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PRE DESIGN SAMPLING AND ANALYSIS REPORT CNC CHARLESTON SC
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ENSAFE INC.

PRE-DESIGN SAMPLING AND ANALYSIS REPORT

**Macalloy Corporation Site
Charleston, South Carolina**

CTO: 0166

Contract Number: N62467-89-D-0318

Prepared for:



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Region 4
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List of Acronyms

bgs	below ground surface
COC	chemical of concern
DPT	direct push technology
EPA	Environmental Protection Agency
ESP	electrostatic precipitator
GEL	General Engineering Laboratories
LSI	lined surface impoundment
MS/MSD	matrix spike/matrix spike duplicate
mg/kg	milligrams per kilogram
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
SAP	sampling and analysis plan
SDG	sample delivery group
µG/L	micrograms per liter

1.0 INTRODUCTION

EnSafe Inc. has prepared this pre-design sampling and analysis report for the Macalloy Corporation Site in Charleston, South Carolina, under Navy CLEAN Contract Number N62467-89-D-0318 for the United States Environmental Protection Agency (EPA). Remedial investigations previously conducted at this former ferrochromium alloy manufacturing plant have indicated chromium (VI) as a chemical of concern (COC) in soil and groundwater and total chromium, nickel, and zinc as sediment COCs. The remedies selected by the EPA to address these COCs, as documented in the final Record of Decision for the site (August 2002), include additional sampling of soil, groundwater, and sediment to support remedial design. This report describes the sampling and analytical methods used to collect these data and presents the sampling results.

Sampling activities were conducted as outlined in the updated Macalloy site-specific health and safety plan presented as Appendix A of the *Final Pre-Design Sampling and Analysis Plan (SAP)* (EnSafe, November 5, 2002). Details of sample collection methods, analytical procedures, and data management are in the Final SAP and the project Quality Assurance Project Plan (QAPP) (May 15, 2000), except where noted in this report.

2.0 FIELD ACTIVITIES

Pre-design field activities were conducted from November 4 to 26, 2002. They included additional delineation sampling of site soil, groundwater, and 001 tidal creek sediment. All samples were hand delivered to General Engineering Laboratories (GEL) of Charleston, South Carolina for analysis. Sampling locations are shown on Figures 4-1 to 4-4 in Section 4. All sampling locations were surveyed by a registered land surveyor.

2.1 Soil Sampling

2.1.1 Vadose Soil Delineation Samples

Surface soil samples were collected to delineate four isolated surface soil exceedances at GRDSB001, GRDSB008, GRDSB010, and LFISB011 in accordance with the final SAP. Direct-push technology (DPT) equipment was used to collect the samples, which were designated GRDSB01A, GRDSB01B, GRDSB01C, GRDSB01D, GRDSB08A, GRDSB08B, GRDSB08C, GRDSB08D, GRDSB10A, GRDSB10B, GRDSB10C, GRDSB10D, LFISB11A, LFI8SB11B. Several of these samples, particularly at GRDSB001, had to be offset due ponded water or other surface obstructions that restricted site access. Sample materials generally consisted of dark gray, pebbly fill.

Delineation samples were also collected in a former marsh area (lake fill) to refine remediation boundaries. Vadose zone contamination in this area generally extends to the water table. Samples were collected from 0 to 1 foot below ground surface (bgs), and every 4 feet thereafter until native material or the water table was encountered. The bottom 2 feet of each 4-foot interval was composited for each subsurface sample. The nine lake fill area delineation samples were designated LFISB022, LFISB023, LFISB024, LFISB025, LFISB026, LFISB027, LFISB028, LFISB029, and LFISB030. Five additional offset locations (LFISB031, LFISB032, LFISB033, LFISB034, and LFISB035) were added based on field observations (such as the presence of fill material) that indicated that soil contamination might extend beyond the sampling areas identified in the SAP. Samples were collected using DPT as outlined in the SAP. Offset location LFISB033 was located further west than desired due to ponded water west of the RW1-1 area. Fill material ranged from less than 1 foot to 8.5 feet thick, and consisted primarily of dark gray silty sand with pebbles and

slag. However, possible electrostatic precipitator (ESP) dust was specifically noted in samples from LFI soil boring locations 25, 27, and 30.

Two casting bay locations (CBFSB003 and CBF004) and five ESP dust storage and treatment area delineation locations (DSTSB007, DSTSB008, DSTSB009, DST010, and DSTSB011) were sampled using DPT equipment in accordance with the SAP. Some of the sample locations were slightly offset from their planned positions because of ground conditions and site accessibility due to rubble from building demolition. Fill material consisted primarily of dark gray, pebbly, sandy silt. There were no specific references to ESP dust in sample descriptions.

2.1.2 Saturated Soil

Samples collected specifically to evaluate saturated soil were collected at the four locations (GRDSB08E, GRDSB08F, LFISB030, and LFSSB036) as proposed in the SAP. Samples were collected using DPT equipment at GRDSB08F, LFISB030, and LFISB036. A tracked excavator was required at GRDSB08E to advance past hard material encountered at an average depth of 3 feet bgs because DPT could not penetrate the material. Surface conditions at the former concentrator facility limited sampling access, which caused GRDSB08F to be located further east than originally proposed. Materials collected for saturated soil samples are described in Table 2-1.

Table 2-1 Saturated Soil Descriptions		
Sample Identification	Sample Depth (feet bgs)	Description
GRDSB08E	8	yellow, silty, very fine grained sand located beneath a 1 foot thick hard ground consisting of a black conglomeratic material. Overlying the hard ground was a 3 feet thickness of gravel and dark gray pebbly silt.
GRDSB08F	10	gray sandy clay
LFISB030	10	a dark gray /black sand with organics and light brown sand
LFISB036	5	gray sandy silt

2.1.3 Lined Surface Impoundment Berm

Thirty-five lined surface impoundment (LSI) berm samples were collected on 5-foot intervals using a tracked excavator for material characterization as described in the SAP. After sampling, the top 3 feet of the berm were removed so that the excavator could access the deeper berm samples.

2.2 Groundwater Sampling

Groundwater samples were collected to further delineate the groundwater plumes identified during the Phase I remedial investigation so that a cost-effective in situ chemical reduction system can be designed.

2.2.1 DPT Groundwater

Groundwater was collected in accordance with the SAP at seven proposed locations (0166GP001, 0166GP002, 0166GP003, 0166GP003, 0166GP004, 0166GP005, 0166GP006, and 0166GP007) using DPT methods. An additional DPT groundwater grab sample was collected at location 0166GP008 to replace a proposed monitoring well near RW3-13 that could not be completed due to ground conditions and auger refusal.

2.2.2 Monitoring Wells

Groundwater monitoring wells were installed at seven of the nine location proposed in the SAP. Wells MW026, MW027, MW028, MW029, MW030, MW031, and MW032 were installed using hollow stem auger drilling methods. Well construction diagrams are presented in Appendix A. As mentioned above, the proposed replacement well for RW13-3 could not be installed due to auger refusal; a groundwater grab sample was collected at this location. In addition, the proposed replacement well near RW2-5 could not be installed due to ponded water and other physical barriers.

The seven new groundwater monitoring wells were installed, developed, and sampled in accordance with the SAP and QAPP. Groundwater samples were also collected from five existing monitoring wells proposed in the SAP. Deep monitoring well MW11D was inadvertently sampled instead of MW011.

2.3 Tidal Creek Sediment Sampling

The 10 sediment sampling locations proposed in the SAP were staked by registered land surveyors. Sediment samples were collected from 12 to 18 inches, 18 to 24 inches, and 24 to 36 inches using boat-mounted split-spoon sampling equipment in accordance with the SAP.

3.0 ANALYTICAL DATA SUMMARY

This section discusses the analytical data collected at the Macalloy site and the quality assurance/quality control (QA/QC) evaluation of those data. Laboratory analytical reports are in Appendix B.

3.1 Quality Assurance Objectives

Quality assurance objectives assess and document the precision, accuracy, representativeness, completeness, and comparability of the sampling and analyses performed. The QAPP discusses quality control sample collection frequencies for the project-specific level of effort for quality assurance and data quality criteria. Duplicates, field blanks, rinsate blanks, matrix spikes and matrix spike duplicates (MS/MSDs), temperature blanks, trip blanks, method blanks, and surrogates are used to provide overall evidence of the data quality. The Level II analytical data packages were reviewed by the project QA manager according to EPA Functional Guidelines. The data were reviewed for compliance with established QC criteria based on six procedures:

Data Review Procedures

- Comparison of sampling, sample extraction, and analysis dates to check that samples were extracted and/or analyzed within the proper holding times.
- Review of analytical methods and required detection limits to verify that they agree with the project data quality objectives.
- Evaluation of all blanks (rinsate, field, trip, and method blanks) to assess potential cross-contamination.
- Evaluation of MS/MSD and laboratory control sample recoveries to assess accuracy.
- Evaluation of duplicate relative percent difference from and MS/MSDs to assess precision.
- Assessment of data usability.

During the evaluation process, data may have been assigned one of the following validation flags:

- **U:** Undetected; the analyte was analyzed but not detected or the analyte was found in the sample at a concentration less than five times the blank contamination.

- **J:** Estimated value; one or more QC parameters were outside control limits or the value was detected below the laboratory's quantitation limit.

3.2 Data Review

GEL analyzed the environmental samples collected at the Macalloy site during the pre-design activities. The sample delivery groups (SDGs), summarized in Table 3-1, were reviewed per the data assurance objectives. Holding times and laboratory control sample results met quality control requirements.

In laboratory method blanks for SDGs 70243 and 70874, chromium (VI) was detected at 0.0736 milligrams per kilogram (mg/kg) and 0.0685 mg/kg respectively; however, none of the sample results were changed because of the "5 times" rule for blank contamination. The matrix spike (DSTSB00905) in SDG 70243 had a recovery of 489%, which exceeded the QC limits of 49%-130%. Matrix spikes MACSLI3A02 and MACSLI7A01 in SDG 70874 had recoveries of 140% and 381%, respectively, which also exceeded the QC limits of 49%-130%.

Table 3-1 Sample Delivery Group Summary				
SDG	Matrix	No. of Samples	Analyte(s)	Method(s)
70243	soil	18	chromium (VI)	SW846-7196A
70249	soil	49	chromium (VI)	SW846-7196A
70250	water	5	chromium (VI)	SW846-7196A
70456	water soil	3 1	chromium (VI)	SW846-7196A
70856	soil	35	chromium (VI)	SW846-7196A
71167	water	7	chromium (VI)	SW846-7196A
71243	water	6	chromium (VI)	SW846-7196A
71023	sediment	30	total chromium, nickel, and zinc	ILM 4.0 Contract Laboratory for Metals

Sample 0166GP00112, which also was analyzed for chromium (VI), had a dilution factor of 100; the analytical result was below the detection limit. As detailed in the field logbook, this DPT location yielded a limited quantity of dark gray and turbid water. According to the GEL project manager, sample turbidity affected the instrument's absorbance during analysis. Based on method procedures, the sample had to be diluted for the instrument's absorbance to read properly. Because of the turbidity of the sample, the result for 0166GP00112 should be considered estimated.

Matrix spike 001M000318 in SDG 70123 had recoveries of 211% for total chromium and 150% for nickel. These recoveries exceed the QC limits. The MS recovery measures matrix effects on the sample; therefore, data quality are not adversely affected by these results.

All other data QA/QC objectives were met; therefore data are usable without further qualification.

4.0 DISCUSSION OF ANALYTICAL RESULTS

4.1 Soil

Figure 4-1 shows the locations and depths of soil samples in which chromium (VI) concentrations exceeded the cleanup level of 23 mg/kg. Results are summarized in Table 4-1. Seventeen of 69 samples had chromium (VI) concentrations that exceeded the cleanup level. These exceedences occurred at 12 sampling locations at depths ranging from 1 to 9 feet bgs. Based on these sampling results, areas requiring remediation have been revised as shown on Figure 4-1. For the areas outside the lake fill area, a dashed line indicates that the remediation boundary has not been defined by delineation sampling results. The lake fill area remedial boundary was estimated based on sampling results and base of fill contours from the *Final Phase I Remedial Investigation Report* (April 2001). These sampling results will be used to refine volume estimates for remedial design.

Four saturated zone soil samples were collected in areas outside the lake fill area with high chromium (VI) groundwater concentrations to assess whether any other major source areas are present below the water table. These locations (indicated by yellow squares on Figure 4-1) correspond to high chromium (VI) groundwater concentrations in Plumes I, III, and V (shown on Figure 4-3).

LFISB030 was collected in an organic dark gray/black sand with some light brown sand at 10 feet bgs in Plume I. The chromium (VI) concentration of the material was 0.931 mg/kg. LFISB036, which was collected in a gray sandy silt at 5 feet bgs in Plume III, had a chromium (VI) concentration of 6 mg/kg. GRDSB08E was collected in yellow, silty, very fine grained sand at 8 feet bgs in Plume V (concentrator area); GRDSB08F was collected in gray sandy clay at 10 feet bgs in Plume V. Chromium (VI) was below detection limits in GRDSB08E and was 0.336 mg/kg in GRDSB08F. A layer of black conglomeratic material overlies the yellow sand at GRDSB08E from approximately 3 to 4 feet bgs. This material is believed to be low carbon slag used as fill material prior to construction of the concentrator. The top 3 feet of fill in the concentrator area is gravel and dark gray pebbly silt. These vadose zone materials were sampled during the phase I remedial investigation.



- ▲ 2002 Soil Boring
 - 2002 Saturated Soil Sample (depth, result)
 - 2002 Soil Boring
 - 2002 Cleanup Level Exceedance (23 mg/kg)
 - Approximate Area of RG Exceedances
 - GRDSB003 Soil Boring ID (1,5,9) Sample Depth w/Cleanup Level Exceedance
 - ▲ Lake Fill Transects
- ND indicates Non Detect.

200 0 200 400 Feet

ENSAFE Figure 4-1
Soil Sampling Locations
Pre-Design Sampling and Analysis Report

Table 4-1 Chromium (VI) Soil Sampling Results			
Sample Identification	Sample Depth (feet bgs)	Concentration (mg/kg)	Exceeds Cleanup Level (23 mg/kg)
<i>Casting Bay Furnace Area</i>			
CBFSB003	1	6.08	
	3	1.09	
	5	not detected	
CBFSB004	1	16.3	
	3	5.47	
	5	not detected	
<i>ESP Dust Storage/Treatment Area</i>			
DSTSB007	1	57	✓
	3	72.3	✓
	5	not detected	
DSTSB008	1	1.12	
	3	43.4	✓
	5	0.705	
DSTSB009	1	not detected	
	3	0.157	
	5	3.84	
DSTSB010	1	145	✓
	3	0.513	
	5	not detected	
DSTSB011	1	40.7	✓
DSTSB011	3	3.23	
DSTSB011	5	not detected	
<i>Grid Sample Points</i>			
GRDSB01A	1	3.63	
GRDSB01B	1	1.32	
GRDSB01C	1	0.56	
GRDSB01D	1	0.432	
GRDSB08A	1	0.305	
GRDSB08B	1	0.202	
GRDSB08C	1	22.4	
GRDSB08D	1	1.76	
GRDSB08E	8	not detected	

Table 4-1 Chromium (VI) Soil Sampling Results			
Sample Identification	Sample Depth (feet bgs)	Concentration (mg/kg)	Exceeds Cleanup Level (23 mg/kg)
GRDSB08F	10	0.336	
GRDSB10A	1	not detected	
GRDSB10B	1	0.107 J	
GRDSB10C	1	4.48	
GRDSB10D	1	26.5	✓
Lake Fill Area			
LFISB022	1	25.4	✓
	5	114	✓
	9	47.5	✓
LFISB023	1	32.1	✓
LFISB024	1	1.01	
LFISB025	1	138	✓
	3	369	✓
LFISB026	1	41.5	✓
	5	6.41	
	9	0.369	
LFISB027	1	0.327	
	5	5.6	
LFISB028	1	0.249	
	5	not detected	
LFISB029	1	0.634	
	3	16.7	
	7	not detected	
LFISB030	1	27.7	✓
	3	146	✓
	5	0.104 J	
	10	0.931	
LFISB031	1	1.33	
	3	0.495	
	10	not detected	

Table 4-1 Chromium (VI) Soil Sampling Results			
Sample Identification	Sample Depth (feet bgs)	Concentration (mg/kg)	Exceeds Cleanup Level (23 mg/kg)
LFISB032	1	0.224	
	5	0.157	
LFISB033	1	13.2	
	3	8.38	
LFISB034	1	0.722	
	3	0.3	
LFISB035	1	40.4	✓
	5	6.61	
LFISB11A	1	40.7	✓
LFISB11B	1	0.551	

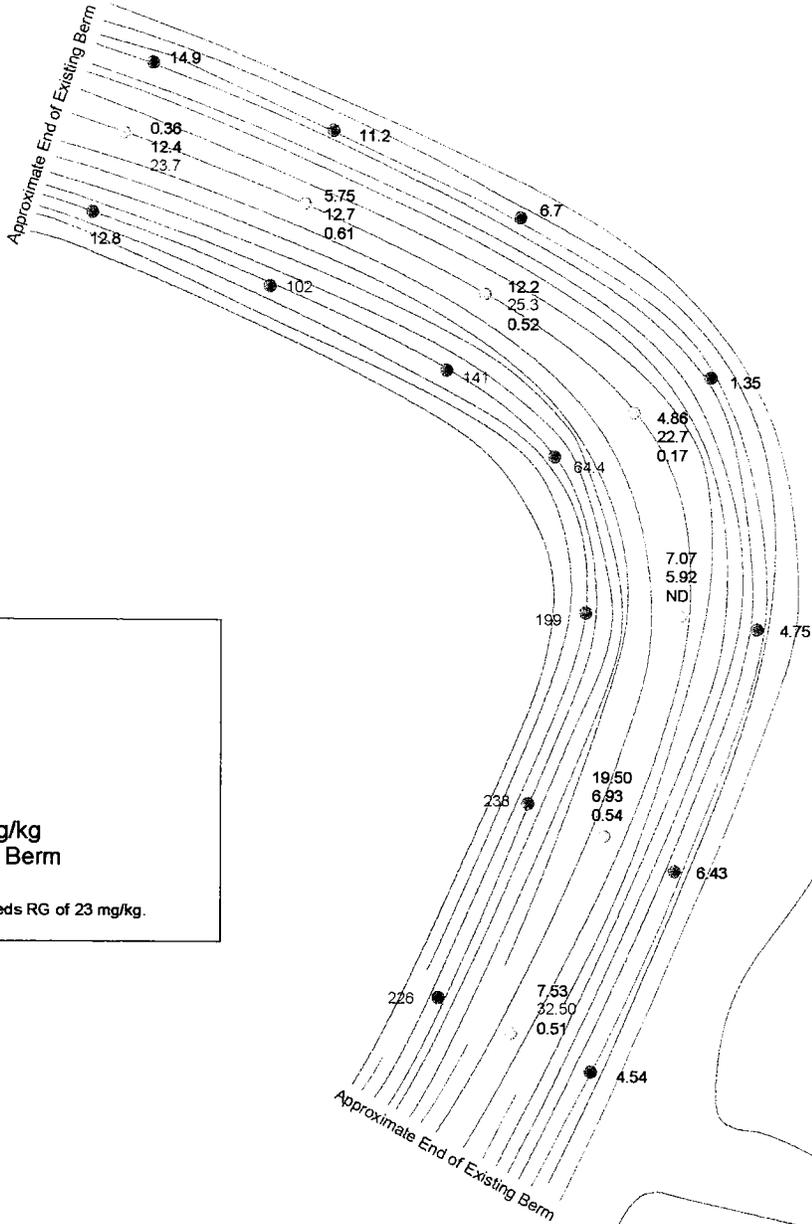
Note:

J indicates result is less than the reporting limit but above the instrument detection limit.

4.2 Lined Surface Impoundment Berm

A stockpile of berm material from the LSI, which is north of the lake fill area was sampled for chromium (VI); results are shown on Figure 4-2 and listed in Table 4-2. Approximately 4,300 cubic yards of this material were covered with the impoundment liner. The berm material was assumed to be homogeneous. However, sampling results indicate that the material beneath liner has higher chromium (VI) concentrations than the material outside of the liner. Therefore, these two portions of the berm were evaluated separately in this report.

Six of seven samples collected from the berm material beneath the liner had chromium (VI) concentrations exceeding the cleanup level of 23 mg/kg. Therefore, all of this material will require remediation.



Berm Samples

- Sample Location
(0-5 feet)
(5-10 feet)
(10-15 feet)
- Sample Location
(0-5 feet)
- 226 Chromium (VI) in mg/kg
- ▭ Lined Impoundment Berm

Red indicates concentration exceeds RG of 23 mg/kg.
ND indicates Non-Detect.

Figure 4-2
Lined Impoundment Berm
Sampling Locations and Results
Pre-Design Sampling
and Analysis Report

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Table 4-2 Lined Surface Impoundment Results			
Sample Identification	Sample Depth (feet bgs)	Concentration (mg/kg)	Exceeds Cleanu Level (23 mg/kg)
MACSLI1A	0 to 5	7.53	
	5 to 10	32.50	✓
	10 to 15	0.51	
MACSLI1B	0 to 5	226	✓
MACSLI1C	0 to 5	4.54	
MACSLI2A	0 to 5	19.50	
	5 to 10	6.39	
	10 to 15	0.54	
MACSLI2B	0 to 5	238	✓
MACSLI2C	0 to 5	6.43	
MACSLI3A	0 to 5	7.07	
	5 to 10	5.92	
	10 to 15	not detected	
MACSLI3B	0 to 5	199	✓
MACSLI3C	0 to 5	4.75	
MACSLI4A	0 to 5	4.86	
	5 to 10	22.70	
	10 to 15	0.17	
MACSLI4B	0 to 5	64.40	✓
MACSLI4C	0 to 5	1.35	
MACSLI5A	0 to 5	12.20	
	5 to 10	25.30	✓
	10 to 15	0.52	
MACSLI5B	0 to 5	141	✓
MACSLI5C	0 to 5	6.70	
MACSLI6A	0 to 5	5.75	
	5 to 10	12.70	
	10 to 15	0.61	
MACSLI6B	0 to 5	102	✓
MACSLI6C	0 to 5	11.20	

Table 4-2 Lined Surface Impoundment Results			
Sample Identification	Sample Depth (feet bgs)	Concentration (mg/kg)	Exceeds Cleanu Level (23 mg/kg)
MACSLI7A	0 to 5	0.36	
	5 to 10	12.40	
	10 to 15	23.70	✓
MACSLI7B	0 to 5	12.80	
MACSLI7C	0 to 5	14.90	

Statistical procedures, outlined in the SAP, were used to assess whether the berm material outside the liner requires remediation. EPA's *Test Methods for Evaluating Solid Waste* was used as guidance for the statistical evaluation. This document outlines procedures for calculating the upper bound of the true mean of a population for various confidence intervals based on the sample mean, sample variance, and sample standard deviation.

Table 4-3 presents the sample set's mean, variance, standard deviation, standard error, 90% upper confidence interval, and required number of samples. The resulting 90% upper confidence limit of 11 mg/kg is less than the cleanup level of 23 mg/kg. Therefore, berm material outside of the liner may not require remediation.

Table 4-3 Statistical Calculations for Berm Material Outside Liner (mg/kg)	
mean	8.97
variance	77.11
standard deviation	8.78
standard error	1.66
90% confidence limit	11.15
number of samples needed	0.7

4.3 Groundwater

Groundwater samples were collected from existing wells, new wells, and grab locations as shown on Figure 4-3 and analyzed for chromium (VI). The results are summarized in Table 4-4. Twelve of 20 samples exceeded the chromium (VI) cleanup objective of 100 micrograms per liter (µg/L).



Sample Locations
 ○ Compound not detected
 ● Compound less than Cleanup Objective (100 µg/L)
 ● Compound exceeds Cleanup Objective (100 µg/L)
 29.00 2002 Sampling Result (µg/L)
 (7.00) 2000 Sampling Result (µg/L)
 NS Not Sampled
 ND Non Detect
 --- Isoconcentration Line

Bold type indicates recently sampled location.
 Concentrations in parentheses are previous concentrations.

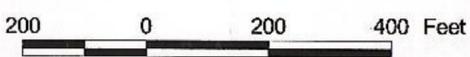


Figure 4-3
 Groundwater Sampling Locations
 Pre-Design Sampling and Analysis Report

Table 4-4 Groundwater Results		
Sample Identification	Concentration (µg/L)	Exceeds Cleanup Level (100 µg.L)
GP001	not detected	
GP002	6 J	
GP003	not detected	
GP004	7,200	✓
GP005	330	✓
GP006	14	
GP007	1,770	✓
GP008	54	
MW008	28,000	✓
MW013	2,680	✓
MW018	21,800	✓
MW023	310	✓
MW025	21	
MW027	not detected	
MW028	19,400	✓
MW029	9,900	✓
MW030	8,700	✓
MW031	8,400	✓
MW032	1,300	✓
MW033	not detected	

Note:

J indicates result is less than the reporting limit but above the instrument detection limit.

Chromium (VI) isoconcentration contours were revised based on the new sampling data. These results will be used to support groundwater remedial design. The 10,000 µg/L isoconcentration contour in Plume I encompasses a greater area than what was indicated by the 2000 remedial investigation sampling. However, the water table for the 2002 sampling event was approximately 3.5 feet higher in the lake fill area than it was during the 2000 sampling event. Therefore, a larger volume of contaminated fill material is now saturated, which may account for the higher chromium (VI) concentrations in groundwater.

Sampling equipment could not be advanced to the desired depth due to subsurface obstructions at grab sample GP008. Therefore, the chromium (VI) sampling result of 54 µg/L may not be representative of groundwater in this area and was not used to prepare the Plume III contours.

4.4 Sediment

Sediment samples were collected every 100 feet along the centerline of the 001 tidal creek at depths of 12 to 18 inches, 18 to 24 inches, and 24 to 36 inches as shown on Figure 4-4. The analytical results are summarized in Table 4-5. As indicated by the sampling results, the vertical extent of contaminated sediment has not been defined at three of 10 sampling locations.

Table 4-5 Sediment Sampling Results (mg/kg)					
Sample Identification	Sample Depth (inches)	Total Chromium	Nickel	Zinc	Exceeds Cleanup Levels
Cleanup level		258	35.7	163	
001M0001	18	2,670	581	1,140	✓
	24	1,170	136	696	✓
	36	71.9	15.1	55.4	
001M0002	18	3,370	667	1,910	✓
	24	72.7	9.9	not detected	
	36	99.6	16.9	68.7	
001M0003	18	2,800	584	1,310	✓
	24	2,180	417	1,490	✓
	36	1,690	107	827	✓
001M0004	18	2,740	232	1,640	✓
	24	353	47.4	202	✓
	36	743	107	303	✓
001M0005	18	2,570	453	1,090	✓
	24	3,040	457	1,770	✓
	36	168	34.4	98.8	
001M0006	18	938	162	400	✓
	24	2,320	370	1,270	✓
	36	37.9	8.7	32.4	

Table 4-5 Sediment Sampling Results (mg/kg)					
Sample Identification	Sample Depth (inches)	Total Chromium	Nickel	Zinc	Exceeds Cleanup Levels
Cleanup level 001M0007		258	35.7	163	
	18	1,350	192	665	✓
	24	905	138	516	✓
	36	53.5	12.4	47.9	
001M0008	18	2,610	484	1,870	✓
	24	2,450	454	1,570	✓
	36	100	26.2	259	✓
001M0009	18	55	15.3	183	✓
	24	72	17.1	74.6	
	36	45.6	11.9	45.1	
001M0010	18	2,890	374	1,720	✓
	24	81.5	21	63.2	
	36	135	27.3	99	

Note:
 Shading indicates that cleanup levels were exceeded at all three sampling depths.



Figure 4-4
Sediment Sampling Locations
Pre-Design Sampling Report

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5.0 REFERENCES

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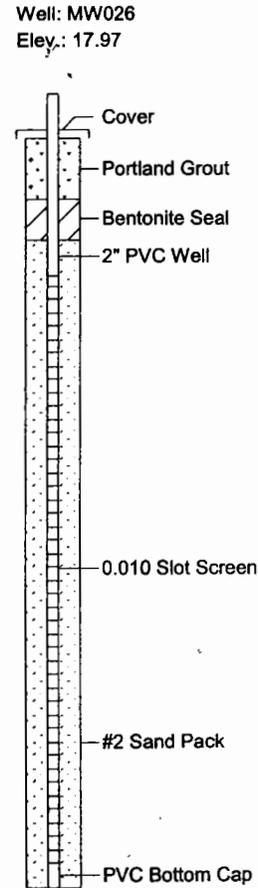
Appendix A
Well Construction and Development Logs

Former Macalloy Corporation Site
Charleston, South Carolina

Date Completed : 11-6-02
 Drilling Method : Hollow Stem Auger
 Driller : BLE SC# 1155
 Sampling Method : None
 Logged By : P. W. Bayley

Northing Coordinate : 366093.36
 Easting Coordinate : 2321641.61
 Ground Elev : 15.4
 Top of Casing Elev : 17.97

Depth in feet	Surf. Elev. 15.4	DESCRIPTION	PID (ppm)	% Recovery
0	15	Fill Material		
1	14			
2	13			
3	12	Native Material		
4	11			
5	10			
6	9			
7	8			
8	7			
9	6			
10	5			
11	4			
12	3			
13	2			
14	1			
15	0			
16	-1			
17	-2			
18	-3			
19	-4			
20				





LOG OF BORING MW027

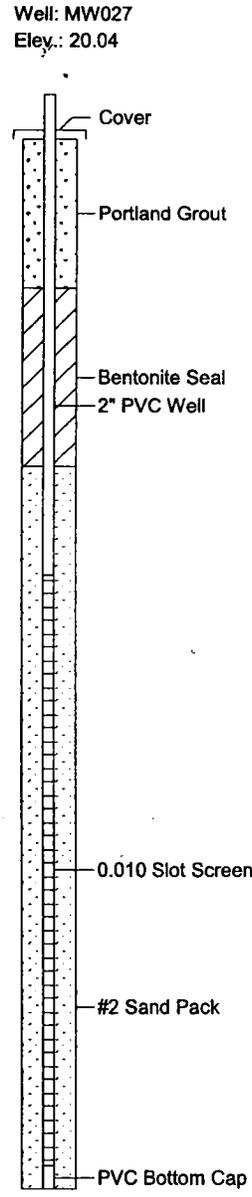
(Page 1 of 1)

Former Macalloy Corporation Site
Charleston, South Carolina

Date Completed : 11-5-02
 Drilling Method : Hollow Stem Auger
 Driller : BLE SC# 1155
 Sampling Method : None
 Logged By : P. W. Bayley

Northing Coordinate : 366342.16
 Easting Coordinate : 2321566.44
 Ground Elev : 17.4
 Top of Casing Elev : 20.04

Depth in feet	Surf. Elev. 17.4	DESCRIPTION	PID (ppm)	% Recovery
0	17	Fill Material		
1	16			
2	15			
3	14			
4	13			
5	12			
6	11			
7	10			
8	10	Native Material		
9	9			
9	8			
10	7			
11	6			
12	5			
13	4			
14	3			
15	2			
16	1			
17	0			
18	-1			
19	-2			
20				





LOG OF BORING MW028

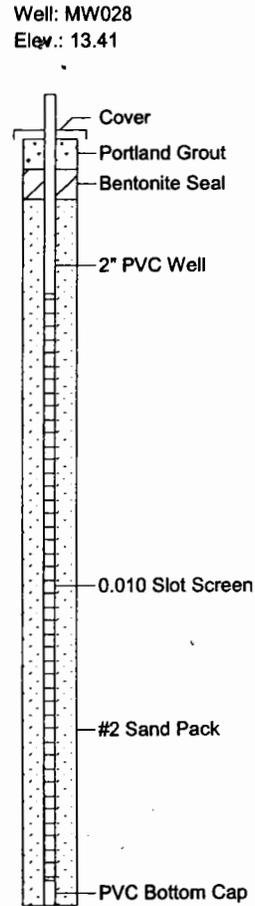
(Page 1 of 1)

Former Macalloy Corporation Site
Charleston, South Carolina

Date Completed : 11-7-02
 Drilling Method : Hollow Stem Auger
 Driller : BLE SC# 1155
 Sampling Method : None
 Logged By : P. W. Bayley

Northing Coordinate : 367596.57
 Easting Coordinate : 2322105.66
 Ground Elev : 11.6
 Top of Casing Elev : 13.41

Depth in feet	Surf. Elev. 11.6	DESCRIPTION	PID (ppm)	% Recovery
0		Fill Material		
1				
2		Native Material		
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				





LOG OF BORING MW029

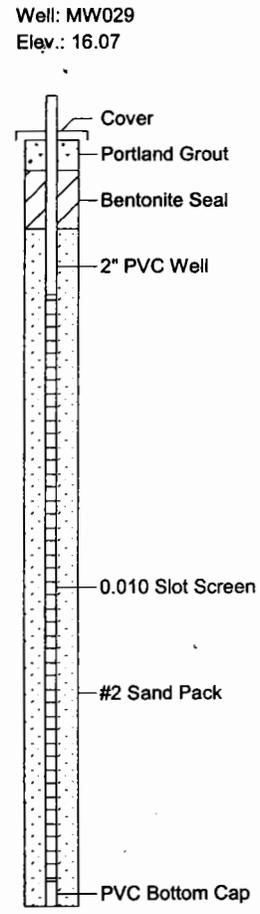
(Page 1 of 1)

Former Macalloy Corporation Site
Charleston, South Carolina

Date Completed : 11-7-02
 Drilling Method : Hollow Stem Auger
 Driller : BLE SC# 1155
 Sampling Method : None
 Logged By : P. W. Bayley

Northing Coordinate : 367804.42
 Easting Coordinate : 2322436.16
 Ground Elev : 13.8
 Top of Casing Elev : 16.07

Depth in feet	Surf. Elev. 13.8	DESCRIPTION	PID (ppm)	% Recovery
0		Fill Material		
1	13			
2	12			
3	11	Native Material		
4	10			
5	9			
6	8			
7	7			
8	6			
9	5			
10	4			
11	3			
12	2			
13	1			
14	0			
15	-1			
16	-2			
17	-3			
18	-4			
19	-5			
20	-6			



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LOG OF BORING MW031

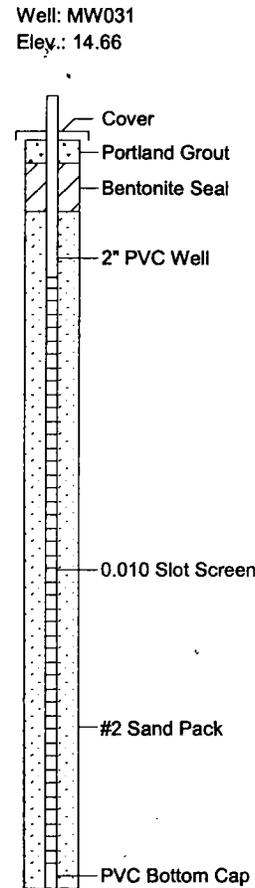
(Page 1 of 1)

Former Macalloy Corporation Site
- Charleston, South Carolina

Date Completed : 11-7-02
Drilling Method : Hollow Stem Auger
Driller : BLE SC# 1155
Sampling Method : None
Logged By : P. W. Bayley

Northing Coordinate : 367974.20
Easting Coordinate : 2322748.30
Ground Elev : 12.2
Top of Casing Elev : 14.66

Depth in feet	Surf. Elev. 12.2	DESCRIPTION	PID (ppm)	% Recovery
0	12	No Fill Material Encountered		
1	11			
2	10			
3	9			
4	8			
5	7			
6	6			
7	5			
8	4			
9	3			
10	2			
11	1			
12	0			
13	-1			
14	-2			
15	-3			
16	-4			
17	-5			
18	-6			
19	-7			
20				





LOG OF BORING MW032

(Page 1 of 1)

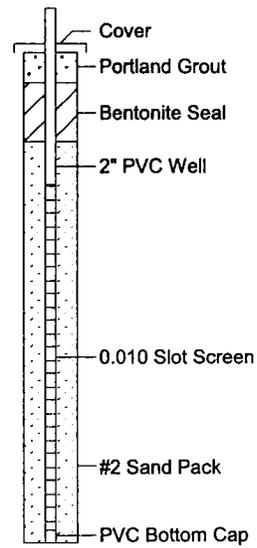
Former Macalloy Corporation Site
Charleston, South Carolina

Date Completed : 11-7-02
 Drilling Method : Hollow Stem Auger
 Driller : BLE SC# 1155
 Sampling Method : None
 Logged By : P. W. Bayley

Northing Coordinate : 367536.36
 Easting Coordinate : 2322870.35
 Ground Elev : 10.0
 Top of Casing Elev : 12.96

Depth in feet	Surf. Elev. 10.0	DESCRIPTION	PID (ppm)	% Recovery
0	10			
1	9			
2	8			
3	7			
4	6	Rocks encountered at 3.8 feet - Auger Refusal at 8.8 feet		
5	5			
6	4			
7	3			
8	2			
9	1			
10	0			
11	-1			
12	-2			
13	-3			
14	-4			
15	-5			
16	-6			
17	-7			
18	-8			
19	-9			
20				

Well: MW032
Elev.: 12.96



Appendix B
Laboratory Analytical Reports

Soil Analytical Reports



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 2

Client Sample ID: DSTSB01001 Project: ENSF00102
 Sample ID: 70243001 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 06-NOV-02 15:15
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 7.69%

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		145	11.0	20.3	mg/kg	200	AL1 11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

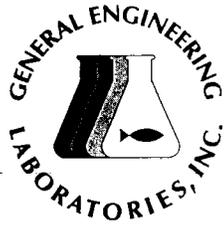
Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 2 of 2

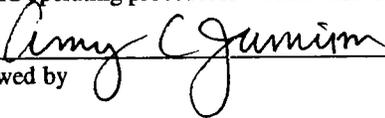
Client Sample ID: DSTSB01001
Sample ID: 70243001

Project: ENSF00102
Client ID: ENSF001

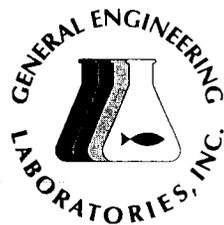
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by 





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 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID:	DSTSB00703	Project:	ENSF00102
Sample ID:	70243002	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	06-NOV-02 14:25		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	14.7%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		72.3	12.0	22.2	mg/kg	200	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: DSTSB01103
Sample ID: 70243003
Matrix: Soil
Collect Date: 06-NOV-02 15:30
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.28%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		3.23	0.109	0.202	mg/kg	2	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

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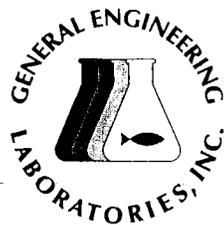
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Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: DSTSB00701
Sample ID: 70243004
Matrix: Soil
Collect Date: 06-NOV-02 14:25
Receive Date: 08-NOV-02
Collector: Client
Moisture: 21.9%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		57.0	13.8	25.6	mg/kg	200	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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 Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: DSTSB01105 Project: ENSF00102
 Sample ID: 70243005 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 06-NOV-02 15:30
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 9.35%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0617	0.114	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

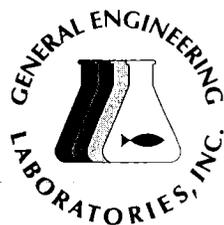
- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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 Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID:	DSTSB00705	Project:	ENSF00102
Sample ID:	70243006	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	06-NOV-02 14:25		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	5.29%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0552	0.102	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: DSTSB01005
Sample ID: 70243007
Matrix: Soil
Collect Date: 06-NOV-02 15:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 13.8%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0614	0.114	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
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- UI Uncertain identification for gamma spectroscopy.
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- Y QC Samples were not spiked with this compound.

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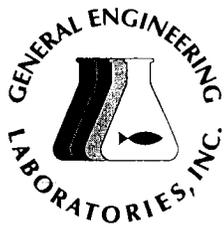
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Reviewed by Amy C. Jamison

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: DSTSB00903
Sample ID: 70243008
Matrix: Soil
Collect Date: 06-NOV-02 15:00
Receive Date: 08-NOV-02
Collector: Client
Moisture: 5.16%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.157	0.0549	0.102	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: DSTSB01003
Sample ID: 70243009
Matrix: Soil
Collect Date: 06-NOV-02 15:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 8.9%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		0.513	0.0599	0.111	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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Client Sample ID: DSTSB00905
Sample ID: 70243010
Matrix: Soil
Collect Date: 06-NOV-02 15:00
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.4%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		3.84	0.117	0.217	mg/kg	2	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

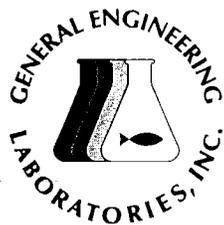
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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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Client Sample ID:	DSTSB00901	Project:	ENSF00102
Sample ID:	70243011	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	06-NOV-02 15:00		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	12.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0601	0.111	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
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- UI Uncertain identification for gamma spectroscopy.
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- Y QC Samples were not spiked with this compound.

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Client Sample ID: DSTSB00805
Sample ID: 70243012
Matrix: Soil
Collect Date: 06-NOV-02 14:40
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.62%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.705	0.054	0.100	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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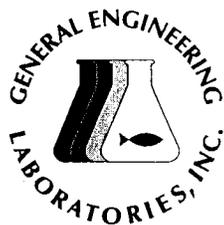
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Report Date: December 2, 2002

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Client Sample ID: LFISB02605
Sample ID: 70243013
Matrix: Soil
Collect Date: 06-NOV-02 16:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.97%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		6.41	0.576	1.07	mg/kg	10	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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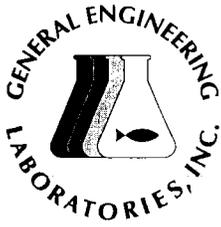
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Report Date: December 2, 2002

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Client Sample ID: DSTSB01101 Project: ENSF00102
 Sample ID: 70243014 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 06-NOV-02 15:30
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 14.4%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		40.7	12.4	23.0	mg/kg	200	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

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Page 1 of 1

Client Sample ID: LFISB02601 Project: ENSF00102
Sample ID: 70243015 Client ID: ENSF001
Matrix: Soil
Collect Date: 06-NOV-02 16:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 18.5%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		41.5	13.5	25.0	mg/kg	200	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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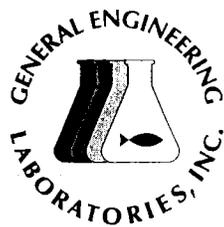
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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: DSTSB00801 Project: ENSF00102
Sample ID: 70243016 Client ID: ENSF001
Matrix: Soil
Collect Date: 06-NOV-02 14:40
Receive Date: 08-NOV-02
Collector: Client
Moisture: 12.2%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		1.12	0.0626	0.116	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

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Project: Macalloy at Charleston NWS

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Page 1 of 1

Client Sample ID: LFISB02609
Sample ID: 70243017
Matrix: Soil
Collect Date: 06-NOV-02 16:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 49.2%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		0.369	0.0995	0.184	mg/kg	1	AL1	11/21/02	1330	216135 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

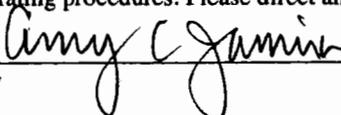
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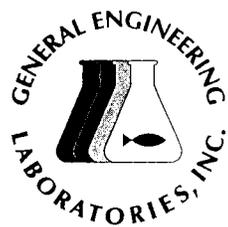
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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: DSTSB00803
Sample ID: 70243018
Matrix: Soil
Collect Date: 06-NOV-02 14:40
Receive Date: 08-NOV-02
Collector: Client
Moisture: 20.1%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		43.4	13.3	24.5	mg/kg	200	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

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QC Summary

Report Date: December 2, 2002
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Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 70243

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	216135										
QC1200336921	70243001	DUP									
Hexavalent Chromium			145	166	mg/kg	14		(0%-50%)	AL1	11/21/02	13:30
QC1200336922	70243010	DUP									
Hexavalent Chromium			3.84	3.66	mg/kg	5		(0%-50%)			
QC1200336925	LCS										
Hexavalent Chromium	0.941			0.792	mg/kg		84	(72%-121%)			
QC1200336920	MB										
Hexavalent Chromium			J	0.0736	mg/kg						
QC1200336923	70243001	MS									
Hexavalent Chromium	1.04		145	215	mg/kg		N/A	(49%-130%)			
QC1200336924	70243010	MS									
Hexavalent Chromium	1.02		3.84	8.80	mg/kg		489*	(49%-130%)			

Notes:

The Qualifiers in this report are defined as follows:

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- > Actual result is greater than amount reported
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



102437

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1
 PROJECT/JOB NO: 0166-001-09-000
 COC NO: _____
 PO NO: 5356
 REL NO: _____
 LAB NAME: GEL

800-588-7962
 MEMPHIS, TENNESSEE
 CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
 LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
 RALEIGH, NC; COLOGNE, GERMANY

CLIENT: EN Safe PROJECT MANAGER: Laura Pearson Blair
 LOCATION: Macalloy TELE/FAX NO: 901-372-7222-372-2457
 SAMPLERS: (SIGNATURE) [Signature]

20071137062

ANALYSIS REQUIRED

NO. OF CONTAINERS
CA 12

REMARKS

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	REMARKS
					TEMP.	CHEMICAL		
001 DSTSB01001	11-6-02	1515	Soil	4oz glass	4°C	-	1 X	
002 DSTSB00703	11-6-02	1425	Soil	4oz glass	4°C	-	1 X	
DSTSB01103	11-6-02	1530	Soil	4oz glass	4°C	-	1 X	
003 DSTSB01103	11-6-02	1530	Soil	4oz glass	4°C	-	1 X	
004 DSTSB00701		1425					1 X	
005 DSTSB01105		1530					1 X	
006 DSTSB00705		1425					1 X	
007 DSTSB01005		1515					1 X	
008 DSTSB00903		1500					1 X	
009 DSTSB01003		1515					1 X	
010 DSTSB00905		1500					1 X	
011 DSTSB00901		1500					1 X	
012 DSTSB00805		1440					1 X	
013 LFISB02005		1615					1 X	
014 DSTSB01101		1530					1 X	
015 LFISB02001		1615					1 X	

RELINQUISHER: <u>[Signature]</u>	DATE: <u>11-8-02</u>	RECEIVER: <u>J. Harley</u>	DATE: <u>11/8/02</u>	RELINQUISHER: _____	DATE: _____
PRINTED: <u>[Signature]</u>	TIME: <u>1125</u>	PRINTED: <u>J. Harley</u>	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>EN Safe</u>		COMPANY: <u>GEL</u>		COMPANY: _____	

METHOD OF SHIPMENT: En Safe delivery
 SHIPMENT NO. _____
 SEND RESULTS TO: Laura Pearson Blair
 COMMENTS: DQG II 21 Day TAT

800-588-7962
 MEMPHIS, TENNESSEE
 CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
 LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
 RALEIGH, NC; COLOGNE, GERMANY

CLIENT: ENSAFE PROJECT MANAGER: Laura Pearson-Brian
 LOCATION: MacAuley TELE/FAX NO.: 901-372-7962/372-2454
 SAMPLERS: (SIGNATURE) [Signature]

ANALYSIS REQUIRED

NO. OF CONTAINERS
CR 12

REMARKS

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	REMARKS
					TEMP.	CHEMICAL		
16 DSTSB00801	11-6-02	1440	soil	462 glass	40	-	1 X	
17 LFISB02609	↓	1615	↓	↓	↓	-	1 X	
18 DSTSB00803	↓	1440	↓	↓	↓	-	1 X	
11-8-02								

RELINQUISHER: <u>[Signature]</u>	DATE: <u>11-8-02</u>	RECEIVER: <u>[Signature]</u>	DATE: <u>11/8/02</u>	RELINQUISHER: _____	DATE: _____	RECEIVER: _____	DATE: _____
PRINTED: <u>Jane Gator</u>	TIME: <u>1125</u>	PRINTED: <u>J Harkey</u>	TIME: <u>1125</u>	PRINTED: _____	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>ENSAFE</u>		COMPANY: _____		COMPANY: _____		COMPANY: _____	

METHOD OF SHIPMENT: Express delivery
 SHIPMENT NO.: _____
 SEND RESULTS TO: Laura Pearson-Brian
 COMMENTS: DAQ II 21 DAY TAT



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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 2

Client Sample ID: LFISB03010 Project: ENSF00102
 Sample ID: 70249001 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 07-NOV-02 13:15
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 31%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.931	0.384	0.710	mg/kg	5	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 2 of 2

Client Sample ID: LFISB03010
Sample ID: 70249001

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by





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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: LFISB03101
Sample ID: 70249002
Matrix: Soil
Collect Date: 07-NOV-02 13:55
Receive Date: 08-NOV-02
Collector: Client
Moisture: 5.3%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		1.33	0.0579	0.107	mg/kg	1	AL1	11/21/02	1330	216135	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1630	216132

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Reviewed by Amy C Jamison





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Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: LFISB03103
Sample ID: 70249003
Matrix: Soil
Collect Date: 07-NOV-02 13:55
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.8%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.495	0.0591	0.109	mg/kg	1	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

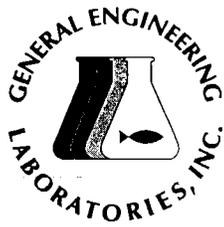
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- H Holding time exceeded
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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: LFISB03110
Sample ID: 70249004
Matrix: Soil
Collect Date: 07-NOV-02 13:55
Receive Date: 08-NOV-02
Collector: Client
Moisture: 18%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.329	0.610	mg/kg	5	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Reviewed by

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Memphis, Tennessee 38134

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: LFISB03201
Sample ID: 70249005
Matrix: Soil
Collect Date: 07-NOV-02 14:30
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.88%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		0.224	0.0542	0.100	mg/kg	1	AL1 11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: LFISB03205
Sample ID: 70249006
Matrix: Soil
Collect Date: 07-NOV-02 14:30
Receive Date: 08-NOV-02
Collector: Client
Moisture: 4.54%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.157	0.0549	0.102	mg/kg	1	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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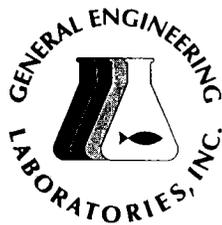
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 Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID:	LFISB03301	Project:	ENSF00102
Sample ID:	70249007	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	07-NOV-02 14:50		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	4.02%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		13.2	0.545	1.01	mg/kg	10	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

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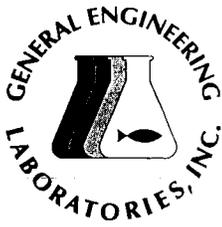
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 Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: LFISB03303
 Sample ID: 70249008
 Matrix: Soil
 Collect Date: 07-NOV-02 14:50
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 3.34%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		8.38	0.531	0.983	mg/kg	10	AL1 11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
I	SW846 7196A	

Notes:

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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: LFISB03401
 Sample ID: 70249009
 Matrix: Soil
 Collect Date: 07-NOV-02 15:10
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 3.75%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		0.722	0.0572	0.106	mg/kg	1	AL1 11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

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Client Sample ID: LFISB03403
Sample ID: 70249010
Matrix: Soil
Collect Date: 07-NOV-02 15:10
Receive Date: 08-NOV-02
Collector: Client
Moisture: 4.21%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.300	0.0555	0.103	mg/kg	1	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

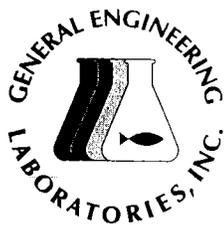
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Client Sample ID: LFISB03501
Sample ID: 70249011
Matrix: Soil
Collect Date: 07-NOV-02 15:40
Receive Date: 08-NOV-02
Collector: Client
Moisture: 4.88%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		40.4	2.70	5.01	mg/kg	50	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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Client Sample ID: GRDSB08F10
 Sample ID: 70249012
 Matrix: Soil
 Collect Date: 07-NOV-02 16:30
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 15.2%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		0.336	0.055	0.102	mg/kg	1	VH1 11/24/02	1320	216139	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/23/02	1200	216136
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	VH1	11/23/02	1200	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	
2	SW846 7196A	

Notes:

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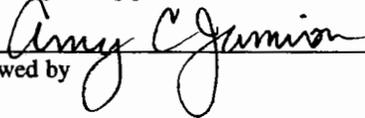
Client Sample ID: GRDSB08F10
Sample ID: 70249012

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Client Sample ID: LFISB02903
 Sample ID: 70249013
 Matrix: Soil
 Collect Date: 07-NOV-02 10:50
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 25.2%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		16.7	1.81	3.36	mg/kg	25	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02501 Project: ENSF00102
 Sample ID: 70249014 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 07-NOV-02 07:50
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 27.8%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		138	14.3	26.6	mg/kg	200	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02503
Sample ID: 70249015
Matrix: Soil
Collect Date: 07-NOV-02 07:50
Receive Date: 08-NOV-02
Collector: Client
Moisture: 40.7%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		369	18.4	34.1	mg/kg	200	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02401
Sample ID: 70249016
Matrix: Soil
Collect Date: 07-NOV-02 08:25
Receive Date: 08-NOV-02
Collector: Client
Moisture: 14.1%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		1.01	0.0601	0.111	mg/kg	1	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02301
Sample ID: 70249017
Matrix: Soil
Collect Date: 07-NOV-02 08:40
Receive Date: 08-NOV-02
Collector: Client
Moisture: 33.4%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		32.1	4.05	7.49	mg/kg	50	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
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- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02201 Project: ENSF00102
Sample ID: 70249018 Client ID: ENSF001
Matrix: Soil
Collect Date: 07-NOV-02 08:50
Receive Date: 08-NOV-02
Collector: Client
Moisture: 26.3%

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		25.4	3.58	6.64	mg/kg	50	AL1 11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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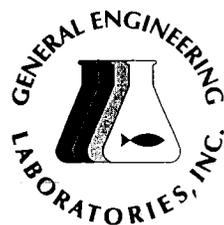
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Client Sample ID: LFISB02205
Sample ID: 70249019
Matrix: Soil
Collect Date: 07-NOV-02 08:50
Receive Date: 08-NOV-02
Collector: Client
Moisture: 31.5%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		114	16.1	29.8	mg/kg	200	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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Client Sample ID: LFISB02209 Project: ENSF00102
Sample ID: 70249020 Client ID: ENSF001
Matrix: Soil
Collect Date: 07-NOV-02 08:50
Receive Date: 08-NOV-02
Collector: Client
Moisture: 24.5%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		47.5	6.89	12.8	mg/kg	100	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02701
Sample ID: 70249021
Matrix: Soil
Collect Date: 07-NOV-02 09:45
Receive Date: 08-NOV-02
Collector: Client
Moisture: 9.09%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.327	0.0582	0.108	mg/kg	1	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

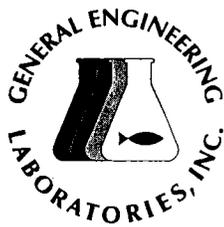
- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

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Reviewed by Amy C Jamison



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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

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Client Sample ID: LFISB02705 Project: ENSF00102
Sample ID: 70249022 Client ID: ENSF001
Matrix: Soil
Collect Date: 07-NOV-02 09:45
Receive Date: 08-NOV-02
Collector: Client
Moisture: 8.27%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		5.60	0.286	0.529	mg/kg	5	AL1	11/21/02	1615	216139	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1658	216136

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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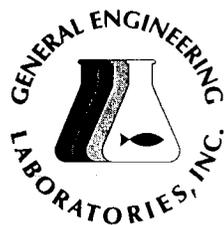
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Client Sample ID: LFISB02801
Sample ID: 70249023
Matrix: Soil
Collect Date: 07-NOV-02 10:10
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.73%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.249	0.0566	0.105	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

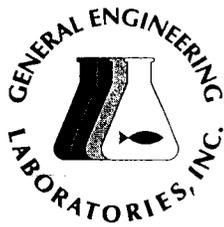
The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID:	LFISB02805	Project:	ENSF00102
Sample ID:	70249024	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	07-NOV-02 10:10		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	12.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0592	0.110	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

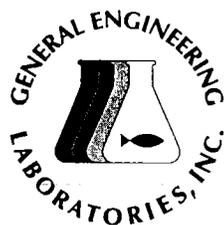
- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB02901
Sample ID: 70249025
Matrix: Soil
Collect Date: 07-NOV-02 10:50
Receive Date: 08-NOV-02
Collector: Client
Moisture: 3.7%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.634	0.0574	0.106	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

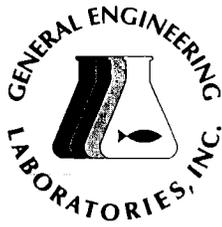
- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

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Client Sample ID:	LFISB02907	Project:	ENSF00102
Sample ID:	70249026	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	07-NOV-02 10:50		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	15.5%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.060	0.111	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

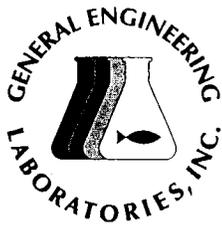
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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Client Sample ID: LFISB03001
Sample ID: 70249027
Matrix: Soil
Collect Date: 07-NOV-02 13:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 10.1%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		27.7	1.17	2.17	mg/kg	20	AL1 11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
I	SW846 7196A	

Notes:

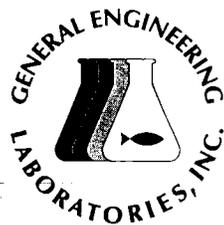
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- > Actual result is greater than amount reported
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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB03003
Sample ID: 70249028
Matrix: Soil
Collect Date: 07-NOV-02 13:15
Receive Date: 08-NOV-02
Collector: Client
Moisture: 17%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
<i>SW846_7196A Hexavalent Chromium</i>										
Hexavalent Chromium		146	9.30	17.2	mg/kg	150	AL1	11/22/02	0930	216142 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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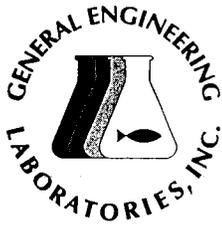
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Client Sample ID: LFISB03005
 Sample ID: 70249029
 Matrix: Soil
 Collect Date: 07-NOV-02 13:15
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 11.6%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	J	0.104	0.0579	0.107	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

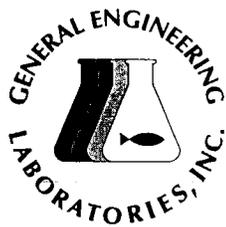
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Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

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Client Sample ID: GRDSB08A01 Project: ENSF00102
Sample ID: 70249030 Client ID: ENSF001
Matrix: Soil
Collect Date: 05-NOV-02 11:02
Receive Date: 08-NOV-02
Collector: Client
Moisture: 12.5%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.305	0.0617	0.114	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB08D01
Sample ID: 70249031
Matrix: Soil
Collect Date: 05-NOV-02 11:20
Receive Date: 08-NOV-02
Collector: Client
Moisture: 1.95%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		1.76	0.0541	0.100	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range.
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB08C01
Sample ID: 70249032
Matrix: Soil
Collect Date: 05-NOV-02 16:45
Receive Date: 08-NOV-02
Collector: Client
Moisture: 5.42%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		22.4	1.43	2.64	mg/kg	25	ALI	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	ALI	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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 Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID:	GRDSB08B01	Project:	ENSF00102
Sample ID:	70249033	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	05-NOV-02 17:00		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	17.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.202	0.0617	0.114	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

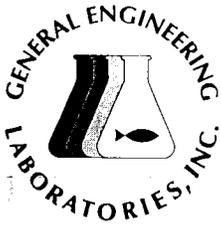
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- BD Flag for results below the MDC or a flag for low tracer recovery.
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- H Holding time exceeded
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Project: Macalloy at Charleston NWS

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Client Sample ID: GRDSB01A01
Sample ID: 70249034
Matrix: Soil
Collect Date: 05-NOV-02 16:32
Receive Date: 08-NOV-02
Collector: Client
Moisture: 2.79%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		3.63	0.105	0.194	mg/kg	2	AL1 11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB01B01
Sample ID: 70249035
Matrix: Soil
Collect Date: 05-NOV-02 16:05
Receive Date: 08-NOV-02
Collector: Client
Moisture: 3.44%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		1.32	0.0543	0.101	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
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Client Sample ID: GRDSB01C01
Sample ID: 70249036
Matrix: Soil
Collect Date: 05-NOV-02 16:11
Receive Date: 08-NOV-02
Collector: Client
Moisture: 22%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		0.560	0.0677	0.125	mg/kg	1	AL1 11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

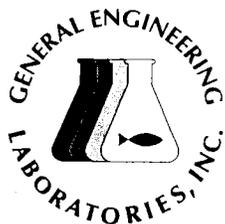
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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB01D01
Sample ID: 70249037
Matrix: Soil
Collect Date: 05-NOV-02 16:25
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.62%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		0.432	0.0547	0.101	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB10A01
Sample ID: 70249038
Matrix: Soil
Collect Date: 05-NOV-02 10:41
Receive Date: 08-NOV-02
Collector: Client
Moisture: 7.74%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0584	0.108	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB10B01
 Sample ID: 70249039
 Matrix: Soil
 Collect Date: 05-NOV-02 10:33
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 9.01%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	J	0.107	0.0598	0.111	mg/kg	1	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Page 1 of 1

Client Sample ID: GRDSB10C01 Project: ENSF00102
Sample ID: 70249040 Client ID: ENSF001
Matrix: Soil
Collect Date: 05-NOV-02 10:16
Receive Date: 08-NOV-02
Collector: Client
Moisture: 6.03%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		4.48	0.286	0.529	mg/kg	5	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: GRDSB10D01
 Sample ID: 70249041
 Matrix: Soil
 Collect Date: 05-NOV-02 10:22
 Receive Date: 08-NOV-02
 Collector: Client
 Moisture: 5.95%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		26.5	2.82	5.22	mg/kg	50	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
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- Y QC Samples were not spiked with this compound.

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Client Sample ID: LFISB11A01
Sample ID: 70249042
Matrix: Soil
Collect Date: 05-NOV-02 10:00
Receive Date: 08-NOV-02
Collector: Client
Moisture: 8.73%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		40.7	2.98	5.52	mg/kg	50	AL1	11/22/02	0930	216142	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1617	216140

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
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Client Sample ID: LFISB11B01
Sample ID: 70249043
Matrix: Soil
Collect Date: 05-NOV-02 09:50
Receive Date: 08-NOV-02
Collector: Client
Moisture: 8.67%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		0.551	0.0599	0.111	mg/kg	1	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

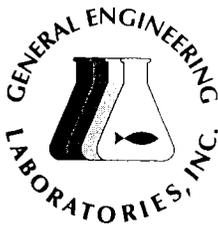
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Reviewed by *Amy Jamison*



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: CBFSB00401
Sample ID: 70249044
Matrix: Soil
Collect Date: 06-NOV-02 11:30
Receive Date: 08-NOV-02
Collector: Client
Moisture: 5.04%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		16.3	1.45	2.69	mg/kg	25	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

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Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID:	CBFSB00403	Project:	ENSF00102
Sample ID:	70249045	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	06-NOV-02 11:30		
Receive Date:	08-NOV-02		
Collector:	Client		
Moisture:	4.69%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		5.47	0.277	0.513	mg/kg	5	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

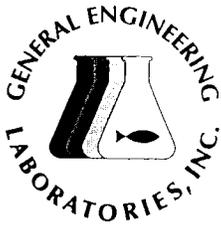
The Qualifiers in this report are defined as follows :

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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: CBFSB00405
Sample ID: 70249046
Matrix: Soil
Collect Date: 06-NOV-02 11:30
Receive Date: 08-NOV-02
Collector: Client
Moisture: 14.1%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0632	0.117	mg/kg	1	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: CBFSB00301
Sample ID: 70249047
Matrix: Soil
Collect Date: 06-NOV-02 12:00
Receive Date: 08-NOV-02
Collector: Client
Moisture: 5.6%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		6.08	0.274	0.508	mg/kg	5	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: CBFSB00303
Sample ID: 70249048
Matrix: Soil
Collect Date: 06-NOV-02 12:00
Receive Date: 08-NOV-02
Collector: Client
Moisture: 17.1%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		1.09	0.061	0.113	mg/kg	1	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: CBFSB00305
Sample ID: 70249049
Matrix: Soil
Collect Date: 06-NOV-02 12:00
Receive Date: 08-NOV-02
Collector: Client
Moisture: 15.3%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0619	0.115	mg/kg	1	AL1	11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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QC Summary

Report Date: December 2, 2002

Page 1 of 2

Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 70249

Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	216135										
QC1200336921	70243001	DUP									
Hexavalent Chromium		145		166	mg/kg	14		(0%-50%)	AL1	11/21/02	13:30
QC1200336922	70243010	DUP									
Hexavalent Chromium		3.84		3.66	mg/kg	5		(0%-50%)			
QC1200336925	LCS										
Hexavalent Chromium	0.941			0.792	mg/kg		84	(72%-121%)			
QC1200336920	MB										
Hexavalent Chromium			J	0.0736	mg/kg						
QC1200336923	70243001	MS									
Hexavalent Chromium	1.04	145		215	mg/kg		N/A	(49%-130%)			
QC1200336924	70243010	MS									
Hexavalent Chromium	1.02	3.84		8.80	mg/kg		489*	(49%-130%)			
Batch	216139										
QC1200336930	70249003	DUP									
Hexavalent Chromium		0.495		0.339	mg/kg	38*^		(+/-0.108)	AL1	11/21/02	16:15
QC1200336931	70249012	DUP									
Hexavalent Chromium		0.336	*	0.559	mg/kg	50*^		(+/-0.112)	VH1	11/24/02	13:20
QC1200336934	LCS										
Hexavalent Chromium	1.02			0.870	mg/kg		85	(72%-121%)	AL1	11/21/02	16:15
QC1200336929	MB										
Hexavalent Chromium			U	ND	mg/kg						
QC1200336932	70249003	MS									
Hexavalent Chromium	1.07	0.495		1.01	mg/kg		48*	(49%-130%)			
QC1200336933	70249012	MS									
Hexavalent Chromium	1.13	0.336		1.78	mg/kg		127	(49%-130%)	VH1	11/24/02	13:20
Batch	216142										
QC1200336946	70249023	DUP									
Hexavalent Chromium		0.249		0.219	mg/kg	13 ^		(+/-0.106)	AL1	11/22/02	09:30
QC1200336947	70249032	DUP									
Hexavalent Chromium		22.4		20.8	mg/kg	7		(0%-50%)			
QC1200336950	LCS										
Hexavalent Chromium	0.985			0.775	mg/kg		79	(72%-121%)			
QC1200336945	MB										
Hexavalent Chromium			U	ND	mg/kg						
QC1200336948	70249023	MS									
Hexavalent Chromium	1.06	0.249		0.800	mg/kg		52	(49%-130%)			
QC1200336949	70249032	MS									
Hexavalent Chromium	1.01	22.4		21.4	mg/kg		N/A	(49%-130%)			
Batch	216144										
QC1200336952	70249043	DUP									
Hexavalent Chromium		0.551		0.522	mg/kg	5 ^		(+/-0.105)	AL1	11/22/02	11:00
QC1200336954	LCS										
Hexavalent Chromium	0.998			0.945	mg/kg		95	(72%-121%)			
QC1200336951	MB										
Hexavalent Chromium			U	ND	mg/kg						

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QC Summary

Workorder: 70249

Page 2 of 2

Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	216144										
QC1200336953	70249043	MS									
Hexavalent Chromium	1.04	0.551		1.39	mg/kg		81	(49%-130%)			

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





800-588-7962
MEMPHIS, TENNESSEE
CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
RALEIGH, NC; COLOGNE, GERMANY

CHAIN OF CUSTODY RECORD

70456%

PAGE 1 OF 1
PROJECT/JOB NO: 0166-001-09-000-01
COC NO: _____
PO NO: 5356
REL NO: 1
LAB NAME: GEL

CLIENT ENSAFE PROJECT MANAGER LAURA PRARSON
LOCATION MDCALLOY TELE/FAX NO. 901-372-7962 / 372-2454
SAMPLERS: (SIGNATURE) Peter W. Bayley

20081137205

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	ANALYSIS REQUIRED										REMARKS					
					TEMP.	CHEMICAL		C-VI															
001	11-13 02	0850	W	125ml POLY	4°C	—	1	X															
002	↓	0930	↓	↓	↓	↓	1	X															
003	↓	1000	↓	↓	↓	↓	1	X															
<i>(Large diagonal signature across the table)</i>																							

RELINQUISHER: <u>Peter W. Bayley</u>	DATE: <u>11/13/02</u>	RECEIVER: <u>Laura Prarson</u>	DATE: <u>11/13/02</u>
PRINTED: <u>Peter W. Bayley</u>	TIME: <u>1120</u>	PRINTED: <u>Laura Prarson</u>	TIME: <u>1120</u>
COMPANY: <u>ENSAFE</u>		COMPANY: <u>GEL</u>	

METHOD OF SHIPMENT: Delivery
SHIPMENT NO. _____
SEND RESULTS TO: Laura Prarson

COMMENTS: DOO II 21 DAY FAT



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 MEMPHIS, TENNESSEE
 CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
 LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
 RALEIGH, NC; COLOGNE, GERMANY

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT/JOB NO: 0166-001-09-000-00

COC NO: _____

PO NO: 5356

REL NO: 9

LAB NAME: GRL

CLIENT ENSAF

PROJECT MANAGER LAURA PEARSON

LOCATION MACALLOY

TELE/FAX NO. 901.372.7962 / 372.2454

SAMPLERS: (SIGNATURE) Paul W. Brady

ANALYSIS REQUIRED

NO. OF CONTAINERS
Cr III

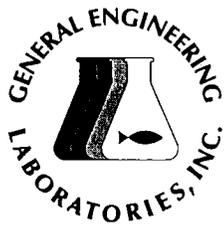
REMARKS

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	REMARKS
					TEMP.	CHEMICAL		
<u>LFISB05545</u>	<u>11-13-02</u>	<u>1015</u>	<u>SOIL</u>	<u>125ml Glass</u>	<u>4°C</u>	<u>-</u>	<u>1 X</u>	
<i>Paul W. Brady</i>								

RELINQUISHER: <u>Paul W. Brady</u>	DATE: <u>11-13-02</u>	RECEIVER: <u>Paul W. Brady</u>	DATE: <u>11/13/02</u>	RELINQUISHER: _____	DATE: _____	RECEIVER: _____	DATE: _____
PRINTED: <u>Paul W. Brady</u>	TIME: <u>1120</u>	PRINTED: <u>Paul W. Brady</u>	TIME: <u>1120</u>	PRINTED: _____	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>ENSAF</u>		COMPANY: <u>GRL</u>		COMPANY: _____		COMPANY: _____	

METHOD OF SHIPMENT Deliver
 SHIPMENT NO. _____
 SEND RESULTS TO: LAURA PEARSON

COMMENTS: DQ02 21 COPY TBT



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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134
 Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 4, 2002

Page 1 of 1

Client Sample ID: LFISB03505
 Sample ID: 70456004
 Matrix: Soil
 Collect Date: 13-NOV-02 10:15
 Receive Date: 13-NOV-02
 Collector: Client
 Moisture: 52%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		6.61	0.569	1.05	mg/kg	5	AL1 11/22/02	1100	216144	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	11/20/02	1640	216143

The following Analytical Methods were performed

Method	Description	Analyst Comments
I	SW846 7196A	

Notes:

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- E Concentration exceeds instrument calibration range
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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
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QC Summary

Report Date: December 4, 2002
Page 1 of 1

Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 70456

Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	215830										
QC1200336192	LCS										
Hexavalent Chromium	0.100			0.109	mg/L		109	(89%-110%)	VH1	11/13/02	16:54
QC1200336189	MB										
Hexavalent Chromium			U	ND	mg/L						
Batch	216144										
QC1200336952	70249043	DUP									
Hexavalent Chromium			0.551	0.522	mg/kg	5 ^		(+/-0.105)	AL1	11/22/02	11:00
QC1200336954	LCS										
Hexavalent Chromium	0.998			0.945	mg/kg		95	(72%-121%)			
QC1200336951	MB										
Hexavalent Chromium			U	ND	mg/kg						
QC1200336953	70249043	MS									
Hexavalent Chromium	1.04		0.551	1.39	mg/kg		81	(49%-130%)			

Notes:

The Qualifiers in this report are defined as follows:

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





70, 19%

CHAIN OF CUSTODY RECORD

PAGE 1 OF 4
 PROJECT/JOB NO: 0166-001-09-000-02
 COC NO: _____
 PO NO: 5356
 REL NO: _____
 LAB NAME: GEL

800-588-7962
 MEMPHIS, TENNESSEE
 CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
 LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
 RALEIGH, NC; COLOGNE, GERMANY

CLIENT ENSAF PROJECT MANAGER Laura Pearson-Bron
 LOCATION MACALLOY TELE/FAX NO. 901-372-7962 / 372-2454
 SAMPLERS: (SIGNATURE) [Signatures]

ANALYSIS REQUIRED
 NO. OF CONTAINERS
C.B. I/E

	FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	REMARKS
						TEMP.	CHEMICAL		
014	LFISB03010	11-7-02	1315	Soil	4oz GLASS	4°C	—	1	X
02	LFISB03101		1355					1	X
03	LFISB03103		1355					1	X
04	LFISB03110		1355					1	X
05	LFISB03201		1430					1	X
06	LFISB03205		1430					1	X
07	LFISB03301		1450					1	X
08	LFISB03303		1450					1	X
09	LFISB03401		1510					1	X
10	LFISB03403		1510					1	X
11	LFISB03501		1540					1	X
12	GRDSB08F10		1630					1	X
13	LFISB02903	↓	1050	↓	↓	↓	↓	1	X

RELINQUISHER: <u>[Signature]</u>	DATE: <u>11-7-02</u>	RECEIVER: <u>Mike Kinshaw</u>	DATE: <u>11-8-02</u>	RELINQUISHER: _____	DATE: _____	RECEIVER: _____	DATE: _____
PRINTED: <u>[Signature]</u>	TIME: <u>0810</u>	PRINTED: <u>Mike Kinshaw</u>	TIME: <u>0810</u>	PRINTED: _____	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>ENSAF</u>		COMPANY: <u>GEL</u>		COMPANY: _____		COMPANY: _____	

METHOD OF SHIPMENT: Overnight Pick-up for Delivery
 SHIPMENT NO. _____
 SEND RESULTS TO: Laura Pearson-Bron
 COMMENTS: DQO II 21 DAY TAT



CHAIN OF CUSTODY RECORD

800-588-7962
MEMPHIS, TENNESSEE
CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
RALEIGH, NC; COLOGNE, GERMANY

PROJECT/JOB NO: 0166-001-09-000-00
COC NO: _____
PO NO: 5356
REL NO: 1
LAB NAME: 661

CLIENT ENSAFE PROJECT MANAGER LAURA PEARSON
LOCATION MACALLOY TELE/FAX NO. 901.372.7962 / 372.2454
SAMPLERS: (SIGNATURE) [Signature] [Signature]

ANALYSIS REQUIRED

NO. OF CONTAINERS
Cr II

REMARKS

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
					TEMP.	CHEMICAL			
30 GRDSB08A01	11-5-02	1102	Soil	4oz glass	40c	—	1	X	
31 GRDSB08D01		1120					1	X	
32 GRDSB08C01		1445					1	X	
33 GRDSB08B01		1700					1	X	
34 GRDSB01A01		1632					1	X	
35 GRDSB01B01		1605					1	X	
36 GRDSB01C01		1611					1	X	
37 GRDSB01D01		1625					1	X	
38 GRDSB10A01		1041					1	X	
39 GRDSB10B01		1033					1	X	
40 GRDSB10C01		1016					1	X	
41 GRDSB10D01		1022					1	X	
42 LFESB11A01		1000					1	X	
43 LFESB11B01		0950					1	X	
44 CBFSB00401	11-6-02	1130					1	X	
45 CBFSB00402		1130					1	X	

RELINQUISHER: <u>[Signature]</u>	DATE: <u>08 Nov 02</u>	RECEIVER: <u>[Signature]</u>	DATE: <u>11-8-02</u>	RELINQUISHER: _____	DATE: _____	RECEIVER: _____	DATE: _____
PRINTED: <u>[Signature]</u>	TIME: <u>0810</u>	PRINTED: <u>Mike Kinslow</u>	TIME: _____	PRINTED: _____	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>ENSAFE</u>	COMPANY: _____	COMPANY: <u>661</u>	COMPANY: _____	COMPANY: _____	COMPANY: _____	COMPANY: _____	COMPANY: _____

METHOD OF SHIPMENT: Courier Delivery B. Delmas COMMENTS: 21 DAY PAT DOO II
SHIPMENT NO. _____
SEND RESULTS TO: Laura Pearson Bran



800-588-7962

MEMPHIS, TENNESSEE

CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
RALEIGH, NC; COLOGNE, GERMANY

CHAIN OF CUSTODY RECORD

PAGE 4 OF 4

PROJECT/JOB NO: 0166-001-09-000-00

COC NO: _____

PO NO: 5354

REL NO: 1

LAB NAME: GEL

CLIENT ENSAF

PROJECT MANAGER LAURA PEARSON

LOCATION MACALLOY

TELE/FAX NO. 901.372.7962 / 372.2454

SAMPLERS: (SIGNATURE) [Signature]

ANALYSIS REQUIRED

NO. OF CONTAINERS
CR VI

REMARKS

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
					TEMP.	CHEMICAL			
<u>046</u> CBFSB04465	<u>11-6-02</u>	<u>1130</u>	<u>Soil</u>	<u>4oz glass</u>	<u>4°C</u>	<u>—</u>	<u>1</u>	<u>X</u>	
<u>047</u> CBFSB044301		<u>1200</u>					<u>1</u>	<u>X</u>	
<u>048</u> CBFSB044303		<u>1200</u>					<u>1</u>	<u>X</u>	
<u>049</u> CBFSB044305		<u>1200</u>					<u>1</u>	<u>X</u>	
<u>[Large handwritten signature]</u>									

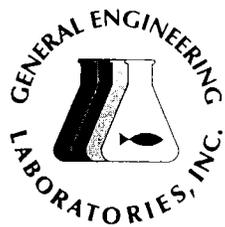
RELINQUISHER: <u>[Signature]</u>	DATE: <u>08NOV 02</u>	RECEIVER: <u>Mike Kinstar</u>	DATE: <u>11-8-02</u>	RELINQUISHER: _____	DATE: _____	RECEIVER: _____	DATE: _____
PRINTED: <u>Orlando Salazar</u>	TIME: <u>0810</u>	PRINTED: <u>Mike Kinstar</u>	TIME: <u>0810</u>	PRINTED: _____	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>Ensaf</u>		COMPANY: <u>GEL</u>		COMPANY: _____		COMPANY: _____	

METHOD OF SHIPMENT: 057 Room Pickup Relinquish

SHIPMENT NO. _____

SEND RESULTS TO: Laura Pearson - Bear

COMMENTS: 21 DAY TAT DQO II



GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 1 of 2

Client Sample ID:	MACSL11A01	Project:	ENSF00102
Sample ID:	70874001	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	19-NOV-02 08:14		
Receive Date:	20-NOV-02		
Collector:	Client		
Moisture:	5.49%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		7.53	0.289	0.534	mg/kg	5	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
M 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
346 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

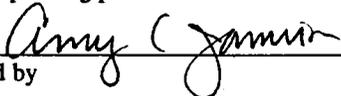
Page 2 of 2

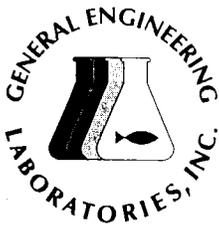
Client Sample ID: MACSLI1A01 Project: ENSF00102
Sample ID: 70874001 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by 



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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID:	MACSLI1B01	Project:	ENSF00102
Sample ID:	70874002	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	19-NOV-02 08:15		
Receive Date:	20-NOV-02		
Collector:	Client		
Moisture:	4.78%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		226	8.18	15.1	mg/kg	150	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 2 of 2

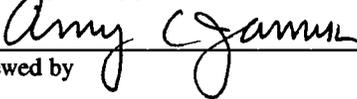
Client Sample ID: MACSLI1B01
Sample ID: 70874002

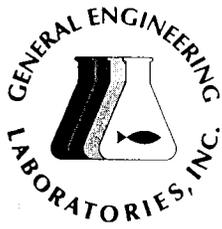
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.


Reviewed by _____



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI1C01 Project: ENSF00102
 Sample ID: 70874003 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 08:16
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 6.93%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		4.54	0.292	0.540	mg/kg	5	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

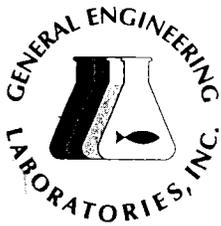
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 2 of 2

Client Sample ID: MACSLI1C01
Sample ID: 70874003

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by Amy C Jamison



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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI2A01
 Sample ID: 70874004
 Matrix: Soil
 Collect Date: 19-NOV-02 08:39
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 7.21%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		19.5	0.871	1.61	mg/kg	15	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 2 of 2

Client Sample ID: MACSLI2A01 Project: ENSF00102
Sample ID: 70874004 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by 



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI2C01
Sample ID: 70874005
Matrix: Soil
Collect Date: 19-NOV-02 08:42
Receive Date: 20-NOV-02
Collector: Client
Moisture: 4.32%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		6.43	0.271	0.502	mg/kg	5	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

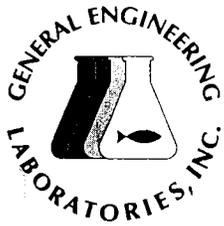
Notes:

The Qualifiers in this report are defined as follows :

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 2 of 2

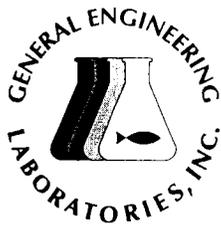
Client Sample ID: MACSLI2C01 Project: ENSF00102
Sample ID: 70874005 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by *Amy C Jamison*



GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI2B01
 Sample ID: 70874006
 Matrix: Soil
 Collect Date: 19-NOV-02 08:45
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 5.79%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		238	8.62	16.0	mg/kg	150	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

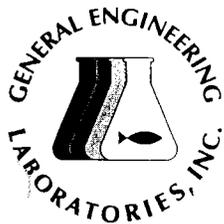
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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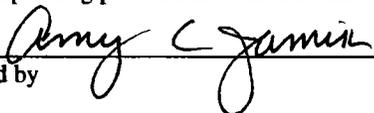
Client Sample ID: MACSLI2B01
Sample ID: 70874006

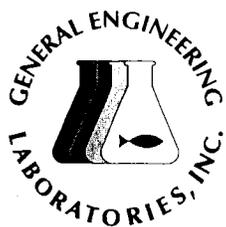
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID:	MACSLJ3A01	Project:	ENSF00102
Sample ID:	70874007	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	19-NOV-02 09:07		
Receive Date:	20-NOV-02		
Collector:	Client		
Moisture:	6.39%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		7.07	0.277	0.512	mg/kg	5	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
§46 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 17, 2002

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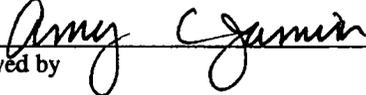
Client Sample ID: MACSLI3A01
Sample ID: 70874007

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID:	MACSLI3B01	Project:	ENSF00102
Sample ID:	70874008	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	19-NOV-02 09:08		
Receive Date:	20-NOV-02		
Collector:	Client		
Moisture:	15.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		199	9.28	17.2	mg/kg	150	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

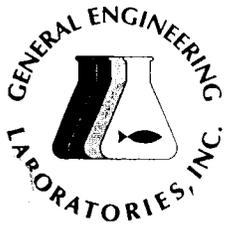
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Client Sample ID: MACSLI3B01
Sample ID: 70874008

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Reviewed by Amy C Jamison



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Client Sample ID: MACSLI3C01
 Sample ID: 70874009
 Matrix: Soil
 Collect Date: 19-NOV-02 09:10
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 7.26%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		4.75	0.285	0.527	mg/kg	5	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSL13C01
Sample ID: 70874009

Project: ENSF00102
Client ID: ENSF001

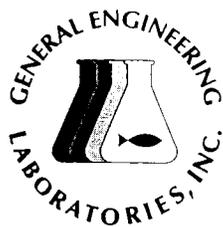
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Reviewed by Amy C Jamison





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 Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI4B01 Project: ENSF00102
 Sample ID: 70874010 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 09:32
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 4.8%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		64.4	8.28	15.3	mg/kg	150	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Client Sample ID: MACSLI4B01
Sample ID: 70874010

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Reviewed by *Amy C Jamison*



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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI4C01
 Sample ID: 70874011
 Matrix: Soil
 Collect Date: 19-NOV-02 09:33
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 4.44%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		1.35	0.0566	0.105	mg/kg	1	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

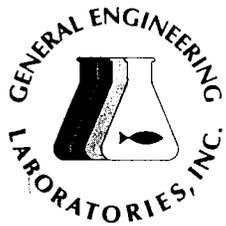
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI4C01
Sample ID: 70874011

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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Client Sample ID: MACSLI4A01 Project: ENSF00102
Sample ID: 70874012 Client ID: ENSF001
Matrix: Soil
Collect Date: 19-NOV-02 09:35
Receive Date: 20-NOV-02
Collector: Client
Moisture: 2.6%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		4.86	0.273	0.506	mg/kg	5	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

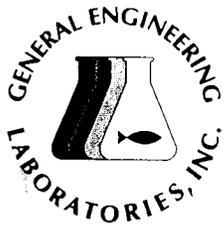
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI4A01
Sample ID: 70874012

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID:	MACSLI5B01	Project:	ENSF00102
Sample ID:	70874013	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	19-NOV-02 10:09		
Receive Date:	20-NOV-02		
Collector:	Client		
Moisture:	5.45%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		141	8.38	15.5	mg/kg	150	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

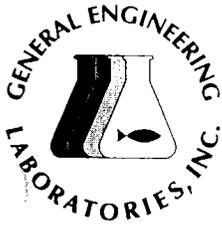
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
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Report Date: December 17, 2002

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Client Sample ID: MACSL15B01
Sample ID: 70874013

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Reviewed by *Amy C Jamison*



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 Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID:	MACSLI5C01	Project:	ENSF00102
Sample ID:	70874014	Client ID:	ENSF001
Matrix:	Soil		
Collect Date:	19-NOV-02 10:11		
Receive Date:	20-NOV-02		
Collector:	Client		
Moisture:	8.66%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		6.70	0.861	1.59	mg/kg	15	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

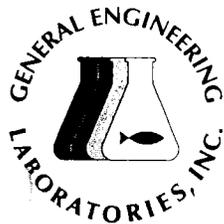
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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Client Sample ID: MACSLI5C01
Sample ID: 70874014

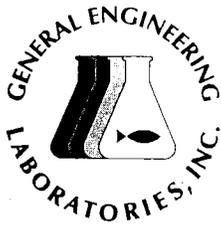
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Reviewed by Amy C Jamison



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Client Sample ID: MACSL15A01
 Sample ID: 70874015
 Matrix: Soil
 Collect Date: 19-NOV-02 10:13
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 8%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		12.2	0.878	1.63	mg/kg	15	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

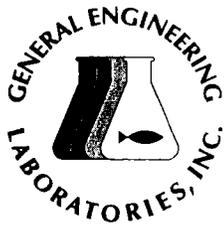
Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI5A01
Sample ID: 70874015

Project: ENSF00102
Client ID: ENSF001

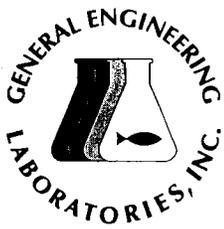
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

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Client Sample ID: MACSLI6B01 Project: ENSF00102
 Sample ID: 70874016 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 10:43
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 16.7%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		102	9.46	17.5	mg/kg	150	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

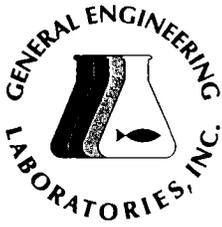
Notes:

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- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI6B01
Sample ID: 70874016

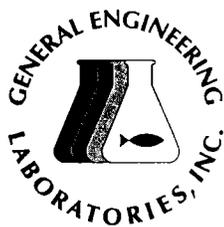
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

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Client Sample ID: MACSLI6C01 Project: ENSF00102
 Sample ID: 70874017 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 10:45
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 8.34%

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
<i>SW846_7196A Hexavalent Chromium</i>										
Hexavalent Chromium		11.2	0.852	1.58	mg/kg	15	AL1 12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

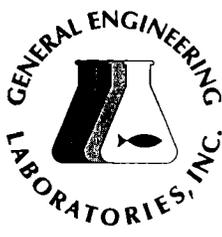
Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI6C01
Sample ID: 70874017

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

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Reviewed by Amy C Jamison





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Client Sample ID: MACSLI6A01
 Sample ID: 70874018
 Matrix: Soil
 Collect Date: 19-NOV-02 10:46
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 5.83%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		5.75	0.862	1.60	mg/kg	15	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI6A01
Sample ID: 70874018

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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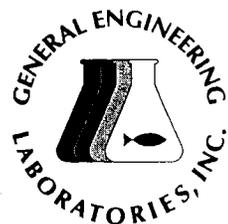
Reviewed by

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Client Sample ID: MACSLI7B01
 Sample ID: 70874019
 Matrix: Soil
 Collect Date: 19-NOV-02 11:13
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 9.48%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
<i>SW846_7196A Hexavalent Chromium</i>										
Hexavalent Chromium		12.8	0.899	1.67	mg/kg	15	AL1	12/04/02 1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI7B01
Sample ID: 70874019

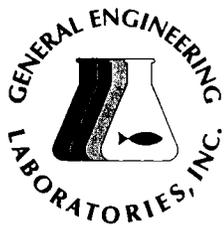
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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Client Sample ID: MACSLI7C01 Project: ENSF00102
 Sample ID: 70874020 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 11:14
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 4.34%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		14.9	0.845	1.56	mg/kg	15	AL1	12/04/02	1400	218958	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217894
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/02/02	1530	218957

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- E Concentration exceeds instrument calibration range
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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI7C01
Sample ID: 70874020

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Report Date: December 17, 2002

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Client Sample ID: MACSLI7A01 Project: ENSF00102
 Sample ID: 70874021 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 11:15
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 8.71%

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
<i>SW846_7196A Hexavalent Chromium</i>										
Hexavalent Chromium		0.361	0.0573	0.106	mg/kg	1	AL1 12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

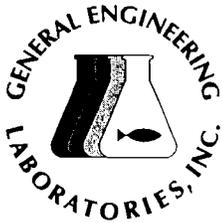
Notes:

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- BD Flag for results below the MDC or a flag for low tracer recovery.
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Client Sample ID: MACSLI7A01
Sample ID: 70874021

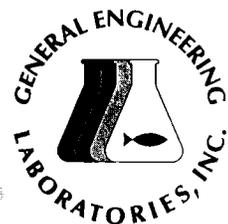
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Client Sample ID: MACSLI7A02
 Sample ID: 70874022
 Matrix: Soil
 Collect Date: 19-NOV-02 13:39
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 9.74%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
<i>SW846_7196A Hexavalent Chromium</i>											
Hexavalent Chromium		12.4	0.861	1.59	mg/kg	15	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
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- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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Client Sample ID: MACSLI7A02
Sample ID: 70874022

Project: ENSF00102
Client ID: ENSF001

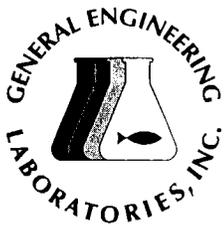
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

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 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 1 of 2

Client Sample ID: MACSLI7A03
 Sample ID: 70874023
 Matrix: Soil
 Collect Date: 19-NOV-02 13:40
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 7.6%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		23.7	0.857	1.59	mg/kg	15	AL1 12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Report Date: December 17, 2002

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Client Sample ID: MACSLI7A03
Sample ID: 70874023

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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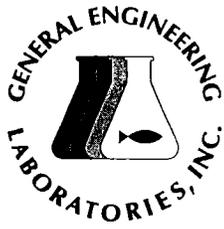
Reviewed by

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI6A02
Sample ID: 70874024
Matrix: Soil
Collect Date: 19-NOV-02 13:42
Receive Date: 20-NOV-02
Collector: Client
Moisture: 9.66%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		12.7	0.915	1.69	mg/kg	15	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 17, 2002

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Client Sample ID: MACSLI6A02
Sample ID: 70874024

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI6A03
 Sample ID: 70874025
 Matrix: Soil
 Collect Date: 19-NOV-02 13:50
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 10.1%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.613	0.0592	0.110	mg/kg	1	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

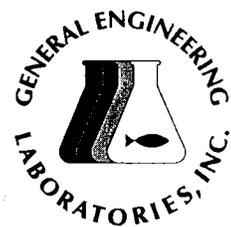
Notes:

The Qualifiers in this report are defined as follows :

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- B Analyte found in the sample as well as the associated blank.
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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Client Sample ID: MACSLI6A03
Sample ID: 70874025

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Reviewed by Amy C Jamison



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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI5A02 Project: ENSF00102
Sample ID: 70874026 Client ID: ENSF001
Matrix: Soil
Collect Date: 19-NOV-02 14:02
Receive Date: 20-NOV-02
Collector: Client
Moisture: 6.27%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		25.3	0.847	1.57	mg/kg	15	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Client Sample ID: MACSL15A02
Sample ID: 70874026

Project: ENSF00102
Client ID: ENSF001

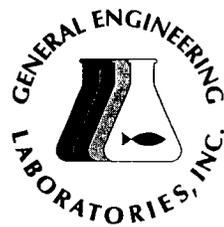
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Reviewed by Amy C Jamison





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 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSL15A03 Project: ENSF00102
 Sample ID: 70874027 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 14:21
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 6.57%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.517	0.0548	0.101	mg/kg	1	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Report Date: December 17, 2002

Page 2 of 2

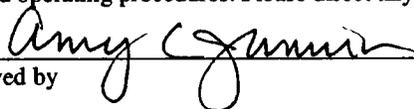
Client Sample ID: MACSL15A03
Sample ID: 70874027

Project: ENSF00102
Client ID: ENSF001

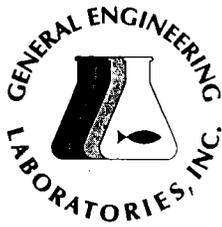
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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 Memphis, Tennessee 38134

Report Date: December 17, 2002

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 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI4A02 Project: ENSF00102
 Sample ID: 70874028 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 14:28
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 5.01%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		22.7	0.844	1.56	mg/kg	15	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

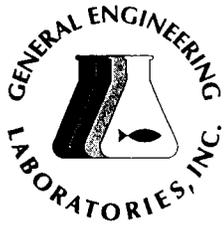
Notes:

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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Page 2 of 2

Client Sample ID: MACSLI4A02
Sample ID: 70874028

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Reviewed by Amy C Jamison



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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 2

Client Sample ID: MACSLI4A03 Project: ENSF00102
 Sample ID: 70874029 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 14:55
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 7.14%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.167	0.0589	0.109	mg/kg	1	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSLI4A03
Sample ID: 70874029

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
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Client Sample ID: MACSLI3A02
 Sample ID: 70874030
 Matrix: Soil
 Collect Date: 19-NOV-02 15:06
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 4.24%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium		5.92	0.271	0.502	mg/kg	5	AL1 12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

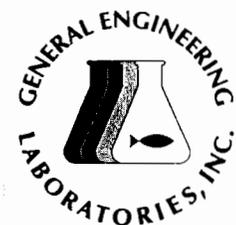
Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

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Client Sample ID: MACSL13A02

Sample ID: 70874030

Project: ENSF00102

Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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 Address : 5724 Summer Trees Dr
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Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI3A03 Project: ENSF00102
 Sample ID: 70874031 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 15:24
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 7.27%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0561	0.104	mg/kg	1	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Report Date: December 17, 2002

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Client Sample ID: MACSLI3A03
Sample ID: 70874031

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

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 Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI2A02 Project: ENSF00102
 Sample ID: 70874032 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 15:28
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 5.84%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		6.39	0.285	0.528	mg/kg	5	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

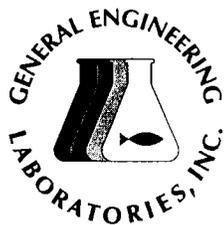
Notes:

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- > Actual result is greater than amount reported
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI2A02
Sample ID: 70874032

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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 Project: Macalloy at Charleston NWS

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Client Sample ID: MACSLI2A03 Project: ENSF00102
 Sample ID: 70874033 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 19-NOV-02 15:41
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 6.37%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.535	0.0567	0.105	mg/kg	1	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

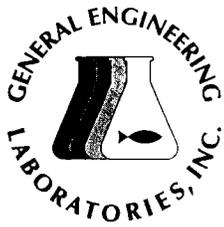
Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 17, 2002

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Client Sample ID: MACSLI2A03
Sample ID: 70874033

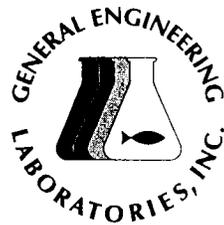
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Reviewed by Amy C Jamison



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Client Sample ID: MACSLI1A02
 Sample ID: 70874034
 Matrix: Soil
 Collect Date: 19-NOV-02 15:45
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 6.12%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		32.5	5.85	10.8	mg/kg	100	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

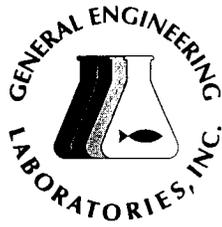
Notes:

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- H Holding time exceeded
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSL11A02
Sample ID: 70874034

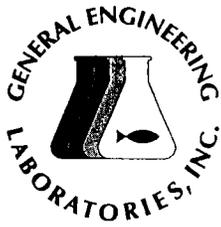
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Reviewed by Amy Jamison



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Client Sample ID: MACSL11A03
 Sample ID: 70874035
 Matrix: Soil
 Collect Date: 19-NOV-02 16:01
 Receive Date: 20-NOV-02
 Collector: Client
 Moisture: 9.57%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.506	0.0594	0.110	mg/kg	1	AL1	12/04/02	1730	219120	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/02/02	1000	217896
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	AL1	12/03/02	1158	219119

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

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- U Indicates the compound was analyzed for but not detected above the detection limit
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: MACSL11A03
Sample ID: 70874035

Project: ENSF00102
Client ID: ENSF001

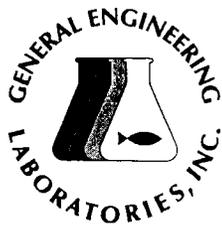
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Report Date: December 13, 2002

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Client Sample ID: 001M000318 Project: ENSF00102
Sample ID: 71023001 Client ID: ENSF001
Matrix: Soil
Collect Date: 21-NOV-02 08:05
Receive Date: 21-NOV-02
Collector: Client
Moisture: 50.9%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2800	0.608	1.89	mg/kg	1	BAS	12/11/02	1054	217899	1
Nickel		584	0.322	1.89	mg/kg	1					
Zinc		1310	0.635	1.89	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

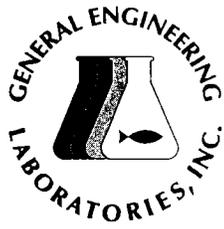
Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000318
Sample ID: 71023001

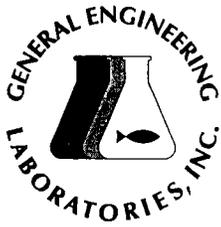
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Client Sample ID: 001M000324 Project: ENSF00102
 Sample ID: 71023002 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 08:10
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 38.3%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2180	0.471	1.46	mg/kg	1	BAS	12/11/02	1121	217899	1
Nickel		417	0.249	1.46	mg/kg	1					
Zinc		1490	0.492	1.46	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 13, 2002

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Client Sample ID: 001M000324
Sample ID: 71023002

Project: ENSF00102
Client ID: ENSF001

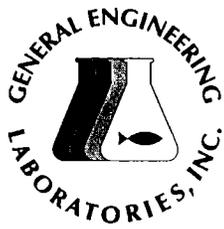
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

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Client Sample ID: 001M000336
 Sample ID: 71023003
 Matrix: Soil
 Collect Date: 21-NOV-02 08:15
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 42.3%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		1690	0.537	1.67	mg/kg	1	BAS	12/11/02	1126	217899 1
Nickel		107	0.285	1.67	mg/kg	1				
Zinc		827	0.561	1.67	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

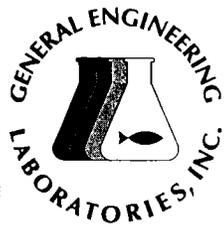
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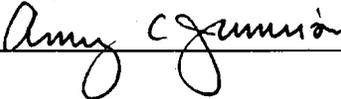
Client Sample ID: 001M000336
Sample ID: 71023003

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000218 Project: ENSF00102
 Sample ID: 71023004 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 08:25
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 52.7%

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		3370	0.675	2.10	mg/kg	1	BAS	12/11/02	1131	217899 1
Nickel		667	0.358	2.10	mg/kg	1				
Zinc		1910	0.705	2.10	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

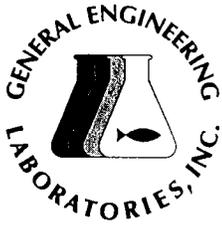
Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000218
Sample ID: 71023004

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000224
 Sample ID: 71023005
 Matrix: Soil
 Collect Date: 21-NOV-02 08:30
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 27.1%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		72.7	0.429	1.33	mg/kg	1	BAS	12/11/02	1149	217899	1
Nickel		9.87	0.227	1.33	mg/kg	1					
Zinc	U	ND	8.97	26.6	mg/kg	20	BAS	12/11/02	1329	217899	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	
2	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Report Date: December 13, 2002

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Client Sample ID: 001M000224
Sample ID: 71023005

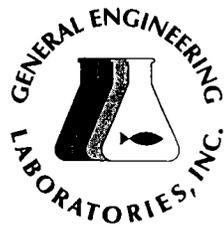
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Report Date: December 13, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000236
 Sample ID: 71023006
 Matrix: Soil
 Collect Date: 21-NOV-02 08:35
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 28.1%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		99.6	0.422	1.31	mg/kg	1	BAS	12/11/02	1155	217899	1
Nickel		16.9	0.224	1.31	mg/kg	1					
Zinc		68.7	0.441	1.31	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

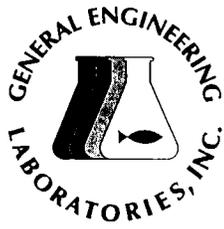
Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: 001M000236
Sample ID: 71023006

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by Amy C Jamison





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Report Date: December 13, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000118
 Sample ID: 71023007
 Matrix: Soil
 Collect Date: 21-NOV-02 08:55
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 37.6%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		2670	0.483	1.50	mg/kg	1	BAS	12/11/02	1201	217899 1
Nickel		581	0.256	1.50	mg/kg	1				
Zinc		1140	0.504	1.50	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
LM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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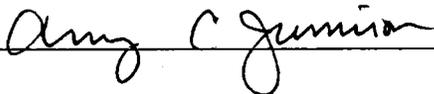
Client Sample ID: 001M000118
Sample ID: 71023007

Project: ENSF00102
Client ID: ENSF001

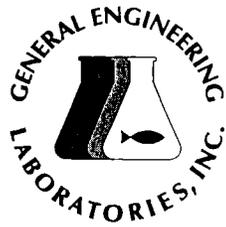
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Report Date: December 13, 2002

Contact: Laura Pearson
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Client Sample ID: 001M000124
 Sample ID: 71023008
 Matrix: Soil
 Collect Date: 21-NOV-02 09:00
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 57%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		1170	0.734	2.28	mg/kg	1	BAS	12/11/02	1206	217899 1
Nickel		136	0.389	2.28	mg/kg	1				
Zinc		696	0.767	2.28	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 13, 2002

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Client Sample ID: 001M000124
Sample ID: 71023008

Project: ENSF00102
Client ID: ENSF001

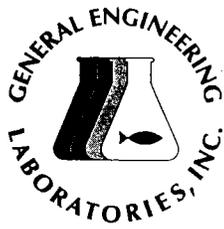
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Reviewed by Amy Jamison





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Report Date: December 13, 2002

Contact: Laura Pearson
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Client Sample ID: 001M000136
 Sample ID: 71023009
 Matrix: Soil
 Collect Date: 21-NOV-02 09:05
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 41.7%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		71.9	0.512	1.59	mg/kg	1	BAS	12/11/02	1211	217899 1
Nickel		15.1	0.271	1.59	mg/kg	1				
Zinc		55.4	0.534	1.59	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Client Sample ID: 001M000136
Sample ID: 71023009

Project: ENSF00102
Client ID: ENSF001

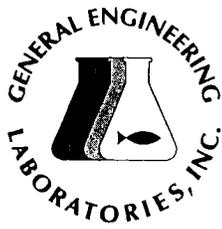
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Reviewed by Amy Jamison





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Report Date: December 13, 2002

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Client Sample ID: 001M000418 Project: ENSF00102
 Sample ID: 71023010 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 09:15
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 63.5%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2740	0.841	2.61	mg/kg	1	BAS	12/11/02	1217	217899	1
Nickel		232	0.446	2.61	mg/kg	1					
Zinc		1640	0.878	2.61	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 13, 2002

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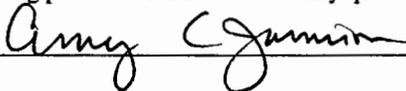
Client Sample ID: 001M000418
Sample ID: 71023010

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000424 Project: ENSF00102
 Sample ID: 71023011 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 09:20
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 50.9%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		353	0.602	1.87	mg/kg	1	BAS	12/11/02	1223	217899	1
Nickel		47.4	0.319	1.87	mg/kg	1					
Zinc		202	0.629	1.87	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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- U Indicates the compound was analyzed for but not detected above the detection limit
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- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

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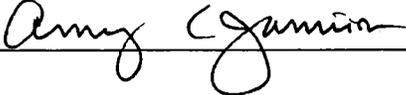
Client Sample ID: 001M000424
Sample ID: 71023011

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Client Sample ID: 001M000436
 Sample ID: 71023012
 Matrix: Soil
 Collect Date: 21-NOV-02 09:25
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 53.1%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		743	0.673	2.09	mg/kg	1	BAS	12/11/02	1229	217899	1
Nickel		107	0.357	2.09	mg/kg	1					
Zinc		303	0.703	2.09	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000436
Sample ID: 71023012

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000518
 Sample ID: 71023013
 Matrix: Soil
 Collect Date: 21-NOV-02 09:35
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 46.5%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2570	0.542	1.68	mg/kg	1	BAS	12/11/02	1234	217899	1
Nickel		453	0.287	1.68	mg/kg	1					
Zinc		1090	0.567	1.68	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Address : 5724 Summer Trees Dr
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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000518

Sample ID: 71023013

Project: ENSF00102

Client ID: ENSF001

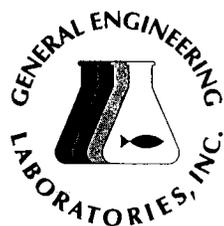
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by Amy Jamison





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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000524
Sample ID: 71023014
Matrix: Soil
Collect Date: 21-NOV-02 09:40
Receive Date: 21-NOV-02
Collector: Client
Moisture: 53.7%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		3040	0.682	2.12	mg/kg	1	BAS	12/11/02	1239	217899	1
Nickel		457	0.362	2.12	mg/kg	1					
Zinc		1770	0.713	2.12	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000524
Sample ID: 71023014

Project: ENSF00102
Client ID: ENSF001

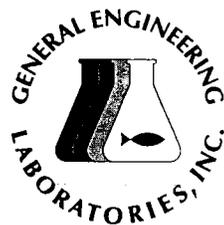
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Reviewed by Amy C Jamison





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Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000536 Project: ENSF00102
 Sample ID: 71023015 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 09:45
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 56.9%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		168	0.740	2.30	mg/kg	1	BAS	12/11/02	1256	217899	1
Nickel		34.4	0.392	2.30	mg/kg	1					
Zinc		98.8	0.773	2.30	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
LM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

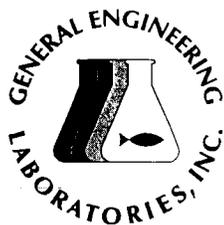
Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 13, 2002

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Client Sample ID: 001M000536
Sample ID: 71023015

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Reviewed by Amy Jamison





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Report Date: December 13, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000618
 Sample ID: 71023016
 Matrix: Soil
 Collect Date: 21-NOV-02 09:50
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 55.2%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		938	0.720	2.23	mg/kg	1	BAS	12/11/02	1302	217899	1
Nickel		162	0.381	2.23	mg/kg	1					
Zinc		400	0.752	2.23	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

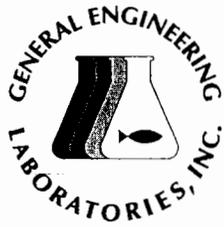
Notes:

The Qualifiers in this report are defined as follows :

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000618
Sample ID: 71023016

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Reviewed by Amy Jamison



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Report Date: December 13, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000624
 Sample ID: 71023017
 Matrix: Soil
 Collect Date: 21-NOV-02 09:55
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 48.7%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL, Metals ICP</i>											
Chromium		2320	0.616	1.91	mg/kg	1	BAS	12/11/02	1308	217899	1
Nickel		370	0.327	1.91	mg/kg	1					
Zinc		1270	0.644	1.91	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

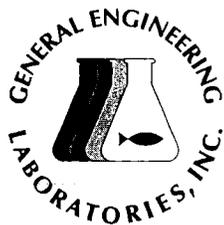
Method	Description	Analyst Comments
I	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000624
Sample ID: 71023017

Project: ENSF00102
Client ID: ENSF001

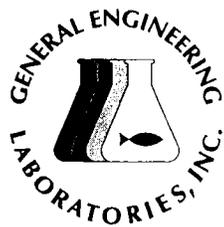
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Reviewed by Amy Jamison





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Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

Page 1 of 2

Client Sample ID: 001M000636
Sample ID: 71023018
Matrix: Soil
Collect Date: 21-NOV-02 10:00
Receive Date: 21-NOV-02
Collector: Client
Moisture: 53.8%

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		37.9	0.664	2.06	mg/kg	1	BAS	12/11/02	1313	217899	1
Nickel		8.68	0.352	2.06	mg/kg	1					
Zinc		32.4	0.693	2.06	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
LM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

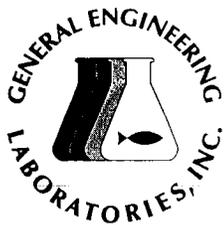
Notes:

The Qualifiers in this report are defined as follows :

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- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 13, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

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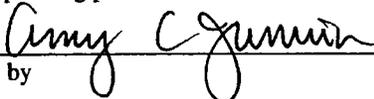
Client Sample ID: 001M000636
Sample ID: 71023018

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

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 Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

Page 1 of 2

Client Sample ID: 001M000718 Project: ENSF00102
 Sample ID: 71023019 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 10:05
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 62.2%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		1350	0.812	2.52	mg/kg	1	BAS	12/11/02	1319	217899	1
Nickel		192	0.430	2.52	mg/kg	1					
Zinc		665	0.848	2.52	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

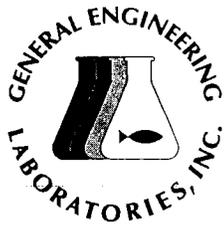
Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000718
Sample ID: 71023019

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Reviewed by Amy C Jamison





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Report Date: December 13, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000724
 Sample ID: 71023020
 Matrix: Soil
 Collect Date: 21-NOV-02 10:10
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 62.2%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		905	0.827	2.57	mg/kg	1	BAS	12/11/02	1324	217899	1
Nickel		138	0.438	2.57	mg/kg	1					
Zinc		516	0.864	2.57	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217898

The following Analytical Methods were performed

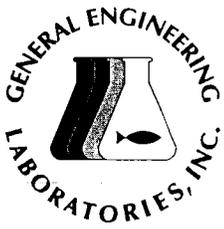
Method	Description	Analyst Comments
I	ILM 4.0 CLP Metals	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Contact: Laura Pearson
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Report Date: December 13, 2002

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Client Sample ID: 001M000724
Sample ID: 71023020

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Reviewed by 





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 Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

Page 1 of 2

Client Sample ID: 001M000736
 Sample ID: 71023021
 Matrix: Soil
 Collect Date: 21-NOV-02 10:15
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 50.4%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		53.5	0.613	1.90	mg/kg	1	HSC	12/09/02	1104	217901 1
Nickel		12.4	0.325	1.90	mg/kg	1				
Zinc		47.9	0.641	1.90	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

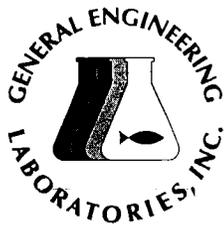
Method	Description	Analyst Comments
I	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.



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Contact: Laura Pearson
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Report Date: December 13, 2002

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Client Sample ID: 001M000736
Sample ID: 71023021

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Reviewed by Amy C. Jamison





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Client Sample ID: 001M000818 Project: ENSF00102
 Sample ID: 71023022 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 10:20
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 46.8%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2610	0.550	1.71	mg/kg	1	HSC	12/09/02	1133	217901	1
Nickel		484	0.583	3.42	mg/kg	2	HSC	12/09/02	1247	217901	2
Zinc		1870	1.15	3.42	mg/kg	2					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	
2	ILM 4.0 CLP Metals	

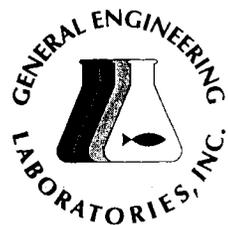
Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
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- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000818
Sample ID: 71023022

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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 Memphis, Tennessee 38134

Report Date: December 13, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

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Client Sample ID: 001M000824
 Sample ID: 71023023
 Matrix: Soil
 Collect Date: 21-NOV-02 10:25
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 39.2%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2450	0.477	1.48	mg/kg	1	HSC	12/09/02	1139	217901	1
Nickel		454	0.506	2.96	mg/kg	2	HSC	12/09/02	1253	217901	2
Zinc		1570	0.997	2.96	mg/kg	2					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	
2	ILM 4.0 CLP Metals	

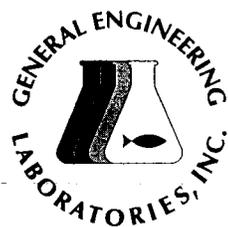
Notes:

The Qualifiers in this report are defined as follows :

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- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





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Report Date: December 13, 2002

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Client Sample ID: 001M000824
Sample ID: 71023023

Project: ENSF00102
Client ID: ENSF001

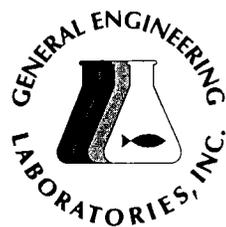
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	--------

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Contact: Laura Pearson
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Client Sample ID: 001M000836
 Sample ID: 71023024
 Matrix: Soil
 Collect Date: 21-NOV-02 10:30
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 57.2%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		100	0.753	2.34	mg/kg	1	HSC	12/09/02	1145	217901	1
Nickel		26.2	0.399	2.34	mg/kg	1					
Zinc		259	0.786	2.34	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

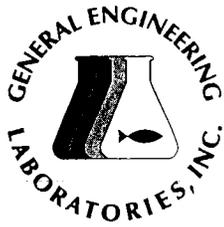
Notes:

The Qualifiers in this report are defined as follows :

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
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- Y QC Samples were not spiked with this compound.

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Client Sample ID: 001M000836
Sample ID: 71023024

Project: ENSF00102
Client ID: ENSF001

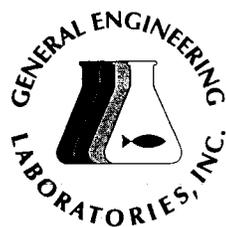
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Reviewed by Amy C Jamison





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Contact: Laura Pearson
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Client Sample ID: 001M000918
 Sample ID: 71023025
 Matrix: Soil
 Collect Date: 21-NOV-02 10:35
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 60.5%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		55.0	0.769	2.39	mg/kg	1	HSC	12/09/02	1203	217901	1
Nickel		15.3	0.408	2.39	mg/kg	1					
Zinc		183	0.804	2.39	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

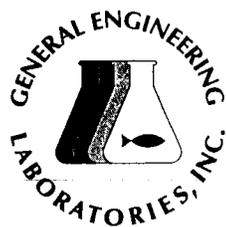
Notes:

The Qualifiers in this report are defined as follows :

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Report Date: December 13, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 2 of 2

Client Sample ID: 001M000918
Sample ID: 71023025

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

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Client Sample ID: 001M000924 Project: ENSF00102
 Sample ID: 71023026 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 10:40
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 56%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		72.0	0.726	2.25	mg/kg	1	HSC	12/09/02	1209	217901	1
Nickel		17.1	0.385	2.25	mg/kg	1					
Zinc		74.6	0.758	2.25	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

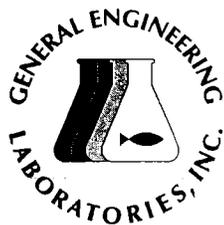
Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Client Sample ID: 001M000924
Sample ID: 71023026

Project: ENSF00102
Client ID: ENSF001

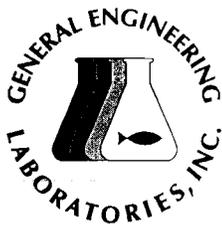
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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 Contact: Laura Pearson
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Client Sample ID: 001M000936
 Sample ID: 71023027
 Matrix: Soil
 Collect Date: 21-NOV-02 10:45
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 58.8%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		45.6	0.730	2.27	mg/kg	1	HSC	12/09/02	1215	217901 1
Nickel		11.9	0.387	2.27	mg/kg	1				
Zinc		45.1	0.763	2.27	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
I	ILM 4.0 CLP Metals	

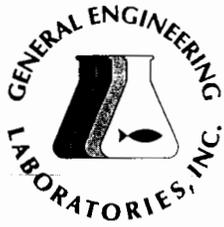
Notes:

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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
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Client Sample ID: 001M000936
Sample ID: 71023027

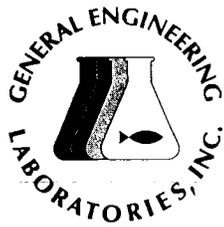
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Contact: Laura Pearson
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Client Sample ID: 001M001018
 Sample ID: 71023028
 Matrix: Soil
 Collect Date: 21-NOV-02 10:55
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 46.7%

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		2890	0.571	1.77	mg/kg	1	HSC	12/09/02	1221	217901	1
Nickel		374	0.303	1.77	mg/kg	1					
Zinc		1720	0.596	1.77	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

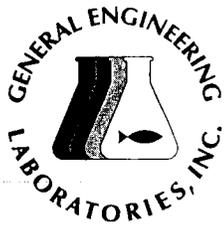
Notes:

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- B Analyte found in the sample as well as the associated blank.
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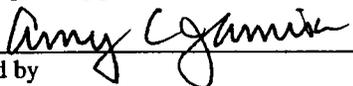
Client Sample ID: 001M001018
Sample ID: 71023028

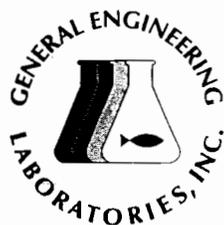
Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

Page 1 of 2

Client Sample ID: 001M001024 Project: ENSF00102
 Sample ID: 71023029 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 11:00
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 59%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP											
<i>ILM 4.0 CLP TAL Metals ICP</i>											
Chromium		81.5	0.777	2.41	mg/kg	1	HSC	12/09/02	1227	217901	1
Nickel		21.0	0.412	2.41	mg/kg	1					
Zinc		63.2	0.812	2.41	mg/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900 *

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.





GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

Page 2 of 2

Client Sample ID: 001M001024
Sample ID: 71023029

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by





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Certificate of Analysis

Company : EnSafe, Inc.
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 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 13, 2002

Page 1 of 2

Client Sample ID: 001M001036 Project: ENSF00102
 Sample ID: 71023030 Client ID: ENSF001
 Matrix: Soil
 Collect Date: 21-NOV-02 11:05
 Receive Date: 21-NOV-02
 Collector: Client
 Moisture: 58.5%

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP										
<i>ILM 4.0 CLP TAL Metals ICP</i>										
Chromium		135	0.775	2.41	mg/kg	1	HSC	12/09/02	1233	217901 1
Nickel		27.3	0.411	2.41	mg/kg	1				
Zinc		99.0	0.810	2.41	mg/kg	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
ILM 4.0 CLP Metals	ILMO 4.0 CLP Metals Prep	FGA	12/06/02	1000	217900

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ILM 4.0 CLP Metals	

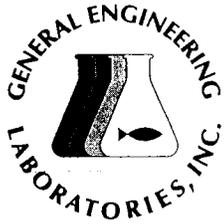
Notes:

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- P The response between the confirmation column and the primary column is >40%D
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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
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GENERAL ENGINEERING LABORATORIES

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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 2 of 2

Client Sample ID: 001M001036
Sample ID: 71023030

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
-----------	-----------	--------	----	----	-------	----	-------------	------	-------	--------

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Reviewed by Amy C Jamison





GENERAL ENGINEERING LABORATORIES

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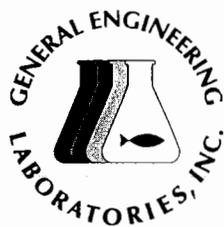
QC Summary

Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 71023

Report Date: December 17, 2002
Page 1 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	217899										
QC1200341480	71023001	DUP									
Chromium		2800		2870	mg/kg	2		(0%-20%)	BAS	12/11/02	11:05
Nickel		584		606	mg/kg	4		(0%-20%)			
Zinc		1310		1460	mg/kg	11		(0%-20%)			
QC1200341479	LCS										
Chromium	133			125	mg/kg		94	(77%-123%)		12/11/02	10:48
Nickel	174			163	mg/kg		94	(78%-121%)			
Zinc	246			218	mg/kg		89	(77%-123%)			
QC1200341478	MB										
Chromium			U	ND	mg/kg					12/11/02	10:42
Nickel			U	ND	mg/kg						
Zinc			U	ND	mg/kg						
QC1200341481	71023001	MS									
Chromium	78.4	2800		3070	mg/kg		N/A	(75%-125%)		12/11/02	11:11
Nickel	196	584		878	mg/kg		150*	(75%-125%)			
Zinc	196	1310		1630	mg/kg		N/A	(75%-125%)			
QC1200349827	71023001	PS									
Nickel	1000	1550		2440	ug/L		89	(75%-125%)		12/11/02	11:16
Zinc	1000	3480		4340	ug/L		86	(75%-125%)			
QC1200341482	71023001	SDILT									
Chromium		7430		1430	ug/L	3.52				12/11/02	10:59
Nickel		1550		309	ug/L	.0453					
Zinc		3480		694	ug/L	.31					
Batch	217901										
QC1200341485	71023021	DUP									
Chromium		53.5		62.4	mg/kg	15		(0%-20%)	HSC	12/09/02	11:16
Nickel		12.4		13.2	mg/kg	6		(0%-20%)			
Zinc		47.9		51.4	mg/kg	7		(0%-20%)			
QC1200341484	LCS										
Chromium	133			138	mg/kg		104	(77%-123%)		12/09/02	10:58
Nickel	174			183	mg/kg		105	(78%-121%)			
Zinc	246			250	mg/kg		102	(77%-123%)			
QC1200341483	MB										
Chromium			U	ND	mg/kg					12/09/02	10:52
Nickel			U	ND	mg/kg						
Zinc			U	ND	mg/kg						
QC1200341486	71023021	MS									
Chromium	75.4	53.5		212	mg/kg		211*	(75%-125%)		12/09/02	11:22
Nickel	189	12.4		210	mg/kg		105	(75%-125%)			
Zinc	189	47.9		280	mg/kg		123	(75%-125%)			
QC1200349704	71023021	PS									
Chromium	200	141		344	ug/L		102	(75%-125%)		12/09/02	11:27
QC1200341487	71023021	SDILT									
Chromium		141		27.7	ug/L	1.35				12/09/02	11:10
Nickel		32.6		6.83	ug/L	4.72					





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QC Summary

Workorder: 71023

Page 2 of 2

Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	217901										
Zinc		126		25.9	ug/L	2.79					

Notes:

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- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





800-588-7962
 MEMPHIS, TENNESSEE
 CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
 LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
 RALEIGH, NC; COLOGNE, GERMANY

CHAIN OF CUSTODY RECORD

71023%

PAGE 1 OF 2
 PROJECT/JOB NO: 0166-001-09-000-02
 COC NO: _____
 PO NO: 5356
 REL NO: _____
 LAB NAME: GEL

CLIENT ENSAFE PROJECT MANAGER LAUDA Pearson-Bray
 LOCATION MACALLOY TELE/FAX NO. 901-372-7962 / 372-2454
 SAMPLERS: (SIGNATURE) [Signature]

20021137619

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	ANALYSIS REQUIRED			REMARKS
					TEMP.	CHEMICAL		Chromium (total)	Nickel (total)	Zinc (total)	
081M080318	11-21-02	0805	SD	4oz glass	4°C	-	1	X	X	X	
081M080324		0814					1				
081M080336		0815					1				
081M080218		0825					1				
081M080224		0834					1				
081M080236		0835					1				
081M080118		0855					1				
081M080124		0904					1				
081M080136		0905					1				
081M080418		0915					1				
081M080424		0924					1				
081M080436		0925					1				
081M080518		0935					1				
081M080524		0944					1				
081M080536		0945					1				
081M080618		0954					1				

RELINQUISHER: [Signature] DATE: 11-21-02 RECEIVER: J.M. Harley DATE: 11/21/02
 PRINTED: [Signature] TIME: _____ PRINTED: J. Harley TIME: _____
 COMPANY: E-Sole COMPANY: GEL

METHOD OF SHIPMENT: ENSAFE COMMENTS: _____
 SHIPMENT NO. _____
 SEND RESULTS TO: LAUDA Pearson-Bray DQD II 21 DAY TAT CL 004



CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

800-588-7962
MEMPHIS, TENNESSEE
CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
RALEIGH, NC; COLOGNE, GERMANY

PROJECT/JOB NO: 0166-081-09-0000000
COC NO: _____
PO NO: 5356
REL NO: _____
LAB NAME: GEL

CLIENT ENSAF PROJECT MANAGER LAURA PEARSON-BRAN
LOCATION MACALLOY TELE/FAX NO. 901-372-7962 / 372-2454
SAMPLERS: (SIGNATURE) [Signature]

ANALYSIS REQUIRED
NO. OF CONTAINERS
Chromium (Total)
Nickel (Total)
Zinc (Total)

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	Chromium (Total)	Nickel (Total)	Zinc (Total)	REMARKS
					TEMP.	CHEMICAL					
001M004624		0955	SED	4oz glass	40C	NONE	1	X	X	X	
001M004636		1000					1				
001M004718		1005					1				
001M004724		1010					1				
001M004736		1015					1				
001M004818		1020					1				
001M004824		1025					1				
001M004836		1030					1				
001M004918		1035					1				
001M004924		1040					1				
001M004936		1045					1				
001M005018		1055					1				
001M005024		1100					1				
001M005036		1105					1				

RELINQUISHER: [Signature] DATE: 11-21-02 RECIPIENT: J. Harley DATE: 11/21/02
 PRINTED: Dave, Wozniak TIME: _____ PRINTED: _____ TIME: _____
 COMPANY: ENSAF TIME: 1520 COMPANY: GEL COMPANY: _____

METHOD OF SHIPMENT: ENSAF COMMENTS: _____
 SHIPMENT NO. _____
 SEND RESULTS TO: LAURA PEARSON-BRAN DQ02 21 DAY TAT CL004

Groundwater Analytical Reports



GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: 0166GP00112 Project: ENSF00102
Sample ID: 70250001 Client ID: ENSF001
Matrix: Water
Collect Date: 08-NOV-02 09:30
Receive Date: 08-NOV-02
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.540	1.00	mg/L	100	VH1	11/08/02	1625	214772	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
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- BD Flag for results below the MDC or a flag for low tracer recovery.
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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

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Reviewed by





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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: 0166GP00212
Sample ID: 70250002
Matrix: Water
Collect Date: 08-NOV-02 11:00
Receive Date: 08-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	J	0.006	0.0054	0.010	mg/L	1	VH1	11/08/02	1625	214772	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
I	SW846 7196A	

Notes:

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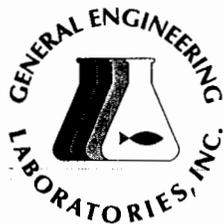
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Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: 0166GP00312 Project: ENSF00102
Sample ID: 70250003 Client ID: ENSF001
Matrix: Water
Collect Date: 08-NOV-02 11:15
Receive Date: 08-NOV-02
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0054	0.010	mg/L	1	VH1	11/08/02	1625	214772	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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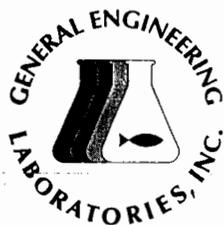
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Report Date: December 2, 2002

Page 1 of 1

Client Sample ID: 0166GP00412 Project: ENSF00102
Sample ID: 70250004 Client ID: ENSF001
Matrix: Water
Collect Date: 08-NOV-02 13:30
Receive Date: 08-NOV-02
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		7.20	0.540	1.00	mg/L	100	VH1	11/08/02	1625	214772	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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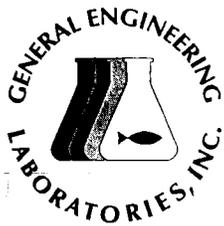
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Reviewed by Amy C Jamison





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Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 2, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 0166GP00512
Sample ID: 70250005
Matrix: Water
Collect Date: 08-NOV-02 14:00
Receive Date: 08-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		0.330	0.054	0.100	mg/L	10	VH1	11/08/02	1625	214772	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
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GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

QC Summary

Report Date: December 2, 2002
Page 1 of 1

Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 70250

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	214772										
QC1200333261	70250001	DUP									
Hexavalent Chromium		U	ND	U	ND	mg/L	N/A	(+/-1.00)	VH1	11/08/02	16:25
QC1200333263	LCS										
Hexavalent Chromium	0.100				0.098	mg/L	98	(89%-110%)			
QC1200333260	MB										
Hexavalent Chromium				U	ND	mg/L					
QC1200333262	70250001	PS									
Hexavalent Chromium	0.100	U	ND		0.023	mg/L	23*	(80%-122%)			

Notes:

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- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



CHAIN OF CUSTODY RECORD

800-588-7962
MEMPHIS, TENNESSEE
CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
RALEIGH, NC; COLOGNE, GERMANY

PROJECT/JOB NO: 0166-001-09-000-00
COC NO:
PO NO: 5356
REL NO:
LAB NAME: GRU

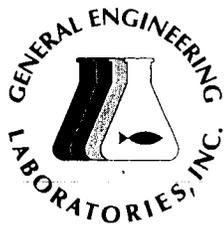
CLIENT: ENSAFE PROJECT MANAGER: LAURA PRARSON
LOCATION: MACALLOY TELE/FAX NO: 901-872-7962 / 372-2454
SAMPLERS: (SIGNATURE) [Signature]

20021137070

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	ANALYSIS REQUIRED	REMARKS
					TEMP.	CHEMICAL			
<u>0166 & P00112</u>	<u>11-8-02</u>	<u>0930</u>	<u>WATER</u>	<u>125 ml poly</u>	<u>4°C</u>	<u>—</u>	<u>1</u>	<u>X</u>	
<u>0166 & P00212</u>	<u>"</u>	<u>1000</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>1</u>	<u>X</u>	
<u>0166 & P00312</u>	<u>"</u>	<u>1115</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>1</u>	<u>X</u>	
<u>0166 & P00412</u>	<u>"</u>	<u>1330</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>1</u>	<u>X</u>	
<u>0166 & P00512</u>	<u>"</u>	<u>1400</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>1</u>	<u>X</u>	
<u>[Signature]</u> <u>11-8-02</u>									

RELINQUISHER: <u>[Signature]</u>	DATE: <u>11-8-02</u>	RECEIVER: <u>[Signature]</u>	DATE: <u>11/8/02</u>	RELINQUISHER: <u> </u>	DATE: <u> </u>	RECEIVER: <u> </u>	DATE: <u> </u>
PRINTED: <u>PETER W. B...</u>	TIME: <u>1505</u>	PRINTED: <u>[Signature]</u>	TIME: <u>1505</u>	PRINTED: <u> </u>	TIME: <u> </u>	PRINTED: <u> </u>	TIME: <u> </u>
COMPANY: <u>ENSAFE</u>		COMPANY: <u>GRU</u>		COMPANY: <u> </u>		COMPANY: <u> </u>	

METHOD OF SHIPMENT: Deliveries COMMENTS: DDO II 21 DAY TAT
SHIPMENT NO.
SEND RESULTS TO: LAURA PRARSON



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 4, 2002

Page 1 of 1

Client Sample ID: 0166GP00612 Project: ENSF00102
Sample ID: 70456002 Client ID: ENSF001
Matrix: Water
Collect Date: 13-NOV-02 09:30
Receive Date: 13-NOV-02
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		0.014	0.0054	0.010	mg/L	1 VH1	11/13/02	1654	215830	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

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Reviewed by Amy C Jamison





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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 4, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 0166GP00712
Sample ID: 70456001
Matrix: Water
Collect Date: 13-NOV-02 08:50
Receive Date: 13-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
<i>SW846_7196A Hexavalent Chromium</i>										
Hexavalent Chromium		1.77	0.027	0.050	mg/L	5	VH1 11/13/02	1654	215830	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
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- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

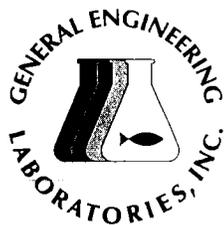
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Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 4, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 0166GP00808
Sample ID: 70456003
Matrix: Water
Collect Date: 13-NOV-02 10:00
Receive Date: 13-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		0.054	0.0054	0.010	mg/L	1 VH1	11/13/02	1654	215830	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID: 166GW02601 Project: ENSF00102
Sample ID: 71167001 Client ID: ENSF001
Matrix: Ground Water
Collect Date: 25-NOV-02 12:45
Receive Date: 25-NOV-02
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0054	0.010	mg/L	1	VH1	11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID: 166GW02701
Sample ID: 71167002
Matrix: Ground Water
Collect Date: 25-NOV-02 13:40
Receive Date: 25-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium	U	ND	0.0054	0.010	mg/L	1	VH1 11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID: 166GW02801
Sample ID: 71167003
Matrix: Ground Water
Collect Date: 25-NOV-02 14:50
Receive Date: 25-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		19.4	1.08	2.00	mg/L	200	VH1	11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

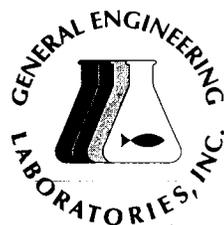
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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID: 166GW02901
Sample ID: 71167004
Matrix: Ground Water
Collect Date: 25-NOV-02 15:45
Receive Date: 25-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		9.90	0.540	1.00	mg/L	100	VH1	11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

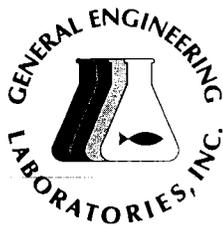
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Reviewed by





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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID: 166GW03001
Sample ID: 71167005
Matrix: Ground Water
Collect Date: 25-NOV-02 16:22
Receive Date: 25-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		8.70	0.540	1.00	mg/L	100	VH1	11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- B Analyte found in the sample as well as the associated blank.
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- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

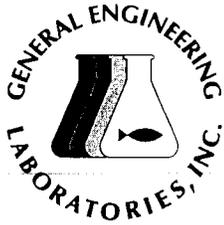
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Reviewed by Amy C Jamison





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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 16, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 166GW03101
 Sample ID: 71167006
 Matrix: Ground Water
 Collect Date: 25-NOV-02 17:05
 Receive Date: 25-NOV-02
 Collector: Client

Project: ENSF00102
 Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		8.40	0.540	1.00	mg/L	100	VH1	11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

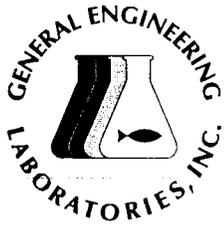
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- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID: 166GW03201
Sample ID: 71167007
Matrix: Ground Water
Collect Date: 25-NOV-02 17:35
Receive Date: 25-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium		1.30	0.270	0.500	mg/L	50	VH1	11/25/02	1930	218192	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

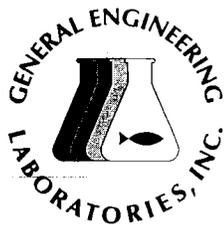
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QC Summary

Report Date: December 17, 2002
Page 1 of 1

Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 71167

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	218192										
QC1200342197	71167001	DUP									
Hexavalent Chromium		U	ND	U	ND	mg/L	N/A	(+/-0.010)	VH1	11/25/02	19:30
QC1200342199	LCS										
Hexavalent Chromium	0.100				0.100	mg/L	100	(89%-110%)			
QC1200342196	MB										
Hexavalent Chromium				U	ND	mg/L					
QC1200342198	71167001	PS									
Hexavalent Chromium	0.100	U	ND		0.105	mg/L	101	(80%-122%)			

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





71167

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1
 PROJECT/JOB NO: 0166-001-09000-00
 COC NO: _____
 PO NO: 5356
 REL NO: 0
 LAB NAME: GEL

800-588-7962
 MEMPHIS, TENNESSEE
 CHARLESTON, SC; CINCINNATI, OH; DALLAS, TX; JACKSON, TN; KNOXVILLE, TN;
 LANCASTER, PA; NASHVILLE, TN; NORFOLK, VA; PADUCAH, KY; PENSACOLA, FL;
 RALEIGH, NC; COLOGNE, GERMANY

CLIENT ENSAFE PROJECT MANAGER LAURA PEARSON
 LOCATION MACALLOY TELE/FAX NO. 1.901.372.7962 / 372.2454
 SAMPLERS: (SIGNATURE) John W. Bly Jan E. ...

ANALYSIS REQUIRED
 NO. OF CONTAINERS
27 67

FIELD SAMPLE NUMBER	DATE	TIME	SAMPLE TYPE	TYPE/SIZE OF CONTAINER	PRESERVATION		NO. OF CONTAINERS	REMARKS
					TEMP.	CHEMICAL		
166GW02601	11-25 02	1245	WATER	125ml poly	40c	—	1 X	
166GW02701	↓	1340	↓	↓	↓	↓	1 X	
166GW02801	↓	1450	↓	↓	↓	↓	1 X	
166GW02901	↓	1545	↓	↓	↓	↓	1 X	
166GW03001	↓	1622	↓	↓	↓	↓	1 Y	
166GW03101	↓	1705	↓	↓	↓	↓	1 X	
166GW03201	↓	1735	↓	↓	↓	↓	1 Y	
<i>John W. Bly</i>								

RELINQUISHER: <u>James Wade</u>	DATE: 11-25 TIME: 02	RECEIVER: <u>Mike Kinslow</u>	DATE: 11-25 TIME: 1805	RELINQUISHER: _____	DATE: _____	RECEIVER: _____	DATE: _____
PRINTED: _____	TIME: 1805	PRINTED: <u>Mike Kinslow</u>	TIME: 1805	PRINTED: _____	TIME: _____	PRINTED: _____	TIME: _____
COMPANY: <u>ENSAFE</u>		COMPANY: <u>GEL</u>		COMPANY: _____		COMPANY: _____	

METHOD OF SHIPMENT: DELIVERY
 SHIPMENT NO. _____
 SEND RESULTS TO: LAURA PEARSON
 COMMENTS: DO NOT 21 DAY TAT



GENERAL ENGINEERING LABORATORIES

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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 1 of 1

Client Sample ID: 166GW023P1 Project: ENSF00102
 Sample ID: 71243001 Client ID: ENSF001
 Matrix: Ground Water
 Collect Date: 26-NOV-02 09:40
 Receive Date: 26-NOV-02
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium		0.310	0.054	0.100	mg/L	10	VH1	11/26/02	1645	218380	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

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- > Actual result is greater than amount reported
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- BD Flag for results below the MDC or a flag for low tracer recovery.
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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Amy Jamison.

Reviewed by Amy Jamison



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Memphis, Tennessee 38134

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 1 of 1

Client Sample ID: 166GW018P1
Sample ID: 71243002
Matrix: Ground Water
Collect Date: 26-NOV-02 12:15
Receive Date: 26-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		21.8	1.35	2.50	mg/L	250	VH1	11/26/02	1645	218380 1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- > Actual result is greater than amount reported
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- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

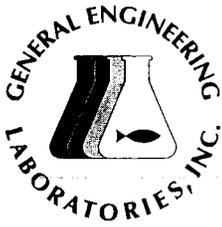
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 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 166GW013P1 Project: ENSF00102
 Sample ID: 71243003 Client ID: ENSF001
 Matrix: Ground Water
 Collect Date: 26-NOV-02 13:00
 Receive Date: 26-NOV-02
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		2.68	0.108	0.200	mg/L	20	VH1 11/26/02	1645	218380	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

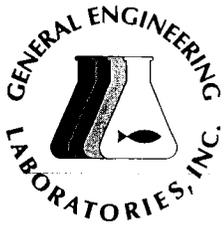
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Reviewed by Amy C Jamison





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Certificate of Analysis

Company : EnSafe, Inc.
 Address : 5724 Summer Trees Dr
 Memphis, Tennessee 38134

Contact: Laura Pearson
 Project: Macalloy at Charleston NWS

Report Date: December 17, 2002

Page 1 of 1

Client Sample ID: 166GW008P1 Project: ENSF00102
 Sample ID: 71243004 Client ID: ENSF001
 Matrix: Ground Water
 Collect Date: 26-NOV-02 13:20
 Receive Date: 26-NOV-02
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		28.0	1.08	2.00	mg/L	200	VH1	11/26/02	1645	218380 1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

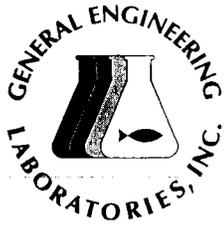
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- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
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- H Holding time exceeded
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- P The response between the confirmation column and the primary column is >40%D
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- UI Uncertain identification for gamma spectroscopy.
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- Y QC Samples were not spiked with this compound.

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Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 166GW025P1
Sample ID: 71243005
Matrix: Ground Water
Collect Date: 26-NOV-02 15:05
Receive Date: 26-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Spectrometric Analysis										
SW846_7196A Hexavalent Chromium										
Hexavalent Chromium		0.021	0.0054	0.010	mg/L	1 VH1	11/26/02	1645	218380	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

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- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
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Certificate of Analysis

Company : EnSafe, Inc.
Address : 5724 Summer Trees Dr
Memphis, Tennessee 38134

Report Date: December 17, 2002

Contact: Laura Pearson
Project: Macalloy at Charleston NWS

Page 1 of 1

Client Sample ID: 166GW011P1
Sample ID: 71243006
Matrix: Ground Water
Collect Date: 26-NOV-02 16:00
Receive Date: 26-NOV-02
Collector: Client

Project: ENSF00102
Client ID: ENSF001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Spectrometric Analysis											
SW846_7196A Hexavalent Chromium											
Hexavalent Chromium	U	ND	0.0054	0.010	mg/L	1	VH1	11/26/02	1645	218380	1

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7196A	

Notes:

The Qualifiers in this report are defined as follows :

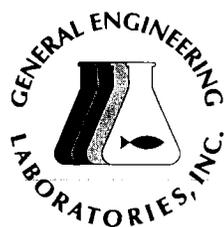
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- P The response between the confirmation column and the primary column is >40%D
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- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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QC Summary

Report Date: December 17, 2002
Page 1 of 1

Client : EnSafe, Inc.
5724 Summer Trees Dr
Memphis, Tennessee
Contact: Laura Pearson
Workorder: 71243

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Spectrometric Analysis											
Batch	218380										
QC1200342674	71243001	DUP									
Hexavalent Chromium		0.310		0.370	mg/L	18 ^		(+/-0.100)	VH1	11/26/02	16:45
QC1200342676	LCS										
Hexavalent Chromium	0.100			0.095	mg/L		95	(89%-110%)			
QC1200342673	MB										
Hexavalent Chromium			U	ND	mg/L						
QC1200342675	71243001	PS									
Hexavalent Chromium	0.100	0.031		0.116	mg/L		85	(80%-122%)			

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N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

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