	52						
201006479	188683 BLANK 2		90	87						
201006297	188683 LCS 1		135	128						
201004999	BLD6102-HSB234-COMP		89	86						
201006298	PUMA-SV-12 MS 1		44	44						
201006299	PUMA-SV-12 MSD 1		101	102						
	QC limits:		10-166	10-166						

Sur 1: 2,4-DCPA (Conf)(S)
Sur 2: 2,4-DCPA (S)

*** denotes surrogate recovery outside of QC limits.**
D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Quality Control

Batch: 188683 **Project:** 20141448 **LCS:** 20100629 20-Jul-12 17:41

Method: TCLP GC Semivolatile Organics **MS:** 20100629 20-Jul-12 18:45

Units: mg/L **MSD:** 20100629 20-Jul-12 19:07

Original for MS: Batch Sample 201005267

Parameter Name	LCS Spike	LCS Found	LCS %Rec	MS Spike	Sample Found	MS Found	MSD Found	MS %Rec	MSD %Rec	RPD	QC Limits LCS	QC Limits MS/MSD	Max RPD	Qu
2,4-D	0.200	0.178	89	0.200		0.0691	0.169	35	85	84 *	10-159	10-167	27	
2,4,5-TP (Silvex)	0.0200	0.0187	93	0.0200		0.00763	0.0182	38	91	82 *	30-165	31-168	20	

2 compound(s) reported

QC Protocol 7/23/2012 13:17:30

*** denotes recovery outside of QC limits.**
MS/MSD RPD is calculated via SW-846 rules on the basis of spiked sample concentrations rather than spike recoveries.

Blank Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 188683 BLANK 1 **Project:** 20141448

Lab ID: 201006296

Prep Level: TCLP **Batch:** 188683

Method: TCLP GC Semivolatile Organics

Prepared: 19-Jul-12

Units: mg/L

CAS Numb	Analyte	Dilution	Result	Qu	Reporting Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	20-Jul-12 16:58 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	20-Jul-12 16:58 SPP1

2 compound(s) reported

Protocol Blank 7/23/2012 13:17:31

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Blank Results

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Blank ID: 188683 BLANK 2 **Project:** 20141448

Lab ID: 201006479

Prep Level: TCLP **Batch:** 188683

Method: TCLP GC Semivolatile Organics

Prepared: 19-Jul-12

Units: mg/L

CAS Numb	Analyte	Dilution	Result	Qu	Reporting Limit	Analysis
94-75-7	2,4-D	1	ND		0.0200	20-Jul-12 17:19 SPP1
93-72-1	2,4,5-TP (Silvex)	1	ND		0.0200	20-Jul-12 17:19 SPP1

2 compound(s) reported

Protocol Blank 7/23/2012 13:17:31

ND denotes the analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.

Limits are corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
Regulatory limit may denote an actual regulatory limit or a client-requested notification limit.

Definitions/Qualifiers

Pace Analytical Services, Inc.
1000 Riverbend Blvd. Suite F
St. Rose, LA 70087
(504) 469-0333

Project: 20141448

Value	Description
J	This estimated value for the analyte is below the adjusted reporting limit but above the instrument reporting limit.
U	The analyte was analyzed for but not detected at the reporting limit or method detection limit indicated.
B	This analyte was detected in the method blank.
E	The sample concentration is above the linear calibrated range of the analysis.
LCS	Laboratory Control Sample.
MS(D)	Matrix Spike (Duplicate).
DUP	Sample Duplicate.
RPD	Relative Percent Difference.

Pace Analytical Services, In
1000 Riverbend Blvd. Suite F
St. Rose, LA 7008
(504) 469-033

Chains of Custody

Chain of Custody

Workorder: 3073114 **Workorder Name:** NIACET CHARACTERIZATION **Owner Received Date:** 7/11/2012 **Results Requested By:** 7/26/2012

Report To	Subcontract To
Carin Ferris Pace Analytical Services, Inc. 1638 Roseytown Road Greensburg, PA 15601 Phone (724)850-5600 Fax (999)999-9999	Pace Analytical New Orleans 1000 Riverbend Blvd Suite F St. Rose, LA 70087 Phone 1(504)469-0333

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP Herbicides	2,4-D	2,4,5-TP	LAB USE ONLY
1	BLD6102-HSB234-COMP	PS	7/10/2012 15:30	3073114004	Solid	1	✓	✓	✓	
2										
3										
4										
5										

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7/13 1400		
2	[signature]		[signature]	7/14/12 0820
3				

Comments

Cooler Temperature on Receipt 3.0 °C **Custody Seal** (Y) or N **Received on Ice** (Y) or N **Samples Intact** (Y) or N

Pace Analytical

1000 Riverbend. Blvd., Suite F
St. Rose, LA 70087

Sample Cond

20141448 PASI-PITT

Courier: ☐ Pace Courier ☐ Hackbarth ☑ Fed X ☐ UPS ☐ DHL ☐ USPS ☐ Customer ☐ Other

Custody Seal on Cooler/Box Present: [see COC] **Custody Seals Intact:** ☑Yes ☐No

Therometer Used: ☑ Therm Fisher IR 1 ☐ Therm Fisher IR 2 ☐ Therm Fisher IR 4

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and initials of person examining contents: IN 7/14/12

Temp must be measured from Temperature blank when present

		Comments:
Temperature Blank Present"?	☑Yes ☐No ☐N/A	1
Chain of Custody Present:	☑Yes ☐No ☐N/A	2
Chain of Custody Complete:	☑Yes ☐No ☐N/A	3
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	4
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	5
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	6
Sufficient Volume:	☑Yes ☐No ☐N/A	7
Correct Containers Used:	☑Yes ☐No ☐N/A	8
Filtered vol. Rec. for Diss. tests	☐Yes ☑No ☐N/A	9
Sample Labels match COC:	☑Yes ☐No ☐N/A	10
All containers received within manafacture's precautionary and/or expiration dates.	☑Yes ☐No ☐N/A	11
All containers needing preservation have been checked (except VOA, coliform, & O&G).	☑Yes ☐No ☐N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	13 If No, was preserative added? ☐Yes ☐No If added record lot no.: HNO3 _____ H2SO4 _____
Samples checked for dechlorination:	☐Yes ☑No ☐N/A	14
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	14
Trip Blank Present:	☐Yes ☑No ☐N/A	16
Trip Blank Custody Seals Present	☐Yes ☑No ☐N/A	17
Pace Trip Blank Lot # (if purchased): N/A		18

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

ALLC003rev.06, 28Jul2010 - mod

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1581820

Section A — **Required** Client Information:

Company:	LATA
Address:	33 WASHINGTON HWY AMHERST, NY 14226
Email To:	JMOORE@LATA.COM
Phone:	716 830 9634 Fax:
Requested Due Date/TAT:	NA

Section B — **Required** Project Information:

Report To:	James Moore
Copy To:	Jason Reynolds
Purchase Order No.:	
Project Name:	NIACET CHARACTERIZATION
Project Number:	11170.003

Section C — Invoice Information:

Attention:	James Moore
Company Name:	LATA
Address:	756 PARKMEADOW RD WESTERVILLE, OH 43081
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Requested Analysis Filtered (Y/N)

Section D — **Required** Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	FULL GAMMA	ALPHA ISO U	ALPHA ISO Th	Gultcap - VOC/SVOC/Metals/Pest/Herb	PCB	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	BLDG102-HSB1-COMP	SL	C	7-10-12	1:30pm	SAME		80°F	1	X									X	X	X				001
2	BLDG102-HSB1-GRAB	SL	G	7-10-12	2pm	SAME		80°F	1	X									X	X	X				002
3	BLDG102-HSB234-COMP	SL	C	7-10-12	3pm	SAME		80°F	1	X									X	X	X				003
4	BLDG102-HSB234-COMP	SL	C	7-10-12	3:30pm	SAME		80°F	1	X												X			004
5	BLDG102-HSB234-COMP	SL	C	7-10-12	3:30pm	SAME		80°F	1	X													X		↓
6																									
7																									
8																									
9																									
10																									
11																									
12																									

3073114

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				Amanda Shirey PACE	7/11/12	0910	1.9°	Y	Y	Y/N

ASY-NTZ

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jason Reynolds

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 7-10-12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: LATA Project # 30731114

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 8716 2 4608 5070

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used (5) 6 7 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 1.9°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: AJS 7/11/12

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☑No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☐No ☑N/A	6.
Rush Turn Around Time Requested:	☐Yes ☐No ☑N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☑No ☐N/A	
Containers Intact:	☐Yes ☑No ☐N/A	10. See below.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed AJS / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: James Moore Date/Time: 7/11/12

Comments/ Resolution: Sample BLD10102-HSB1-GRAB was broken. Salvaged sample from bubble bag but it is contaminated with cooler water.

Proceed w/ analysis CAF 7/11/12

Project Manager Review: Carla Sais **Date:** 7/11/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical

Project Number: 3073114

Client Name: LATA

Item No.	Matrix Code	Glass Jar (120 / (250) / 500 / (1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	SL	1																						
↓	↓	↓																						
003		↓																						
004		1-250ml																						
005	↓	1																						

SCURF Back (C016-4 15May2012).xls