

Bedrock Groundwater Monitoring Report

SKW Metals & Alloys, Inc.
Niagara Falls, NY

RECEIVED

AUG 1 1997

NYSDEC-REG. 9
FOIL
 REL UNREL

Submitted to:

New York State
Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-2999

Attn: Mr. Michael J. Hinton
Environmental Engineer II

LAN
LAN ASSOCIATES^{INC.}

ENVIRONMENTAL AND FACILITIES ENGINEERING
66 CUNA STREET ■ ST. AUGUSTINE, FL 32084-3619

904-824-8999

FAX ■ 904-824-0726

Admin. Records

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Attn: Mr. Michael J. Hinton
Environmental Engineer II

Prepared by:

LAN Associates, Inc.
66 Cuna Street
St. Augustine, FL 32084

© LAN Associates, Inc.

LAN Ref. #2.3269.6
August 8, 1997

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ENVIRONMENTAL AND FACILITIES ENGINEERING
66 CUNA STREET • ST. AUGUSTINE, FL 32084-3619

904-824-6999

FAX • 904-824-0726

Bedrock Groundwater Monitoring Report

SKW Metals & Alloys, Inc.
Niagara Falls, New York

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Bedrock Groundwater Monitoring Report

SKW Metals & Alloys, Inc.
Niagara Falls, New York

1. INTRODUCTION

LAN Associates, on behalf of SKW Metals and Alloys, has installed a bedrock groundwater monitoring well at the SKW Witmer Road landfill site. This well was installed in order to determine the groundwater potentiometric surface and groundwater quality at this location. The bedrock well (BR-1) was installed at a location on the western portion on the property just inside the entrance gate. The location of this well was agreed to by the NYSDEC project manager and SKW management in a meeting held in Buffalo on June 9, 1997. The location of the well is depicted on the well location map (Attachment 1).

After the well was installed, a groundwater sample was collected from this well and tested for metals, volatile organic, and semi-volatile organic compounds. In addition, the depth to groundwater was measured in order to determine groundwater elevation.

2. METHODS

The soil boring for monitoring well BR-1 was advanced on June 24, 1997. The boring was completed by split spoon sampling through 6¼-inch hollow stem augers. The split spoon samples were 2 inch diameter and 2 feet long. Blow counts were recorded as an indication of soil density. This information, along with soil description and well construction, was recorded on soil boring logs (Attachment 2). Subsurface material encountered while advancing the split spoons included 5 feet of industrial fill. Below the industrial fill was a light brown silty clay that extended from approximately 5 to 8 feet below grade. This was followed by a reddish brown, silty, fine to very fine sand that extended from approximately 8 to 15 feet below grade. Below this interval, the sequence included a reddish brown, silty, fine to very fine sand with dark gray limestone pebbles from a depth of approximately 15 to 17 feet below grade. From 17 to 19 feet below grade, a reddish brown, medium coarse sand with limestone gravel was encountered. Split spoon sample refusal occurred at approximately 19 feet below surface. From 19 to 21½ feet below ground surface, the boring was advanced via wet rotary drilling. This provided a 2-foot deep socket into the competent limestone bedrock. The work was concluded on June 24, 1997, by grouting a 4-inch diameter outer steel casing into the limestone. The bottom depth of the casing was positioned at 21.5 feet below ground surface.

On June 25th the boring was advanced through the inside of the 4-inch steel casing using a 3 ½ inch diameter core bit. The boring was advanced 12 feet to a total depth of 33.5 feet below ground surface. Approximately 12 feet of core material was recovered indicating 100% recovery. The core material consisted of a dense, fine grain limestone with fractures. Some fractures showed recrystallization of quartz indicating fluid movement and mineral precipitation along the fracture plains. It was also noted that while advancing the drill bit, the bit dropped approximately 5 inches at the 26.5 foot interval. This probably represents a subsurface fracture or bedding plan void that contains a significant amount of groundwater.

After the boring was advanced to 33.5 feet, the well drillers installed a 2-inch diameter PVC well to the bottom of the bore hole. The well was constructed with a 6-inch bottom cap, 10 feet of .010 slot well screen, and 2-inch diameter PVC riser pipe to approximately 3 feet above the ground surface. After the well was installed, No. 1 sand was installed as a filter pack into the angular space of the bore hole. The filter pack was installed via a tremie pipe, from the base of the bore hole to a depth of 22 feet below ground surface. Above the filter pack, the drillers installed bentonite pellets from a depth of 22 to 19 feet below ground surface. The bentonite

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pellets were allowed to hydrate for approximately two hours, then a cement/bentonite grout was installed with a tremie pipe to the surface.

The well was completed with a locking sealed cap and a concrete pad. In order to protect the well, three steel bollards were installed in a triangular formation around the well. These bollards were filled with concrete and cemented into place. Photo documentation of the drilling activities and well installation is included in Attachment 3. The location of BR-1 was surveyed by Niagara Boundary & Mapping Services. The location of bedrock well BR-1 is; northing 1,138,562.94 and easting 380,289.25 (NAD 1927). The NAD 1983 location is; northing 1,138,599.48 and easting 1,028,646,80. The elevation of bedrock well BR-1 top of casing is 604.32 feet (NVGD). The ground elevation at bedrock well BR-1 is 601.80 feet (NVDG). The Niagara Boundary & Mapping Services survey data is included in Attachment 4.

Late in the afternoon on June 25th, bedrock well BR-1 was developed by utilizing a rig pump at 6 gpm. Pumping with the rig pump continued for approximately 30 minutes. This produced a discharge of 180 gallons. The rig pump then shut off and a 2-inch submersible pump was lowered into the well and pumped at 10 gpm for a total of 40 minutes. The discharge from the submersible pump equaled 400 gallons. Based on a total of 70 minutes of development, the total discharge during this period was approximately 580 gallons. The development well water was discharged into a metal culvert which drains into the Town of Niagara stormwater sewer system.

While utilizing the 2-inch submersible pump, the pump was raised at 2-foot intervals throughout the entire screen sequence. This facilitated the development of the entire screen interval. The development of BR-1 produced a clear groundwater discharge after approximately 20 minutes of pumping. This indicated good groundwater flow through fractures within the limestone sequence. It was also noted during the start of the well development that the discharge water had a milky gray color from fines ground up by the core bit. No reddish or brown tint was noted in the development water which indicated that the bedrock formation was completely sealed off from the overlying sedimentary sequence.

While advancing the boring for BR-1, a slight solvent and/or fuel odor was detected in the 2 to 4 foot split spoon sample at this location. As requested by the NYSDEC field representative on site at the time, a soil investigation was completed near BR-1 to determine if the detected odor represented significant levels of contamination. Three soil borings were completed in the area near BR-1 to determine if the solvent odor was an isolated or area-wide problem. Soil boring SB-1 (Attachment 5) was completed at a location near the southernmost well protection bollard and within 5 feet of BR-1. The soil boring was completed by split spoon sampling to 5.5 feet and

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collecting soil samples for analysis every 2 feet. The material recovered included a dark gray gravel fill followed by a tan, silty fill material. SB-1 encountered refusal at approximately 5½ feet below ground surface. This is probably due to a large piece of concrete or other debris. This same refusal was encountered in bedrock well BR-1.

Soil boring SB-2 (Attachment 6) was completed approximately 50 feet to the south of SB-1. The recovered soil contained a tan, silt fill in the top 6 inches followed by 1½ feet of dark gray gravel fill and 4 feet of brown, silty clay to clayey silt.

SB-3 (Attachment 7) encountered tan silt fill in the top 6 inches followed by 18 inches of dark gray gravel, which was followed by 12 inches of tan fill followed by dark gray to black gravel. SB-3 encountered refusal at approximately 5 feet below grade. Again, this was probably caused by a large piece of concrete in the fill material.

While completing the three soil borings, the writer detected slight odor in SB-1 at the 2 to 4 foot interval and the 4 to 6 foot interval. In SB-2 the writer detected a slight odor in the 2 to 4 foot interval. In SB-3 the writer did not detect any odor at all. A total of 17 soil samples were collected from the three soil borings. The soil samples, along with the sample Chain of Custody records, were taken to Advance Environmental Laboratories for analysis. The soil boring sample Chain of Custody record is included in Attachment 8. It was determined that the 2 to 4 foot interval in SB-1 would be analyzed for volatile and semi-volatile organic compounds. If the results from the 2 to 4 foot intervals in SB-1 indicated significant soil contamination, then the laboratory was instructed to complete the analysis on the remaining 16 soil samples to determine the distribution of the contamination. However, if the soil sample did not contain significant contamination, then no further analyses were required.

After the bedrock groundwater monitoring well had stabilized, Advanced Environmental was instructed to return to the site and sample BR-1. The sampling was completed on July 2, 1997. Field monitoring data and sample Chain of Custody report for the bedrock groundwater sample that was completed on July 2nd are included in Attachment 9. The depth to groundwater was recorded at 11.95 feet. The groundwater elevation calculated by LAN Associates is 592.33 feet (NVGD).

3. RESULTS

The Advanced Environmental Laboratories report for soil sample SB-1 (2-4 feet) is included in Attachment 10. The laboratory analysis included a scan of volatile organic and semi-volatile organic compounds. The laboratory analysis showed no detection of volatile or semi-volatile organic compounds.

The laboratory report for the bedrock well BR-1 groundwater sample is included in Attachment 11. This report indicates no detection of volatile and semi-volatile organic compounds. The report also shows no detection of total recoverable phenol and a variety of metals including lead, cadmium, silver, aluminum, antimony, arsenic, beryllium, hexavalent chromium, copper, chromium, mercury, nickel, selenium, barium. Detected metals include: boron, potassium, sodium, iron, magnesium, and manganese. Of these detections sodium was detected at 29 mg/l which is above the State limit of 20 mg/l. In addition, manganese was detected at .51 mg/l, which is not significantly above the limit of .5 mg/l. All other parameters were within acceptable limits.

4. INTERPRETATION

Based on the findings of the investigation completed at BR-1 and SB-1, the following interpretations can be made:

1. There is no significant soil contamination from volatile or semi-volatile organic compounds in the shallow surface soil adjacent to BR-1.
2. Groundwater monitoring results from BR-1 are within acceptable limits for all parameters except for sodium and manganese.

Sodium concentration in the SKW shallow groundwater typically ranges between 50 and 140 mg/l. The sodium from BR-1 is significantly lower than this concentration. Sodium concentration in off-site bedrock wells typically range above 50 mg/l which is significantly greater than bedrock well BR-1. This indicates that the SKW Witmer Road site has not had a significant impact on the sodium concentration in the bedrock groundwater at location BR-1, and that off-site bedrock groundwater is probably impacting the groundwater at BR-1.

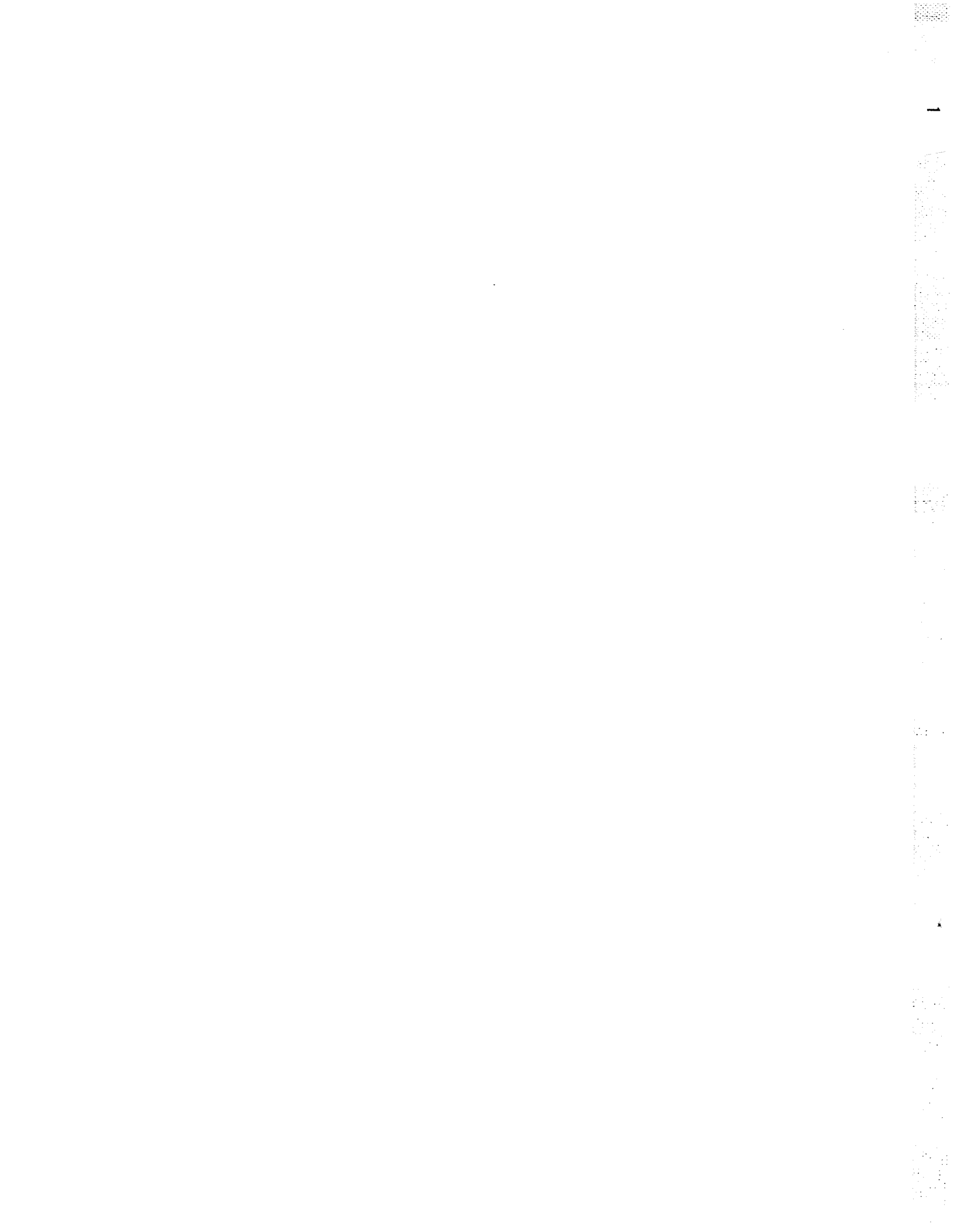
The manganese concentration in bedrock well BR-1 is not significantly above the State groundwater limit. Therefore, manganese is not a parameter of concern in the bedrock groundwater at this location. However, the detected concentration for manganese can be compared to nearby shallow and bedrock groundwater monitoring results.

The manganese concentration in shallow groundwater monitoring wells on the SKW site typically range between .01 mg/l and .38 mg/l. The manganese detected in BR-1 (.51 mg/l) is higher than that detected in the shallow groundwater at the SKW site. This indicates that the source of manganese in the deep bedrock well is not from the shallow groundwater on the SKW site. Bedrock groundwater samples collected from the Niagara Mohawk site contained manganese that ranged from .031 mg/l to .690 mg/l. Manganese concentrations in bedrock groundwater samples collected from the Airco site ranged from .01 to 5.5 mg/l. These data indicate that high concentrations of manganese in the bedrock groundwater appear to originate from the adjacent Airco property.

5. CONCLUSIONS

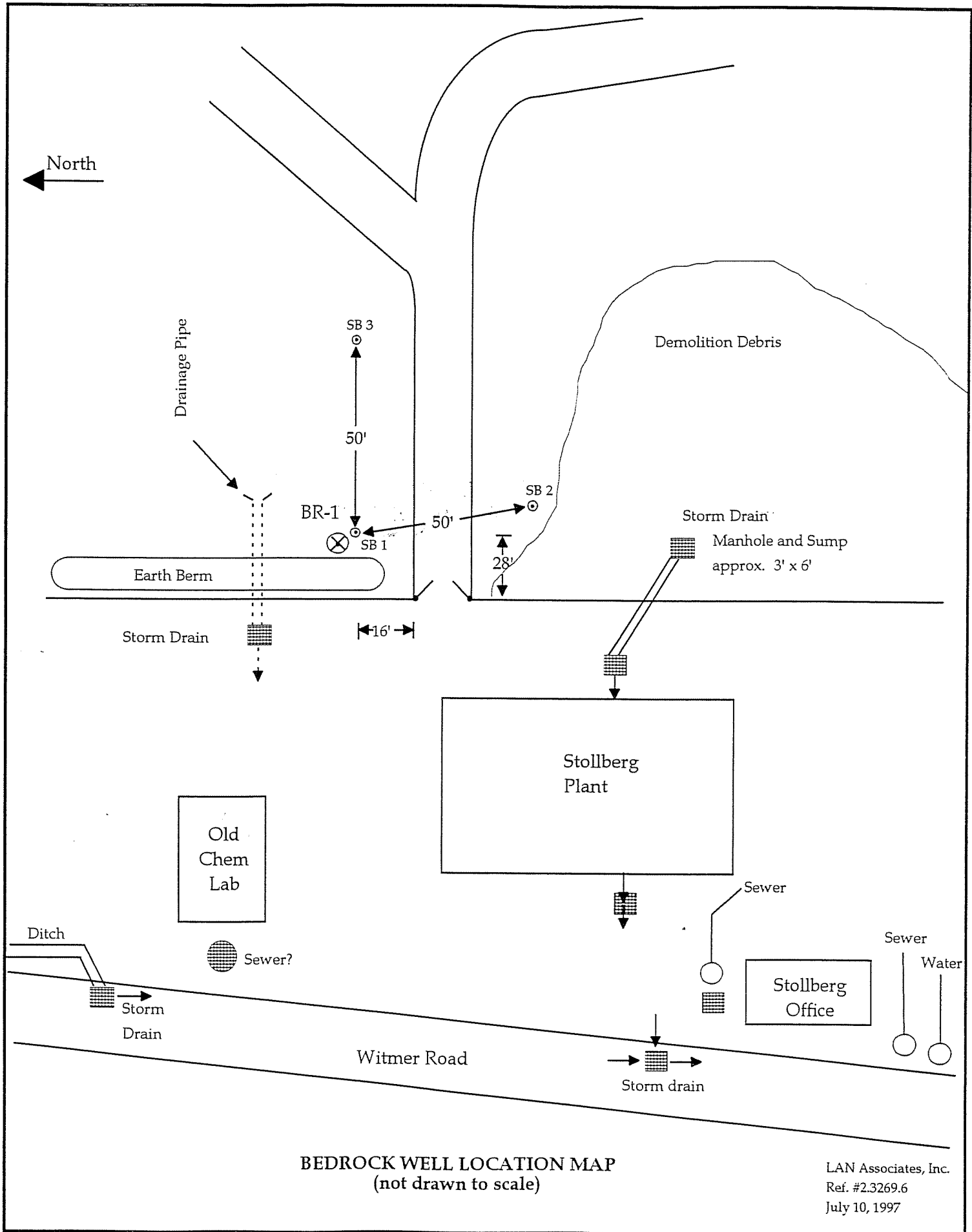
The bedrock groundwater and shallow soil at location BR-1 has been sampled and analyzed. The laboratory analytic results show that the soil and ground water are within acceptable limits except for sodium and manganese in the groundwater. The sodium and manganese detections in the groundwater appear to be related to off-site groundwater conditions on the adjacent Airco property. Based on the findings of this investigation, there are no bedrock groundwater issues that would prevent the implementation of the proposed remedial actions for the shallow groundwater and surface water at the SKW site.





Attachment 1

Well Location Map



BEDROCK WELL LOCATION MAP
(not drawn to scale)

LAN Associates, Inc.
Ref. #2.3269.6
July 10, 1997

Attachment 2

Bedrock Soil Boring and Well Construction Log (BR-1)

LAN ASSOCIATES, Inc.
 66 Cuna St. St. Augustine Fl. 32084
 904-824-6999

Boring No. BR-1
 Bedrock One
 Location: Just NW of South Gate

Project: Remedial Investigation Sheet No. 1 of 2

Client: SKW Metals & Alloys, Inc. Job #: 2.3269.6

Boring Contractor: SBJ Services, Inc. G.S. Elevation

Groundwater Cas. Samp. Core Tube W.L. Ref. Elev.

Date Water Depth Water Elev Intake Type SS - - - Date Started 6/24/97

6/25/97 9.0 Ft. Diam. 4 - - - Date Finished 6/25/97

Weight - - - Driller Chris from SBJ

Fall - - - Engineer/Geologist Skip Hutton

Well Construction	Depth (ft.)	Samples				Classification	Remarks
		No.	Type	Rec.	Blows/6"		
Fill	0	1	SS	14"	1	Rocky, brn sand & silt drk gry sand & gravel	top soil fill, metallic pebbles
					7		
					9		
					6		
	2	SS	14"	5	drk gry sand & gravel	Fill, metallic?, silt, sand & gravel	
				5			
				12			
				8			
	5	3	SS	6"	5	Coarse sand & gravel/wet concrete or bolder	Refusal at 4.5 Ft. (perched) water in spoon fill
					50		
Clay/Silt	4	SS	16"	Refusal	Lt brn clayey silt/silty clay w/ one 2" layer of sandy clayey silt. No water	Dry, no water	
				1			
				2			
	5	SS	12"	2	Reddish brn silty sand Grading to fine to very fine reddish brn sand	Wet quartz sand w/ some drk grains (iron oxides?)	
				2			
				5			
Fine Sand	10	6	SS	14"	Fine to very fine reddish brn sand	wet	
							3
							5
	12	7	SS	14"	Fine to very fine reddish brn sand	Red brn sandy silt, caly layer	
							7
14	8	SS	12"	3	Red brn fine-very fine sand		
				6			

LAN ASSOCIATES, Inc.
 66 Cuna St. St. Augustine Fl. 32084
 904-824-6999

Boring No. BR-1

Location:

Project: Remedial Investigation

Sheet No. 2 of 2

Client: SKW Metals & Alloys, Inc.

Job #2.3269.6

Boring Contractor: SBJ Services, Inc.

G.S. Elevation

Groundwater

Cas. Samp. Core Tube

W.L. Ref. Elev.

Date 6/25/97 Water Depth 9.0' Water Elev. Intake Type Diam. 4 SS - - - Date Started 6/24/97

Weight - - - Date Finished 6/25/97

Fall - - - Driller

Engineer/Geologist

Well Construction	Depth (ft.)	Samples				Classification	Remarks
		No.	Type	Rec.	Blows/6"		
Fine Sand w/ L.S. gravel Grout Bentonite Screen 10' (010) Sand 11.5' Limestone Plug 6"	15	9	SS	12"	6	Red brn fine-very fine sand w/drck gry LS pebbles Red brn sandy silty clay layer Red brn fine-very fine sand Medium coarse sand w/gravel (limestone)	Pebbles are 1/4 - 3/4" angular to sub-angular Sub-rounded 1/8" to 1/2"
	16				2		
	17				3		
	18				5		
	19				5		
	20	10	SS	12"	23	Lt brn silt sand & gravel w/ Limestone, hard drilling	large drk gry cobbles Limestone BR(?) at 19.5 wet rotary bore down from 19.5 to 21.5 Hard drilling limestone
	21				50		
	22				Refusal		
	23	Core to 33.5'			NR	Dense limestone w/ sub- horizontal factures and recrystallized quartz in fractures	Advance hole w/ 3.5" coring bit from 21.5 to 33.5 ft. Soft Drilling for approximately 5" at ~ 26.5 Well Lock is Master #3232
	24				NR		
25	NR						
26							
27							
28							
29							
30							
31							
32							
33							
33.5							

Attachment 3

Photo Caption Documentation

LAN ASSOCIATES ¹/₈

Memo to: File #2.3269.6

Date: June 30, 1997

From: Skip Hutton

Subject: Photo Captions of Bedrock
Monitoring Well Installation



Photo #1

Shows the drill rig located at BR-1 just northeast of the south gate entering into the SKW property.



Photo #2

Shows the first split spoon sample on the left from 0 to 2 feet, and the second split spoon sample on the right from 2 to 4 feet. The dark material is an industrial fill mainly composed of slag. The light color material is an industrial fill that may be ash.

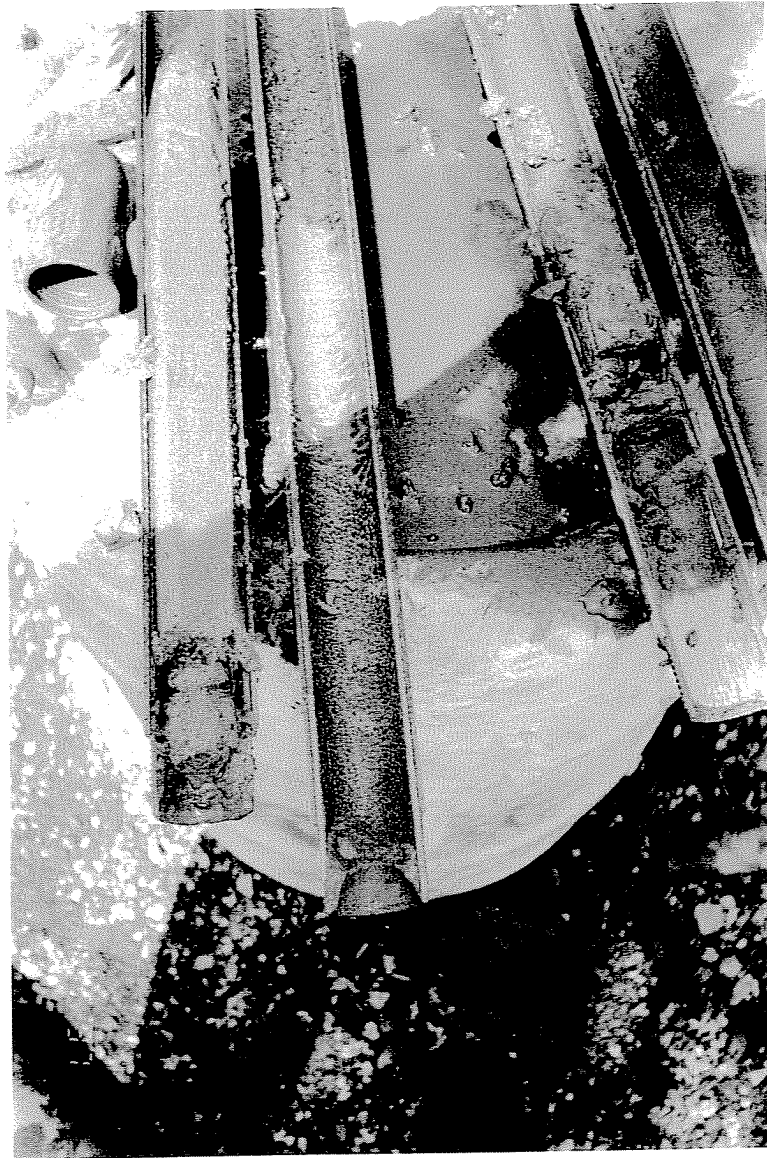


Photo #3

Shows split spoon samples #5 and #6. Split spoon sample #5 is located on the right; #6 is located on the left. The material is composed of fine to very fine, reddish brown, quartz sand.



Photo #4

Split spoon samples #7 and #8 showing additional fine to very fine, reddish brown, quartz sand material.

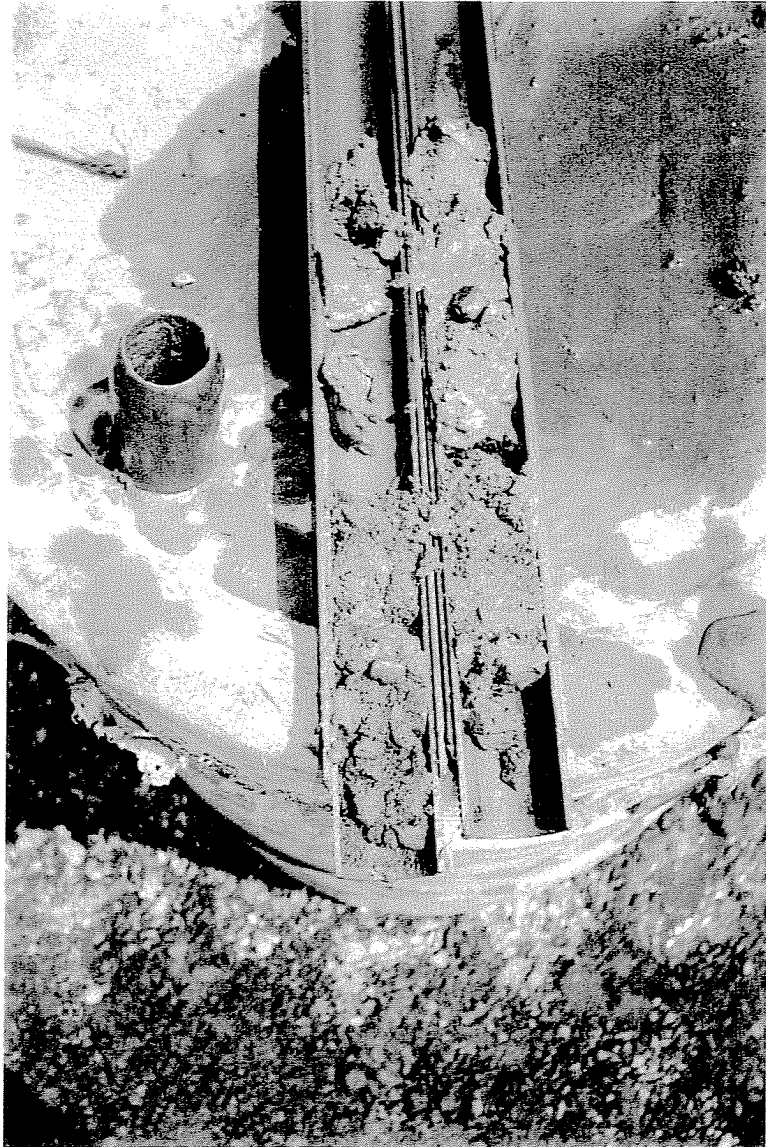


Photo #5

Split spoon sample #9 showing a coarsening of the sequence to a medium to coarse sand with limestone gravel. This sample was collected from 16 to 18 feet below grade.



Photo #6

Shows the drilling of the bedrock "socket" approximately two feet into the limestone. This will permit grouting the outer casing into the upper two feet of the bedrock.

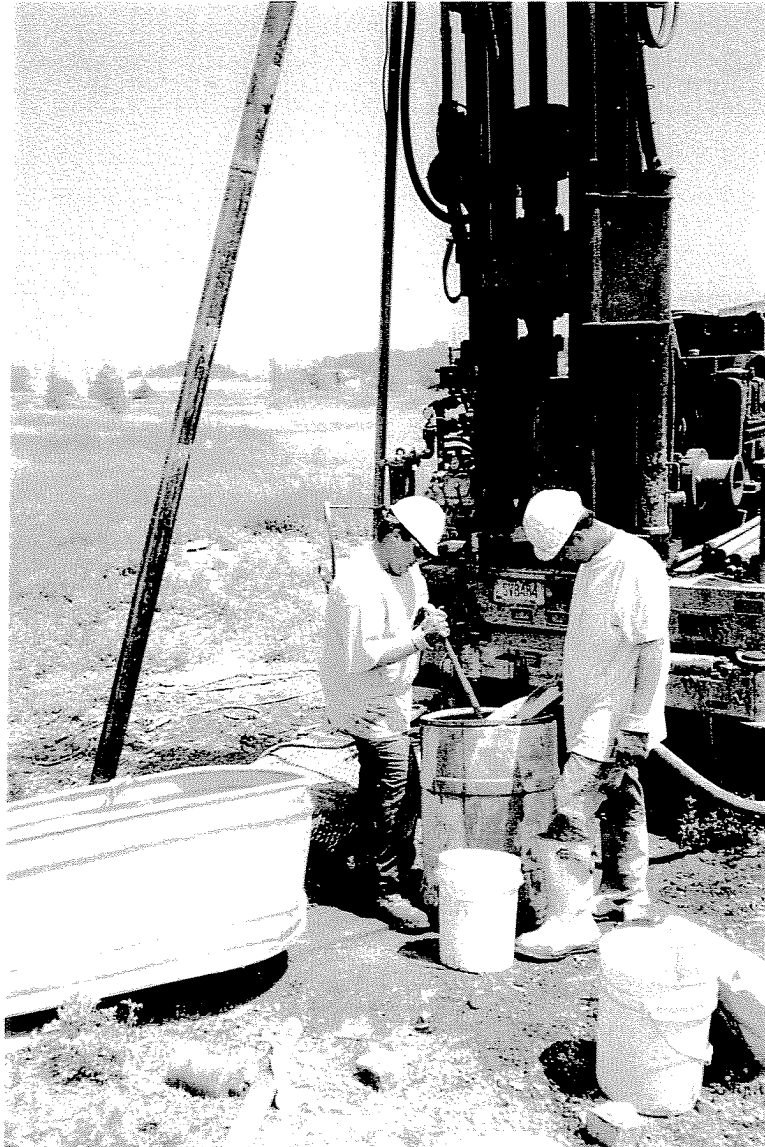


Photo #7

Shows the welded steel casing leaning against the drill rig and the drillers mixing grout for the installation of the outer casing.

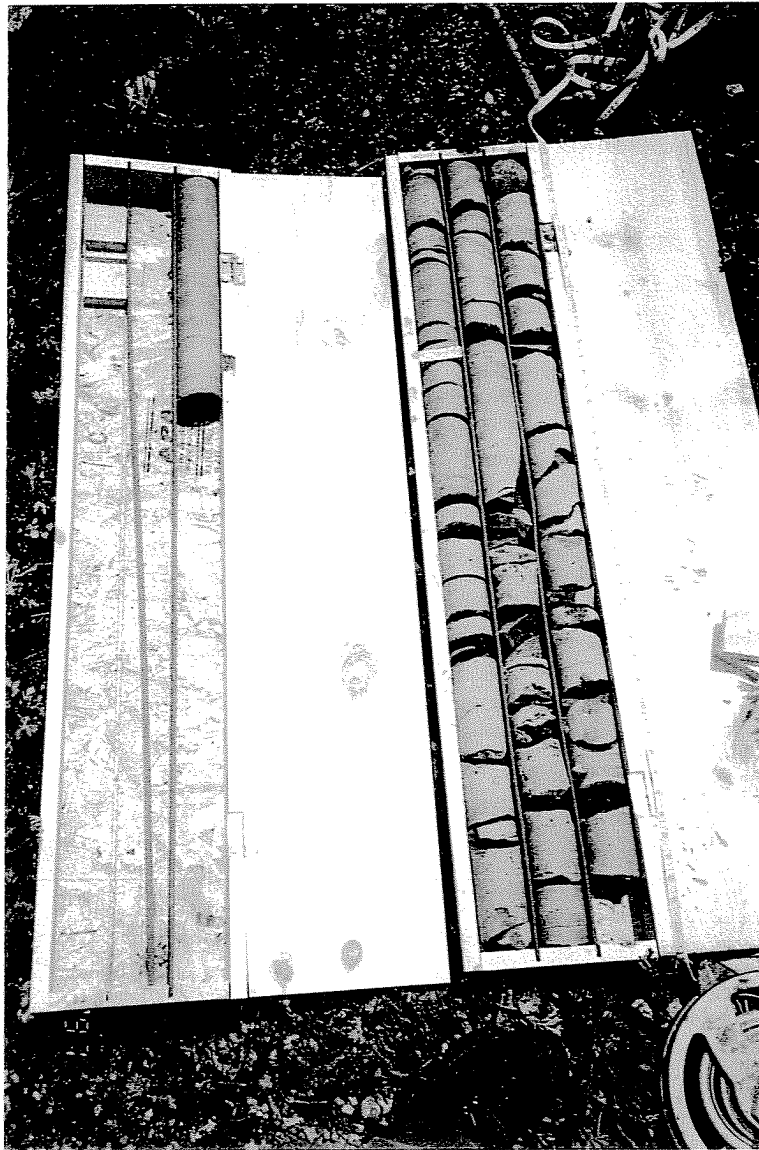


Photo #8

Shows the core material that was collected by coring through the casing. The coring bit was advanced a total of 13 feet and the recovery was nearly 100%. The core tops are at the top of the picture; the bottom of the cores are at the bottom of the picture where the taped reel can be seen. The core on the right was collected first followed by the sections to the left. These cores represent the material recovered while advancing the core bit from 21½ feet to 33½ feet below grade.

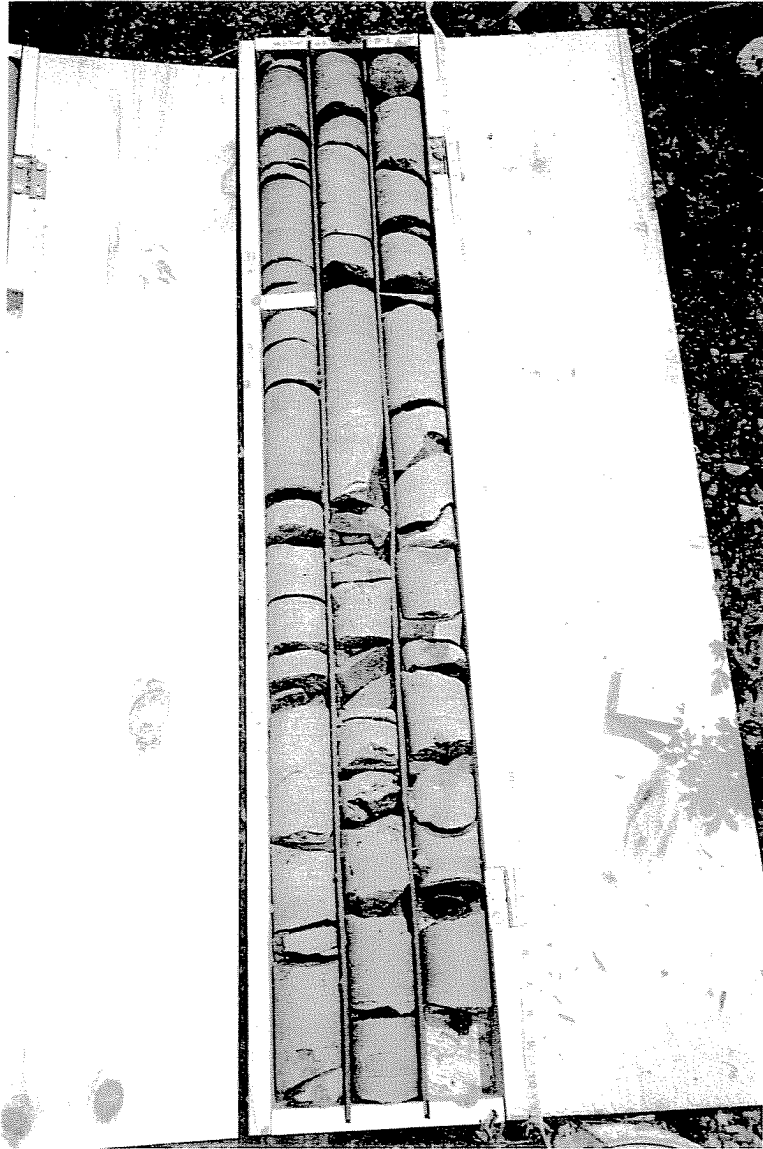


Photo #9

Shows a close up of the core material. Inspection of the cores showed a number of natural fractures with chemically etched limestone and re-crystallized quartz. This indicates zones of groundwater movement.



Photo #10

Shows the drillers setting up to develop bedrock well BR-1. A 2-inch submersible pump is installed in the well. The well was pumped at approximately 10 gpm.

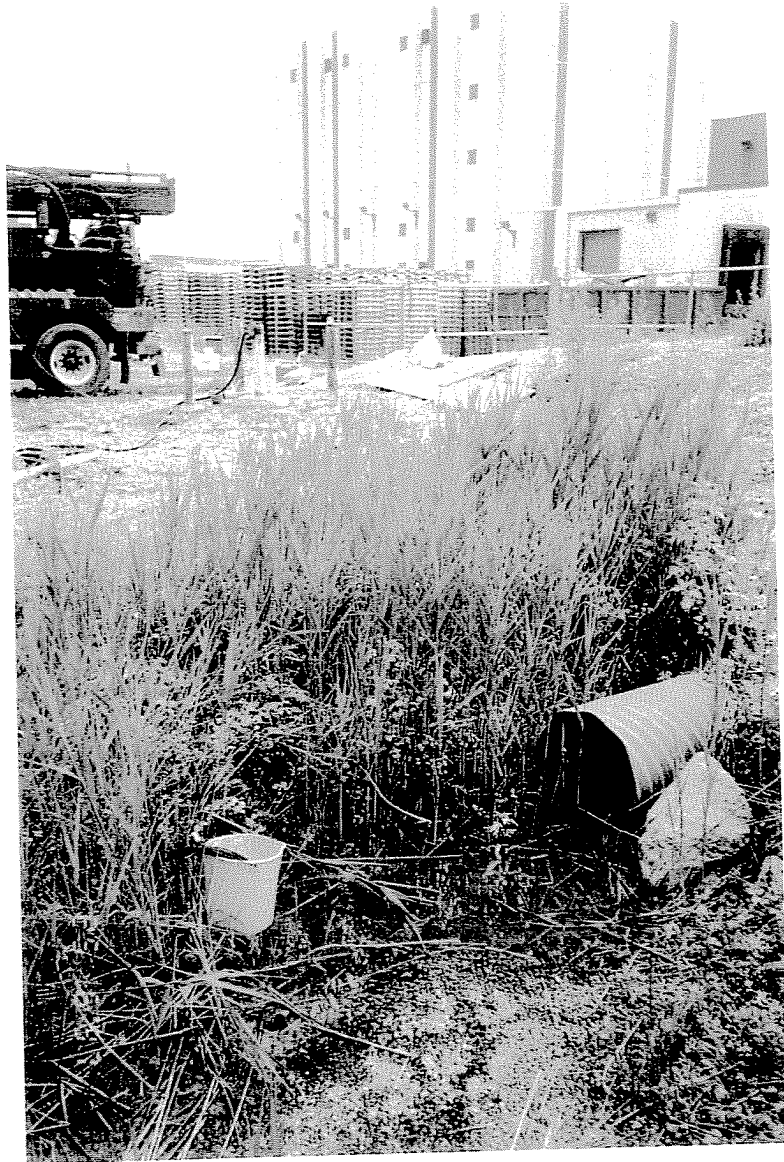


Photo #11

Shows the discharge from the 2-inch submersible pump entering into the storm culvert.

LAN ASSOCIATES
INC

Photo #12

Shows the location of additional soil borings that were completed per the request of the NYSDEC. SB-1 and SB-2 are approximately 50 feet apart.

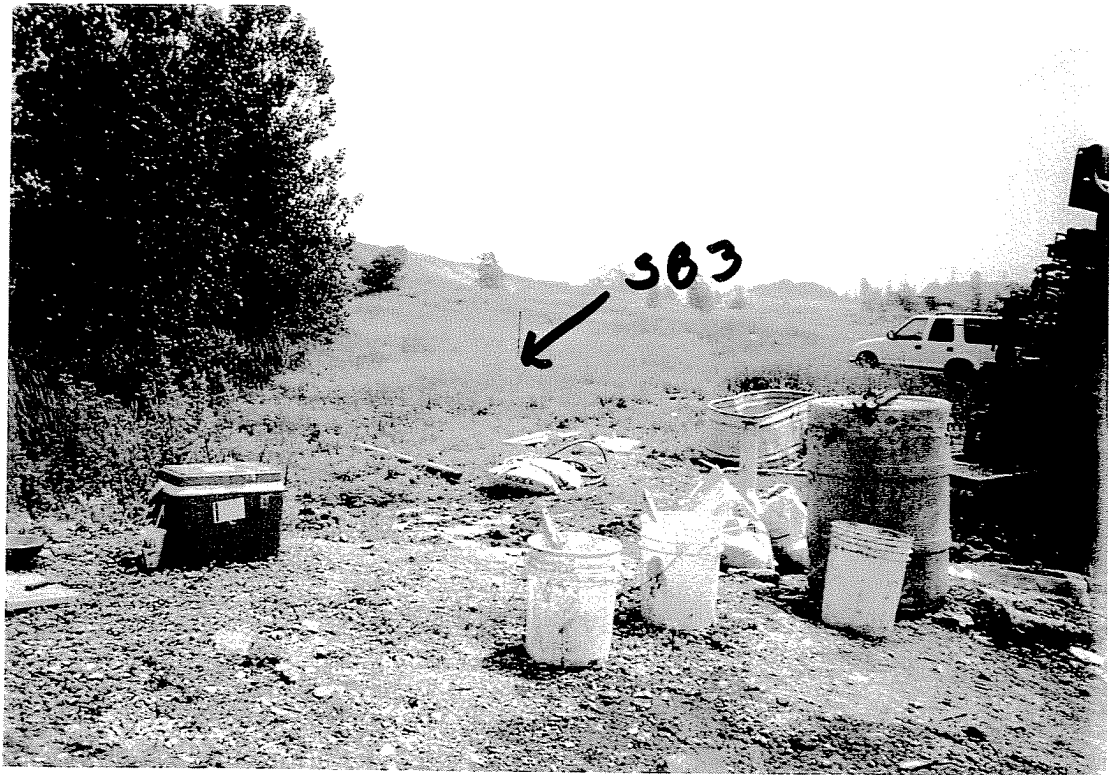


Photo #13

Shows the location of soil boring SB-3 which was located approximately 50 feet from SB-1.



Photo #14

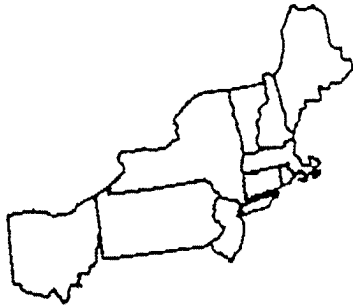
Shows the drill rig being used to redevelop monitoring well MW-14N. This re-development was also completed at monitoring wells MW-3R, MW-5R, and MW-12.

HHH:jw

3269.6-M-Photos-970630-hhh

Attachment 4

Niagara Boundary & Mapping Services Survey Data



Niagara

And Mapping Services

Boundary

August 6, 1997

Mr. Skip Hutton
LAN Associates
66 Cuna Street
St. Augustine, FL 32084

Via Fax: 904-824-0726, Original to follow

**SUBJECT: LOCATION OF NEW MONITORING WELL AT SKW LANDFILL SITE
NIAGARA FALLS, NEW YORK**

Dear Skip,

As we have discussed we have located the new monitoring well at the SKW Landfill site in Niagara Falls. The information is as follows:

**HORIZONTAL LOCATION, N.Y.S. PLANE COORDINATE SYSTEM,
WEST ZONE, NAD 27:**

N 1,138,562.94 E 380,289.25

**HORIZONTAL LOCATION, N.Y.S. PLANE COORDINATE SYSTEM,
WEST ZONE, NAD 83:**

N 1,138,599.48 E 1,028,646.80

VERTICAL ELEVATIONS NGVD 29:

Top of PVC Casing inside of well 604.32

Ground at well 601.8

Please let me know if we can help you in any other regard. Thank you.

Sincerely and positively,

Ken Slaughenhoupt LS

Attachment 5

Soil Boring SB-1

Attachment 6

Soil Boring SB-2

Attachment 7
Soil Boring SB-3



Attachment 8

Soil Boring Sample Chain of Custody Record



ENVIRONMENTAL SERVICES, INC.
2186 LIBERTY DRIVE
NIAGARA FALLS, NEW YORK 14304

(716) 283-3120
(800) 791-3120
FAX (716) 283-4727

CHAIN OF CUSTODY RECORD

DOT 72DC

PROJECT NAME: SKW / Witmer Road

PROJECT I.D. #: 23269.6

SAMPLER'S SIGNATURE: [Signature]

JOB-CODE: Bill To: SKW Metals & Alloys

PCBs, TCLVs, PPA6/PA6s

PARAMETERS/REMARKS

DATE	TIME	SAMPLE IDENTIFICATION	GRAB COMP	SAMPLE TYPE	CONTAINER CLASSIFICATION							TOTAL NUMBER OF CONTAINERS		
					UNPRESERVED	HNO ₃	H ₂ SO ₄	HCL	NAOH	VIAL (UNPRES.)	VIAL (PRES.)		TOTAL	
6-25-97	11:20	SB4 0-2'	✓	Soil	X								2	VOCs and Semi. VOCs
	11:35	SB4 2-4'	✓										2	
	11:50	SB4 4-6	✓										2	
	13:15	SB2 0-2'	✓										2	
	13:30	SB2 2-4'	✓										2	
	13:45	SB2 4-6	✓										2	
	14:00	SB3 0-2'	✓										2	
	14:05	SB3 2-4'	✓										2	
	14:15	SB3 4-6'	✓										1	

CONTACT: Step Hulten

904-824-6999
LAW Associates

TOTAL NUMBER OF CONTAINERS 17

NOTE: Please indicate required analysis, and whom we may contact with questions, if you have not yet done so through your customer service representative.

Standard Turn Around Time

1. RELINQUISHED BY:	<u>[Signature]</u>	DATE	<u>6-25-97</u>	TIME	<u>7:35 pm</u>	RECEIVED BY:	<u>[Signature]</u>
2. RELINQUISHED BY:		DATE		TIME		RECEIVED BY:	
3. RELINQUISHED BY:		DATE		TIME		RECEIVED BY:	

Attachment 9

Bedrock Groundwater Sample Chain of Custody Record

SKW ALLOYS

SOIL INVESTIGATION

SAMPLE DATE: 06/25/97

Prepared By:

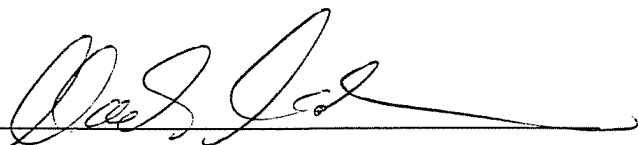
ADVANCED
ENVIRONMENTAL SERVICES INC.

'A Company Dedicated to Honesty, Quality and Service'

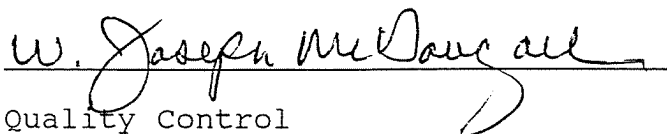
July 11, 1997
REF: DTT172DC

QA/QC VERIFICATION FOR PROJECT ID 72DC

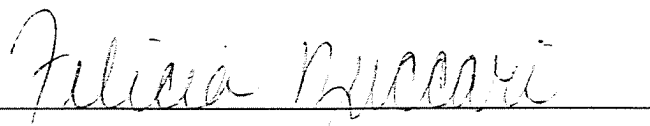
The following report, as well as the supporting data, have been carefully reviewed for accuracy, adherence to the cited methods, and completeness. All data contained in this report was generated in accordance with the AES Laboratory Quality Assurance/Quality Control Program.



Organic Chemistry



Quality Control



Project Manager

All 'Total' results on soil matrices are calculated on a dry weight basis, unless otherwise noted. Analyses noted as 'Performed in the laboratory' require immediate testing and should be performed in the field.

The following are standard abbreviations:

- BQL - Below Quantifiable Limits
- ND - None Detected
- NG - No Growth of Colonies
- NR - Not Requested
- D - Indicates a dilution was required

Attachment 10

Advanced Environmental Services' Report for Soil Boring Samples

CLIENT: SKW Alloys
 SAMPLE ID: SB1 2-4'
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 06/25/97
 SAMPLE TYPE: SOIL

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DC-1

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Chloromethane	ND	µg/kg	270	SW 846 8240
Bromomethane	ND	µg/kg	270	SW 846 8240
Vinyl chloride	ND	µg/kg	270	SW 846 8240
Chloroethane	ND	µg/kg	270	SW 846 8240
Methylene chloride	ND	µg/kg	270	SW 846 8240
Acetone	ND	µg/kg	270	SW 846 8240
Carbon disulfide	ND	µg/kg	270	SW 846 8240
1,1 Dichloroethene	ND	µg/kg	270	SW 846 8240
1,1 Dichloroethane	ND	µg/kg	270	SW 846 8240
trans-1,2-Dichloroethene (Total)	ND	µg/kg	270	SW 846 8240
Chloroform	ND	µg/kg	270	SW 846 8240
1,2-Dichloroethane	ND	µg/kg	270	SW 846 8240
2-Butanone	ND	µg/kg	270	SW 846 8240
1,1,1-Trichloroethane	ND	µg/kg	270	SW 846 8240
Carbon tetrachloride	ND	µg/kg	270	SW 846 8240
Vinyl acetate	ND	µg/kg	270	SW 846 8240
Bromodichloromethane	ND	µg/kg	270	SW 846 8240
1,2-Dichloropropane	ND	µg/kg	270	SW 846 8240
cis-1,3-Dichloropropene	ND	µg/kg	270	SW 846 8240
Trichloroethene	ND	µg/kg	270	SW 846 8240
Benzene	ND	µg/kg	270	SW 846 8240
trans-1,3-Dichloropropene	ND	µg/kg	270	SW 846 8240
Chlorodibromomethane	ND	µg/kg	270	SW 846 8240
1,1,2-Trichloroethane	ND	µg/kg	270	SW 846 8240
Bromoform	ND	µg/kg	270	SW 846 8240
4-Methyl-2-pentanone	ND	µg/kg	270	SW 846 8240
2-Hexanone	ND	µg/kg	270	SW 846 8240
Tetrachloroethene	ND	µg/kg	270	SW 846 8240
1,1,2,2-Tetrachloroethane	ND	µg/kg	270	SW 846 8240

CLIENT: SKW Alloys
 SAMPLE ID: SB1 2-4'
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 06/25/97
 SAMPLE TYPE: SOIL

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DC-1

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Toluene	ND	µg/kg	270	SW 846 8240
Chlorobenzene	ND	µg/kg	270	SW 846 8240
Ethylbenzene	ND	µg/kg	270	SW 846 8240
Styrene	ND	µg/kg	270	SW 846 8240
m-Xylene	ND	µg/kg	270	SW 846 8240
o/p-Xylene	ND	µg/kg	270	SW 846 8240
bis(2-chloroethyl)ether	ND	mg/kg	0.33	SW 846 8270
1,3-Dichlorobenzene	ND	mg/kg	0.33	SW 846 8270
1,4-Dichlorobenzene	ND	mg/kg	0.33	SW 846 8270
Benzyl alcohol	ND	mg/kg	0.33	SW 846 8270
1,2-Dichlorobenzene	ND	mg/kg	0.33	SW 846 8270
bis(2-chloroisopropyl)ether	ND	mg/kg	0.33	SW 846 8270
n-Nitrosodi-n-propylamine	ND	mg/kg	0.33	SW 846 8270
Hexachloroethane	ND	mg/kg	0.33	SW 846 8270
Nitrobenzene	ND	mg/kg	0.33	SW 846 8270
Isophorone	ND	mg/kg	0.33	SW 846 8270
bis(2-chloroethoxy)methane	ND	mg/kg	0.33	SW 846 8270
1,2,4-Trichlorobenzene	ND	mg/kg	0.33	SW 846 8270
Naphthalene	ND	mg/kg	0.33	SW 846 8270
4-Chloroaniline	ND	mg/kg	0.33	SW 846 8270
Hexachlorobutadiene	ND	mg/kg	0.33	SW 846 8270
2-Methylnaphthalene	ND	mg/kg	0.33	SW 846 8270
Hexachlorocyclopentadiene	ND	mg/kg	0.33	SW 846 8270
2-Chloronaphthalene	ND	mg/kg	0.33	SW 846 8270
2-Nitroaniline	ND	mg/kg	0.33	SW 846 8270
Dimethylphthalate	ND	mg/kg	0.33	SW 846 8270
2,6-Dinitrotoluene	ND	mg/kg	0.33	SW 846 8270
Acenaphthylene	ND	mg/kg	0.33	SW 846 8270
3-Nitroaniline	ND	mg/kg	0.33	SW 846 8270

CLIENT: SKW Alloys
 SAMPLE ID: SB1 2-4'
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 06/25/97
 SAMPLE TYPE: SOIL

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DC-1

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Acenaphthene	ND	mg/kg	0.33	SW 846 8270
2,4-Dinitrotoluene	ND	mg/kg	0.33	SW 846 8270
Dibenzofuran	ND	mg/kg	0.33	SW 846 8270
Diethylphthalate	ND	mg/kg	0.33	SW 846 8270
4-chlorophenyl phenyl ether	ND	mg/kg	0.33	SW 846 8270
Fluorene	ND	mg/kg	0.33	SW 846 8270
4-Nitroaniline	ND	mg/kg	0.33	SW 846 8270
n-Nitrosodiphenylamine	ND	mg/kg	0.33	SW 846 8270
4-Bromophenylphenyl ether	ND	mg/kg	0.33	SW 846 8270
Hexachlorobenzene	ND	mg/kg	0.33	SW 846 8270
Phenanthrene	ND	mg/kg	0.33	SW 846 8270
Anthracene	ND	mg/kg	0.33	SW 846 8270
di-n-Butylphthalate	ND	mg/kg	0.33	SW 846 8270
Fluoranthene	ND	mg/kg	0.33	SW 846 8270
Pyrene	ND	mg/kg	0.33	SW 846 8270
Butylbenzylphthalate	ND	mg/kg	0.33	SW 846 8270
3,3'-Dichlorobenzidine	ND	mg/kg	0.33	SW 846 8270
bis(2-ethylhexyl)phthalate	ND	mg/kg	0.33	SW 846 8270
Benzo(a)anthracene	ND	mg/kg	0.33	SW 846 8270
Chrysene	ND	mg/kg	0.33	SW 846 8270
di-n-Octylphthalate	ND	mg/kg	0.33	SW 846 8270
Benzo(b)fluoranthene	ND	mg/kg	0.33	SW 846 8270
Benzo(k)fluoranthene	ND	mg/kg	0.33	SW 846 8270
Benzo(a)pyrene	ND	mg/kg	0.33	SW 846 8270
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.33	SW 846 8270
Dibenzo(a,h)anthracene	ND	mg/kg	0.33	SW 846 8270
Benzo(g,h,i)perylene	ND	mg/kg	0.33	SW 846 8270
Phenol	ND	mg/kg	0.33	SW 846 8270
2-Chlorophenol	ND	mg/kg	0.33	SW 846 8270

CLIENT: SKW Alloys
 SAMPLE ID: SB1 2-4'
 COLLECTION METHOD: GRAB
 COLLECTION DATE(S): 06/25/97
 SAMPLE TYPE: SOIL

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DC-1

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
2-Methylphenol	ND	mg/kg	0.33	SW 846 8270
4-Methylphenol	ND	mg/kg	0.33	SW 846 8270
2-Nitrophenol	ND	mg/kg	0.33	SW 846 8270
2,4-Dimethylphenol	ND	mg/kg	0.33	SW 846 8270
Benzoic acid	ND	mg/kg	0.33	SW 846 8270
2,4-Dichlorophenol	ND	mg/kg	0.33	SW 846 8270
4-Chloro-3-methylphenol	ND	mg/kg	0.33	SW 846 8270
2,4,6-Trichlorophenol	ND	mg/kg	0.33	SW 846 8270
2,4,5-Trichlorophenol	ND	mg/kg	0.33	SW 846 8270
2,4-Dinitrophenol	ND	mg/kg	0.33	SW 846 8270
4-Nitrophenol	ND	mg/kg	0.33	SW 846 8270
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.33	SW 846 8270
Pentachlorophenol	ND	mg/kg	0.33	SW 846 8270

CLIENT: SKW Alloys
 SAMPLE ID: METHOD BLANK
 COLLECTION METHOD:
 COLLECTION DATE(S):
 SAMPLE TYPE:

AES CLIENT ID: DTT

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Chloromethane	ND	µg/kg	10	SW 846 8240
Bromomethane	ND	µg/kg	10	SW 846 8240
Vinyl chloride	ND	µg/kg	10	SW 846 8240
Chloroethane	ND	µg/kg	10	SW 846 8240
Methylene chloride	ND	µg/kg	10	SW 846 8240
Acetone	ND	µg/kg	10	SW 846 8240
Carbon disulfide	ND	µg/kg	10	SW 846 8240
1,1 Dichloroethene	ND	µg/kg	10	SW 846 8240
1,1 Dichloroethane	ND	µg/kg	10	SW 846 8240
trans-1,2-Dichloroethene (Total)	ND	µg/kg	10	SW 846 8240
Chloroform	ND	µg/kg	10	SW 846 8240
1,2-Dichloroethane	ND	µg/kg	10	SW 846 8240
2-Butanone	ND	µg/kg	10	SW 846 8240
1,1,1-Trichloroethane	ND	µg/kg	10	SW 846 8240
Carbon tetrachloride	ND	µg/kg	10	SW 846 8240
Vinyl acetate	ND	µg/kg	10	SW 846 8240
Bromodichloromethane	ND	µg/kg	10	SW 846 8240
1,2-Dichloropropane	ND	µg/kg	10	SW 846 8240
cis-1,3-Dichloropropene	ND	µg/kg	10	SW 846 8240
Trichloroethene	ND	µg/kg	10	SW 846 8240
Benzene	ND	µg/kg	10	SW 846 8240
trans-1,3-Dichloropropene	ND	µg/kg	10	SW 846 8240
Chlorodibromomethane	ND	µg/kg	10	SW 846 8240
1,1,2-Trichloroethane	ND	µg/kg	10	SW 846 8240
Bromoform	ND	µg/kg	10	SW 846 8240
4-Methyl-2-pentanone	ND	µg/kg	10	SW 846 8240
2-Hexanone	ND	µg/kg	10	SW 846 8240
Tetrachloroethene	ND	µg/kg	10	SW 846 8240
1,1,2,2-Tetrachloroethane	ND	µg/kg	10	SW 846 8240

CLIENT: SKW Alloys SAMPLE ID: METHOD BLANK COLLECTION METHOD: COLLECTION DATE(S): SAMPLE TYPE:	AES CLIENT ID: DTT PROJECT ID: 72DC
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Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Toluene	ND	µg/kg	10	SW 846 8240
Chlorobenzene	ND	µg/kg	10	SW 846 8240
Ethylbenzene	ND	µg/kg	10	SW 846 8240
Styrene	ND	µg/kg	10	SW 846 8240
m-Xylene	ND	µg/kg	10	SW 846 8240
o/p-Xylene	ND	µg/kg	10	SW 846 8240
bis(2-chloroethyl)ether	ND	mg/kg	0.33	SW 846 8270
1,3-Dichlorobenzene	ND	mg/kg	0.33	SW 846 8270
1,4-Dichlorobenzene	ND	mg/kg	0.33	SW 846 8270
Benzyl alcohol	ND	mg/kg	0.33	SW 846 8270
1,2-Dichlorobenzene	ND	mg/kg	0.33	SW 846 8270
bis(2-chloroisopropyl)ether	ND	mg/kg	0.33	SW 846 8270
n-Nitrosodi-n-propylamine	ND	mg/kg	0.33	SW 846 8270
Hexachloroethane	ND	mg/kg	0.33	SW 846 8270
Nitrobenzene	ND	mg/kg	0.33	SW 846 8270
Isophorone	ND	mg/kg	0.33	SW 846 8270
bis(2-chloroethoxy)methane	ND	mg/kg	0.33	SW 846 8270
1,2,4-Trichlorobenzene	ND	mg/kg	0.33	SW 846 8270
Naphthalene	ND	mg/kg	0.33	SW 846 8270
4-Chloroaniline	ND	mg/kg	0.33	SW 846 8270
Hexachlorobutadiene	ND	mg/kg	0.33	SW 846 8270
2-Methylnaphthalene	ND	mg/kg	0.33	SW 846 8270
Hexachlorocyclopentadiene	ND	mg/kg	0.33	SW 846 8270
2-Chloronaphthalene	ND	mg/kg	0.33	SW 846 8270
2-Nitroaniline	ND	mg/kg	0.33	SW 846 8270
Dimethylphthalate	ND	mg/kg	0.33	SW 846 8270
2,6-Dinitrotoluene	ND	mg/kg	0.33	SW 846 8270
Acenaphthylene	ND	mg/kg	0.33	SW 846 8270
3-Nitroaniline	ND	mg/kg	0.33	SW 846 8270

CLIENT: SKW Alloys
 SAMPLE ID: METHOD BLANK
 COLLECTION METHOD:
 COLLECTION DATE(S):
 SAMPLE TYPE:

AES CLIENT ID: DTT

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Acenaphthene	ND	mg/kg	0.33	SW 846 8270
2,4-Dinitrotoluene	ND	mg/kg	0.33	SW 846 8270
Dibenzofuran	ND	mg/kg	0.33	SW 846 8270
Diethylphthalate	ND	mg/kg	0.33	SW 846 8270
4-chlorophenyl phenyl ether	ND	mg/kg	0.33	SW 846 8270
Fluorene	ND	mg/kg	0.33	SW 846 8270
4-Nitroaniline	ND	mg/kg	0.33	SW 846 8270
n-Nitrosodiphenylamine	ND	mg/kg	0.33	SW 846 8270
4-Bromophenylphenyl ether	ND	mg/kg	0.33	SW 846 8270
Hexachlorobenzene	ND	mg/kg	0.33	SW 846 8270
Phenanthrene	ND	mg/kg	0.33	SW 846 8270
Anthracene	ND	mg/kg	0.33	SW 846 8270
di-n-Butylphthalate	ND	mg/kg	0.33	SW 846 8270
Fluoranthene	ND	mg/kg	0.33	SW 846 8270
Pyrene	ND	mg/kg	0.33	SW 846 8270
Butylbenzylphthalate	ND	mg/kg	0.33	SW 846 8270
3,3'-Dichlorobenzidine	ND	mg/kg	0.33	SW 846 8270
bis(2-ethylhexyl)phthalate	ND	mg/kg	0.33	SW 846 8270
Benzo(a)anthracene	ND	mg/kg	0.33	SW 846 8270
Chrysenes	ND	mg/kg	0.33	SW 846 8270
di-n-Octylphthalate	ND	mg/kg	0.33	SW 846 8270
Benzo(b)fluoranthene	ND	mg/kg	0.33	SW 846 8270
Benzo(k)fluoranthene	ND	mg/kg	0.33	SW 846 8270
Benzo(a)pyrene	ND	mg/kg	0.33	SW 846 8270
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.33	SW 846 8270
Dibenzo(a,h)anthracene	ND	mg/kg	0.33	SW 846 8270
Benzo(g,h,i)perylene	ND	mg/kg	0.33	SW 846 8270
Phenol	ND	mg/kg	0.33	SW 846 8270
2-Chlorophenol	ND	mg/kg	0.33	SW 846 8270

CLIENT: SKW Alloys
 SAMPLE ID: METHOD BLANK
 COLLECTION METHOD:
 COLLECTION DATE(S):
 SAMPLE TYPE:

AES CLIENT ID: DTT

PROJECT ID: 72DC

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
2-Methylphenol	ND	mg/kg	0.33	SW 846 8270
4-Methylphenol	ND	mg/kg	0.33	SW 846 8270
2-Nitrophenol	ND	mg/kg	0.33	SW 846 8270
2,4-Dimethylphenol	ND	mg/kg	0.33	SW 846 8270
Benzoic acid	ND	mg/kg	0.33	SW 846 8270
2,4-Dichlorophenol	ND	mg/kg	0.33	SW 846 8270
4-Chloro-3-methylphenol	ND	mg/kg	0.33	SW 846 8270
2,4,6-Trichlorophenol	ND	mg/kg	0.33	SW 846 8270
2,4,5-Trichlorophenol	ND	mg/kg	0.33	SW 846 8270
2,4-Dinitrophenol	ND	mg/kg	0.33	SW 846 8270
4-Nitrophenol	ND	mg/kg	0.33	SW 846 8270
4,6-Dinitro-2-methylphenol	ND	mg/kg	0.33	SW 846 8270
Pentachlorophenol	ND	mg/kg	0.33	SW 846 8270

Attachment 11

Advanced Environmental Services' Report for Bedrock Well BR-1

SKW ALLOYS

**QUARTERLY ANALYSIS OF PART 360
BASELINE PARAMETERS & SEMI-VOLATILES**

SITE BR-1

SAMPLE DATE: 07/02/97

Prepared By:

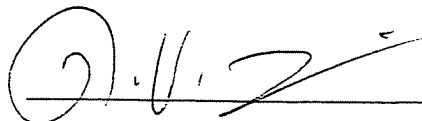
ADVANCED
ENVIRONMENTAL SERVICES INC.

'A Company Dedicated to Honesty, Quality and Service'

July 31, 1997
REF: DTT172DV/CLOS

QA/QC VERIFICATION FOR PROJECT ID 72DV

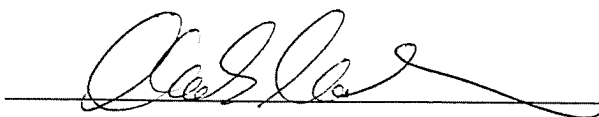
The following report, as well as the supporting data, have been carefully reviewed for accuracy, adherence to the cited methods, and completeness. All data contained in this report was generated in accordance with the AES Laboratory Quality Assurance/Quality Control Program.



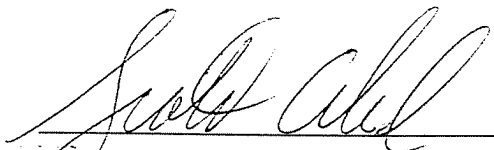
Metals Department



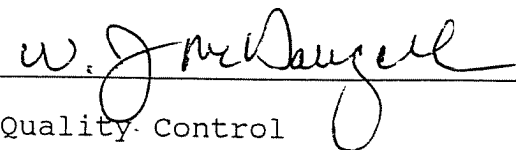
Inorganic Chemistry



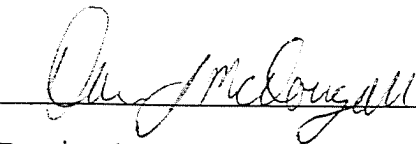
Organic Chemistry



Field Services



Quality Control



Project Manager

All 'Total' results on soil matrices are calculated on a dry weight basis, unless otherwise noted. Analyses noted as 'Performed in the laboratory' require immediate testing and should be performed in the field.

The following are standard abbreviations:

BQL - Below Quantifiable Limits
ND - None Detected
NG - No Growth of Colonies
NR - Not Requested
D - Indicates a dilution was required

COMMENT

As part of the scope of this project, exceedence values were established for the metals listed below. Sites which did exceed these values are noted (for fields which do not contain a value, the limit was not exceeded). Filtered metals samples (for soluble fractions) are currently being held in our cold room, pending a decision from Lan Associates on reanalyses. These will be held until 10/02/97.

Parameter	Limit (mg/l)	BR-1	14N	3R	5R	12	POINT 7	POINT 6	LEACHATE	BLIND DUP
Sodium	20	29								
Iron	0.5 *									
Manganese	0.5 *	0.51								
Iron + Manganese	0.5 *	0.67								
Lead	0.025									
Cadmium	0.01									

* Iron & Manganese have a combined limit of 0.5 mg/l.

Advanced Environmental Services, Inc.

2186 Liberty Drive
Niagara Falls, New York 14304
(716) 283-3120

QUARTERLY GROUNDWATER MONITORING - WELL INFORMATION

July 2, 1997

SKW ALLOYS

Saunders Settlement Road
Niagara Falls, New York

AES Code: DTT

Project LD. # 72DV

Monitoring Well I.D.	Evacuation Date	Evacuation Time	Top of Inner Casing Elevation (ft.)	Monitoring Well Diameter	Water Level (ft.)	Water Elevation (ft.)	Bottom of Well (ft.)	Volume of Standing Water (gallons)	Volume of Evacuated Water (gallons)	Recharge Rate
BR-1	7/2/97	9:15 AM	N/A	2	11.95	NA	33.50	3.52	12.5	C

Abbreviations:

VS = Very Slow ----- Recharge Rate longer than 24 hr period.

S = Slow ----- Recharge Rate within 24 hr period.

R = Rapid ----- Recharge Rate within 1 hr period.

C = Continuous --- Recharge Rate immediate.

N/R = Not Required

N/A = Not Applicable


Field Technician

7-3-97
Date

Advanced Environmental Services, Inc.

2186 Liberty Drive
Niagara Falls, New York 14304
(716) 283-3120

QUARTERLY GROUNDWATER MONITORING - WELL INFORMATION

July 2, 1997

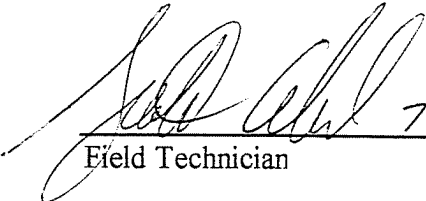
SKW ALLOYS

Saunders Settlement Road
Niagara Falls, New York

AES Code: DTT

Project I.D. # 72DV

Monitoring Well Identification	Sampling Date	Sampling Elevation	Sampling Time	pH (Standard Units)	Specific Conductance (umhos/cm)	Turbidity (NTU)	eH (mV)	Dissolved Oxygen	Temp	Comments
BR-1	7/2/97	12.08	10:15 AM	7.18	567	4	2	NR	52	Very Clear, SO2 odor


Field Technician 7-2-97
Date

CLIENT: SKW Alloys
 SAMPLE ID: BR-1
 COLLECTION METHOD: Grab
 COLLECTION DATE(S): 07/02/97
 SAMPLE TYPE: Groundwater

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DV-1

PROJECT ID: 72DV

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Total Kjeldahl Nitrogen	1.2 D	mg/L	0.4	EPA 351.3
Ammonia	1.2	mg/L	0.4	EPA 350.3
Nitrate (by Nitrate/Nitrite Method)	0.03	mg/L	0.04	EPA 353.2
Chemical Oxygen Demand	5.9	mg/L	5.0	Hach Appendix
Total BOD	7.5	mg/L	2.0	EPA 405.1
Total Organic Carbon	4.0	mg/L	2.0	EPA 415.1
Total Dissolved Solids	380	mg/L	1.0	EPA 160.1
Sulfate	72 D	mg/L	4.0	EPA 375.4
Alkalinity	4.5	mg/L	1.0	EPA 310.1
Total Recoverable Phenolics	ND	mg/L	0.004	EPA 420.2
Chloride	72	mg/L	2.0	EPA 325.3
Hardness	250	mg/L	1.0	EPA 200.7
Turbidity *	3.5	NTU	0.1	EPA 180.1
eH *	2	Millivolts	---	EH
Specific Conductance *	567	µmhos/cm	0.1	EPA 120.1
Temperature *	52	°F	---	EPA 170.1
pH *	7.18	Std.	0.01	EPA 150.1
True Color	<5	color	5	EPA 110.2
Total Boron	0.17	mg/L	0.02	EPA 200.7
Total Potassium	9.1	mg/L	1.0	EPA 200.7
Total Sodium	29	mg/L	0.10	EPA 200.7
Total Iron	0.16	mg/L	0.05	EPA 200.7
Total Manganese	0.51	mg/L	0.005	EPA 200.7
Total Magnesium	24	mg/L	0.05	EPA 200.7
Total Lead	ND	mg/L	0.005	EPA 239.2
Total Cadmium	ND	mg/L	0.005	EPA 200.7
Total Silver	ND	mg/L	0.005	EPA 200.7
Total Aluminum	ND	mg/L	0.05	EPA 200.7

* Analysis performed in the field.

CLIENT: SKW Alloys
 SAMPLE ID: BR-1
 COLLECTION METHOD: Grab
 COLLECTION DATE(S): 07/02/97
 SAMPLE TYPE: Groundwater

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DV-1

PROJECT ID: 72DV

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
Total Calcium	61	mg/L	0.1	EPA 200.7
Total Antimony	ND	mg/L	0.05	EPA 200.7
Total Arsenic	ND	mg/L	0.005	EPA 206.2
Total Beryllium	ND	mg/L	0.005	EPA 200.7
Total Barium	0.11	mg/L	0.005	EPA 200.7
Total Hexavalent Chromium	ND	mg/L	0.04	SW 846 7196
Total Copper	ND	mg/L	0.01	EPA 200.7
Total Chromium	ND	mg/L	0.01	EPA 200.7
Total Mercury	ND	mg/L	0.0004	EPA 245.1
Total Nickel	ND	mg/L	0.02	EPA 200.7
Total Selenium	ND	mg/L	0.005	EPA 270.2
Total Thallium	ND	mg/L	0.10	EPA 200.7
Total Zinc	0.02	mg/L	0.02	EPA 200.7
Total Cyanide manually distilled	ND	mg/L	0.04	SM 412B/EPA 335.2
Chloromethane	ND	µg/L	4.0	SW 846 8010
Vinyl chloride	ND	µg/L	4.0	SW 846 8010
Bromomethane	ND	µg/L	4.0	SW 846 8010
Chloroethane	ND	µg/L	4.0	SW 846 8010
1,1-Dichloroethene	ND	µg/L	2.0	SW 846 8010
Methylene chloride	ND	µg/L	2.0	SW 846 8010
trans-1,2-Dichloroethene	ND	µg/L	2.0	SW 846 8010
1,1-Dichloroethane	ND	µg/L	2.0	SW 846 8010
Chloroform	ND	µg/L	2.0	SW 846 8010
1,1,1-Trichloroethane	ND	µg/L	2.0	SW 846 8010
Carbon tetrachloride	ND	µg/L	2.0	SW 846 8010
1,2-Dichloroethane	ND	µg/L	2.0	SW 846 8010
Trichloroethene	ND	µg/L	2.0	SW 846 8010
1,2-Dichloropropane	ND	µg/L	2.0	SW 846 8010
Bromodichloromethane	ND	µg/L	2.0	SW 846 8010

CLIENT: SKW Alloys
 SAMPLE ID: BR-1
 COLLECTION METHOD: Grab
 COLLECTION DATE(S): 07/02/97
 SAMPLE TYPE: Groundwater

AES CLIENT ID: DTT
 AES SAMPLE ID: 72DV-1

PROJECT ID: 72DV

Analytical Parameters	Analytical Results	Units	Practical Quantifiable Limit	Method
2-Chloroethyl vinyl ether	ND	µg/L	2.0	SW 846 8010
cis-1,3-Dichloropropene	ND	µg/L	2.0	SW 846 8010
trans-1,3-Dichloropropene	ND	µg/L	2.0	SW 846 8010
1,1,2-Trichloroethane	ND	µg/L	2.0	SW 846 8010
Tetrachloroethene	ND	µg/L	2.0	SW 846 8010
Dibromochloromethane	ND	µg/L	2.0	SW 846 8010
Bromoform	ND	µg/L	2.0	SW 846 8010
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0	SW 846 8010
Toluene	ND	µg/L	2.0	SW 846 8020
Chlorobenzene	ND	µg/L	2.0	SW 846 8020
Ethyl Benzene	ND	µg/L	2.0	SW 846 8020
1,3-Dichlorobenzene	ND	µg/L	2.0	SW 846 8020
1,4-Dichlorobenzene	ND	µg/L	2.0	SW 846 8020
1,2-Dichlorobenzene	ND	µg/L	4.0	SW 846 8020
m/p-Xylene	ND	µg/L	2.0	SW 846 8020
o-Xylene	ND	µg/L	2.0	SW 846 8020

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CLIENT: SKW Alloys

AES CLIENT ID: DTT
PROJECT ID: 72DV

ACCURACY

Analytical Parameter(s)	Method	Sample ID	Type	Percent Recovery
Total BOD	EPA 405.1	---	Independent Standard	97 *

* Glucose-Glutamic acid standard.

Advanced Environmental Services, Inc.
Sample Traceability Report

Project Identification DITI 72DV

Sample #	Sample Collection	Group #	Run #	Prep Method	Prep Date	Analyst	Analytical Methodology	Analysis Date	Analyst
72DV-1	7/2/97	2001	189	-	-	-	405.1	7/2/97	DH/UR
72DV-1	7/2/97	2020	22	-	-	-	110.2	7/2/97	UR
72DV-1	7/2/97	2014	93	-	-	-	719.6	7/2/97	UR
72DV-1	7/2/97	2017	195	-	-	-	Hach Color	7/8/97	UR
72DV-1	7/2/97	2050	63	-	-	-	375.4	7/7/97	UR
72DV-1	7/2/97	2201	148	412B	7/8/97	JH	335.2	7/11/97	DAW
72DV-1	7/2/97	2025	199	-	-	-	140.1	7/7-8/97	UR/DH
72DV-1	7-2-97	2002	131	400.2	7.8.97	MC	420.2	7.9.97	MC
72DV-1	7-2-97	2005	57	-	-	-	350.3	7.10.97	MC
72DV-1	7-2-97	2002	88	-	-	-	353.2	7.10.97	MC
72DV-1	7-2-97	2011	65	-	-	-	325.3	7-14-97	UR
72DV-1	7-2-97	2006	53	-	-	-	310.1	7/7/97	AJH
72DV-1	7/2/97	2027	65	351.3	7/15/97	MC	351.3	7/15/97	MC
72DV-1	7/2/97	2111	144	-	-	-	415.1	7/15/97	UR

Please note: Areas marked by a dash indicate that no sample preparation is required under the applied methodology.