January 31, 2013

Ms. Holly Burke
State Cooperative Program/Remedial Section
Kansas Department of Health and Environment
1000 SW Jackson Street, Suite 410
Topeka, Kansas 66612-1367

Project 07-119.200

RE: Cherryvale, Kansas Residential Removal Action Final Report

Dear Ms. Burke,

Please find attached the revised final removal action report for the Cherryvale Kansas residential lead removal action. This includes the items described in the November 28, 2012 and the January 4, 2013 letter from KDHE to William Anderson.

Should you have any questions, please contact me at 713-468-5886 or email to mlandress@projectnavigator.com.

Sincerely,

Mark Landress P.G. Kansas Licensed Geologist No. 793
Project Navigator, Ltd.

Attachment

Cc: William C. Anderson, Doerner, Saunders, Daniel & Anderson, L.L.P.
Jeffrey L. Rey, United States Steel Corporation
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Andrew G. Thiros, United States Steel Corporation
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Cherryvale, Kansas
Residential Soil Removal Action Summary Report

Prepared for:
Kansas Department of Health and Environment

Prepared by:
Project Navigator, Ltd.
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Houston, TX 77024

On behalf of:
United States Steel Corporation and
Citigroup Global Market Holdings, Inc.

January, 2013
Revised

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1.0 Introduction

On behalf of United States Steel Corporation and Citigroup Global Market Holdings, Inc., Respondents to Consent Order Case No. 03-E-0222, as amended (Respondents), Project Navigator Ltd. (PNL) presents this following Removal Action Summary Report detailing the soil removal activities performed in response to the Kansas Department of Health and Environment (KDHE) Letter entitled Cherryvale, KS Residential Soil Evaluation, dated November 15, 2011.

This report summarizes site activities performed for the residential soil remediation at the residential properties designated as 500, 502, 504, 506, 508 Coyle Street, 501 Martin Street, 502 and 508 Liberty Street. The subject residential properties are hereafter referred to as the "Residential Sites". A location map of the area is included as Figure 1.

2.0 Background Information

The subject Residential Sites are immediately south of the former National Zinc Smelter facility on the northern edge of Cherryvale, KS. The history and details of the facility are documented in various site reports which are on file at KDHE and are discussed in the aforementioned Cherryvale, Kansas Residential Soil Evaluation dated November 2011.

2.1 Site Description

The Residential Sites consists of residential parcels in the City of Cherryvale immediately south of the former National Zinc Smelter site and also located south of the City Water Plant. The status of the subject parcels is summarized below. The site features are depicted in *Figure 2*.

Property	Building Status	Status Action
500 Coyle	Single wide trailer Demolished	Vacant, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
502 Coyle	Small shed. Demolished	Vacant, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
504 Coyle	Single wide trailer Demolished	Vacant, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
506 Coyle	Single wide trailer Demolished	Vacant, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
508 Coyle	None	Vacant, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
501 Martin	Single wide Trailer. Remain in place.	Occupied, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
502 Liberty	Double wide manufactured home with outbuildings. Remain in place.	Occupied, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.
508 Liberty	Double wide manufactured home with outbuildings. Remain in place.	Occupied, Remediated. Backfilled with clean soil and sodded. Orange marker fabric in place for areas above KDHE residential soil limits.

Initial pre-remedial observations indicated the possible presence of fill containing slag and smelter debris along the north property line at 506 Coyle Street. The area with the slag consisting of coarse black and granular fragments was identified by the

property owner. Sampling of the location by KDHE indicated elevated lead concentrations above residential soil limits. Measurements made in auger holes indicated slag fill approximately 12 inches thick was present at 500, 502, 504 and 506 Coyle Street under the soil and driveway. Other properties examined showed native soil or clean soil fill with small slag fragments sporadically observed at the surface.

Smelter-related materials observed in the Residential Sites are characterized by black and dark brown to ashy colored material with vitreous fragments and includes coarse clinker, purple and green ceramic retort fragments, varying amounts of brick, rocky fill, and soil. Slag fill was observed to be dry when encountered in place and ranged in size from sand sized particles to very coarse fragments up to 6 inches in size.

The following sections describe the work performed at the subject properties.

3.0 Remedial Activities

The following sections discuss the remedial work conducted by Entact with oversight conducted by PNL. Field construction and dirt work was performed by Entact LLC, on behalf of the Respondents. Logs of Entact's activities are provided in Appendix E. Construction management, oversight and testing was performed by Phil Jen, PG, Melissa Nelson and Mark Landress, PG of Project Navigator, Ltd. Land surveying was performed by Cornerstone Surveying of Independence, KS.

3.1 Site Preparation, Soil Removal, Transport and Disposal

The remedial objective was to remove soils containing lead above the KDHE residential soil limit of 400 mg/kg according to the soil removal work plan.

Prior to remediation work, utility clearances were performed by Entact through Kansas One-call. Gas, telephone, cable, power, sewer and water lines were present on the properties and all utilities were marked and / or de-energized by the utility contractors. Land boundaries were marked by the surveyor and the limits of excavation established. Residents were requested to move any moveable items including cars, lawn equipment, wood and trailers. Trailers scheduled for demolition were examined and photographed and landowners had the opportunity to remove any items prior to demolition. Because trailers and other items remained on the Marler/Wood property at the time of mobilization, consent to remove these items was received from these owners. (See Appendix C) Major onsite activities began May 7, 2012 starting with the removal and disposal of dilapidated structures and concluded June 8, 2012 with the completion of sod installation on remediated properties.

Soils containing lead concentrations greater than or equal to 400 mg/kg were excavated to a nominal depth between 1 and two feet below surface grade (bgs). Any visible slag fill was removed. The excavation depth was determined using the results from the pre-remedial residential soil evaluation (PNL, November 2011) and depth was measured manually in the field with measuring tapes. The excavation areas are depicted in Figure 2 and 3. Excavation was performed up to the road edge or was bounded by the surveyed property line. Materials encountered

matched those anticipated from the pre-remedial investigation. Slag was observed at the road edge on the north side of Front Street and sporadically along the west side of Coyle Street. This material possibly extends under the asphalt pavement. Material under the road was not removed. Marker fabric was placed along the edge of the excavations where denoted on the map.

Several 8 to10 foot diameter brick-lined cisterns or dug wells were uncovered during the excavation work which were not encountered in the pre-remedial investigation. The cisterns at 502 and 506 Coyle Street contained slag fill. The cistern at 502 N Liberty Street contained brick, glass and soil. Cisterns were excavated an additional 2 feet below the bottom of the excavation to remove the fill material. At 502 and 506 Coyle Street, water was observed at 4 feet below ground surface and excavation was halted at this depth. No water was observed at 502 N Liberty. Marker fabric was used to indicate the bottom of the excavation and limestone base material was used to fill the cisterns to the surrounding excavation depth prior to backfill with clean soil. Photos of the cisterns are included in Appendix D of this report.

Excavation equipment consisted of a small track-hoe, and two front-end loaders and several 8-10 cubic yard dump trucks. Excavation around structures and utilities was carefully executed to prevent any damage to these features. In areas where soil could not be excavated with heavy equipment, shovels and hand tools were utilized for soil removal. Soils in areas where roots from trees and shrubs were located were carefully excavated to the extent possible around the roots, usually just below the grass line. Care was taken to maintain the root structures so trees would not be killed from the excavation. In these areas, soil above the lead screening limit remain in place.

Areas where soils remain above the screening limit are depicted on the Figure 3 with spot readings posted to characterize the metal levels remaining in place in areas around tree roots and utility corridors.

Excavated soil was transported to the EPA Repository located at former National Zinc Smelter Site where it was temporarily stockpiled pending final placement. The stockpiled soil was graded and covered with protective tarps and sand bags. The estimated in place soil volume removed was approximately 2,800 cubic yards. The soil stockpile cover was reconstructed in September 2012 following damage from a hail storm. Final placement of the stockpiled soil will be managed under a separate plan dealing with the EPA Repository. Photos of the reconstructed cover are in Appendix D.

Following removal of the soils to the target excavation depth, a final XRF screen was performed and points flagged for confirmation sampling. Confirmation sampling is discussed below.

3.2 XRF Screening

XRF screening was performed to confirm soil was removed to below KDHE residential soil limits for lead. An Innov-X Alpha portable X-ray XRF analyzer operating in soil mode was utilized for the screening. Screening consisted of spot readings taken on the soil surface at multiple locations within the excavation. Individual spot readings are tabulated in Table 2. Since clearance was confirmed by

laboratory results, individual readings used to spot-check soil excavation is tabulated in a summary format.

3.3 Field QA / QC

Field QA/QC included instrument checks for battery level, physical condition, stable operation, duplicate analysis and standard cross-check performed periodically during the work. The instrument was initially factory calibrated prior to use and it employs an external standardization plate which checks detector resolution and peak function. The instrument standardization is performed on start-up and after 4 hours of use. The internal software will inhibit the instrument if the unit does not pass one or more internal checks during standardization. Replicate analysis on individual samples, internal calibration using the manufacturer supplied standardization plates comprise the instrument operational check. NIST standards and replicate analyses are used to check the reproducibility of the instrument in the field.

QA/QC results comparing XRF results to NIST standards is compiled in Table 3. For NIST standards, a percent difference (PD) of less than 20 percent between the field reading and the known standard concentration was the target. The A PD of 18.5 and 5.3 was calculated for the NIST standards. These values are below 20% and therefore pass QA/QC.

The reproducibility of the X-ray analysis on duplicate samples was calculated as part of the QA/QC work by calculating the relative standard deviation (RSD). The RSD target is a value below 20. Average RSD for duplicate samples was calculated at 8. This value is below the RSD target of 20 and therefore pass QA/QC. RSD values are summarized in Table 4.

3.4 X-Ray Instrument License and Safety

The instrument operators received X-ray radiation safety training prior to the use of the instrument in Kansas, and PNL holds a KDHE BEH Radiation and Asbestos Control Section Certificate of Registration No. 7192 to operate XRF analyzers in the State of Kansas.

3.5 Confirmation Sampling

Confirmation sampling was conducted following general guidelines found in EPA OSWER 9285.7-50 Superfund Lead-Contaminated Residential Sites Handbook as amended. Excavation floor samples were taken in each designated sub-grid and composited into a representative sample from within the main grid. Sampling grids were represented by the same grid system utilized during the site investigation and is depicted in Figure 2.

Composite samples collected were placed in 4 oz jars supplied by the laboratory and were labeled, placed in an ice filled cooler, and shipped overnight to the laboratory for analysis. Soil samples were analyzed on an expedited turnaround time to speed up the closure process. Excavations were left open until confirmation samples showed they were below specified limits for lead in soil.

At request of KDHE, one side wall grab samples was collected east of 502 and 508 N. Liberty at the east property boundary. Twenty-three confirmation samples (including the two side wall samples) were submitted to the laboratory for analysis. Figure 2 depicts the approximate locations where confirmation samples were collected.

3.6 Laboratory Analysis

Laboratory analysis of onsite composite samples was performed by Pace Analytical in Lenexa, Kansas. Soil confirmation samples were labeled, placed into laboratory-supplied containers and preserved on ice for delivery to the lab while maintaining proper chain of custody procedures. Confirmation Samples were analyzed for lead, arsenic, cadmium and zinc by EPA method 6010. Duplicate samples analyzed by KDHE included lead, arsenic and cadmium.

3.7 Marker Fabric

Marker fabric consisting of flexible orange barrier fencing was used to delimit areas where soils remained in place above KDHE residential soil limits for either lead or arsenic. A 10 foot wide zone along Front street east of Coyle street and on the east side of Coyle street was excavated to approximately 6-8 inches depth to prevent damage to sewer, gas line utilities and trees tree roots. These areas were marked with orange marker fabric prior to backfill.

Confirmation samples for areas excavated beyond tree drip lines and utility corridor all tested below removal levels for lead. Several samples contained elevated concentrations of arsenic (further discussed in Section 4). These areas were also identified with orange marker fabric. The use of marker fabric in the areas where exceedances of arsenic above 11.3 mg/kg in soil remaining was discussed and approved by KDHE in the correspondence dated May 23, 2012 which is included in Appendix C.

3.8 Excavation Backfill and Re-vegetation

After confirmation sample analysis indicated excavated areas were below residential soil limits, fill material was imported from a near by source approved by KDHE to backfill and replace all soil removed during the excavation. The analytical data for the soil sample collected from the borrow source area is included in Appendix A.

Soil was placed with loaders, spread and lightly compacted to grade. Drainage around the property perimeters was re-established prior to sod placement. Gravel driveways were replaced with similar materials from nearby commercial sources and sod consisting of fescue and Bermuda grass obtained from commercial vendors by Entact was laid in the remaining areas. Grass was watered using a water truck for 4 weeks after the sod installation to insure that the grasses would take root.

Following the 4-week watering period, land owners resumed responsibility for normal maintenance and grass watering for their individual properties. Notice letters provided to property owners to resume watering responsibilities are attached in Appendix C. Follow up with residents regarding inspection of the properties and sod

condition was done on August 28, 2012. PNL met with Mr. Stuart Perez at his residence. No other residents were available at the time.

4.0 Analytical Results

Soil samples analyzed in a commercial laboratory were used to confirm the removal of impacted soil. A total of 23 samples were sent for laboratory analysis by PNL with 5 split samples collected by KDHE. The analytical results of the soil samples are presented in Table 1, the sample numbering is keyed to the map in Figure 3.

4.1 Composite Samples

Composite samples collected were analyzed for lead, arsenic, cadmium, and zinc using EPA method 6010 by Pace Analytical. Prior to backfilling the excavated areas, composite samples were analyzed and the laboratory analytical results were provided to KDHE for review. Of the 21 composite confirmation samples PNL collected, and the 5 duplicate samples KDHE collected, none reported concentrations exceeding the KDHE Tier 2 Soil Pathway for cadmium or lead. Concentrations exceeding the residential soil screening limit for arsenic were detected in 13 of the 21 samples collected by PNL and 4 of the 5 duplicate samples collected by KDHE. The analytical results are tabulated in Table 1 and laboratory analytical is in Appendix B.

4.2 Sidewall Samples

KDHE requested that two sidewall samples be collected along the DOT right of way east of 502 and 508 N. Liberty. The locations of the sidewall samples are depicted in Figure 3. The sidewall sample collected on the 508 N. Liberty reported an arsenic concentration of 11.7 mg/kg and the sidewall sample collected at 502 N. Liberty reported arsenic at 21.8 mg/kg and lead at 830 mg/kg. Soils in this area show some residual smelter material associated with old brick sidewalks now covered under the Liberty street overpass. The analytical results of the sidewall samples are available in Table 1 of this report.

5.0 Conclusion

The residential soil excavation activities conducted at 500, 502, 504, 506, 508 Coyle Street, 501 Martin Street, 502 and 508 Liberty Street was performed by Entact, with screening and confirmation sampling provided by PNL. Additional oversight was performed by KDHE. The Residential Sites work was performed as per the soil removal plan.

Onsite activities started May 7, 2012 beginning with the removal and disposal of dilapidated structures. Site excavation and backfilling activities began May 14, 2012 and concluded with the completion of sod installation June 8, 2012. After the sod installation was completed daily watering to help the sod take root was performed until July 6, 2012.

The residential soil remediation achieved the goal of removing soils identified in the residential soil evaluation report dated November 2011 that exceeded the KDHE

residential soil screening limit of 400 mg/kg for lead as indicated from confirmation sampling. Exceedances of arsenic above the screening limit of 11.3 mg/kg for arsenic was observed in several samples. As per guidance from KDHE, orange marker fabric was used to mark the boundaries of where the bottom of excavation and side wall samples exceeded residential screening limits for lead and arsenic.

6.0 References

EPA. *Superfund Lead-Contaminated Residential Sites Handbook*, OSWER 9285.7.50, EPA, 2003.

TetraTech. *Removal Action Summary Report, National Zinc Site, Cherryvale, KS*. U.S. EPA Region 7 START 2, Contract No. 68-S7-01-41, Task Order No. 0063, EM, 2002.

Project Navigator, LTD. *Cherryvale, Kansas Residential Soil Evaluation*. November 2011.

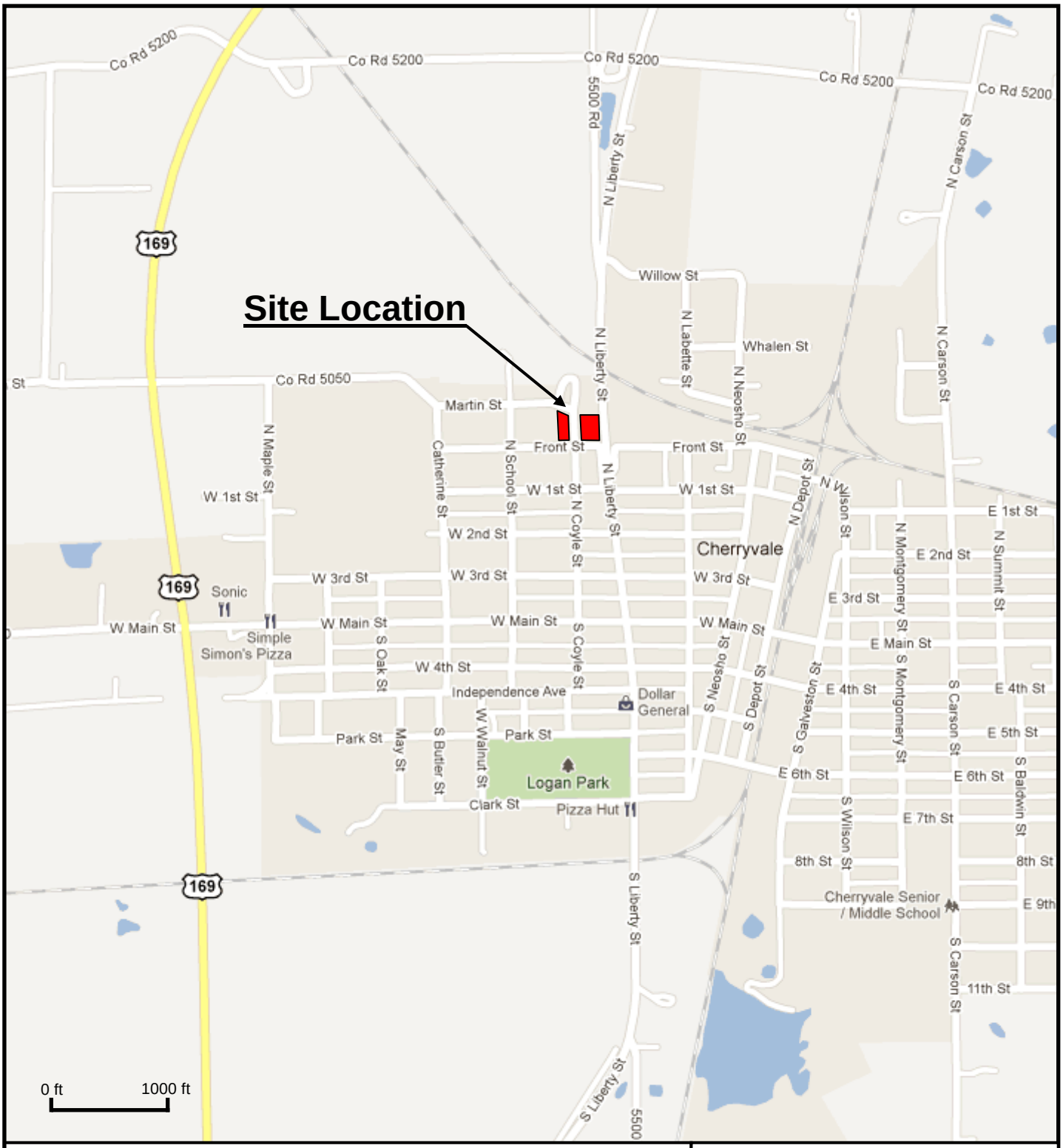
Project Navigator, LTD. *Cherryvale, Kansas Residential Soil Excavation Workplan*. December 2011.

Kansas Department of Health and Environment Bureau of Environmental Regulation, *Risk-Based Standards for Kansas (RSK) Manual 5th Version*, 2010

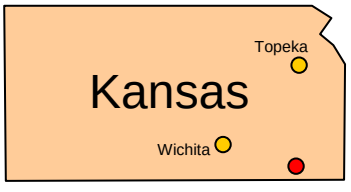
Figures

Residential Removal Action

Cherryvale, KS



N



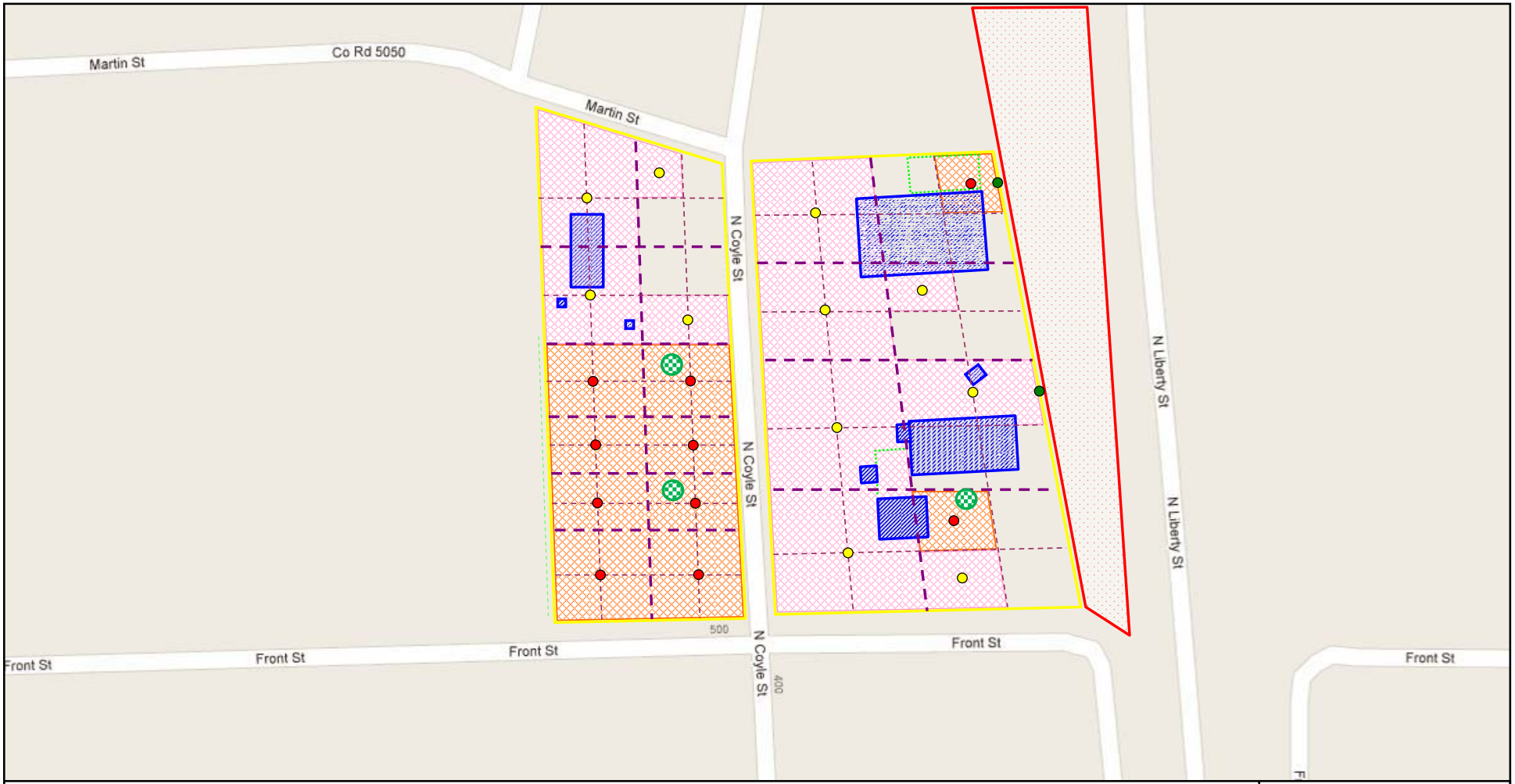
Site Location

PROJECT NAVIGATOR, LTD.

FIGURE 1

SITE LOCATION MAP
CHERRYVALE RESIDENTIAL SOIL REMOVAL AREA
CHERRYVALE, KANSAS

DATE	PROJECT NUMBER
MAY 2012	07-119



N

0 ft 50 ft

PROJECT NAVIGATOR, LTD.

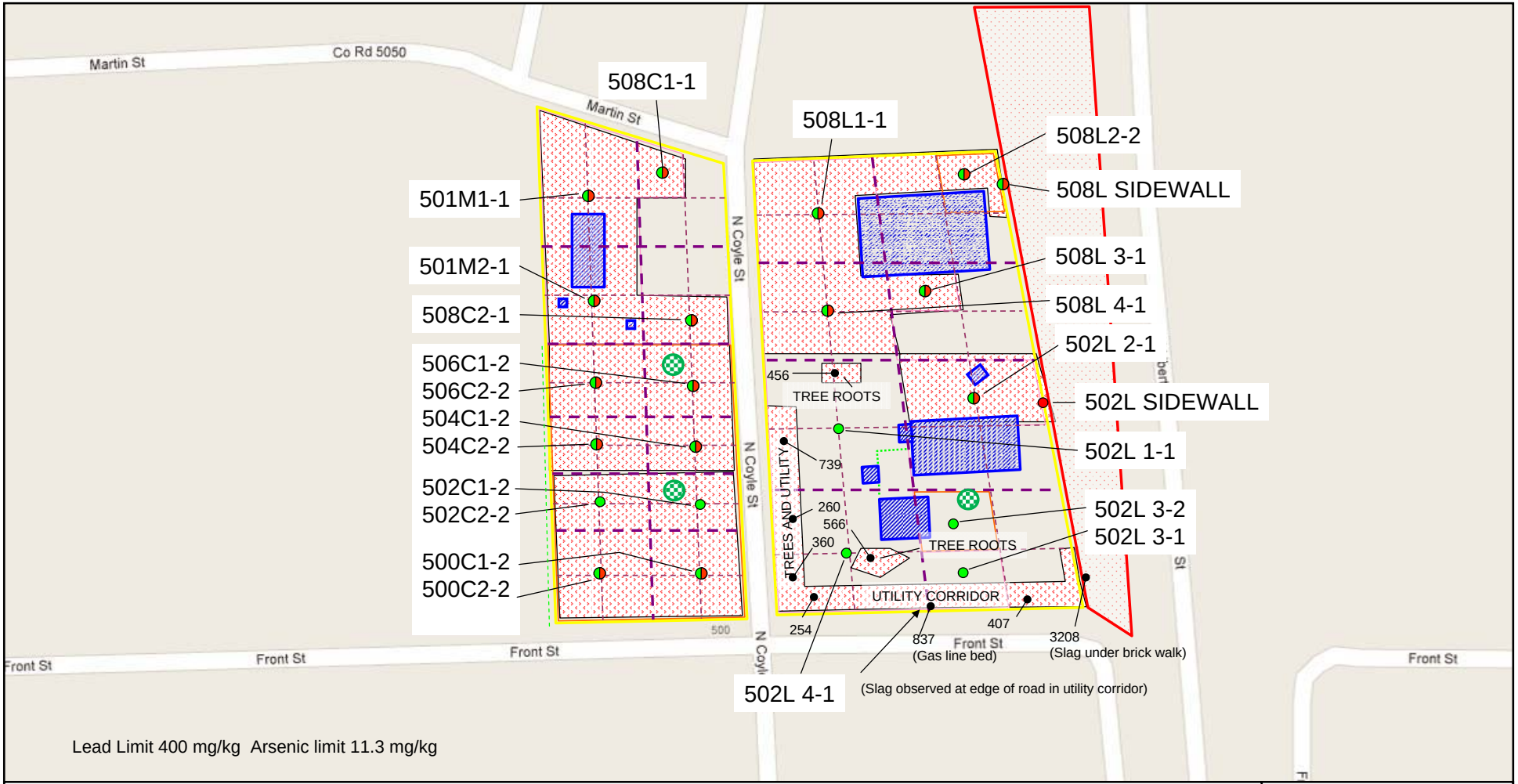
LEGEND

- EASTERN BOUNDARY SAMPLES
- 1-FT COMPOSITE CONFIRMATION SAMPLE
- 2-FT COMPOISITE CONFIRMATION SAMPLE
- STUDY AREA BOUNDRY
- EXCAVATION GRID
- EXCAVATION SUB-GRID
- FENCE LINE
- STRUCTURE
- DOT EASEMENT
- 1 FT EXCAVATION DEPTH
- 2 FT EXCAVATION DEPTH
- CISTERN

FIGURE 2

EXCAVATION AREAS CONFIRMATION SAMPLE LOCATION MAP CHERRYVALE RESIDENTIAL REMOVAL AREA CHERRYVALE, KANSAS

DATE	PROJECT NUMBER
JUNE 2012	07-119



Lead Limit 400 mg/kg Arsenic limit 11.3 mg/kg

N

0 ft 50 ft

Lead Arsenic

COMPOSITE WITH NO EXCEDENCE

COMPOSITE WITH EXCEDENCE

SPOT LEAD XRF READING REMAINING UNDER FABRIC (mg/kg)

LEGEND

STUDY AREA BOUNDRY

EXCAVATION GRID

EXCAVATION SUB-GRID

FENCE LINE

STRUCTURE

DOT ROAD EASEMENT

MARKER FABRIC

CISTERN

PROJECT NAVIGATOR, LTD.

FIGURE 3

CLEARANCE SAMPLES MARKER FABRIC LOCATION CHERRYVALE, RESIDENTIAL REMOVAL AREA CHERRYVALE, KANSAS

DATE	PROJECT NUMBER
JUNE , 2012	07-119

Tables

Residential Removal Action

Cherryvale, KS

Table 1
Composite Soil Samples Laboratory Analytical Results
National Zinc Residential Soil Remediation
Cherryvale, KS

Sample Location	Date	Lead		Arsenic		Cadmium		Zinc
		PNL	KDHE	PNL	KDHE	PNL	KDHE	Zn
500C-1-2'	5/17/2012	31.20	35.00	**12.50**	**14.20**	2.00	6.72	152.00
500C-2-2'	5/17/2012	24.80	44.40	9.50	**13.00**	ND	6.94	388.00
502C-1-2'	5/17/2012	23.60	--	7.10	--	1.40	--	126.00
502C-2-2'	5/17/2012	26.60	--	9.00	--	ND	--	197.00
504C-1-2'	5/17/2012	46.20	38.10	**13.00**	9.95	3.60	25.1	298.00
504C-2-2'	5/17/2012	35.70	36.40	**12.50**	**12.50**	3.30	5.27	144.00
506C-1-2'	5/17/2012	26.00	41.60	9.00	**14.10**	1.60	5.93	198.00
506C-2-2'	5/17/2012	52.20	--	**18.00**	--	7.20	--	459.00
508C-1-1'	5/21/2012	74.70	--	**13.40**	--	5.40	--	1250.00
508C-2-1'	5/21/2012	112.00	--	**18.10**	--	8.40	--	999.00
501M-1-1'	5/21/2012	94.50	--	**14.00**	--	9.10	--	1260.00
501M-2-1'	5/21/2012	70.50	--	**14.20**	--	4.50	--	842.00
502L-1-1'	5/24/2012	47.90	--	10.50	--	4.30	--	713.00
502L-2-1'	5/24/2012	207.00	--	**15.30**	--	12.10	--	1450.00
502L-3-1'	5/24/2012	34.10	--	7.80	--	2.70	--	594.00
502L-3-2'	5/24/2012	49.30	--	10.60	--	2.60	--	457.00
502L-4-1'	5/24/2012	52.40	--	10.40	--	5.80	--	979.00
508L-1-1'	5/30/2012	49.50	--	**13.00**	--	3.50	--	788.00
508L-2-2'	5/30/2012	99.60	--	**12.00**	--	2.50	--	660.00
508L-3-1'	5/30/2012	88.50	--	**18.00**	--	6.20	--	469.00
508L-4-1'	5/30/2012	64.80	--	**17.30**	--	7.10	--	1010.00
502L-SIDE	5/24/2012	**830.00**	--	**21.80**	--	20.10	--	15500.00
508L-SIDE	5/30/2012	53.00	--	**11.70**	--	4.30	--	777.00
KDHE Tier 2 Soil Pathway		***400***		***11.3***		***39***		***23500***

notes:

1. All concentrations are reported in mg/kg.
2. ND = Not Detected
3. Numbers in bold and red font exceed their respective Tier 2 concentration limits.
4. -- = no split sample taken by KDHE at this location.

Table 2 - XRF Field Sample Result Summary

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
1	14-May-12	40	13	341	36	<LOD	127	Soil	TEST RUN	DUP
2	14-May-12	27	4	295	13	<LOD	49	Soil	TEST RUN	DUP
3	14-May-12	52	3	225	7	<LOD	31	Soil	TEST RUN	DUP
4	14-May-12	46	4	435	11	<LOD	35	Soil	TEST RUN	DUP
5	16-May-12	123	5	3435	41	<LOD	38	Soil	SPOT SAMPLE	
6	16-May-12	546	12	4979	58	<LOD	40	Soil	SPOT SAMPLE	
7	16-May-12	70	3	288	6	<LOD	23	Soil	SPOT SAMPLE	
8	16-May-12	208	7	3196	42	<LOD	41	Soil	SPOT SAMPLE	
9	16-May-12	410	8	5170	51	<LOD	33	Soil	SPOT SAMPLE	
10	16-May-12	703	14	7848	90	<LOD	42	Soil	SPOT SAMPLE	
11	17-May-12	66	5	942	20	<LOD	44	Soil	SPOT SAMPLE	
12	17-May-12	147	7	1961	33	<LOD	46	Soil	SPOT SAMPLE	
13	17-May-12	71	5	1197	24	<LOD	46	Soil	SPOT SAMPLE	
14	17-May-12	89	6	1281	25	<LOD	46	Soil	SPOT SAMPLE	
15	17-May-12	306	10	4183	60	<LOD	47	Soil	SPOT SAMPLE	
16	17-May-12	358	12	4098	65	<LOD	51	Soil	SPOT SAMPLE	
17	17-May-12	51	5	674	17	<LOD	44	Soil	SPOT SAMPLE	
18	17-May-12	15	4	267	11	<LOD	46	Soil	SPOT SAMPLE	
19	17-May-12	304	10	3287	52	<LOD	50	Soil	SPOT SAMPLE	
20	17-May-12	42	5	707	19	<LOD	50	Soil	SPOT SAMPLE	
21	17-May-12	101	7	1044	25	<LOD	52	Soil	SPOT SAMPLE	
22	17-May-12	112	6	1495	27	<LOD	45	Soil	SPOT SAMPLE	
23	17-May-12	182	8	2105	36	<LOD	47	Soil	SPOT SAMPLE	
24	17-May-12	92	6	1451	30	<LOD	50	Soil	SPOT SAMPLE	
25	17-May-12	51	5	630	17	<LOD	50	Soil	SPOT SAMPLE	
26	17-May-12	193	8	1287	26	<LOD	48	Soil	SPOT SAMPLE	
27	17-May-12	66	5	1299	26	<LOD	48	Soil	SPOT SAMPLE	
28	17-May-12	51	5	1043	22	<LOD	46	Soil	SPOT SAMPLE	
29	17-May-12	<LOD	9	212	9	<LOD	42	Soil	SPOT SAMPLE	
30	17-May-12	212	8	2913	45	<LOD	47	Soil	SPOT SAMPLE	
31	17-May-12	32	5	618	17	<LOD	49	Soil	SPOT SAMPLE	
32	17-May-12	484	14	110	7	478	18	Soil	SPOT SAMPLE	
33	17-May-12	353	11	3630	53	<LOD	47	Soil	SPOT SAMPLE	
34	17-May-12	19	4	259	11	<LOD	50	Soil	SPOT SAMPLE	
35	17-May-12	33	4	539	15	<LOD	45	Soil	SPOT SAMPLE	
36	17-May-12	157	7	2970	45	<LOD	46	Soil	SPOT SAMPLE	DUP
37	17-May-12	135	7	2288	37	<LOD	47	Soil	SPOT SAMPLE	DUP
38	17-May-12	96	6	1426	29	<LOD	49	Soil	SPOT SAMPLE	
39	17-May-12	16	4	343	12	<LOD	48	Soil	SPOT SAMPLE	
40	17-May-12	212	9	9092	119	<LOD	49	Soil	SPOT SAMPLE	
41	17-May-12	35	5	749	18	<LOD	47	Soil	SPOT SAMPLE	
42	17-May-12	26	5	414	16	<LOD	59	Soil	SPOT SAMPLE	
43	17-May-12	27	4	378	13	<LOD	48	Soil	SPOT SAMPLE	
44	17-May-12	37	4	626	16	<LOD	45	Soil	SPOT SAMPLE	
45	17-May-12	184	7	103	6	154	13	Soil	SPOT SAMPLE	
46	17-May-12	26	4	312	11	<LOD	43	Soil	SPOT SAMPLE	
47	17-May-12	13	3	140	7	<LOD	41	Soil	SPOT SAMPLE	
48	17-May-12	28	4	172	8	<LOD	44	Soil	SPOT SAMPLE	DUP
49	17-May-12	26	4	151	8	<LOD	45	Soil	SPOT SAMPLE	DUP
50	17-May-12	20	4	183	8	<LOD	44	Soil	SPOT SAMPLE	
51	17-May-12	24	4	201	9	<LOD	43	Soil	SPOT SAMPLE	
52	17-May-12	16	3	163	8	<LOD	41	Soil	506C-2-2'	
53	17-May-12	<LOD	11	256	11	<LOD	49	Soil	BLANK	BLANK
54	17-May-12	24	4	289	10	<LOD	42	Soil	506C-1-2'	
55	17-May-12	26	4	236	10	<LOD	47	Soil	504C-1-2'	
56	17-May-12	28	4	293	10	<LOD	44	Soil	504C-2-2'	
57	17-May-12	15	3	133	7	<LOD	42	Soil	502C-2-2'	
58	17-May-12	18	3	188	8	<LOD	40	Soil	502C-1-2'	
59	17-May-12	<LOD	10	180	8	<LOD	40	Soil	BLANK	BLANK
60	17-May-12	10	3	157	8	43	14	Soil	500C-1-2'	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
61	17-May-12	19	4	330	11	<LOD	42	Soil	500C-2-2'	
62	17-May-12	130	6	1152	23	<LOD	44	Soil	Tree base-S	
63	17-May-12	443	11	6046	71	43	14	Soil	Tree base-NW	
64	17-May-12	423	10	3874	49	45	14	Soil	Tree base-N	
65	17-May-12	154	6	2812	36	<LOD	39	Soil	Tree base-NW	
66	17-May-12	619	13	6511	77	<LOD	43	Soil	Tree base-N	
67	17-May-12	478	10	7464	78	<LOD	39	Soil	Tree base-N	
68	18-May-12	75	5	927	18	<LOD	39	Soil	SPOT SAMPLE	
69	18-May-12	71	5	1364	24	<LOD	43	Soil	SPOT SAMPLE	
70	18-May-12	961	18	8130	100	<LOD	45	Soil	SPOT SAMPLE	
71	18-May-12	465	11	7065	81	42	14	Soil	SPOT SAMPLE	
72	18-May-12	413	9	3295	40	<LOD	37	Soil	SPOT SAMPLE	
73	18-May-12	618	14	4452	61	<LOD	46	Soil	SPOT SAMPLE	
74	18-May-12	742	15	5840	72	55	15	Soil	SPOT SAMPLE	
75	18-May-12	30	4	271	9	<LOD	41	Soil	SPOT SAMPLE	
76	18-May-12	118	6	2091	32	<LOD	42	Soil	SPOT SAMPLE	
77	18-May-12	243	9	2074	36	<LOD	49	Soil	SPOT SAMPLE	
78	18-May-12	121	6	994	21	<LOD	45	Soil	SPOT SAMPLE	
79	21-May-12	82	5	1033	20	<LOD	41	Soil	508C SE	
80	21-May-12	138	7	1666	29	<LOD	46	Soil	508C NE	
81	21-May-12	67	5	1002	20	<LOD	44	Soil	508C NW	
82	21-May-12	216	8	2151	35	<LOD	45	Soil	501 M 2 SE	
83	21-May-12	107	6	1185	23	<LOD	43	Soil	501 M 2 NE	
84	21-May-12	68	5	1119	23	<LOD	45	Soil	501 M 2 SW	DUP
85	21-May-12	57	5	757	17	<LOD	42	Soil	501 M 2 NW	DUP
86	21-May-12	67	5	1504	26	<LOD	43	Soil	501 M 1 SW	
87	21-May-12	37	4	371	11	<LOD	41	Soil	501 M 1 NW	
88	21-May-12	520	13	4620	63	<LOD	46	Soil	501 M 1 NE BY TREE	
89	21-May-12	189	7	1773	29	<LOD	43	Soil	501 M 1 SE	
90	21-May-12	243	9	2171	36	<LOD	46	Soil	508 C 1-1 SE	
91	21-May-12	57	5	1387	25	<LOD	43	Soil	508 C 1-1 NE	
92	21-May-12	433	11	5465	71	<LOD	46	Soil	508 C 1-1 NW	
93	21-May-12	313	9	2565	38	<LOD	43	Soil	508 C 1-1 SW	
94	21-May-12	47	4	381	11	42	14	Soil	508 C 1-1 COMP	
95	21-May-12	65	5	936	18	<LOD	41	Soil	SPOT SAMPLE	
96	21-May-12	42	4	548	14	<LOD	42	Soil	SPOT SAMPLE	
97	21-May-12	266	9	2415	36	<LOD	43	Soil	SPOT SAMPLE	
98	21-May-12	145	7	1536	27	<LOD	44	Soil	SPOT SAMPLE	
99	21-May-12	145	7	2430	37	<LOD	44	Soil	SPOT SAMPLE	
100	21-May-12	43	4	1214	23	<LOD	44	Soil	SPOT SAMPLE	
101	21-May-12	47	5	876	19	<LOD	44	Soil	SPOT SAMPLE	
102	21-May-12	57	4	602	14	<LOD	41	Soil	SPOT SAMPLE	
103	21-May-12	26	4	674	16	<LOD	43	Soil	SPOT SAMPLE	
104	21-May-12	59	4	1140	21	<LOD	40	Soil	SPOT SAMPLE	
105	21-May-12	322	9	1100	20	<LOD	40	Soil	SPOT SAMPLE	
106	21-May-12	35	4	602	15	<LOD	43	Soil	SPOT SAMPLE	
107	21-May-12	135	6	1924	31	<LOD	43	Soil	SPOT SAMPLE	
108	21-May-12	42	5	268	11	<LOD	46	Soil	SPOT SAMPLE	
109	21-May-12	39	4	195	8	<LOD	43	Soil	SPOT SAMPLE	
110	21-May-12	430	9	1046	17	<LOD	36	Soil	SPOT SAMPLE	
111	21-May-12	312	9	998	21	<LOD	45	Soil	SPOT SAMPLE	
112	21-May-12	240	8	1804	30	<LOD	44	Soil	SPOT SAMPLE	
113	21-May-12	274	8	2455	36	<LOD	43	Soil	SPOT SAMPLE	
114	21-May-12	182	8	1422	27	<LOD	47	Soil	SPOT SAMPLE	
115	21-May-12	150	7	3226	49	<LOD	44	Soil	SPOT SAMPLE	
116	21-May-12	74	4	180	7	<LOD	36	Soil	SPOT SAMPLE	
117	21-May-12	110	6	733	16	<LOD	41	Soil	SPOT SAMPLE	
118	21-May-12	172	7	1276	23	<LOD	43	Soil	502 L 4 CENTER	
119	21-May-12	80	5	829	17	<LOD	41	Soil	502 L 4 NE	
120	21-May-12	243	8	1501	27	<LOD	44	Soil	502 L 3 W	
121	21-May-12	276	9	2015	32	<LOD	43	Soil	SPOT SAMPLE	
122	21-May-12	59	4	1129	21	<LOD	42	Soil	502 L 3 MID	
123	21-May-12	193	7	1443	26	<LOD	44	Soil	502 L 3 MID	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
124	21-May-12	177	7	1517	27	<LOD	45	Soil	502 L 3 EAST	
125	21-May-12	736	16	3865	55	<LOD	46	Soil	SPOT SAMPLE	
126	21-May-12	1266	22	4449	60	<LOD	46	Soil	SPOT SAMPLE	
127	21-May-12	754	15	3225	46	<LOD	44	Soil	SPOT SAMPLE	
128	21-May-12	729	15	1740	30	<LOD	45	Soil	SPOT SAMPLE	
129	21-May-12	574	13	3417	48	<LOD	44	Soil	SPOT SAMPLE	
130	21-May-12	648	14	4483	59	50	15	Soil	SPOT SAMPLE	
131	21-May-12	1788	34	43389	573	114	18	Soil	SPOT SAMPLE	
132	21-May-12	814	17	2186	36	<LOD	45	Soil	SPOT SAMPLE	
133	21-May-12	39	4	670	14	<LOD	39	Soil	SPOT SAMPLE	
134	21-May-12	151	6	1379	23	<LOD	41	Soil	SPOT SAMPLE	
135	21-May-12	1455	29	76656	1003	<LOD	54	Soil	SPOT SAMPLE	
136	21-May-12	632	14	3420	49	<LOD	45	Soil	SPOT SAMPLE	
137	21-May-12	126	6	1223	22	<LOD	42	Soil	SPOT SAMPLE	
138	21-May-12	234	9	4854	70	<LOD	50	Soil	SPOT SAMPLE	
139	21-May-12	666	16	4648	67	<LOD	49	Soil	SPOT SAMPLE	
140	21-May-12	83	4	780	15	<LOD	37	Soil	SPOT SAMPLE	
141	21-May-12	114	6	4037	55	<LOD	44	Soil	SPOT SAMPLE	
142	21-May-12	238	8	1907	29	<LOD	41	Soil	SPOT SAMPLE	
143	21-May-12	75	5	289	11	<LOD	45	Soil	SPOT SAMPLE	
144	21-May-12	84	5	854	19	<LOD	44	Soil	SPOT SAMPLE	
145	21-May-12	249	8	7720	89	<LOD	42	Soil	SPOT SAMPLE	
146	21-May-12	119	6	982	20	<LOD	44	Soil	SPOT SAMPLE	
147	21-May-12	156	7	1017	23	<LOD	47	Soil	SPOT SAMPLE	DUP
148	21-May-12	126	6	1107	21	<LOD	43	Soil	SPOT SAMPLE	DUP
149	21-May-12	539	13	3854	53	<LOD	45	Soil	SPOT SAMPLE	
150	21-May-12	47	4	345	11	<LOD	42	Soil	SPOT SAMPLE	
151	21-May-12	264	8	1573	26	<LOD	41	Soil	SPOT SAMPLE	
152	21-May-12	169	7	1163	22	<LOD	43	Soil	SPOT SAMPLE	
153	22-May-12	133	6	1705	26	<LOD	39	Soil	SPOT SAMPLE	
154	22-May-12	169	6	1603	26	<LOD	41	Soil	SPOT SAMPLE	
155	22-May-12	44	4	1237	21	<LOD	40	Soil	SPOT SAMPLE	
156	22-May-12	103	5	1398	23	<LOD	40	Soil	SPOT SAMPLE	
157	22-May-12	28	3	2238	29	<LOD	36	Soil	SPOT SAMPLE	
158	22-May-12	2489	39	54752	649	<LOD	50	Soil	502 L2 SIDE	
159	22-May-12	692	14	8867	99	<LOD	41	Soil	502 L-2	
160	22-May-12	653	14	4757	61	45	15	Soil	502 L-2	
161	22-May-12	141	7	1401	26	<LOD	45	Soil	503-L-3	
162	22-May-12	125	6	1355	25	<LOD	43	Soil	503-L-3	
163	22-May-12	336	9	2004	31	<LOD	41	Soil	SPOT SAMPLE	
164	22-May-12	34	4	702	15	<LOD	40	Soil	502 L3	
165	22-May-12	111	6	1283	24	<LOD	43	Soil	502 L3	
166	22-May-12	61	5	511	14	<LOD	43	Soil	502 L3	
167	22-May-12	18	3	186	8	<LOD	39	Soil	502 L3	
168	22-May-12	208	8	1397	25	<LOD	44	Soil	502 L3	DUP
169	22-May-12	204	7	1147	21	<LOD	42	Soil	502 L3	DUP
170	22-May-12	35	4	643	17	<LOD	46	Soil	502 L3	
171	22-May-12	2083	32	17731	207	<LOD	47	Soil	SIDE LIB RD	
172	22-May-12	80	5	1498	27	<LOD	45	Soil	SPOT SAMPLE	
173	22-May-12	52	5	504	14	<LOD	44	Soil	DUP 1	DUP
174	22-May-12	35	4	393	11	<LOD	39	Soil	DUP 2	DUP
175	22-May-12	269	8	2013	31	<LOD	42	Soil	SPOT SAMPLE	
176	22-May-12	297	9	1643	27	<LOD	41	Soil	SPOT SAMPLE	DUP
177	22-May-12	263	9	1479	26	<LOD	43	Soil	SPOT SAMPLE	DUP
178	22-May-12	166	7	1706	30	<LOD	45	Soil	SPOT SAMPLE	
179	22-May-12	29	4	1062	20	<LOD	42	Soil	SPOT SAMPLE	
180	22-May-12	335	9	1666	26	<LOD	39	Soil	SPOT SAMPLE	
181	22-May-12	23	4	1049	21	<LOD	44	Soil	SPOT SAMPLE	
182	22-May-12	78	5	1700	27	<LOD	41	Soil	SPOT SAMPLE	
183	22-May-12	356	10	2708	40	<LOD	43	Soil	SPOT SAMPLE	
184	22-May-12	429	13	3001	50	<LOD	51	Soil	SPOT SAMPLE	
185	22-May-12	513	12	3359	48	<LOD	45	Soil	SPOT SAMPLE	
186	22-May-12	544	13	3510	50	<LOD	46	Soil	SPOT SAMPLE	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
187	22-May-12	31	4	1658	27	<LOD	42	Soil	SPOT SAMPLE	
188	22-May-12	332	10	3566	52	<LOD	46	Soil	SPOT SAMPLE	
189	22-May-12	1345	23	8918	110	<LOD	46	Soil	SPOT SAMPLE	
190	22-May-12	12	3	1310	23	<LOD	42	Soil	SPOT SAMPLE	
191	22-May-12	224	8	3877	51	<LOD	43	Soil	SPOT SAMPLE	
192	22-May-12	483	12	2860	42	<LOD	45	Soil	SPOT SAMPLE	
193	22-May-12	308	9	2530	38	<LOD	43	Soil	SPOT SAMPLE	
194	22-May-12	332	10	2230	35	<LOD	44	Soil	SPOT SAMPLE	
195	22-May-12	20	4	386	12	<LOD	43	Soil	SPOT SAMPLE	
196	22-May-12	72	5	1392	24	<LOD	41	Soil	SPOT SAMPLE	
197	22-May-12	2397	39	18605	240	<LOD	51	Soil	SPOT SAMPLE	
198	22-May-12	206	8	1883	31	<LOD	43	Soil	SPOT SAMPLE	
199	22-May-12	611	14	4180	58	<LOD	45	Soil	SPOT SAMPLE	
200	22-May-12	241	8	2422	36	<LOD	43	Soil	SPOT SAMPLE	
201	22-May-12	23	4	1145	21	<LOD	41	Soil	SPOT SAMPLE	
202	22-May-12	64	5	1374	24	<LOD	41	Soil	SPOT SAMPLE	
203	22-May-12	838	16	3657	51	<LOD	44	Soil	SPOT SAMPLE	
204	22-May-12	1282	23	30343	351	<LOD	48	Soil	SPOT SAMPLE	
205	22-May-12	463	13	7894	110	<LOD	52	Soil	SPOT SAMPLE	
206	22-May-12	545	12	2696	39	55	15	Soil	SPOT SAMPLE	
207	22-May-12	64	5	1011	21	<LOD	43	Soil	SPOT SAMPLE	
208	22-May-12	561	13	3045	46	<LOD	45	Soil	SPOT SAMPLE	
209	22-May-12	474	15	2714	50	<LOD	55	Soil	SPOT SAMPLE	
210	22-May-12	203	7	2108	32	<LOD	42	Soil	SPOT SAMPLE	
211	22-May-12	96	6	2189	35	<LOD	45	Soil	SPOT SAMPLE	
212	22-May-12	621	14	3585	50	<LOD	45	Soil	SPOT SAMPLE	
213	22-May-12	1338	23	5942	77	<LOD	45	Soil	SPOT SAMPLE	
214	22-May-12	527	13	2201	36	<LOD	46	Soil	SPOT SAMPLE	
215	22-May-12	79	5	979	20	<LOD	44	Soil	SPOT SAMPLE	
216	22-May-12	1213	22	6480	84	<LOD	47	Soil	SPOT SAMPLE	
217	22-May-12	425	11	2888	42	<LOD	45	Soil	SPOT SAMPLE	
218	22-May-12	812	17	5518	74	65	16	Soil	SPOT SAMPLE	
219	22-May-12	313	10	2191	36	<LOD	45	Soil	SPOT SAMPLE	
220	22-May-12	3111	46	28202	340	<LOD	50	Soil	SPOT SAMPLE	
221	22-May-12	592	13	3308	46	<LOD	43	Soil	SPOT SAMPLE	
222	22-May-12	1041	20	6197	84	<LOD	48	Soil	SPOT SAMPLE	
223	22-May-12	615	15	3085	50	<LOD	50	Soil	SPOT SAMPLE	
224	22-May-12	721	16	5902	80	<LOD	47	Soil	SPOT SAMPLE	
225	22-May-12	309	9	1949	31	<LOD	43	Soil	SPOT SAMPLE	
226	22-May-12	179	7	1661	27	<LOD	42	Soil	SPOT SAMPLE	
227	22-May-12	295	10	1908	33	<LOD	47	Soil	SPOT SAMPLE	
228	22-May-12	768	15	4086	54	58	14	Soil	SPOT SAMPLE	
229	22-May-12	617	14	2704	41	<LOD	45	Soil	SPOT SAMPLE	
230	22-May-12	510	13	3612	55	<LOD	48	Soil	SPOT SAMPLE	
231	22-May-12	120	6	1444	25	<LOD	42	Soil	SPOT SAMPLE	
232	22-May-12	71	5	1039	20	<LOD	42	Soil	SPOT SAMPLE	
233	22-May-12	290	9	2581	40	<LOD	45	Soil	SPOT SAMPLE	
234	22-May-12	25	4	378	12	<LOD	42	Soil	SPOT SAMPLE	
235	22-May-12	62	5	761	17	<LOD	42	Soil	SPOT SAMPLE	
236	22-May-12	291	8	1580	26	<LOD	41	Soil	SPOT SAMPLE	
237	22-May-12	158	7	1175	22	<LOD	43	Soil	SPOT SAMPLE	
238	22-May-12	55	5	705	18	<LOD	48	Soil	SPOT SAMPLE	
239	22-May-12	78	5	1480	26	<LOD	44	Soil	SPOT SAMPLE	
240	22-May-12	25	5	213	12	<LOD	56	Soil	SPOT SAMPLE	DUP
241	22-May-12	35	4	557	16	<LOD	47	Soil	SPOT SAMPLE	DUP
242	22-May-12	123	6	872	20	<LOD	46	Soil	SPOT SAMPLE	
243	22-May-12	170	8	1580	30	<LOD	48	Soil	SPOT SAMPLE	
244	22-May-12	83	6	1409	27	<LOD	46	Soil	SPOT SAMPLE	
245	22-May-12	173	7	1185	24	<LOD	45	Soil	SPOT SAMPLE	
246	22-May-12	141	8	869	24	<LOD	56	Soil	SPOT SAMPLE	
247	22-May-12	280	9	2081	35	<LOD	47	Soil	SPOT SAMPLE	
248	22-May-12	444	13	2696	46	<LOD	50	Soil	SPOT SAMPLE	
249	22-May-12	77	6	1409	28	<LOD	49	Soil	SPOT SAMPLE	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
250	22-May-12	14	3	454	12	<LOD	39	Soil	SPOT SAMPLE	
251	22-May-12	20	3	557	13	<LOD	40	Soil	502 L4	
252	22-May-12	60	5	945	19	<LOD	43	Soil	502 L4	
253	22-May-12	31	4	448	13	<LOD	45	Soil	502 L4	
254	22-May-12	135	6	1557	27	<LOD	43	Soil	502 L4	
255	22-May-12	124	6	1394	25	<LOD	44	Soil	502 L4	
256	22-May-12	267	9	1959	32	<LOD	44	Soil	502 L4	
257	22-May-12	68	5	1030	21	<LOD	45	Soil	502 L4 COMP	
258	22-May-12	458	11	2134	33	<LOD	43	Soil	SPOT SAMPLE	
259	22-May-12	422	12	1883	34	<LOD	48	Soil	SPOT SAMPLE	
260	22-May-12	201	7	1937	31	<LOD	44	Soil	SPOT SAMPLE	
261	22-May-12	42	4	2920	40	<LOD	41	Soil	SPOT SAMPLE	
262	22-May-12	35	4	1228	24	<LOD	46	Soil	SPOT SAMPLE	
263	22-May-12	52	4	1047	19	<LOD	40	Soil	SPOT SAMPLE	
264	22-May-12	122	7	1462	29	<LOD	48	Soil	SPOT SAMPLE	
265	22-May-12	246	9	3018	46	<LOD	46	Soil	SPOT SAMPLE	
266	22-May-12	<LOD	11	50	6	<LOD	53	Soil	SPOT SAMPLE	
267	22-May-12	189	7	997	21	<LOD	44	Soil	SPOT SAMPLE	
268	22-May-12	227	8	1298	24	<LOD	44	Soil	SPOT SAMPLE	
269	22-May-12	215	7	914	18	<LOD	41	Soil	SPOT SAMPLE	
270	22-May-12	230	8	1680	30	<LOD	46	Soil	SPOT SAMPLE	
271	22-May-12	352	9	1808	29	<LOD	41	Soil	SPOT SAMPLE	
272	22-May-12	286	9	1799	31	<LOD	45	Soil	SPOT SAMPLE	
273	22-May-12	316	10	2069	36	<LOD	49	Soil	SPOT SAMPLE	
274	22-May-12	247	8	1780	30	<LOD	44	Soil	SPOT SAMPLE	
275	22-May-12	354	11	1801	32	<LOD	47	Soil	SPOT SAMPLE	
276	22-May-12	167	7	1499	28	<LOD	47	Soil	SPOT SAMPLE	
277	22-May-12	222	8	4909	67	<LOD	46	Soil	SPOT SAMPLE	DUP
278	22-May-12	224	8	1779	30	<LOD	45	Soil	SPOT SAMPLE	DUP
279	22-May-12	231	8	1618	29	<LOD	46	Soil	SPOT SAMPLE	
280	22-May-12	158	6	448	12	<LOD	41	Soil	SPOT SAMPLE	
281	22-May-12	122	5	350	10	<LOD	38	Soil	SPOT SAMPLE	
282	22-May-12	871	16	1635	27	<LOD	41	Soil	SPOT SAMPLE	
283	22-May-12	39	4	739	18	<LOD	44	Soil	SPOT SAMPLE	
284	22-May-12	75	5	1251	23	<LOD	44	Soil	SPOT SAMPLE	
285	22-May-12	127	6	1538	26	<LOD	42	Soil	SPOT SAMPLE	
286	22-May-12	169	7	1820	31	47	15	Soil	SPOT SAMPLE	
287	22-May-12	419	11	2518	38	<LOD	44	Soil	SPOT SAMPLE	
288	22-May-12	423	11	2213	36	<LOD	45	Soil	SPOT SAMPLE	
289	22-May-12	182	8	1380	26	<LOD	46	Soil	SPOT SAMPLE	
290	22-May-12	238	8	1835	30	<LOD	43	Soil	SPOT SAMPLE	
291	22-May-12	48	5	1082	24	<LOD	48	Soil	SPOT SAMPLE	
292	22-May-12	49	5	413	13	<LOD	44	Soil	SPOT SAMPLE	
293	22-May-12	250	9	2015	35	<LOD	47	Soil	SPOT SAMPLE	
294	22-May-12	235	8	1715	29	<LOD	43	Soil	SPOT SAMPLE	
295	22-May-12	90	6	923	21	<LOD	47	Soil	SPOT SAMPLE	
296	22-May-12	262	9	2773	43	<LOD	46	Soil	SPOT SAMPLE	
297	22-May-12	607	14	4591	64	<LOD	48	Soil	SPOT SAMPLE	
298	22-May-12	81	5	1189	23	<LOD	45	Soil	SPOT SAMPLE	
299	22-May-12	232	8	2058	32	<LOD	42	Soil	SPOT SAMPLE	
300	22-May-12	139	7	999	22	<LOD	47	Soil	SPOT SAMPLE	
301	22-May-12	87	5	1070	21	<LOD	44	Soil	SPOT SAMPLE	
302	22-May-12	148	7	1045	22	<LOD	46	Soil	SPOT SAMPLE	
303	22-May-12	301	9	3586	49	<LOD	43	Soil	SPOT SAMPLE	
304	22-May-12	72	5	968	20	<LOD	43	Soil	SPOT SAMPLE	
305	22-May-12	227	8	2430	36	<LOD	42	Soil	SPOT SAMPLE	
306	22-May-12	130	5	1037	19	<LOD	38	Soil	SPOT SAMPLE	DUP
307	22-May-12	158	6	1503	25	<LOD	42	Soil	SPOT SAMPLE	DUP
308	22-May-12	181	7	1034	21	<LOD	44	Soil	SPOT SAMPLE	
309	22-May-12	97	5	1114	21	<LOD	42	Soil	SPOT SAMPLE	
310	22-May-12	506	11	1636	26	43	13	Soil	SPOT SAMPLE	
311	22-May-12	526	12	1923	31	<LOD	43	Soil	SPOT SAMPLE	
312	22-May-12	99	5	1035	20	<LOD	41	Soil	SPOT SAMPLE	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
313	22-May-12	552	13	5485	69	45	15	Soil	SPOT SAMPLE	
314	22-May-12	717	14	3148	44	<LOD	43	Soil	SPOT SAMPLE	
315	22-May-12	107	6	1552	28	45	15	Soil	SPOT SAMPLE	
316	22-May-12	67	4	1171	20	<LOD	40	Soil	SPOT SAMPLE	
317	22-May-12	74	5	983	19	<LOD	39	Soil	SPOT SAMPLE	
318	22-May-12	101	5	489	13	<LOD	42	Soil	SPOT SAMPLE	
319	22-May-12	140	6	602	14	<LOD	40	Soil	SPOT SAMPLE	
320	22-May-12	30	4	433	13	<LOD	44	Soil	SPOT SAMPLE	
321	22-May-12	19	3	754	15	<LOD	39	Soil	SPOT SAMPLE	
322	22-May-12	29	4	943	18	<LOD	40	Soil	SPOT SAMPLE	
323	22-May-12	71	5	791	17	<LOD	42	Soil	SPOT SAMPLE	
324	22-May-12	213	8	1582	27	<LOD	43	Soil	SPOT SAMPLE	
325	22-May-12	391	10	2158	32	<LOD	42	Soil	SPOT SAMPLE	
326	22-May-12	518	13	6529	83	<LOD	47	Soil	SPOT SAMPLE	
327	22-May-12	266	9	2971	43	<LOD	43	Soil	SPOT SAMPLE	
328	22-May-12	273	9	4266	60	<LOD	46	Soil	SPOT SAMPLE	
329	23-May-12	540	13	3626	53	<LOD	46	Soil	SPOT SAMPLE	
330	23-May-12	208	8	1714	30	<LOD	46	Soil	SPOT SAMPLE	
331	23-May-12	176	7	1004	20	<LOD	42	Soil	SPOT SAMPLE	
332	23-May-12	44	5	669	17	<LOD	46	Soil	SPOT SAMPLE	
333	23-May-12	111	5	364	10	<LOD	37	Soil	SPOT SAMPLE	
334	23-May-12	55	4	287	9	<LOD	40	Soil	SPOT SAMPLE	
335	23-May-12	42	4	434	13	<LOD	43	Soil	SPOT SAMPLE	
336	23-May-12	250	8	2387	34	<LOD	41	Soil	502 L 1 CLEAR	DUP
337	23-May-12	242	10	1902	36	<LOD	51	Soil	502 L 1 CLEAR	DUP
338	23-May-12	183	8	1997	38	<LOD	51	Soil	502 L 2 CLEAR	
339	23-May-12	38	4	868	18	<LOD	42	Soil	502 L 2 CLEAR	
340	23-May-12	263	9	2400	37	<LOD	44	Soil	502 L 2 CLEAR	
341	23-May-12	63	5	1486	25	<LOD	42	Soil	502 L 2 CLEAR	
342	23-May-12	572	13	4302	58	<LOD	44	Soil	502 L 2 SIDE	
343	23-May-12	368	10	3750	52	<LOD	46	Soil	502 L 2 SIDE	
344	23-May-12	736	16	4607	63	<LOD	44	Soil	502 L 2 SIDE	
345	23-May-12	241	9	2591	42	<LOD	48	Soil	502 L 1 CLEAR	
346	23-May-12	90	5	874	19	<LOD	43	Soil	502 L 1 CLEAR	
347	23-May-12	40	5	733	18	<LOD	47	Soil	502 L 1 CLEAR	
348	23-May-12	374	10	1822	30	<LOD	43	Soil	SPOT SAMPLE	
349	23-May-12	271	9	1863	31	<LOD	44	Soil	SPOT SAMPLE	
350	23-May-12	24	4	399	12	<LOD	41	Soil	SPOT SAMPLE	
351	24-May-12	193	7	1164	21	<LOD	37	Soil	STD 2781	STD
352	24-May-12	195	7	1166	21	<LOD	38	Soil	STD 2781	STD
353	24-May-12	180	7	1137	21	<LOD	39	Soil	STD 2781	STD
354	24-May-12	121	6	400	12	<LOD	41	Soil	STD 2702	STD
355	24-May-12	111	7	374	14	<LOD	49	Soil	STD 2702	STD
356	24-May-12	108	5	394	11	<LOD	40	Soil	STD 2702	STD
357	24-May-12	<LOD	6	<LOD	7	<LOD	36	Soil	BLANK	BLANK
358	24-May-12	254	12	2794	58	<LOD	61	Soil	NEAR HYD	
359	24-May-12	407	12	4358	68	<LOD	50	Soil	BTW HYD TREE	
360	24-May-12	355	12	4431	69	<LOD	53	Soil	TREE BY METER	
361	24-May-12	162	10	1008	29	<LOD	61	Soil	SPOT SAMPLE	
362	24-May-12	46	5	724	18	<LOD	48	Soil	SPOT SAMPLE	
363	24-May-12	3208	57	75354	1072	<LOD	59	Soil	SPOT SAMPLE	
364	24-May-12	352	10	3008	45	<LOD	45	Soil	SIDEWALL	
365	24-May-12	198	9	1083	26	<LOD	53	Soil	SIDEWALL	DUP
366	24-May-12	186	9	1391	30	<LOD	52	Soil	SPOT SAMPLE	DUP
367	24-May-12	148	7	1323	26	<LOD	46	Soil	SPOT SAMPLE	
368	24-May-12	36	5	389	14	<LOD	50	Soil	SPOT SAMPLE	
369	24-May-12	42	5	328	12	<LOD	46	Soil	SPOT SAMPLE	
370	24-May-12	466	15	1249	30	<LOD	57	Soil	SPOT EXCAVATE	
371	24-May-12	81	7	892	27	<LOD	61	Soil	SPOT SAMPLE	DUP
372	24-May-12	85	7	615	21	<LOD	59	Soil	SPOT SAMPLE	DUP
373	24-May-12	77	6	1688	33	<LOD	50	Soil	SPOT SAMPLE	
374	24-May-12	837	19	6936	100	<LOD	51	Soil	ROW EDGE	
375	24-May-12	2955	40	22484	249	<LOD	44	Soil	EDGE W SLAG	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
376	24-May-12	33	4	771	19	<LOD	47	Soil	502 L 4 CLEAR	
377	24-May-12	566	16	5036	82	<LOD	55	Soil	502 L 4 ROOT AREA	
378	24-May-12	294	10	2661	43	<LOD	48	Soil	:OOT AREA AFTER EXC	
379	24-May-12	216	9	1581	32	<LOD	50	Soil	502 L 4 CLEAR	
380	24-May-12	82	5	1133	23	<LOD	44	Soil	502 L 4 CLEAR	
381	24-May-12	204	8	1954	33	<LOD	46	Soil	502 L 4 CLEAR	
382	24-May-12	183	6	1843	27	<LOD	39	Soil	502 L 4 CLEAR	
383	24-May-12	739	16	3433	52	86	16	Soil	CLEARANCE	
384	24-May-12	260	9	2356	38	<LOD	46	Soil	502 L 4 CLEAR	
385	24-May-12	360	10	2653	39	<LOD	43	Soil	502 L 4 CLEAR	
386	24-May-12	254	10	2730	48	<LOD	51	Soil	502 L 4 CLEAR	
387	24-May-12	361	17	3112	75	<LOD	74	Soil	502 L 4 CLEAR	
388	24-May-12	296	9	3166	46	<LOD	45	Soil	502 L 4 CLEAR	
389	24-May-12	20	4	755	18	<LOD	44	Soil	502 L 4 CLEAR	
390	24-May-12	142	7	941	20	53	15	Soil	502 L 4 CLEAR	
391	24-May-12	477	14	3328	56	<LOD	52	Soil	502 L 4 ROOT AREA	
392	24-May-12	57	5	1001	21	<LOD	43	Soil	502 L 4 CLEAR	
393	24-May-12	86	5	1169	22	<LOD	42	Soil	SPOT SAMPLE	
394	24-May-12	456	13	3597	57	<LOD	49	Soil	ROOT	
395	24-May-12	1169	25	4493	73	<LOD	54	Soil	SPOT SAMPLE	
396	24-May-12	297	11	4417	68	57	17	Soil	ROOT	
397	24-May-12	244	9	2193	39	<LOD	50	Soil	ROOT	
398	24-May-12	90	7	1306	29	<LOD	53	Soil	ROOT	
399	24-May-12	40	4	446	13	<LOD	43	Soil	502 L2 CLEAR	DUP
400	24-May-12	41	6	1043	28	<LOD	60	Soil	502 L2 CLEAR	DUP
401	24-May-12	500	14	2519	45	<LOD	52	Soil	502-2 SIDEWALL	
402	24-May-12	44	5	997	24	<LOD	51	Soil	502 L2 CLEAR	
403	24-May-12	53	5	1073	22	<LOD	45	Soil	502 L2 CLEAR	
404	24-May-12	101	7	430	16	<LOD	52	Soil	STD 2702	STD
405	24-May-12	109	6	400	12	<LOD	42	Soil	STD 2702	STD
406	24-May-12	103	7	373	14	<LOD	51	Soil	STD 2702	STD
407	24-May-12	100	7	412	15	<LOD	53	Soil	STD 2702	STD
408	24-May-12	198	6	1186	18	<LOD	33	Soil	STD 2781	STD
409	24-May-12	193	7	1129	21	<LOD	38	Soil	STD 2781	STD
410	24-May-12	200	7	1149	21	<LOD	39	Soil	STD 2781	STD
411	24-May-12	193	7	1142	21	<LOD	39	Soil	STD 2781	STD
412	24-May-12	<LOD	6	<LOD	6	<LOD	31	Soil	BLANK	BLANK
413	30-May-12	<LOD	6	<LOD	8	<LOD	37	Soil	BLANK	BLANK
414	30-May-12	194	6	1130	19	<LOD	36	Soil	2781 STD	STD
415	30-May-12	111	7	427	14	<LOD	46	Soil	2702 STD	STD
416	30-May-12	148	6	1433	24	<LOD	41	Soil	SPOT SAMPLE	
417	30-May-12	71	5	949	18	<LOD	40	Soil	SPOT SAMPLE	

No.	Date	Pb	Pb +/-	Zn	Zn +/-	Cd	Cd +/-	Mode	Note	QA
418	30-May-12	217	8	1408	25	51	14	Soil	SPOT SAMPLE	
419	30-May-12	330	9	1951	31	47	14	Soil	SPOT SAMPLE	
420	30-May-12	215	8	1642	27	<LOD	42	Soil	SPOT SAMPLE	
421	30-May-12	257	8	2550	36	<LOD	40	Soil	SPOT SAMPLE	
422	30-May-12	43	4	566	15	<LOD	44	Soil	SPOT SAMPLE	
423	30-May-12	265	8	1629	25	<LOD	40	Soil	SPOT SAMPLE	
424	30-May-12	200	7	1067	19	<LOD	38	Soil	SPOT SAMPLE	
425	30-May-12	549	13	3918	56	<LOD	46	Soil	SPOT SAMPLE	
426	30-May-12	387	11	2226	35	68	15	Soil	SPOT SAMPLE	
427	30-May-12	53	4	655	15	<LOD	41	Soil	SPOT SAMPLE	
428	30-May-12	112	7	961	24	<LOD	52	Soil	SPOT SAMPLE	
429	30-May-12	36	5	376	13	<LOD	48	Soil	SPOT SAMPLE	
430	30-May-12	61	4	977	19	<LOD	40	Soil	SPOT SAMPLE	
431	30-May-12	23	4	524	14	<LOD	43	Soil	SPOT SAMPLE	
432	30-May-12	188	7	1334	23	<LOD	40	Soil	SPOT SAMPLE	
433	30-May-12	58	4	711	15	<LOD	38	Soil	SPOT SAMPLE	
434	30-May-12	376	11	6059	83	<LOD	48	Soil	SPOT SAMPLE	
435	30-May-12	205	7	905	17	<LOD	39	Soil	SPOT SAMPLE	
436	30-May-12	71	5	847	17	<LOD	40	Soil	508L-1-1'	
437	30-May-12	57	4	524	13	<LOD	41	Soil	508L-4-1'	DUP
438	30-May-12	43	4	302	10	<LOD	39	Soil	508L-4-1'	DUP
439	30-May-12	64	5	542	14	<LOD	43	Soil	508L-2-2'	
440	30-May-12	57	4	865	17	<LOD	40	Soil	502L-SIDE	
441	30-May-12	110	6	406	13	<LOD	45	Soil	2702 STD	STD
442	30-May-12	177	6	1096	20	<LOD	37	Soil	2781 std	STD
443	30-May-12	<LOD	7	<LOD	9	<LOD	38	Soil	BLANK	BLANK
444	30-May-12	<LOD	6	<LOD	8	<LOD	39	Soil	BLANK	BLANK

Results in mg/kg
<LOD = Below limit of detection

Table 3 - XRF Quality Control Summary / NIST Standard

Reading	XRF Pb mg/kg	Pb +/-	NIST 2702 Pb mg/kg	Percent Diff (PD)
1	121	8	132.8	8.9
2	111	8	132.8	16.4
3	108	8	132.8	18.7
4	101	8	132.8	23.9
5	109	8	132.8	17.9
6	103	7	132.8	22.4
7	100	7	132.8	24.7
8	111	7	132.8	16.4
9	110	8	132.8	17.2
			Average PD=	18.5

Target Average PD = 20% Pass

Reading	XRF Pb mg/kg	Pb +/-	NIST 2781 Pb mg/kg	Percent Diff (PD)
1	193	7	202.1	4.5
2	195	7	202.1	3.5
3	180	7	202.1	10.9
4	198	7	202.1	2.0
5	193	7	202.1	4.5
6	200	7	202.1	1.0
7	193	7	202.1	4.5
8	194	7	202.1	4.0
9	177	7	202.1	12.4
			Average PD =	5.3

Target Average PD = 20% Pass

Table 4 - XRF Field Duplicate Relative Standard Deviation Quality Control Summary

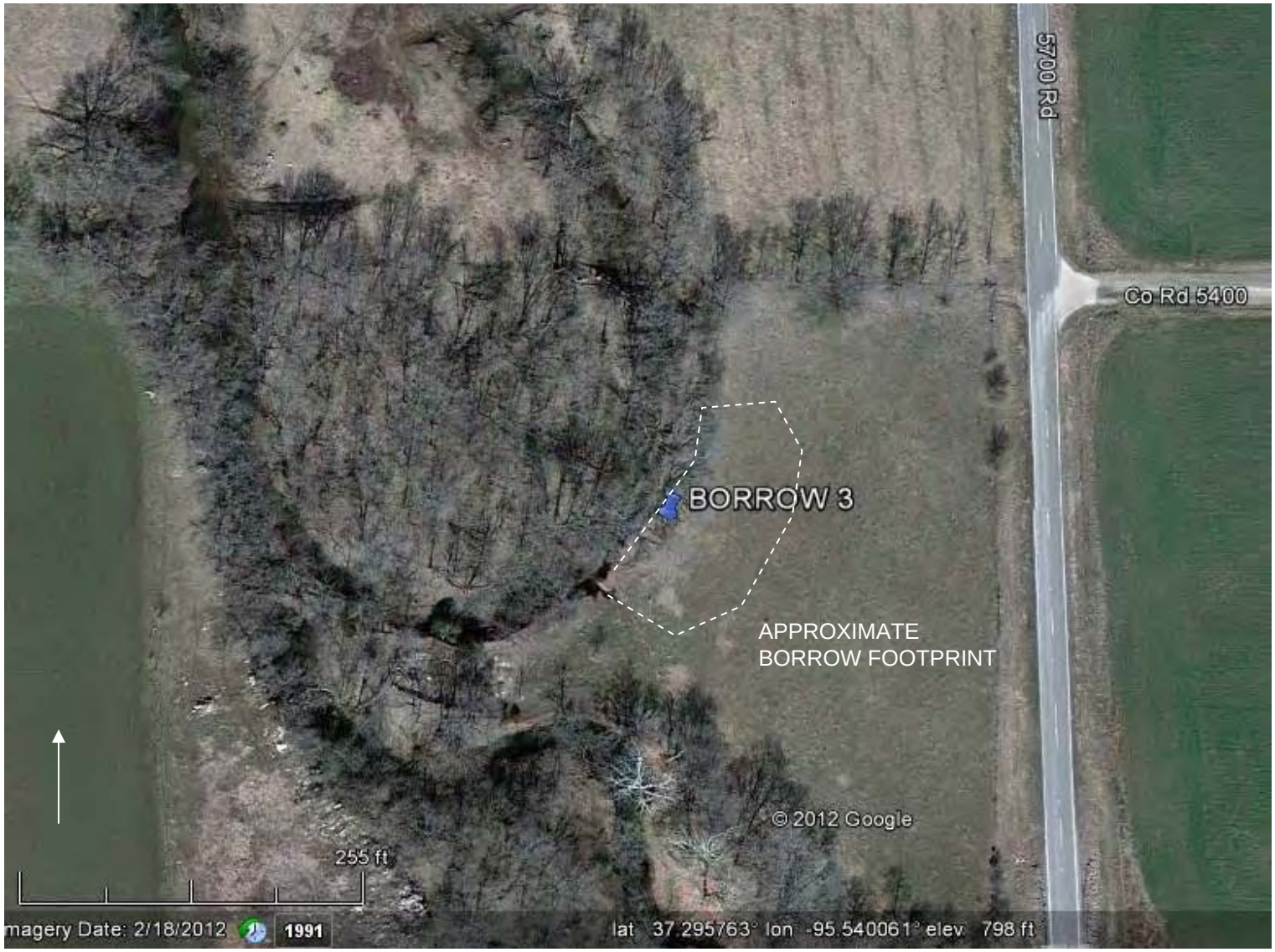
Reading	First Value XRF Pb mg/kg	Second Value XRF Pb mg/kg	Standard Deviation	Relative Std. Deviation
1	40	27	6.5	19.4
2	52	46	3.0	6.1
3	208	204	2.0	1.0
4	157	135	11.0	7.5
5	68	57	5.5	8.8
6	28	26	1.0	3.7
7	156	126	15.0	10.6
8	297	263	17.0	6.1
9	52	35	8.5	19.5
10	25	35	5.0	16.7
11	222	224	1.0	0.4
12	130	158	14.0	9.7
13	41	51	5.0	10.9
14	53	52	0.5	1.0
15	61	59	1.0	1.7
16	43	60	8.5	16.5
STD 2702	101	109	4.0	3.8
STD 2781	193	195	1.0	0.5
			Average RSD =	8.0

Target Average RSD = 20 Pass

Appendix A

Borrow Soil Analytical Results

Residential Removal Action
Cherryvale, KS



BORROW SOURCE SAMPLING LOCATION 2. AERIAL VIEW (SAMPLE ID BORROW 3)

PHOTO VIEW

BORROW SOURCE SAMPLING LOCATION 2 (SAMPLE BORROW 3)
VIEW DATE 5-8-12 VIEW LOOKING SOUTHWEST
SOIL HORIZON EXPOSED IN CREEK BANK, NATIVE SOIL, VIRGIN GROUND.

PROJECT NAVIGATOR, LTD.

BORROW No. 3

(ALS Labs) PCBs, Metals, Pesticides, Herbicides, TPH, GRO, Semi-Volatiles, Volatiles

ALS Environmental

Date: *14-May-12*

Client: Project Navigator, Ltd
Project: 07-119 Natrual Zinc Residential
Work Order: 1205372
Sample ID: Borrow 3
Lab ID: 1205372-03
Collection Date: 5/8/2012 12:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES - SW8081B			**SW8081**		Prep Date: **5/9/2012**	Analyst: **GWK**
4,4´-DDD	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
4,4´-DDE	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
4,4´-DDT	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
Aldrin	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
alpha-BHC	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
beta-BHC	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
Chlordane	U		20	µg/Kg-dry	1	5/10/2012 11:20 AM
delta-BHC	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
Dieldrin	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
Endosulfan I	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
Endosulfan II	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
Endosulfan sulfate	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
Endrin	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
Endrin aldehyde	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
Endrin ketone	U		3.9	µg/Kg-dry	1	5/10/2012 11:20 AM
gamma-BHC	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
Heptachlor	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
Heptachlor epoxide	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
Methoxychlor	U		20	µg/Kg-dry	1	5/10/2012 11:20 AM
Toxaphene	U		20	µg/Kg-dry	1	5/10/2012 11:20 AM
Surr: Decachlorobiphenyl	*90.0*		*59-144*	*%REC*	1	5/10/2012 11:20 AM
Surr: Tetrachloro-m-xylene	*84.0*		*56.9-130*	*%REC*	1	5/10/2012 11:20 AM
MISCELLANEOUS PESTICIDES - SW8081B			**SW8081**		Prep Date: **5/9/2012**	Analyst: **GWK**
alpha-Chlordane	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
gamma-Chlordane	U		2.0	µg/Kg-dry	1	5/10/2012 11:20 AM
CHLORINATED HERBICIDES - SW8151A			**SW8151**		Prep Date: **5/12/2012**	Analyst: **GWK**
2,4,5-T	U		5.9	µg/Kg-dry	1	5/14/2012 12:56 PM
2,4,5-TP (Silvex)	U		5.9	µg/Kg-dry	1	5/14/2012 12:56 PM
2,4-D	U		12	µg/Kg-dry	1	5/14/2012 12:56 PM
2,4-DB	U		12	µg/Kg-dry	1	5/14/2012 12:56 PM
Dalapon	U		5.9	µg/Kg-dry	1	5/14/2012 12:56 PM
Dicamba	U		5.9	µg/Kg-dry	1	5/14/2012 12:56 PM
Dichlorprop	U		12	µg/Kg-dry	1	5/14/2012 12:56 PM
Dinoseb	U		5.9	µg/Kg-dry	1	5/14/2012 12:56 PM
MCPA	U		1,200	µg/Kg-dry	1	5/14/2012 12:56 PM
MCPP	U		1,200	µg/Kg-dry	1	5/14/2012 12:56 PM
Surr: DCAA	*106*		*30-150*	*%REC*	1	5/14/2012 12:56 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *14-May-12*

Client: Project Navigator, Ltd
Project: 07-119 Natrual Zinc Residential
Work Order: 1205372
Sample ID: Borrow 3
Lab ID: 1205372-03
Collection Date: 5/8/2012 12:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS BY SW8082A			**SW8082**		Prep Date: **5/9/2012**	Analyst: **NPI**
Aroclor 1016	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Aroclor 1221	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Aroclor 1232	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Aroclor 1242	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Aroclor 1248	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Aroclor 1254	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Aroclor 1260	U		20	µg/Kg-dry	1	5/9/2012 07:13 PM
Surr: Decachlorobiphenyl	*86.6*		*54-143*	*%REC*	1	5/9/2012 07:13 PM
Surr: Tetrachloro-m-xylene	*80.2*		*55-137*	*%REC*	1	5/9/2012 07:13 PM
TPH DRO/ORO			**SW8015M**		Prep Date: **5/9/2012**	Analyst: **KMB**
TPH (Diesel Range)	U		2.0	mg/Kg-dry	1	5/11/2012 02:02 PM
TPH (Motor Oil Range)	**0.88**	Jn	**4.1**	**mg/Kg-dry**	1	5/11/2012 02:02 PM
Surr: 2-Fluorobiphenyl	*74.8*		*60-135*	*%REC*	1	5/11/2012 02:02 PM
GASOLINE RANGE ORGANICS - SW8015C			**SW8015**			Analyst: **KKP**
Gasoline Range Organics	U		0.060	mg/Kg-dry	1	5/10/2012 12:21 PM
Surr: 4-Bromofluorobenzene	*92.1*		*70-130*	*%REC*	1	5/10/2012 12:21 PM
MERCURY - SW7471B			**SW7471A**		Prep Date: **5/11/2012**	Analyst: **JCJ**
Mercury	**11.0**		**4.18**	**µg/Kg-dry**	1	5/11/2012 02:58 PM
METALS			**SW6020**		Prep Date: **5/10/2012**	Analyst: **ALR**
Arsenic	**10.4**		**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
Barium	**67.6**		**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
Cadmium	**0.253**	J	**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
Chromium	**15.8**		**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
Lead	**25.2**		**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
Selenium	**1.68**		**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
Silver	**0.109**	J	**0.527**	**mg/Kg-dry**	1	5/10/2012 07:09 PM
LOW-LEVEL SEMIVOLATILES			**SW8270**		Prep Date: **5/9/2012**	Analyst: **LG**
1,1´-Biphenyl	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2,4,5-Trichlorophenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2,4,6-Trichlorophenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2,4-Dichlorophenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2,4-Dimethylphenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2,4-Dinitrophenol	U		39	µg/Kg-dry	1	5/9/2012 10:56 PM
2,4-Dinitrotoluene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2,6-Dinitrotoluene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2-Chloronaphthalene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *14-May-12*

Client: Project Navigator, Ltd
Project: 07-119 Natrual Zinc Residential
Sample ID: Borrow 3
Collection Date: 5/8/2012 12:00 PM

Work Order: 1205372
Lab ID: 1205372-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
2-Chlorophenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2-Methylnaphthalene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2-Methylphenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2-Nitroaniline	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
2-Nitrophenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
3&4-Methylphenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
3,3´-Dichlorobenzidine	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
3-Nitroaniline	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4,6-Dinitro-2-methylphenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4-Bromophenyl phenyl ether	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4-Chloro-3-methylphenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4-Chloroaniline	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4-Chlorophenyl phenyl ether	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4-Nitroaniline	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
4-Nitrophenol	U		39	µg/Kg-dry	1	5/9/2012 10:56 PM
Acenaphthene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Acenaphthylene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Acetophenone	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Anthracene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Atrazine	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Benz(a)anthracene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Benzaldehyde	U	n	7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Benzo(a)pyrene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Benzo(b)fluoranthene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Benzo(g,h,i)perylene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Benzo(k)fluoranthene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Bis(2-chloroethoxy)methane	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Bis(2-chloroethyl)ether	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Bis(2-chloroisopropyl)ether	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Bis(2-ethylhexyl)phthalate	**4.9**	J	**7.9**	**µg/Kg-dry**	1	5/9/2012 10:56 PM
Butyl benzyl phthalate	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Caprolactam	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Carbazole	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Chrysene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Dibenz(a,h)anthracene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Dibenzofuran	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Diethyl phthalate	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Dimethyl phthalate	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Di-n-butyl phthalate	**2.7**	J	**7.9**	**µg/Kg-dry**	1	5/9/2012 10:56 PM
Di-n-octyl phthalate	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *14-May-12*

Client: Project Navigator, Ltd
Project: 07-119 Natrual Zinc Residential
Work Order: 1205372
Sample ID: Borrow 3
Lab ID: 1205372-03
Collection Date: 5/8/2012 12:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Fluorene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Hexachlorobenzene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Hexachlorobutadiene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Hexachlorocyclopentadiene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Hexachloroethane	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Indeno(1,2,3-cd)pyrene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Isophorone	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Naphthalene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Nitrobenzene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
N-Nitrosodi-n-propylamine	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
N-Nitrosodiphenylamine	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Pentachlorophenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Phenanthrene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Phenol	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Pyrene	U		7.9	µg/Kg-dry	1	5/9/2012 10:56 PM
Surr: 2,4,6-Tribromophenol	*110*		*36-126*	*%REC*	1	5/9/2012 10:56 PM
Surr: 2-Fluorobiphenyl	*89.1*		*43-125*	*%REC*	1	5/9/2012 10:56 PM
Surr: 2-Fluorophenol	*67.1*		*37-125*	*%REC*	1	5/9/2012 10:56 PM
Surr: 4-Terphenyl-d14	*94.9*		*32-125*	*%REC*	1	5/9/2012 10:56 PM
Surr: Nitrobenzene-d5	*80.5*		*37-125*	*%REC*	1	5/9/2012 10:56 PM
Surr: Phenol-d6	*63.8*		*40-125*	*%REC*	1	5/9/2012 10:56 PM
TCL VOLATILES			**SW8260**			Analyst: **WLR**
1,1,1-Trichloroethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,1,2,2-Tetrachloroethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,1,2-Trichlor-1,2,2-trifluoroethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,1,2-Trichloroethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,1-Dichloroethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,1-Dichloroethene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,2,4-Trichlorobenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,2-Dibromo-3-chloropropane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,2-Dibromoethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,2-Dichlorobenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,2-Dichloroethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,2-Dichloropropane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,3-Dichlorobenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
1,4-Dichlorobenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
2-Butanone	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
2-Hexanone	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
4-Methyl-2-pentanone	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *14-May-12*

Client: Project Navigator, Ltd
Project: 07-119 Natrual Zinc Residential
Work Order: 1205372
Sample ID: Borrow 3
Lab ID: 1205372-03
Collection Date: 5/8/2012 12:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Acetone	U		24	µg/Kg-dry	1	5/9/2012 06:09 PM
Benzene	**0.85**	J	**6.0**	**µg/Kg-dry**	1	5/9/2012 06:09 PM
Bromodichloromethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Bromoform	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Bromomethane	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
Carbon disulfide	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
Carbon tetrachloride	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Chlorobenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Chloroethane	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
Chloroform	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Chloromethane	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
cis-1,2-Dichloroethene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
cis-1,3-Dichloropropene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Cyclohexane	U	n	6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Dibromochloromethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Dichlorodifluoromethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Dichloromethane	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
Ethylbenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Isopropylbenzene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
m,p-Xylene	U		12	µg/Kg-dry	1	5/9/2012 06:09 PM
Methyl acetate	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Methyl tert-butyl ether	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Methylcyclohexane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
o-Xylene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Styrene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Tetrachloroethene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Toluene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
trans-1,2-Dichloroethene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
trans-1,3-Dichloropropene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Trichloroethene	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Trichlorofluoromethane	U		6.0	µg/Kg-dry	1	5/9/2012 06:09 PM
Vinyl chloride	U		2.4	µg/Kg-dry	1	5/9/2012 06:09 PM
Xylenes, Total	U		18	µg/Kg-dry	1	5/9/2012 06:09 PM
Surr: 1,2-Dichloroethane-d4	*95.2*		*70-128*	*%REC*	1	5/9/2012 06:09 PM
Surr: 4-Bromofluorobenzene	*99.3*		*73-126*	*%REC*	1	5/9/2012 06:09 PM
Surr: Dibromofluoromethane	*98.7*		*71-128*	*%REC*	1	5/9/2012 06:09 PM
Surr: Toluene-d8	*99.2*		*73-127*	*%REC*	1	5/9/2012 06:09 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**16.1**		**0.0100**	**wt%**	1	5/10/2012 06:20 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Appendix B

Laboratory Analytical Results for Confirmation Samples

Residential Removal Action

Cherryvale, KS

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

May 23, 2012

Mark Landress
Project Navigator, Ltd.
10497 Town and Country Way
Suite 830
Houston, TX 77024

RE: Project: NATIONAL ZINC
Pace Project No.: 60121749

Dear Mark Landress:
Enclosed are the analytical results for sample(s) received by the laboratory on May 19, 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.

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

Sincerely,

Jamie Church

jamie.church@pacelabs.com
Project Manager

Enclosures

cc: Philip Jen, Project Navigator, Ltd.

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: NATIONAL ZINC
Pace Project No.: 60121749

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60121749001	**500C-1-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749002	**500C-2-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749003	**502C-1-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749004	**502C-2-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749005	**504C-1-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749006	**504C-2-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749007	**506C-1-2'**	Solid	05/17/12 17:00	05/19/12 09:15
60121749008	**506C-2-2'**	Solid	05/17/12 17:00	05/19/12 09:15

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SAMPLE ANALYTE COUNT

Project: NATIONAL ZINC
Pace Project No.: 60121749

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60121749001	**500C-1-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749002	**500C-2-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749003	**502C-1-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749004	**502C-2-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749005	**504C-1-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749006	**504C-2-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749007	**506C-1-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121749008	**506C-2-2'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K

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(913)599-5665

ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 500C-1-2' **Lab ID: 60121749001** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**12.5**	mg/kg	2.3	2	05/21/12 09:40	05/21/12 19:23	7440-38-2	M1
Cadmium	**2.0**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 19:23	7440-43-9	
Lead	**31.2**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 19:23	7439-92-1	
Zinc	**152**	mg/kg	22.8	2	05/21/12 09:40	05/21/12 19:23	7440-66-6	M1
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**24.4**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 500C-2-2' **Lab ID: 60121749002** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**9.5**	mg/kg	4.8	5	05/21/12 09:40	05/22/12 12:20	7440-38-2	
Cadmium	ND	mg/kg	2.4	5	05/21/12 09:40	05/22/12 12:20	7440-43-9	D3
Lead	**24.8**	mg/kg	2.4	5	05/21/12 09:40	05/22/12 12:20	7439-92-1	
Zinc	**388**	mg/kg	48.0	5	05/21/12 09:40	05/22/12 12:20	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**21.8**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 502C-1-2' **Lab ID: 60121749003** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**7.1**	mg/kg	2.2	2	05/21/12 09:40	05/21/12 19:38	7440-38-2	
Cadmium	**1.4**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 19:38	7440-43-9	
Lead	**23.6**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 19:38	7439-92-1	
Zinc	**126**	mg/kg	21.8	2	05/21/12 09:40	05/21/12 19:38	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**25.4**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 502C-2-2' **Lab ID: 60121749004** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**9.0**	mg/kg	4.7	5	05/21/12 09:40	05/22/12 12:24	7440-38-2	
Cadmium	ND	mg/kg	2.4	5	05/21/12 09:40	05/22/12 12:24	7440-43-9	D3
Lead	**26.6**	mg/kg	2.4	5	05/21/12 09:40	05/22/12 12:24	7439-92-1	
Zinc	**197**	mg/kg	47.3	5	05/21/12 09:40	05/22/12 12:24	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**22.8**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 504C-1-2' **Lab ID: 60121749005** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**13.0**	mg/kg	2.4	2	05/21/12 09:40	05/21/12 19:45	7440-38-2	
Cadmium	**3.6**	mg/kg	1.2	2	05/21/12 09:40	05/21/12 19:45	7440-43-9	
Lead	**46.2**	mg/kg	1.2	2	05/21/12 09:40	05/21/12 19:45	7439-92-1	
Zinc	**298**	mg/kg	24.0	2	05/21/12 09:40	05/21/12 19:45	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**26.8**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 504C-2-2' **Lab ID: 60121749006** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**12.5**	mg/kg	2.0	2	05/21/12 09:40	05/21/12 19:56	7440-38-2	
Cadmium	**3.3**	mg/kg	0.98	2	05/21/12 09:40	05/21/12 19:56	7440-43-9	
Lead	**35.7**	mg/kg	0.98	2	05/21/12 09:40	05/21/12 19:56	7439-92-1	
Zinc	**144**	mg/kg	19.6	2	05/21/12 09:40	05/21/12 19:56	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**24.9**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 506C-1-2' **Lab ID: 60121749007** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**9.0**	mg/kg	2.2	2	05/21/12 09:40	05/21/12 20:00	7440-38-2	
Cadmium	**1.6**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 20:00	7440-43-9	
Lead	**26.0**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 20:00	7439-92-1	
Zinc	**198**	mg/kg	21.6	2	05/21/12 09:40	05/21/12 20:00	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**24.8**	%	0.50	1		05/21/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121749

Sample: 506C-2-2' **Lab ID: 60121749008** Collected: 05/17/12 17:00 Received: 05/19/12 09:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**18.0**	mg/kg	2.1	2	05/21/12 09:40	05/21/12 20:03	7440-38-2	
Cadmium	**7.2**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 20:03	7440-43-9	
Lead	**52.2**	mg/kg	1.1	2	05/21/12 09:40	05/21/12 20:03	7439-92-1	
Zinc	**459**	mg/kg	21.1	2	05/21/12 09:40	05/21/12 20:03	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**22.3**	%	0.50	1		05/21/12 00:00		

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QUALITY CONTROL DATA

Project: NATIONAL ZINC
Pace Project No.: 60121749

QC Batch: MPRP/18111 | Analysis Method: EPA 6010
QC Batch Method: EPA 3050 | Analysis Description: 6010 MET
Associated Lab Samples: 60121749001, 60121749002, 60121749003, 60121749004, 60121749005, 60121749006, 60121749007, 60121749008

METHOD BLANK: 1001277 | Matrix: Solid
Associated Lab Samples: 60121749001, 60121749002, 60121749003, 60121749004, 60121749005, 60121749006, 60121749007, 60121749008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	05/21/12 19:16	
Cadmium	mg/kg	ND	0.50	05/21/12 19:16	
Lead	mg/kg	ND	0.50	05/21/12 19:16	
Zinc	mg/kg	ND	10.0	05/21/12 19:16	

LABORATORY CONTROL SAMPLE: 1001278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	46.0	92	80-120	
Cadmium	mg/kg	50	46.1	92	80-120	
Lead	mg/kg	50	50.2	100	80-120	
Zinc	mg/kg	50	55.4	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1001279 1001280

Parameter	Units	60121749001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	12.5	57	57.6	53.2	58.5	71	80	75-125	10	20	M1
Cadmium	mg/kg	2.0	57	57.6	48.0	48.5	81	81	75-125	1	20	
Lead	mg/kg	31.2	57	57.6	80.0	88.6	86	100	75-125	10	20	
Zinc	mg/kg	152	57	57.6	206	241	96	155	75-125	15	20	M1

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QUALITY CONTROL DATA

Project: NATIONAL ZINC
Pace Project No.: 60121749

QC Batch: PMST/7272 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60121749001, 60121749002, 60121749003, 60121749004, 60121749005, 60121749006, 60121749007, 60121749008

METHOD BLANK: 1001275 | Matrix: Solid
Associated Lab Samples: 60121749001, 60121749002, 60121749003, 60121749004, 60121749005, 60121749006, 60121749007, 60121749008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	05/21/12 00:00	

SAMPLE DUPLICATE: 1001276

Parameter	Units	60121749001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	24.4	24.3	0	20	

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QUALIFIERS

Project: NATIONAL ZINC
Pace Project No.: 60121749

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.

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NATIONAL ZINC
Pace Project No.: 60121749

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60121749001	**500C-1-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749002	**500C-2-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749003	**502C-1-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749004	**502C-2-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749005	**504C-1-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749006	**504C-2-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749007	**506C-1-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749008	**506C-2-2'**	EPA 3050	MPRP/18111	EPA 6010	ICP/15235
60121749001	**500C-1-2'**	ASTM D2974-87	PMST/7272		
60121749002	**500C-2-2'**	ASTM D2974-87	PMST/7272		
60121749003	**502C-1-2'**	ASTM D2974-87	PMST/7272		
60121749004	**502C-2-2'**	ASTM D2974-87	PMST/7272		
60121749005	**504C-1-2'**	ASTM D2974-87	PMST/7272		
60121749006	**504C-2-2'**	ASTM D2974-87	PMST/7272		
60121749007	**506C-1-2'**	ASTM D2974-87	PMST/7272		
60121749008	**506C-2-2'**	ASTM D2974-87	PMST/7272		

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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

1556624

Section A Required Client Information:

Company: Project Navigator, LTD
Address: 10497 Town & Country Way Suite 830, Houston, TX 77024
Email To: mlandress@projectnavigator.com
Phone: 713-468-5864 Fax: 713-468-4515
Requested Due Date/TAT: 24 hr TAT

Section B Required Project Information:

Report To: Mark Landress
Copy To: Philip Jen, pjen@projectnavigator.com
Purchase Order No.:
Project Name: National Zinc
Project Number:

Section C Invoice Information:

Attention: Same as Client
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #:

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

Site Location STATE: KS

Section D Required Client Information

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

Requested Analysis Filtered (Y/N): N

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE (Composite Start)	COLLECTED TIME (Composite Start)	COLLECTED DATE (Composite End)	COLLECTED TIME (Composite End)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Metals (As, Cd, Pb, Zn)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	500C-1-2'	SL	C	5/17/12	17:00			1		X								X		01
2	500C-2-2'	SL	C	5/17/12	17:00			1		X								X		02
3	502C-1-2'	SL	C	5/17/12	1700			1		X								X		03
4	502C-2-2'	SL	C	5/17/12	1700			1		X								X		04
5	504C-1-2'	SL	C	5/17/12	1700			1		X								X		05
6	504C-2-2'	SL	C	5/17/12	1700			1		X								X		06
7	506C-2-2'	SL	C	5/17/12	1700			1		X								X		07
8	506C-1-2'	SL	C	5/17/12	1700			1		X								X		08
9																				
10																				
11																				
12																				

WGFA

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
				[signature]	5/19/12	915	0-6	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE: Philip Jen [signature]
PRINT Name of SAMPLER: Philip Jen
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 05/17/12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*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: Project Navigator Project # 60121749

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #: 8548 4075 4495 Pace Shipping Label Used? ☐ Yes ☑ No

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals intact: ☑ Yes ☐ No

Optional
Proj. Due Date 5/22/12
Proj. Name

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ Foam ☐ None ☐ Other

Thermometer Used: T-193 / T-194 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 0.6

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 5-19-12

		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 holding time:	☑ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☑ No ☐ N/A	6.
Rush Turn Around Time requested:	☑ Yes ☐ No ☐ N/A	7. 24Hr
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.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☑ N/A	11.
Filtered volume received for dissolved tests	☐ Yes ☐ No ☑ N/A	12.
Sample labels match COC	☑ Yes ☐ No ☐ N/A	13.
-Includes date/time/ID/analyses Matrix: SL		
All containers needing preservation have been checked	☐ Yes ☐ No ☑ N/A	14.
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), Phenolics	☐ Yes ☑ No	Initial when completed ____ Lot # of added preservative ____
Trip Blank present:	☐ Yes ☐ No ☑ N/A	15.
Pace Trip Blank lot # (if purchased): ____		
Headspace in VOA vials (>6mm):	☐ Yes ☐ No ☑ N/A	16.
Project sampled in USDA Regulated Area:	☐ Yes ☐ No ☑ N/A	17. List State ____

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: ____ Date/Time: ____

Comments/ Resolution: ____

SLS

Project Manager Review: ____ Date: 5/21/12

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

F-KS-C-003-Rev.05, 18February2010

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Lenexa, KS 66219
(913)599-5665

May 23, 2012

Mark Landress
Project Navigator, Ltd.
10497 Town and Country Way
Suite 830
Houston, TX 77024

RE: Project: NATIONAL ZINC
Pace Project No.: 60121791

Dear Mark Landress:
Enclosed are the analytical results for sample(s) received by the laboratory on May 22, 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.

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

Sincerely,

Jamie Church

jamie.church@pacelabs.com
Project Manager

Enclosures

cc: Philip Jen, Project Navigator, Ltd.

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CERTIFICATIONS

Project: NATIONAL ZINC
Pace Project No.: 60121791

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: NATIONAL ZINC
Pace Project No.: 60121791

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60121791001	**508C-2-1'**	Solid	05/21/12 11:30	05/22/12 08:20
60121791002	**508C-1-1'**	Solid	05/21/12 11:30	05/22/12 08:20
60121791003	**501M-1-1'**	Solid	05/21/12 11:30	05/22/12 08:20
60121791004	**501M-2-1'**	Solid	05/21/12 11:30	05/22/12 08:20

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SAMPLE ANALYTE COUNT

Project: NATIONAL ZINC
Pace Project No.: 60121791

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60121791001	**508C-2-1'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121791002	**508C-1-1'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121791003	**501M-1-1'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121791004	**501M-2-1'**	EPA 6010	SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121791

Sample: 508C-2-1' **Lab ID: 60121791001** Collected: 05/21/12 11:30 Received: 05/22/12 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**18.1**	mg/kg	4.9	5	05/22/12 09:50	05/23/12 13:50	7440-38-2	
Cadmium	**8.4**	mg/kg	2.5	5	05/22/12 09:50	05/23/12 13:50	7440-43-9	
Lead	**112**	mg/kg	2.5	5	05/22/12 09:50	05/23/12 13:50	7439-92-1	M1
Zinc	**999**	mg/kg	49.0	5	05/22/12 09:50	05/23/12 13:50	7440-66-6	M1
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**14.3**	%	0.50	1		05/22/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121791

Sample: 508C-1-1' **Lab ID: 60121791002** Collected: 05/21/12 11:30 Received: 05/22/12 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**13.4**	mg/kg	4.5	5	05/22/12 09:50	05/23/12 14:01	7440-38-2	
Cadmium	**5.4**	mg/kg	2.3	5	05/22/12 09:50	05/23/12 14:01	7440-43-9	
Lead	**74.7**	mg/kg	2.3	5	05/22/12 09:50	05/23/12 14:01	7439-92-1	
Zinc	**1250**	mg/kg	45.0	5	05/22/12 09:50	05/23/12 14:01	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**18.3**	%	0.50	1		05/22/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121791

Sample: 501M-1-1' **Lab ID: 60121791003** Collected: 05/21/12 11:30 Received: 05/22/12 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**14.0**	mg/kg	5.0	5	05/22/12 09:50	05/23/12 14:04	7440-38-2	
Cadmium	**9.1**	mg/kg	2.5	5	05/22/12 09:50	05/23/12 14:04	7440-43-9	
Lead	**94.5**	mg/kg	2.5	5	05/22/12 09:50	05/23/12 14:04	7439-92-1	
Zinc	**1260**	mg/kg	50.3	5	05/22/12 09:50	05/23/12 14:04	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**15.0**	%	0.50	1		05/22/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60121791

Sample: 501M-2-1' **Lab ID: 60121791004** Collected: 05/21/12 11:30 Received: 05/22/12 08:20 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**14.2**	mg/kg	4.6	5	05/22/12 09:50	05/23/12 14:08	7440-38-2	
Cadmium	**4.5**	mg/kg	2.3	5	05/22/12 09:50	05/23/12 14:08	7440-43-9	
Lead	**70.5**	mg/kg	2.3	5	05/22/12 09:50	05/23/12 14:08	7439-92-1	
Zinc	**842**	mg/kg	45.6	5	05/22/12 09:50	05/23/12 14:08	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**13.7**	%	0.50	1		05/22/12 00:00		

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QUALITY CONTROL DATA

Project: NATIONAL ZINC
Pace Project No.: 60121791

QC Batch: MPRP/18119 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 60121791001, 60121791002, 60121791003, 60121791004

METHOD BLANK: 1001688 Matrix: Solid
Associated Lab Samples: 60121791001, 60121791002, 60121791003, 60121791004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	05/23/12 13:43	
Cadmium	mg/kg	ND	0.50	05/23/12 13:43	
Lead	mg/kg	ND	0.50	05/23/12 13:43	
Zinc	mg/kg	ND	10.0	05/23/12 13:43	

LABORATORY CONTROL SAMPLE: 1001689

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	48.0	96	80-120	
Cadmium	mg/kg	50	48.4	97	80-120	
Lead	mg/kg	50	50.6	101	80-120	
Zinc	mg/kg	50	49.4	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1001690 1001691

Parameter	Units	60121791001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	18.1	51.2	51.6	59.6	63.5	81	88	75-125	6	20	
Cadmium	mg/kg	8.4	51.2	51.6	50.5	56.3	82	93	75-125	11	20	
Lead	mg/kg	112	51.2	51.6	125	164	25	101	75-125	27	20	D6,M1
Zinc	mg/kg	999	51.2	51.6	810	1040	-369	88	75-125	25	20	D6,M1

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QUALITY CONTROL DATA

Project: NATIONAL ZINC
Pace Project No.: 60121791

QC Batch: PMST/7280 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60121791001, 60121791002, 60121791003, 60121791004

METHOD BLANK: 1001890 Matrix: Solid
Associated Lab Samples: 60121791001, 60121791002, 60121791003, 60121791004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	05/22/12 00:00	

SAMPLE DUPLICATE: 1001891

Parameter	Units	60121791001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.3	14.1	2	20	

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QUALIFIERS

Project: NATIONAL ZINC
Pace Project No.: 60121791

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.

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NATIONAL ZINC
Pace Project No.: 60121791

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60121791001	**508C-2-1'**	EPA 3050	MPRP/18119	EPA 6010	ICP/15248
60121791002	**508C-1-1'**	EPA 3050	MPRP/18119	EPA 6010	ICP/15248
60121791003	**501M-1-1'**	EPA 3050	MPRP/18119	EPA 6010	ICP/15248
60121791004	**501M-2-1'**	EPA 3050	MPRP/18119	EPA 6010	ICP/15248
60121791001	**508C-2-1'**	ASTM D2974-87	PMST/7280		
60121791002	**508C-1-1'**	ASTM D2974-87	PMST/7280		
60121791003	**501M-1-1'**	ASTM D2974-87	PMST/7280		
60121791004	**501M-2-1'**	ASTM D2974-87	PMST/7280		

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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

1373071

Section A Required Client Information:

Company: Project Navigator LTD
Address: 10497 Town & Country Way Ste 830, Houston, TX 77024
Email To: mlandress@projectnavigator
Phone: 713-468-5004 Fax: 713-968-4515
Requested Due Date/TAT: 24 hr TAT

Section B Required Project Information:

Report To: Mark Landress
Copy To: Philip Jen, pgen@projectnavigator.com
Purchase Order No.:
Project Name: National Zinc
Project Number:

Section C Invoice Information:

Attention: Same as Client
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #:

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

Site Location STATE: KS

Requested Analysis Filtered (Y/N): N

Section D Required Client Information

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE (Composite Start)	COLLECTED TIME (Composite Start)	COLLECTED DATE (Composite End/Grab)	COLLECTED TIME (Composite End/Grab)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Metals (As, Cd, Pb, Zn)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	S08C-2-1'	SL	C	5/21/12	11:30				1	X								X		61
2	S08C-1-1'	SL	C	5/21/12	11:30				1	X								X		62
3	S01M-1-1'	SL	C	5/21/12	11:30				1	X								X		63
4	S01M-2-1'	SL	C	5/21/12	11:30				1	X								X		64
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

6012/791

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Melissa Nelson	5-21-12	1500	[illegible]	5-22	820	11.6	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Melissa Nelson - Agent

SIGNAYURE of SAMPLER:

DATE Signed (MM/DD/YY): 5/21/12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*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: project Navigator Project # 60121741

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

Tracking # 8726 4246 4814 Pace Shipping Label Used? ☐ Yes ☑ No

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals intact: ☑ Yes ☐ No

Optional: Proj. Due Date: 5/23 Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ Foam ☐ None ☐ Other ____

Thermometer Used: (T-193) / T-194 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 11.6

Temperature should be above freezing to 6°C

Date and Initials of person examining contents: 5-22-12

		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 holding time:	☑ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☑ No ☐ N/A	6.
Rush Turn Around Time requested:	☑ Yes ☐ No ☐ N/A	7. 24Hr
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.
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☑ N/A	11.
Filtered volume received for dissolved tests	☐ Yes ☐ No ☑ N/A	12.
Sample labels match COC:	☑ Yes ☐ No ☐ N/A	13.
-Includes date/time/ID/analyses Matrix: SL		
All containers needing preservation have been checked	☐ Yes ☐ No ☑ N/A	14.
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), Phenolics	☐ Yes ☑ No	Initial when completed ____ Lot # of added preservative ____
Trip Blank present:	☐ Yes ☐ No ☑ N/A	15.
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm)	☐ Yes ☐ No ☑ N/A	16
Project sampled in USDA Regulated Area	☐ Yes ☐ No ☑ N/A	17. List State: ____

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted ____ Date/Time: ____

Comments/ Resolution ____

Project Manager Review: ____ Date: 5/22/12

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).

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May 25, 2012

Mark Landress
Project Navigator, Ltd.
10497 Town and Country Way
Suite 830
Houston, TX 77024

RE: Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Dear Mark Landress:
Enclosed are the analytical results for sample(s) received by the laboratory on May 24, 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.

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

Sincerely,

Jamie Church

jamie.church@pacelabs.com
Project Manager

Enclosures

cc: Philip Jen, Project Navigator, Ltd.

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CERTIFICATIONS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60121928001	**502-L-4-1**	Solid	05/22/12 14:00	05/24/12 08:30
60121928002	**502-L-3-2**	Solid	05/22/12 14:00	05/24/12 08:30
60121928003	**502-L-3-1**	Solid	05/22/12 14:00	05/24/12 08:30
60121928004	**502-L-1-1**	Solid	05/23/12 13:00	05/24/12 08:30
60121928005	**502-L-2-1**	Solid	05/23/12 13:00	05/24/12 08:30
60121928006	**502-L-SIDE**	Solid	05/23/12 13:00	05/24/12 08:30

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SAMPLE ANALYTE COUNT

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60121928001	**502-L-4-1**	EPA 6010	JGP	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121928002	**502-L-3-2**	EPA 6010	JGP	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121928003	**502-L-3-1**	EPA 6010	JGP	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121928004	**502-L-1-1**	EPA 6010	JGP	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121928005	**502-L-2-1**	EPA 6010	JGP	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60121928006	**502-L-SIDE**	EPA 6010	JGP, SMW	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K

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ANALYTICAL RESULTS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Sample: 502-L-4-1 **Lab ID: 60121928001** Collected: 05/22/12 14:00 Received: 05/24/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**10.4**	mg/kg	2.3	2	05/24/12 10:15	05/24/12 23:57	7440-38-2	M1
Cadmium	**5.8**	mg/kg	1.1	2	05/24/12 10:15	05/24/12 23:57	7440-43-9	
Lead	**52.4**	mg/kg	1.1	2	05/24/12 10:15	05/24/12 23:57	7439-92-1	M1
Zinc	**979**	mg/kg	22.6	2	05/24/12 10:15	05/24/12 23:57	7440-66-6	M1
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**20.3**	%	0.50	1		05/24/12 00:00		

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ANALYTICAL RESULTS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Sample: 502-L-3-2 **Lab ID: 60121928002** Collected: 05/22/12 14:00 Received: 05/24/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**10.6**	mg/kg	2.0	2	05/24/12 10:15	05/25/12 00:08	7440-38-2	
Cadmium	**2.6**	mg/kg	0.98	2	05/24/12 10:15	05/25/12 00:08	7440-43-9	
Lead	**49.3**	mg/kg	0.98	2	05/24/12 10:15	05/25/12 00:08	7439-92-1	
Zinc	**457**	mg/kg	19.6	2	05/24/12 10:15	05/25/12 00:08	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**17.8**	%	0.50	1		05/24/12 00:00		

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ANALYTICAL RESULTS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Sample: 502-L-3-1 **Lab ID: 60121928003** Collected: 05/22/12 14:00 Received: 05/24/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**7.8**	mg/kg	2.0	2	05/24/12 10:15	05/25/12 00:11	7440-38-2	
Cadmium	**2.7**	mg/kg	1.0	2	05/24/12 10:15	05/25/12 00:11	7440-43-9	
Lead	**34.1**	mg/kg	1.0	2	05/24/12 10:15	05/25/12 00:11	7439-92-1	
Zinc	**594**	mg/kg	20.1	2	05/24/12 10:15	05/25/12 00:11	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**20.5**	%	0.50	1		05/24/12 00:00		

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ANALYTICAL RESULTS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Sample: 502-L-1-1 **Lab ID: 60121928004** Collected: 05/23/12 13:00 Received: 05/24/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**10.5**	mg/kg	1.9	2	05/24/12 10:15	05/25/12 00:15	7440-38-2	
Cadmium	**4.3**	mg/kg	0.97	2	05/24/12 10:15	05/25/12 00:15	7440-43-9	
Lead	**47.9**	mg/kg	0.97	2	05/24/12 10:15	05/25/12 00:15	7439-92-1	
Zinc	**713**	mg/kg	19.4	2	05/24/12 10:15	05/25/12 00:15	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**18.3**	%	0.50	1		05/24/12 00:00		

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ANALYTICAL RESULTS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Sample: 502-L-2-1 **Lab ID: 60121928005** Collected: 05/23/12 13:00 Received: 05/24/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**15.3**	mg/kg	2.1	2	05/24/12 10:15	05/25/12 00:19	7440-38-2	
Cadmium	**12.1**	mg/kg	1.1	2	05/24/12 10:15	05/25/12 00:19	7440-43-9	
Lead	**207**	mg/kg	1.1	2	05/24/12 10:15	05/25/12 00:19	7439-92-1	
Zinc	**1450**	mg/kg	21.1	2	05/24/12 10:15	05/25/12 00:19	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**20.9**	%	0.50	1		05/24/12 00:00		

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ANALYTICAL RESULTS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Sample: 502-L-SIDE **Lab ID: 60121928006** Collected: 05/23/12 13:00 Received: 05/24/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**21.8**	mg/kg	2.0	2	05/24/12 10:15	05/25/12 00:29	7440-38-2	
Cadmium	**20.1**	mg/kg	0.98	2	05/24/12 10:15	05/25/12 00:29	7440-43-9	
Lead	**830**	mg/kg	0.98	2	05/24/12 10:15	05/25/12 00:29	7439-92-1	
Zinc	**15500**	mg/kg	98.1	10	05/24/12 10:15	05/25/12 10:43	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**15.0**	%	0.50	1		05/24/12 00:00		

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QUALITY CONTROL DATA

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

QC Batch: MPRP/18144 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 60121928001, 60121928002, 60121928003, 60121928004, 60121928005, 60121928006

METHOD BLANK: 1002969 Matrix: Solid
Associated Lab Samples: 60121928001, 60121928002, 60121928003, 60121928004, 60121928005, 60121928006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	05/24/12 23:36	
Cadmium	mg/kg	ND	0.50	05/24/12 23:36	
Lead	mg/kg	ND	0.50	05/24/12 23:36	
Zinc	mg/kg	ND	10.0	05/24/12 23:36	

LABORATORY CONTROL SAMPLE: 1002970

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	42.3	85	80-120	
Cadmium	mg/kg	50	46.9	94	80-120	
Lead	mg/kg	50	47.0	94	80-120	
Zinc	mg/kg	50	49.1	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1002971 1002972

Parameter	Units	60121928001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	10.4	51.8	50.6	50.3	44.6	77	68	75-125	12	20	M1
Cadmium	mg/kg	5.8	51.8	50.6	49.8	45.4	85	78	75-125	9	20	
Lead	mg/kg	52.4	51.8	50.6	108	72.2	107	39	75-125	40	20	D6,M1
Zinc	mg/kg	979	51.8	50.6	1020	734	85	-485	75-125	33	20	D6,M1

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QUALITY CONTROL DATA

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

QC Batch: PMST/7284 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60121928001, 60121928002, 60121928003, 60121928004, 60121928005, 60121928006

METHOD BLANK: 1003116 | Matrix: Solid
Associated Lab Samples: 60121928001, 60121928002, 60121928003, 60121928004, 60121928005, 60121928006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	05/24/12 00:00	

SAMPLE DUPLICATE: 1003117

Parameter	Units	60121928001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.3	20.0	2	20	

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QUALIFIERS

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

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.

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NAT ZINC RESIDENTIAL
Pace Project No.: 60121928

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60121928001	**502-L-4-1**	EPA 3050	MPRP/18144	EPA 6010	ICP/15262
60121928002	**502-L-3-2**	EPA 3050	MPRP/18144	EPA 6010	ICP/15262
60121928003	**502-L-3-1**	EPA 3050	MPRP/18144	EPA 6010	ICP/15262
60121928004	**502-L-1-1**	EPA 3050	MPRP/18144	EPA 6010	ICP/15262
60121928005	**502-L-2-1**	EPA 3050	MPRP/18144	EPA 6010	ICP/15262
60121928006	**502-L-SIDE**	EPA 3050	MPRP/18144	EPA 6010	ICP/15262
60121928001	**502-L-4-1**	ASTM D2974-87	PMST/7284		
60121928002	**502-L-3-2**	ASTM D2974-87	PMST/7284		
60121928003	**502-L-3-1**	ASTM D2974-87	PMST/7284		
60121928004	**502-L-1-1**	ASTM D2974-87	PMST/7284		
60121928005	**502-L-2-1**	ASTM D2974-87	PMST/7284		
60121928006	**502-L-SIDE**	ASTM D2974-87	PMST/7284		

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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

1556625

Section A Required Client Information:

Company: Project Navigator LTD
Address: 10497 Town & Country Way Suite 830 Houston TX 77024
Email To: mlandress@projectnavigator.com
Phone: 713-468-5004 Fax: 713-468-4515
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Mark Landress
Copy To: Phil Jen
Pjen@projectnavigator.com
Purchase Order No.:
Project Name: NAT ZINC Residential
Project Number:

Section C Invoice Information:

Attention: Same
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

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

Site Location STATE: KS

Section D Required Client Information

Matrix Codes (use only codes in left) 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

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

Requested Analysis Filtered (Y/N): Analysis Test: As Cd Pb Zn

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	COMPOSITE START DATE	COMPOSITE START TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	As	Cd	Pb	Zn	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	502-L-4-1	SL	C	5-27-12				60	1	X								X					001
2	502-L-3-2	SL	C	↓				60	1	X								X					002
3	502-L-3-1	SL	C					60	1	X								X					003
4	502-L-1-1	SL	C	5-28-12				60	1	X								X					004
5	502-L-2-1	SL	C	↓				60	1	X								X					005
6	502-L-SIDE	SL	C	↓				60	1	X								X					006
7																							
8																							
9																							
10																							
11																							
12																							

6012.1928

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Rush 24 hr	Mark Landress	5-23-12	1330	Phil Jen	5/24	850	7.9	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Mark Landress

SIGNATURE of SAMPLER: Mark Landress DATE Signed (MM/DD/YY): 5-23-12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*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.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: Project Navigator Project # 60121988

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #: 8726 9246 8836 Pace Shipping Label Used? ☐ Yes ☑ No

Optional: Proj. Due Date: 5/29/12 Proj. Name:

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals intact: ☑ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ Foam ☐ None ☐ Other

Thermometer Used: T-193 / T-194 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 7.9

Temperature should be above freezing to 6°C

Date and Initials of person examining contents: 5-24-12

		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 holding time:	☑ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☑ No ☐ N/A	6.
Rush Turn Around Time requested:	☑ Yes ☐ No ☐ N/A	7. 24hr
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. 502 - L-4-1 5-22-12 1400
Unpreserved 5035A soils frozen w/in 48hrs?	☐ Yes ☐ No ☑ N/A	11. L-3-2
Filtered volume received for dissolved tests	☐ Yes ☐ No ☑ N/A	12. L-2-1
Sample labels match COC:	☑ Yes ☐ No ☐ N/A	13. L-1-1 5-23-12 1300
-Includes date/time/ID/analyses Matrix: GW		L-2-1 L-side
All containers needing preservation have been checked	☐ Yes ☐ No ☑ N/A	14.
All containers needing preservation are found to be in compliance w/in EPA recommendation	☐ Yes ☐ No ☑ N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐ Yes ☑ No	Initial when completed: Lot # of added preservative:
Trip Blank present:	☐ Yes ☐ No ☑ N/A	15.
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm).	☐ Yes ☐ No ☑ N/A	16.
Project sampled in USDA Regulated Area	☐ Yes ☐ No ☑ N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

JCC

Project Manager Review: 5/24/12 Date:

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).

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June 01, 2012

Mark Landress
Project Navigator, Ltd.
10497 Town and Country Way
Suite 830
Houston, TX 77024

RE: Project: NATIONAL ZINC
Pace Project No.: 60122290

Dear Mark Landress:
Enclosed are the analytical results for sample(s) received by the laboratory on May 31, 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.

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

Sincerely,

Andy Brownfield

Andy Brownfield for
Jamie Church
jamie.church@pacelabs.com
Project Manager

Enclosures

cc: Philip Jen, Project Navigator, Ltd.

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CERTIFICATIONS

Project: NATIONAL ZINC
Pace Project No.: 60122290

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: NATIONAL ZINC
Pace Project No.: 60122290

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60122290001	**S08L-1-1**	Solid	05/30/12 12:00	05/31/12 08:30
60122290002	**S08L-2-2**	Solid	05/30/12 12:00	05/31/12 08:30
60122290003	**S08L-3-1**	Solid	05/30/12 12:00	05/31/12 08:30
60122290004	**S08L-4-1**	Solid	05/30/12 12:00	05/31/12 08:30
60122290005	**S08L-SIDE**	Solid	05/30/12 12:00	05/31/12 08:30

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SAMPLE ANALYTE COUNT

Project: NATIONAL ZINC
Pace Project No.: 60122290

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60122290001	**S08L-1-1**	EPA 6010	JDH	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60122290002	**S08L-2-2**	EPA 6010	JDH	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60122290003	**S08L-3-1**	EPA 6010	JDH	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60122290004	**S08L-4-1**	EPA 6010	JDH	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K
60122290005	**S08L-SIDE**	EPA 6010	JDH	4	PASI-K
		ASTM D2974-87	DWC	1	PASI-K

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60122290

Sample: S08L-1-1 **Lab ID: 60122290001** Collected: 05/30/12 12:00 Received: 05/31/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**13.0**	mg/kg	0.99	1	05/31/12 10:50	06/01/12 11:05	7440-38-2	
Cadmium	**3.5**	mg/kg	0.49	1	05/31/12 10:50	06/01/12 11:05	7440-43-9	
Lead	**49.5**	mg/kg	0.49	1	05/31/12 10:50	06/01/12 11:05	7439-92-1	M1
Zinc	**788**	mg/kg	9.9	1	05/31/12 10:50	06/01/12 11:05	7440-66-6	M1
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**22.0**	%	0.50	1		05/31/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60122290

Sample: S08L-2-2 **Lab ID: 60122290002** Collected: 05/30/12 12:00 Received: 05/31/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**12.0**	mg/kg	0.92	1	05/31/12 10:50	06/01/12 11:12	7440-38-2	
Cadmium	**2.5**	mg/kg	0.46	1	05/31/12 10:50	06/01/12 11:12	7440-43-9	
Lead	**99.6**	mg/kg	0.46	1	05/31/12 10:50	06/01/12 11:12	7439-92-1	
Zinc	**660**	mg/kg	9.2	1	05/31/12 10:50	06/01/12 11:12	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**19.8**	%	0.50	1		05/31/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60122290

Sample: S08L-3-1 **Lab ID: 60122290003** Collected: 05/30/12 12:00 Received: 05/31/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**18.0**	mg/kg	2.0	2	05/31/12 10:50	06/01/12 11:33	7440-38-2	
Cadmium	**6.2**	mg/kg	0.99	2	05/31/12 10:50	06/01/12 11:33	7440-43-9	
Lead	**88.5**	mg/kg	0.99	2	05/31/12 10:50	06/01/12 11:33	7439-92-1	
Zinc	**469**	mg/kg	9.9	1	05/31/12 10:50	06/01/12 11:14	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.4**	%	0.50	1		05/31/12 00:00		

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ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60122290

Sample: S08L-4-1 **Lab ID: 60122290004** Collected: 05/30/12 12:00 Received: 05/31/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**17.3**	mg/kg	2.2	2	05/31/12 10:50	06/01/12 11:35	7440-38-2	
Cadmium	**7.1**	mg/kg	1.1	2	05/31/12 10:50	06/01/12 11:35	7440-43-9	
Lead	**64.8**	mg/kg	1.1	2	05/31/12 10:50	06/01/12 11:35	7439-92-1	
Zinc	**1010**	mg/kg	10.8	1	05/31/12 10:50	06/01/12 11:16	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**23.4**	%	0.50	1		05/31/12 00:00		

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: NATIONAL ZINC
Pace Project No.: 60122290

Sample: S08L-SIDE **Lab ID: 60122290005** Collected: 05/30/12 12:00 Received: 05/31/12 08:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**11.7**	mg/kg	0.98	1	05/31/12 10:50	06/01/12 11:18	7440-38-2	
Cadmium	**4.3**	mg/kg	0.49	1	05/31/12 10:50	06/01/12 11:18	7440-43-9	
Lead	**53.0**	mg/kg	0.49	1	05/31/12 10:50	06/01/12 11:18	7439-92-1	
Zinc	**777**	mg/kg	9.8	1	05/31/12 10:50	06/01/12 11:18	7440-66-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**9.8**	%	0.50	1		05/31/12 00:00		

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QUALITY CONTROL DATA

Project: NATIONAL ZINC
Pace Project No.: 60122290

QC Batch: MPRP/18204 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 60122290001, 60122290002, 60122290003, 60122290004, 60122290005

METHOD BLANK: 1006278 Matrix: Solid
Associated Lab Samples: 60122290001, 60122290002, 60122290003, 60122290004, 60122290005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	06/01/12 11:03	
Cadmium	mg/kg	ND	0.50	06/01/12 11:03	
Lead	mg/kg	ND	0.50	06/01/12 11:03	
Zinc	mg/kg	ND	10.0	06/01/12 11:03	

LABORATORY CONTROL SAMPLE: 1006279

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	49.1	98	80-120	
Cadmium	mg/kg	50	49.6	99	80-120	
Lead	mg/kg	50	49.8	100	80-120	
Zinc	mg/kg	50	48.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1006280 1006281

Parameter	Units	60122290001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	13.0	50.5	49	53.4	52.3	80	80	75-125	2	20	
Cadmium	mg/kg	3.5	50.5	49	44.6	43.8	81	82	75-125	2	20	
Lead	mg/kg	49.5	50.5	49	83.6	84.4	67	71	75-125	1	20	M1
Zinc	mg/kg	788	50.5	49	796	797	16	19	75-125	0	20	M1

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QUALITY CONTROL DATA

Project: NATIONAL ZINC
Pace Project No.: 60122290

QC Batch: PMST/7311 | Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 | Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60122290001, 60122290002, 60122290003, 60122290004, 60122290005

METHOD BLANK: 1006374 | Matrix: Solid
Associated Lab Samples: 60122290001, 60122290002, 60122290003, 60122290004, 60122290005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	05/31/12 00:00	

SAMPLE DUPLICATE: 1006375

Parameter	Units	60122290001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.0	22.0	0	20	

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QUALIFIERS

Project: NATIONAL ZINC
Pace Project No.: 60122290

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.

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

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

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NATIONAL ZINC
Pace Project No.: 60122290

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60122290001	**S08L-1-1**	EPA 3050	MPRP/18204	EPA 6010	ICP/15293
60122290002	**S08L-2-2**	EPA 3050	MPRP/18204	EPA 6010	ICP/15293
60122290003	**S08L-3-1**	EPA 3050	MPRP/18204	EPA 6010	ICP/15293
60122290004	**S08L-4-1**	EPA 3050	MPRP/18204	EPA 6010	ICP/15293
60122290005	**S08L-SIDE**	EPA 3050	MPRP/18204	EPA 6010	ICP/15293
60122290001	**S08L-1-1**	ASTM D2974-87	PMST/7311		
60122290002	**S08L-2-2**	ASTM D2974-87	PMST/7311		
60122290003	**S08L-3-1**	ASTM D2974-87	PMST/7311		
60122290004	**S08L-4-1**	ASTM D2974-87	PMST/7311		
60122290005	**S08L-SIDE**	ASTM D2974-87	PMST/7311		

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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

1556627

Section A Required Client Information:

Company: Project Navigator Ltd.
Address: 10497 Town & Country Way Suite 830, Houston TX 77024
Email To: mlandress@projectnavigator.com
Phone: 713-468-5004 Fax: 713-468-4515
Requested Due Date/TAT: 24 hr TAT

Section B Required Project Information:

Report To: Mark Landress
Copy To: Philip Jen, pjen@projectnavigator.com
Purchase Order No.:
Project Name: National Zinc
Project Number:

Section C Invoice Information:

Attention: Same as Client
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Jamie Church
Pace Profile #:

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

Site Location STATE: KS

Section D Required Client Information

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

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

Requested Analysis Filtered (Y/N): N

ITEM #	SAMPLE ID	MATRIX CODE (use 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	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Metals (As, Cd, Pb, Zn)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	508L-1-1'	SL	C			5/30/12	1200		1	X								X		01
2	508L-2-2'	SL	C			5/30/12	1200		1	X								X		02
3	508L-3-1'	SL	C			5/30/12	1200		1	X								X		03
4	508L-4-1'	SL	C			5/30/12	1200		1	X								X		04
5	508L-SIDE	SL	G			5/30/12	1200		1	X								X		05
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Analysis Test: IWQFU

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature]	5/31/12	1300	[signature]	5/31	850	1.2	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE: Philip Jen [signature]
PRINT Name of SAMPLER: Philip Jen
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 5/30/12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*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: Project Navigator Project # 60122290

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

Tracking #: 8540 7504 5120 Pace Shipping Label Used? ☐ Yes ☑ No

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No Seals intact ☑ Yes ☐ No

Optional
Proj. Due Date 6/1
Proj. Name

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

Thermometer Used: (T-191) / T-194 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 1.2

Temperature should be above freezing to 6°C

Date and Initials of person examining contents: 5-31-12

		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 holding time.	☑ Yes ☐ No ☐ N/A	5.
Short Hold Time analyses (<72hr):	☐ Yes ☑ No ☐ N/A	6.
Rush Turn Around Time requested:	☑ Yes ☐ No ☐ N/A	7 24Hr
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
Unpreserved 5035A soils frozen win 48hrs?	☐ Yes ☐ No ☑ N/A	11
Filtered volume received for dissolved tests	☐ Yes ☐ No ☑ N/A	12.
Sample labels match COC	☑ Yes ☐ No ☐ N/A	13
-Includes date/time/ID/analyses Matrix: SL		
All containers needing preservation have been checked	☐ Yes ☐ No ☑ N/A	14.
All containers needing preservation are found to be in compliance with EPA recommendation	☐ Yes ☐ No ☑ N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-GRO (water), Phenolics	☐ Yes ☑ No	Initial when completed _____ Lot # of added preservative _____
Trip Blank present:	☐ Yes ☐ No ☑ N/A	15.
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm)	☐ Yes ☐ No ☑ N/A	16.
Project sampled in USDA Regulated Area	☐ Yes ☐ No ☑ N/A	17. List State: _____

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / (N)

Person Contacted _____ Date/Time _____

Comments/ Resolution _____

Project Manager Review ARB Date 5/31/12

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).

F-KS-C-003-Rev.05, Effective 04/26/10

21-May-2012

Holly Burke
Kansas Department of Health and Environment
1000 SW Jackson Suite 410
Topeka, KS 66612

Tel: (785) 296-1935
Fax:

Re: National Zinc Work Order: **1205831**

Dear Holly,

ALS Environmental received 5 samples on 19-May-2012 09:35 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 15.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Bethany Agarwal

Electronically approved by: Yvan K. Ty

Bethany Agarwal
Project Manager

Certificate No: KS: E-10352

ALS Environmental

Date: 21-May-12

Client: Kansas Department of Health and Environment
Project: National Zinc
Work Order: **1205831**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1205831-01	500C-1-2D	Soil		5/17/2012 17:00	5/19/2012 09:35	☐
1205831-02	500C-2-2D	Soil		5/17/2012 17:00	5/19/2012 09:35	☐
1205831-03	504C-1-2D	Soil		5/17/2012 17:00	5/19/2012 09:35	☐
1205831-04	504C-2-2D	Soil		5/17/2012 17:00	5/19/2012 09:35	☐
1205831-05	506C-1-2D	Soil		5/17/2012 17:00	5/19/2012 09:35	☐

ALS Environmental

Date: 21-May-12

Client: Kansas Department of Health and Environment
Project: National Zinc
Work Order: 1205831

Case Narrative

"I certify that this data is technically accurate, complete, and in compliance with the terms and conditions
of the contract, for other than the conditions detailed above. Release of the data contained in this
hardcopy data package and its electronic data deliverable submitted on diskette has been authorized by
the Laboratory Manager or her/his designee, as verified by the following signature."

Bethany McDaniel Agarwal

ALS Environmental

Date: *21-May-12*

Client: Kansas Department of Health and Environment
Project: National Zinc
Work Order: 1205831
Sample ID: 500C-1-2D
Lab ID: 1205831-01
Collection Date: 5/17/2012 05:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS			**SW6020**		Prep Date: **5/21/2012**	Analyst: **ALR**
Arsenic	**14.2**		**2.92**	**mg/Kg-dry**	5	5/21/2012 03:32 PM
Cadmium	**6.72**		**2.92**	**mg/Kg-dry**	5	5/21/2012 03:32 PM
Lead	**35.0**		**2.92**	**mg/Kg-dry**	5	5/21/2012 03:32 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**23.8**		**0.0100**	**wt%**	1	5/21/2012 09:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *21-May-12*

Client: Kansas Department of Health and Environment
Project: National Zinc
Work Order: 1205831
Sample ID: 500C-2-2D
Lab ID: 1205831-02
Collection Date: 5/17/2012 05:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS			**SW6020**		Prep Date: **5/21/2012**	Analyst: **ALR**
Arsenic	**13.0**		**2.97**	**mg/Kg-dry**	5	5/21/2012 03:37 PM
Cadmium	**6.94**		**2.97**	**mg/Kg-dry**	5	5/21/2012 03:37 PM
Lead	**44.4**		**2.97**	**mg/Kg-dry**	5	5/21/2012 03:37 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**22.3**		**0.0100**	**wt%**	1	5/21/2012 09:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *21-May-12*

Client: Kansas Department of Health and Environment
Project: National Zinc
Sample ID: 504C-1-2D
Collection Date: 5/17/2012 05:00 PM

Work Order: 1205831
Lab ID: 1205831-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS			**SW6020**		Prep Date: **5/21/2012**	Analyst: **ALR**
Arsenic	**9.95**		**3.21**	**mg/Kg-dry**	5	5/21/2012 03:41 PM
Cadmium	**25.1**		**3.21**	**mg/Kg-dry**	5	5/21/2012 03:41 PM
Lead	**38.1**		**3.21**	**mg/Kg-dry**	5	5/21/2012 03:41 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**24.8**		**0.0100**	**wt%**	1	5/21/2012 09:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *21-May-12*

Client: Kansas Department of Health and Environment
Project: National Zinc
Work Order: 1205831
Sample ID: 504C-2-2D
Lab ID: 1205831-04
Collection Date: 5/17/2012 05:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS			**SW6020**		Prep Date: **5/21/2012**	Analyst: **ALR**
Arsenic	**12.5**		**2.83**	**mg/Kg-dry**	5	5/21/2012 03:46 PM
Cadmium	**5.27**		**2.83**	**mg/Kg-dry**	5	5/21/2012 03:46 PM
Lead	**36.4**		**2.83**	**mg/Kg-dry**	5	5/21/2012 03:46 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**21.2**		**0.0100**	**wt%**	1	5/21/2012 09:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *21-May-12*

Client: Kansas Department of Health and Environment
Project: National Zinc
Work Order: 1205831
Sample ID: 506C-1-2D
Lab ID: 1205831-05
Collection Date: 5/17/2012 05:00 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS			**SW6020**		Prep Date: **5/21/2012**	Analyst: **ALR**
Arsenic	**14.1**		**3.04**	**mg/Kg-dry**	5	5/21/2012 03:50 PM
Cadmium	**5.93**		**3.04**	**mg/Kg-dry**	5	5/21/2012 03:50 PM
Lead	**41.6**		**3.04**	**mg/Kg-dry**	5	5/21/2012 03:50 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**24.7**		**0.0100**	**wt%**	1	5/21/2012 09:00 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 21-May-12

Client: Kansas Department of Health and Environment
Work Order: 1205831
Project: National Zinc

QC BATCH REPORT

Batch ID: **61223** Instrument ID **ICPMS03** Method: **SW6020**

MBLK Sample ID: **MBLKS1-052112-61223** Units: **mg/Kg** Analysis Date: **5/21/2012 04:13 PM**

Client ID: Run ID: **ICPMS03_120521A** SeqNo: **2788419** Prep Date: **5/21/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.50								
Cadmium	ND	0.50								
Lead	ND	0.50								

LCS Sample ID: **MLCSS1-052112-61223** Units: **mg/Kg** Analysis Date: **5/21/2012 03:14 PM**

Client ID: Run ID: **ICPMS03_120521A** SeqNo: **2788305** Prep Date: **5/21/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.02	0.50	10	0	100	80-120	0			
Cadmium	10.82	0.50	10	0	108	80-120	0			
Lead	10.6	0.50	10	0	106	80-120	0			

MS Sample ID: **1205657-26BMS** Units: **mg/Kg** Analysis Date: **5/21/2012 04:31 PM**

Client ID: Run ID: **ICPMS03_120521A** SeqNo: **2788423** Prep Date: **5/21/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.617	0.46	9.223	0.049	92.9	75-125	0			
Cadmium	25.78	0.46	9.223	402.6	-4090	75-125	0			SO
Lead	10.5	0.46	9.223	1.205	101	75-125	0			

MSD Sample ID: **1205657-26BMSD** Units: **mg/Kg** Analysis Date: **5/21/2012 04:36 PM**

Client ID: Run ID: **ICPMS03_120521A** SeqNo: **2788424** Prep Date: **5/21/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.27	0.46	9.135	0.049	90	75-125	8.617	4.11	25	
Cadmium	20.4	0.46	9.135	402.6	-4180	75-125	25.78	23.3	25	SO
Lead	10.11	0.46	9.135	1.205	97.5	75-125	10.5	3.72	25	

DUP Sample ID: **1205657-26BDUP** Units: **mg/Kg** Analysis Date: **5/21/2012 04:22 PM**

Client ID: Run ID: **ICPMS03_120521A** SeqNo: **2788421** Prep Date: **5/21/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.47	0	0	0	0-0	0.049	0	25	
Lead	1.123	0.47	0	0	0	0-0	1.205	7.09	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Kansas Department of Health and Environment
Work Order: 1205831
Project: National Zinc

QC BATCH REPORT

Batch ID: **61223** Instrument ID **ICPMS03** Method: **SW6020**

DUP Sample ID: **1205657-26BDUP** Units: **mg/Kg** Analysis Date: **5/21/2012 05:02 PM**

Client ID: Run ID: **ICPMS03_120521A** SeqNo: **2788546** Prep Date: **5/21/2012** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cadmium	12.8	47	0	0	0	0-0	397.9	0	25	J

The following samples were analyzed in this batch:

1205831-01A	1205831-02A	1205831-03A
1205831-04A	1205831-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Kansas Department of Health and Environment
Work Order: 1205831
Project: National Zinc

QC BATCH REPORT

Batch ID: **R128151** Instrument ID **Balance1** Method: **SW3550** **(Dissolve)**

DUP Sample ID: **1205831-05ADUP** Units: **wt%** Analysis Date: **5/21/2012 09:00 AM**

Client ID: **506C-1-2D** Run ID: **BALANCE1_120521B** SeqNo: **2788303** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	25.4	0.010	0	0	0	0-0	24.7	2.79	20	

The following samples were analyzed in this batch:

1205831-01A	1205831-02A	1205831-03A
1205831-04A	1205831-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 21-May-12

Client: Kansas Department of Health and Environment
Project: National Zinc
WorkOrder: **1205831**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/Kg-dry	Milligrams per Kilogram - Dry weight corrected
wt%	

ALS Environmental

Sample Receipt Checklist

Client Name: **KDHE** Date/Time Received: **19-May-12 09:35**

Work Order: **1205831** Received by: **RDN**

Checklist completed by Rachel D. Naran (eSignature) 19-May-12 (Date) Reviewed by: Bethany Agarwal (eSignature) 19-May-12 (Date)

Matrices: SOIL
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.2	003	
Cooler(s)/Kit(s):	2828		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070

Chain of Custody Fo

Page 1 of 1

COC ID: 59759

1205831

KDHE: Kansas Department of Health and Environment

Project: National Zinc

ALS Project Manager:

Customer Information		Project Information	
Purchase Order	12051	Project Name	
Work Order		Project Number	
Company Name		Bill To Company	
Send Report To		Invoice Attn	
Address		Address	
City/State/Zip		City/State/Zip	
Phone	— 6242	Phone	— 6242
Fax	785-296-7030	Fax	785-296-7030
e-Mail Address	hburke@kaneks.gov	e-Mail Address	hburke@kaneks.gov

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	500C-1-2D	5/17/12	1700	Soil	None	1	X	X									
2	500C-2-2D	5/17/12	1700	Soil	None	1	X	X									
3	504C-1-2D	5/17/12	1700	Soil	None	1	X	X									
4	504C-2-2D	5/17/12	1700	Soil	None	1	X	X									
5	506C-1-2D	5/17/12	1700	Soil	None	1	X	X									
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Holly Burke Holly Burke/KDHE

Shipment Method: Truck Fed Ex 8747 6464 9826

Required Turnaround Time: (Check Box) [illegible] X

Results Due Date: 5/21/12

Relinquished by: Holly Burke/KDHE Date: 5/18/12 Time: 0900

Received by:

Relinquished by: Date: 5/19/12 Time: 09:35

Received by (Laboratory): EN AS

Logged by (Laboratory): Date: Time:

Checked by (Laboratory):

Notes: 24 Hour TAT

Cooler ID | Cooler Temp.

QC Package: (Check One Box Below)

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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120631

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5657

CUSTODY SEAL

Date: 5/18/12 Time: 0930
Name: Holly Black / Blake [illegible]
Company: [illegible]

Seal Broken By: LN
Date: 5/19/12

Fedex Tracking Number: 874764649869

To: _____ Phone: _____

Attn: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

In Internal Billing Reference

Appendix C

Correspondence

Residential Removal Action
Cherryvale, KS

From: Holly Burke [mailto:HBurke@kdheks.gov]
Sent: Wednesday, May 23, 2012 1:12 PM
To: Philip Jen; Mark Landress
Cc: Chris Carey
Subject: National Zinc-Residential 500-506 Coyle Approval to Backfill

Phil/Mark,
Thanks for providing the data, table, and map. I have looked over the data and compared it to the duplicate KDHE samples. I have attached the data for your reference (National Zinc Final.pdf). As you will see KDHE's samples for 500C-2-2D and 506C-1-2D both exceeded Residential RSK levels for arsenic, whereas the samples analyzed by Pace came back below RSK for those two locations; therefore, to be on the safe side, we will need to lay barrier down in those two locations. Any locations where data comes back exceeding any Residential RSK level (for compounds analyzed) will need barrier laid down prior to backfilling.

From speaking with Mark out here in the field, for simplicity I think he is going to have the field crew lay barrier down on the entire Guidie and Wood (500, 502, 504, 506 Coyle St) properties since arsenic exceeds the RSK levels on all lots except for 502 Coyle, rather than cut pieces out for the 502 area.

I have given approval to Mark to have the field crew begin backfilling the Guidie and Wood Properties since all final data has been received and evaluated for those areas.

Thanks,
Holly Burke

DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.
ATTORNEYS AT LAW

WILLIAM C. ANDERSON

WRITER'S DIRECT:
(918) 591-5283 (telephone)
(918) 925-5283 (facsimile)
Tulsa, Oklahoma
wanderson@dsda.com

E. J. DOERNER (1897-1980)
DICKSON M. SAUNDERS (1920-2003)

April 30, 2012

Mr. James H. Marler
Ms. Angela Wood
221 N. Iowa
Winfield, KS 67156

Re: 500/502/504/506 North Coyle Street
Cherryvale, Kansas 67335

Dear Mr. Marler and Ms. Wood:

This will confirm our telephone conversation this morning in which the two of you requested that the Respondents include Ms. Woods' property at 500/502/504/506 North Coyle Street, Cherryvale, Kansas in the environmental remediation scheduled to commence next Monday, May 7, 2012.

In response to my inquiry whether the Respondents' contractor could dispose of the house trailers, attachments, fixtures, out buildings, fences and other property now located at the above addresses at a suitable land fill, such disposal to be at the sole cost of the Respondents, both of you indicated this was permissible and gave your consent. You indicated that there is a cedar chest and a wood stove currently in one of the house trailers that you wanted to preserve, and that you would remove those two items (if they are still there) before May 7, but that anything in the house trailers or on the premises as of May 7 can be disposed of by ENTACT when they remediate the property. By signing this letter in the space provided below, the two of you grant Respondents and ENTACT a sufficient property interest in the items of property to be disposed of as may be needed to lawfully authorize ENTACT to carry out their disposal.

I indicated to you that regarding any children's toys and play equipment on the lawn outside the house trailers, we would ask ENTACT to assemble these items and move them off to one side near the edge of the real property so that you can pick them up when you are next in Cherryvale. Of course, there can be no assurance that someone will not take these items or that they will still be there when you can get there to pick them up.

Two things which we did not discuss this morning but which I ask that you confirm: First, that by signing and returning this letter, you affirm and reaffirm the validity of the Access Agreement and Easement you executed and delivered to the Respondents last August, and that under this document, the Respondents and their contractor have the authority to proceed with the remediation of Ms. Woods' property and dispose of the house trailers, attachments, fixtures, out

buildings, fences and other property now located at the above addresses; secondly, that by singing and returning this letter, you represent that the two of you, either jointly or individually, own the property to be disposed of and that none of it is subject to any mortgage, lien or property interest of any kind owned by any third party.

Please signify your agreement, confirmation and consent to the matters covered by this letter by dating and signing in the space provided below and returning one copy to me in the enclosed self-addressed stamped envelope. Upon receipt of the signed and dated copy of this letter, Respondents will instruct ENTACT to include Ms. Woods' property at 500/502/504/506 North Coyle Street, Cherryvale, Kansas in the environmental remediation scheduled to commence next Monday, May 7, 2012.

Sincerely,

William C. Anderson

William C. Anderson of
DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.

WCA:VR

cc: Nancy Ulrich, KDHE, via email
Deanna Ross, KDHE, via email
Holly Burke, KDHE, via email
Mark Landress, Project Navigator, via email
Andrew Thiros, U.S. Steel, via email
Mark Rupnow, U.S. Steel, via email
Jeff Rey, U.S. Steel, via email
Mike Stoub, ENTACT, via email

Agreed to, consent to, approved and confirmed this 3 day of May, 2012.

Angie Wood

Angela Wood

James H. Marler

James Marler

DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.
ATTORNEYS AT LAW

WILLIAM C. ANDERSON

WRITER'S DIRECT:
(918) 591-5283 (telephone)
(918) 925-5283 (facsimile)
Tulsa, Oklahoma
wanderson@dsda.com

S. J. DOERNER (1897-1980)
DICKSON M. SAUNDERS (1910-2001)

July 2, 2012

Mr. Gary Blackburn
508 N. Liberty
Cherryvale, KS 67335

Re: 508 N. Liberty
Cherryvale, Kansas 67335

Dear Mr. Blackburn:

This is to advise that the 30 day watering period on the sod installed on your property as part of the residential remediation ended June 30, 2012. We encourage you to continue watering yourselves.

Give me a call if you have any questions.

Regards,

Bill Anderson

William C. Anderson of
DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.

WCA:VR

cc: Jeff Rey via email
Mark Rupnow, via email
Andrew Thiros, via email
Mike Stoub, via email
Mark Landress, via email

2507458v1

TWO WEST SECOND STREET, SUITE 700
TULSA, OKLAHOMA 74103-3117
TELEPHONE (918) 592-1211
FACSIMILE (918) 581-5380

www.dsda.com

201 ROBERT S. KERR AVENUE, SUITE 700
OKLAHOMA CITY, OKLAHOMA 73102-4203
TELEPHONE (405) 319-3500
FACSIMILE (405) 319-3509

DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.
ATTORNEYS AT LAW

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Tulsa, Oklahoma
wanderson@dsda.com

E. J. DOERNER (1897-1980)
DICKSON M. SAUNDERS (1920-2001)

July 2, 2012

Mr. Jonathan Guidie
Mrs. Regina Guidie
1481 Piper Drive
Carthage, Missouri 64836

Re: 500 North Coyle Street
Cherryvale, Kansas 67335

Dear Mr. and Mrs. Guidie:

This is to advise that the 30 day watering period on the sod installed on your property as part of the residential remediation ended June 30, 2012. We encourage you to continue watering yourselves.

Give me a call if you have any questions.

Regards,

Bill Anderson

William C. Anderson of
DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.

WCA:VR

cc: Jeff Rey via email
Mark Rupnow, via email
Andrew Thiros, via email
Mike Stoub, via email
Mark Landress, via email

2507479v1

DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.
ATTORNEYS AT LAW

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Tulsa, Oklahoma
wanderson@dsda.com

K. J. DOERNER (1897-1980)
DICKSON M. SAUNDERS (1940-2001)

July 2, 2012

Mr. James H. Marler
Ms. Angela Wood
2210 N. Iowa
Winfield, KS 67156

Re: 500/502/504/506 North Coyle Street
Cherryvale, Kansas 67335

Dear Mr. Marler and Ms. Wood:

This is to advise that the 30 day watering period on the sod installed on your property as part of the residential remediation ended June 30, 2012. We encourage you to continue watering yourselves.

Give me a call if you have any questions.

Regards.

Bill Anderson

William C. Anderson of
DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.

WCA:VR

cc: Jeff Rey via email
Mark Rupnow, via email
Andrew Thiros, via email
Mike Stoub, via email
Mark Landress, via email

2507481v1

DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.
ATTORNEYS AT LAW

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(918) 925-5283 (facsimile)
Tulsa, Oklahoma
wanderson@dada.com

H. J. DOERNER (1897-1980)
DICKSON M. SAUNDERS (1910-2001)

July 2, 2012

Mr. Steve Page
Mrs. Cindy Page
511 Martin Street
Cherryvale, KS 67335

Re: 501 Martin Street
Cherryvale, Kansas 67335

Dear Mr. and Mrs. Page:

This is to advise that the 30 day watering period on the sod installed on your property as part of the residential remediation ended June 30, 2012. We encourage you to continue watering yourselves.

Give me a call if you have any questions.

Regards,

William C. Anderson of
DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.

WCA:VR

cc: Jeff Rey via email
Mark Rupnow, via email
Andrew Thiros, via email
Mike Stoub, via email
Mark Landress, via email

2507474v1

DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.
ATTORNEYS AT LAW

WILLIAM C. ANDERSON

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Tulsa, Oklahoma
wanderson@dsda.com

E. J. DOERNER (1897-1960)
DICKSON M. SAUNDERS (1920-2001)

July 2, 2012

Mr. Stuart Perez
Ms. Catherine Hannah
502 N. Liberty
Cherryvale, KS 67335

Re: 502 N. Liberty
Cherryvale, Kansas 67335

Dear Mr. Perez and Ms. Hannah:

This is to advise that the 30 day watering period on the sod installed on your property as part of the residential remediation ended June 30, 2012. We encourage you to continue watering yourselves.

Give me a call if you have any questions.

Regards,

William C. Anderson of
DOERNER, SAUNDERS, DANIEL & ANDERSON, L.L.P.

WCA:VR

cc: Jeff Rey via email
Mark Rupnow, via email
Andrew Thiros, via email
Mike Stoub, via email
Mark Landress, via email

2507468v1

Appendix D

Photo Documentation

Residential Removal Action
Cherryvale, KS

Demolition activities on the 500-506 Coyle St. properties.

Demolition activities on the 500-506 Coyle St. properties.

Demolition activities on the 500-506 Coyle St. properties.

Demolition activities on the 500-506 Coyle St. properties.

Photo looking NW at 500-508 Coyle Street Before Excavation.

Photo looking NW at 500-508 Coyle Street After Excavation.

Cistern with marker fabric being laid at the bottom of excavation.

Cistern being filled with limestone gravel.

Cistern with marker fabric laid at the bottom of excavation prior to lime gravel backfill.

Cistern with limestone gravel fill.

XRF measurement of soils at the bottom of an excavation point.

Soil backfilling with marker fabric visible.

Placement of clean fill soil.

Skid loader pushing clean fill over marker fabric.

Completed soil backfill and placed. View north at 500-508 Coyle St.

View northwest at 502 N. Liberty St. property with sod being installed.

View southwest at the 508 Coyle St. property with sod being installed.

Sod watering using a water truck.

Sod condition in July 2012

Sod watering using a water truck.

Waste soil stockpile during construction.

Waste soil stockpile August, 2012. Cover damaged by hail and wind.

Waste soil stockpile September, 2012 following repair.

Cherryvale, Kansas Residential Soil Removal Action May, 2012

PROJECT NAVIGATOR, LTD.

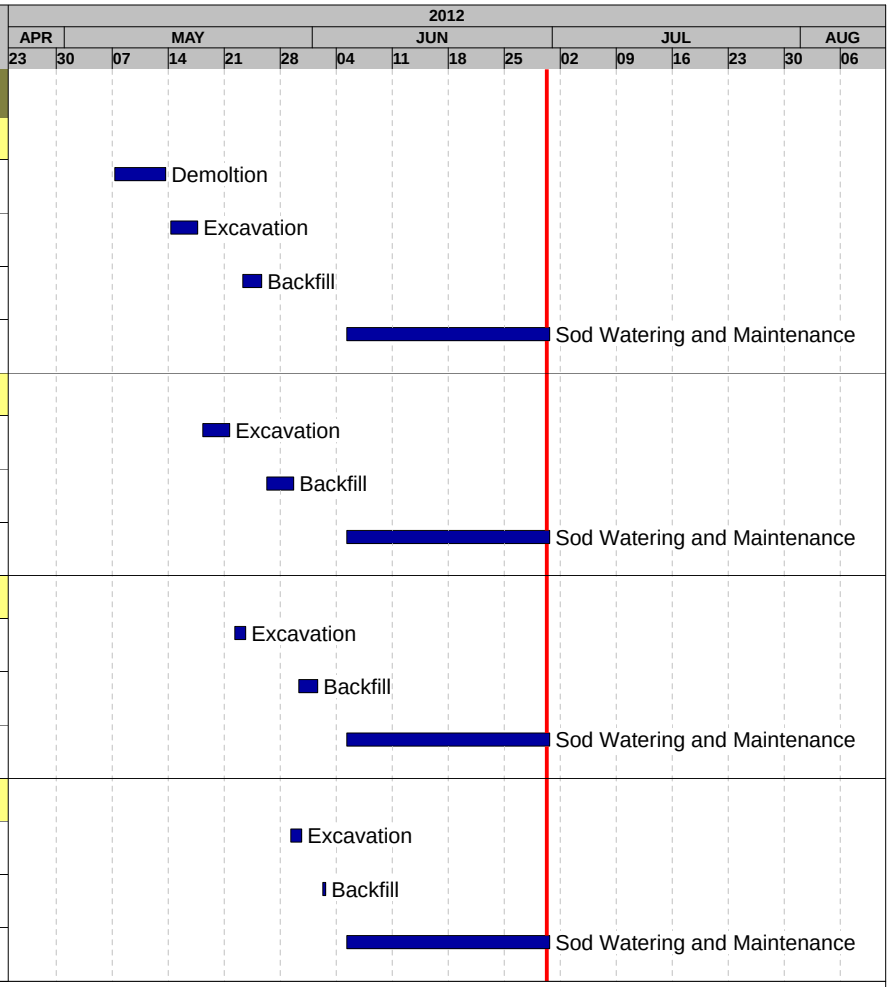
Appendix E

Contractor Field Logs

Residential Removal Action

Cherryvale, KS

Act ID	Description	Duration	Start	Finish
Former National Zinc Smelter-Residential RA 2012				
500-502-504-506 N. Coyle				
1000	Demoltion	5d	07MAY12 A	13MAY12 A
1010	Excavation	4d	14MAY12 A	17MAY12 A
1020	Backfill	3d	23MAY12 A	25MAY12 A
1030	Sod Watering and Maintenance	19d	05JUN12 A	30JUN12 A
501 N. Martin				
1040	Excavation	2d	18MAY12 A	21MAY12 A
1050	Backfill	2d	26MAY12 A	29MAY12 A
1060	Sod Watering and Maintenance	19d	05JUN12 A	30JUN12 A
502 N. Liberty				
1070	Excavation	2d	22MAY12 A	23MAY12 A
1080	Backfill	3d	30MAY12 A	01JUN12 A
1090	Sod Watering and Maintenance	19d	05JUN12 A	30JUN12 A
508 N. Liberty				
1100	Excavation	2d	29MAY12 A	30MAY12 A
1110	Backfill	0	02JUN12 A	02JUN12 A
1120	Sod Watering and Maintenance	19d	05JUN12 A	30JUN12 A



ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

500-502-504-506 North Coyle
Structure Demolition

Start Date: May 7, 2012
Completion Date: May 13, 2012

Personnel:

Maynard Randall	FPM
Jerry Overtyon	H&S
Rocky Randall	Operator
Tommy Rozell	Laborer
Gary Robinson	Laborer

Equipment:

TB175 Mini Excavator with 36" bucket
Crew Pickup
Utility / Restoration Truck

Subcontractor:

Pillar to Post Services included:
Operator - Jason Atkinson
Equipment - Skid Steer with Grappler

Allied Waste: Disposal / Recycling

5/7/12 - 10.86 Tons of stuctural debris removed (2 containers)
5/8/12 - 36.25 Tons of structural debris removed (5 containers)
5/9/12 - 33.16 Tons of structural debris removed (4 containers)

ACTIVITIES: Utilities were located and disconnected prior to initiating field work. Mobilization occured on the 5/7/12. Allied Waste dropped containers for debris removal, which included the demolition of 3 trailers, fencing, garbage, outbuilding, steps, metal and miscellaneous debris. Homeowner's personal property was staged in a location of their discretion. Demolition was completed on 5/13/12.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

500-502-504-506 North Coyle

Excavation

Start Date: May 14, 2012
Completion Date: May 17, 2012

Personnel:

Maynard Randall	FPM
Jerry Overtyon	H&S
Rocky Randall	Operator
Mike Singleton	Operator
Johnny England	Operator
Tommy Rozell	Laborer
Earl Palmer	Laborer
Gary Robinson	Laborer / Fueling

Equipment:

TB175 Mini Excavator with 36" bucket
2 - TL250C TAK - Skid Steers
Crew Pickup
Utility / Restoration Truck

Subcontractor: Onsite repository hauling

Pillar to Post Services included:
5/14/12: 12yd. Dump truck
5/15/12: 3-12yd Dump Trucks
5/16/12: 3 - 12yd Dump Trucks
5/17/12: 3-12yd Dump Trucks

ACTIVITIES: Work began on 5/14/12 and included excavation, stockpiling and hauling yards soils to the onsite repository. Excavation of these properties was completed on the 5/17/12.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

500-502-504-506 North Coyle

Backfill

Start Date: May 23, 2012
Completion Date: May 25, 2012

Personnel:

Mike Singleton	Operator
Earl Palmer	Laborer

Equipment:

TL250C TAK - Skid Steer
Crew Pickup
Utility / Restoration Truck

Subcontractor: Pillar to Post

5/23/12: 12Yd Dump Trucks - 47 loads
5/24/12: 12yd Dump Trucks -82 loads
5/25/12: 12yd Dump Trucks - 50 loads

Midwest Minerals:

AB-3 Stone - 176.78 Tons hauled by Subcontractor Pillar to Post: 13 loads

ACTIVITIES: Backfill consisted of placing common fill and topsoil materials and restroing the property to original grade. Geo-textile was placed under the stone used for driveway restoration.

RESTORATION

Date Started: June 5, 2012
Completed: June 30, 2012

Watering of Sod started on the 6/5/12 and was completed on 6/30/12.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

501 North Martin

Excavation

Start Date: May 18, 2012
Completion Date: May 21, 2012

Personnel:

Maynard Randall	FPM
Jerry Overtyon	H&S
Rocky Randall	Operator
Mike Singleton	Operator
Johnny England	Operator
Tommy Rozell	Laborer
Earl Palmer	Laborer
Gary Robinson	Dust Suppression

Equipment:

TB175 Mini Excavator with 36" bucket
2 - TL250C TAK - Skid Steers
Crew Pickup
Utility / Restoration Truck
2000 Gallon Water Truck

Subcontractor: Onsite repository hauling

Pillar to Post Services included:
5/18/12: 2 - 12yd Dump Trucks
5/21/12: 2 - 12yd Dump Trucks

ACTIVITIES: Started excavation on the 5/18/12, which included removing soils and hauling off to onsite repository. Also a dog pen was removed and rebuilt per owner outside the excavation and backfill area.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

501 North Martin

Backfill

Start Date: May 26, 2012
Completion Date: May 29, 2012

Personnel:

Mike Singleton	Operator	Maynard Randall - FPM
Earl Palmer	Laborer	Jerry Overton - HSO

Equipment:

TL250C TAK - Skid Steer
Crew Pickup
Utility / Restoration Truck

Subcontractor: Pillar to Post

5/26/12 - 12yd Dump Trucks - 25 loads

Midwest Minerals:

AB-3 Stone: 59.84 tons hauled and stockpiled by Subcontractor Pillar to Post: 5 loads

ACTIVITIES: Backfill started on the 5/26/12. This consisted of placing common fill and topsoil in the yard area and placing geofabric in both driveway areas where rock was placed. Backfill activities were completed on the 5/29/12.

RESTORATION

Date Started: June 5, 2012
Date Completed: June 30, 2012

Watering of Sod started on the 6/5/12 and was completed on 6/30/12.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

502 North Liberty

Excavation

Start Date: May 22, 2012
Completion Date: May 23, 2012

Personnel:

Maynard Randall	FPM
Jerry Overtyon	H&S
Rocky Randall	Operator
Johnny England	Operator
Tommy Rozell	Laborer
Gary Robinson	Dust Suppression

Equipment:

TB175 Mini Excavator with 36" bucket
TL250C TAK - Skid Steer
Crew Pickup
Utility / Restoration Truck
2000 Gallon Water Truck

Subcontractor: Onsite repository hauling

Pillar to Post Services included:
5/22/12: 2 - 12yd Dump Trucks
5/23/12: 2 - 12yd Dump Trucks

ACTIVITIES: Started excavation activities on the 22nd of May and completed on the 23rd of May. These activities consisted of removing and hauling soils to the onsite repository preparing area for backfill.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

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1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

502 North Liberty

Backfill

Start Date: May 30, 2012
Completion Date: June 1, 2012

Personnel:

Mike Singleton	Operator	Maynard Randall - FPM
Earl Palmer	Laborer	Jerry Overton - HSO

Equipment:

TL250C TAK - Skid Steer
Crew Pickup
Utility / Restoration Truck

Subcontractor: Pillar to Post

5/30/12 - 12yd Dump Trucks - 61 loads
6/1/12 - 12yd Dump Trucks - 44 loads

Midwest Minerals:

AB-3 Stone: 56.31 tons hauled and stockpiled by Subcontractor Pillar to Post: 4 loads

ACTIVITIES: Backfill activities started on the 30th of May and where completed on the 1st of June. These activities consisted placing commonfill and topsoil, also a driveway to the southside of property was completed with the placement of geofabric and stone. The mailbox was relocated per homeowners request.

RESTORATION

Date Started: June 5, 2012
Date Completed: June 30, 2012

Watering of Sod started on the 6/5/12 and was completed on 6/30/12.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

508 Liberty

Excavation

Start Date: May 29, 2012
Completion Date: May 30, 2012

Personnel:

Maynard Randall	FPM
Jerry Overtyon	H&S
Rocky Randall	Operator
Johnny England	Operator
Tommy Rozell	Laborer
Gary Robinson	Dust Suppression

Equipment:

TB175 Mini Excavator with 36" bucket
TL250C TAK - Skid Steers
Crew Pickup
Utility / Restoration Truck
2000 Gallon Water Truck

Subcontractor: Onsite repository hauling

Pillar to Post Services included:
5/29/12: 2 - 12yd Dump Trucks
5/30/12: 2 - 12yd Dump Trucks

ACTIVITIES: Started excavation activities on the 5/29/12 and completed on 5/30/12. These activities consisted of removing and hauling soils to the onsite repository preparing area for backfill.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

ENTACT, LLC
1 E. Oak Hill Drive, Suite 102
Westmont, IL 60559
630.986.2900
630.986.0653 (fax)

Former National Zinc Smelter Site, Cherryvale, KS
Field Activity Summary Report

508 Liberty

Backfill

Start Date: June 2, 2012
Completion Date: June 2, 2012

Personnel:

Mike Singleton	Operator	Maynard Randall - FPM
Johnny England	Operator	Jerry Overton - HSO
Earl Palmer	Laborer	
Tommy Rozell	Laborer	

Equipment:

2 - TL250C TAK - Skid Steer
Crew Pickup
Utility / Restoration Truck

Subcontractor: Pillar to Post

6/2/12 - 12yd Dump Trucks - 56 loads

Midwest Minerals:

AB-3 Stone: 44.34 tons hauled and stockpiled by Subcontractor Pillar to Post: 3 loads

ACTIVITIES: Backfill activities started on 6/2/12 and were completed on 6/2/12. These activities consisted of placing common fill and topsoil in the specified areas. Also a driveway was completed on the west side of the house with gravel underlain by geo-textile. A dog pen was restored on this property after the sod had been placed.

RESTORATION

Date Started: June 5, 2012
Date Completed: June 30, 2012

Watering of Sod started on the 6/5/12 and was completed on 6/30/12.

Maynard Randall

Maynard Randall, ENTACT Field Project Manager

Pillar to Post Services
262 19,000 Rd.
Cherryvale, KS 67335
620-330-3315

STATEMENT

Vendor # 8619

Date
05/29/2012

E8103
30.00.00
4
6/12/12

Name/Address
Entact 1010 Executive Court Suite 280 Westmont, IL 60559

Item	Description	Total
5/7-5/13, 2012 Skid Steer	44 hrs	
Dump truck	5/14- 11 hrs. (1 truck) 5/15- 33 hrs. (3 trucks) 5/16- 33 hrs. (3 trucks) 5/17- 33 hrs. (3 trucks) 5/18- 22 hrs. (2 trucks) 5/21- 22 hrs. (2 trucks) 5/22- 22 hrs. (2 trucks) 5/23- 22 hrs. (2 trucks) 5/25- 16 hrs. (2 trucks) Total dump truck hrs. - 214	
Topsoil	5/23- 47 loads 5/24- 82 loads 5/25- 75 loads Total topsoil loads - 204	
Trackhoe	5/22- 1 trackhoe standby 8 hrs. 5/23- 1 trackhoe standby 6 hrs. Total hrs. for trackhoe - 14	
Project Navigator photos	4/1- 1 photo 4/8- 1 photo 4/11- 1 photo 4/14- 1 photo 4/30- 1 photo 5/14- 1 photo	
Storage	Warehouse storage	
THIS IS A STATEMENT		

Pillar to Post Services
262 19,000 Rd.
Cherryvale, KS 67335
620-330-3315

STATEMENT

Vendor.
#8619

E8103
30.00.00
4

6/21/12

Date
06/12/2012

Name/Address
Entact 1010 Executive Court Suite 280 Westmont, IL 60559

Item	Description	Total
5/25-6/2, 2012 Dump truck	5/25- 16 hrs. (2 trucks) 5/29-22 hrs. (2 trucks) 5/30-16 hrs. (2 trucks) 6/01-25 hrs. (4 trucks) 6/02-2 hrs. (1 truck) Total dump truck hrs. – 81 hrs	
Topsoil	5/30-61 loads 6/01-44 loads 6/02-56 loads Total topsoil loads – 161 loads	
Silt Fence	2 Rolls	
Safety Fence	15 Rolls	
Straw Bales	6 bales	

THIS IS A STATEMENT

Fill Soil - 365 Loads
Dump Truck - 295 hours