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NOV 10 2003

BUREAU OF
ENVIRONMENTAL REMEDIATION

**Analytical Report
Surface Water, Sediment, and EPA
Repository Soil Sampling
For
Former National Zinc Site
Cherryvale, Montgomery County, Kansas**

**ACCEPTED INTO
ADMINISTRATIVE
RECORD FILE**

October 2003

Presented to:

**Kansas Department of Health
& Environment**

Prepared By:

**Salomon Smith Barney Holdings, Inc.
United States Steel Corporation
&
A & M Engineering and Environmental Services, Inc.**

BER SCANNED

JUL 17 2013



A & M ENGINEERING & ENVIRONMENTAL SERVICES, INC.

10010 E. 16TH STREET
TULSA, OK 74128-4813

ENGINEERING • ENVIRONMENTAL • CONSTRUCTION
(918) 665-6575 • FAX (918) 665-6576
EMAIL: aandm@aandmengineering.com

November 7, 2003

Mr. Rob Bixby
Environmental Scientist/Remedial Section
Bureau of Environmental Remediation (BER)
Kansas Department of Health and Environment
1000 Southwest Jackson, Suite 410
Topeka, Kansas 66612-1367

RECEIVED
NOV 10 2003
BUREAU OF
ENVIRONMENTAL REMEDIATION

RE: Former National Zinc Site, Cherryvale, Kansas

Dear Rob:

Enclosed are four copies of the Analytical Report for Surface Water, Sediment and EPA Repository soil sampling at the former National Zinc Site in Cherryvale, Montgomery County, Kansas.

Please be advised that the sampling and laboratory analyses were conducted in accordance with the Consent Order and its attachments.

Sincerely,

Altay M. Ertugrul, P.E.
President

Enclosures

Cc: William Anderson
David Smiga

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Appendix A	Analyzed Parameters for Cadmium, Zinc, Arsenic & Lead (Figures 3A-3D)
Appendix B	Sediment and Surface Water Analytical Data for Unnamed & Drum Creeks
Appendix C	Sediment Sample Location Descriptions & Site Photos for Unnamed and Drum Creeks
Appendix D	EPA Repository Analytical Data

Introduction:

The purpose of this report is for the presentation of the sediment and surface water sampling and the Environmental Protection Agency (EPA) Repository Sampling Data. This report is divided into two sections. Section I will cover the sediment and surface water sampling. Section II will deal with the EPA Repository area soil sampling. All sampling events were conducted according to the sampling and amended sampling plan outlined in the National Zinc Site (Site) Consent Agreement.

I. Sediment and Surface Water Sampling

Background Information:

A & M Engineering and Environmental Services, Inc. (A & M Engineering) of Tulsa Oklahoma conducted sediment and surface water testing on June 24, 25 and 26 of 2003. The purpose of the sampling event was to collect and analyze surface water and sediment samples as spelled out in the plan.

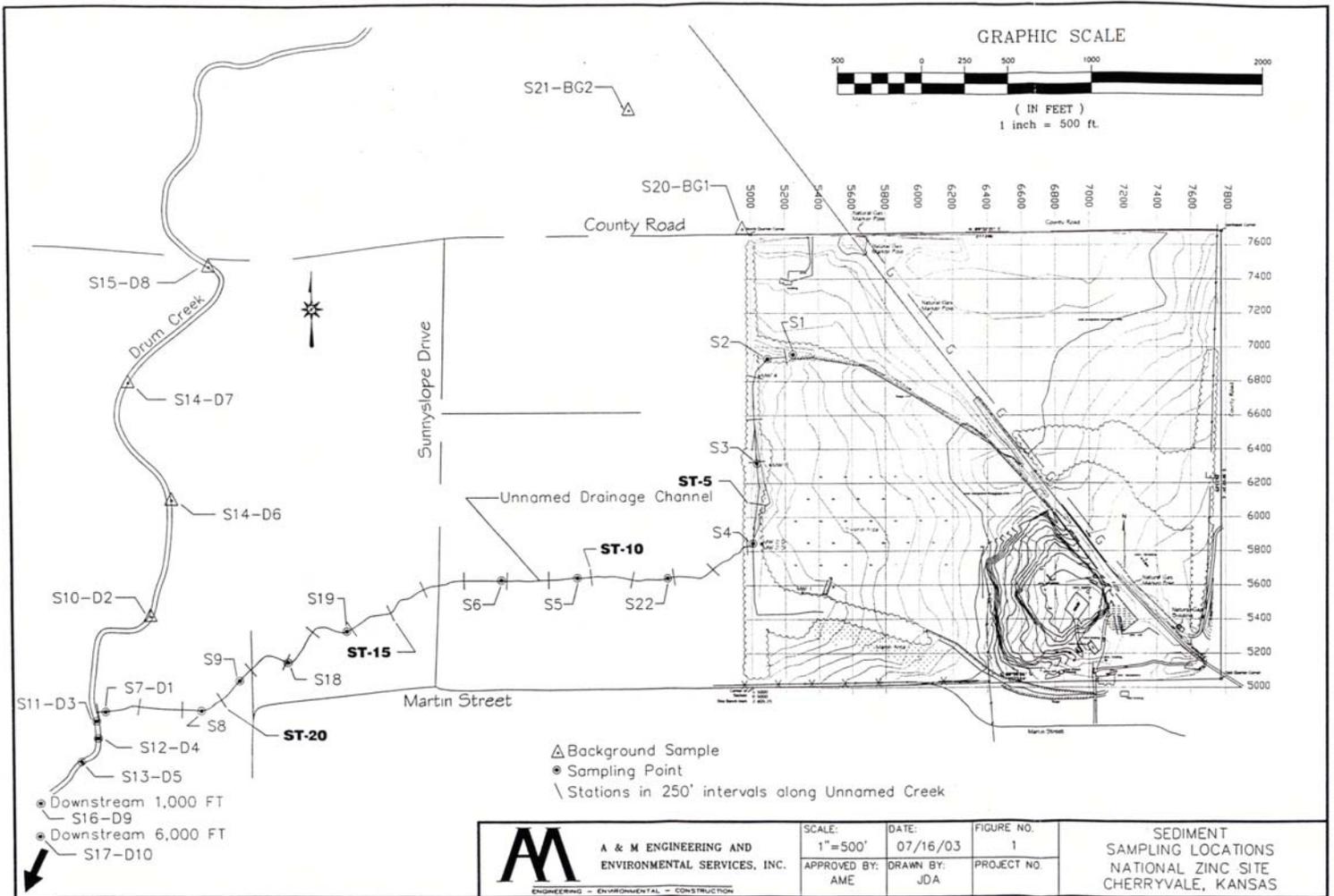
Sediment samples and background sediment sample locations are shown on Figure 1. Water samples and background water sample locations are shown in Figure 2.

The parameters analyzed for sediments were Lead, Cadmium, Arsenic, Chromium, Zinc, Mercury and pH. The sampling events were broken up into 2 categories: Unnamed Creek and Drum Creek. The sediment sampling parameters for Unnamed Creek are summarized in Table 1. The parameters analyzed for Drum Creek are summarized in Table 2.

The parameters analyzed for surface water samples were Hardness, Mercury, Arsenic, Cadmium, Chromium, Lead, Zinc and Suspended Solids. The sampling event covered two areas: Unnamed Creek and Drum Creek. The analytical parameters for Unnamed Creek are summarized in Table 3. The analytical parameters for Drum Creek are summarized in Table 4.

Figures 3A-3D present the four analyzed parameters, Cadmium, Zinc, Arsenic, and Lead plotted on the map for overlay references. These figures are included as Appendix A. Appendix B includes the Sediment and Surface Water Analytical Data for both Unnamed and Drum Creeks. Table 5 quantifies the sediment amounts between measuring points in Unnamed Creek and the total amount of sedimentation in Unnamed Creek.

Appendix C presents the Sediment Sample Descriptions and Site Photos for sample locations along Unnamed Creek and Drum Creek.



GRAPHIC SCALE



(IN FEET)
1 inch = 500 ft.

S21-BG2

S20-BG1

County Road

S15-D8

S14-D7

S14-D6

S10-D2

S19

ST-15

Martin Street

S7-D1

S8

ST-20

S12-D4

S13-D5

● Downstream 1,000 FT
S16-D9

● Downstream 6,000 FT
S17-D10

ST-5

Unnamed Drainage Channel

ST-10

S4

S3

S2

S1

△ Background Sample

● Sampling Point

\ Stations in 250' intervals along Unnamed Creek



A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

SCALE:
1" = 500'

DATE:
07/16/03

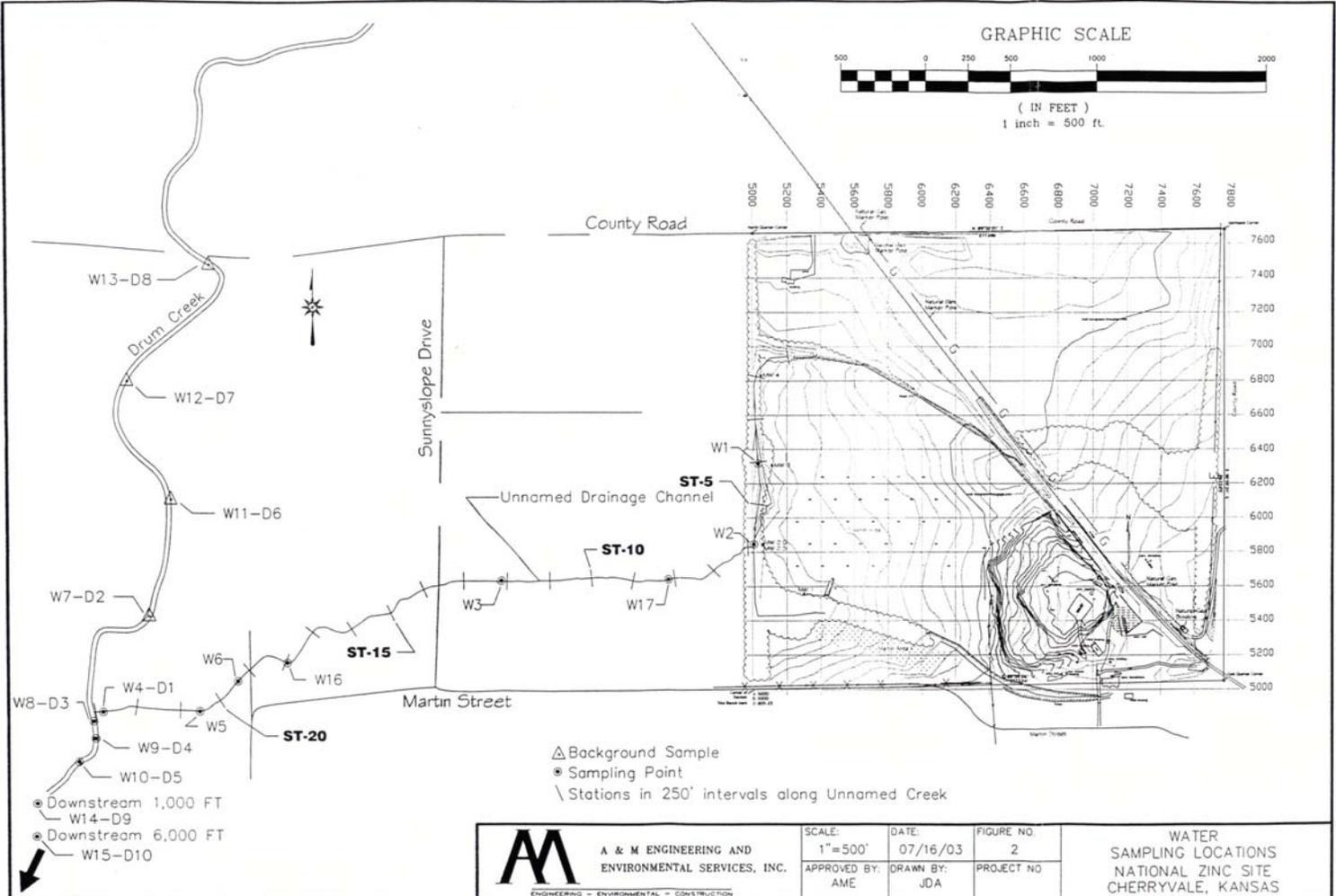
FIGURE NO.
1

APPROVED BY:
AME

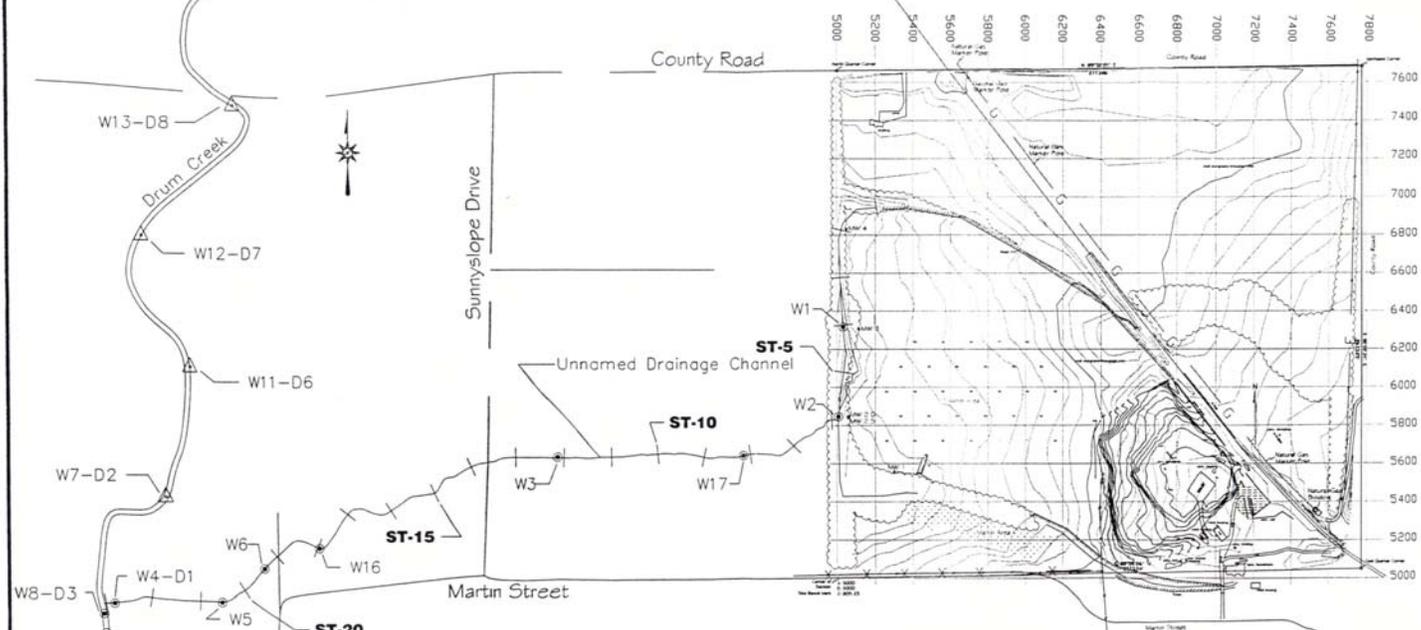
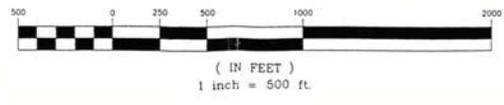
DRAWN BY:
JDA

PROJECT NO.

SEDIMENT SAMPLING LOCATIONS
NATIONAL ZINC SITE
CHERRYVALE, KANSAS



GRAPHIC SCALE



- △ Background Sample
- Sampling Point
- \ Stations in 250' intervals along Unnamed Creek

 A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC. <small>ENGINEERING - ENVIRONMENTAL - CONSTRUCTION</small>	SCALE: 1" = 500'	DATE: 07/16/03	FIGURE NO. 2	WATER SAMPLING LOCATIONS NATIONAL ZINC SITE CHERRYVALE, KANSAS
	APPROVED BY: AME	DRAWN BY: JDA	PROJECT NO.	

Table 1

Sediment Samples from Unnamed Creek near the National Zinc Site - Cherryvale, Kansas

Sample	Mercury (mg/Kg)	Arsenic (mg/Kg)	Cadmium (mg/Kg)	Chromium (mg/Kg)	Lead (mg/Kg)	Zinc (mg/Kg)	pH
S-1	0.059	21.20	20.60	11.20	163.00	1470.0	6.90
S-2	0.070	41.50	32.50	11.30	233.00	2150.0	6.81
S-3	0.086	15.80	44.80	11.00	189.00	3290.0	7.45
S-4	0.240	40.30	51.60	12.80	546.00	11900.0	7.22
S-22	0.098	23.20	333.00	17.40	606.00	14600.0	7.67
S-5	0.560	37.80	704.00	19.00	1190.00	16500.0	7.47
S-6	0.170	5.94	68.70	7.68	238.00	2850.0	7.45
S-19	0.046	18.00	511.00	15.60	368.00	32900.0	7.70
S-18	0.088	58.10	177.00	9.49	192.00	3600.0	7.38
S-9	0.160	15.20	79.30	13.20	145.00	2170.0	7.48
S-8	0.064	0.92	23.50	6.96	9.42	1010.0	7.38
S-7-D1	0.130	30.70	430.00	14.00	473.00	10300.0	7.43
S20-BG1	0.089	6.97	3.98	14.10	22.40	131.0	7.79
S21-BG2	<0.025	11.90	8.94	25.40	70.30	59.6	7.83

Table 2

Sediment Samples from Drum Creek near the National Zinc Site - Cherryvale, Kansas

Sample	Mercury (mg/Kg)	Arsenic (mg/Kg)	Cadmium (mg/Kg)	Chromium (mg/Kg)	Lead (mg/Kg)	Zinc (mg/Kg)	pH
S-15-D8	0.038	2.30	1.80	8.68	8.87	49.9	7.46
S-14-D7	0.052	1.81	1.70	8.20	16.00	81.2	7.06
S-14-D6	0.180	3.17	2.55	9.70	24.50	94.6	7.17
S-10-D2	0.086	7.16	4.63	13.90	20.60	78.8	6.40
S-11-D3	0.099	11.40	90.40	11.70	144.00	3680.0	7.16
S-12-D4	0.120	13.90	73.00	13.50	223.00	5950.0	7.50
S-13-D5	0.100	8.84	71.10	18.60	109.00	1520.0	7.36
S-16-D9	0.046	1.66	1.77	8.86	10.10	49.6	7.22
S-17-D10	0.051	18.50	14.30	11.60	48.20	517.0	7.03
S20-BG1	0.089	6.97	3.98	14.10	22.40	131.0	7.79
S21-BG2	<0.025	11.90	8.94	25.40	70.30	59.6	7.83

Table 3

Water Samples from Unnamed Creek near the National Zinc Site - Cherryvale, Kansas

Sample	Hardness (mg/L)	Mercury (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Zinc (mg/L)	Suspended Solids (mg/L)
W-1	1600	<0.000100	<0.00500	0.039	<0.0100	<0.00500	1.6300	10
W-2	910	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.7910	<5.00
W-17	470	0.0002	<0.00500	0.498	0.0365	0.585	35.9000	3780
W-3	280	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.6950	7
W-16	320	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.2860	18
W-6	300	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.3540	<5.00
W-5	310	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.2240	<5.00
W-4-D1	240	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.0322	10

Table 4

Water Samples from Drum Creek near the National Zinc Site - Cherryvale, Kansas

Sample	Hardness (mg/L)	Mercury (mg/L)	Arsenic (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Zinc (mg/L)	Suspended Solids (mg/L)
W-13-D8	220	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	<0.0100	79
W-12-D7	250	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	<0.0100	<5.00
W-11-D6	230	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	<0.0100	16
W-7-D2	240	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	<0.0100	7
W-8-D3	240	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	<0.0100	33
W-9-D4	230	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.1320	58
W-10-D5	240	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.0544	130
W-14-D9	250	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	<0.0100	60
W-15-D10	220	<0.000100	<0.00500	<0.00100	<0.0100	<0.00500	0.0204	189

Table 5
 Unnamed Creek
 Sediment Quantification

Station	Width (feet)	Depth (inches)	Length (feet)	Cubic Feet	Cubic Yards
1	14	4	250	1166.667	43.210
2	8	6	250	1000.000	37.037
3	14	12	250	3500.000	129.630
4	11	4	250	916.667	33.951
5	11	10	250	2291.667	84.876
6	6	8	250	1000.000	37.037
7	12	2	250	500.000	18.519
8	27	6	250	3375.000	125.000
9	14	10	250	2916.667	108.025
10	27	2	250	1125.000	41.667
11	40	6	250	5000.000	185.185
12	16	3	250	1000.000	37.037
13	20	4	250	1666.667	61.728
14	27	4	250	2250.000	83.333
15	27	6	250	3375.000	125.000
16	27	2	250	1125.000	41.667
17	19	16	250	6333.333	234.568
18	21	6	250	2625.000	97.222
19	19	8	250	3166.667	117.284
20	19	16	250	6333.333	234.568
21	16	16	250	5333.333	197.531
22	16	30	250	10000.000	370.370
Totals	411	181	5500	66000.000	2444.442

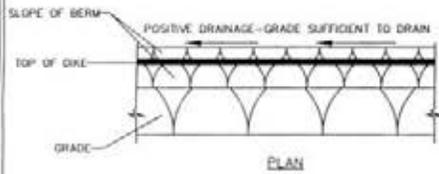
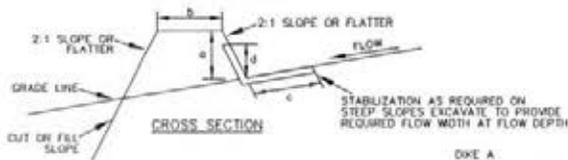
II. EPA Repository Sampling

Background Information:

The EPA Repository area is the area where EPA placed the excavated contaminated soil from the residential areas. The purpose of sampling the EPA Repository area was to determine if the concentration levels in the repository area exceeded the non-residential area Risk-Based Standards for Kansas (RSK) and assess the need for placing a cap over this entire area. The collection and handling of the repository soil samples were conducted in accordance with the pre-approved and amended sampling plans of Kansas Department of Health and Environment (KDHE).

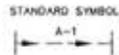
On May 15 and May 28, 2003 A & M Engineering collected soil samples on the EPA repository area. The samples were collected according to the grid map, see Figure 4. The samples were composited according to the sampling and amended sampling plan, and analyzed by Sherry Laboratories in Tulsa, Oklahoma for Total Lead, Arsenic and Cadmium. Sample points requiring a second composite sample, because of depth, are listed as A and B on the chain of custody for its respective grid number, Figure 5 shows the sampling points. There were no levels of Cadmium above the RSK, however one area described as sample point 18 exceeded the RSK for Arsenic and Lead. Table 6 summarizes the data for the analyzed parameters. Figure 6 shows the cross sectional view of the Repository Area. Appendix D presents the EPA Repository Laboratory Report.

DETAIL-EARTH DIKE (DIVERSION DIKE)
NTS



DIKE A

a-DIKE HEIGHT	24"
b-DIKE WIDTH	24"
c-FLOW WIDTH	2'
d-FLOW DEPTH	12"



CONSTRUCTION SPECIFICATIONS

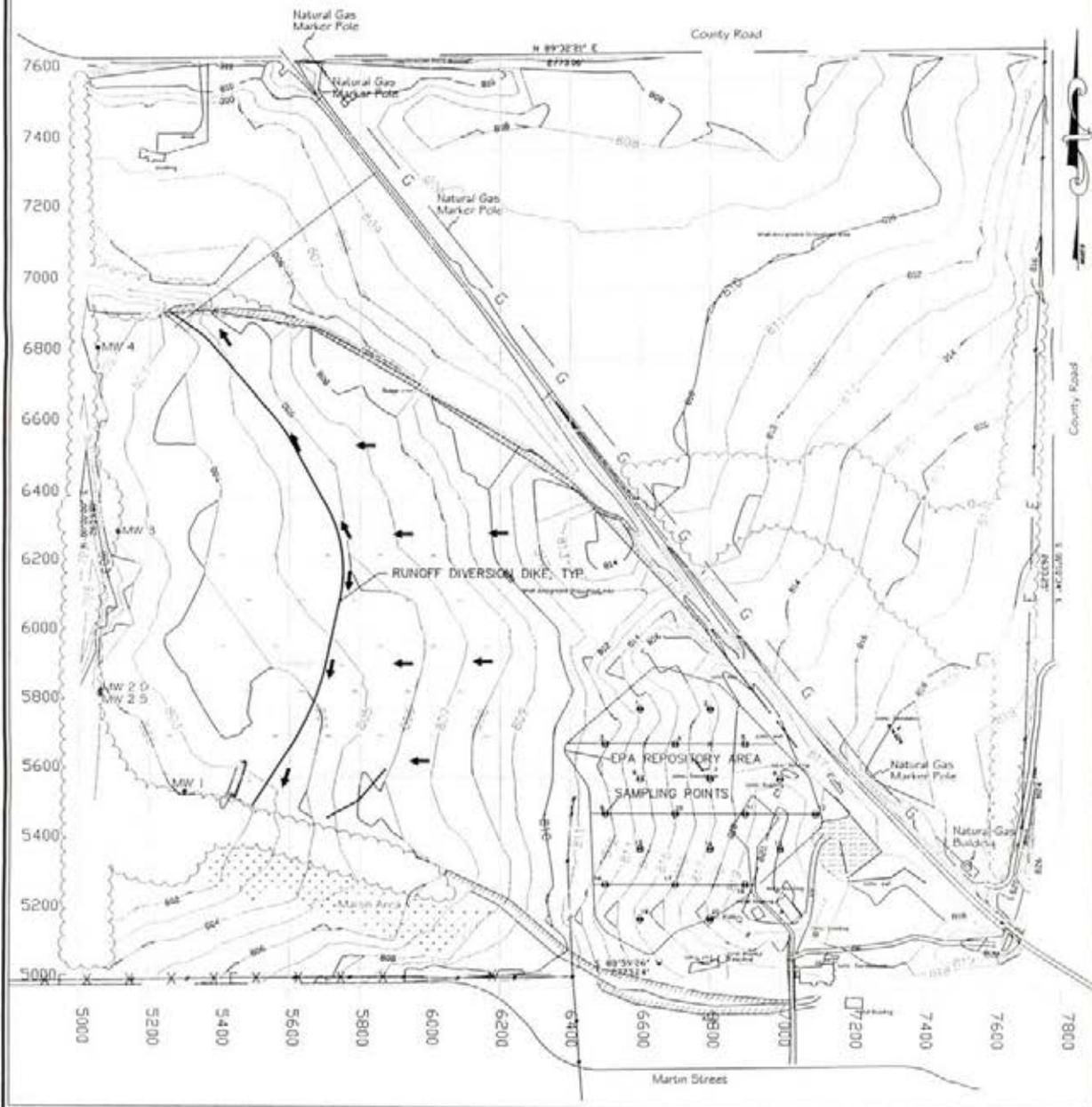
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION.
6. FLOW CHANNEL STABILIZATION SHALL BE PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A
1	0.5-3.0%	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH
3	5.1-8.0%	SEED WITH JUTE OR SOG + STONE
4	8.1-20%	LINED RIP-RAP 4-6"

- A. STONE TO BE 3 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
 B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
 C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



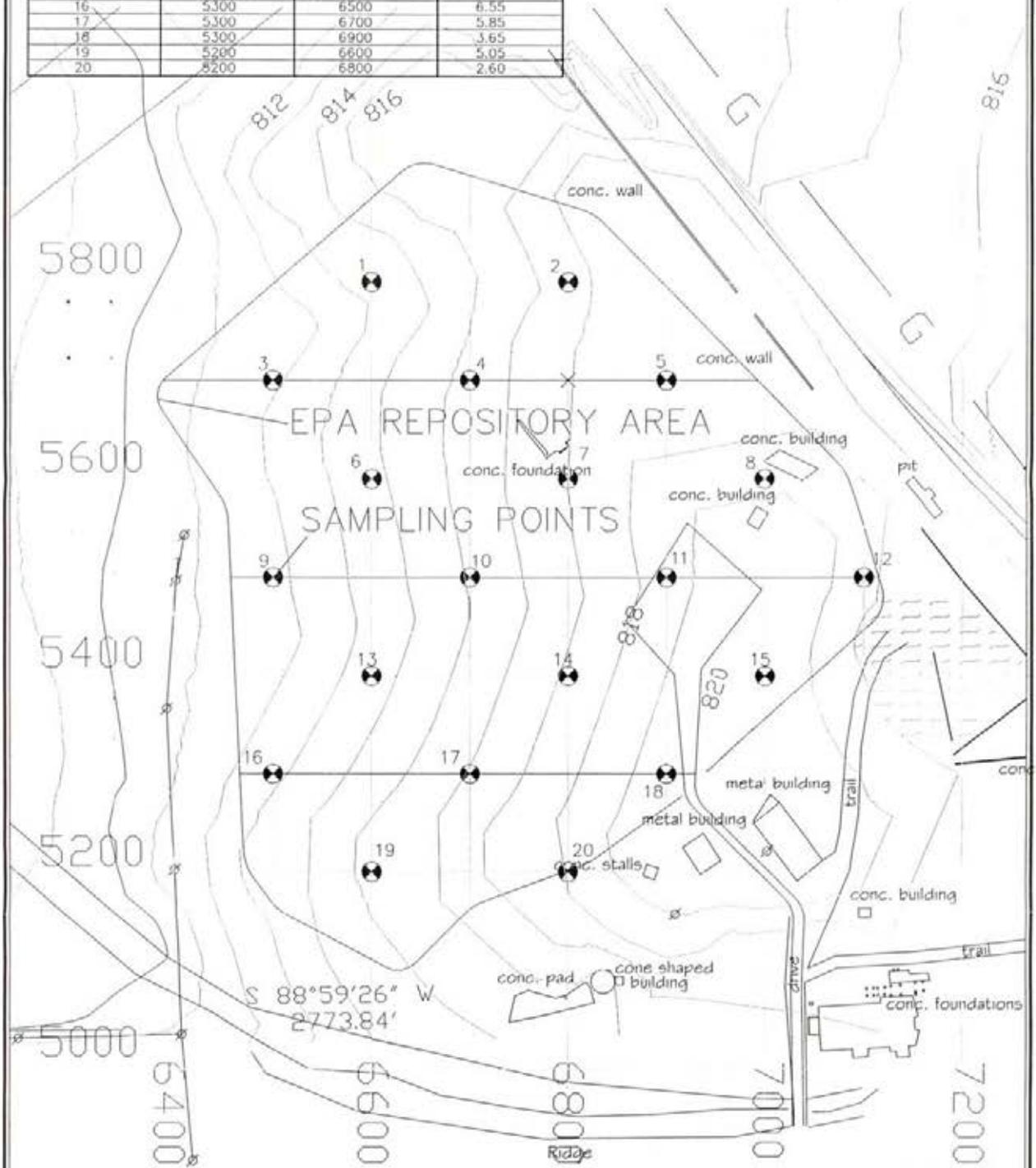
A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

**EPA REPOSITORY AREA LOCATION
NATIONAL ZINC SITE, CHERRYVALE, KANSAS**

SCALE: 1" = 300'	DATE: 4-28-2003	FIGURE NO. 4
APPROVED BY: AME	DRAWN BY: OME	PROJECT NO.

SAMPLE ID NO.	X-COORDINATE	Y-COORDINATE	REP. DEPTH (ft)
1	5800	6600	6.45
2	5800	6800	8.00
3	5700	6500	6.70
4	5700	6700	9.80
5	5700	6900	6.50
6	5600	6600	8.45
7	5600	6800	9.10
8	5600	7000	7.45
9	5500	6500	6.65
10	5500	6700	10.20
11	5500	6900	8.20
12	5500	7100	5.00
13	5400	6600	6.55
14	5400	6800	8.80
15	5400	7000	6.15
16	5300	6500	6.55
17	5300	6700	5.85
18	5300	6900	3.65
19	5200	6600	5.05
20	5200	6800	2.60

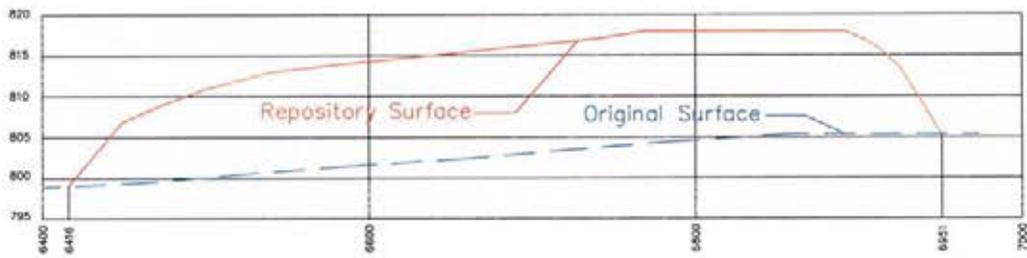


A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

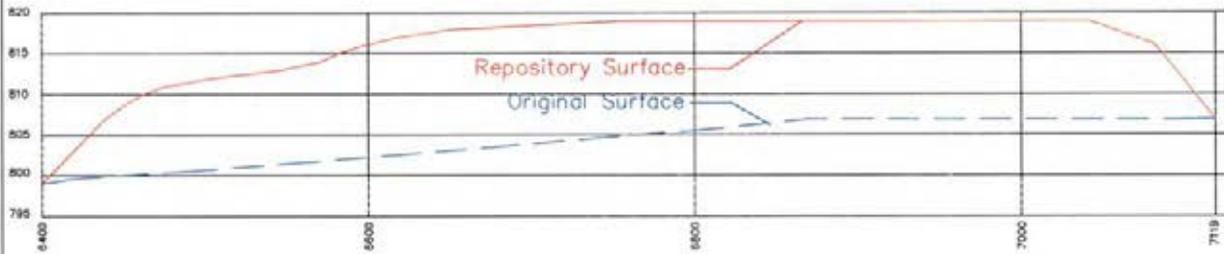
ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

EPA REPOSITORY AREA SAMPLING LOCATIONS
NATIONAL ZINC SITE, CHERRYVALE, KANSAS

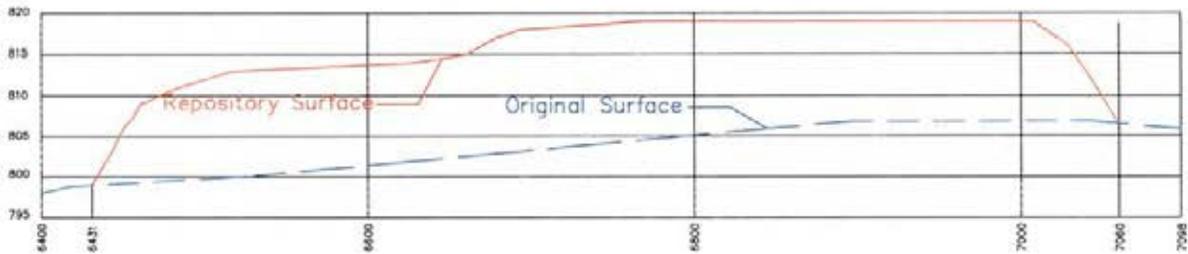
SCALE: 1" = 100'	DATE: 4-28-2003	FIGURE NO. 5
APPROVED BY: AME	DRAWN BY: OME	PROJECT NO.



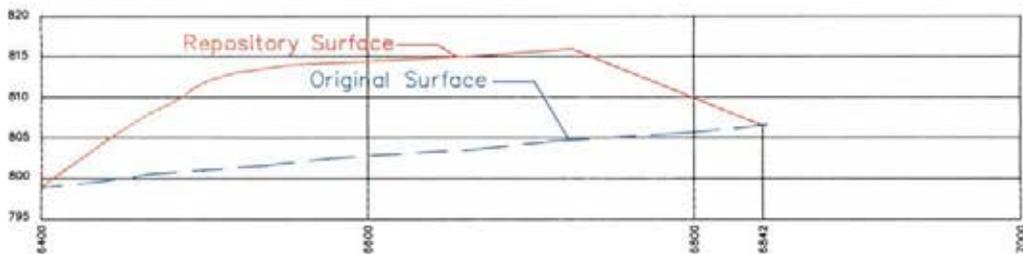
N 5800 CROSSSECTION
scale as noted



N 5600 CROSSSECTION
scale as noted



N 5400 CROSSSECTION
scale as noted



N 5200 CROSSSECTION
scale as noted



A & M ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.

ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

EPA REPOSITORY AREA CROSS SECTIONS
NATIONAL ZINC SITE, CHERRYVALE, KANSAS

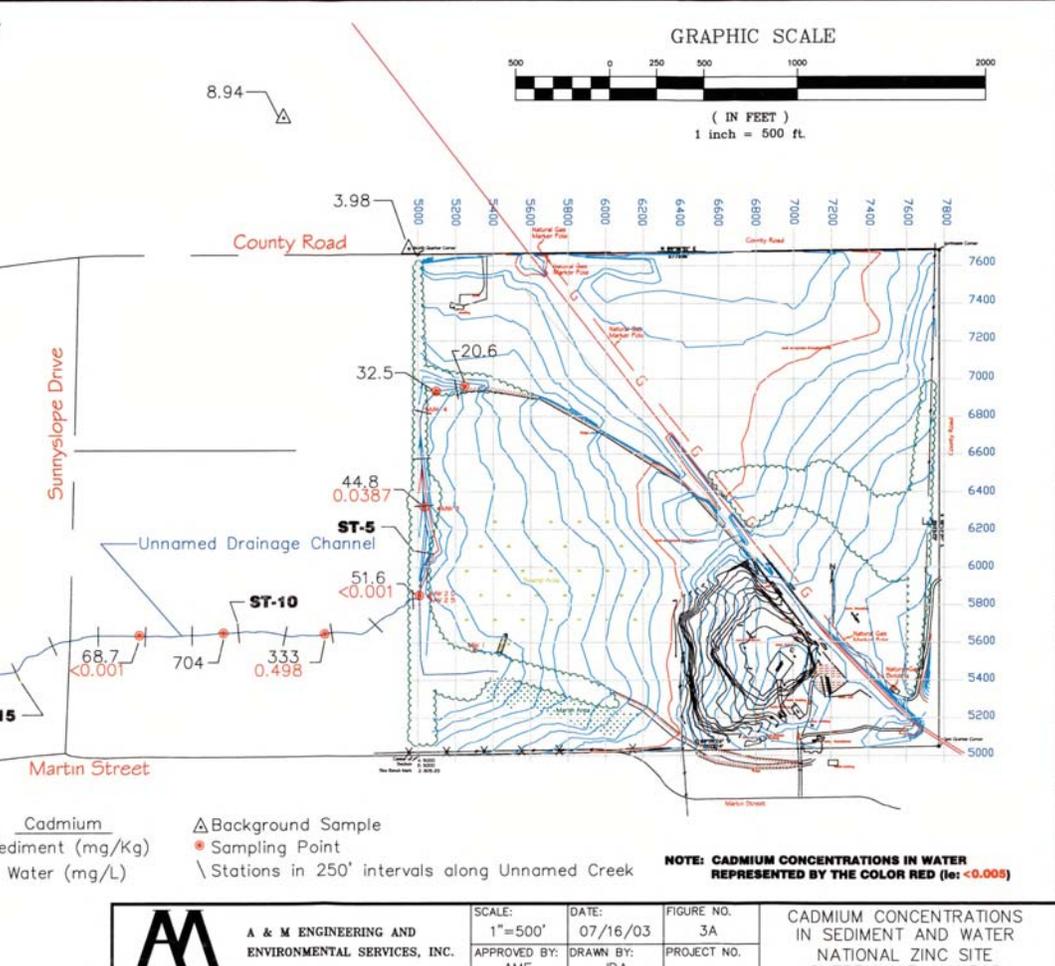
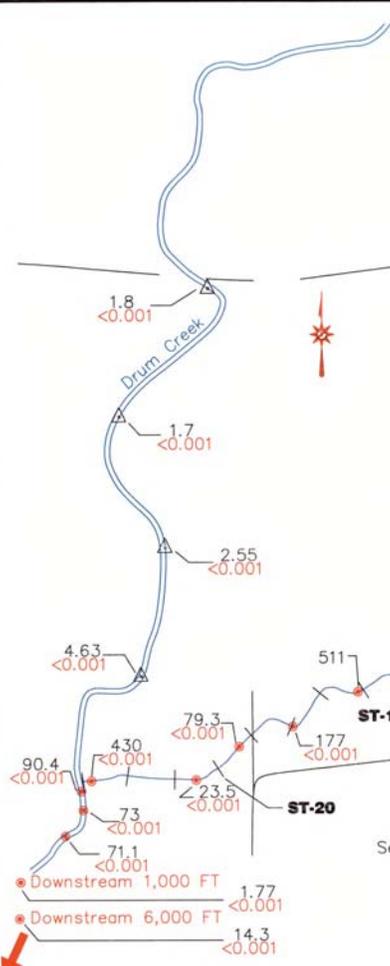
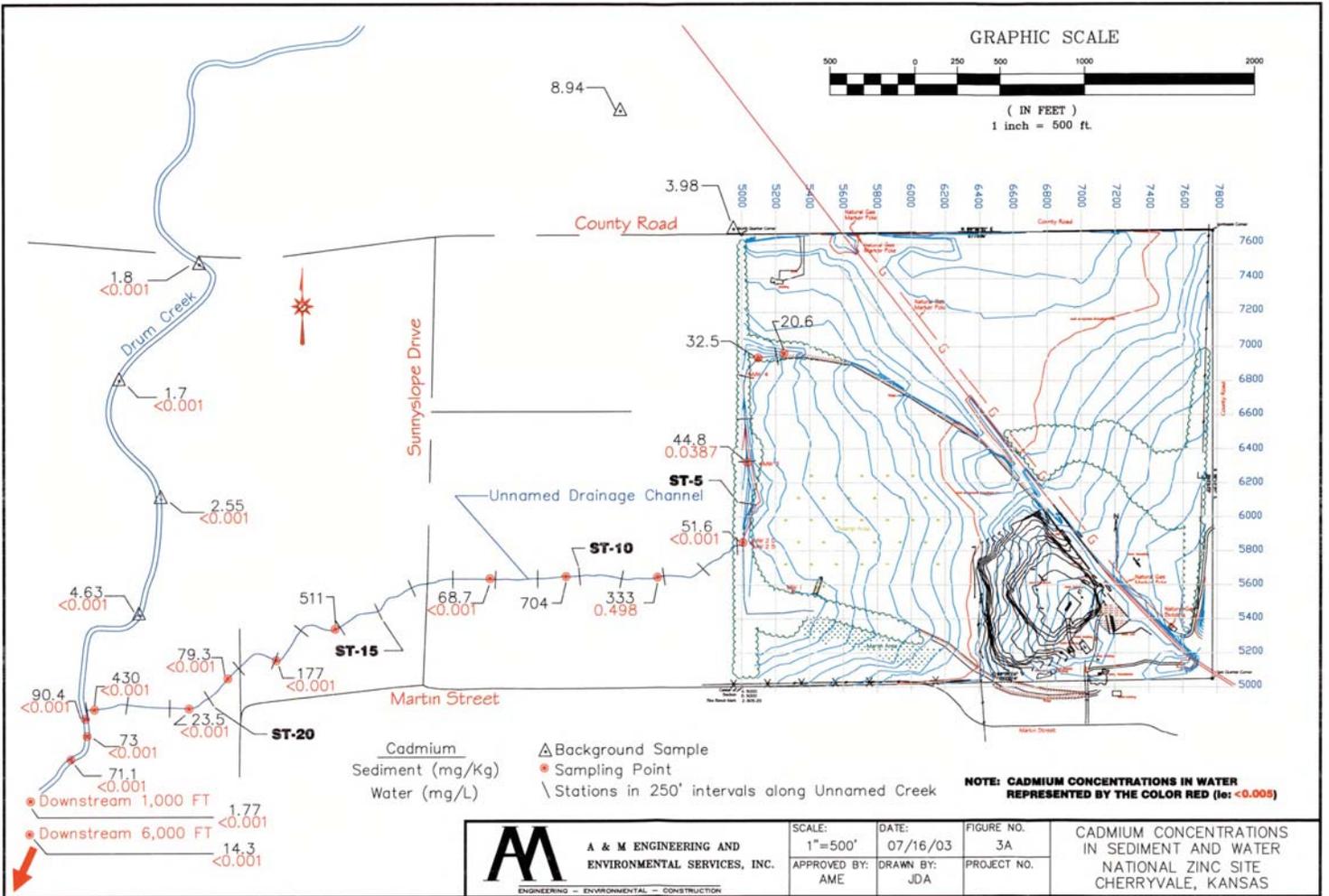
SCALE: AS NOTED	DATE: 4-28-2003	FIGURE NO. 6
APPROVED BY: AME	DRAWN BY: OME	PROJECT NO.

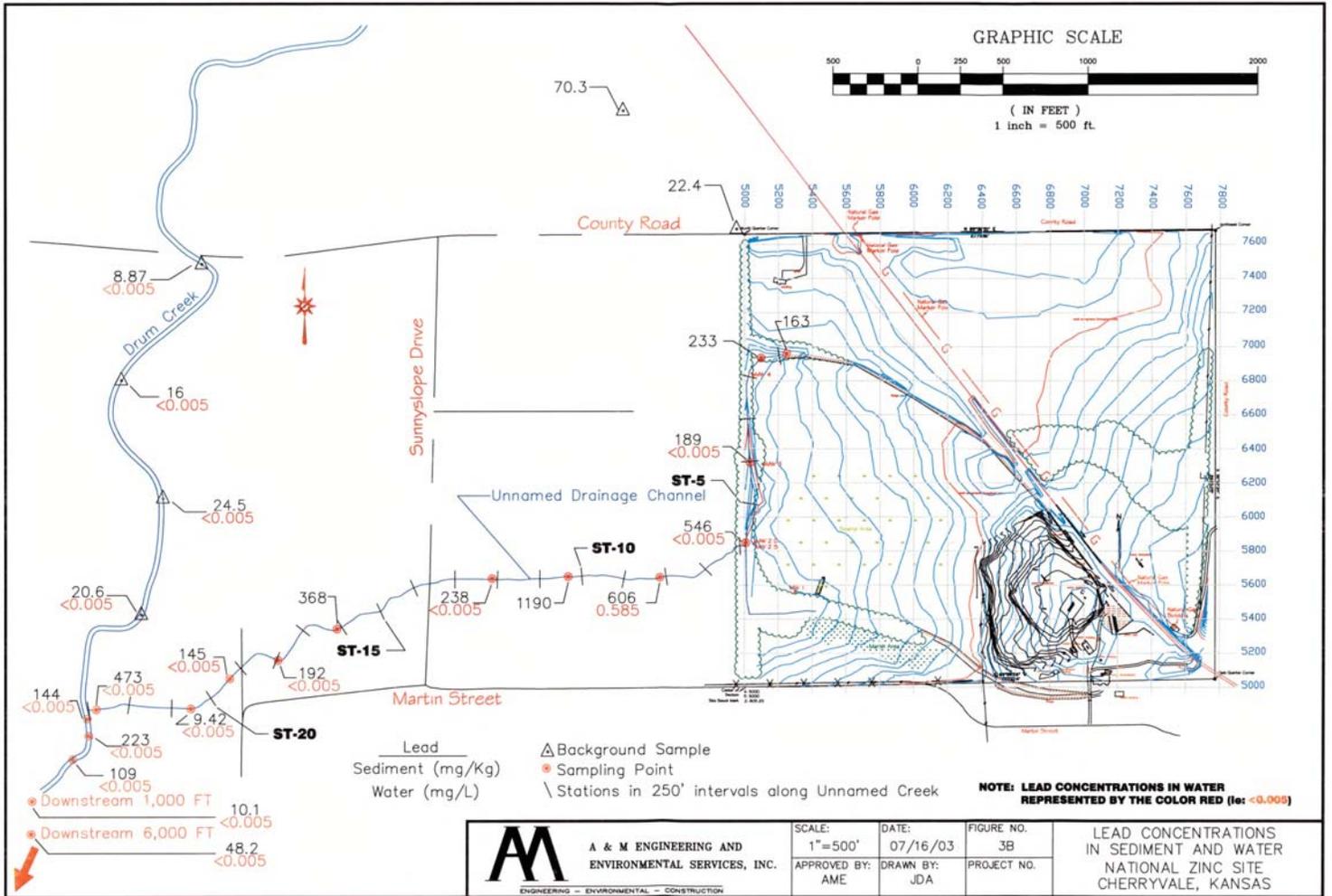
TABLE 6
EPA REPOSITORY SOIL SAMPLES
Parameters in mg/kg

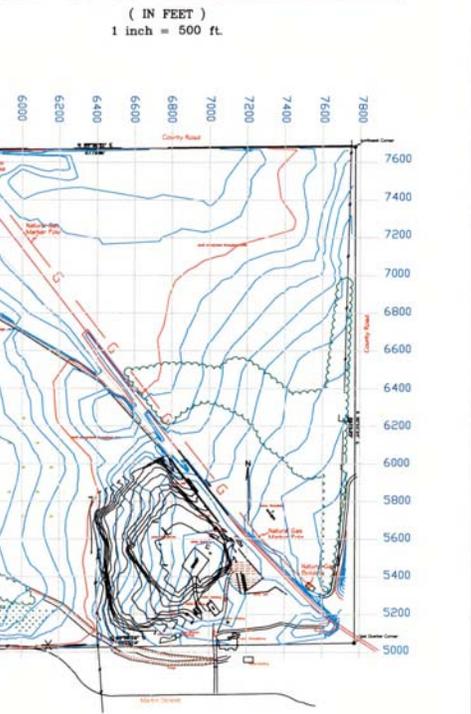
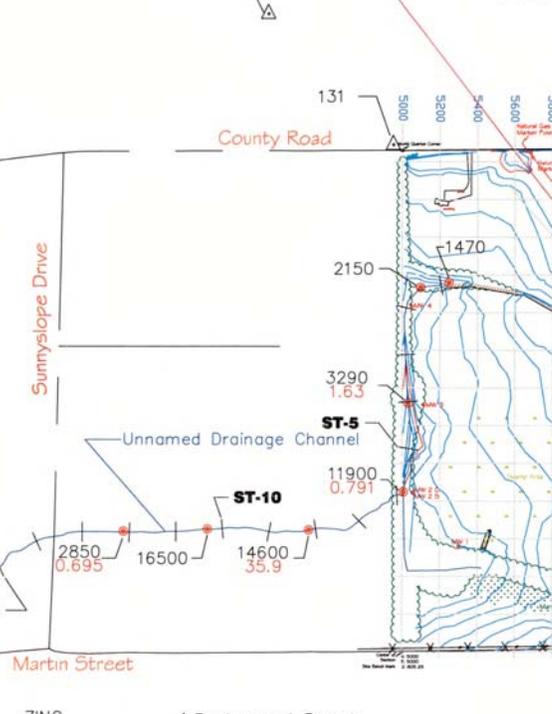
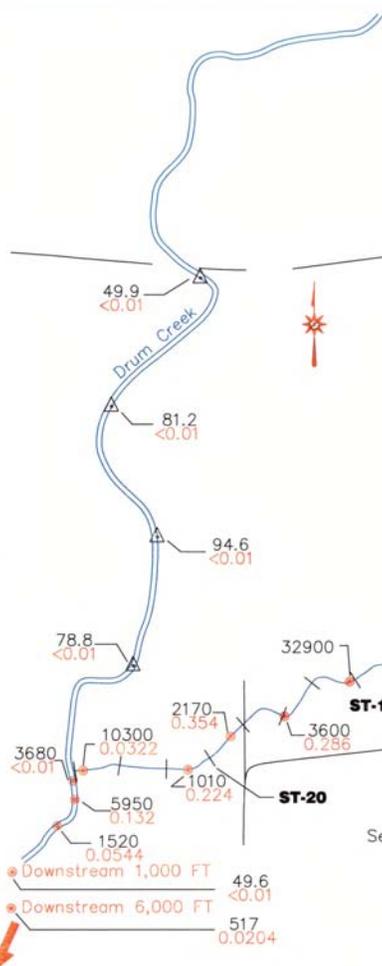
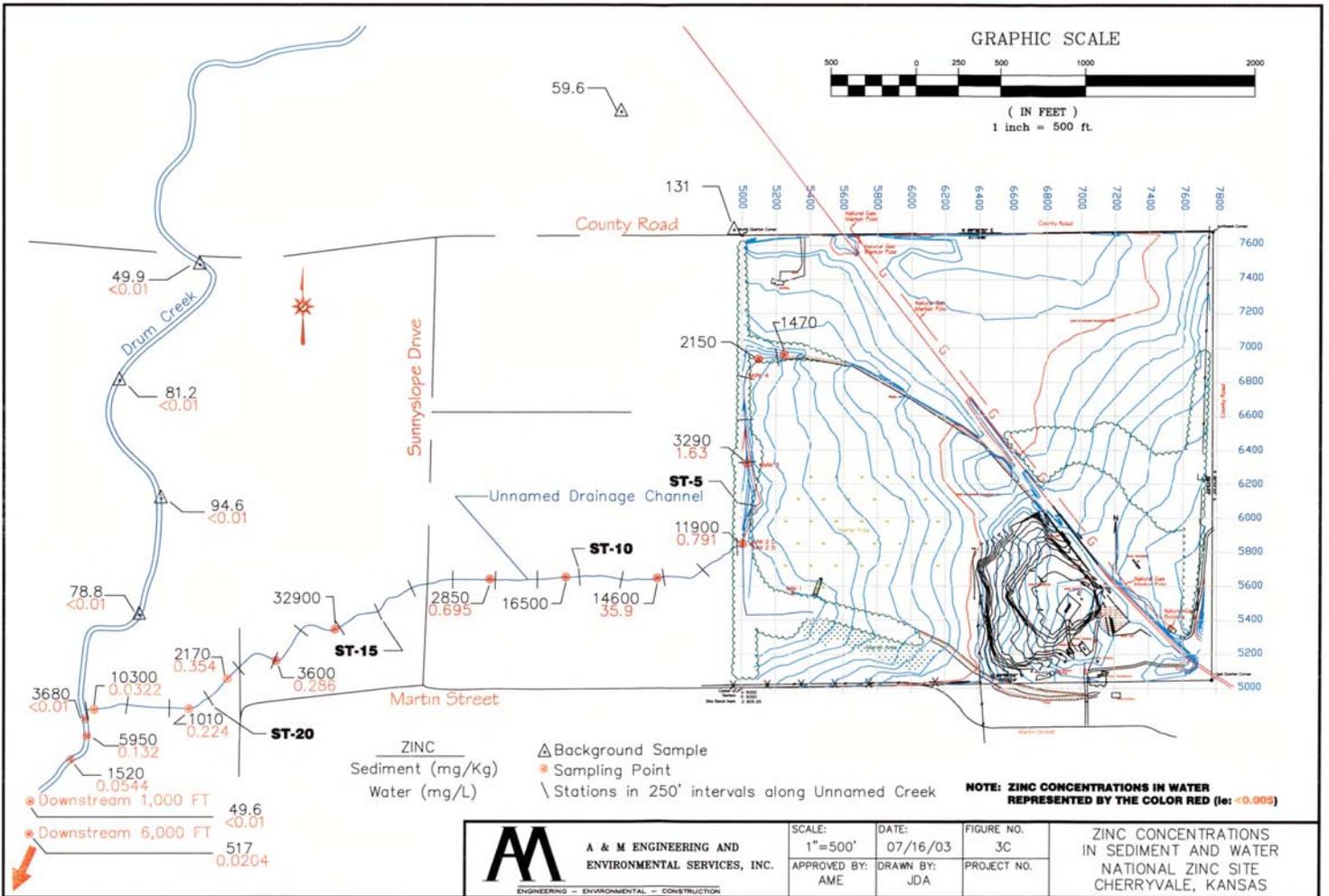
National Zinc Site- Cherryvale, Kansas

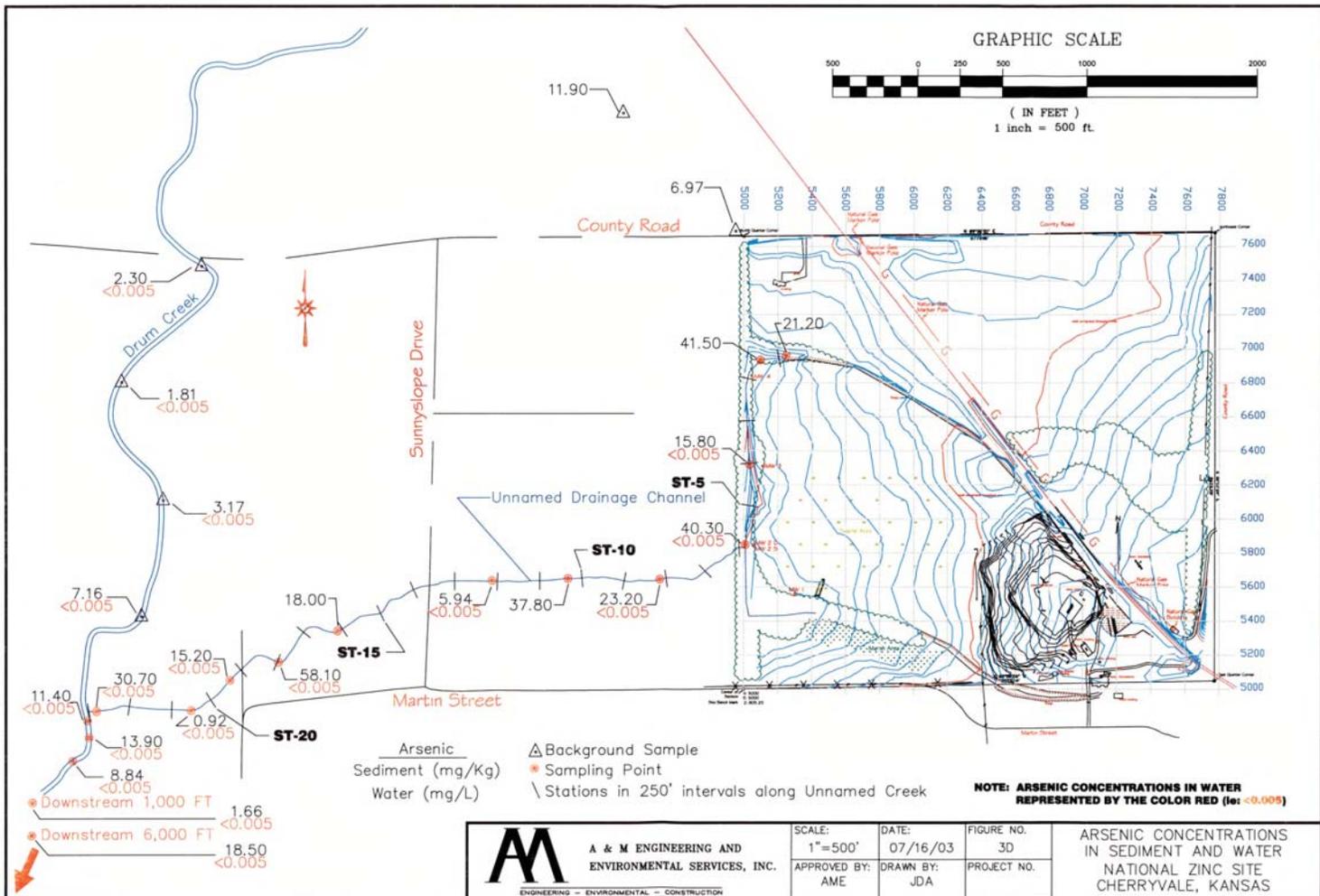
Sampling Location	Arsenic	Cadmium	Lead
EPAR11A	3.53	6.42	95
EAPR15A	5.23	7.17	101
EPAR18A	41.3*	19.60	1050*
EPAR20A	9.19	15.8	529
EPAR19A	5.89	12.5	227
EPAR16A	6.1	12.7	226
EPAR09A	6.57	14.3	289
EPAR03A	4.14	12.7	270
EPAR01A	4.97	10.3	198
EPAR02A	3.75	5.89	108
EPAR05A	5.86	10.7	215
EPAR07A	5.33	11.7	414
EPAR10A	4.72	7.25	169
EPAR13A	5.76	4.18	49.8
EPAR06A	4.39	6.81	177
EPAR06B	9.82	22.3	569
EPAR04A	4.84	7.09	155
EPAR04B	7.2	9.84	210
EPAR08A	5.4	10.3	221
EPAR08B	5.15	35.2	160
EPAR012A	5.65	11.4	241
EPAR017A	12.7	35.3	707
EPAR014A	8.17	18.8	575
EPAR014BEB	7.11	17.4	243
EB (Equipment)	<DL	<DL	<DL

* Denotes sample locations that exceed RSK for industrial area









A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
 ENGINEERING — ENVIRONMENTAL — CONSTRUCTION

SCALE: 1"=500'
 DATE: 07/16/03
 APPROVED BY: AME
 DRAWN BY: JDA

FIGURE NO. 3D
 PROJECT NO.
ARSENIC CONCENTRATIONS IN SEDIMENT AND WATER NATIONAL ZINC SITE CHERRYVALE, KANSAS

**SHERRY**Laboratories

Testing Today - Protecting Tomorrow*

6825 E 38th Street
Tulsa OK 74145
(918)828-9977Fax: (918)828-7756
(800)324-5757Altay Ertugrul
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6574
FAX () 665-6576July 09, 2003
Order No.: T03060331

RE: Cherryvale

Dear Altay Ertugrul:

Sherry Laboratories received 23 samples on 6/27/03 for the analyses presented in the following report.

In accordance with your instructions, Sherry Laboratories/Oklahoma conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analysis was conducted using EPA approved methodologies. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by SLO.

Certifications/Accreditation: OK - 7604
AR - ADEQ
KS - E-10232
LA - 4002

A scope of Certified/Accredited parameters is available upon request.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Tom Gilroy

Approved By:



Brian Duzan, Director
Environmental Services



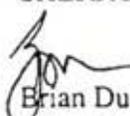
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QA/QC REPORT
A&M Eng.
SAMPLE # T03060331
BATCH QC

PARAMETERS	LFB	MS % REC.	MSD % REC.	RPD
Total Arsenic	97	99	121	20.1
Total Cadmium	101	88	89	2.0
Total Chromium	101	99	97	2.1
Total Mercury	112	128	130	1.4

Approved by:
SHERRY LABORATORIES/OKLAHOMA


Brian Duzan
Laboratory Director



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-01 Collection Date: 6/24/03 10:15:00 AM Sample ID: CVKS-1

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE		SW7471			KR
Mercury	0.059	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP		SW6010A			KR
Arsenic	21.2	0.500	mg/Kg	7/1/03	
Cadmium	20.6	0.250	mg/Kg	7/1/03	
Chromium	11.2	0.250	mg/Kg	7/1/03	
Lead	163	0.125	mg/Kg	7/1/03	
Zinc	1,470	2.20	mg/Kg	7/1/03	
PH IN SOIL		SW9040			SN
pH	6.90	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-02 Collection Date: 6/24/03 11:00:00 AM Sample ID: CVKS-2

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE		SW7471			KR
Mercury	0.070	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP		SW6010A			KR
Arsenic	41.5	0.500	mg/Kg	7/1/03	
Cadmium	32.5	0.250	mg/Kg	7/1/03	
Chromium	11.3	0.250	mg/Kg	7/1/03	
Lead	233	1.20	mg/Kg	7/1/03	
Zinc	2,150	21.0	mg/Kg	7/1/03	
PH IN SOIL		SW9040			SN
pH	6.81	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-03 Collection Date: 6/24/03 12:00:00 PM Sample ID: CVKS-3

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				
Mercury	0.086	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				
Arsenic	15.8	0.500	mg/Kg	7/1/03	KR
Cadmium	44.8	0.250	mg/Kg	7/1/03	
Chromium	11.0	0.250	mg/Kg	7/1/03	
Lead	189	0.125	mg/Kg	7/1/03	
Zinc	3,290	25.0	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.45	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-04 Collection Date: 6/24/03 12:20:00 PM Sample ID: CVKS-4

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				
Mercury	0.24	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				
Arsenic	40.3	0.500	mg/Kg	7/1/03	KR
Cadmium	51.6	0.250	mg/Kg	7/1/03	
Chromium	12.8	0.250	mg/Kg	7/1/03	
Lead	546	1.00	mg/Kg	7/1/03	
Zinc	11,900	21.0	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.22	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-05 Collection Date: 6/24/03 1:35:00 PM Sample ID: CVKS-5

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				
Mercury	0.56	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				
Arsenic	37.8	0.500	mg/Kg	7/1/03	KR
Cadmium	704	1.90	mg/Kg	7/1/03	
Chromium	19.0	0.250	mg/Kg	7/1/03	
Lead	1,190	1.00	mg/Kg	7/1/03	
Zinc	16,500	19.0	mg/Kg	7/1/03	
PH IN SOIL	SW9040				
pH	7.47	0.10	pH Units	7/8/03 2:52:00 PM	SN

Lab ID: T03060331-06 Collection Date: 6/24/03 3:00:00 PM Sample ID: CVKS-6

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				
Mercury	0.17	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				
Arsenic	5.94	0.500	mg/Kg	7/1/03	KR
Cadmium	68.7	0.250	mg/Kg	7/1/03	
Chromium	7.68	0.250	mg/Kg	7/1/03	
Lead	238	0.125	mg/Kg	7/1/03	
Zinc	2,850	22.0	mg/Kg	7/1/03	
PH IN SOIL	SW9040				
pH	7.45	0.10	pH Units	7/8/03 2:52:00 PM	SN



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-07 Collection Date: 6/25/03 11:00:00 AM Sample ID: CVKS-7-D-1

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE					
Mercury	0.13	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP					
Arsenic	30.7	0.500	mg/Kg	7/1/03	KR
Cadmium	430	2.30	mg/Kg	7/1/03	
Chromium	14.0	0.250	mg/Kg	7/1/03	
Lead	473	1.20	mg/Kg	7/1/03	
Zinc	10,300	23.0	mg/Kg	7/1/03	
PH IN SOIL					
pH	7.43	0.10	pH Units	7/8/03 2:52:00 PM	SN

Lab ID: T03060331-08 Collection Date: 6/25/03 11:15:00 AM Sample ID: CVKS-8

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE					
Mercury	0.064	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP					
Arsenic	0.924	0.500	mg/Kg	7/1/03	KR
Cadmium	23.5	0.250	mg/Kg	7/1/03	
Chromium	6.96	0.250	mg/Kg	7/1/03	
Lead	9.42	0.125	mg/Kg	7/1/03	
Zinc	1,010	2.50	mg/Kg	7/1/03	
PH IN SOIL					
pH	7.38	0.10	pH Units	7/8/03 2:52:00 PM	SN



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-09 Collection Date: 6/25/03 11:40:00 AM Sample ID: CVKS-9

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE					
	SW7471				KR
Mercury	0.16	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP					
	SW6010A				KR
Arsenic	15.2	0.500	mg/Kg	7/1/03	
Cadmium	79.3	0.250	mg/Kg	7/1/03	
Chromium	13.2	0.250	mg/Kg	7/1/03	
Lead	145	0.125	mg/Kg	7/1/03	
Zinc	2,170	21.0	mg/Kg	7/1/03	
PH IN SOIL					
	SW9040				SN
pH	7.48	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-10 Collection Date: 6/25/03 12:30:00 PM Sample ID: CVKS-10-D-2

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE					
	SW7471				KR
Mercury	0.086	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP					
	SW6010A				KR
Arsenic	7.16	0.500	mg/Kg	7/1/03	
Cadmium	4.63	0.250	mg/Kg	7/1/03	
Chromium	13.9	0.250	mg/Kg	7/1/03	
Lead	20.6	0.125	mg/Kg	7/1/03	
Zinc	78.8	0.250	mg/Kg	7/1/03	
PH IN SOIL					
	SW9040				SN
pH	6.40	0.10	pH Units	7/8/03 2:52:00 PM	


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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-11 **Collection Date:** 6/25/03 1:30:00 PM **Sample ID:** CVKS-11-D-3

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				
Mercury	0.099	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				
Arsenic	11.4	0.500	mg/Kg	7/1/03	KR
Cadmium	90.4	0.250	mg/Kg	7/1/03	
Chromium	11.7	0.250	mg/Kg	7/1/03	
Lead	144	0.125	mg/Kg	7/1/03	
Zinc	3,680	24.0	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.16	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-12 **Collection Date:** 6/25/03 1:50:00 PM **Sample ID:** CVKS-12-D-4

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				
Mercury	0.12	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				
Arsenic	13.9	0.500	mg/Kg	7/1/03	KR
Cadmium	73.0	0.250	mg/Kg	7/1/03	
Chromium	13.5	0.250	mg/Kg	7/1/03	
Lead	223	0.950	mg/Kg	7/1/03	
Zinc	5,950	19.0	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.50	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-13 Collection Date: 6/25/03 2:10:00 PM Sample ID: CVKS-13-D-5

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				KR
Mercury	0.10	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				KR
Arsenic	8.84	0.500	mg/Kg	7/1/03	
Cadmium	71.1	0.250	mg/Kg	7/1/03	
Chromium	18.6	0.250	mg/Kg	7/1/03	
Lead	109	0.125	mg/Kg	7/1/03	
Zinc	1,520	2.00	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.36	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-14 Collection Date: 6/25/03 2:40:00 PM Sample ID: CVKS-14-D-6

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				KR
Mercury	0.18	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				KR
Arsenic	3.17	0.500	mg/Kg	7/1/03	
Cadmium	2.55	0.250	mg/Kg	7/1/03	
Chromium	9.70	0.250	mg/Kg	7/1/03	
Lead	24.5	0.125	mg/Kg	7/1/03	
Zinc	94.6	0.250	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.17	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-15 Collection Date: 6/25/03 3:30:00 PM Sample ID: CVKS-14-D-7

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				KR
Mercury	0.052	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				KR
Arsenic	1.81	0.500	mg/Kg	7/1/03	
Cadmium	1.70	0.250	mg/Kg	7/1/03	
Chromium	8.20	0.250	mg/Kg	7/1/03	
Lead	16.0	0.125	mg/Kg	7/1/03	
Zinc	81.2	0.250	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.06	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-16 Collection Date: 6/25/03 3:50:00 PM Sample ID: CVKS-15-D-8

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				KR
Mercury	0.038	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				KR
Arsenic	2.30	0.500	mg/Kg	7/1/03	
Cadmium	1.80	0.250	mg/Kg	7/1/03	
Chromium	8.68	0.250	mg/Kg	7/1/03	
Lead	8.87	0.125	mg/Kg	7/1/03	
Zinc	49.9	0.250	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.46	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-17 Collection Date: 6/25/03 4:15:00 PM Sample ID: CVKS-16-D-9

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				KR
Mercury	0.046	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				KR
Arsenic	1.66	0.500	mg/Kg	7/1/03	
Cadmium	1.77	0.250	mg/Kg	7/1/03	
Chromium	8.86	0.250	mg/Kg	7/1/03	
Lead	10.1	0.125	mg/Kg	7/1/03	
Zinc	49.6	0.250	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.22	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-18 Collection Date: 6/25/03 4:40:00 PM Sample ID: CVKS-17-D-10

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE	SW7471				KR
Mercury	0.051	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				KR
Arsenic	18.5	0.500	mg/Kg	7/1/03	
Cadmium	14.3	0.250	mg/Kg	7/1/03	
Chromium	11.6	0.250	mg/Kg	7/1/03	
Lead	48.2	0.125	mg/Kg	7/1/03	
Zinc	517	2.30	mg/Kg	7/1/03	
PH IN SOIL	SW9040				SN
pH	7.03	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-19 Collection Date: 6/25/03 5:00:00 PM Sample ID: CVKS-18

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE					
Mercury	0.088	0.025	mg/Kg	6/30/03	KR
METALS IN SOIL OR SLUDGE BY ICP					
Arsenic	58.1	0.500	mg/Kg	7/1/03	KR
Cadmium	177	1.80	mg/Kg	7/1/03	
Chromium	9.49	0.250	mg/Kg	7/1/03	
Lead	192	0.900	mg/Kg	7/1/03	
Zinc	3,600	18.0	mg/Kg	7/1/03	
PH IN SOIL					
pH	7.38	0.10	pH Units	7/8/03 2:52:00 PM	SN

Lab ID: T03060331-20 Collection Date: 6/25/03 5:20:00 PM Sample ID: CVKS-19

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE					
Mercury	0.046	0.025	mg/Kg	7/3/03	KR
METALS IN SOIL OR SLUDGE BY ICP					
Arsenic	18.0	0.500	mg/Kg	7/1/03	KR
Cadmium	511	2.00	mg/Kg	7/1/03	
Chromium	15.6	0.250	mg/Kg	7/1/03	
Lead	368	1.00	mg/Kg	7/1/03	
Zinc	32,900	200	mg/Kg	7/1/03	
PH IN SOIL					
pH	7.70	0.10	pH Units	7/8/03 2:52:00 PM	SN



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Tulsa OK 74145
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Fax: (918)828-7756
(800)324-5757

CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-21 Collection Date: 6/26/03 11:30:00 AM Sample ID: CVKS020-BG-1

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE		SW7471			KR
Mercury	0.089	0.025	mg/Kg	6/30/03	
METALS IN SOIL OR SLUDGE BY ICP		SW6010A			KR
Arsenic	6.97	0.500	mg/Kg	7/1/03	
Cadmium	3.98	0.250	mg/Kg	7/1/03	
Chromium	14.1	0.250	mg/Kg	7/1/03	
Lead	22.4	0.125	mg/Kg	7/1/03	
Zinc	131	0.250	mg/Kg	7/1/03	
PH IN SOIL		SW9040			SN
pH	7.79	0.10	pH Units	7/8/03 2:52:00 PM	

Lab ID: T03060331-22 Collection Date: 6/26/03 11:45:00 AM Sample ID: CVKS021-BG-2

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE		SW7471			KR
Mercury	*<0.025	0.025	mg/Kg	7/3/03	
METALS IN SOIL OR SLUDGE BY ICP		SW6010A			KR
Arsenic	11.9	0.500	mg/Kg	7/1/03	
Cadmium	8.94	0.250	mg/Kg	7/1/03	
Chromium	25.4	0.250	mg/Kg	7/1/03	
Lead	70.3	0.125	mg/Kg	7/1/03	
Zinc	59.6	0.250	mg/Kg	7/1/03	
PH IN SOIL		SW9040			SN
pH	7.83	0.10	pH Units	7/8/03 2:52:00 PM	



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CLIENT: A & M Engineering
Lab Order: T03060331
Project: Cherryvale

Date Received: 6/27/03
Date Reported: 09-Jul-03

Lab ID: T03060331-23 Collection Date: 6/26/03 12:30:00 PM Sample ID: CVKS-22

Matrix SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
MERCURY IN SOIL OR SLUDGE		SW7471			
Mercury	0.098	0.025	mg/Kg	7/3/03	KR
METALS IN SOIL OR SLUDGE BY ICP		SW6010A			
Arsenic	23.2	0.500	mg/Kg	7/1/03	KR
Cadmium	333	2.40	mg/Kg	7/1/03	
Chromium	17.4	0.250	mg/Kg	7/1/03	
Lead	606	1.20	mg/Kg	7/1/03	
Zinc	14,600	24.0	mg/Kg	7/1/03	
PH IN SOIL		SW9040			
pH	7.67	0.10	pH Units	7/8/03 2:52:00 PM	SN

**A & M ENGINEERING
AND
ENVIRONMENTAL SERVICES, INC.**



TULSA, OKLAHOMA
ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

10010 E. 16th Street - TULSA, OKLAHOMA 74128-4813
TEL: (918)665-6575 FAX: (918)665-6576 E-Mail: aamdm@aandmengineering.com

703060331

SAMPLING FIRM: **A & M ENGINEERING**
CLIENT CONTACT: *Ally Entyral*
PHONE NUMBER: (918) 665-6573

PROJECT NUMBER: **1804-002-301**
PROJECT NAME: *Cherryvale*

SAMPLERS: (Signature)

ANALYTICAL TESTS REQUIRED

Total Lead	Total Cadmium	Total Arsenic	Total Chromium	Total Zinc	Total Mercury	pH
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STA. NO	DATE	TIME	COMP	GRAB	STATION LOCATION	MATRIX	NO. OF CONTAINERS	RUSH ?		ANALYTICAL TESTS REQUIRED							REMARKS
								YES	NO	Total Lead	Total Cadmium	Total Arsenic	Total Chromium	Total Zinc	Total Mercury	pH	
	6/24/03	10:15			CVKS-1	Sol	1	X		X	X	X	X	X	X	X	
	6/24/03	11:00			CVKS-2	Sol	1	X		X	X	X	X	X	X	X	
	6/24/03	12:00			CVKS-3	Sol	1	X		X	X	X	X	X	X	X	
	6/24/03	12:20			CVKS-4	Sol	1	X		X	X	X	X	X	X	X	
	6/24/03	13:35			CVKS-5	Sol	1	X		X	X	X	X	X	X	X	
	6/24/03	15:00			CVKS-6	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	11:00			CVKS-7-D-1	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	11:15			CVKS-8	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	11:40			CVKS-9	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	12:30			CVKS-10-D-2	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	13:30			CVKS-11-D-3	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	13:50			CVKS-12-D-4	Sol	1	X		X	X	X	X	X	X	X	
	6/25/03	14:10			CVKS-13-D-5	Sol	1	X		X	X	X	X	X	X	X	

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
				<i>John K...</i>	6/27/03	09:00	<i>Ally Entyral</i>
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
				<i>Ally Entyral</i>	6-27-03	9:20	<i>John K...</i>
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	REMARKS:			

7-9-03: 8:07AM: SHERRY LABORATORIES 11-018-628-7756 # 4/ 5

11-918-628-7756 # 5/ 7- 8-03: 8:07AM: SHERRY LABORATORIES

T03060331

A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.



TULSA, OKLAHOMA
ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

10010 E. 16th Street - TULSA, OKLAHOMA 74128-4813
TEL: (918)665-6575 FAX: (918)665-6576 E-Mail: aandm@aandmengineering.com

SAMPLING FIRM: **A & M ENGINEERING**
CLIENT CONTACT: *Ally Ertugrul*
PHONE NUMBER: (918) 665-6575

PROJECT NUMBER: *1804-002-301*
PROJECT NAME: *Cherryvale*

SAAMPLERS: (Signature) *Jan Kuba*

ANALYTICAL TESTS REQUIRED

Total Lead	Total Cadmium	Total Arsenic	Total Chromium	Total Zinc	Total Mercury	pH
------------	---------------	---------------	----------------	------------	---------------	----

STA. NO	DATE	TIME	COMP	GRAB	STATION LOCATION	MATRIX	NO. OF CONTAINERS	RUSH ?		ANALYTICAL TESTS REQUIRED							REMARKS	
								YES	NO	Total Lead	Total Cadmium	Total Arsenic	Total Chromium	Total Zinc	Total Mercury	pH		
	6/25/03	14:40			CVKS-14-D-6	Sol	1	X		X	X	X	X	X	X	X		
	6/25/03	15:30			CVKS-14-D-7	Sol	1	X		X	X	X	X	X	X	X		
	6/25/03	15:50			CVKS-15-D-8	Sol	1	X		X	X	X	X	X	X	X		
	6/25/03	16:15			CVKS-16-D-9	Sol	1	X		X	X	X	X	X	X	X		
	6/25/03	16:40			CVKS-17-D-10	Sol	1	X		X	X	X	X	X	X	X		
	6/25/03	17:00			CVKS-18	Sol	1	X		X	X	X	X	X	X	X		
	6/25/03	17:20			CVKS-19	Sol	1	X		X	X	X	X	X	X	X		
	6/26/03	11:30			CVKS020-BG-1	Sol	1	X		X	X	X	X	X	X	X		
	6/26/03	11:45			CVKS021-BG-2	Sol	1	X		X	X	X	X	X	X	X		
	6/26/03	12:30			CVKS-22	Sol	1	X		X	X	X	X	X	X	X		

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
				<i>Jan Kuba</i>	6/25/03	09:00	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
				<i>[Signature]</i>	6-22-03	9:20	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	REMARKS:			



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Altay Ertugrul
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6574
FAX () 665-6576

July 08, 2003
Order No.: T03060315

RE: Cherryvale

Dear Altay Ertugrul:

Sherry Laboratories received 16 samples on 6/26/03 for the analyses presented in the following report.

In accordance with your instructions, Sherry Laboratories/Oklahoma conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analysis was conducted using EPA approved methodologies. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by SLO.

Certifications/Accreditation: OK - 7604
AR - ADEQ
KS - E-10232
LA - 4002

A scope of Certified/Accredited parameters is available upon request.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,
Tom Gilroy

Approved By: 
Brian Duzan, Director
Environmental Services



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**QA/QC REPORT
A & M Engineering
SAMPLE # 315
BATCH QC**

PARAMETERS	LFB	MS % REC.	MSD % REC.	RPD
Hardness	99	90	90	0.0
Mercury	112	106	103	2.4
Arsenic	98	100	97	3.6
Cadmium	101	103	100	3.1
Chromium	102	104	102	2.0
Lead	99	104	101	2.6
Zinc	100	102	99	3.2
Total Suspended Solids	103	-	-	12.2

Approved by:

SHERRY LABORATORIES/OKLAHOMA

Brian Duzan
Laboratory Director



SHERRY Laboratories

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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-01 Collection Date: 6/24/03 12:00:00 PM Sample ID: CVKW-1

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				SM
Hardness (As CaCO ₃)	1,600	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 3:53:20 P	
Cadmium	0.0387	0.00100	mg/L	6/30/03 3:53:20 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 3:53:20 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 3:53:20 P	
Zinc	1.63	0.0100	mg/L	6/30/03 3:53:20 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	10.0	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-02 Collection Date: 6/24/03 12:20:00 PM Sample ID: CVKW-2

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				SM
Hardness (As CaCO ₃)	910	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 4:16:53 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 4:16:53 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 4:16:53 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 4:16:53 P	
Zinc	0.791	0.0100	mg/L	6/30/03 4:16:53 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	< 5.00	5.00	mg/L	6/26/03 12:00:00 P	



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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-03 Collection Date: 6/24/03 3:00:00 PM Sample ID: CVKW-3

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS		E130.2			SM
Hardness (As CaCO ₃)	280	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 4:51:02 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 4:51:02 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 4:51:02 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 4:51:02 P	
Zinc	0.695	0.0100	mg/L	6/30/03 4:51:02 P	
TOTAL SUSPENDED SOLIDS		E160.2			JF
Suspended Solids (Residue, Non-Filterable)	7.00	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-04 Collection Date: 6/25/03 11:00:00 AM Sample ID: CVKW-4-D1

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS		E130.2			SM
Hardness (As CaCO ₃)	240	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 4:55:57 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 4:55:57 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 4:55:57 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 4:55:57 P	
Zinc	0.0322	0.0100	mg/L	6/30/03 4:55:57 P	
TOTAL SUSPENDED SOLIDS		E160.2			JF
Suspended Solids (Residue, Non-Filterable)	10.0	5.00	mg/L	6/26/03 12:00:00 P	


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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-05 **Collection Date:** 6/25/03 11:15:00 AM **Sample ID:** CVKW-5

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				SM
Hardness (As CaCO3)	310	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:00:52 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:00:52 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:00:52 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:00:52 P	
Zinc	0.224	0.0100	mg/L	6/30/03 5:00:52 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	< 5.00	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-06 **Collection Date:** 6/25/03 11:40:00 AM **Sample ID:** CVKW-6

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				SM
Hardness (As CaCO3)	300	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:24:16 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:24:16 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:24:16 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:24:16 P	
Zinc	0.354	0.0100	mg/L	6/30/03 5:24:16 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	< 5.00	5.00	mg/L	6/26/03 12:00:00 P	



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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-07 Collection Date: 6/25/03 12:30:00 PM Sample ID: CVKW-7-D2

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				SM
Hardness (As CaCO ₃)	240	10	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/26/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:29:12 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:29:12 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:29:12 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:29:12 P	
Zinc	< 0.0100	0.0100	mg/L	6/30/03 5:29:12 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	7.00	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-08 Collection Date: 6/25/03 1:30:00 PM Sample ID: CVKW-8-D3

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				KR
Hardness (As CaCO ₃)	240	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:34:01 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:34:01 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:34:01 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:34:01 P	
Zinc	< 0.0100	0.0100	mg/L	6/30/03 5:34:01 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	33.0	5.00	mg/L	6/26/03 12:00:00 P	



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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-09 Collection Date: 6/25/03 1:50:00 PM Sample ID: CVKW-9-D4

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS		E130.2			KR
Hardness (As CaCO ₃)	230	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:38:50 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:38:50 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:38:50 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:38:50 P	
Zinc	0.132	0.0100	mg/L	6/30/03 5:38:50 P	
TOTAL SUSPENDED SOLIDS		E160.2			JF
Suspended Solids (Residue, Non-Filterable)	58.0	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-10 Collection Date: 6/25/03 2:10:00 PM Sample ID: CVKW-10-D4

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS		E130.2			KR
Hardness (As CaCO ₃)	240	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:43:39 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:43:39 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:43:39 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:43:39 P	
Zinc	0.0544	0.0100	mg/L	6/30/03 5:43:39 P	
TOTAL SUSPENDED SOLIDS		E160.2			JF
Suspended Solids (Residue, Non-Filterable)	130	5.00	mg/L	6/26/03 12:00:00 P	



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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-11 **Collection Date:** 6/25/03 2:40:00 PM **Sample ID:** CVKW-11-D6

Matrix: AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS		E130.2			KR
Hardness (As CaCO3)	230	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:48:28 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:48:28 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:48:28 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:48:28 P	
Zinc	< 0.0100	0.0100	mg/L	6/30/03 5:48:28 P	
TOTAL SUSPENDED SOLIDS		E160.2			JF
Suspended Solids (Residue, Non-Filterable)	16.0	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-12 **Collection Date:** 6/25/03 3:20:00 PM **Sample ID:** CVKW-12-D7

Matrix: AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS		E130.2			KR
Hardness (As CaCO3)	250	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:53:17 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:53:17 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:53:17 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:53:17 P	
Zinc	< 0.0100	0.0100	mg/L	6/30/03 5:53:17 P	
TOTAL SUSPENDED SOLIDS		E160.2			JF
Suspended Solids (Residue, Non-Filterable)	< 5.00	5.00	mg/L	6/26/03 12:00:00 P	



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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-13 Collection Date: 6/25/03 3:50:00 PM Sample ID: CVKW-13-D8

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				KR
Hardness (As CaCO ₃)	220	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 5:58:06 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 5:58:06 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 5:58:06 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 5:58:06 P	
Zinc	< 0.0100	0.0100	mg/L	6/30/03 5:58:06 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	79.0	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-14 Collection Date: 6/25/03 4:15:00 PM Sample ID: CVKW-14-D9

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				KR
Hardness (As CaCO ₃)	250	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 6:02:55 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 6:02:55 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 6:02:55 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 6:02:55 P	
Zinc	< 0.0100	0.0100	mg/L	6/30/03 6:02:55 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	60.0	5.00	mg/L	6/26/03 12:00:00 P	



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CLIENT: A & M Engineering
Lab Order: T03060315
Project: Cherryvale

Date Received: 6/26/03
Date Reported: 08-Jul-03

Lab ID: T03060315-15 Collection Date: 6/25/03 4:40:00 PM Sample ID: CVKW-15-D10

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				KR
Hardness (As CaCO ₃)	220	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 6:07:44 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 6:07:44 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 6:07:44 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 6:07:44 P	
Zinc	0.0204	0.0100	mg/L	6/30/03 6:07:44 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	189	5.00	mg/L	6/26/03 12:00:00 P	

Lab ID: T03060315-16 Collection Date: 6/25/03 5:00:00 PM Sample ID: CVKW-16

Matrix AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
HARDNESS	E130.2				KR
Hardness (As CaCO ₃)	320	10	mg/L	7/8/03 10:00:00 A	
MERCURY IN WATER, TOTAL	E245.2				KR
Mercury	< 0.000100	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL	E200.7				KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 6:30:59 P	
Cadmium	< 0.00100	0.00100	mg/L	6/30/03 6:30:59 P	
Chromium	< 0.0100	0.0100	mg/L	6/30/03 6:30:59 P	
Lead	< 0.00500	0.00500	mg/L	6/30/03 6:30:59 P	
Zinc	0.286	0.0100	mg/L	6/30/03 6:30:59 P	
TOTAL SUSPENDED SOLIDS	E160.2				JF
Suspended Solids (Residue, Non-Filterable)	18.0	5.00	mg/L	6/26/03 12:00:00 P	

T03060315

A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.



TULSA, OKLAHOMA
ENGINEERING - ENVIRONMENTAL - CONSTRUCTION

10010 E. 16th Street - TULSA, OKLAHOMA 74128-4813
TEL: (918)665-6575 FAX: (918)665-6576 E-Mail: aam@aandmengineering.com

SAMPLING FIRM A & M ENGINEERING	CLIENT CONTACT <i>Ally Enternal</i>	PHONE NUMBER (918) 665-6575
PROJECT NUMBER 1804-002-301	PROJECT NAME	

SAMPLERS: (Signature)
Jon Kuch

ANALYTICAL TESTS REQUIRED									
Total Lead	Total Cadmium	Total Arsenic	Total Chromium	Total Zinc	Total Manganese (Cd)	Total Mercury (Cd)	Total Copper	Total Nickel	Total Selenium

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	MATRIX	NO. OF CONTAINERS	RUSH ?		ANALYTICAL TESTS REQUIRED										REMARKS		
								YES	NO	Total Lead	Total Cadmium	Total Arsenic	Total Chromium	Total Zinc	Total Manganese (Cd)	Total Mercury (Cd)	Total Copper	Total Nickel	Total Selenium			
	6/25/03	16:15		/	CVKW-14-D9	Liq	2	X		X	X	X	X	X	X	X	X	X	X	X	X	
	6/25/03	16:40		/	CVKW-15-D10	Liq	2	X		X	X	X	X	X	X	X	X	X	X	X	X	
	6/25/03	17:00		/	CVKW-16	Liq	2	X		X	X	X	X	X	X	X	X	X	X	X	X	

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)				REMARKS:			

1:918-628-7756 # 12/12



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Altay Ertugrul
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6574
FAX () 665-6576

July 02, 2003
Order No.: T03060333

RE: Cherryvale

Dear Altay Ertugrul:

Sherry Laboratories received 1 sample on 6/27/03 for the analyses presented in the following report.

In accordance with your instructions, Sherry Laboratories/Oklahoma conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analysis was conducted using EPA approved methodologies. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by SLO.

Certifications/Accreditation: OK - 7604
AR - ADEQ
KS - E-10232
LA - 4002

A scope of Certified/Accredited parameters is available upon request.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Tom Gilroy

Approved By: 
Brian Duzan, Director
Environmental Services

**SHERRY**Laboratories

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**QA/QC REPORT
A & M Engineering
SAMPLE # T03060333
BATCH QC**

PARAMETERS	LFB	MS % REC.	MSD % REC.	RPD
Total Hardness	99	90	90	0.0
Arsenic	99	98	99	1.1
Cadmium	101	100	102	1.6
Chromium	102	102	104	2.0
Lead	100	102	104	1.3
Zinc	100	98	100	1.3
Total Suspended Solids	108	-	-	2.1

Approved by:

SHERRY LABORATORIES/OKLAHOMA

Brian Duzan
Laboratory Director



SHERRY Laboratories

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Tulsa OK 74145
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CLIENT: A & M Engineering
Lab Order: T03060333
Project: Cherryvale
Lab ID: T03060333-01A
Date Received: 27-Jun-03

Client Sample ID: CVKW-17
Tag Number:
Collection Date: 6/26/03 12:30:00 PM
Matrix: AQUEOUS
Date Reported: 02-Jul-03

Analyses	Result	Detection Limit	Units	Date Analyzed	Analyst
HARDNESS		E130.2			SM
Hardness (As CaCO ₃)	470	20	mg/L	7/1/03 2:15:00 PM	
MERCURY IN WATER, TOTAL		E245.2			KR
Mercury	0.000200	0.000100	mg/L	6/27/03	
METALS IN WATER BY ICP, TOTAL		E200.7			KR
Arsenic	< 0.00500	0.00500	mg/L	6/30/03 6:45:37 P	
Cadmium	0.498	0.00100	mg/L	6/30/03 6:45:37 P	
Chromium	0.0365	0.0100	mg/L	6/30/03 6:45:37 P	
Lead	0.585	0.00500	mg/L	6/30/03 6:45:37 P	
Zinc	35.9	0.100	mg/L	6/30/03 6:45:37 P	
TOTAL SUSPENDED SOLIDS		E160.2			SN
Suspended Solids (Residue, Non-Filterable)	3,780	20.0	mg/L	6/27/03 2:15:00 P	

Sediment Sample Descriptions – Unnamed Creek

S1:

Sampled on the National Zinc Site (project site) about 300' east of the western property line. The area was open and somewhat dry. The sediment area is 10' wide and 4" deep. The sediment was a tannish brown color with some silt and sand type gravel.

S2:

Sampled along the edge of the project site about 100' east of the western property line. At this point, unnamed creek is narrow and turns south and has varying pockets of sediment. There is a small tributary that connects from the north. The sample was taken east of the intersection point to prevent influence from tributary. Trees surrounded the area and the soil was moist. The sediment area is 6' wide and 16" deep. The sediment was dark in color with intermixed river sand the size of gravel at the point of accumulation.

S3:

Sampled on the project site about 650' south of S2 near MW3 along the western property line in the unnamed creek. The sediment area is 8' wide and 10" deep. Water was present at the sampling point so W1 was collected at the same point. Dense grass and cattails present where canopy was open. Wherever vegetation is present, sediments have washed clean from those areas. The drainage pipe originates from the flatlands of the site. The sediment was brown with very little gravel, more like silt.

Photo 1: Drainage pipe and area where sediment and water were sampled.

Photo 2: Slate rock that covers much of the creek between S3 and S4.

S4:

Sampled on the project site about 500' south of S3 near MW2 along the western property line in the unnamed creek. Water was present at the sampling point so W2 was collected at the same point. Trees covered the area and it was a low point where water had collected. Near this point, the creek turns and starts going west off of the project site and towards Highway 169. The sediment area is 16' wide and 2" deep. Area north of the sample point is heavy with cattails and the sample point is mainly dark silt with some gravel.

Photo 2: Slate rock that covers much of the creek between S3 and S4.

Photo 3: Looking west towards Highway 169 from MW2 near S4.

Photo 4: Looking east towards project site from Highway 169. S4 is located near the clearing in the tree line near the left-center portion of the photo.

S22:

Sampled along unnamed creek between the project site and Highway 169. The sample point was about 400' west of the western property line. Trees lined the creek at this point and there was standing water where W17 was collected. The creek had fairly heavy silt and dense grass and cattail vegetation. The sediment area is 8' wide and 8" deep. The sediment was mainly dark silt.

Photo 4: Looking east towards project site from Highway 169. S22 is located in the dry streambed seen in the top-right portion of the photo.

S5:

Sampled along unnamed creek between the project site and Highway 169 about 950' west of the western property line. The area has a shallow streambed with a rocky slate bottom and mixed vegetation. There is very little sediment and the sample collected was from a thin top layer. The sediment area is 20' wide and 1" deep.

Photo 4: Looking east towards project site from Highway 169. S22 is located in the dry streambed seen in the top-right portion of the photo.

S6:

Sampled on the west side of Highway 169 about 400' east of Sunnyslope Drive along unnamed creek. The sample was taken from the shallow streambed populated with mixed grasses and heavy in silt with little sediment. The creek is lined with hayfields on both sides and has standing water in many places because of equipment running down and making deep ruts. The sediment area is 15' wide and 1" deep. W3 was collected from this same area.

Photo 5: Looking west along unnamed creek towards Sunnyslope Drive from Highway 169. S6 is located in the center of the streambed.

S19:

Sampled along unnamed creek about 550' west of Sunnyslope Drive. The sample point is surrounded by very dense vegetation. The portion of the creek leading up to this point is mostly slate rock but at the sample point, the creek begins to include sediment. The sediment area is 12' wide and 2" deep.

S18:

Sampled along unnamed creek about 250' east of the Martin Street culvert. This area has very heavy sediments and brackish water in many places. The sediment was estimated as 12' across and at least 16" deep near this point. The vegetation is dense and there are

many aquatic creatures in this area. Gray colored buildup was noted on top of the organic matter in this stretch of the creek. The water has to be 3' deep to reach the culvert opening. The sediment was mixed gravel with silt, dark in color with some gray mix. W16 was collected at this sample point.

Photo 6: Looking northeast from Martin Street culvert up the unnamed creek. S18 is located near the top portion of the photo obscured by foliage.

Photo 7: Located right at the northeast base of the Martin Street culvert. Water must reach about 3' to flow through the drainage pipe.

S9:

Sampled along unnamed creek about 100' west of the Martin Street culvert. The sample area was estimated to have sediment that was 16' wide and 6" deep. The area was a lot drier than the previous portion of the creek due to the culvert. Dense vegetation was present in the area. W6 was collected at this sample point.

Photo 8: Looking southwest from Martin Street culvert down the unnamed creek. S9 is located near the top-center portion of the photo obscured by foliage.

Photo 9: Located between S8 and S9, this area is where a water line has been added.

S8:

Sampled about 600' east of the intersection point between unnamed creek and Drum creek. The creek deepens and widens considerably in this stretch and has mostly standing water. The vegetation is dense in the area. There is heavy sediment near the sample point with estimates of sediment as 14' wide and 8" deep. This portion of the creek from the Martin Street Culvert downstream to Drum Creek is all brick red brownish sediment. W5 was collected at this sample point.

Photo 9: Located between S8 and S9, this area is where a water line has been added.

Photo 10: Sediment piles that are typical of the turns along unnamed creek between Martin Street culvert and the end of unnamed creek.

S7-D1:

Sampled within 50' east of Drum creek along unnamed creek at about the intersection point. This area is very heavy in sediment with an estimated 12' width and 24" depth. The vegetation is dense in the area. W4-D1 was collected at this point.

Sediment Sample Descriptions – Drum Creek

S15-D8:

Sampled within 50' south of the new bridge. The county had disturbed the area during the installation of the new bridge although the amount of disturbance is uncertain. The creek is very wide and deep with steep sides. The area is relatively free of vegetation because of the construction although the rest of the creek is full of vegetation. W13-D8 was collected at this point.

Photo 11: Looking south down Drum creek from the new bridge located on the county road. S15-D8 is located to the bottom-right outside the scope of the photo.

S14-D7:

Sampled about 750' south of the county road at a major bend in Drum creek. Vegetation is present but not dense and the sides are steep with deep water in the creek. W12-D7 was collected at this point.

S14-D6:

Sampled along Drum creek about 1350' south of the county road. The creek conditions remain relatively constant at this point with moderate vegetation, steep banks, and deep water. W11-D6 was collected at this point.

Photo 12: Looking north along Drum creek from S10-D2 towards S14-D6. S14-D6 is farther upstream and is not visible in the photo.

S10-D2:

Sampled along Drum creek about 2100' south of the county road. The creek has moderate vegetation at this point. The sample area has shallow water and sediment piles. W7-D2 was collected at this point.

Photo 12: Looking north along Drum creek from S10-D2 towards S14-D6.

Photo 13: Looking west at the feeder creek. S10-D2 is located below scope of the photo.

Photo 14: Silt shelf located in the sampling area. S10-D2 was taken near in the vicinity of the silt shelf. Note fish in water.

S11-D3:

Sampled along Drum creek within 50' south of the intersection with unnamed creek. The sediment is very deep at this point while the creek is still wide with steep banks. The vegetation is moderate. W8-D3 was collected at this point.

S12-D4:

Sampled along Drum creek about 100' south of the intersection with unnamed creek. The sediment is very deep at this point while the creek is still wide with steep banks. The vegetation is moderate. W9-D4 was collected at this point.

S13-D5:

Sampled along Drum creek about 250' south of the intersection with unnamed creek. The creek is wide at this point but less than 4' deep. The vegetation remains moderate. W10-D5 was collected at this point.

S16-D9:

Sampled along Drum creek south of the next bridge crossing for the county road about 1 mile south of the first bridge (S15-D8). There is moderate vegetation, steep sides, and deep water in the sample area. W14-D9 was collected at this point.

Photo 15: Looking south along Drum creek from the second county road bridge. S16-D9 is located on the left bank of the creek on the left side of the photo obscured by foliage.

S17-D10:

Sampled along Drum creek at a low water crossing for the county road about 1 mile south of the second bridge (S16-D9). The water was no more than 6" above the crossing. The actual streambed is populated with vegetation and some sediment. W15-D10 was collected at this point.

Photo 16: Looking east across low water crossing on the third county road. S17-D10 was sampled from the streambed near the right edge of the low water crossing.

Sediment Sample Description – Background

S20-BG1:

Sampled within 100' of the northwest corner of the project site on the south side of the country road in a ditch area that fed into a drain. The area was relatively dry and surrounded by grass.

Photo 17: Ditch area on the south side of the country road. S20-BG1 can be seen in the bottom-right portion of the photo.

S21-BG2:

Sampled about 150' south of the railroad tracks on the west side of Highway 169 in a ditch just east of an area of cattails. The sample point was 100' south of the gas line to stay away from ground disturbance. The area was moist and surrounded by grass.

Photo 18: Looking north towards railroad tracks along Highway 169. S21-BG2 is located in the low area between the highway and cattails.

The quantity of sediment to be removed from Unnamed Creek was 2,444 cubic yards. The heaviest sediment accumulations were located in the areas where Unnamed Creek had slight bends and turns. The amount of sediments to be removed were measured in the field.

Water Sample Descriptions – Unnamed Creek

W1:

Sampled on the project site about 650' south of the county road. Located near MW3 along the western property line in the unnamed creek. The sediment in this area is 8' wide and 10" deep. The water was collected from the pool in Photo 1. Dense grass and cattails present where canopy was open. The drainage pipe originates from the flatlands of the site. S3 was collected at this point.

Photo 1: Drainage pipe and area where sediment and water were sampled.

Photo 2: Slate rock that covers much of the creek between W1 and W2.

W2:

Sampled on the project site about 500' south of W1 near MW2 along the western property line in the unnamed creek. Trees covered the area and it was a low point where water had collected. Near this point, the creek turns and starts going west off of the project site and towards Highway 169. The sediment in the area is 16' wide and 2" deep. S4 was collected in this area.

Photo 2: Slate rock that covers much of the creek between W1 and W2.

Photo 3: Looking west towards Highway 169 from MW2 near W2.

Photo 4: Looking east towards project site from Highway 169. W2 is located near the clearing in the tree line near the left-center portion of the photo.

W17:

Sampled along unnamed creek between the project site and Highway 169. The sample point was about 400' west of the western property line. Trees lined the creek at this point and there was standing water where W17 was collected. The creek had fairly heavy silt and dense grass and cattail vegetation. The sediment in the area is 8' wide and 8" deep. S22 was collected at this sample point.

Photo 4: Looking east towards project site from Highway 169. W17 is located in the dry streambed seen in the top-right portion of the photo.

W3:

Sampled on the west side of Highway 169 about 400' east of Sunnyslope Drive along unnamed creek. The sample was taken from the shallow streambed populated with mixed grasses and heavy in silt with little sediment. The creek is lined with hayfields on both sides and has standing water in many places because of equipment running down

and making deep ruts. The sediment area is 15' wide and 1" deep. S6 was collected from this same area.

Photo 5: Looking west along unnamed creek towards Sunnyslope Drive from Highway 169. W3 is located in the center of the streambed.

W16:

Sampled along unnamed creek about 250' east of the Martin Street culvert. This area has very heavy sediments and brackish water in many places. The sediment was estimated as 12' across and at least 16" deep near this point. The vegetation is dense and there are many aquatic creatures in this area. Gray colored buildup was noted on top of the organic matter in this stretch of the creek. The water has to be 3' deep to reach the culvert opening. S18 was collected at this sample point.

Photo 6: Looking northeast from Martin Street culvert up the unnamed creek. W16 is located near the top portion of the photo obscured by foliage.

Photo 7: Located right at the northeast base of the Martin Street culvert. Water must reach about 3' to flow through the drainage pipe.

W6:

Sampled along unnamed creek about 100' west of the Martin Street culvert. The sample area was estimated to have sediment that was 16' wide and 6" deep. The area was a lot drier than the previous portion of the creek due to the culvert. Dense vegetation was present in the area. S9 was collected at this sample point.

Photo 8: Looking southwest from Martin Street culvert down the unnamed creek. W6 is located near the top-center portion of the photo obscured by foliage.

Photo 9: Located between W5 and W6, this area is where a water line has been added.

W5:

Sampled about 600' east of the intersection point between unnamed creek and Drum creek. The creek deepens and widens considerably in this stretch and has mostly standing water. The vegetation is dense in the area. There is heavy sediment near the sample point with estimates of sediment as 14' wide and 8" deep. S8 was collected at this sample point.

Photo 9: Located between W5 and W6, this area is where a water line has been added.

Photo 10: Sediment piles that are typical of the turns along unnamed creek between Martin Street culvert and the end of unnamed creek.

W4-D1:

Sampled within 50' east of Drum creek along unnamed creek at about the intersection point. This area is very heavy in sediment with an estimated 12' width and 24" depth. The vegetation is dense in the area. S7-D1 was collected at this point.

Water Sample Descriptions – Drum Creek

W13-D8:

Sampled within 50' south of the new bridge. The county had disturbed the area during the installation of the new bridge although the amount of disturbance is uncertain. The creek is very wide and deep with steep sides. The area is relatively free of vegetation because of the construction although the rest of the creek is full of vegetation. S15-D8 was collected at this point.

Photo 11: Looking south down Drum creek from the new bridge located on the county road. W13-D8 is located to the bottom-right outside the scope of the photo.

W12-D7:

Sampled about 750' south of the county road at a major bend in Drum creek. Vegetation is present but not dense and the sides are steep with deep water in the creek. S14-D7 was collected at this point.

W11-D6:

Sampled along Drum creek about 1350' south of the county road. The creek conditions remain relatively constant at this point with moderate vegetation, steep banks, and deep water. S14-D6 was collected at this point.

Photo 12: Looking north along Drum creek from W7-D2 towards W11-D6. W11-D6 is farther upstream and is not visible in the photo.

W7-D2:

Sampled along Drum creek about 2100' south of the county road. The creek has moderate vegetation at this point. The sample area has shallow water and sediment piles. S10-D2 was collected at this point.

Photo 12: Looking north along Drum creek from W7-D2 towards W11-D6.

Photo 13: Looking west at the feeder creek. W7-D2 is located below scope of the photo.

Photo 14: Silt shelf located in the sampling area. W7-D2 was taken near in the vicinity of the silt shelf. Note fish in water.

W8-D3:

Sampled along Drum creek within 50' south of the intersection with unnamed creek. The sediment is very deep at this point while the creek is still wide with steep banks. The vegetation is moderate. S11-D3 was collected at this point.

W9-D4:

Sampled along Drum creek about 100' south of the intersection with unnamed creek. The sediment is very deep at this point while the creek is still wide with steep banks. The vegetation is moderate. S12-D4 was collected at this point.

W10-D5:

Sampled along Drum creek about 250' south of the intersection with unnamed creek. The creek is wide at this point but less than 4' deep. The vegetation remains moderate. S13-D5 was collected at this point.

W14-D9:

Sampled along Drum creek south of the next bridge crossing for the county road about 1 mile south of the first bridge (W13-D8). There is moderate vegetation, steep sides, and deep water in the sample area. S16-D9 was collected at this point.

Photo 15: Looking south along Drum creek from the second county road bridge. S16-D9 is located on the left bank of the creek on the left side of the photo obscured by foliage.

W15-D10:

Sampled along Drum creek at a low water crossing for the county road about 1 mile south of the second bridge (W14-D9). The water was no more than 6" above the crossing. The actual streambed is populated with vegetation and some sediment. S17-D10 was collected at this point.

Photo 16: Looking east across low water crossing on the third county road. W15-D10 was sampled from the streambed near the right edge of the low water crossing.

#1



Drainage pipe and area where S3 and W1 were sampled.

#2



Slate rock that covers much of the creek between S3 and S4.

#3



Looking west towards Highway 169 from MW2 near S4.

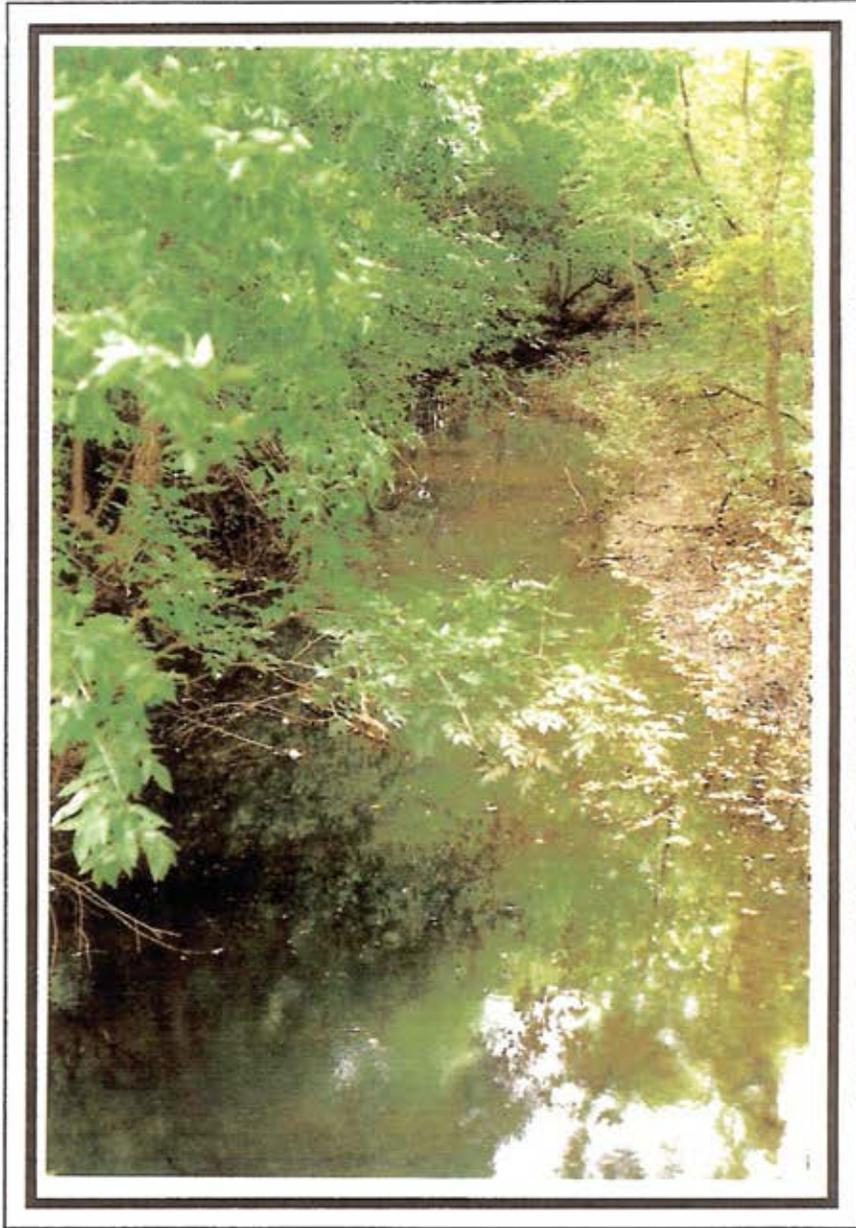
#4



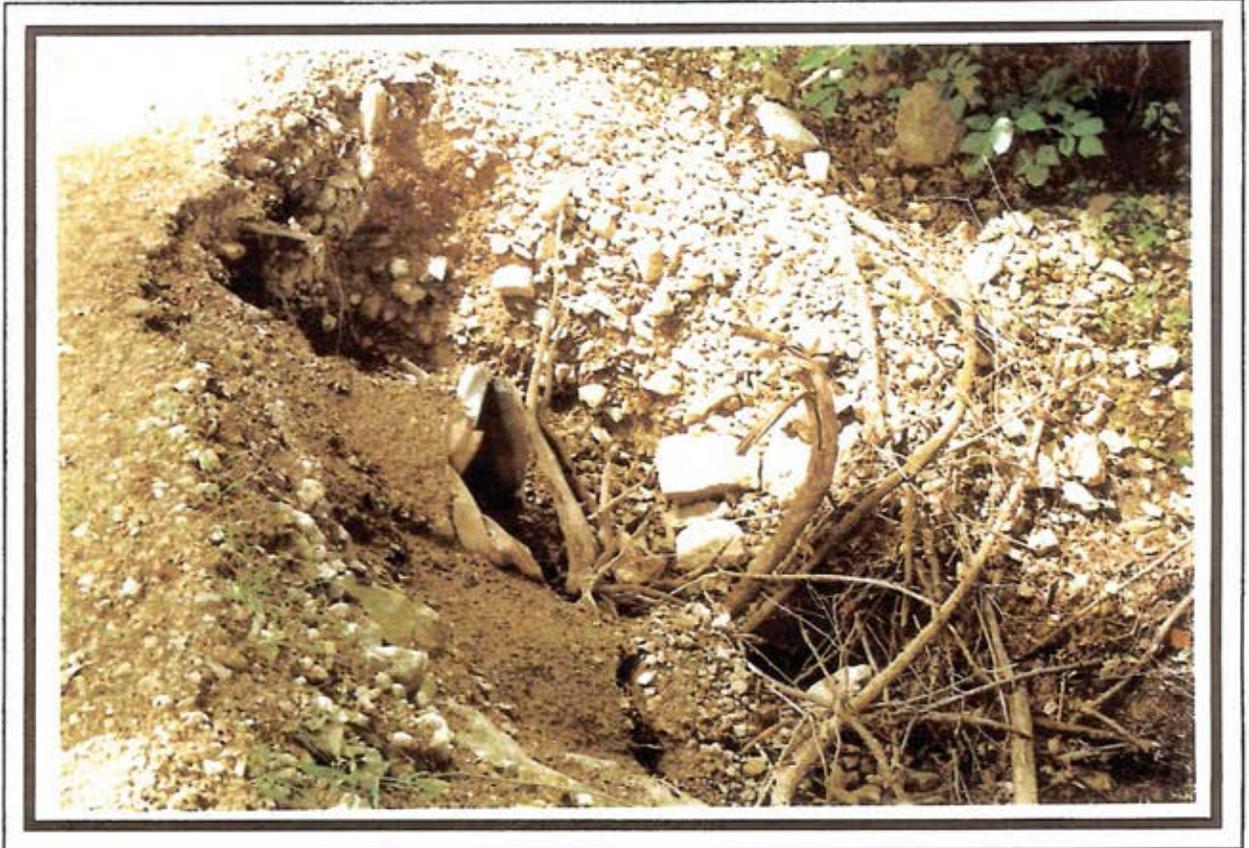
Looking east towards project site from Highway 169. S4 is located near the clearing in the tree line at the back. S22 and S5 are located in the creek visible on the right.



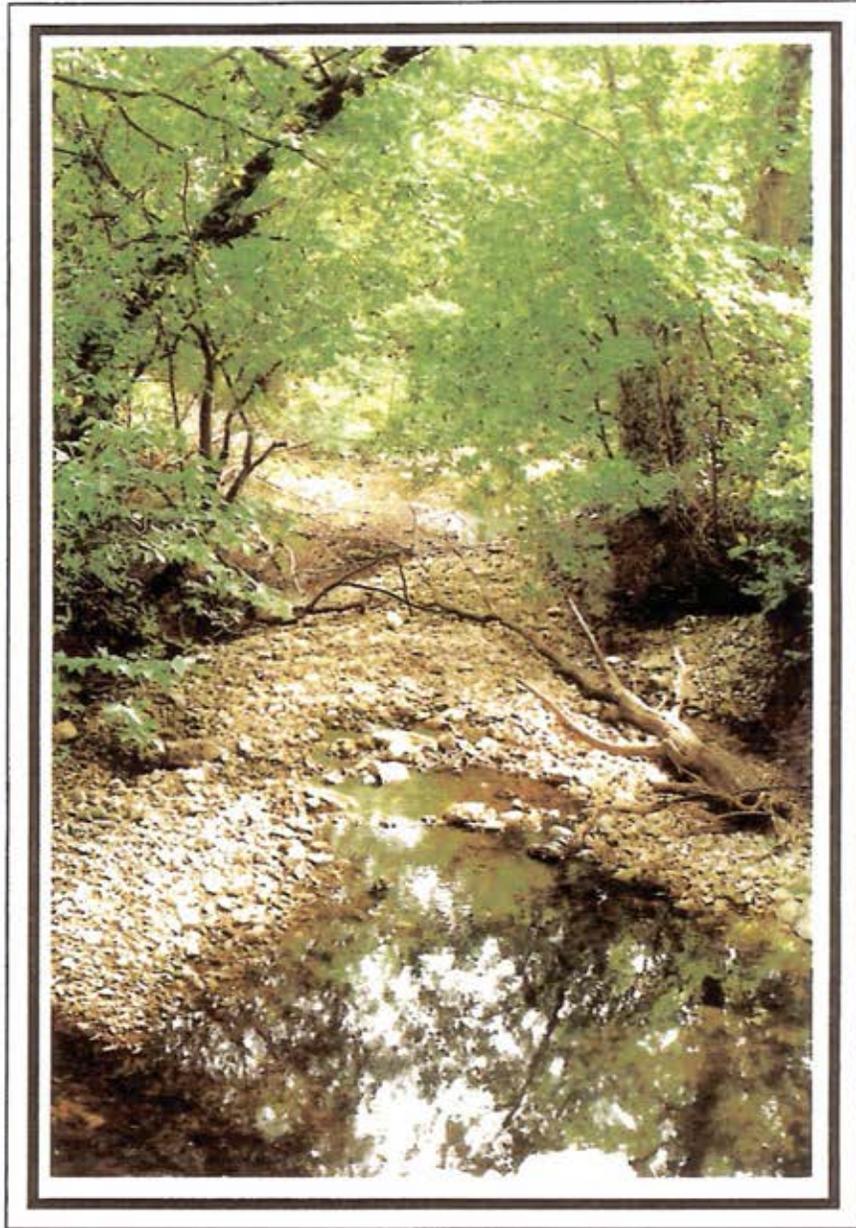
Looking west along unnamed creek towards Sunnyslope Drive from Highway 169. S6 is located in the center of the creek.



Looking northeast from Martin Street culvert up the unnamed creek. S18 is located near the top of the photo but obscured by foliage.



Located right at the northeast base of the Martin Street culvert. Water must reach about 3' to flow through the drainage pipe.

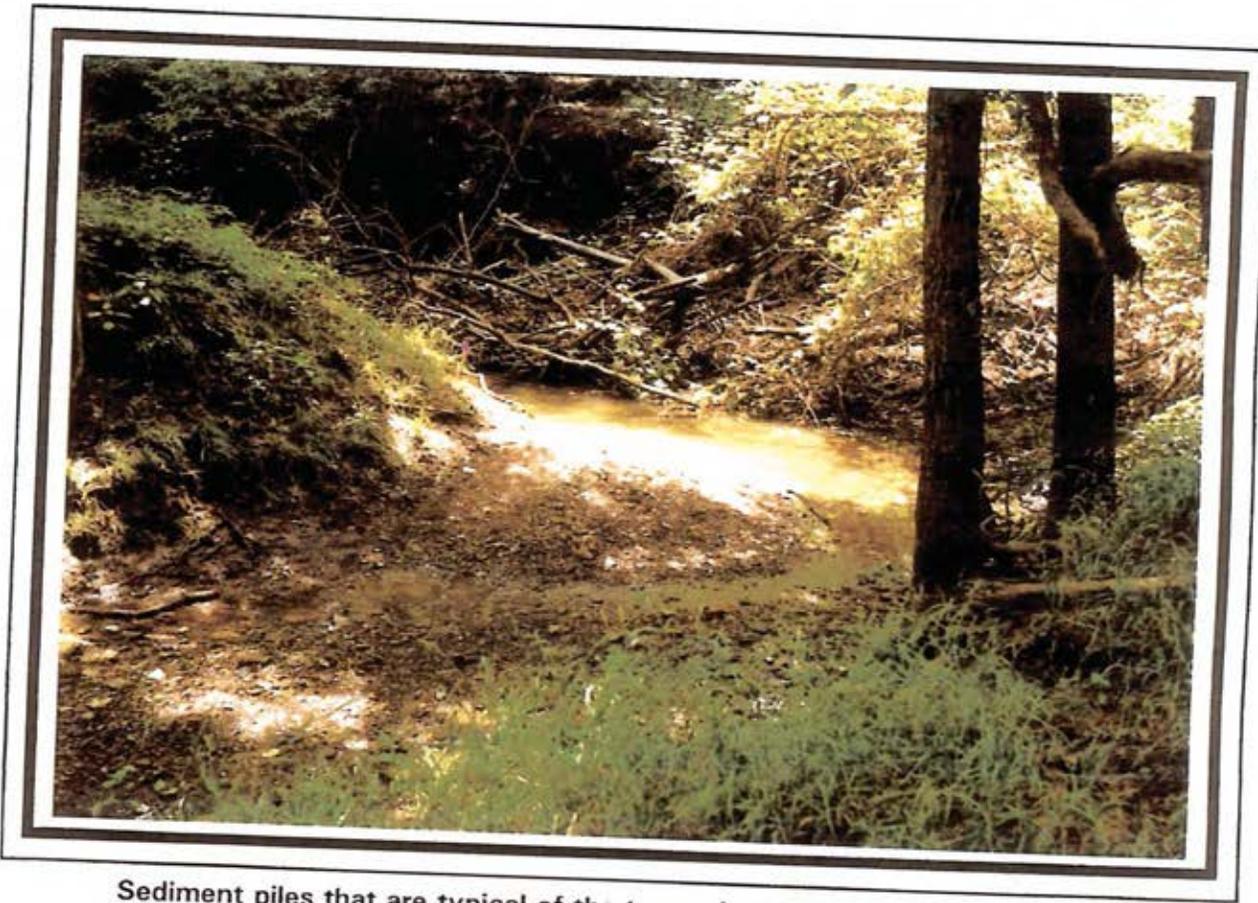


Looking southwest from Martin Street culvert down the unnamed creek. S9 is located near the top of the photo but obscured by foliage.



#9

Located between S8 and S9, this area is where a water line has been added.



#10

Sediment piles that are typical of the turns along unnamed creek between Martin Street culvert and the end of unnamed creek.

#11



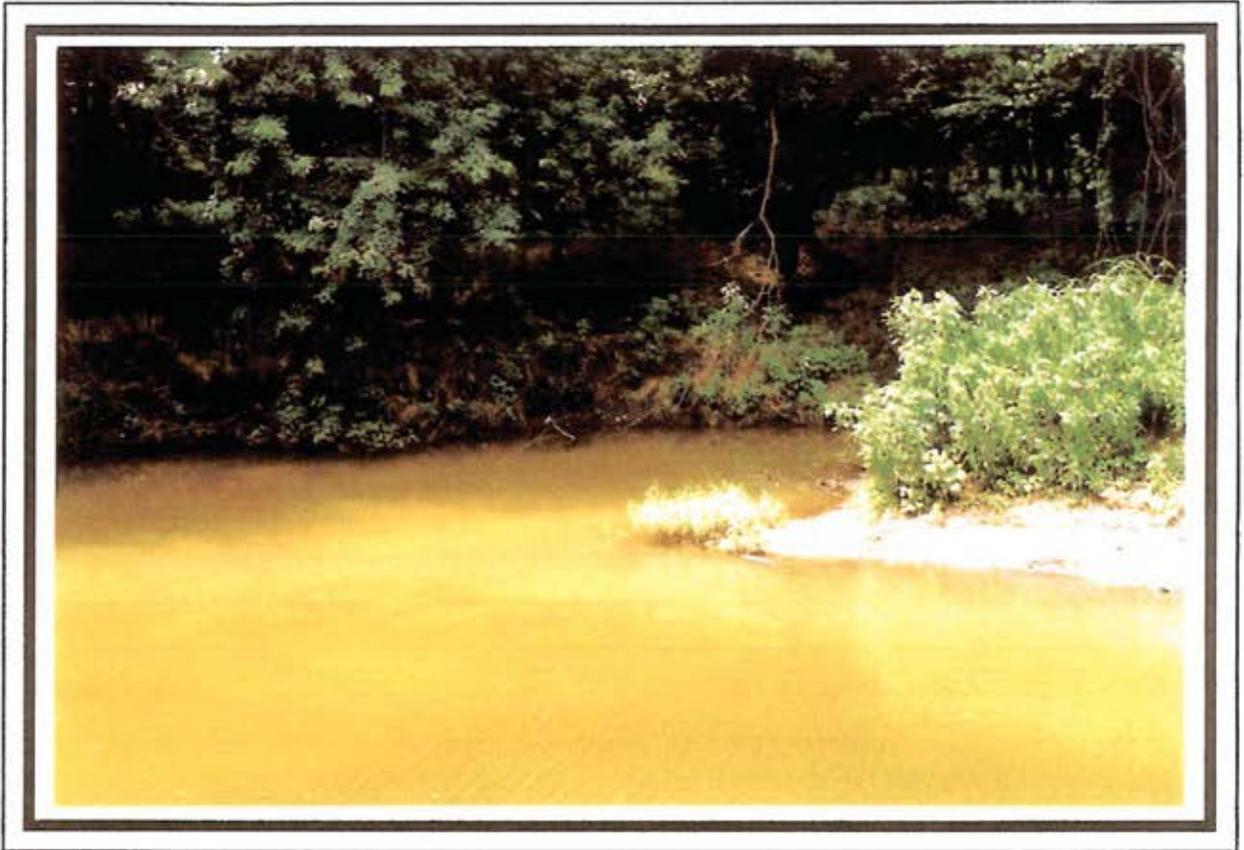
Looking south down Drum creek from the new bridge located on the county road. S15 is located to the bottom-right outside the scope of the photo.

#12



Looking north along Drum creek from S10-D2 towards S14-D6.

#13



Looking west at the feeder creek. S10-D2 is located below scope of the photo.

#14



Silt shelf located in the sampling area. S10-D2 was taken near in the vicinity of the silt shelf. Note fish in water.

#15



Looking south along Drum creek from the second county road bridge. S16 is located on the left bank of the creek but obscured by foliage.

#16



Looking east across low water crossing on the third county road. S17 was sampled in the streambed near the right edge of the low water crossing.

#1



Ditch area on the south side of the county road. S20-BG1 can be seen in the bottom-right portion of the photo.

#1E



Looking north towards railroad tracks along Highway 169. S21-BG2 is located in the low area between the highway and cattails.

6825 E 38th Street
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Altay Ertugrul
A & M Engineering
10010 E. 16th St.
Tulsa, OK 74128-4813
TEL: (918) 665-6574
FAX () 665-6576

June 05, 2003
Order No.: T03050336

RE: Cherryvale Soils

Dear Altay Ertugrul:

Sherry Laboratories received 25 samples on 5/30/03 for the analyses presented in the following report.

In accordance with your instructions, Sherry Laboratories/Oklahoma conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analysis was conducted using EPA approved methodologies. All relevant sampling information is on the attached chain-of-custody form. The initials SUB as the analyst designate any testing sub-contracted by SLO.

Certifications/Accreditation: OK - 7604
AR - ADEQ
KS - E-10232
LA - 4002

A scope of Certified/Accredited parameters is available upon request.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Tom Gilroy

Approved By: 
Brian Duzan, Director
Environmental Services



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-01 **Collection Date:** 5/28/03

Sample ID: EPAR11A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP					SW
Arsenic	3.53	0.500	mg/Kg	6/2/03	
Cadmium	6.42	0.250	mg/Kg	6/2/03	
Lead	95.3	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-02 **Collection Date:** 5/28/03

Sample ID: EPAR15A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP					SW
Arsenic	5.23	0.500	mg/Kg	6/2/03	
Cadmium	7.17	0.250	mg/Kg	6/2/03	
Lead	101	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-03 **Collection Date:** 5/28/03

Sample ID: EPAR18A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP					SW
Arsenic	41.3	0.500	mg/Kg	6/2/03	
Cadmium	19.6	0.250	mg/Kg	6/2/03	
Lead	1,050	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-04 **Collection Date:** 5/28/03

Sample ID: EPAR20A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP					SW
Arsenic	9.19	0.500	mg/Kg	6/2/03	
Cadmium	15.8	0.250	mg/Kg	6/2/03	
Lead	529	1.25	mg/Kg	6/2/03	



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-05 **Collection Date:** 5/28/03

Sample ID: EPAR19A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.89	0.500	mg/Kg	6/2/03	
Cadmium	12.5	0.250	mg/Kg	6/2/03	
Lead	227	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-06 **Collection Date:** 5/28/03

Sample ID: EPAR16A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	6.10	0.500	mg/Kg	6/2/03	
Cadmium	12.7	0.250	mg/Kg	6/2/03	
Lead	226	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-07 **Collection Date:** 5/28/03

Sample ID: EPAR09A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	6.57	0.500	mg/Kg	6/2/03	
Cadmium	14.3	0.250	mg/Kg	6/2/03	
Lead	289	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-08 **Collection Date:** 5/28/03

Sample ID: EPAR03A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	4.14	0.500	mg/Kg	6/2/03	
Cadmium	12.7	0.250	mg/Kg	6/2/03	
Lead	270	1.25	mg/Kg	6/2/03	



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-09 **Collection Date:** 5/28/03

Sample ID: EPAR1A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	4.97	0.500	mg/Kg	6/2/03	
Cadmium	10.3	0.250	mg/Kg	6/2/03	
Lead	198	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-10 **Collection Date:** 5/28/03

Sample ID: EPAR2A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	3.75	0.500	mg/Kg	6/2/03	
Cadmium	5.89	0.250	mg/Kg	6/2/03	
Lead	108	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-11 **Collection Date:** 5/28/03

Sample ID: EPAR5A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.86	0.500	mg/Kg	6/2/03	
Cadmium	10.7	0.250	mg/Kg	6/2/03	
Lead	215	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-12 **Collection Date:** 5/28/03

Sample ID: EPAR7A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.33	0.500	mg/Kg	6/2/03	
Cadmium	11.7	0.250	mg/Kg	6/2/03	
Lead	414	1.25	mg/Kg	6/2/03	



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-13 **Collection Date:** 5/28/03

Sample ID: EPAR10A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	4.72	0.500	mg/Kg	6/2/03	
Cadmium	7.25	0.250	mg/Kg	6/2/03	
Lead	169	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-14 **Collection Date:** 5/28/03

Sample ID: EPAR13A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.76	0.500	mg/Kg	6/2/03	
Cadmium	4.18	0.250	mg/Kg	6/2/03	
Lead	49.8	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-15 **Collection Date:** 5/28/03

Sample ID: EPAR06A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	4.39	0.500	mg/Kg	6/2/03	
Cadmium	6.81	0.250	mg/Kg	6/2/03	
Lead	177	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-16 **Collection Date:** 5/28/03

Sample ID: EPAR06B

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	9.82	0.500	mg/Kg	6/2/03	
Cadmium	22.3	0.250	mg/Kg	6/2/03	
Lead	569	1.25	mg/Kg	6/2/03	



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-17 **Collection Date:** 5/28/03

Sample ID: EPAR04A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	4.84	0.500	mg/Kg	6/2/03	
Cadmium	7.09	0.250	mg/Kg	6/2/03	
Lead	155	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-18 **Collection Date:** 5/28/03

Sample ID: EPAR04B

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	7.20	0.500	mg/Kg	6/2/03	
Cadmium	9.84	0.250	mg/Kg	6/2/03	
Lead	210	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-19 **Collection Date:** 5/28/03

Sample ID: EPAR08A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.40	0.500	mg/Kg	6/2/03	
Cadmium	10.3	0.250	mg/Kg	6/2/03	
Lead	221	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-20 **Collection Date:** 5/28/03

Sample ID: EPAR08B

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.15	0.500	mg/Kg	6/2/03	
Cadmium	35.2	0.250	mg/Kg	6/2/03	
Lead	160	0.125	mg/Kg	6/2/03	



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-21 **Collection Date:** 5/28/03

Sample ID: EPAR12A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	5.65	0.500	mg/Kg	6/2/03	
Cadmium	11.4	0.250	mg/Kg	6/2/03	
Lead	241	0.125	mg/Kg	6/2/03	

Lab ID: T03050336-22 **Collection Date:** 5/28/03

Sample ID: EPAR17A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	12.7	0.500	mg/Kg	6/2/03	
Cadmium	35.3	0.250	mg/Kg	6/2/03	
Lead	707	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-23 **Collection Date:** 5/28/03

Sample ID: EPAR14A

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	8.17	0.500	mg/Kg	6/2/03	
Cadmium	18.8	0.250	mg/Kg	6/2/03	
Lead	575	1.25	mg/Kg	6/2/03	

Lab ID: T03050336-24 **Collection Date:** 5/28/03

Sample ID: EPAR14B

Matrix: SOIL

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN SOIL OR SLUDGE BY ICP	SW6010A				SW
Arsenic	7.11	0.500	mg/Kg	6/2/03	
Cadmium	17.4	0.250	mg/Kg	6/2/03	
Lead	243	1.25	mg/Kg	6/2/03	



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CLIENT: A & M Engineering
Lab Order: T03050336
Project: Cherryvale Soils

Date Received: 5/30/03
Date Reported: 05-Jun-03

Lab ID: T03050336-25 **Collection Date:** 5/28/03

Sample ID: Equipment Blank

Matrix: AQUEOUS

<u>Analyses</u>	<u>Result</u>	<u>Detection Limit</u>	<u>Units</u>	<u>Date Analyzed</u>	<u>Analyst</u>
METALS IN WATER BY ICP, TOTAL		E200.7			SW
Arsenic	< 0.00500	0.00500	mg/L	6/3/03	
Cadmium	< 0.00100	0.00100	mg/L	6/3/03	
Lead	< 0.00500	0.00500	mg/L	6/3/03	

