FORM
27
Rev 6/99

#4952

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY

RECEIVED
11/10/2011

OGCC Employee:

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No:

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☑ Site/Facility Closure ☐ Other (describe): Pit Closure

OGCC Operator Number: 96850
Name of Operator: Williams Production RMT Company
Address: 1058 County Road 215
City: Parachute State: CO Zip: 81635

Contact Name and Telephone:
Karolina Blaney
No: 970.683.2295
Fax: 970.285.9573

API Number: 05-045-12286 County: Garfield
Facility Name: Chevron TR 31-13-597 Facility Number: 324367
Well Name: Chevron TR 31-13-597 Well Number: N/A
Location: (QtrQtr, Sec, Twp, Rng, Meridian): NWNE, S13, T5S, R97W, 6PM Latitude: 39.617504 Longitude: -108.22463

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☑ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Non-crop rangeland, non irrigated

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Parachute-Irigul-Rhone, 25 to 50% slopes; Silas Loam, 1-2% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): No permitted water wells within 1/4 mi.; unnamed tributary to Wolf Creek lies approximately 260 feet to the northwest

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
☐ Soils	See Attached Notice of Completion Report	Visual observations, field screening and analytical analysisi
☐ Vegetation	Remediation #	
☐ Groundwater		
☐ Surface Water		

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

See Attached Notice of Completion Report, Remediation # 4952

Describe how source is to be removed:

See Attached Notice of Completion Report, Remediation # 4952

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

See Attached Notice of Completion Report, Remediation # 4952

Submit Page 2 with Page 1

FORM 27 Rev 6/99

Page 2

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver, Colorado 80203
(303)894-2100 Fax:(303)894-2109

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: ~~Pit ID #: 284691~~
Received Date: _____
Well Name & No: Location ID #: 324367
Facility Name & No: JR 31-13-597

REMEDIATION WORKPLAN (Cont.)

OGCC Employee:

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

See Attached Notice of Completion Report, Remediation # 4952

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

See Attached Notice of Completion Report, Remediation # 4952

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☐ N If yes, describe:

See Attached Notice of Completion Report, Remediation # 4952

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

See Attached Notice of Completion Report, Remediation # 4952

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 9/13/2010	Date Site Investigation Completed: 11/6/2010	Date Remediation Plan Submitted: 11/10/2009
Remediation Start Date: 9/13/2010	Anticipated Completion Date: 10/13/2010	Actual Completion Date: 11/6/2010

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Karolina Blaney Signed: Karolina Blaney

Title: Environmental Specialist Date: 11/10/2011

OGCC Approved: Title: FOR Chris Canfield Date: 12/05/2011

EPS NW Region

Re-contouring pending
Cover w/3' native top soil ✓

WILLIAMS PRODUCTION RMT COMPANY
TRAIL RIDGE FIELD

CHEVRON TR 31-13-597
NOTICE OF COMPLETION REPORT FOR REMEDIATION #4952

Prepared For:

1058 County Road 215
P.O. Box 370
Parachute, Colorado 81635

Prepared By:

826 21 ½ Road
Grand Junction, CO 81504
Phone: 970.263.7800
Fax: 970.263.7456

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Introduction

The purpose of this Notice of Completion (NOC) Report for the closure of the production pit associated with the Williams Production RMT Company (Williams) facility identified as the TR 31-13-597 is to provide an analysis of results for actions taken according to the previously submitted and approved Colorado Oil and Gas Conservation Commission (COGCC) Site Investigation and Remediation Workplan, Form 27 (remediation #4952). This NOC Report will provide the documentation necessary to show that Williams conducted an investigation of the pit and surrounding area in accordance with all appropriate county, state, and federal rules and regulations.

The subject Form 27 was submitted via electronic email on November 2, 2009. Preliminary approval to proceed with closure of the subject pit was issued by the COGCC and obtained by Williams on March 31, 2010; at which time the aforementioned remediation number was issued. Closure activities began on September 13, 2010 and were concluded on November 3, 2010. Information included in this report includes but is not limited to, field screening results, laboratory analytical, subliner soil remediation, soil disposal, liner recycling and complete backfilling of the production pit.

Site Location

The site is located in Garfield County, Colorado. The site legal location is the NWNE of Section 13, Township 5 South, Range 97 West of the 6th PM. Please refer to Figure 1 for the site location.

Evacuation of Pit Contents

The pit was emptied of all produced water using hydro-vac trucks, and all water was disposed of using approved disposal/evaporation facilities. The water was also recycled for use in other frac operations within the Piceance Basin.

All residual material remaining on the pit liner was removed during pit liner removal operations through the use of a hydro-vac truck. All collected pit residue was placed within a bermed containment.

Pit Liner Investigation and Integrity Assessment

On September 13, 2010 prior to its removal, an assessment was made of the pit liner system. The system consisted of two woven liners overlying a poly liner, overlying felt. The poly liner appeared to be the original liner and the two woven liners were placed over it after its integrity was compromised. A three inch hole in the west side wall of the pit was noted as a result of a failed patch on the uppermost woven liner. No other tears or weaknesses were observed in the woven liners, and all seams appeared to be intact.

The poly liner was found to be in very poor condition. Numerous holes and tears were found throughout the liner, especially on the northern and western side walls. The liner in the bottom of the pit was found to be very brittle. Please see Figure 2 for a schematic of the liner condition.

Site Reconnaissance

A Wolf Creek tributary lies approximately twenty (20) feet north of the pads fill slope and flows from the southwest to the northeast. An investigation of the area was made on September 13th. No evidence of impact was observed along the hillside or creek. No sheening, stressed vegetation or seeps were observed. Additionally no hydrocarbons were detected by a photoionization detector (PID). Readings were ~0.0 ppm. A stormwater collection ditch at the base of the pad slope showed no signs of impact.

To ensure that there was no migration of impact off site, a total of five test holes were dug. Three of the holes were dug at the base of the fill slope. Test Hole 1 was dug to a depth of 6-7' below the topsoil, into the shale. No staining or odor was evident (PID=0.0ppm), and groundwater was not encountered. Test Hole 2 was dug to a depth of 6 feet through the topsoil and into the shale. No staining or odor was observed (PID=2.6ppm), and groundwater was not encountered. Test Hole 3 was excavated to a depth of 8 feet through the topsoil. Again, no staining or odor was evident (PID=0.1ppm), and groundwater was not encountered. It was therefore concluded that the contamination from the production pit was not migrating down gradient from the site.

Test Pit 4 was dug north of the eastern end of the excavated pit area, to a depth of approximately 15 feet into the topsoil layer. No evidence of impact was observed, both visual or olfactory (PID=0.1ppm). Test Pit 5 was dug north of the western end of the excavated area to a depth of 14.5 feet. No evidence of impact was observed in either the topsoil (PID=0.0ppm) or gravel/rock (PID=0.0ppm) layers.

Pit Liner Removal and Excavation

Liner removal was initiated on September 13, 2010 at the eastern portion of the pit. The upper liners were cut and removed in layers. The poly liner was found to be brittle in the southeast corner of the pit, and numerous tears were discovered on the southern, northern, and western side walls.

Once the liner and felt removal was complete, it was apparent that a large area of the pit bottom showed visual and olfactory signs of impact. An initial field screening with a PID was conducted on September 13, 2010 to determine the level of contamination and the areas to be excavated. Results and locations of this screening can be seen in Figure 3.

Excavation of impacted soil began on September 14, 2010 in the northeast corner of the pit. The soil from the bottom of the pit was first stripped to a depth of 3-4 feet below the surface of the pit bottom. Excavated soils were placed in a temporary plastic lined and soil bermed containment cell. The impacted soil was removed until field screening results indicated potential impact below COGCC Table 910-1 standards.

Please see the attached Appendix A for a photographic log of excavation activities.

Sampling Activities

Petroflag© and PID screening was conducted on September 20, 2010 to ensure that all impacted soils had been removed from the pit. Please refer to Figure 3 for a schematic of screening locations. Table 1 contains results from each screening location.

Five grab samples were also collected, one from each side wall and the pit bottom, to verify the field screening results and further confirm that all contaminated soil had been removed. Figure 4 contains a schematic of all sampling locations. These samples were analyzed for COGCC Rule 910 and Table 910-1 compliance. Please see Table 2 for the results of these confirmation samples. The lowest point in the pit was located at the screening location X9. This point also had the highest concentration for TPH from the field screening conducted on September 14, 2010. This point was excavated further before any confirmation samples were collected.

On October 29, 2010 five grab samples were collected from undisturbed ground surrounding the pad. Figure 5 shows the locations of the background samples collected. These samples were analyzed for arsenic and sodium adsorption ratio (SAR). Please refer to Table 3 for results of the background sampling.

Each sample was packed into laboratory supplied sample containers, labeled, logged on the chain-of-custody form and packed on ice for preservation.

All samples were submitted, via overnight delivery and under strict chain-of-custody protocol, to Accutest Laboratories of Houston, TX for analysis. All samples arrived in good condition, and within the appropriate temperature range and holding time.

Remediation Activities

The excavation began on September 14, 2010, and was completed on October 6, 2010. Approximately 1500 cubic yards of soil was excavated from the production pit. The bottom of the impact was found 15-17 feet in the north sidewall, 4-6 feet in the western sidewall, and 7-9 feet in the south east sidewall.

Analytical results from the confirmation samples indicate that soils within the pit bottom were below COGCC Table 910-1 criteria and required no further remediation.

Backfilling operations began on October 6, 2010 and completed on October 12, 2010. The results from the pit fill samples show that the impacted soils were mixed to an acceptable ratio, within Table 910-1 standards.

Management of Stockpiled Material

The components of the pit liner system were separated according to material and placed in a bermed containment.

Approximately 1500 cubic yards of soil was excavated from the production pit. The excavated soils were mixed to a ratio of three parts clean to one part impacted (3:1) soil. Three grab samples were collected from the pit fill and analyzed for regulation compliance. See Table 4 for

the results of the pit fill analysis. The top three feet of the pit were backfilled only with native soils.

Approximately 120 cubic yards of impacted soils was land farmed in a plastic lined and bermed area on location. The soil was sampled in October 2011 and analytical results indicate compliance with COGCC Table 910-1 except for SAR. Upon approval, the material will be reincorporated with native soil during re-contouring activities and capped with 3-feet of native topsoil.

Exceptions to COGCC Table 910-1

Arsenic concentrations in all five of the confirmation samples and sodium adsorption ratio in two of the confirmation samples exceeded COGCC Table 910-1 standards. In addition, the sodium adsorption ratio in the land farmed soil was above the allowable concentration. Upon approval, this soil will be reincorporated with native soil during re-contouring activities and capped with 3-feet of native topsoil. A Sundry Notice requesting reincorporation of land farmed soil including consideration of background arsenic and SAR concentrations is included in Appendix B.

Analytical Data Management

The laboratory data reports, including the chain-of-custody forms, for the samples collected during the activities described above are attached to this report in Appendix C.

FIGURES

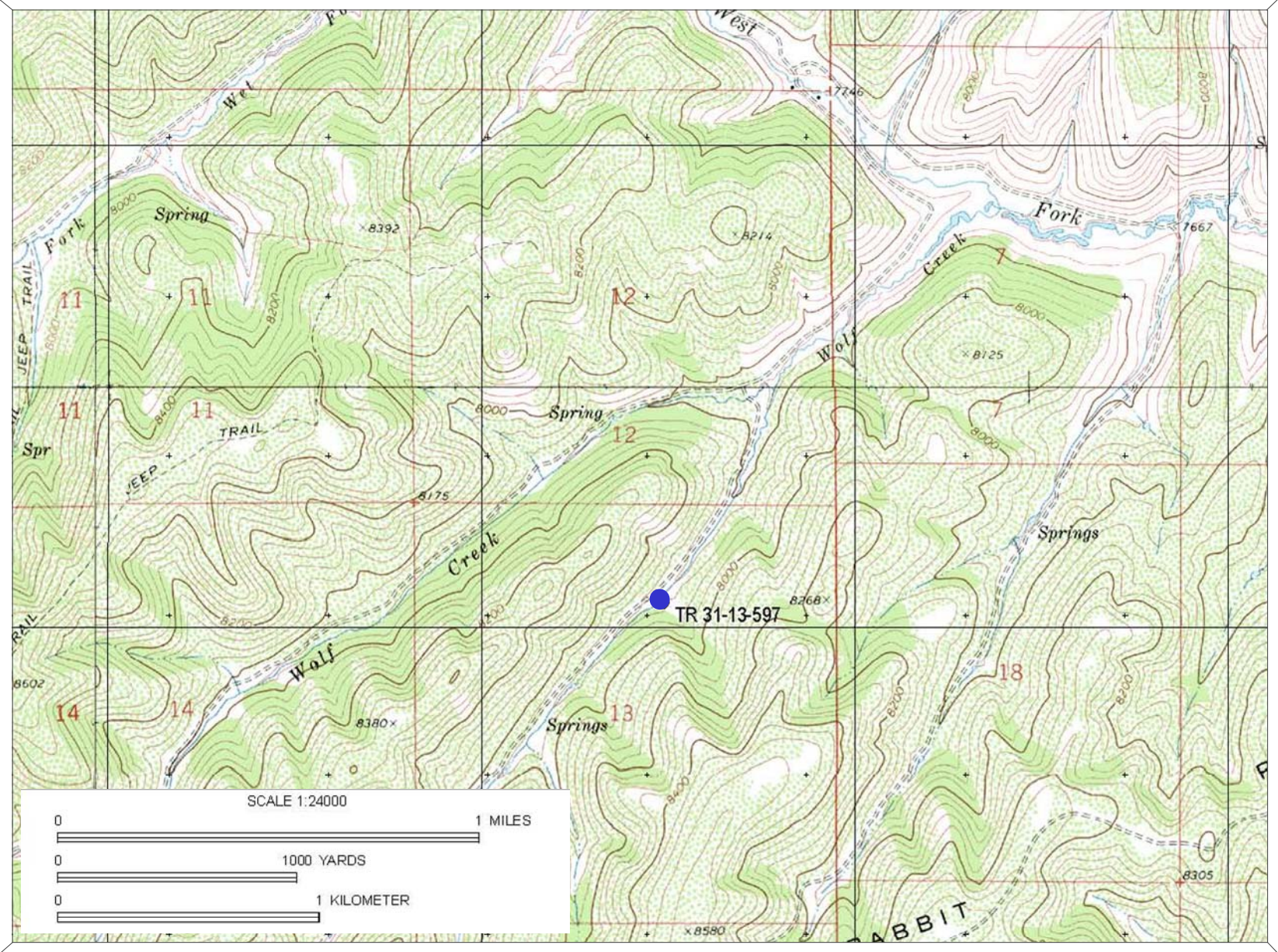

Figure 1

TR 31-13-597 Site Location

NWNE Section 13, Township 5S, Range 97W, 6th PM
Garfield County

● - Site Location

N

OLSSON ASSOCIATES

826 21-1/2 ROAD
GRAND JUNCTION, CO 81505
TEL 970.263.7800
FAX 970.263.7456

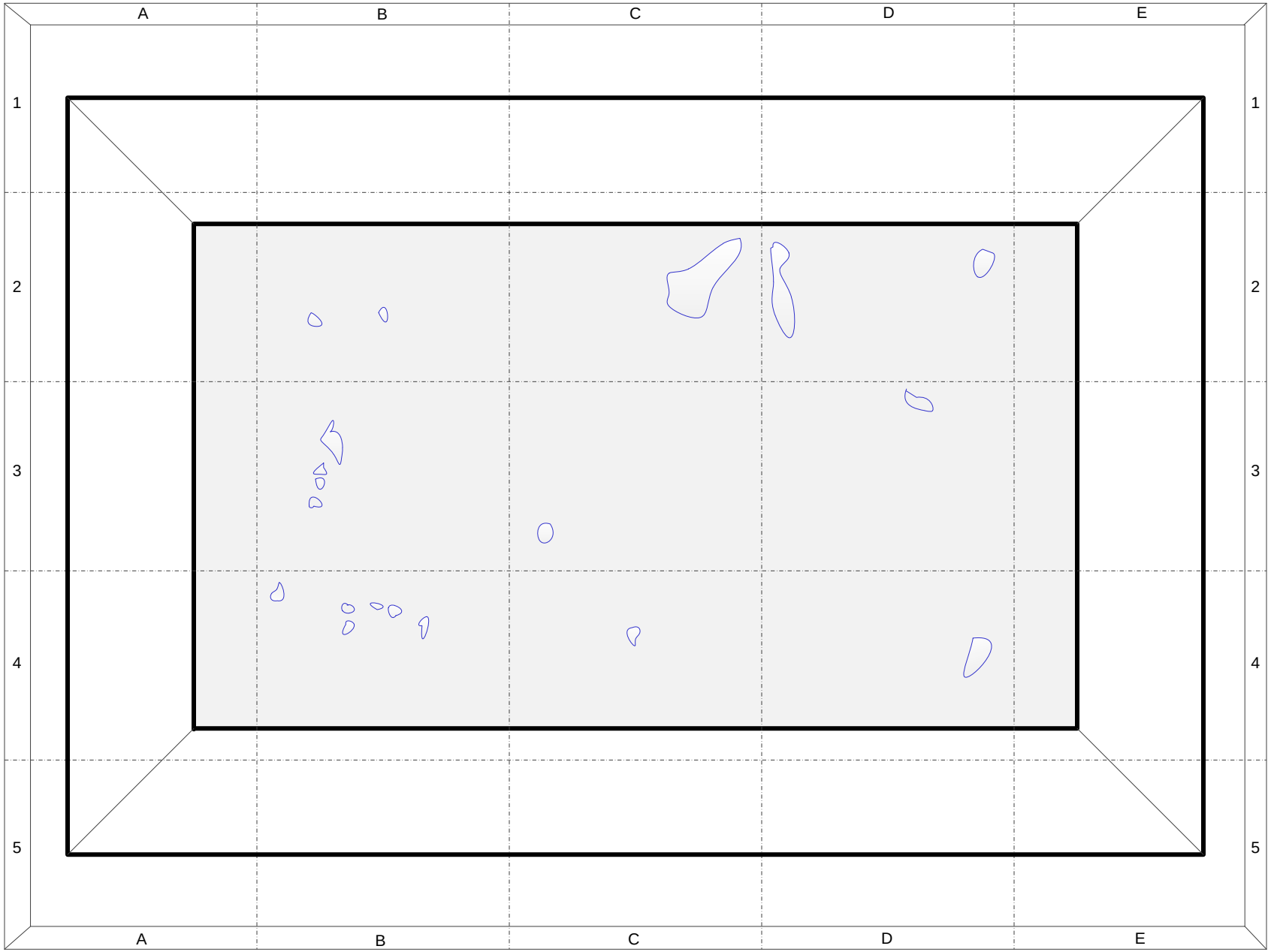

Figure 2

Liner Condition
Schematic
and
Initial Field Screening
Results

- Tears in PolyLiner

826 21-1/2 ROAD
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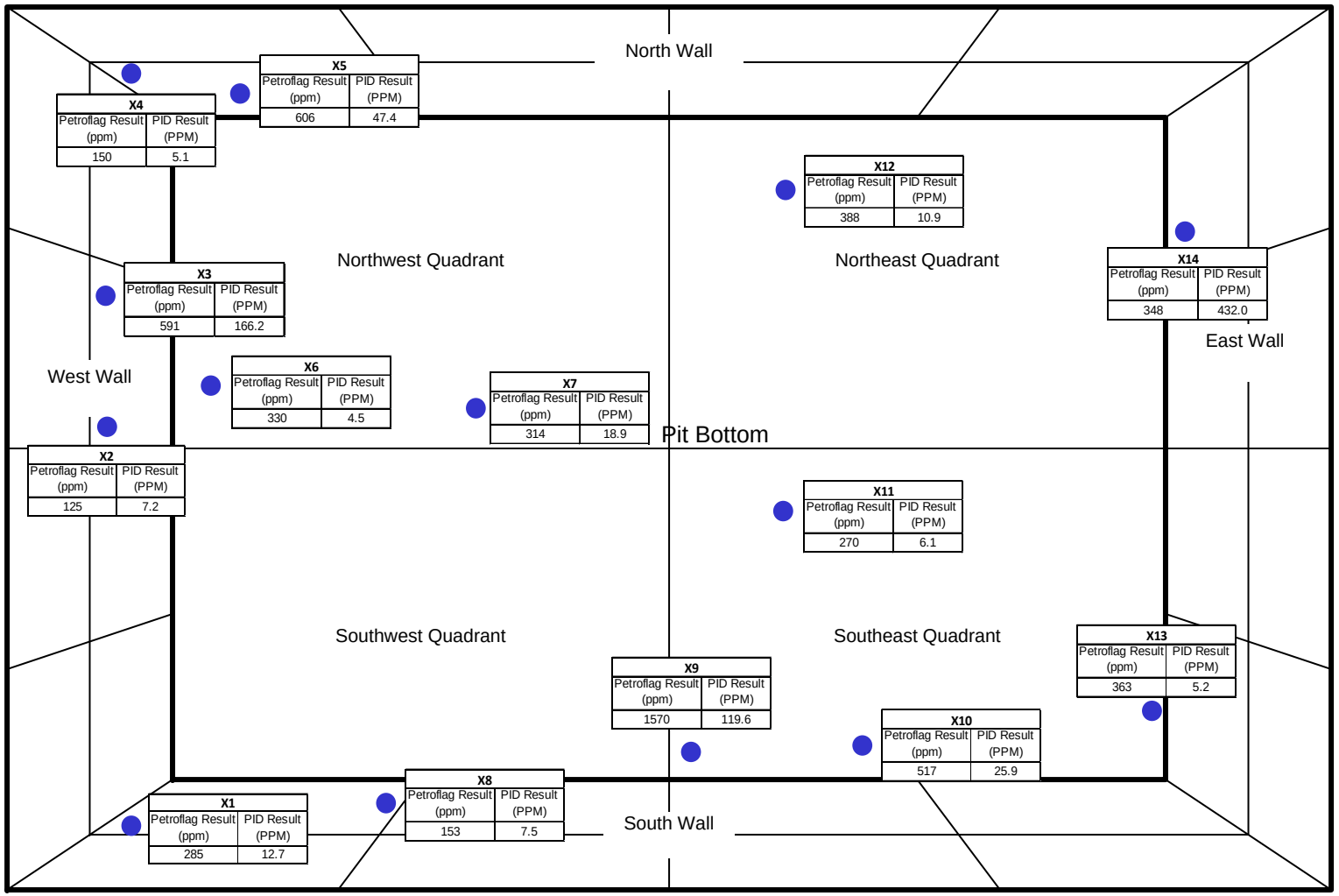


Figure 3

Field Screening Schematic

● - Screening Location

826 21-1/2 ROAD
GRAND JUNCTION, CO 81505
TEL 970.263.7800
FAX 970.263.7456

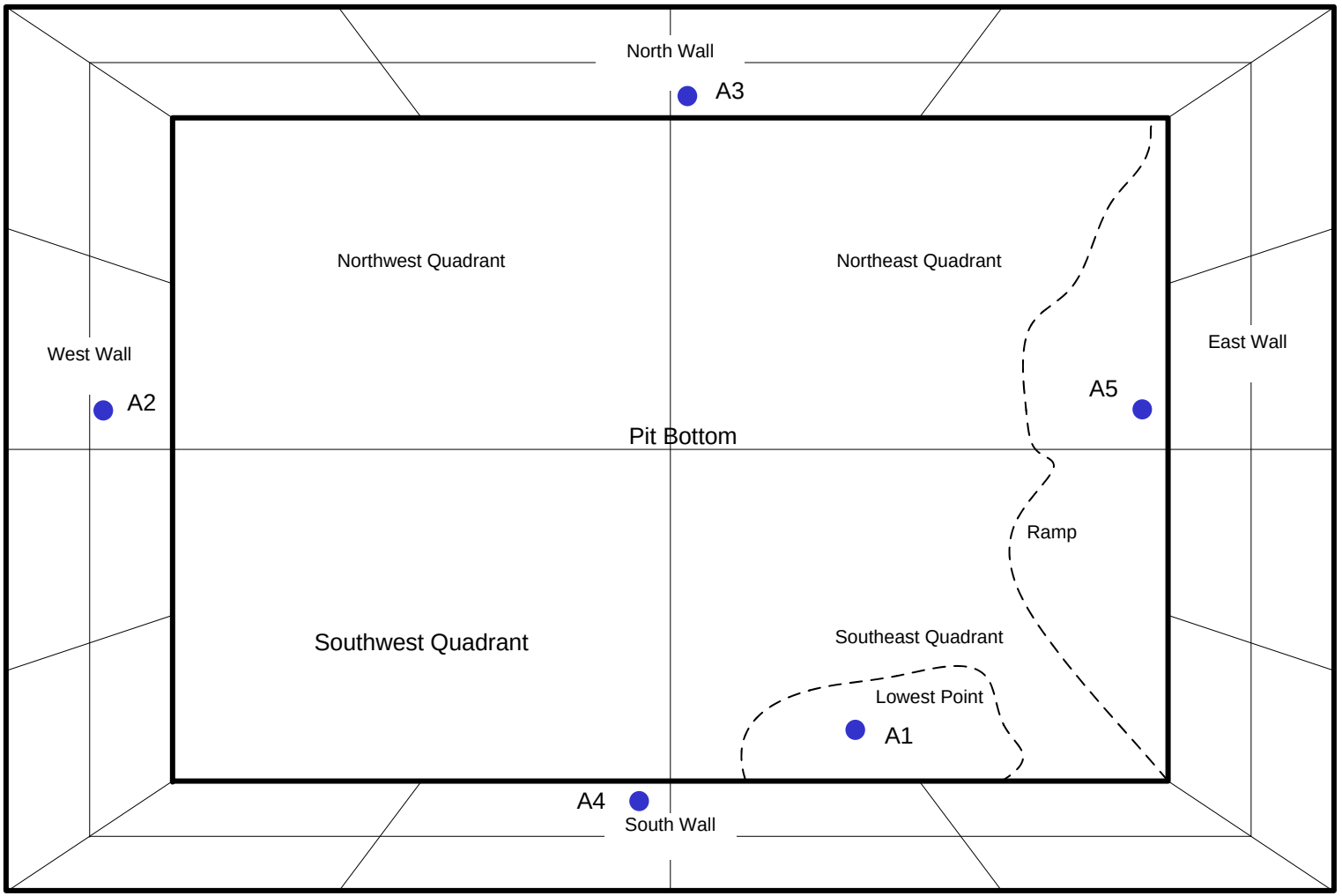


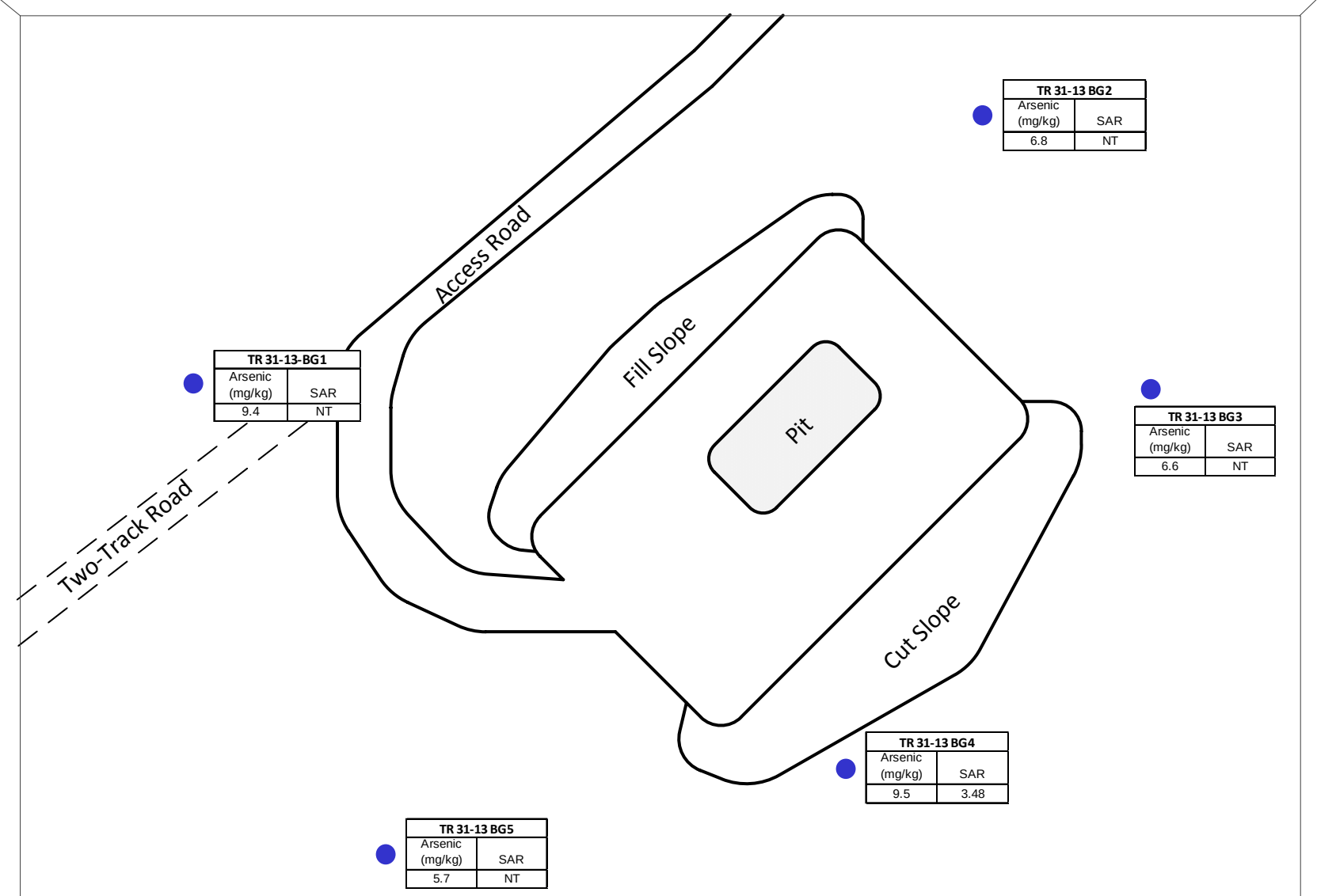
Figure 4

Confirmation Sample Locations

● - Screening Location

N

826 21-1/2 ROAD
GRAND JUNCTION, CO 81505
TEL 970.263.7800
FAX 970.263.7456



*Drawing Not to Scale

Figure 5

Background Sample Locations

● - Screening Location

826 21-1/2 ROAD
GRAND JUNCTION, CO 81505
TEL 970.263.7800
FAX 970.263.7456

TABLES

Table 1
TR 31-13-597 Pit Closure
Field Screening Sample Summary

SAMPLE SUMMARY	
Location Description	TR 31-13 Pit Closure Field Screening Sample
Sample Type	Soil
Sample Date	9/20/2010

DATA SUMMARY		
Sample ID	**Petroflag Result (ppm)**	**PID Result (ppm)**
X1	285	12.7
X2	125	7.2
X3	591	166.2
X4	150	5.1
X5	606	47.4
X6	330	4.5
X7	314	18.9
X8	153	7.5
X9	1570	119.6
X10	517	25.9
X11	270	6.1
X12	388	10.9
X13	363	5.2
X14	348	432.0

ppm - parts per million

Table 2
TR 31-13-597 Pit Closure
Confirmation Soil Sample Summary

SAMPLE SUMMARY	
Location Description	TR 31-13 Pit Closure Confirmation Sample
Sample Type	Soil
Sample Date	10/6/2010

LABORATORY DATA SUMMARY							
Sample ID	A1	A2	A3	A4	A5	**ALLOWABLE LIMITS**	**UNITS**
Analytical Parameters							
TPH							
TPH -GRO	<7.4	<6.8	<6.8	<5.7	7.42	NA	mg/kg
TPH-DRO	116	194	<4.0	6.16	408	NA	mg/kg
BTEX							
Benzene	<0.0048	<0.0047	<0.0042	<0.0040	<0.0048	0.17	mg/kg
Toluene	<0.0048	<0.0047	<0.0042	<0.0040	<0.0048	85	mg/kg
Ethylbenzene	<0.0048	<0.0047	<0.0042	<0.0040	<0.0048	100	mg/kg
Total Xylene	<0.014	<0.014	<0.013	<0.012	<0.015	175	mg/kg
Metals							
Chromium, Hexavalent	<2.5	<2.4	<2.4	<2.3	<2.4	23	mg/kg
Chromium, Trivalent	39.2	43.0	42.4	41.8	37.3	120,000	mg/kg
Arsenic	6.7	6.5	5.5	6.8	8.1	0.39	mg/kg
Barium	418	511	458	398	373	15,000	mg/kg
Cadmium	<0.34	0.34	<0.37	0.35	<0.33	70	mg/kg
Chromium	40.4	44.5	43.5	42.9	38.0	NA	mg/kg
Copper	23.0	21.7	18.6	18.8	22.4	3,100	mg/kg
Lead	15.3	15.2	14.3	13.9	14.7	400	mg/kg
Mercury	<0.020	0.13	<0.019	<0.018	0.028	23	mg/kg
Nickel	24.2	23.5	24.7	20.9	21.4	1,600	mg/kg
Selenium	<3.5	<3.3	<3.7	<3.4	<3.3	390	mg/kg
Silver	<0.68	<0.66	<0.73	<0.69	<0.67	390	mg/kg
Zinc	83.7	76.9	86.3	82.1	97.5	23,000	mg/kg
SAR Metals Analysis							
Calcium	509	523	1000	653	748	NA	mg/L
Magnesium	69.1	83.1	141	102	84.9	NA	mg/L
Sodium	1180	1160	38.1	<25	1030	NA	mg/L
Polynuclear Aromatic Hyrdrocarbons							
Anthracene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	1,000	mg/kg
Acenaphthene	<0.0083	0.0427	<0.0081	<0.0075	<0.0081	1,000	mg/kg
Acenaphthylene	<0.0083	0.0089	<0.0081	<0.0075	<0.0081	NA	mg/kg
Benzo(a)anthracene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	0.22	mg/kg
Benzo(a)pyrene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	0.022	mg/kg
Benzo(b)fluoranthene	<0.0083	<0.0082	<0.0081	<0.0075	0.0568	0.22	mg/kg
Benzo(g,h,i)perylene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	NA	mg/kg
Benzo(k)fluoranthene	<0.0083	<0.0082	<0.0081	<0.0075	0.0065	2.2	mg/kg
Chrysene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	22	mg/kg
Dibenzo(a,h)anthracene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	0.022	mg/kg
Fluoranthene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	1,000	mg/kg
Fluorene	<0.0083	<0.0082	<0.0081	<0.0075	0.0030	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	0.22	mg/kg
Napthalene	0.0124	0.0068	<0.0081	<0.0075	<0.0081	23.00	mg/kg
1-Methylnaphthalene	0.0193	0.0121	0.0076	<0.0075	<0.0081	NA	mg/kg
2-Methylnaphthalene	0.0451	0.0238	0.0158	<0.0075	<0.0081	NA	mg/kg
Phenanthrene	<0.0083	<0.0082	<0.0081	<0.0075	0.0046	NA	mg/kg
Pyrene	<0.0083	<0.0082	<0.0081	<0.0075	<0.0081	1,000	mg/kg
General Chemistry							
Percent Solids	80.2	81.2	81.8	88.8	81.7	NA	%
pH	7.60	8.45	7.17	6.71	7.81	6-9	su
Sodium Adsorption Ratio	13.0	12.4	0.299	0.161	9.51	<12	ratio
Specific Conductance	2.260	2.280	1.570	1.150	2.740	<4 mmhos/cm or <2 x background	mmhos/cm

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
mmhos/cm - millimhos per centimeter
su - standard units
NA - not applicable

Over allowable limit but under BACKGROUND level.

Table 3
TR 31-13-597 Pit Closure
Background Soil Sample Summary

SAMPLE SUMMARY	
Location Description	TR 31-13 Pit Closure Background Sample
Sample Type	Soil
Sample Date	10/29/2010

LABORATORY DATA SUMMARY							
Sample ID	TR-31-13 BG1	TR-31-13-BG2	TR-31-13 BG3	TR-31-13 BG4	TR-31-13 BG5	**ALLOWABLE LIMITS**	**UNITS**
Analytical Parameters							
Metals							
Chromium, Hexavalent	NT	NT	NT	1.3	NT	23	mg/kg
Chromium, Trivalent	NT	NT	NT	28.1	NT	120,000	mg/kg
Arsenic	9.4	6.8	6.6	9.5	5.7	0.39	mg/kg
Barium	NT	NT	NT	282	NT	15,000	mg/kg
Cadmium	NT	NT	NT	<1.2	NT	70	mg/kg
Chromium	NT	NT	NT	29.4	NT	NA	mg/kg
Copper	NT	NT	NT	21.3	NT	3,100	mg/kg
Lead	NT	NT	NT	14.4	NT	400	mg/kg
Mercury	NT	NT	NT	<0.12	NT	23	mg/kg
Nickel	NT	NT	NT	17.3	NT	1,600	mg/kg
Selenium	NT	NT	NT	<6.1	NT	390	mg/kg
Silver	NT	NT	NT	<3.7	NT	390	mg/kg
Zinc	NT	NT	NT	54.1	NT	23,000	mg/kg
SAR Metals Analysis							
Calcium	NT	NT	NT	74.6	NT	NA	mg/L
Magnesium	NT	NT	NT	17.7	NT	NA	mg/L
Sodium	NT	NT	NT	129	NT	NA	mg/L
General Chemistry							
Percent Solids	NT	NT	NT	79.3	NT	NA	%
pH	NT	NT	NT	7.07	NT	6-9	su
Sodium Adsorption Ratio	NT	NT	NT	3.48	NT	<12	ratio
Redox Potential Vs H2	NT	NT	NT	381	NT	NA	mv
Specific Conductance	NT	NT	NT	1.08	NT	<4 mmhos/cm	mmhos/cm

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
mmhos/cm - millimhos per centimeter
mv - millivolts
su - standard units
NT - parameter not tested
NA - not applicable

Table 4
TR 31-13-597 Pit Closure
Pit Fill Soil Sample Summary

SAMPLE SUMMARY	
Location Description	TR 31-13 Pit Closure Pit Fill Sample
Sample Type	Soil

LABORATORY DATA SUMMARY					
Sample ID	TR-31-13-PF1	TR-31-13 PF2	TR-31-13 PF3		
Sample Date	10/13/2010	11/3/2010	11/3/2010		
Analytical Parameters				**ALLOWABLE LIMITS**	**UNITS**
TPH					
TPH -GRO	16.8	63.3	25.0	NA	mg/kg
TPH-DRO	297	114	90.1	NA	mg/kg
BTEX					
Benzene	<0.0046	<0.079	<0.075	0.17	mg/kg
Toluene	<0.0046	<0.160	<0.150	85	mg/kg
Ethylbenzene	<0.0046	<0.160	<0.150	100	mg/kg
m, p-Xylene	NT	0.126	<0.300	NA	mg/kg
o-Xylene	NT	<0.160	<0.150	NA	mg/kg
Total Xylene	0.0062	0.126	<0.150	175	mg/kg
Metals					
Chromium, Hexavalent	<2.4	1.7	1.7	23	mg/kg
Chromium, Trivalent	46.0	39.3	36.2	120,000	mg/kg
Arsenic	6.2	7.3	6.8	0.39	mg/kg
Barium	426	452	309	15,000	mg/kg
Cadmium	<0.36	<1.2	<1.3	70	mg/kg
Chromium	46.7	41.0	37.9	NA	mg/kg
Copper	24.1	21.4	17.7	3,100	mg/kg
Lead	15.4	14.3	14.3	400	mg/kg
Mercury	0.025	<0.12	<0.12	23	mg/kg
Nickel	24.6	23.8	19.5	1,600	mg/kg
Selenium	<3.6	<5.9	<6.5	390	mg/kg
Silver	<0.73	<3.5	<3.9	390	mg/kg
Zinc	78.9	68.2	47.1	23,000	mg/kg
SAR Metals Analysis					
Calcium	405	31.9	35.8	NA	mg/L
Magnesium	51.1	6.74	7.06	NA	mg/L
Sodium	372	165	187	NA	mg/L
Polynuclear Aromatic Hyrdrocarbons					
Anthracene	<0.0079	<0.043	<0.042	1,000	mg/kg
Acenaphthene	<0.0079	<0.043	<0.042	1,000	mg/kg
Acenaphthylene	<0.0079	<0.210	<0.210	NA	mg/kg
Benzo(a)anthracene	<0.0079	<0.043	<0.042	0.22	mg/kg
Benzo(a)pyrene	<0.0079	<0.043	<0.042	0.022	mg/kg
Benzo(b)fluoranthene	0.0116	<0.043	<0.042	0.22	mg/kg
Benzo(g,h,i)perylene	<0.0079	<0.043	<0.042	NA	mg/kg
Benzo(k)fluoranthene	<0.0079	<0.043	<0.042	2.2	mg/kg
Chrysene	<0.0079	<0.043	<0.042	22	mg/kg
Dibenzo(a,h)anthracene	<0.0079	<0.043	<0.042	0.022	mg/kg
Fluoranthene	<0.0079	<0.043	<0.042	1,000	mg/kg
Fluorene	0.0097	<0.043	<0.042	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.0079	<0.043	<0.042	0.22	mg/kg
Napthalene	<0.0079	<0.210	<0.210	23.00	mg/kg
1-Methylnaphthalene	0.0071	0.0571	<0.042	NA	mg/kg
2-Methylnaphthalene	0.0126	0.161	<0.210	NA	mg/kg
Phenanthrene	0.0074	<0.043	<0.042	NA	mg/kg
Pyrene	<0.0079	<0.043	<0.042	1,000	mg/kg
General Chemistry					
Percent Solids	82.8	77.5	80	NA	%
pH	8.51	8.55	8.63	6-9	su
Sodium Adsorption Ratio	4.63	6.92	7.47	<12	ratio
Redox Potential Vs H2	NT	372	372	NA	mv
Specific Conductance	1.850	0.869	0.976	<4 mmhos/cm or <2 x background	mmhos/cm

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
mmhos/cm - millimhos per centimeter
su - standard units
mv - millivolts
NT - parameter not tested
NA - not applicable

Over allowable limit but under BACKGROUND level.

APPENDIX A

Photographic Log

Appendix A
Williams Production Company RMT
TR 31-13-597 Pit Closure

PHOTO 1

Date: September 13, 2010
View: Three inch hole in the west side wall of the pit resulting from failed patch

PHOTO 2

Date: September 13, 2010
View: Numerous tears discovered on the southern, northern, and western side walls

PHOTO 3

Date: September 13, 2010
View: The pit bottom after the removal of the liner

Appendix A
Williams Production Company RMT
TR 31-13-597 Pit Closure

PHOTO 4

Date: September 14, 2010
View: Excavation of impacted soils from the pit bottom

PHOTO 5

Date: October 12, 2010
View: The pit after the excavation of all impacted soils

PHOTO 6

Date: October 29, 2010
View: The pit after being backfilled

APPENDIX B

Sundry Notice

FORM 4 Rev 12/05

Page 1

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

DE	ET	DE	ET

1. OGCC Operator Number: 96850
2. Name of Operator: Williams Production RMT Company
3. Address: 1058 County Road 215 PO Box 370
   City Parachute State: CO Zip:81635
4. Contact Name: Jason Rauen
   Phone: 970.274.4567
   Fax: 970.263.5313

Complete the Attachment Checklist

	OP	OGCC
Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page		
Other		

5. API Number 05- 045-12286 OGCC Facility ID Number 284691
6. Well/Facility Name: Chevron TR 31-13-597 7. Well/Facility Number 31-13-597
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE, S13, T5S, R97W, 6 PM
9. County: Garfield 10. Field Name: Trail Ridge - #63825
11. Federal, Indian or State Lease Number: Remediation #4952/Release Tracking #2521435

General Notice

☐ **CHANGE OF LOCATION:** Attach New Survey Plat (a change of surface qtrqtr is substantive and requires a new permit)

	FNL/FSL		FEL/FWL	
Change of Surface Footage from Exterior Section Lines:				
Change of Surface Footage to Exterior Section Lines:				
Change of Bottomhole Footage from Exterior Section Lines:				
Change of Bottomhole Footage to Exterior Section Lines:				attach directional survey

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer _____

Latitude _____ Distance to nearest property line _____ Distance to nearest bldg, public rd, utility or RR _____

Longitude _____ Distance to nearest lease line _____ Is location in a High Density Area (rule 603b)? Yes/No ☐

Ground Elevation _____ Distance to nearest well same formation _____ Surface owner consultation date: _____

GPS DATA:

Date of Measurement _____ PDOP Reading _____ Instrument Operator's Name _____

☐ **CHANGE SPACING UNIT**

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

☐ **Remove from surface bond** Signed surface use agreement attached

☐ **CHANGE OF OPERATOR (prior to drilling):**
Effective Date: _____
Plugging Bond: ☐ Blanket ☐ Individual

☐ **CHANGE WELL NAME** NUMBER
From: _____
To: _____
Effective Date: _____

☐ **ABANDONED LOCATION:**
Was location ever built? ☐ Yes ☐ No
Is site ready for inspection? ☐ Yes ☐ No
Date Ready for Inspection: _____

☐ **NOTICE OF CONTINUED SHUT IN STATUS**
Date well shut in or temporarily abandoned: _____
Has Production Equipment been removed from site? ☐ Yes ☐ No
MIT required if shut in longer than two years. Date of last MIT _____

☐ **SPUD DATE:** _____

☐ **REQUEST FOR CONFIDENTIAL STATUS** (6 mos from date casing set)

☐ **SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK** *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

☐ **RECLAMATION:** Attach technical page describing final reclamation procedures per Rule 1004.
Final reclamation will commence on approximately _____ ☐ Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

☐ Notice of Intent Approximate Start Date: _____
☐ Report of Work Done Date Work Completed: _____

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

☐ Intent to Recomplete (submit form 2)	☐ Request to Vent or Flare	☐ E&P Waste Disposal
☐ Change Drilling Plans	☐ Repair Well	☐ Beneficial Reuse of E&P Waste
☐ Gross Interval Changed?	☐ Rule 502 variance requested	☒ Status Update/Change of Remediation Plans for Spills and Releases
☐ Casing/Cementing Program Change	☐ Other: _____	

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: _____ Date: 10/11/2010 Email: jason.rauen2@williams.com

Print Name: Jason Rauen Title: Environmental Specialist II

COGCC Approved: _____ Title for Chris Canfield Date: 10/13/2010

EPS Northwest Region

CONDITIONS OF APPROVAL, IF ANY:

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

FOR OGCC USE ONLY

1. OGCC Operator Number: 96850 API Number: 05-045-12286
2. Name of Operator: Williams Production RMT Company OGCC Facility ID # 284691
3. Well/Facility Name: Chevron TR 31-13-597 Well/Facility Number: 31-13-597
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE, S13, T5S, R97W, 6PM

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

This COGCC Form 4 is being submitted to amend the existing open Form 27 for the TR 31-13-597 location. A Form 19 was submitted on September 23, 2010 indicating that evidence of a release was discovered during routine closure of the TR 31-13-597 production pit (Remediation # 4952 and Spill/Release Tracking # 2521435). At that time, the horizontal and vertical extent were not completely understood. Excavation of has since been completed with the extent of impact being approximately 125 sq. ft. by 20 ft. deep. Excavation activities were driven by visual and olfactory assessment, PID field screening and Petroflag measurements. Once field screening indicated the end of contamination had been reached, confirmation of cleanup samples were collected to document successful mitigation. Analytical results are pending and will be submitted as an update to the Form 27 when received.

Approximately 1500 cubic yards of soil was excavated from the production pit. It is proposed that the excavated material will be thouroughly mixed with clean soils to a ration of three parts clean to one part impacted (3:1) and placed back into the excavation. Soils samples will be collected from each 500 cubic yards of material to document that TPH and BTEX concentrations are below regulatory standards. The top three feet of the pit will be backfilled with only native soils. Any contaminated soils unable to be placed back into the pit due to capacity restraints will either be remediated on-site or disposed of at an off site disposal facility.

Upon completion of remediation and closure activities, a Notice of Completion Report complete with analytical results and request for closure will be prepared and submitted to COGCC. Including all data required to substantiate successful completion and remediation of the subject pit.

APPENDIX C

Laboratory Analytical Results

Gulf Coast ACCUTEST LABORATORIES

10/22/10

Technical Report for

Olsson Associates

TR 31-13 Pit Closure

Accutest Job Number: T61312

Sampling Date: 10/06/10

Report to:

Olsson Associates
826 21 1/2 Road
Grand Junction, CO 81505
tdobransky@oaconsulting.com

ATTN: Tim Dobransky

Total number of pages in report: **98**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103)

Sections: 1 2 3 4 5 6 7 8 9 10 11

Table of Contents

Sections:

Table of Contents

Sample Summary

Olsson Associates

Job No: T61312

TR 31-13 Pit Closure

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T61312-1	10/06/10	09:45		10/08/10	SO	Soil	A1
T61312-1A	10/06/10	09:45		10/08/10	SO	Soil	A1
T61312-2	10/06/10	13:15		10/08/10	SO	Soil	A2
T61312-2A	10/06/10	13:15		10/08/10	SO	Soil	A2
T61312-3	10/06/10	13:25		10/08/10	SO	Soil	A3
T61312-3A	10/06/10	13:25		10/08/10	SO	Soil	A3
T61312-4	10/06/10	13:45		10/08/10	SO	Soil	A4
T61312-4A	10/06/10	13:45		10/08/10	SO	Soil	A4
T61312-5	10/06/10	13:55		10/08/10	SO	Soil	A5
T61312-5A	10/06/10	13:55		10/08/10	SO	Soil	A5
T61312-6	10/06/10	11:20		10/08/10	SO	Soil	B2
T61312-7	10/06/10	12:00		10/08/10	SO	Soil	B COMP

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8260B	**Percent Solids:**	80.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0043063.D	1	10/12/10	FI	n/a	n/a	VY2647
Run #2							

	Initial Weight	Final Volume
Run #1	5.25 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0048	0.00083	mg/kg	
108-88-3	Toluene	ND	0.0048	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0048	0.0011	mg/kg	
1330-20-7	Xylene (total)	ND	0.014	0.0025	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	83%		70-121%
2037-26-5	Toluene-D8	99%		76-132%
460-00-4	4-Bromofluorobenzene	104%		73-165%
17060-07-0	1,2-Dichloroethane-D4	70%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	80.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V1909.D	1	10/13/10	MK	10/11/10	OP16339	EV115
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0083	0.0014	mg/kg	
208-96-8	Acenaphthylene	ND	0.0083	0.0029	mg/kg	
120-12-7	Anthracene	ND	0.0083	0.0016	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0083	0.0013	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0083	0.0044	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0083	0.0044	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0083	0.0083	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0083	0.0054	mg/kg	
218-01-9	Chrysene	ND	0.0083	0.0020	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0083	0.0080	mg/kg	
206-44-0	Fluoranthene	ND	0.0083	0.0018	mg/kg	
86-73-7	Fluorene	ND	0.0083	0.0029	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0083	0.0062	mg/kg	
90-12-0	1-Methylnaphthalene	0.0193	0.0083	0.0015	mg/kg	
91-57-6	2-Methylnaphthalene	0.0451	0.0083	0.0014	mg/kg	
91-20-3	Naphthalene	0.0124	0.0083	0.0013	mg/kg	
85-01-8	Phenanthrene	ND	0.0083	0.0012	mg/kg	
129-00-0	Pyrene	ND	0.0083	0.0028	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		10-127%
321-60-8	2-Fluorobiphenyl	79%		11-133%
1718-51-0	Terphenyl-d14	78%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8015	**Percent Solids:**	80.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001864.D	1	10/08/10	LB	n/a	n/a	GHH93
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	7.4	0.44	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	92%		46-127%
98-08-8	aaa-Trifluorotoluene	97%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	80.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7597.D	1	10/11/10	HD	10/11/10	OP16336	GJB73
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	116	4.1	3.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	93%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	80.2
Project:	TR 31-13 Pit Closure		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	6.7	0.62	mg/kg	5	10/20/10	10/21/10	ANJ	SW846 6020A [5]	SW846 3050B [9]
Barium	418	14	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Cadmium	< 0.34	0.34	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Chromium	40.4	0.68	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Copper	23.0	1.7	mg/kg	1	10/20/10	10/20/10	TW	SW846 6010B [4]	SW846 3050B [8]
Lead	15.3	0.68	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Mercury	< 0.020	0.020	mg/kg	1	10/08/10	10/08/10	CN	SW846 7471A [1]	SW846 7471A [6]
Nickel	24.2	2.7	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Selenium [b]	< 3.5	3.5	mg/kg	5	10/20/10	10/20/10	NS	SW846 6010B [3]	SW846 3050B [8]
Silver	< 0.68	0.68	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Zinc	83.7	1.4	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]

(1) Instrument QC Batch: MA5164
(2) Instrument QC Batch: MA5185
(3) Instrument QC Batch: MA5188
(4) Instrument QC Batch: MA5189
(5) Instrument QC Batch: N:MA25222
(6) Prep QC Batch: MP13069
(7) Prep QC Batch: MP13120
(8) Prep QC Batch: MP13131
(9) Prep QC Batch: N:MP55250

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.
(b) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	80.2
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.5	2.5	mg/kg	1	10/13/10 11:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	39.2	3.1	mg/kg	1	10/19/10 21:37	NS	SW846 6010/7196A M
Solids, Percent	80.2		%	1	10/11/10	JL	SM 2540 G
Specific Conductivity	2260	1.0	umhos/cm	1	10/12/10 14:00	KD	EPA 120.1
pH	7.60		su	1	10/12/10 17:53	LA	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID: A1
Lab Sample ID: T61312-1A
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 80.2

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	509	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Magnesium	69.1	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Sodium	1180	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA5167
(2) Prep QC Batch: MP13074

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A1		
Lab Sample ID:	T61312-1A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	80.2
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	13.0		ratio	1	10/12/10 16:30	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A2		
Lab Sample ID:	T61312-2	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8260B	**Percent Solids:**	81.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0043064.D	1	10/12/10	FI	n/a	n/a	VY2647
Run #2							

	Initial Weight	Final Volume
Run #1	5.29 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0047	0.00081	mg/kg	
108-88-3	Toluene	ND	0.0047	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0047	0.0011	mg/kg	
1330-20-7	Xylene (total)	ND	0.014	0.0024	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		70-121%
2037-26-5	Toluene-D8	98%		76-132%
460-00-4	4-Bromofluorobenzene	107%		73-165%
17060-07-0	1,2-Dichloroethane-D4	73%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A2		
Lab Sample ID:	T61312-2	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	81.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V1910.D	1	10/13/10	MK	10/11/10	OP16339	EV115
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.0427	0.0082	0.0014	mg/kg	
208-96-8	Acenaphthylene	0.0089	0.0082	0.0029	mg/kg	
120-12-7	Anthracene	ND	0.0082	0.0016	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0082	0.0013	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0082	0.0044	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0082	0.0043	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0082	0.0082	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0082	0.0053	mg/kg	
218-01-9	Chrysene	ND	0.0082	0.0020	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0082	0.0079	mg/kg	
206-44-0	Fluoranthene	ND	0.0082	0.0018	mg/kg	
86-73-7	Fluorene	ND	0.0082	0.0029	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0082	0.0061	mg/kg	
90-12-0	1-Methylnaphthalene	0.0121	0.0082	0.0015	mg/kg	
91-57-6	2-Methylnaphthalene	0.0238	0.0082	0.0014	mg/kg	
91-20-3	Naphthalene	0.0068	0.0082	0.0013	mg/kg	J
85-01-8	Phenanthrene	ND	0.0082	0.0011	mg/kg	
129-00-0	Pyrene	ND	0.0082	0.0028	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%		10-127%
321-60-8	2-Fluorobiphenyl	60%		11-133%
1718-51-0	Terphenyl-d14	80%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A2		
Lab Sample ID:	T61312-2	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8015	**Percent Solids:**	81.2
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001865.D	1	10/08/10	LB	n/a	n/a	GHH93
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.46 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	6.8	0.41	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	95%		46-127%
98-08-8	aaa-Trifluorotoluene	97%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A2
Lab Sample ID: T61312-2
Matrix: SO - Soil
Method: SW846 8015 M SW846 3550B
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7598.D	1	10/11/10	HD	10/11/10	OP16336	GJF73
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	194	4.0	3.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A2
Lab Sample ID: T61312-2
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.2

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	6.5	0.59	mg/kg	5	10/20/10	10/21/10	ANJ	SW846 6020A [5]	SW846 3050B [9]
Barium	511	13	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Cadmium	0.34	0.33	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Chromium	44.5	0.66	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Copper	21.7	1.7	mg/kg	1	10/20/10	10/20/10	TW	SW846 6010B [3]	SW846 3050B [8]
Lead	15.2	0.66	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Mercury	0.13	0.019	mg/kg	1	10/08/10	10/08/10	CN	SW846 7471A [1]	SW846 7471A [6]
Nickel	23.5	2.7	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Selenium [b]	< 3.3	3.3	mg/kg	5	10/19/10	10/21/10	NS	SW846 6010B [4]	SW846 3050B [7]
Silver	< 0.66	0.66	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Zinc	76.9	1.3	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]

(1) Instrument QC Batch: MA5164
(2) Instrument QC Batch: MA5185
(3) Instrument QC Batch: MA5189
(4) Instrument QC Batch: MA5191
(5) Instrument QC Batch: N:MA25222
(6) Prep QC Batch: MP13069
(7) Prep QC Batch: MP13120
(8) Prep QC Batch: MP13131
(9) Prep QC Batch: N:MP55250

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.
(b) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A2		
Lab Sample ID:	T61312-2	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.2
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.4	2.4	mg/kg	1	10/13/10 11:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	43.0	3.1	mg/kg	1	10/19/10 22:09	NS	SW846 6010/7196A M
Solids, Percent	81.2		%	1	10/11/10	JL	SM 2540 G
Specific Conductivity	2280	1.0	umhos/cm	1	10/12/10 14:00	KD	EPA 120.1
pH	8.45		su	1	10/12/10 17:53	LA	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID: A2
Lab Sample ID: T61312-2A
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.2

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	523	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Magnesium	83.1	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Sodium	1160	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA5167
(2) Prep QC Batch: MP13074

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A2		
Lab Sample ID:	T61312-2A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.2
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	12.4		ratio	1	10/12/10 16:36	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A3		
Lab Sample ID:	T61312-3	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8260B	**Percent Solids:**	81.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0029035.D	1	10/13/10	FI	n/a	n/a	VM1186
Run #2							

	Initial Weight	Final Volume
Run #1	5.82 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0042	0.00073	mg/kg	
108-88-3	Toluene	ND	0.0042	0.0010	mg/kg	
100-41-4	Ethylbenzene	ND	0.0042	0.00095	mg/kg	
1330-20-7	Xylene (total)	ND	0.013	0.0022	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-121%
2037-26-5	Toluene-D8	120%		76-132%
460-00-4	4-Bromofluorobenzene	132%		73-165%
17060-07-0	1,2-Dichloroethane-D4	94%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A3		
Lab Sample ID:	T61312-3	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	81.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V1880.D	1	10/12/10	MK	10/11/10	OP16339	EV114
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0081	0.0014	mg/kg	
208-96-8	Acenaphthylene	ND	0.0081	0.0028	mg/kg	
120-12-7	Anthracene	ND	0.0081	0.0015	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0081	0.0013	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0081	0.0043	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0081	0.0043	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0081	0.0081	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0081	0.0052	mg/kg	
218-01-9	Chrysene	ND	0.0081	0.0020	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0081	0.0078	mg/kg	
206-44-0	Fluoranthene	ND	0.0081	0.0018	mg/kg	
86-73-7	Fluorene	ND	0.0081	0.0028	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0081	0.0060	mg/kg	
90-12-0	1-Methylnaphthalene	0.0076	0.0081	0.0015	mg/kg	J
91-57-6	2-Methylnaphthalene	0.0158	0.0081	0.0014	mg/kg	
91-20-3	Naphthalene	ND	0.0081	0.0012	mg/kg	
85-01-8	Phenanthrene	ND	0.0081	0.0011	mg/kg	
129-00-0	Pyrene	ND	0.0081	0.0027	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	48%		10-127%
321-60-8	2-Fluorobiphenyl	58%		11-133%
1718-51-0	Terphenyl-d14	77%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A3		
Lab Sample ID:	T61312-3	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8015	**Percent Solids:**	81.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001866.D	1	10/08/10	LB	n/a	n/a	GHH93
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.34 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	6.8	0.41	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	89%		46-127%
98-08-8	aaa-Trifluorotoluene	98%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A3
Lab Sample ID: T61312-3
Matrix: SO - Soil
Method: SW846 8015 M SW846 3550B
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.8

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7621.D	1	10/12/10	HD	10/11/10	OP16336	GJB73
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	4.0	3.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A3
Lab Sample ID: T61312-3
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.8

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	5.5	0.62	mg/kg	5	10/20/10	10/21/10	ANJ	SW846 6020A [5]	SW846 3050B [9]
Barium	458	15	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Cadmium	< 0.37	0.37	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Chromium	43.5	0.73	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Copper	18.6	1.8	mg/kg	1	10/20/10	10/20/10	TW	SW846 6010B [3]	SW846 3050B [8]
Lead	14.3	0.73	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Mercury	< 0.019	0.019	mg/kg	1	10/08/10	10/08/10	CN	SW846 7471A [1]	SW846 7471A [6]
Nickel	24.7	2.9	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Selenium [b]	< 3.7	3.7	mg/kg	5	10/19/10	10/21/10	NS	SW846 6010B [4]	SW846 3050B [7]
Silver	< 0.73	0.73	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Zinc	86.3	1.5	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]

(1) Instrument QC Batch: MA5164
(2) Instrument QC Batch: MA5185
(3) Instrument QC Batch: MA5189
(4) Instrument QC Batch: MA5191
(5) Instrument QC Batch: N:MA25222
(6) Prep QC Batch: MP13069
(7) Prep QC Batch: MP13120
(8) Prep QC Batch: MP13131
(9) Prep QC Batch: N:MP55250

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.
(b) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A3		
Lab Sample ID:	T61312-3	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.8
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.4	2.4	mg/kg	1	10/13/10 11:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	42.4	3.1	mg/kg	1	10/19/10 22:16	NS	SW846 6010/7196A M
Solids, Percent	81.8		%	1	10/11/10	JL	SM 2540 G
Specific Conductivity	1570	1.0	umhos/cm	1	10/12/10 14:00	KD	EPA 120.1
pH	7.17		su	1	10/12/10 17:53	LA	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A3		
Lab Sample ID:	T61312-3A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.8
Project:	TR 31-13 Pit Closure		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	1000	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Magnesium	141	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Sodium	38.1	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA5167
(2) Prep QC Batch: MP13074

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A3		
Lab Sample ID:	T61312-3A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.8
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	0.299		ratio	1	10/12/10 16:42	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8260B	**Percent Solids:**	88.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0043066.D	1	10/12/10	FI	n/a	n/a	VY2647
Run #2							

	Initial Weight	Final Volume
Run #1	5.57 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0040	0.00071	mg/kg	
108-88-3	Toluene	ND	0.0040	0.00096	mg/kg	
100-41-4	Ethylbenzene	ND	0.0040	0.00091	mg/kg	
1330-20-7	Xylene (total)	ND	0.012	0.0021	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	83%		70-121%
2037-26-5	Toluene-D8	105%		76-132%
460-00-4	4-Bromofluorobenzene	107%		73-165%
17060-07-0	1,2-Dichloroethane-D4	71%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	88.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V1911.D	1	10/13/10	MK	10/11/10	OP16339	EV115
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0075	0.0013	mg/kg	
208-96-8	Acenaphthylene	ND	0.0075	0.0026	mg/kg	
120-12-7	Anthracene	ND	0.0075	0.0014	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0075	0.0012	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0075	0.0040	mg/kg	
205-99-2	Benzo(b)fluoranthene	ND	0.0075	0.0040	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0075	0.0075	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0075	0.0049	mg/kg	
218-01-9	Chrysene	ND	0.0075	0.0018	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0075	0.0072	mg/kg	
206-44-0	Fluoranthene	ND	0.0075	0.0016	mg/kg	
86-73-7	Fluorene	ND	0.0075	0.0026	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0075	0.0056	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.0075	0.0014	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0075	0.0013	mg/kg	
91-20-3	Naphthalene	ND	0.0075	0.0011	mg/kg	
85-01-8	Phenanthrene	ND	0.0075	0.0010	mg/kg	
129-00-0	Pyrene	ND	0.0075	0.0025	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		10-127%
321-60-8	2-Fluorobiphenyl	69%		11-133%
1718-51-0	Terphenyl-d14	76%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8015	**Percent Solids:**	88.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001867.D	1	10/08/10	LB	n/a	n/a	GHH93
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.50 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.7	0.34	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	89%		46-127%
98-08-8	aaa-Trifluorotoluene	96%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A4
Lab Sample ID: T61312-4
Matrix: SO - Soil
Method: SW846 8015 M SW846 3550B
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 88.8

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7622.D	1	10/12/10	HD	10/11/10	OP16336	GJF73
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	6.16	3.7	3.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	88.8
Project:	TR 31-13 Pit Closure		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	6.8	0.57	mg/kg	5	10/20/10	10/21/10	ANJ	SW846 6020A [5]	SW846 3050B [9]
Barium	398	14	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Cadmium	0.35	0.34	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Chromium	42.9	0.69	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Copper	18.8	1.5	mg/kg	1	10/20/10	10/20/10	TW	SW846 6010B [3]	SW846 3050B [8]
Lead	13.9	0.69	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Mercury	< 0.018	0.018	mg/kg	1	10/08/10	10/08/10	CN	SW846 7471A [1]	SW846 7471A [6]
Nickel	20.9	2.7	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Selenium [b]	< 3.4	3.4	mg/kg	5	10/19/10	10/21/10	NS	SW846 6010B [4]	SW846 3050B [7]
Silver	< 0.69	0.69	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Zinc	82.1	1.4	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]

(1) Instrument QC Batch: MA5164
(2) Instrument QC Batch: MA5185
(3) Instrument QC Batch: MA5189
(4) Instrument QC Batch: MA5191
(5) Instrument QC Batch: N:MA25222
(6) Prep QC Batch: MP13069
(7) Prep QC Batch: MP13120
(8) Prep QC Batch: MP13131
(9) Prep QC Batch: N:MP55250

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.
(b) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	88.8
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.3	2.3	mg/kg	1	10/13/10 11:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	41.8	2.9	mg/kg	1	10/19/10 22:22	NS	SW846 6010/7196A M
Solids, Percent	88.8		%	1	10/11/10	JL	SM 2540 G
Specific Conductivity	1150	1.0	umhos/cm	1	10/12/10 14:00	KD	EPA 120.1
pH	6.71		su	1	10/14/10 11:37	LA	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	88.8
Project:	TR 31-13 Pit Closure		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	653	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Magnesium	102	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Sodium	< 25	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA5167
(2) Prep QC Batch: MP13074

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A4		
Lab Sample ID:	T61312-4A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	88.8
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	0.161		ratio	1	10/12/10 16:13	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A5		
Lab Sample ID:	T61312-5	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8260B	**Percent Solids:**	81.7
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0029036.D	1	10/13/10	FI	n/a	n/a	VM1186
Run #2							

	Initial Weight	Final Volume
Run #1	5.06 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0048	0.00085	mg/kg	
108-88-3	Toluene	ND	0.0048	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0048	0.0011	mg/kg	
1330-20-7	Xylene (total)	ND	0.015	0.0025	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-121%
2037-26-5	Toluene-D8	111%		76-132%
460-00-4	4-Bromofluorobenzene	143%		73-165%
17060-07-0	1,2-Dichloroethane-D4	96%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A5		
Lab Sample ID:	T61312-5	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	81.7
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V1912.D	1	10/13/10	MK	10/11/10	OP16339	EV115
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0081	0.0014	mg/kg	
208-96-8	Acenaphthylene	ND	0.0081	0.0028	mg/kg	
120-12-7	Anthracene	ND	0.0081	0.0015	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0081	0.0013	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0081	0.0043	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0568	0.0081	0.0043	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0081	0.0081	mg/kg	
207-08-9	Benzo(k)fluoranthene	0.0065	0.0081	0.0053	mg/kg	J
218-01-9	Chrysene	ND	0.0081	0.0020	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0081	0.0078	mg/kg	
206-44-0	Fluoranthene	ND	0.0081	0.0018	mg/kg	
86-73-7	Fluorene	0.0030	0.0081	0.0029	mg/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0081	0.0061	mg/kg	
90-12-0	1-Methylnaphthalene	ND	0.0081	0.0015	mg/kg	
91-57-6	2-Methylnaphthalene	ND	0.0081	0.0014	mg/kg	
91-20-3	Naphthalene	ND	0.0081	0.0012	mg/kg	
85-01-8	Phenanthrene	0.0046	0.0081	0.0011	mg/kg	J
129-00-0	Pyrene	ND	0.0081	0.0028	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		10-127%
321-60-8	2-Fluorobiphenyl	25%		11-133%
1718-51-0	Terphenyl-d14	78%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	A5		
Lab Sample ID:	T61312-5	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
Method:	SW846 8015	**Percent Solids:**	81.7
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	HH0001868.D	1	10/08/10	LB	n/a	n/a	GHH93
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.07 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	7.42	7.2	0.43	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		46-127%
98-08-8	aaa-Trifluorotoluene	96%		44-120%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A5
Lab Sample ID: T61312-5
Matrix: SO - Soil
Method: SW846 8015 M SW846 3550B
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7623.D	10	10/12/10	HD	10/11/10	OP16336	GJB73
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	408	41	34	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID: A5
Lab Sample ID: T61312-5
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.7

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	8.1	0.59	mg/kg	5	10/20/10	10/21/10	ANJ	SW846 6020A [5]	SW846 3050B [9]
Barium	373	13	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Cadmium	< 0.33	0.33	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Chromium	38.0	0.67	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Copper	22.4	1.8	mg/kg	1	10/20/10	10/20/10	TW	SW846 6010B [3]	SW846 3050B [8]
Lead	14.7	0.67	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Mercury	0.028	0.019	mg/kg	1	10/08/10	10/08/10	CN	SW846 7471A [1]	SW846 7471A [6]
Nickel	21.4	2.7	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Selenium [b]	< 3.3	3.3	mg/kg	5	10/19/10	10/21/10	NS	SW846 6010B [4]	SW846 3050B [7]
Silver	< 0.67	0.67	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Zinc	97.5	1.3	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]

(1) Instrument QC Batch: MA5164
(2) Instrument QC Batch: MA5185
(3) Instrument QC Batch: MA5189
(4) Instrument QC Batch: MA5191
(5) Instrument QC Batch: N:MA25222
(6) Prep QC Batch: MP13069
(7) Prep QC Batch: MP13120
(8) Prep QC Batch: MP13131
(9) Prep QC Batch: N:MP55250

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.
(b) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A5		
Lab Sample ID:	T61312-5	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.7
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.4	2.4	mg/kg	1	10/13/10 11:00	KD	SW846 3060/7196A
Chromium, Trivalent [a]	37.3	3.1	mg/kg	1	10/19/10 22:45	NS	SW846 6010/7196A M
Solids, Percent	81.7		%	1	10/11/10	JL	SM 2540 G
Specific Conductivity	2740	1.0	umhos/cm	1	10/12/10 14:00	KD	EPA 120.1
pH	7.81		su	1	10/14/10 11:37	LA	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID: A5
Lab Sample ID: T61312-5A
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/06/10
Date Received: 10/08/10
Percent Solids: 81.7

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	748	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Magnesium	84.9	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]
Sodium	1030	25	mg/l	5	10/11/10	10/12/10	TW	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA5167
(2) Prep QC Batch: MP13074

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	A5		
Lab Sample ID:	T61312-5A	**Date Sampled:**	10/06/10
Matrix:	SO - Soil	**Date Received:**	10/08/10
		Percent Solids:	81.7
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	9.51		ratio	1	10/12/10 16:47	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE 1 OF 1

ACCUTEST Laboratories

10165 Harwin Dr, Ste 150 Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: | Accutest Job #: T61312

Client / Reporting Information

Company Name: Olsson Associates
Street Address: 826 21 1/2 Road
City: Grand Junction State: CO Zip: 81505
Project Contact: Tim Dobransky E-mail: tdobransky@eacconsultants.com
Phone #: 970-263-7800 Fax #:
Sampler(s) Name(s): Stuart Hall Phone #:

Project Information

Project Name: TR 31-13 Pit Closure
Street:
City: State:
Project #: 010-1955_10C-100008
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses

TABLE 910 - See Attached List
8260 - Please Rush

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	Collection: Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	ZnNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER	TABLE 910	8260	LAB USE ONLY
1	A1	10/6/10	0945	SH	SS	5						X							X		
2	A2		1315	SH	SS	5						X							X		
3	A3		1325	SH	SS	5						X							X		
4	A4		1345	SH	SS	5						X							X		
5	A5		1355	SH	SS	5						X							X		
6	B2		1120	SH	SS	2														X	
7	B Comp		1200	SH	SS	2														X	

Turnaround Time (Business days)

- [ ] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

#Invoice to Williams Production RMT-Attn: Jason Raven
1058 County Road 215 PoBox 370, Parachute, CO 81635
TR 31-13 Closure / Routing NXEEPH1GHLA
- Authorized by Jason Raven

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		10/7/10 1500	1	2 FedEX	10-8-10 0845	2 ALS
3			3	4		4
5			5	Custody Seal #	Intact / Not Intact	Preserved where applicable / On Ice / Cooler Temp. 3.6°C

SAMPLE INSPECTION FORM

Accutest Job Number: T61312 Client: Olsson Associates Date/Time Received: 10/8/10 0845

# of Coolers Received: 1 Thermometer #: IRGun04 Temperature Adjustment Factor: 0

Cooler Temperatures (initial/adjusted): #1: 3.6°C #2: _____ #3: _____ #4: _____ #5: _____

#6: _____ #7: _____ #8: _____ #9: _____ #10 _____ #11 _____ #12 _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] Wet ice received in cooler

CHAIN OF CUSTODY

- [ ] Chain of Custody not received
- [ ] Sample D/T unclear or missing
- [ ] Analyses unclear or missing
- [ ] COC not properly executed

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [✓] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] Trip Blank on COC but not received
- [ ] Trip Blank received but not on COC
- [ ] Trip Blank not intact
- [ ] Received Water Trip Blank
- [ ] Received Soil TB

Number of Encores? _____
Number of 5035 kits? _____
Number of lab-filtered metals? _____

Summary of Discrepancies:
Sample A1 - 1 Bottle received labeled AH, D/T match COC for A1.

TECHNICIAN SIGNATURE/DATE: Daniel Kuebler 10/8/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: EC 10-8-10

CORRECTIVE ACTIONS

Client Representative Notified: Tim Dobrawsky **Date:** 10-8-10

By Accutest Representative: Sylvia Cano **Via:** Phone (Email)

Client Instructions:
Date + time noted A1 and all other samples have all jars

I:\mwalker\form\samplemanagement SM023 Revised 8/11/10

T61312: Chain of Custody
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SAMPLE RECEIPT LOG

JOB #: T61312 DATE/TIME RECEIVED: 10/8/10 0845

CLIENT: Olsson Associates INITIALS: DRA

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	A1	10-6-10 0945	soil	40z	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
	↓	A1	↓	↓	↓	2-4	2-22	(1) 2 3 4 5 6 7 8	<2 >12
*	↓	AH	↓	↓	↓	5	2-22	(1) 2 3 4 5 6 7 8	<2 >12
	2	A2	1315	↓	↓	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
	2	A2	↓	↓	↓	2-5	2-22	(1) 2 3 4 5 6 7 8	<2 >12
	3	A3	1325	↓	↓	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
	3	A3	↓	↓	↓	2-5	2-22	(1) 2 3 4 5 6 7 8	<2 >12
	4	A4	1345	↓	↓	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
	4	A4	↓	↓	↓	2-5	2-22	(1) 2 3 4 5 6 7 8	<2 >12
	5	A5	1355	↓	↓	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
	5	A5	↓	↓	↓	2-5	2-22	(1) 2 3 4 5 6 7 8	<2 >12
	6	B2	1120	↓	↓	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
	6	B2	↓	↓	↓	2	2-22	(1) 2 3 4 5 6 7 8	<2 >12
	7	B Comp	1200	↓	↓	1	VR	(1) 2 3 4 5 6 7 8	<2 >12
↓	7	B Comp	↓	↓	↓	2	2-22	(1) 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
			DRA					1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
			10/8/10					1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 ewp

T61312: Chain of Custody

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Gulf Coast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2647-MB	Y0043047.D	1	10/12/10	FI	n/a	n/a	VY2647

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61312-1, T61312-2, T61312-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	4.0	0.90	ug/kg	
108-88-3	Toluene	ND	4.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	12	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	84%	70-121%
2037-26-5	Toluene-D8	94%	76-132%
460-00-4	4-Bromofluorobenzene	82%	73-165%
17060-07-0	1,2-Dichloroethane-D4	73%	57-122%

Method Blank Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1186-MB	M0029034.D	1	10/13/10	FI	n/a	n/a	VM1186

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61312-3, T61312-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	4.0	0.90	ug/kg	
108-88-3	Toluene	ND	4.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	12	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	100%	70-121%
2037-26-5	Toluene-D8	108%	76-132%
460-00-4	4-Bromofluorobenzene	115%	73-165%
17060-07-0	1,2-Dichloroethane-D4	92%	57-122%

Blank Spike Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2647-BS	Y0043045.D	1	10/12/10	FI	n/a	n/a	VY2647

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61312-1, T61312-2, T61312-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	45.9	92	70-114
100-41-4	Ethylbenzene	50	48.7	97	60-119
108-88-3	Toluene	50	47.8	96	68-115
1330-20-7	Xylene (total)	150	145	97	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	84%	70-121%
2037-26-5	Toluene-D8	93%	76-132%
460-00-4	4-Bromofluorobenzene	87%	73-165%
17060-07-0	1,2-Dichloroethane-D4	75%	57-122%

Blank Spike Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VM1186-BS	M0029032.D	1	10/13/10	FI	n/a	n/a	VM1186

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61312-3, T61312-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	48.1	96	70-114
100-41-4	Ethylbenzene	50	46.1	92	60-119
108-88-3	Toluene	50	47.8	96	68-115
1330-20-7	Xylene (total)	150	140	93	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	104%	70-121%
2037-26-5	Toluene-D8	111%	76-132%
460-00-4	4-Bromofluorobenzene	118%	73-165%
17060-07-0	1,2-Dichloroethane-D4	92%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T61402-1MS	Y0043049.D	1	10/12/10	FI	n/a	n/a	VY2647
T61402-1MSD	Y0043050.D	1	10/12/10	FI	n/a	n/a	VY2647
T61402-1	Y0043048.D	1	10/12/10	FI	n/a	n/a	VY2647

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61312-1, T61312-2, T61312-4

CAS No.	Compound	T61402-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4.1 U		53.9	40.3	75	41.9	72	4	70-114/38
100-41-4	Ethylbenzene	4.1 U		53.9	42.8	79	45.1	78	5	60-119/40
108-88-3	Toluene	4.1 U		53.9	44.3	82	46.7	81	5	68-115/38
1330-20-7	Xylene (total)	12 U		162	149	92	160	92	7	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T61402-1	Limits
1868-53-7	Dibromofluoromethane	83%	83%	84%	70-121%
2037-26-5	Toluene-D8	93%	93%	92%	76-132%
460-00-4	4-Bromofluorobenzene	85%	85%	82%	73-165%
17060-07-0	1,2-Dichloroethane-D4	76%	73%	76%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T61312-3MS	M0029037.D	1	10/13/10	FI	n/a	n/a	VM1186
T61312-3MSD	M0029038.D	1	10/13/10	FI	n/a	n/a	VM1186
T61312-3	M0029035.D	1	10/13/10	FI	n/a	n/a	VM1186

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61312-3, T61312-5

CAS No.	Compound	T61312-3 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		59.1	56.3	95	50.7	92	10	70-114/38
100-41-4	Ethylbenzene	ND		59.1	58.8	99	51.8	94	13	60-119/40
108-88-3	Toluene	ND		59.1	76.4	129*	69.6	126*	9	68-115/38
1330-20-7	Xylene (total)	ND		177	172	97	152	92	12	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T61312-3	Limits
1868-53-7	Dibromofluoromethane	99%	102%	102%	70-121%
2037-26-5	Toluene-D8	114%	114%	120%	76-132%
460-00-4	4-Bromofluorobenzene	128%	127%	132%	73-165%
17060-07-0	1,2-Dichloroethane-D4	91%	89%	94%	57-122%

Gulf Coast ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16339-MB	V1876.D	1	10/12/10	MK	10/11/10	OP16339	EV114

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	24%	10-127%
321-60-8	2-Fluorobiphenyl	16%	11-133%
1718-51-0	Terphenyl-d14	92%	15-187%

Blank Spike Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16339-BS	V1877.D	1	10/12/10	MK	10/11/10	OP16339	EV114

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	125	75	18-118
208-96-8	Acenaphthylene	167	120	72	35-125
120-12-7	Anthracene	167	127	76	24-116
56-55-3	Benzo(a)anthracene	167	145	87	32-132
50-32-8	Benzo(a)pyrene	167	125	75	36-130
205-99-2	Benzo(b)fluoranthene	167	171	103	35-134
191-24-2	Benzo(g,h,i)perylene	167	166	100	18-149
207-08-9	Benzo(k)fluoranthene	167	131	79	30-131
218-01-9	Chrysene	167	145	87	37-124
53-70-3	Dibenzo(a,h)anthracene	167	170	102	23-150
206-44-0	Fluoranthene	167	152	91	28-118
86-73-7	Fluorene	167	129	77	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	174	104	18-150
90-12-0	1-Methylnaphthalene	167	120	72	10-128
91-57-6	2-Methylnaphthalene	167	116	70	28-113
91-20-3	Naphthalene	167	76.4	46	31-106
85-01-8	Phenanthrene	167	127	76	37-112
129-00-0	Pyrene	167	135	81	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	32%	10-127%
321-60-8	2-Fluorobiphenyl	39%	11-133%
1718-51-0	Terphenyl-d14	83%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16339-MS	V1881.D	1	10/12/10	MK	10/11/10	OP16339	EV114
OP16339-MSD	V1883.D	1	10/12/10	MK	10/11/10	OP16339	EV114
T61420-1	V1879.D	1	10/12/10	MK	10/11/10	OP16339	EV114

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	T61420-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		186	118	63	120	64	2	10-153/80
208-96-8	Acenaphthylene	ND		186	113	61	115	61	2	10-144/71
120-12-7	Anthracene	ND		186	117	63	121	64	3	10-176/57
56-55-3	Benzo(a)anthracene	ND		186	135	73	137	73	1	10-174/73
50-32-8	Benzo(a)pyrene	ND		186	117	63	123	66	5	10-182/74
205-99-2	Benzo(b)fluoranthene	ND		186	141	76	149	79	6	10-188/86
191-24-2	Benzo(g,h,i)perylene	ND		186	148	80	154	82	4	10-150/62
207-08-9	Benzo(k)fluoranthene	ND		186	109	59	111	59	2	10-170/94
218-01-9	Chrysene	ND		186	124	67	128	68	3	10-165/73
53-70-3	Dibenzo(a,h)anthracene	ND		186	152	82	160	85	5	10-192/74
206-44-0	Fluoranthene	ND		186	139	75	140	75	1	10-141/73
86-73-7	Fluorene	ND		186	126	68	127	68	1	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	ND		186	197	106	207	110	5	10-150/73
90-12-0	1-Methylnaphthalene	ND		186	123	66	130	69	6	10-154/82
91-57-6	2-Methylnaphthalene	ND		186	120	65	129	69	7	10-171/75
91-20-3	Naphthalene	ND		186	93.7	50	102	54	8	10-138/82
85-01-8	Phenanthrene	ND		186	112	60	115	61	3	10-191/77
129-00-0	Pyrene	ND		186	124	67	129	69	4	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T61420-1	Limits
4165-60-0	Nitrobenzene-d5	52%	53%	34%	10-127%
321-60-8	2-Fluorobiphenyl	44%	43%	36%	11-133%
1718-51-0	Terphenyl-d14	71%	69%	73%	15-187%

Gulf Coast ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH93-MB	HH0001853.D	1	10/08/10	LB	n/a	n/a	GHH93

The QC reported here applies to the following samples: **Method:** SW846 8015

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	90%	46-127%
98-08-8	aaa-Trifluorotoluene	100%	44-120%

Blank Spike Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GHH93-BS	HH0001851.D	1	10/08/10	LB	n/a	n/a	GHH93

The QC reported here applies to the following samples: **Method:** SW846 8015

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.376	94	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	89%	46-127%
98-08-8	aaa-Trifluorotoluene	99%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T61309-1MS	HH0001856.D	1	10/08/10	LB	n/a	n/a	GHH93
T61309-1MSD	HH0001857.D	1	10/08/10	LB	n/a	n/a	GHH93
T61309-1	HH0001854.D	1	10/08/10	LB	n/a	n/a	GHH93

The QC reported here applies to the following samples: **Method:** SW846 8015

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	T61309-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	2.94	J	24	22.7	82	21.3	76*	6	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T61309-1	Limits
460-00-4	4-Bromofluorobenzene	99%	111%	90%	46-127%
98-08-8	aaa-Trifluorotoluene	100%	101%	95%	44-120%

Gulf Coast ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16336-MB	JJ7587.D	1	10/11/10	HD	10/11/10	OP16336	GJB73

The QC reported here applies to the following samples: **Method:** SW846 8015 M

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	3.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	96%	33-115%

Blank Spike Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16336-BS	JJ7588.D	1	10/11/10	HD	10/11/10	OP16336	GJF73

The QC reported here applies to the following samples: **Method:** SW846 8015 M

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.1	27.2	82	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	88%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61312
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16336-MS	JJ7589.D	1	10/11/10	HD	10/11/10	OP16336	GJB73
OP16336-MSD	JJ7590.D	1	10/11/10	HD	10/11/10	OP16336	GJF73
T61418-2	JJ7630.D	10	10/12/10	HD	10/11/10	OP16336	GJF73

The QC reported here applies to the following samples: **Method:** SW846 8015 M

T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

CAS No.	Compound	T61418-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	314		37.2	454	377* [a]	349	94	26	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T61418-2	Limits
84-15-1	o-Terphenyl	94%	75%	76%	33-115%

(a) Outside control limits due to high level in sample relative to spike amount.

Gulf Coast ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13069 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/08/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.0042	.0067	-0.0030	<0.017

Associated samples MP13069: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13069
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date:			10/08/10					10/08/10	
Metal	T61312-1 Original	DUP	RPD	QC Limits	T61312-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.014	0.016	13.3	0-20	0.014	0.35	0.311	108.0	75-125

Associated samples MP13069: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13069 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/08/10

Metal	T61312-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.014	0.35	0.309	108.7	0.0	

Associated samples MP13069: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13069
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/08/10

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	7.3	7.34	99.5	72-128

Associated samples MP13069: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13074
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/11/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12		
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1		
Barium	200	.97	3.4		
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09		
Calcium	5000	7.4	25	-4.0	<5000
Chromium	10	.23	.27		
Cobalt	50	.15	.22		
Copper	25	1.1	5.9		
Iron	100	1.1	23		
Lead	3.0	1	1.8		
Lithium	300	2	2		
Magnesium	5000	7.7	7.9	-6.7	<5000
Manganese	15	.054	1.9		
Molybdenum	10	.39	.2		
Nickel	40	.69	1.4		
Potassium	5000	39	45		
Selenium	5.0	1.5	.98		
Silver	10	1.2	.24		
Sodium	5000	9.2	100	-110	<5000
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5		

Associated samples MP13074: T61312-1A, T61312-2A, T61312-3A, T61312-4A, T61312-5A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13074
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/11/10

Metal	T61312-4A Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	653000	657000	0.6	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	102000	103000	1.0	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	16800	16900	0.6	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13074: T61312-1A, T61312-2A, T61312-3A, T61312-4A, T61312-5A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13074
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/11/10

Metal	T61312-4A Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	653000	643000	1.5	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	102000	101000	1.3	0-10
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	16800	14200	15.9*(a)	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13074: T61312-1A, T61312-2A, T61312-3A, T61312-4A, T61312-5A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/19/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.0080	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.043	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.083	<0.50
Cobalt	2.5	.025	.09		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.058	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.055	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	-0.075	<0.50
Silver	0.50	.043	.04	-0.0090	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	-0.028	<1.0

Associated samples MP13120: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/19/10					10/19/10	
Metal	T61312-1 Original	DUP	RPD	QC Limits	T61312-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony	anr								
Arsenic	anr								
Barium	418	443	5.8	0-20	418	435	26.4	64.3 (b)	80-120
Beryllium	anr								
Boron									
Cadmium	0.28	0.23	19.6	0-20	0.28	22.0	26.4	82.1	80-120
Calcium									
Chromium	40.4	46.1	13.2	0-20	40.4	63.3	26.4	86.6	80-120
Cobalt									
Iron									
Lead	15.3	15.8	3.2	0-20	15.3	36.3	26.4	79.4N(c)	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	24.2	24.6	1.6	0-20	24.2	44.5	26.4	76.8N(c)	80-120
Potassium									
Selenium									
Silver	0.10	0.14	33.3 (a)	0-20	0.10	24.0	26.4	90.4	80-120
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	83.7	93.9	11.5	0-20	83.7	115	26.4	118.4	80-120

Associated samples MP13120: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(c) Spike recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/19/10

Metal	T61312-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	418	441	26.6	86.6	1.4	20
Beryllium	anr					
Boron						
Cadmium	0.28	21.0	26.6	78.0N(a)	4.7	20
Calcium						
Chromium	40.4	61.8	26.6	80.6	2.4	20
Cobalt						
Iron						
Lead	15.3	34.5	26.6	72.3N(a)	5.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel	24.2	42.6	26.6	69.3N(a)	4.4	20
Potassium						
Selenium						
Silver	0.10	23.1	26.6	86.6	3.8	20
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	83.7	112	26.6	106.6	2.6	20

Associated samples MP13120: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/19/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	362	348	104.0	81-119
Beryllium	anr			
Boron				
Cadmium	168	187	89.8	82-118
Calcium				
Chromium	85.1	89.5	95.1	79-121
Cobalt				
Iron				
Lead	153	172	89.0	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	92.9	99	93.8	81-119
Potassium				
Selenium	133	148	89.9	78-121
Silver	62.9	66	95.3	66-134
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	363	394	92.1	80-119

Associated samples MP13120: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/19/10

Metal	T61312-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	6170	7210	16.9*(a)	0-10
Beryllium	anr			
Boron				
Cadmium	4.18	0.00	100.0(b)	0-10
Calcium				
Chromium	595	725	21.8*(a)	0-10
Cobalt				
Iron				
Lead	226	276	21.8*(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	357	436	22.1*(a)	0-10
Potassium				
Selenium				
Silver	1.54	0.00	100.0(b)	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	1230	1500	21.4*	0-10

Associated samples MP13120: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/20/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.41	.73		
Antimony	0.50	.05	.085		
Arsenic	0.50	.085	.085		
Barium	10	.049	.069		
Beryllium	0.25	.0028	.0055		
Boron	5.0	.07	.17		
Cadmium	0.25	.0055	.014		
Calcium	250	.37	1.3		
Chromium	0.50	.012	.023		
Cobalt	2.5	.0075	.03		
Copper	1.3	.056	.056	0.044	<1.3
Iron	5.0	.057	1.1		
Lead	0.50	.05	.05		
Lithium	15	.1			
Magnesium	250	.38	1.3		
Manganese	0.75	.0027	.037		
Molybdenum	0.50	.02	.025		
Nickel	2.0	.035	.057		
Potassium	250	2	10		
Selenium	0.50	.077	.14		
Silver	0.50	.058	.058		
Sodium	250	.46	1.6		
Strontium	1.0	.0031	.059		
Thallium	0.50	.034	.04		
Tin	1.0	.035	.035		
Titanium	1.0	.015	.029		
Vanadium	2.5	.015	.034		
Zinc	1.0	.026	.084		

Associated samples MP13131: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/20/10					10/20/10	
Metal	T61312-1 Original	DUP	RPD	QC Limits	T61312-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper	23.0	23.5	2.2	0-20	23.0	43.3	25.5	79.6N(a)	80-120
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP13131: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/20/10

Metal	T61312-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper	23.0	45.2	25.7	86.5	4.3	20
Iron						
Lead						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP13131: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/20/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	125	129	96.9	84-117
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13131: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131 Methods: SW846 6010B
Matrix Type: SOLID Units: ug/l

Prep Date: 10/20/10

Metal	T61312-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	328	378	15.2*(a)	0-10
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13131: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

Gulf Coast ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN25988	2.0	<2.0	mg/kg	40	39.7	99.0	80-120%
Specific Conductivity	GN26007	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN25988: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5
Batch GN26007: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN25988	T61214-1	mg/kg	1.6	<2.5	0.6	0-20%
Solids, Percent	GN25983	T61402-1	%	85.1	84.7	0.5	0-5%
Specific Conductivity	GN26007	T61312-1	umhos/cm	2260	2230	1.3	0-20%
pH	GN26004	T61312-1	su	7.60	7.60	0.0	0-20%
pH	GN26005	T61426-7	su	8.10	8.12	0.2	0-20%

Associated Samples:
Batch GN25983: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5
Batch GN25988: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5
Batch GN26004: T61312-1, T61312-2, T61312-3
Batch GN26005: T61312-4, T61312-5
Batch GN26007: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T61312
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN25988	T61214-1	mg/kg	1.6	49	46.1	91.0	75-125%

Associated Samples:
Batch GN25988: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Gulf Coast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest New Jersey)

Includes the following where applicable:

- Chain of Custody

50

ACCUTEST Laboratories

SUBCONTRACT COC

Page 1 of 1

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

FED-EX Tracking #	Bottle Order Control #
7963 2708 2721	
Accutest Quote #	Accutest Job #

Client Information		Subcontract Information	
Company Name: Accutest Gulf Coast		Subcontract Laboratory: ACCUTEST NEW JERSEY	
Project Contact: Sylvia Garza	Email: sylviag@accutest.com	Laboratory Contact: Sample Receiving	Email:
Address: 10165 Harwin Dr, Suite 150		Address:	
City: Houston State: TX	Zip: 77036	City: State:	Zip:
Phone No.: 713-271-4700		Phone No.:	

Requested Analyses: As (6020)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Wastewater; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Liquid; SOL - Other Solid

Accutest Sample Number	Collection Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	DI/MeOH	TSP	NONE	OTHER	As (6020)	LAB USE ONLY
T61312-1	10/6/2010		SO	1									X	
T61312-2	10/6/2010		SO	1									X	ME 14
T61312-3	10/6/2010		SO	1									X	
T61312-4	10/6/2010		SO	1									X	
T61312-5	10/6/2010		SO	1									X	

Turnaround Time (Business days)

- [ ] STANDARD
- [ ] 7 Day
- [ ] 4 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Approved By:/ Date: 10/19/2010

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [x] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other_NARR

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 ALGC Daniel Huddleston	10-8-10 1555	1 FEDEX	2 FedX	10/9/10 1000	2 [signature]
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # Client, intact	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 2.2°C

10.1

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T61312: Chain of Custody
Page 1 of 1
Accutest New Jersey

Gulf Coast ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

(Accutest New Jersey)

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61312
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55250
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/20/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.35	.52		
Antimony	0.25	.035	.022		
Arsenic	0.50	.045	.11	-0.015	<0.50
Barium	0.50	.028	.038		
Beryllium	0.25	.0075	.03		
Boron	2.5	.26	.25		
Cadmium	0.25	.029	.016		
Calcium	130	2.4	3.1		
Chromium	2.0	.029	.29		
Cobalt	0.25	.001	.016		
Copper	2.0	.054	.036		
Iron	25	.41	1.9		
Lead	0.25	.0095	.012		
Magnesium	130	.2	1.4		
Manganese	0.25	.008	.02		
Molybdenum	0.50	.097	.096		
Nickel	2.0	.021	.026		
Potassium	130	1.5	3.9		
Selenium	0.50	.029	.058		
Silver	1.0	.004	.022		
Sodium	130	.48	1.3		
Strontium	0.50	.004	.0082		
Thallium	0.25	.0075	.0051		
Tin	0.50	.035			
Titanium	0.50	.023	.27		
Uranium	0.50				
Vanadium	2.0	.23	.79		
Zinc	2.0	.36	.91		

Associated samples MP55250: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55250
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/20/10

Metal	JA58303-12 Original	MS	Spikelot MPIRS1	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.28	396	420	94.1	75-125
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP55250: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61312
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55250
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/20/10

Metal	JA58303-12 Original	MSD	Spikelot MPIRS1	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.28	385	420	91.5	2.8	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP55250: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61312
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55250
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/20/10

Metal	BSP Result	Spikelot MPIRS1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	405	400	101.3	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP55250: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61312
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55250
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/20/10

Metal	JA58303-12 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	2.74	2.76	0.8	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP55250: T61312-1, T61312-2, T61312-3, T61312-4, T61312-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Gulf Coast ACCUTEST LABORATORIES

10/28/10

Technical Report for

Olsson Associates

TR 31-13 Pit Closure

Accutest Job Number: T61792

Sampling Date: 10/13/10

Report to:

Olsson Associates
826 21 1/2 Road
Grand Junction, CO 81505
tdobransky@oaconsulting.com

ATTN: Tim Dobransky

Total number of pages in report: **63**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Sylvia Garza 713-271-4700

Certifications: TX (T104704220-10-3) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103)

Sections: 1 2 3 4 5 6 7 8 9 10 11

Table of Contents

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Sample Summary

Olsson Associates

Job No: T61792

TR 31-13 Pit Closure

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T61792-1	10/13/10	13:45		10/15/10	SO	Soil	TR-31-13-PF1
T61792-1A	10/13/10	13:45		10/15/10	SO	Soil	TR-31-13-PF1

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
Method:	SW846 8260B	**Percent Solids:**	82.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Y0043214.D	1	10/18/10	FI	n/a	n/a	VY2653
Run #2							

	Initial Weight	Final Volume
Run #1	5.26 g	5.0 ml
Run #2		

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0046	0.00080	mg/kg	
108-88-3	Toluene	ND	0.0046	0.0011	mg/kg	
100-41-4	Ethylbenzene	ND	0.0046	0.0010	mg/kg	
1330-20-7	Xylene (total)	0.0062	0.014	0.0024	mg/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	84%		70-121%
2037-26-5	Toluene-D8	100%		76-132%
460-00-4	4-Bromofluorobenzene	96%		73-165%
17060-07-0	1,2-Dichloroethane-D4	68%		57-122%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
Method:	SW846 8270C BY SIM SW846 3550B	**Percent Solids:**	82.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V1983.D	1	10/19/10	MK	10/19/10	OP16413	EV119
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.0079	0.0013	mg/kg	
208-96-8	Acenaphthylene	ND	0.0079	0.0028	mg/kg	
120-12-7	Anthracene	ND	0.0079	0.0015	mg/kg	
56-55-3	Benzo(a)anthracene	ND	0.0079	0.0013	mg/kg	
50-32-8	Benzo(a)pyrene	ND	0.0079	0.0042	mg/kg	
205-99-2	Benzo(b)fluoranthene	0.0116	0.0079	0.0042	mg/kg	
191-24-2	Benzo(g,h,i)perylene	ND	0.0079	0.0079	mg/kg	
207-08-9	Benzo(k)fluoranthene	ND	0.0079	0.0051	mg/kg	
218-01-9	Chrysene	ND	0.0079	0.0019	mg/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	0.0079	0.0076	mg/kg	
206-44-0	Fluoranthene	ND	0.0079	0.0017	mg/kg	
86-73-7	Fluorene	0.0097	0.0079	0.0028	mg/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.0079	0.0059	mg/kg	
90-12-0	1-Methylnaphthalene	0.0071	0.0079	0.0015	mg/kg	J
91-57-6	2-Methylnaphthalene	0.0126	0.0079	0.0014	mg/kg	
91-20-3	Naphthalene	ND	0.0079	0.0012	mg/kg	
85-01-8	Phenanthrene	0.0074	0.0079	0.0011	mg/kg	J
129-00-0	Pyrene	ND	0.0079	0.0027	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		10-127%
321-60-8	2-Fluorobiphenyl	95%		11-133%
1718-51-0	Terphenyl-d14	69%		15-187%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
Method:	SW846 8015	**Percent Solids:**	82.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BB0002875.D	1	10/19/10	AT	n/a	n/a	GBB157
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.86 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	16.8	6.2	0.37	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	151% [a]		46-127%
98-08-8	aaa-Trifluorotoluene	110%		44-120%

(a) Outside control limits due to matrix interference. Confirmed by MS/MSD.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
Method:	SW846 8015 M SW846 3550B	**Percent Solids:**	82.8
Project:	TR 31-13 Pit Closure		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	JJ7819.D	1	10/19/10	HD	10/16/10	OP16389	GJB77
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	297	4.0	3.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	90%		33-115%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
		Percent Solids:	82.8
Project:	TR 31-13 Pit Closure		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	6.2	0.10	mg/kg	1	10/21/10	10/27/10	ANJ	SW846 6020A [5]	SW846 3050B [9]
Barium	426	15	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Cadmium	< 0.36	0.36	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Chromium	46.7	0.73	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Copper	24.1	1.8	mg/kg	1	10/20/10	10/20/10	TW	SW846 6010B [3]	SW846 3050B [8]
Lead	15.4	0.73	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Mercury	0.025	0.020	mg/kg	1	10/18/10	10/18/10	CN	SW846 7471A [1]	SW846 7471A [6]
Nickel	24.6	2.9	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Selenium [b]	< 3.6	3.6	mg/kg	5	10/19/10	10/21/10	NS	SW846 6010B [4]	SW846 3050B [7]
Silver	< 0.73	0.73	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]
Zinc	78.9	1.5	mg/kg	1	10/19/10	10/19/10	NS	SW846 6010B [2]	SW846 3050B [7]

(1) Instrument QC Batch: MA5183
(2) Instrument QC Batch: MA5185
(3) Instrument QC Batch: MA5189
(4) Instrument QC Batch: MA5191
(5) Instrument QC Batch: N:MA25253
(6) Prep QC Batch: MP13117
(7) Prep QC Batch: MP13120
(8) Prep QC Batch: MP13131
(9) Prep QC Batch: N:MP55257

(a) Analysis performed at Accutest Laboratories, Dayton, NJ.
(b) Elevated reporting limit due to matrix interference.

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
		Percent Solids:	82.8
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent	< 2.4	2.4	mg/kg	1	10/19/10 10:20	KD	SW846 3060/7196A
Chromium, Trivalent [a]	46.0	3.1	mg/kg	1	10/19/10 23:18	NS	SW846 6010/7196A M
Solids, Percent	82.8		%	1	10/15/10	ID	SM 2540 G
Specific Conductivity	1850	1.0	umhos/cm	1	10/20/10 12:30	KD	EPA 120.1
pH	8.51		su	1	10/19/10 17:41	LA	SW846 9045C

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID: TR-31-13-PF1
Lab Sample ID: T61792-1A
Matrix: SO - Soil
Project: TR 31-13 Pit Closure

Date Sampled: 10/13/10
Date Received: 10/15/10
Percent Solids: 82.8

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	405	25	mg/l	5	10/19/10	10/20/10	TW	SW846 6010B [1]	LADNR 29B [2]
Magnesium	51.1	25	mg/l	5	10/19/10	10/20/10	TW	SW846 6010B [1]	LADNR 29B [2]
Sodium	372	25	mg/l	5	10/19/10	10/20/10	TW	SW846 6010B [1]	LADNR 29B [2]

(1) Instrument QC Batch: MA5189
(2) Prep QC Batch: MP13122

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13-PF1		
Lab Sample ID:	T61792-1A	**Date Sampled:**	10/13/10
Matrix:	SO - Soil	**Date Received:**	10/15/10
		Percent Solids:	82.8
Project:	TR 31-13 Pit Closure		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	4.63		ratio	1	10/20/10 21:08	TW	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE 1 OF 1

ACCUTEST Laboratories

4036 Youngfield Street, Wheat Ridge, Colorado 80033
TEL. 303-425-6021; 877-737-4521 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # T61792

Client / Reporting Information

Company Name: OLSSON ASSOCIATES
Street Address: 826 21½ Rd
City State Zip: GRAND JNCT, CO 81505
Project Contact: Tim Dobransky | E-mail:
Phone #: 970 263-7800 x 2002 | Fax #:
Sampler(s) Name(s): JESS VANN | Phone #: 970 250-1320

Project Information

Project Name: TR 31-13 PIT Closure
Street:
City State:
Project #: 010-1955
Client Purchase Order #:
Project Manager: Tim Dobransky

Billing Information (If different from Report to)

Company Name: SAME
Street Address:
City State Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

910 SOIL LIST

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	910	$OIL	LIST	LAB USE ONLY
1	TR-31-13-PF1		10-13-10	1345	JV	SOL	5					X				X	X	X	

Turnaround Time (Business days)

- [ ] Std. 10 Business Days
- [ ] UST Analysis 3-5 Days
- [x] 6 - 9 Day *RUSH*
- [ ] 3 - 5 Day *RUSH*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Labtink

Data Deliverable Information

- [ ] Level 1
- [ ] Level 2
- [ ] Level 3
- [ ] Level 4

Level 1 = Results Only
Level 2 = Results + QC Summary + Case Narrative
Level 3 = Results + QC Summary + Partial Raw data
Level 4 = Full Deliverable

- [ ] PDF
- [ ] EDD Format
- [ ] Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		10-14-10 1800	1	2 FedEX	10/15/10 0920	2 ALAC
3	Relinquished by Sampler:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	☐ Intact ☐ Not Intact	Preserved where applicable ☐	On Ice ☑	Cooler Temp. 5.0°

T61792: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T61792 Client: Olsson Associates Date/Time Received: 10/15/10 0920

# of Coolers Received: 1 Thermometer #: IR Gun 04 Temperature Adjustment Factor: 0

Cooler Temperatures (initial/adjusted): #1: 5.0°C #2: _____ #3: _____ #4: _____ #5: _____

#6: _____ #7: _____ #8: _____ #9: _____ #10 _____ #11 _____ #12 _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] Wet ice received in cooler

CHAIN OF CUSTODY

- [ ] Chain of Custody not received
- [ ] Sample D/T unclear or missing
- [ ] Analyses unclear or missing
- [ ] COC not properly executed

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] Trip Blank on COC but not received
- [ ] Trip Blank received but not on COC
- [ ] Trip Blank not intact
- [ ] Received Water Trip Blank
- [ ] Received Soil TB

Number of Encores? _____
Number of 5035 kits? _____
Number of lab-filtered metals? _____

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: [signature] 10/15/10

INFORMATION AND SAMPLE LABELING VERIFIED BY: [signature] 10/15/10

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: _____ **Via:** Phone Email

Client Instructions:

i:\mwalker\form\samplemanagement SM023 Revised 8/11/10

T61792: Chain of Custody
Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: T61792 DATE/TIME RECEIVED: 10/15/10 0920

CLIENT: Olsson Associates INITIALS: ORA

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	TR-31-13 PF1	10-13-10 1345	Soil	4oz	1-4	2-38	(1) 2 3 4 5 6 7 8	<2 >12
↓	|	↓ ↓ ↓	↓ ↓	↓	4oz	5	VR	(1) 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

ORA 10/15/10

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 ewp

Gulf Coast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2653-MB	Y0043198.D	1	10/18/10	FI	n/a	n/a	VY2653

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61792-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.0	0.70	ug/kg	
100-41-4	Ethylbenzene	ND	4.0	0.90	ug/kg	
108-88-3	Toluene	ND	4.0	0.95	ug/kg	
1330-20-7	Xylene (total)	ND	12	2.1	ug/kg	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	85%	70-121%
2037-26-5	Toluene-D8	90%	76-132%
460-00-4	4-Bromofluorobenzene	84%	73-165%
17060-07-0	1,2-Dichloroethane-D4	70%	57-122%

Blank Spike Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VY2653-BS	Y0043196.D	1	10/18/10	FI	n/a	n/a	VY2653

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61792-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	42.6	85	70-114
100-41-4	Ethylbenzene	50	41.6	83	60-119
108-88-3	Toluene	50	42.4	85	68-115
1330-20-7	Xylene (total)	150	128	85	61-115

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	88%	70-121%
2037-26-5	Toluene-D8	89%	76-132%
460-00-4	4-Bromofluorobenzene	80%	73-165%
17060-07-0	1,2-Dichloroethane-D4	75%	57-122%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T61737-4MS	Y0043204.D	1	10/18/10	FI	n/a	n/a	VY2653
T61737-4MSD	Y0043205.D	1	10/18/10	FI	n/a	n/a	VY2653
T61737-4	Y0043201.D	1	10/18/10	FI	n/a	n/a	VY2653

The QC reported here applies to the following samples: **Method:** SW846 8260B

T61792-1

CAS No.	Compound	T61737-4 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		56.3	35.2	62*	29.3	58*	18	70-114/38
100-41-4	Ethylbenzene	ND		56.3	33.1	59*	28.4	56*	15	60-119/40
108-88-3	Toluene	ND		56.3	35.6	63*	29.2	58*	20	68-115/38
1330-20-7	Xylene (total)	2.9	J	169	100	57*	86.9	55*	14	61-115/39

CAS No.	Surrogate Recoveries	MS	MSD	T61737-4	Limits
1868-53-7	Dibromofluoromethane	84%	84%	102%	70-121%
2037-26-5	Toluene-D8	88%	87%	104%	76-132%
460-00-4	4-Bromofluorobenzene	82%	80%	91%	73-165%
17060-07-0	1,2-Dichloroethane-D4	71%	70%	85%	57-122%

Gulf Coast ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16413-MB	V2003.D	1	10/20/10	MK	10/19/10	OP16413	EV120

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T61792-1

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	1.1	ug/kg	
208-96-8	Acenaphthylene	ND	6.7	2.3	ug/kg	
120-12-7	Anthracene	ND	6.7	1.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	1.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	3.6	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	3.5	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	6.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.3	ug/kg	
218-01-9	Chrysene	ND	6.7	1.6	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	6.4	ug/kg	
206-44-0	Fluoranthene	ND	6.7	1.5	ug/kg	
86-73-7	Fluorene	ND	6.7	2.4	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	5.0	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-57-6	2-Methylnaphthalene	ND	6.7	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.7	1.0	ug/kg	
85-01-8	Phenanthrene	ND	6.7	0.93	ug/kg	
129-00-0	Pyrene	ND	6.7	2.3	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	58%	10-127%
321-60-8	2-Fluorobiphenyl	83%	11-133%
1718-51-0	Terphenyl-d14	85%	15-187%

Blank Spike Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16413-BS	V2004.D	1	10/20/10	MK	10/19/10	OP16413	EV120

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T61792-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	167	105	63	18-118
208-96-8	Acenaphthylene	167	103	62	35-125
120-12-7	Anthracene	167	102	61	24-116
56-55-3	Benzo(a)anthracene	167	107	64	32-132
50-32-8	Benzo(a)pyrene	167	100	60	36-130
205-99-2	Benzo(b)fluoranthene	167	119	71	35-134
191-24-2	Benzo(g,h,i)perylene	167	120	72	18-149
207-08-9	Benzo(k)fluoranthene	167	121	73	30-131
218-01-9	Chrysene	167	113	68	37-124
53-70-3	Dibenzo(a,h)anthracene	167	109	65	23-150
206-44-0	Fluoranthene	167	108	65	28-118
86-73-7	Fluorene	167	104	62	32-106
193-39-5	Indeno(1,2,3-cd)pyrene	167	111	67	18-150
90-12-0	1-Methylnaphthalene	167	104	62	10-128
91-57-6	2-Methylnaphthalene	167	99.8	60	28-113
91-20-3	Naphthalene	167	96.3	58	31-106
85-01-8	Phenanthrene	167	100	60	37-112
129-00-0	Pyrene	167	106	64	24-132

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	90%	10-127%
321-60-8	2-Fluorobiphenyl	90%	11-133%
1718-51-0	Terphenyl-d14	69%	15-187%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16413-MS	V2009.D	1	10/20/10	MK	10/19/10	OP16413	EV120
OP16413-MSD	V2010.D	1	10/20/10	MK	10/19/10	OP16413	EV120
T61249-3R [a]	V1985.D	1	10/19/10	MK	10/19/10	OP16413	EV119

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

T61792-1

CAS No.	Compound	T61249-3R ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	7.4	U	184	31.7	17	62.0	34	65	10-153/80
208-96-8	Acenaphthylene	7.4	U	184	62.4	34	59.5	32	5	10-144/71
120-12-7	Anthracene	7.4	U	184	59.4	32	75.5	41	24	10-176/57
56-55-3	Benzo(a)anthracene	7.4	U	184	126	69	135	74	7	10-174/73
50-32-8	Benzo(a)pyrene	7.4	U	184	94.4	51	109	59	14	10-182/74
205-99-2	Benzo(b)fluoranthene	7.4	U	184	142	77	165	90	15	10-188/86
191-24-2	Benzo(g,h,i)perylene	7.4	U	184	58.9	32	53.2	29	10	10-150/62
207-08-9	Benzo(k)fluoranthene	7.4	U	184	120	65	156	85	26	10-170/94
218-01-9	Chrysene	7.4	U	184	124	68	140	76	12	10-165/73
53-70-3	Dibenzo(a,h)anthracene	7.4	U	184	59.6	32	56.8	31	5	10-192/74
206-44-0	Fluoranthene	7.4	U	184	116	63	108	59	7	10-141/73
86-73-7	Fluorene	7.4	U	184	176	96	150	82	16	10-164/72
193-39-5	Indeno(1,2,3-cd)pyrene	7.4	U	184	69.2	38	83.6	46	19	10-150/73
90-12-0	1-Methylnaphthalene	7.4	U	184	130	71	130	71	0	10-154/82
91-57-6	2-Methylnaphthalene	7.4	U	184	112	61	116	63	4	10-171/75
91-20-3	Naphthalene	7.4	U	184	21.2	12	24.0	13	12	10-138/82
85-01-8	Phenanthrene	7.4	U	184	344	187	319	174	8	10-191/77
129-00-0	Pyrene	7.4	U	184	119	65	130	71	9	10-150/66

CAS No.	Surrogate Recoveries	MS	MSD	T61249-3R	Limits
4165-60-0	Nitrobenzene-d5	58%	47%	36%	10-127%
321-60-8	2-Fluorobiphenyl	42%	46%	61%	11-133%
1718-51-0	Terphenyl-d14	77%	89%	69%	15-187%

(a) Internal standards are not within the advisory limits. Confirmed by associated ms/msd.

Gulf Coast ACCUTEST LABORATORIES

GC Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBB157-MB	BB0002858.D	1	10/19/10	AT	n/a	n/a	GBB157

The QC reported here applies to the following samples: **Method:** SW846 8015

T61792-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	5.0	0.30	mg/kg	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	102%	46-127%
98-08-8	aaa-Trifluorotoluene	108%	44-120%

Blank Spike Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GBB157-BS	BB0002856.D	1	10/19/10	AT	n/a	n/a	GBB157

The QC reported here applies to the following samples: **Method:** SW846 8015

T61792-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	0.4	0.382	96	78-115

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	106%	46-127%
98-08-8	aaa-Trifluorotoluene	116%	44-120%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T61792-1MS	BB0002876.D	1	10/19/10	AT	n/a	n/a	GBB157
T61792-1MSD	BB0002877.D	1	10/19/10	AT	n/a	n/a	GBB157
T61792-1	BB0002875.D	1	10/19/10	AT	n/a	n/a	GBB157

The QC reported here applies to the following samples: **Method:** SW846 8015

T61792-1

CAS No.	Compound	T61792-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	16.8		24.8	43.7	109	44.5	112	2	78-115/14

CAS No.	Surrogate Recoveries	MS	MSD	T61792-1	Limits
460-00-4	4-Bromofluorobenzene	184%* [a]	166%* [a]	151%* [a]	46-127%
98-08-8	aaa-Trifluorotoluene	115%	116%	110%	44-120%

(a) Outside control limits due to matrix interference. Confirmed by MS/MSD.

Gulf Coast ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16389-MB	JJ7815.D	1	10/19/10	HD	10/16/10	OP16389	GJB77

The QC reported here applies to the following samples: **Method:** SW846 8015 M

T61792-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C10-C28)	ND	3.3	2.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	91%	33-115%

Blank Spike Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16389-BS	JJ7816.D	1	10/19/10	HD	10/16/10	OP16389	GJF77

The QC reported here applies to the following samples: **Method:** SW846 8015 M

T61792-1

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH (C10-C28)	33.1	18.2	55	45-107

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	68%	33-115%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T61792
Account: CCSARCO Olsson Associates
Project: TR 31-13 Pit Closure

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP16389-MS	JJ7817.D	1	10/19/10	HD	10/16/10	OP16389	GJB77
OP16389-MSD	JJ7818.D	1	10/19/10	HD	10/16/10	OP16389	GJF77
T61802-1	JJ7820.D	1	10/19/10	HD	10/16/10	OP16389	GJF77

The QC reported here applies to the following samples: **Method:** SW846 8015 M

T61792-1

CAS No.	Compound	T61802-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH (C10-C28)	91.7		38.7	149	148* [a]	95.5	10* [a]	44*	45-107/34

CAS No.	Surrogate Recoveries	MS	MSD	T61802-1	Limits
84-15-1	o-Terphenyl	75%	60%	69%	33-115%

(a) Outside control limits due to high level in sample relative to spike amount.

Gulf Coast ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13117 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/18/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.017	.00083	.0067	0.00044	<0.017

Associated samples MP13117: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13117
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/18/10 10/18/10

Metal	T61756-1 Original	DUP	RPD	QC Limits	T61756-1 Original	MS	Spikelot HGTXWS1	% Rec	QC Limits
Mercury	0.012	0.017	34.5 (a)	0-20	0.012	0.26	0.261	95.1	75-125

Associated samples MP13117: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13117 Methods: SW846 7471A
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/18/10

Metal	T61756-1 Original	MSD	Spikelot HGTXWS1	% Rec	MSD RPD	QC Limit
Mercury	0.012	0.26	0.257	96.4	0.0	

Associated samples MP13117: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13117
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 10/18/10

Metal	LCS Result	Spikelot HGLCD054	% Rec	QC Limits
Mercury	7.0	7.34	95.4	72-128

Associated samples MP13117: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/19/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.82	2.2		
Antimony	0.50	.11	.14		
Arsenic	0.50	.089	.1		
Barium	10	.007	.03	0.0080	<10
Beryllium	0.25	.0055	.01		
Boron	5.0	.054	.11		
Cadmium	0.25	.013	.05	-0.043	<0.25
Calcium	250	.27	.86		
Chromium	0.50	.055	.035	-0.083	<0.50
Cobalt	2.5	.025	.09		
Iron	5.0	.65	1.1		
Lead	0.50	.079	.2	0.058	<0.50
Magnesium	250	.34	.58		
Manganese	0.75	.01	.035		
Molybdenum	0.50	.048	.075		
Nickel	2.0	.048	.065	-0.055	<2.0
Potassium	250	2.7	16		
Selenium	0.50	.16	.12	-0.075	<0.50
Silver	0.50	.043	.04	-0.0090	<0.50
Sodium	250	6.5	13		
Strontium	1.0	.0085	.025		
Thallium	0.50	.16	.25		
Tin	1.0	.09	.12		
Titanium	1.0	.015	.045		
Vanadium	2.5	.03	.06		
Zinc	1.0	.025	.2	-0.028	<1.0

Associated samples MP13120: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/19/10					10/19/10	
Metal	T61312-1 Original	DUP	RPD	QC Limits	T61312-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony	anr								
Arsenic	anr								
Barium	418	443	5.8	0-20	418	435	26.4	64.3 (b)	80-120
Beryllium	anr								
Boron									
Cadmium	0.28	0.23	19.6	0-20	0.28	22.0	26.4	82.1	80-120
Calcium									
Chromium	40.4	46.1	13.2	0-20	40.4	63.3	26.4	86.6	80-120
Cobalt									
Iron									
Lead	15.3	15.8	3.2	0-20	15.3	36.3	26.4	79.4N(c)	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel	24.2	24.6	1.6	0-20	24.2	44.5	26.4	76.8N(c)	80-120
Potassium									
Selenium									
Silver	0.10	0.14	33.3 (a)	0-20	0.10	24.0	26.4	90.4	80-120
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	83.7	93.9	11.5	0-20	83.7	115	26.4	118.4	80-120

Associated samples MP13120: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) RPD acceptable due to low duplicate and sample concentrations.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(c) Spike recovery indicates possible matrix interference.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/19/10

Metal	T61312-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony	anr					
Arsenic	anr					
Barium	418	441	26.6	86.6	1.4	20
Beryllium	anr					
Boron						
Cadmium	0.28	21.0	26.6	78.0N(a)	4.7	20
Calcium						
Chromium	40.4	61.8	26.6	80.6	2.4	20
Cobalt						
Iron						
Lead	15.3	34.5	26.6	72.3N(a)	5.1	20
Magnesium						
Manganese						
Molybdenum						
Nickel	24.2	42.6	26.6	69.3N(a)	4.4	20
Potassium						
Selenium						
Silver	0.10	23.1	26.6	86.6	3.8	20
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Vanadium						
Zinc	83.7	112	26.6	106.6	2.6	20

Associated samples MP13120: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/19/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	362	348	104.0	81-119
Beryllium	anr			
Boron				
Cadmium	168	187	89.8	82-118
Calcium				
Chromium	85.1	89.5	95.1	79-121
Cobalt				
Iron				
Lead	153	172	89.0	79-120
Magnesium				
Manganese				
Molybdenum				
Nickel	92.9	99	93.8	81-119
Potassium				
Selenium	133	148	89.9	78-121
Silver	62.9	66	95.3	66-134
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	363	394	92.1	80-119

Associated samples MP13120: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13120 Methods: SW846 6010B
Matrix Type: SOLID Units: ug/l

Prep Date: 10/19/10

Metal	T61312-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic	anr			
Barium	6170	7210	16.9*(a)	0-10
Beryllium	anr			
Boron				
Cadmium	4.18	0.00	100.0(b)	0-10
Calcium				
Chromium	595	725	21.8*(a)	0-10
Cobalt				
Iron				
Lead	226	276	21.8*(a)	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel	357	436	22.1*(a)	0-10
Potassium				
Selenium				
Silver	1.54	0.00	100.0(b)	0-10
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Vanadium				
Zinc	1230	1500	21.4*	0-10

Associated samples MP13120: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13122
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/19/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12		
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1		
Barium	200	.97	3.4		
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09		
Calcium	5000	7.4	25	11.0	<5000
Chromium	10	.23	.27		
Cobalt	50	.15	.22		
Copper	25	1.1	5.9		
Iron	100	1.1	23		
Lead	3.0	1	1.8		
Lithium	300	2	2		
Magnesium	5000	7.7	7.9	0.21	<5000
Manganese	15	.054	1.9		
Molybdenum	10	.39	.2		
Nickel	40	.69	1.4		
Potassium	5000	39	45		
Selenium	5.0	1.5	.98		
Silver	10	1.2	.24		
Sodium	5000	9.2	100	50.2	<5000
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5		

Associated samples MP13122: T61792-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13122
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/19/10

Metal	T61849-2A Original	DUP	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	258000	222000	15.0	0-20
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	49600	42200	16.1	0-20
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	11000	9710	12.5	0-20
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13122: T61792-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13122
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 10/19/10

Metal	T61849-2A Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	258000	250000	3.1	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	49600	47900	3.4	0-10
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium	11000	10900	0.9	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13122: T61792-1A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/20/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.41	.73		
Antimony	0.50	.05	.085		
Arsenic	0.50	.085	.085		
Barium	10	.049	.069		
Beryllium	0.25	.0028	.0055		
Boron	5.0	.07	.17		
Cadmium	0.25	.0055	.014		
Calcium	250	.37	1.3		
Chromium	0.50	.012	.023		
Cobalt	2.5	.0075	.03		
Copper	1.3	.056	.056	0.044	<1.3
Iron	5.0	.057	1.1		
Lead	0.50	.05	.05		
Lithium	15	.1			
Magnesium	250	.38	1.3		
Manganese	0.75	.0027	.037		
Molybdenum	0.50	.02	.025		
Nickel	2.0	.035	.057		
Potassium	250	2	10		
Selenium	0.50	.077	.14		
Silver	0.50	.058	.058		
Sodium	250	.46	1.6		
Strontium	1.0	.0031	.059		
Thallium	0.50	.034	.04		
Tin	1.0	.035	.035		
Titanium	1.0	.015	.029		
Vanadium	2.5	.015	.034		
Zinc	1.0	.026	.084		

Associated samples MP13131: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:			10/20/10					10/20/10	
Metal	T61312-1 Original	DUP	RPD	QC Limits	T61312-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper	23.0	23.5	2.2	0-20	23.0	43.3	25.5	79.6N(a)	80-120
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP13131: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131 Methods: SW846 6010B
Matrix Type: SOLID Units: mg/kg

Prep Date: 10/20/10

Metal	T61312-1 Original	MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper	23.0	45.2	25.7	86.5	4.3	20
Iron						
Lead						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc						

Associated samples MP13131: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 10/20/10

Metal	LCS Result	Spikelot MPLCD054	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	125	129	96.9	84-117
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13131: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

QC Batch ID: MP13131 Methods: SW846 6010B
Matrix Type: SOLID Units: ug/l

Prep Date: 10/20/10

Metal	T61312-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper	328	378	15.2*(a)	0-10
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP13131: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

Gulf Coast ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN26097	2.0	<2.0	mg/kg	40	40.4	100.9	80-120%
Specific Conductivity	GN26149	1.0	<1.0	umhos/cm				

Associated Samples:
Batch GN26097: T61792-1
Batch GN26149: T61792-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GN26097	T61556-1	mg/kg	0.77	<2.4	10.0	0-20%
Solids, Percent	GN26081	T61630-7	%	79	80	1.3	0-5%
Specific Conductivity	GN26149	T61556-1	umhos/cm	1860	1860	0.0	0-20%
pH	GN26131	T61792-1	su	8.51	8.47	0.5	0-20%

Associated Samples:
Batch GN26081: T61792-1
Batch GN26097: T61792-1
Batch GN26131: T61792-1
Batch GN26149: T61792-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T61792
Account: CCSARCO - Olsson Associates
Project: TR 31-13 Pit Closure

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GN26097	T61556-1	mg/kg	0.77	48.13	46.0	94.0	75-125%

Associated Samples:
Batch GN26097: T61792-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

Gulf Coast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest New Jersey)

Includes the following where applicable:

- Chain of Custody

SUBCONTRACT COC

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

FED-EX Tracking # 7963 4980 7869 | Bottle Order Control # | Accutest Quote # | Accutest Job #

Client Information

Company Name: Accutest Gulf Coast
Project Contact: Sylvia Garza | Email: sylviag@accutest.com
Address: 10165 Harwin Dr. Suite 150
City: Houston | State: TX | Zip: 77036
Phone No.: 713-271-4700

Subcontract Information

Subcontract Laboratory: ACCUTEST NEW JERSEY
Laboratory Contact: Sample Receiving | Email:
Address:
City | State | Zip
Phone No.

Requested Analyses

As (6020)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Liquid
SOL - Other Solid

Accutest Sample Number	Collection Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	DI/MeOH	TSP	NONE	OTHER	As (6020)	LAB USE ONLY
T61792-1	10/13/2010		SO	1									X	ME14

Turnaround Time (Business days)

- [ ] STANDARD — Approved By:/ Date:
- [ ] 7 Day
- [ ] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY* — 10/22/2010
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [x] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other_NARR

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

• 202 NAM 10-16-WAM

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler / Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	ALGC	1605 10/15/10	1 FEDEX	2 FEDEX	10-16-10 950	2
3			3	4		4
5			5	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 2.1°C

10.1 10

T61792: Chain of Custody
Page 1 of 2
Accutest New Jersey

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: T61792 **Client:** **Immediate Client Services Action Required:** No

Date / Time Received: 10/16/2010 **Delivery Method:** **Client Service Action Required at Login:** No

Project: **No. Coolers:** 1 **Airbill #'s:**

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservatio	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Gulf Coast ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

(Accutest New Jersey)

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T61792
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55257
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/21/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.35	.52		
Arsenic	0.50	.045	.11	-0.018	<0.50
Barium	0.50	.028	.038		
Beryllium	0.25	.0075	.03		
Boron	2.5	.26	.25		
Cadmium	0.25	.029	.016		
Calcium	130	2.4	3.1		
Chromium	2.0	.029	.29		
Cobalt	0.25	.001	.016		
Copper	2.0	.054	.036		
Iron	25	.41	1.9		
Lead	0.25	.0095	.012		
Magnesium	130	.2	1.4		
Manganese	0.25	.008	.02		
Molybdenum	0.50	.097	.096		
Nickel	2.0	.021	.026		
Potassium	130	1.5	3.9		
Selenium	0.50	.029	.058		
Silver	1.0	.004	.022		
Sodium	130	.48	1.3		
Strontium	0.50	.004	.0082		
Thallium	0.25	.0075	.0051		
Tin	0.50	.035			
Titanium	0.50	.023	.27		
Uranium	0.50				
Vanadium	2.0	.23	.79		

Associated samples MP55257: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55257
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/21/10

Metal	T61849-1 Original	MS	Spikelot MPIRS1	% Rec	QC Limits
Aluminum					
Arsenic	2.4	449	413	108.1	75-125
Barium					
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	anr				
Iron					
Lead	anr				
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	anr				
Silver	anr				
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium					
Vanadium					

Associated samples MP55257: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T61792
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55257
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/21/10

Metal	T61849-1 Original	MSD	Spikelot MPIRS1	% Rec	MSD RPD	QC Limit
Aluminum						
Arsenic	2.4	462	417	110.1	2.9	20
Barium						
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	anr					
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium						
Vanadium						

Associated samples MP55257: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T61792
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55257
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 10/21/10

Metal	BSP Result	Spikelot MPIRS1	% Rec	QC Limits
Aluminum				
Arsenic	407	400	101.8	80-120
Barium				
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium				

Associated samples MP55257: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T61792
Account: ALGC - Accutest Laboratories Gulf Coast, Inc.
Project: CCSARCO: TR 31-13 Pit Closure

QC Batch ID: MP55257
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/21/10

Metal	T61849-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Arsenic	23.3	22.0	5.6	0-10
Barium				
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron				
Lead	anr			
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	anr			
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium				
Vanadium				

Associated samples MP55257: T61792-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

11/12/10

Technical Report for

Olsson Associates

TR31-13 Pit Closure 010-1955

Accutest Job Number: D18792

Sampling Dates: 10/29/10 - 11/03/10

Report to:

Olsson Associates
826 21 1/2 Road
Grand Junction, CO 81505
tdobransky@oaconsulting.com

ATTN: Tim Dobransky

Total number of pages in report: **89**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

John Hamilton
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

Sections: 1 2 3 4 5 6 7 8 9 10 11 12

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Sample Summary

Olsson Associates

Job No: D18792

TR31-13 Pit Closure 010-1955

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D18792-1	10/29/10	13:30	JV	11/05/10	SO	Soil	TR-31-13 BG1
D18792-2	10/29/10	13:40	JV	11/05/10	SO	Soil	TR-31-13 BG2
D18792-3	10/29/10	13:50	JV	11/05/10	SO	Soil	TR-31-13 BG3
D18792-4	10/29/10	14:05	JV	11/05/10	SO	Soil	TR-31-13 BG4
D18792-4A	10/29/10	14:05	JV	11/05/10	SO	Soil	TR-31-13 BG4
D18792-5	10/29/10	15:00	JV	11/05/10	SO	Soil	TR-31-13 BG5
D18792-6	11/03/10	13:30	JV	11/05/10	SO	Soil	TR-31-13 PF2
D18792-6A	11/03/10	13:30	JV	11/05/10	SO	Soil	TR-31-13 PF2
D18792-7	11/03/10	14:10	JV	11/05/10	SO	Soil	TR-31-13 PF3
D18792-7A	11/03/10	14:10	JV	11/05/10	SO	Soil	TR-31-13 PF3

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Olsson Associates	**Job No**	D18792
Site:	TR31-13 Pit Closure 010-1955	**Report Dat**	11/12/2010 2:43:10 PM

On 11/05/2010, eight (8) samples, 0 Trip Blanks, and 0 Field Blanks were received at Accutest Mountain States (AMS) at a temperature of 3.0°C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D18792 was assigned to the project. The lab sample IDs, client sample IDs, and dates of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** V3V427

- All samples were analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D18792-6MS and D18792-6MSD were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP2753

- All samples were extracted and analyzed within the recommended method holding time.
- Samples D18793-2MS and D18793-2MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.
- The matrix spike and matrix spike duplicate (MS/MSD) recoveries of 2-Methylnaphthalene are outside control limits. Probable cause due to matrix interference. Refer to the lab control or spike blank for recovery information.
- The RPDs for the MS and MSD recoveries of several analytes are outside control limits for sample OP2753-MSD. The high RPD is due to possible sample nonhomogeneity.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGA529

- All samples were analyzed within the recommended method holding time.
- Samples D18793-1MS and D18793-1MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP2757

- All samples were extracted and analyzed within the recommended method holding time.
- Samples D18792-6MS and D18792-6MSD were used as the QC samples indicated.
- The method blank for this batch meets method specific criteria.

Metals By Method SW846 6010B

Matrix	AQ	Batch ID:	MP3352

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D18793-2AMS and D18793-2AMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery of Calcium is outside control limits. The spike recovery indicates possible matrix interference. Refer to the lab control or spike blank for recovery information.
- The matrix spike (MS) recovery of Sodium Is outside control limits. The spike amount is low relative to the sample amount. Refer to the lab control or spike blank for recovery information.

Matrix	SO	Batch ID:	MP3336

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D18792-4MS, D18792-4MSD, and D18792-4SDL were used as the QC samples for the metals analysis.
- The matrix spike (MS) recoveries of Selenium and Silver are outside control limits. The spike recoveries indicate possible matrix interference and/or sample nonhomogeneity. Refer to the lab control or spike blank for recovery information.
- The serial dilution RPDs for Cadmium, Chromium, Nickel, and Selenium are outside control limits for sample MP3336-SD1. The percent differences are acceptable for Cadmium and Selenium due to low initial sample concentration (< 50 times IDL).
- MP3336-SD1 for Cadmium and Nickel: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020

Matrix	SO	Batch ID:	MP3337

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D18792-4MS, D18792-4MSD, and D18792-4SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471A

Matrix	SO	Batch ID:	MP3359

- All samples were digested and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.
- Samples D18792-4MS and D18792-4MSD were used as the QC samples for the Mercury analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix	SO	Batch ID:	M:GN33405

- The data for ASTM D1498-76M meets quality control requirements.
- Redox Potential Vs H2: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method DEPT.OF AG, BOOK N9

Matrix	SO	Batch ID:	GP3163

- All samples were prepared and analyzed within the recommended method holding time.
- The method blank for this batch meets method specific criteria.

Wet Chemistry By Method LADNR29B

Matrix	SO	Batch ID:	MP3352

- Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

Wet Chemistry By Method SM19 2540B M

Matrix	SO	Batch ID:	GN7112

- The data for SM19 2540B M meets quality control requirements.

Wet Chemistry By Method SW846 3060/7196A M

Matrix	SO	Batch ID:	R5279

- The data for SW846 3060/7196A M meets quality control requirements.
- Trivalent Chromium: Calculated as: (Chromium) - (Hexavalent Chromium)

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	Batch ID:	M:GP12257

- The data for SW846 3060A/7196A meets quality control requirements.
- Hexavalent Chromium: Analysis performed at Accutest Laboratories, Marlborough, MA.

Wet Chemistry By Method SW846 9045C

Matrix	SO	Batch ID:	GN7130

- The following samples were run outside of holding time for method SW846 9045C: D18792-4, D18792-6, and D18792-7.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Accutest Mountain States	**Job No**	D18792
Site:	CORCCOGJ: TR31-13 Pit Closure 010-1955	**Report Date**	11/12/2010 2:41:34 PM

3 Sample(s) were collected on between 10/29/2010 and 11/03/2010 and were received at Accutest on 11/05/2010 properly preserved, at 1.7 Deg. C and intact. These Samples received an Accutest job number of D18792. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Wet Chemistry By Method ASTM D1498-76M

Matrix SO **Batch ID:** GN33405

- Sample(s) D18792-4DUP were used as the QC samples for Redox Potential Vs H2.

Wet Chemistry By Method SW846 3060A/7196A

Matrix SO **Batch ID:** GP12257

- All samples were distilled within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D18583-2DUP, D18583-2MS were used as the QC samples for Chromium, Hexavalent.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(D18792).

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TR-31-13 BG1		
Lab Sample ID:	D18792-1	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	75.5
Project:	TR31-13 Pit Closure 010-1955		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	9.4	0.50	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1113
(2) Prep QC Batch: MP3337

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG2		
Lab Sample ID:	D18792-2	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	76.2
Project:	TR31-13 Pit Closure 010-1955		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.8	0.50	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1113
(2) Prep QC Batch: MP3337

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG3		
Lab Sample ID:	D18792-3	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	80.6
Project:	TR31-13 Pit Closure 010-1955		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.6	0.47	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1113
(2) Prep QC Batch: MP3337

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG4		
Lab Sample ID:	D18792-4	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	79.3
Project:	TR31-13 Pit Closure 010-1955		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	9.5	0.49	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [3]	SW846 3050B [5]
Barium	282	1.2	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.2	1.2	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	29.4	1.2	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	21.3	0.61	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	14.4	6.1	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.12	0.12	mg/kg	1	11/10/10	11/10/10	JM	SW846 7471A [2]	SW846 7471A [6]
Nickel	17.3	3.7	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 6.1	6.1	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.7	3.7	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	54.1	3.7	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1109
(2) Instrument QC Batch: MA1110
(3) Instrument QC Batch: MA1113
(4) Prep QC Batch: MP3336
(5) Prep QC Batch: MP3337
(6) Prep QC Batch: MP3359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG4		
Lab Sample ID:	D18792-4	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	79.3
Project:	TR31-13 Pit Closure 010-1955		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	1.3	0.50	mg/kg	1	11/11/10 14:45	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	28.1	1.7	mg/kg	1	11/11/10 14:45	AMA	SW846 3060/7196A M
Redox Potential Vs H2 [a]	381		mv	1	11/11/10	AMA	ASTM D1498-76M
Solids, Percent	79.3		%	1	11/08/10	CJ	SM19 2540B M
Specific Conductivity	1080	1.0	umhos/cm	1	11/09/10	CJ	DEPT.OF AG, BOOK N9
pH	7.07		su	1	11/08/10 15:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG4		
Lab Sample ID:	D18792-4A	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	79.3
Project:	TR31-13 Pit Closure 010-1955		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	74.6	2.0	mg/l	1	11/09/10	11/11/10	JM	SW846 6010B [2]	EPA 200.7 [3]
Magnesium	17.7	1.0	mg/l	1	11/09/10	11/09/10	GJ	SW846 6010B [1]	EPA 200.7 [3]
Sodium	129	2.0	mg/l	1	11/09/10	11/09/10	GJ	SW846 6010B [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA1109
(2) Instrument QC Batch: MA1115
(3) Prep QC Batch: MP3352

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG4		
Lab Sample ID:	D18792-4A	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	79.3
Project:	TR31-13 Pit Closure 010-1955		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	3.48		ratio	1	11/11/10 14:56	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 BG5		
Lab Sample ID:	D18792-5	**Date Sampled:**	10/29/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	76.9
Project:	TR31-13 Pit Closure 010-1955		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	5.7	0.49	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA1113
(2) Prep QC Batch: MP3337

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846 8260B	**Percent Solids:**	77.5
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V07839.D	1	11/09/10	DC	n/a	n/a	V3V427
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.00 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	79	24	ug/kg	
108-88-3	Toluene	ND	160	79	ug/kg	
100-41-4	Ethylbenzene	ND	160	32	ug/kg	
	m,p-Xylene	126	320	55	ug/kg	J
95-47-6	o-Xylene	ND	160	55	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	86%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%
17060-07-0	1,2-Dichloroethane-D4	84%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846 8270C BY SIM SW846 3540C	**Percent Solids:**	77.5
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G02299.D	5	11/10/10	TMB	11/06/10	OP2753	E3G69
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	43	40	ug/kg	
208-96-8	Acenaphthylene	ND	210	44	ug/kg	
120-12-7	Anthracene	ND	43	28	ug/kg	
56-55-3	Benzo(a)anthracene	ND	43	42	ug/kg	
50-32-8	Benzo(a)pyrene	ND	43	27	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	43	31	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	43	27	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	43	27	ug/kg	
218-01-9	Chrysene	ND	43	21	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	43	32	ug/kg	
206-44-0	Fluoranthene	ND	43	26	ug/kg	
86-73-7	Fluorene	ND	43	42	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	43	28	ug/kg	
90-12-0	1-Methylnaphthalene	57.1	43	38	ug/kg	
91-57-6	2-Methylnaphthalene	161	210	65	ug/kg	J
91-20-3	Naphthalene	ND	210	47	ug/kg	
85-01-8	Phenanthrene	ND	43	34	ug/kg	
129-00-0	Pyrene	ND	43	29	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		10-193%
321-60-8	2-Fluorobiphenyl	57%		20-138%
1718-51-0	Terphenyl-d14	75%		17-174%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846 8015B	**Percent Solids:**	77.5
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA9751.D	1	11/07/10	BR	n/a	n/a	GGA529
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	63.3	16	16	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	101%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846-8015B SW846 3550B	**Percent Solids:**	77.5
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE4742.D	1	11/08/10	JB	11/08/10	OP2757	GFE252
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	114	17	11	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		63-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TR-31-13 PF2
Lab Sample ID: D18792-6
Matrix: SO - Soil
Project: TR31-13 Pit Closure 010-1955

Date Sampled: 11/03/10
Date Received: 11/05/10
Percent Solids: 77.5

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.3	0.47	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [3]	SW846 3050B [5]
Barium	452	1.2	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Cadmium	< 1.2	1.2	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Chromium	41.0	1.2	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Copper	21.4	0.59	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Lead	14.3	5.9	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Mercury	< 0.12	0.12	mg/kg	1	11/10/10	11/10/10	JM	SW846 7471A [2]	SW846 7471A [6]
Nickel	23.8	3.5	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Selenium	< 5.9	5.9	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Silver	< 3.5	3.5	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]
Zinc	68.2	3.5	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [4]

(1) Instrument QC Batch: MA1109
(2) Instrument QC Batch: MA1110
(3) Instrument QC Batch: MA1113
(4) Prep QC Batch: MP3336
(5) Prep QC Batch: MP3337
(6) Prep QC Batch: MP3359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	77.5
Project:	TR31-13 Pit Closure 010-1955		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	1.7	0.51	mg/kg	1	11/11/10 14:48	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	39.3	1.7	mg/kg	1	11/11/10 14:48	AMA	SW846 3060/7196A M
Redox Potential Vs H2 [a]	372		mv	1	11/11/10	AMA	ASTM D1498-76M
Solids, Percent	77.5		%	1	11/08/10	CJ	SM19 2540B M
Specific Conductivity	869	1.0	umhos/cm	1	11/09/10	CJ	DEPT.OF AG, BOOK N9
pH	8.55		su	1	11/08/10 15:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6A	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	77.5
Project:	TR31-13 Pit Closure 010-1955		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	31.9	2.0	mg/l	1	11/09/10	11/11/10	JM	SW846 6010B [2]	EPA 200.7 [3]
Magnesium	6.74	1.0	mg/l	1	11/09/10	11/09/10	GJ	SW846 6010B [1]	EPA 200.7 [3]
Sodium	165	2.0	mg/l	1	11/09/10	11/09/10	GJ	SW846 6010B [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA1109
(2) Instrument QC Batch: MA1115
(3) Prep QC Batch: MP3352

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF2		
Lab Sample ID:	D18792-6A	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	77.5
Project:	TR31-13 Pit Closure 010-1955		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	6.92		ratio	1	11/11/10 15:02	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846 8260B	**Percent Solids:**	80.0
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V07843.D	1	11/09/10	DC	n/a	n/a	V3V427
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.00 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	75	23	ug/kg	
108-88-3	Toluene	ND	150	75	ug/kg	
100-41-4	Ethylbenzene	ND	150	30	ug/kg	
	m,p-Xylene	ND	300	53	ug/kg	
95-47-6	o-Xylene	ND	150	53	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	85%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%
17060-07-0	1,2-Dichloroethane-D4	78%		70-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846 8270C BY SIM SW846 3540C	**Percent Solids:**	80.0
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G02300.D	5	11/10/10	TMB	11/06/10	OP2753	E3G69
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	42	39	ug/kg	
208-96-8	Acenaphthylene	ND	210	43	ug/kg	
120-12-7	Anthracene	ND	42	27	ug/kg	
56-55-3	Benzo(a)anthracene	ND	42	41	ug/kg	
50-32-8	Benzo(a)pyrene	ND	42	26	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	42	30	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	42	26	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	42	26	ug/kg	
218-01-9	Chrysene	ND	42	21	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	42	31	ug/kg	
206-44-0	Fluoranthene	ND	42	26	ug/kg	
86-73-7	Fluorene	ND	42	41	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	42	27	ug/kg	
90-12-0	1-Methylnaphthalene	ND	42	37	ug/kg	
91-57-6	2-Methylnaphthalene	ND	210	64	ug/kg	
91-20-3	Naphthalene	ND	210	46	ug/kg	
85-01-8	Phenanthrene	ND	42	33	ug/kg	
129-00-0	Pyrene	ND	42	28	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%		10-193%
321-60-8	2-Fluorobiphenyl	61%		20-138%
1718-51-0	Terphenyl-d14	70%		17-174%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846 8015B	**Percent Solids:**	80.0
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA9752.D	1	11/07/10	BR	n/a	n/a	GGA529
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	25.0	15	15	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	92%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
Method:	SW846-8015B SW846 3550B	**Percent Solids:**	80.0
Project:	TR31-13 Pit Closure 010-1955		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FE4743.D	1	11/08/10	JB	11/08/10	OP2757	GFE252
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	90.1	17	11	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	93%		63-130%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	80.0
Project:	TR31-13 Pit Closure 010-1955		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	6.8	0.52	mg/kg	5	11/08/10	11/10/10	JM	SW846 6020 [4]	SW846 3050B [6]
Barium	309	1.3	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Cadmium	< 1.3	1.3	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Chromium	37.9	1.3	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Copper	17.7	0.65	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Lead	14.3	6.5	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Mercury	< 0.12	0.12	mg/kg	1	11/10/10	11/10/10	JM	SW846 7471A [2]	SW846 7471A [7]
Nickel	19.5	3.9	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Selenium	< 6.5	6.5	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Silver	< 3.9	3.9	mg/kg	1	11/08/10	11/09/10	GJ	SW846 6010B [1]	SW846 3050B [5]
Zinc	47.1	3.9	mg/kg	1	11/08/10	11/10/10	GJ	SW846 6010B [3]	SW846 3050B [5]

(1) Instrument QC Batch: MA1109
(2) Instrument QC Batch: MA1110
(3) Instrument QC Batch: MA1111
(4) Instrument QC Batch: MA1113
(5) Prep QC Batch: MP3336
(6) Prep QC Batch: MP3337
(7) Prep QC Batch: MP3359

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	80.0
Project:	TR31-13 Pit Closure 010-1955		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	1.7	0.47	mg/kg	1	11/11/10 14:48	AMA	SW846 3060A/7196A
Chromium, Trivalent [b]	36.2	1.8	mg/kg	1	11/11/10 14:48	AMA	SW846 3060/7196A M
Redox Potential Vs H2 [a]	372		mv	1	11/11/10	AMA	ASTM D1498-76M
Solids, Percent	80		%	1	11/08/10	CJ	SM19 2540B M
Specific Conductivity	976	1.0	umhos/cm	1	11/09/10	CJ	DEPT.OF AG, BOOK N9
pH	8.63		su	1	11/08/10 15:15	JD	SW846 9045C

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7A	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	80.0
Project:	TR31-13 Pit Closure 010-1955		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	35.8	2.0	mg/l	1	11/09/10	11/11/10	JM	SW846 6010B [2]	EPA 200.7 [3]
Magnesium	7.06	1.0	mg/l	1	11/09/10	11/11/10	JM	SW846 6010B [2]	EPA 200.7 [3]
Sodium	187	2.0	mg/l	1	11/09/10	11/10/10	GJ	SW846 6010B [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA1111
(2) Instrument QC Batch: MA1115
(3) Prep QC Batch: MP3352

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TR-31-13 PF3		
Lab Sample ID:	D18792-7A	**Date Sampled:**	11/03/10
Matrix:	SO - Soil	**Date Received:**	11/05/10
		Percent Solids:	80.0
Project:	TR31-13 Pit Closure 010-1955		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	7.47		ratio	1	11/11/10 15:08	JM	LADNR29B

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

D18792

ACCUTEST Laboratories

4036 Youngfield St., Wheat Ridge, CO 80033; 303-425-6021; 303-425-6854

FED-EX Tracking # | Bottle Order Control #

Accutest Quote # | Accutest Job #

Client / Reporting Information

Company Name: Olsson Associates

Project Contact: Tim Dobransky | E-Mail: tdobransky@oaconsulting.com

Address: 826 21 1/2 Road

City: Grand Junction | State: CO | Zip: 81505

Phone No.: 970-263-7800 | Fax No.:

Samplers's Name: Jess Vann | 970 250-1320

Project Information

Project Name / No.: TR - 31-13 Pit Closur 010-1955

Bill to: SAME | Invoice Attn.:

Address:

City: | State: | Zip:

Phone No.: | Fax No.:

Client Purchase Order #:

Requested Analyses

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	EnCore	NaHSO4	MEOH	NONE	Arsenic	EC, pH, SAR, Metals from 910 list	910 list	LAB USE ONLY
	TR - 31-13 BG1	10/29/2010	1330	SO	1									X			01
	TR - 31-13 BG2	10/29/2010	1340	SO	1									X			02
	TR - 31-13 BG3	10/29/2010	1350	SO	1									X			03
	TR - 31-13 BG4	10/29/2010	1405	SO	3										X		04
	TR - 31-13 BG5	10/29/2010	1500	SO	1									X			05
	TR - 31-13 PF2	11/3/2010	1330	SO	5											X	06
	TR - 31-13 PF3	11/3/2010	1410	SO	5											X	07

Turnaround Time (Business days)

- [ ] 7 Day *STANDARD* — Approved By:/ Date:
- [ ] 7 Day (per contract)
- [X] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only

Commercial "B" = Results & Standard QC

Comments / Remarks

AMS FEDEX Account Number - 467721860

As limit is 0.39 mg/kg - if result is less than this, re-analyze sample via Method 6020

# of bottles = 4 oz jars.

Additional 1 gallon zip lock bags for BG4, PF2, PF3 for SAR

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		11-4-10 1900				
2					11-5 11:45	11/5/10
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp.
				#0	NA	3.0

D18792: Chain of Custody

Page 1 of 2

CHAIN OF CUSTODY

ACCUTEST

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #:	D18792
Accutest Quote #:	
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information			Analytical Information					
Name: Accutest Mountain States (AMS)			Name: Accutest - New England								
Address: 4036 Youngfield St.			Address: 495 Technology Center West, BLDG C								
City: Wheat Ridge,	State: CO	Zip: 80033	City: Marlborough	State: MA	Zip: 01752						
Send Report to: Tiffany Pham			Contact: Sample Management								
Any questions contact: Amanda Kissell											
Phone/Fax #: (303) 425-6021; (303)425-6854			Phone: (508) 481-6200								

	Collection				Preservation									
Field ID / Point of Collection	Date	Time		Matrix	# of bottles	HCL	NaOH	HNO3	H2So4	None	EH	XCRA			Comments
D18792 -4	10/29/10	1:30 PM		Soil	1						X	X			
-6		1:30 PM		Soil	1						X	X			
-7		2:05 PM		Soil	1						X	X			
-															
-															

Turnaround Information	Data Deliverable Information	Comments / Remarks
[X] 3 - 5 Business Day Rush — Approved By:	[ ] Commercial "A" [ ] PDF	Please use Colorado regulations and RLs.
[ ] Other _____ (Days)	[ ] Commercial "B" [ ] Compact Disk Deliverable	
	[ ] Commercial "BN" [ ] Electronic Delivery:	
	[ ] Reduced Tier 1 [ ] State Forms	
10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.	[ ] Full Tier 1 [ ] Other (Specify)	

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date & Time:	Received By:	Date & Time:
1		1	1
2		2	2
3		3	3

For Subcontract Laborartory Use Only

Seal #: Headspace: Yes [ ] No [ ] NA [ ]

Preserved where applicable: [ ]

Temperature °C _____ On Ice [ ]

D18792: Chain of Custody
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Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V427-MB1	3V07837.D	1	11/09/10	DC	n/a	n/a	V3V427

The QC reported here applies to the following samples: **Method:** SW846 8260B

D18792-6, D18792-7

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	15	ug/kg	
100-41-4	Ethylbenzene	ND	100	20	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
	m,p-Xylene	ND	200	35	ug/kg	
95-47-6	o-Xylene	ND	100	35	ug/kg	

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	87%	70-130%
460-00-4	4-Bromofluorobenzene	88%	70-130%
17060-07-0	1,2-Dichloroethane-D4	81%	70-130%

Blank Spike Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V427-BS1	3V07838.D	1	11/09/10	DC	n/a	n/a	V3V427

The QC reported here applies to the following samples: **Method:** SW846 8260B

D18792-6, D18792-7

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	50	50.8	102	68-130
100-41-4	Ethylbenzene	50	53.2	106	70-130
108-88-3	Toluene	50	51.4	103	70-130
	m,p-Xylene	50	47.9	96	53-130
95-47-6	o-Xylene	50	47.5	95	61-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	86%	70-130%
460-00-4	4-Bromofluorobenzene	88%	70-130%
17060-07-0	1,2-Dichloroethane-D4	82%	70-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D18792-6MS	3V07840.D	1	11/09/10	DC	n/a	n/a	V3V427
D18792-6MSD	3V07841.D	1	11/09/10	DC	n/a	n/a	V3V427
D18792-6	3V07839.D	1	11/09/10	DC	n/a	n/a	V3V427

The QC reported here applies to the following samples: **Method:** SW846 8260B

D18792-6, D18792-7

CAS No.	Compound	D18792-6 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		3950	4070	103	3950	100	3	55-140/30
100-41-4	Ethylbenzene	ND		3950	4320	109	4260	108	1	56-139/30
108-88-3	Toluene	ND		3950	4160	105	4120	104	1	57-144/30
	m,p-Xylene	126	J	3950	4070	100	4030	99	1	47-130/30
95-47-6	o-Xylene	ND		3950	3960	100	3900	99	2	51-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D18792-6	Limits
2037-26-5	Toluene-D8	84%	85%	86%	70-130%
460-00-4	4-Bromofluorobenzene	96%	96%	95%	70-130%
17060-07-0	1,2-Dichloroethane-D4	81%	80%	84%	70-130%

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2753-MB	3G02275.D	1	11/08/10	TMB	11/06/10	OP2753	E3G68

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D18792-6, D18792-7

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	6.7	6.2	ug/kg	
208-96-8	Acenaphthylene	ND	33	6.9	ug/kg	
120-12-7	Anthracene	ND	6.7	4.3	ug/kg	
56-55-3	Benzo(a)anthracene	ND	6.7	6.5	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.7	4.2	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.7	4.8	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	6.7	4.2	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.7	4.2	ug/kg	
218-01-9	Chrysene	ND	6.7	3.3	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.7	4.9	ug/kg	
206-44-0	Fluoranthene	ND	6.7	4.1	ug/kg	
86-73-7	Fluorene	ND	6.7	6.5	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.7	4.4	ug/kg	
90-12-0	1-Methylnaphthalene	ND	6.7	5.9	ug/kg	
91-57-6	2-Methylnaphthalene	ND	33	10	ug/kg	
91-20-3	Naphthalene	ND	33	7.4	ug/kg	
85-01-8	Phenanthrene	ND	6.7	5.3	ug/kg	
129-00-0	Pyrene	ND	6.7	4.5	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	49%	10-193%
321-60-8	2-Fluorobiphenyl	44%	20-138%
1718-51-0	Terphenyl-d14	62%	17-174%

Blank Spike Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2753-BS	3G02293.D	1	11/09/10	TMB	11/06/10	OP2753	E3G69

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D18792-6, D18792-7

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	59.4	71	40-136
208-96-8	Acenaphthylene	83.3	59.2	71	42-139
120-12-7	Anthracene	83.3	65.1	78	40-141
56-55-3	Benzo(a)anthracene	83.3	66.2	79	38-143
50-32-8	Benzo(a)pyrene	83.3	66.5	80	39-145
205-99-2	Benzo(b)fluoranthene	83.3	64.5	77	38-151
191-24-2	Benzo(g,h,i)perylene	83.3	66.6	80	35-136
207-08-9	Benzo(k)fluoranthene	83.3	66.1	79	38-147
218-01-9	Chrysene	83.3	66.2	79	39-137
53-70-3	Dibenzo(a,h)anthracene	83.3	65.7	79	35-139
206-44-0	Fluoranthene	83.3	65.5	79	34-132
86-73-7	Fluorene	83.3	61.5	74	41-136
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	63.6	76	31-144
90-12-0	1-Methylnaphthalene	83.3	58.9	71	36-130
91-57-6	2-Methylnaphthalene	83.3	58.3	70	40-131
91-20-3	Naphthalene	83.3	59.2	71	36-130
85-01-8	Phenanthrene	83.3	62.6	75	40-135
129-00-0	Pyrene	83.3	65.4	78	29-157

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	73%	10-193%
321-60-8	2-Fluorobiphenyl	71%	20-138%
1718-51-0	Terphenyl-d14	80%	17-174%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2753-MS	3G02297.D	5	11/10/10	TMB	11/06/10	OP2753	E3G69
OP2753-MSD	3G02298.D	5	11/10/10	TMB	11/06/10	OP2753	E3G69
D18793-2	3G02296.D	5	11/10/10	TMB	11/06/10	OP2753	E3G69

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D18792-6, D18792-7

CAS No.	Compound	D18793-2 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		110	64.2	58	64.4	59	0	20-151/30
208-96-8	Acenaphthylene	ND		110	60.8	55	59.0	54	3	23-156/30
120-12-7	Anthracene	ND		110	80.6	73	59.3	54	30	25-149/30
56-55-3	Benzo(a)anthracene	ND		110	98.8	90	70.4	64	34* [a]	22-157/30
50-32-8	Benzo(a)pyrene	ND		110	88.2	80	61.6	56	36* [a]	23-153/30
205-99-2	Benzo(b)fluoranthene	ND		110	91.4	83	63.3	58	36* [a]	22-161/30
191-24-2	Benzo(g,h,i)perylene	ND		110	83.3	76	62.4	57	29	20-158/30
207-08-9	Benzo(k)fluoranthene	ND		110	94.7	86	68.7	62	32* [a]	17-161/30
218-01-9	Chrysene	ND		110	95.0	86	67.0	61	35* [a]	16-159/30
53-70-3	Dibenzo(a,h)anthracene	ND		110	83.5	76	59.0	54	34* [a]	21-154/30
206-44-0	Fluoranthene	ND		110	96.9	88	68.1	62	35* [a]	16-140/30
86-73-7	Fluorene	ND		110	74.0	67	62.9	57	16	15-153/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		110	78.9	72	62.2	57	24	21-159/30
90-12-0	1-Methylnaphthalene	ND		110	60.3	55	62.5	57	4	10-148/30
91-57-6	2-Methylnaphthalene	ND		110	ND	0* [b]	ND	0* [b]	nc	10-181/30
91-20-3	Naphthalene	ND		110	60.0	55	58.0	53	3	10-176/30
85-01-8	Phenanthrene	ND		110	86.3	78	64.9	59	28	22-152/30
129-00-0	Pyrene	ND		110	93.4	85	65.6	60	35* [a]	10-200/30

CAS No.	Surrogate Recoveries	MS	MSD	D18793-2	Limits
4165-60-0	Nitrobenzene-d5	53%	53%	49%	10-193%
321-60-8	2-Fluorobiphenyl	55%	56%	50%	20-138%
1718-51-0	Terphenyl-d14	81%	57%	70%	17-174%

(a) High RPD due to possible sample nonhomogeneity.
(b) Outside control limits due to matrix interference. Refer to Blank Spike.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA529-MB	GA9745.D	1	11/07/10	BR	n/a	n/a	GGA529

The QC reported here applies to the following samples: **Method:** SW846 8015B

D18792-6, D18792-7

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	10	mg/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	101%	60-140%

Blank Spike Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA529-BS	GA9746.D	1	11/07/10	BR	n/a	n/a	GGA529

The QC reported here applies to the following samples: **Method:** SW846 8015B

D18792-6, D18792-7

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	95.8	87	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	106%	60-140%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D18793-1MS	GA9748.D	1	11/07/10	BR	n/a	n/a	GGA529
D18793-1MSD	GA9749.D	1	11/07/10	BR	n/a	n/a	GGA529
D18793-1	GA9747.D	1	11/07/10	BR	n/a	n/a	GGA529

The QC reported here applies to the following samples: **Method:** SW846 8015B

D18792-6, D18792-7

CAS No.	Compound	D18793-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		153	152	99	148	97	3	62-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D18793-1	Limits
120-82-1	1,2,4-Trichlorobenzene	116%	109%	90%	60-140%

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2757-MB	FE4738.D	1	11/08/10	JB	11/08/10	OP2757	GFE252

The QC reported here applies to the following samples: **Method:** SW846-8015B

D18792-6, D18792-7

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	93%	63-130%

Blank Spike Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2757-BS	FE4739.D	1	11/08/10	JB	11/08/10	OP2757	GFE252

The QC reported here applies to the following samples: **Method:** SW846-8015B

D18792-6, D18792-7

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	607	91	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	94%	63-130%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D18792
Account: CORCCOGJ Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP2757-MS	FE4740.D	1	11/08/10	JB	11/08/10	OP2757	GFE252
OP2757-MSD	FE4741.D	1	11/08/10	JB	11/08/10	OP2757	GFE252
D18792-6	FE4742.D	1	11/08/10	JB	11/08/10	OP2757	GFE252

The QC reported here applies to the following samples: **Method:** SW846-8015B

D18792-6, D18792-7

CAS No.	Compound	D18792-6 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	114		860	956	98	1000	103	4	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D18792-6	Limits
84-15-1	o-Terphenyl	95%	105%	97%	63-130%

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/08/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.7	2		
Antimony	3.0	.17	.5		
Arsenic	2.5	.28	.72		
Barium	1.0	.014	.05	0.040	<1.0
Beryllium	1.0	.14	.21		
Boron	5.0	.35	.91		
Cadmium	1.0	.022	.12	0.040	<1.0
Calcium	40	1.7	2.7		
Chromium	1.0	.027	.18	0.11	<1.0
Cobalt	0.50	.048	.058		
Copper	0.50	.16	.38	0.13	<0.50
Iron	7.0	.77	.91		
Lead	5.0	.13	.24	0.030	<5.0
Lithium	0.20	.076	.09		
Magnesium	20	.58	.93		
Manganese	0.50	.021	.028		
Molybdenum	1.0	.041	.16		
Nickel	3.0	.038	.075	0.0	<3.0
Phosphorus	10	1.5	3.5		
Potassium	200	38	130		
Selenium	5.0	.28	.54	-0.060	<5.0
Silicon	5.0	1.2	.68		
Silver	3.0	.098	.068	0.0	<3.0
Sodium	40	23	6.3		
Strontium	5.0	.0091	.02		
Thallium	1.0	.31	.21		
Tin	5.0	1.4	.56		
Titanium	1.0	.0098	.041		
Uranium	5.0	.22	.53		
Vanadium	1.0	.027	.034		
Zinc	3.0	.076	.49	0.30	<3.0

Associated samples MP3336: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/08/10

Metal	D18792-4 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	282	495	257	82.8	75-125
Beryllium					
Boron					
Cadmium	0.45	53.4	64.3	82.3	75-125
Calcium	anr				
Chromium	29.4	87.6	64.3	90.5	75-125
Cobalt					
Copper	21.3	77.1	64.3	86.7	75-125
Iron					
Lead	14.4	120	129	82.1	75-125
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum	anr				
Nickel	17.3	71.7	64.3	84.6	75-125
Phosphorus	anr				
Potassium	anr				
Selenium	1.7	97.7	129	74.6N(a)	75-125
Silicon					
Silver	0.0	18.9	25.7	73.4N(a)	75-125
Sodium	anr				
Strontium					
Thallium					
Tin					
Titanium					
Uranium	anr				
Vanadium					
Zinc	54.1	108	64.3	83.8	75-125

Associated samples MP3336: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/08/10

Metal	D18792-4 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	282	477	236	82.7	3.7	20
Beryllium						
Boron						
Cadmium	0.45	50.7	58.9	85.3	5.2	20
Calcium	anr					
Chromium	29.4	87.8	58.9	99.1	0.2	20
Cobalt						
Copper	21.3	75.7	58.9	92.3	1.8	20
Iron						
Lead	14.4	115	118	85.4	4.3	20
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	17.3	69.7	58.9	88.9	2.8	20
Phosphorus	anr					
Potassium	anr					
Selenium	1.7	92.1	118	76.7	5.9	20
Silicon						
Silver	0.0	18.0	23.6	76.4	4.9	20
Sodium	anr					
Strontium						
Thallium						
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	54.1	106	58.9	88.1	1.9	20

Associated samples MP3336: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date: 11/08/10

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	171	200	85.5	80-120
Beryllium				
Boron				
Cadmium	45.0	50	90.0	80-120
Calcium	anr			
Chromium	48.2	50	96.4	80-120
Cobalt				
Copper	46.8	50	93.6	80-120
Iron				
Lead	91.8	100	91.8	80-120
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	46.2	50	92.4	80-120
Phosphorus	anr			
Potassium	anr			
Selenium	82.2	100	82.2	80-120
Silicon				
Silver	17.9	20	89.5	80-120
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	44.5	50	89.0	80-120

Associated samples MP3336: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: mg/kg

Prep Date:

Metal

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date: 11/08/10

Metal	D18792-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	2300	2480	7.4	0-10
Beryllium				
Boron				
Cadmium	3.70	10.0	170.3(a)	0-10
Calcium	anr			
Chromium	240	285	18.3*(b)	0-10
Cobalt				
Copper	174	165	5.1	0-10
Iron				
Lead	118	127	7.4	0-10
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum	anr			
Nickel	142	169	19.4*(b)	0-10
Phosphorus	anr			
Potassium	anr			
Selenium	13.6	42.5	212.5(a)	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium	anr			
Strontium				
Thallium				
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	442	430	2.8	0-10

Associated samples MP3336: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3336
Matrix Type: SOLID

Methods: SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3337
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/08/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	25	.14	1.2		
Antimony	0.20	.001	.0095		
Arsenic	0.40	.049	.22	0.089	<0.40
Barium	1.0	.0035	.1		
Beryllium	0.10	.0075	.014		
Boron	20	.97	1		
Cadmium	0.050	.023	.048		
Calcium	200	1.8	8.2		
Chromium	1.0	.021	.24		
Cobalt	0.10	.0033	.003		
Copper	1.0	.011	.063		
Iron	20	.81	3.7		
Lead	0.25	.0012	.015		
Magnesium	50	.067	2.6		
Manganese	0.50	.007	.029		
Molybdenum	0.50	.0044	.023		
Nickel	1.0	.0029	.031		
Phosphorus	30	1.8	3.5		
Potassium	100	2	3.2		
Selenium	0.20	.075	.19		
Silver	0.050	.0008	.002		
Sodium	250	.8	4.4		
Strontium	10	.004	.04		
Thallium	0.10	.015	.02		
Tin	5.0	.006	.028		
Titanium	1.0	.035	.062		
Uranium	0.25	.00038	.0009		
Vanadium	2.0	.052	.29		
Zinc	5.0	.039	.12		

Associated samples MP3337: D18792-1, D18792-2, D18792-3, D18792-4, D18792-5, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3337
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/08/10

Metal	D18792-4 Original	MS	Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	9.5	118	129	84.3	60-119
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP3337: D18792-1, D18792-2, D18792-3, D18792-4, D18792-5, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3337
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/08/10

Metal	D18792-4 Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	9.5	110	118	85.3	7.0	20
Barium						
Beryllium						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP3337: D18792-1, D18792-2, D18792-3, D18792-4, D18792-5, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3337
Matrix Type: SOLID

Methods: SW846 6020
Units: mg/kg

Prep Date: 11/08/10

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	88.9	100	88.9	80-120
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP3337: D18792-1, D18792-2, D18792-3, D18792-4, D18792-5, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3337
Matrix Type: SOLID

Methods: SW846 6020
Units: ug/l

Prep Date: 11/08/10

Metal	D18792-4 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	78.0	81.3	4.3	0-10
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP3337: D18792-1, D18792-2, D18792-3, D18792-4, D18792-5, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/09/10

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	35	250		
Antimony	150	8.5	65		
Arsenic	130	14	33		
Barium	50	.7	12		
Beryllium	50	7	22		
Boron	250	18	93		
Cadmium	50	1.1	6		
Calcium	2000	85	46	-59	<2000
Chromium	50	1.4	8		
Cobalt	25	2.4	1.5		
Copper	25	8	14		
Iron	350	39	50		
Lead	250	6.5	16		
Lithium	10	3.8	8		
Magnesium	1000	29	62	95.0	<1000
Manganese	25	1.1	3.5		
Molybdenum	50	2.1	6		
Nickel	150	1.9	3		
Phosphorus	500	75	270		
Potassium	5000	1900	2700		
Selenium	250	14	36		
Silicon	250	60	100		
Silver	150	4.9	1.5		
Sodium	2000	1200	110	-990	<2000
Strontium	25	.46	17		
Thallium	50	16	11		
Tin	250	70	22		
Titanium	50	.49	3.5		
Uranium	250	11	20		
Vanadium	50	1.4	1.5		
Zinc	150	3.8	8.5		

Associated samples MP3352: D18792-4A, D18792-6A, D18792-7A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/09/10

Metal	D18793-2A Original MS		Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	421000	514000	125000	74.4N(a)	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	98400	213000	125000	91.7	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	752000	814000	125000	49.6 (b)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP3352: D18792-4A, D18792-6A, D18792-7A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/09/10

Metal	D18793-2A Original	MSD	Spikelot MPICPALL	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	421000	539000	125000	94.4	4.7	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	98400	220000	125000	97.3	3.2	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	752000	860000	125000	86.4	5.5	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP3352: D18792-4A, D18792-6A, D18792-7A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date: 11/09/10

Metal	BSP Result	Spikelot MPICPALL	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	134000	125000	107.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	122000	125000	97.6	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	118000	125000	94.4	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP3352: D18792-4A, D18792-6A, D18792-7A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3352
Matrix Type: AQUEOUS

Methods: LADNR29B, SW846 6010B
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3359
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/10/10

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.10	.0011	.013	-0.0025	<0.10

Associated samples MP3359: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3359
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/10/10

Metal	D18792-4 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.011	0.50	0.495	98.9	85-115

Associated samples MP3359: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3359
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/10/10

Metal	D18792-4 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.011	0.47	0.476	96.5	6.2	20

Associated samples MP3359: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

QC Batch ID: MP3359
Matrix Type: SOLID

Methods: SW846 7471A
Units: mg/kg

Prep Date: 11/10/10

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.39	0.4	97.5	80-120

Associated samples MP3359: D18792-4, D18792-6, D18792-7

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D18792
Account: CORCCOGJ - Olsson Associates
Project: TR31-13 Pit Closure 010-1955

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Specific Conductivity	GP3163/GN7155	1.0	<1.0	umhos/cm	10003	10100	101.1	90-110%
pH	GN7130			su	8.00	7.96	99.5	99.3-100.7%
pH	GN7130			su	8.00	7.96	99.5	99.3-100.7%

Associated Samples:
Batch GN7130: D18792-4, D18792-6, D18792-7
Batch GP3163: D18792-4, D18792-6, D18792-7
(*) Outside of QC limits

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST

4036 Youngfield St., Wheat Ridge, CO 80033
303-425-6021 FAX: 303-425-6854

Accutest Job #:	D18792
Accutest Quote #:	
AMS P.O. #:	
Project No.:	

Client Information			Subcontract Laboratory Information			Analytical Information					
Name: Accutest Mountain States (AMS)			Name: Accutest - New England								
Address: 4036 Youngfield St.			Address: 495 Technology Center West, BLDG C								
City: Wheat Ridge,	State: CO	Zip: 80033	City: Marlborough	State: MA	Zip: 01752						
Send Report to: Tiffany Pham			Contact: Sample Management								
Any questions contact: Amanda Kissell											
Phone/Fax #: (303) 425-6021; (303)425-6854			Phone: (508) 481-6200								

Field ID / Point of Collection	Collection Date	Collection Time		Matrix	# of bottles	Preservation HCL	NaOH	HNO3	H2SO4	None	EH	XCRA				Comments
D18792 -4	10/29/10	1:30 PM		Soil	1						X	X				
-6		1:30 PM		Soil	1						X	X				
-7		2:05 PM		Soil	1						X	X				
-																
-																

Turnaround Information

[X] 3 - 5 Business Day Rush
[ ] Other (Days)

RUSH!

10 Day Turnaround Hardcopy, RUSH is FAX Data unless previously approved.

Approved By:

Data Deliverable Information

[ ] Commercial "A"
[ ] Commercial "B"
[X] Commercial "BN"
[ ] Reduced Tier 1
[ ] Full Tier 1
[ ] PDF
[ ] Compact Disk Deliverable
[ ] Electronic Delivery:
[ ] State Forms
[ ] Other (Specify)

Comments / Remarks

Please use Colorado regulations and RLs.

11B

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date & Time:	Received By:	Date & Time:
1		11/8/10	1 FedEx	1
2	FedEx	11/9/10 10:00	2	2 11/9/10 10:00
3			3	3

For Subcontract Laboratory Use Only

Seal #:
Headspace: Yes [ ] No [ ] NA [ ]
Preserved where applicable: [ ]
On Ice
Temperature °C 1.7

11.1 11

D18792: Chain of Custody
Page 1 of 1
Accutest Labs of New England, Inc.

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

(Accutest Labs of New England, Inc.)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D18792
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: TR31-13 Pit Closure 010-1955

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP12257/GN33401	0.40	0.0	mg/kg	12	12.0	100.0	80-120%
Chromium, Hexavalent	GP12257/GN33401			mg/kg	676	741	109.6	80-120%

Associated Samples:
Batch GP12257: D18792-4, D18792-6, D18792-7
(*) Outside of QC limits

BLANK SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D18792
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: TR31-13 Pit Closure 010-1955

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
Chromium, Hexavalent	GP12257/GN33401	mg/kg	12	11.4	5.1	

Associated Samples:
Batch GP12257: D18792-4, D18792-6, D18792-7
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D18792
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: TR31-13 Pit Closure 010-1955

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP12257/GN33401	D18583-2	mg/kg	0.37	0.40	7.8	0-20%
Redox Potential Vs H2	GN33405	D18792-4	mv	381	379	0.5	0-20%

Associated Samples:
Batch GN33405: D18792-4, D18792-6, D18792-7
Batch GP12257: D18792-4, D18792-6, D18792-7
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D18792
Account: ALMS - Accutest Mountain States
Project: CORCCOGJ: TR31-13 Pit Closure 010-1955

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP12257/GN33401	D18583-2	mg/kg	0.37	13.9	12.1	84.6	75-125%
Chromium, Hexavalent	GP12257/GN33401	D18583-2	mg/kg	0.37	806	927	115.0	75-125%

Associated Samples:
Batch GP12257: D18792-4, D18792-6, D18792-7
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits