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FINAL PHASE 1 SITE INSPECTION REPORT FOR AREA OF CONCERN 20 NAS FORT WORTH TX

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NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 689

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D.E. 689

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AOC 20 SITE INSPECTION
NAS FORT WORTH JRB, TEXAS

SITE CHARACTERIZATION SUMMARY ITIR

U.S. Air Force Center for Environmental Excellence
Brooks AFB, Texas

Contract No. F41624-00-D-8030
Delivery Order No. 0007

FEBRUARY 2001

Phase 1 Site Inspection Report, Area of Concern 20, NASFWJRB, Ft Worth Texas
Response to Comments, 28 September 2001

Commentor/ Comment #	Page	Line	Comment	SAIC Response
Sandra M. Eberts, USGS				
EXECUTIVE SUMMARY 1			1. The goals of the Site Inspection work, as well as the scope of the report, were nicely defined Note that the trend of the paleochannel should be described as northwest-to-southeast rather than northwest-to-southwest. I also recall that only one well had notable TCE concentration stratification. The Executive Summary mentions 'several'. Perhaps I overlooked something. In addition, not all of the salient points from the body of the report are mentioned in the Executive Summary.	Text has been changed from "southwest" to "-southeast". The text has been changed to "Of the three monitoring wells installed along the centerline of the plume, one had a groundwater sample which was stratified" The following point is added to show potential sources in fill material: "There is an abundant amount of fill materials in the area between Taxiway Charlie and the aqueduct, presumably the former river bed, where increased TCE biodegradation is occurring, suggesting the presence of unnatural organic matters in the fill materials."
Environmental Setting 1	2-8	18	1. I suggest using the term 'contaminated ground water' as opposed to 'contaminants' when discussing preferential flow in the paleochannels.	Text revised. Chapter 2 was carried over from the work plan, which was derived entirely from a pervious HGL work plan provided by AFCEE. Some unimportant information was omitted Minor modification was made for this project, but no new information was added to expedite the process. The original report (HGL 1997) was cited for further information.
Environmental Setting 2	2-9	10	2. The use of the term 'turning east' to describe the position of the paleochannel is a bit odd.	No change. See previous comment.
Environmental Setting 2	2-10	11-25	3. This discussion of TCE in surface water is quite useful It would be nice if the area discussed, as well as the sample locations, were identified on a map.	No change. See previous comment.
Field Investigation 1	3-3	6	1. It would be useful if all features in this paragraph were located on a map within Section 3. I had to search for them and found what I was looking for on Figure 5-1.	Two wells where velocity surveys were conducted were added to Figure 3-1.
Field Investigation 2	3-4	7	2. I suggest calling out Figure 3-1 here and mentioning that 4 of the borings were completed as wells Well installation and groundwater plume characterization can still be described in Section 3.2.4. (I spent time looking for the boring locations before I read Section 3.2.4.)	The sentence has been changed to "Six soil borings were installed to confirm the bedrock depth and gravel characteristics predicted by the seismic and EI survey. Four of these soil borings were completed as monitoring wells (Figure 3-1)."

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
Field Investigation 3			3. Why were such long well screens used (10-20 feet)? Long well screens will likely result in the dilution of most ground water samples collected and provide a fairly limited opportunity to characterize the plume in 3-dimensions, unless passive diffusion samplers are used. Collection of multiple samples (top, middle, and bottom) from three of the wells is described on Page 3-8. Without the use of packers, how was it determined that the samples represented the top, middle, and bottom intervals in the well/aquifer?	The long-screen wells were installed at the center and the deepest portion of the channel, screening for vertical plume stratification. The purpose of the stratification screening was to look for the potential existence of near-solubility-strength concentration of TCE at the bottom and center of the channel, an indication of presence of DNAPL. Since the concentrations detected were much lower than solubility, the result is not that significant Sampling using packers was not necessary for this purpose at this concentration.
Field Investigation 4	3-9	18	4. I did not see survey locations for the seismic and EI lines. They could be in the appendix, which I did not really review. If not, they should be included in the report so that these geophysical lines can be included in various GIS databases and maps.	All the surveyed endpoints and crossover points of the seismic lines were used to interpolate the points in between Both the surveyed and the estimated points for seismic shot points are in Appendix C, and those for EI are in Appendix D
EVALUATION OF DATA 1			1. One of the objectives of this section is to map the ground water plume pathway. Because this is a dissolved phase plume, a potentiometric-surface map for the Terrace Alluvium should be included. This lack of a potentiometric map in reports that describe the Plant 4/Carswell TCE plume is pervasive and problematic It limits the ability of the reader to understand plume migration.	Figure 5-7 was added to show the potentiaometric surface, and it was discussed in text.
EVALUATION OF DATA 2	5-9	6-12	2 There is discussion of a notable amount of fill in the vicinity of wells WSAICTA003 and WHGLTA302. The proximity of the identified fill material to the area of increased biodegradation of TCE in the aquifer strikes me. Nothing more needs to be added in this section but this information should be carried into discussions later on in the report.	The following sentence is added to the "Summary and Conclusions" and also in "Executive Summary": "There is an abundant amount of fill materials in the area between Taxiway Charlie and the aqueduct, presumably the former river bed, where increased TCE biodegradation is occurring, suggesting the presence of unnatural organic matters in the fill materials."
EVALUATION OF DATA 3	5-9	20-21	3. Also of interest on Page 5-9 (lines 20, 21) is the statement that the gravels appear to be random and do not correlate with the paleochannel. Note that groundwater flow and thus plume migration should be more closely tied to the position of the gravels than the position of the paleochannel itself. Again, a detailed	A potentiometric surface map is added as Figure 5-7 and will be referenced in Section 5 7 for pathway discussion.

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
			potentiometric-surface map would help clarify the relation between the gravels, paleochannel, and plume migration. All of the necessary data seems to have been collected.	
EVALUATION OF DATA 4	5-10	3-12	4. The location of the October 2000 basewide sampling points should be identified on the maps. I find it perplexing that Paluxy well data were considered when Terrace Alluvium data were contoured. Doesn't a confining unit separate the aquifers? If so . the Paluxy data should not have been considered. If not, then the Paluxy wells should at least be located on the maps.	Map is revised to note different data sources. To reduce confusion, text referring to the Paluxy aquifer is deleted.
EVALUATION OF DATA 5	5-10	14-26	5. This discussion of natural attenuation is incomplete. The TCE/cDCE ratio decreases by an order of magnitude across the area of fill that was identified by use of the geophysical techniques applied in this investigation. The correlation between the fill area and an increase in bidegradation in the aquifer is quite notable and needs to be discussed. The current version of the report states that degradation is occurring near the sources at AFP 4 and along the pathways ... no more. Such a discussion suggests that there is consistent degradation along the entire plume, which is not the case. The change in ground-water chemistry near WHGLTA302 and WSAICTA003 must be taken into account when designing a remediation system. Support for future remedial system design was stated as an objective of the investigation in the Executive Summary. In addition, I suggest dropping the word 'the' from line 20 on Page 5-10 ("... suggest that degradation is occurring near 'the' sources at AFP 4 and ..."). The use of the word 'the' implies that AFP 4 may be the only source of TCE and I think that there is consensus that AFP 4 may not be the only source for this part of the TCE plume Finally, lines 23-26 state that the aquifer is under reduced conditions. The area of reducing conditions in the aquifer needs to be identified on a map. Not all of the aquifer is under reduced conditions.	Good comments. The text is revised as recommended. Areas of groundwater under reduced condition are added in Figures 5-5 and 5-6. Text is revised to show the increased bioactivities in this area

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EVALUATION OF DATA 6	5-10	28-31	6. The text states that the paleochannel was the primary pathway for contaminant migration from the upgradient source. How is this known? Data presented in this report indicate that the paleochannel and the most highly transmissive parts of the aquifer (gravels) are not necessarily coincident. Again, inclusion of a potentiometric-surface map would go a long way to clarify controls on plume migration.	The text is revised to read "Data indicate that a narrow deep incision may be located within the broad paleochannel (See Figure 5-1 and 5-2). Also, the center line of the plume (Figures 5-5 and 5-6) is parallel to the channel and the hydraulic gradient (Figure 5-7). This appears to suggest that the paleochannel was the primary pathway for contaminant migration from upgradient sources." A potentiometric surface map is added (Figure 5-7)
EVALUATION OF DATA 7	5-11		7. The conceptual model presented in the table on this page is not entirely consistent with the data, maps, and discussions within the body of the report. The way the report is currently written, the statement that household wastes containing organic carbon or petroleum hydrocarbons may have been disposed of in the area between Taxiway Charlie and the aqueduct seems unfounded. I do not dispute this conclusion. However, the rationale behind this conclusion, which I presume includes the increase in degradation byproducts in the vicinity of the fill material, must be discussed in the natural attenuation section, as previously mentioned. A second statement in this table refers to the organic material in the fill as being 'natural'. What is this statement based on? The statement that 'the' apparent source is located at AFP 4, which implies that AFP 4 is the source for the entire area addressed by the report, is in conflict with Figure 5-5. Specifically, TCE concentrations go down near SAICTA003 and WHGLTA302 and then back up downgradient of the aqueduct. Although Figure 5-6 was included to demonstrate that total VOC concentrations do not necessarily go down across this entire reach, there must be an explanation for why TCE concentrations go back up in a general downgradient direction – if indeed it is a downgradient direction ... no potentiometric-surface map is included. (I believe that the area south of the aqueduct is indeed downgradient of wells WSAICTA003 and WHGLTA302.) Such an important observation (a	Excellent comments The assessment is in agreement with the information presented but the summary did not reflect the line of reasoning. The sentence in the soil portion is revised to read "Fill materials in the area between Taxiway Charlie and the aqueduct appear to contain organic carbons and may contain additional sources of TCE. The word "natural" is deleted from the phrase "natural organic materials" "in" the channel is changed to "adjacent to the channel" The TCE contours were cut from a large plume map that extend beyond the study area. The data defining the elevated TCE concentration contours downgradient of the aqueduct are beyond this cut map.

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
			decrease and then an increase in TCE concentrations) must not be overlooked in a report of this nature. If the maps are to remain as is, the potential for an additional source south of the aqueduct must be addressed. Curiously, there are no data on any of the maps in the report to support contouring an increase in TCE concentrations south of the aqueduct. Finally, to be consistent with the data and discussions in the body of the report, I suggest that the statement " ... The thickest aquifer and the highest groundwater contamination is located in a narrow band (potentially less than 500 ft) in the paleochannel" be changed to " ... in and 'adjacent to' the paleochannel".	
SUMMARY AND CONCLUSIONS				
1			1. On the basis of information presented in the report, I suggest " ... most concentrated portion of the plume was less than 500 wide and 'generally coincident' with the paleochannel" as opposed to " ..'confined within' the paleochannel."	Text revised.
2			2. The conclusion related to biodegradation needs to be more complete. Perhaps a statement describing the relative amounts of degradation by products in different parts of the plume could be added.	The following text is added· Due to the limited scope of the project, the areas where bioactivities are active were not completely defined. The major part of the aquifer is under aerobic condition, while two areas show highly reduced condition: HM-113 and the former river channel between Taxiway Charlie and the aqueduct. TCE in some wells is nearly degraded to daughter products.
3			3. The observation (?) that TCE concentrations go up downgradient of the biodegradation zone needs to be mentioned and potentially discussed. Such an observation must not be overlooked during design of a remediation system	The following bullet is added: • TCE concentration decreases to near non-detect from AFP4 to the aqueduct due to natural attenuation and increased bioactivities in the area with lots of fill materials. However, its concentration increases again downgradient, suggesting additional sources to the south of the study area

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Phase 1 Site Inspection Report, Area of Concern 20, NASFWJRB, Ft Worth Texas
Response to Comments, 28 September 2001

Commentor/ Comment #	Page	Line	Comment	SAIC Response
Reviewer: R. Wice, IT Corporation				
1			In the site history section of the report the use of former Carswell Air Force Base (CAFB) and NAS Fort Worth JRB (NAS Fort Worth) are used in an interchangeable way. CAFB should be used in the report as text related to historic information or when the facility was an Air Force Base, or when describing areas that are under the authority of the BRAC. The activities conducted as part of the AOC 20 inspection (should this really be called investigation?) have been discussed by stakeholders in the past. The investigation is needed in better understanding the hydrogeologic characteristics and contaminant distribution at Air Force Plant 4(AFP4) and NAS Fort Worth JRB. This work by SAIC under AFCEE direction takes an important step in resolving some outstanding hydrogeological and contaminant transport issues. The field activities, sampling, data interpretations and presentation in the report are very good in bettering our understanding of the area. Investigation activities in AOC 20 should be continued to the southeast to tie into the WP07 and Landfill 4 CAFB BRAC areas. Data collected by Hydrogeologic as part of their various investigations at NAS Fort Worth and CAFB BRAC areas, and the upcoming WP07 investigation by Hill, need to be incorporated into a comprehensive site model. The recent site model proposed by Sandy Ebert of the USGS also needs to be evaluated and if appropriate, incorporated into the model. Most of my comments are on the historical parts of the report where SAIC utilized previous report information.	Good comments but no change. The historical section was nearly taken as is from an existing work plan. No major revision was provided.
2	1-2		Figure 1-1 - The figure lumps together AFP4 and NAS Ft. Worth in one square. Perhaps the square should be split to show each base or both names should be included.	Both names are added.

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
3	1-5	17	Section 1.1 2, Line 16 and 17 - Reference to B-52 and KC - 135 aircraft generated waste should be referenced to former Carswell AFB activities. As mentioned in general comments the text switches back and forth between Carswell and NAS Ft. Worth.	Text revised
4	2-2		Figure 2-1 - The figure presents the bedrock surface line pointing to the Paluxy. The line is meant to show the bedrock surface, but may confuse some readers. The line should point to a different place in the column Figure 2-1 also shows the top of the Goodland as being at the surface. This is not the case in the study area (does occur southwest corner of Landfill4). I suggest the top of the figure show Alluvium over bedrock. The unit thicknesses in Figure 2-1 are not consistent with the thickness in the text. In the study area, the Goodland is not 100 feet thick. The figure was taken from previous work but it should be updated to present actual site conditions.	Do not agree. No changes.
5	2-1	35-36	2.2.1 Lines 35 and 36, Item 1 - The Terrace alluvium units should be associated with ancestral Trinity River and tributary deposits (Farmers Branch). Part of these upper deposits may also be a result of fill activities associated with base construction A figure showing the main channel of the former Trinity Channel may be useful. Did Parsons do one?	The word "ancestral" is added to the text
6	2-3	12	2.2.2, Line 12 – Appears that AFP4 water leakage (General Dynamics) is also being referenced to NAS Forth Worth. If reference applies to AFP4 only, it should not imply NAS Fort Worth water leakage. If separate leakage values for AFP4 and NAS Fort Worth are available, present both. Statement (Lines 13 and 14) about leaked water affecting local flow patterns, and acting as a force to potentially drive water into lower aquifer, may be true in a theoretical sense, but not as a determination in this study at this time, and should be deleted.	The description is correct and leakage location may not be pinpointed. The information is relevant and important for water budget analysis. Will keep as is.
7	2-3		2.2.3, Line 36 and Figures 5-1 and 5-2 – Window area includes breached Walnut Formation and areas where Walnut is 5 feet or less in thickness. This should be reworded in text so we maintain the continuity of the "Window Area" definitions. In the past, there was confusion each time the Window was redefined. The red outlined area of breached Walnut in Figures 5-1 and 5-2 should be supplemented by	Agree. The calculated window area is referenced in Figures 5-1 and 5-2.

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
			marking the less-than 5-foot-thick Walnut area. (See JEG EPL design documents or USGS groundwater modeling report.)	
8	2-4	11-17	2.2.3.1, Lines 11 – 17 – Statement implies Paluxy water mostly due to structural features. Water is more likely stored in intergranular pore spaces Fracture flow is not the main water contribution factor in the Upper and Middle Paluxy in this area.	A different theory. May be correct. No change to the report.
9	2-7	22-23	2 6.1, Lines 22 – 23 – Which school?. If this refers to the school in the former Carswell housing area, it is closed and I think demolished.	Not known. Referenced information. No change to the text.
10	2-8	29-31	2.6.2, Lines 29 –31 – 2000 census data or base commander data may be more up to date.	Not available at the time. Will update in the future report.
11	2-8	5-6	2.7.1, Lines 5 – 6 - These deposits may be better defined as ancestral Trinity River and its tributaries' floods. It would be clearer to say so here as we reference ancestral later in the paragraph (Lines 12 and 13).	Text revised.
12	2-8	25	2.7.1, Lines 25 – 25 – Goodland thickness (20 to 25 feet) not consistent with Figure 2-1 which shows approximately 110 feet. Text should match schematic presented in Figure 2-1, which should be based on AFP4/NAS Fort Worth specific data.	110 ft in regional 20-25 ft is site-specific. No change to the text.
13	2-8	27	2.7.1, Line 27 – The reader at this point would have no idea of where Meandering Road Creek is (not on maps). May add in text it is located west side of AFP4 or show in a Figure	Text revised.
14	2-9	23-24	2.7.2, Lines 23 – 24 – Suggestion, may be worth mentioning recent elevated VOC levels near WP-07? Clear evidence of a possible source area at the former CAFB.	WP-07 is outside the study area and downgradient at this phase. No change to text.
15	2-9	4-5	2.7.2, Lines 4 – 5 – This sentence is not clear; it implies the big Building 181 TCE leak in 1991 or 1992. The large release in Building 181 happened after 1990. AFP4 was placed on the NPL because of actions and site investigations conducted from 1982 through 1985. Other historical TCE leaks occurred at AFP4.	The following sentence is added: A release also occurred after 1990.
16	2-9		2.7.2 – It may be of some historical note under groundwater impact to mention the interim groundwater pump and treat system downgradient from the AOC 20 study area. Other issues on regional geology, air, demographics are presented to	The following sentence is added at the end of the section: Currently, there is one groundwater containment system downgradient of the study area.

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
			make this a comprehensive document. The future PRB is also mentioned.	
17	2-9		2.7.2, Lines 11 – 12 – Is there more recent surface water data to reference.	Not available at the time of reporting. No change to the text.
18	2-10		2.7.2, Lines 19 – 20 – When was data collected – 1997?	Not sure.
19	2-10		2.7.3 – A map showing surface water bodies would be useful. Lines 23 – 24 on Pages 2 - 10 reference seeps to an unnamed tributary, knowing its location would be helpful	Agree But the information was not available at the time, and the historical information was taken as is to expedite the process. Will revise in the future report
20			**General Comments – Section 5.0 and Figures 5-1, 5-2, and 5-3.** Figures 5-1 and 5-2 are an excellent comparison showing the added value of geophysical methods in delineating top of bedrock features. The 510-foot bedrock high in Figure 5-2, which trends west to east near the Farmers Branch aqueduct may have an impact on basal sand and ground flow, and VOC migration. There is west-east trend (Wells TA302 to LF05-02) of lower TCE concentration in this area that may be the result of natural attenuation The report mentions that biodegradation is occurring between taxiway Charlie and the aqueduct. Why is biodegradation isolated to this area? Shown on a map, natural attenuation parameters would be useful in seeing how conditions in the area are different and may be impacting the TCE plume. Text should be expanded in Section 5.6 to explain in a few sentences the conditions that may cause TCE natural attenuation. With the discontinuity of the TCE plume, could there be some other sources in the area causing increased concentrations to the southeast of the aqueduct? S. Ebert of USGS proposed a conceptual site model which presents an interpretation that indicated radically different flow paths to the southeast of AOC 20, and other possible source areas other than AFP4. This needs to be taken into consideration as mentioned in general comments.	Text expanded and areas of under anaerobic conditions are shown on Figures 5-5 and 5-6 It is a possible theory. Text is being revised See response to Sandra Eberts' comment "Evaluation of Data # 7"

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Commentor/ Comment #	Page	Line	Comment	SAIC Response
21	5-3		5.3, Line 22 – It would be helpful here or in Section 3.2.4 to briefly explain the reason for VOC, arsenic, and natural attenuation parameters. Section 5.6 does mention natural attenuation results. An expanded text would help reader better understand the purpose of the analytical program. Figure 5-3 – If other well data (existing) and the geophysics are used, could a basal sand and gravel isopach map be prepared? Even if the old well data are are suspect, it may help in defining these deposits.	It was explained in the workplan. Text in Section 5.6 is expanded. See response to comment # 20 and Sandra Eberts' comment "Evaluation of Data # 5"

PHASE 1 SITE INSPECTION REPORT

AREA OF CONCERN 20
NAVAL AIR STATION FORT WORTH
JOINT RESERVE BASE
FORT WORTH, TEXAS

FINAL

Prepared for

U.S. Air Force Center for Environmental Excellence
Brooks Air Force Base, Texas

Prepared by

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION
San Antonio, Texas

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G Field Laboratory Test Results

H Waste Disposal Records

I Laboratory Report – Soil and Groundwater

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFP 4	Air Force Plant 4
AGE	aerospace ground equipment
AOC	area of concern
bgs	below ground surface
btoc	below top of casing
°C	degrees Celsius
$CaCO_3$	calcium carbonate
Cl	chloride
cm/sec	centimeter per second
DCE	dichloroethene
DRMO	Defense Reutilization and Marketing Office
DOT	Department of Transportation
E	data qualifier – the measurement exceeded the upper calibration limit, therefore the concentration was estimated
EI	electrical imaging
ESE	Environmental Science and Engineering, Incorporated
°F	degrees Fahrenheit
FD	field duplicate
FSP	Field Sampling Plan
ft/day	feet per day
gpd/ft^2	gallons per day per square foot
HGL	HydroGeoLogic, Incorporated
ID	identification
IDW	investigation derived waste
J	data qualifier – the compound was positively identified and the assigned value is an estimated concentration
JP-4	jet propulsion grade 4 fuel
JRB	Joint Reserve Base
µg/kg	microgram per kilogram
µg/L	microgram per liter
MEK	methyl ethyl ketone
mg/kg	milligram per kilogram
mS/cm	microsiemens per centimeter
mV	millivolt
N	nitrogen
NAS	Naval Air Station

ACRONYMS AND ABBREVIATIONS (cont.)

NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
NTU	nephelometric turbidity unit
ORP	oxidation-reduction potential
OVA	organic vapor analyzer
OWS	oil/water separator
PD-680	petroleum naphtha
PPE	personal protective equipment
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
Radian	Radian Corporation
ROD	Record of Decision
Rust	Rust Geotech
SAC	Strategic Air Command
SI	Site Inspection
SO_4	sulfate
TA	terrace alluvium
TCA	trichloroethane
TCE	trichloroethene
TNRCC	Texas Natural Resource Conservation Commission
TOC	total organic carbon
U	data qualifier – indicated analytical result less than the reporting limit shown
U.S.	United States
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

EXECUTIVE SUMMARY

This Site Inspection Report presents field investigation data collected from Area of Concern 20, Naval Air Station Fort Worth Joint Reserve Base. The goal of the site inspection was to delineate the paleochannel in the study area to support future remedial system design. The bedrock topography and basal gravel distribution were mapped, and the field data used to refine the groundwater plume at Area of Concern 20.

This report includes a brief description of field activities and a series of maps generated from these data and that of previous investigations in the area.

- Bedrock topography was contoured using data derived from soil boring logs and the seismic survey.

- Gravel distribution is shown as thickness of the basal gravel (described in boring logs). Because the logging of gravel using split spoons is not definitive, several profiles using electric imaging techniques were completed that better illustrate the subsurface heterogeneity.

- Groundwater plume maps were constructed that depict chemicals of concern and natural attenuation degradation products.

The northwest-to-southeast trending paleochannel is an erosional surface approximately fifty feet wide on top of the bedrock at Area of Concern 20. The geometry of the most concentrated part of the trichloroethene plume (concentrations greater than one thousand milligrams per liter) overlies the paleochannel. Of the three monitoring wells installed along the centerline of the plume, one had a groundwater sample that was stratified.

There is an abundant amount of fill materials in the area between Taxiway Charlie and the aqueduct, presumably the former river bed, where increased TCE biodegradation is occurring, suggesting the presence of unnatural organic matters in the fill materials.

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1. INTRODUCTION

The Phase 1 Site Inspection (SI) conducted at Area of Concern (AOC) 20, Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB), focuses on the runway area adjacent to Air Force Plant 4 (AFP 4). Figure 1-1 presents the location of NAS Fort Worth JRB and Figure 1-2 shows the SI area. AOC 20 is part of AOC 2, which is loosely defined as the portion of the shallow aquifer located in the Quaternary terrace alluvium (TA) that is contaminated with dissolved phase trichloroethene (TCE). The purpose of the SI is to delineate paleochannels (erosional depressions on the bedrock filled by alluvial deposits) and preferential groundwater pathways in AOC 20.

1.1 BACKGROUND AND PURPOSE

Carswell Air Force Base (AFB) was officially closed on 30 September 1993. A parcel of the former base, now known as NAS Fort Worth JRB, has been transferred from United States (U.S.) Air Force (USAF) to U.S. Navy management. Before complete property transfer can be accomplished, required environmental investigations of potential contamination related to Air Force activities occurring prior to 30 September 1993 at the NAS Fort Worth JRB property are to be complete, and contaminated sites are to be remediated.

The primary regulatory agencies that govern the SI are the U.S. Environmental Protection Agency (USEPA) Region 6 and the Texas Natural Resource Conservation Commission (TNRCC). The USEPA is the lead regulatory agency for activities conducted at the subject site. The site is currently regulated by the AFP 4 Record of Decision (ROD) under the Comprehensive Environmental Response, Compensation, and Liability Act. This SI Report was prepared using guidance documents from the USEPA Region 6 Superfund Division, the TNRCC, and the Headquarters USAF Center for Environmental Excellence (AFCEE)

1.1.1 Background

NAS Fort Worth JRB is located on 2,555 acres of land in Tarrant County, Texas, 8 miles west of downtown Fort Worth. It consists of the main base and two noncontiguous parcels (the Instrument Landing System marker beacon and the Weapons Storage Area) located west of the city of White Settlement. The main base comprises 2,264 acres and is bordered by Lake Worth to the north, the West Fork of the Trinity River, the city of River Oaks, and the city of Westworth Village to the east, other urban areas of Fort Worth to the northeast and southeast, the city of White Settlement to the west and southwest, and AFP 4 to the west.

AFP 4 occupies 602 acres and employs people in various positions pertaining to aircraft manufacturing and associated processes. The area surrounding NAS Fort Worth JRB not used for Department of Defense operations is primarily suburban. Land use in the immediate vicinity of the base is industrial, commercial, residential, and recreational (Kearney 1989).

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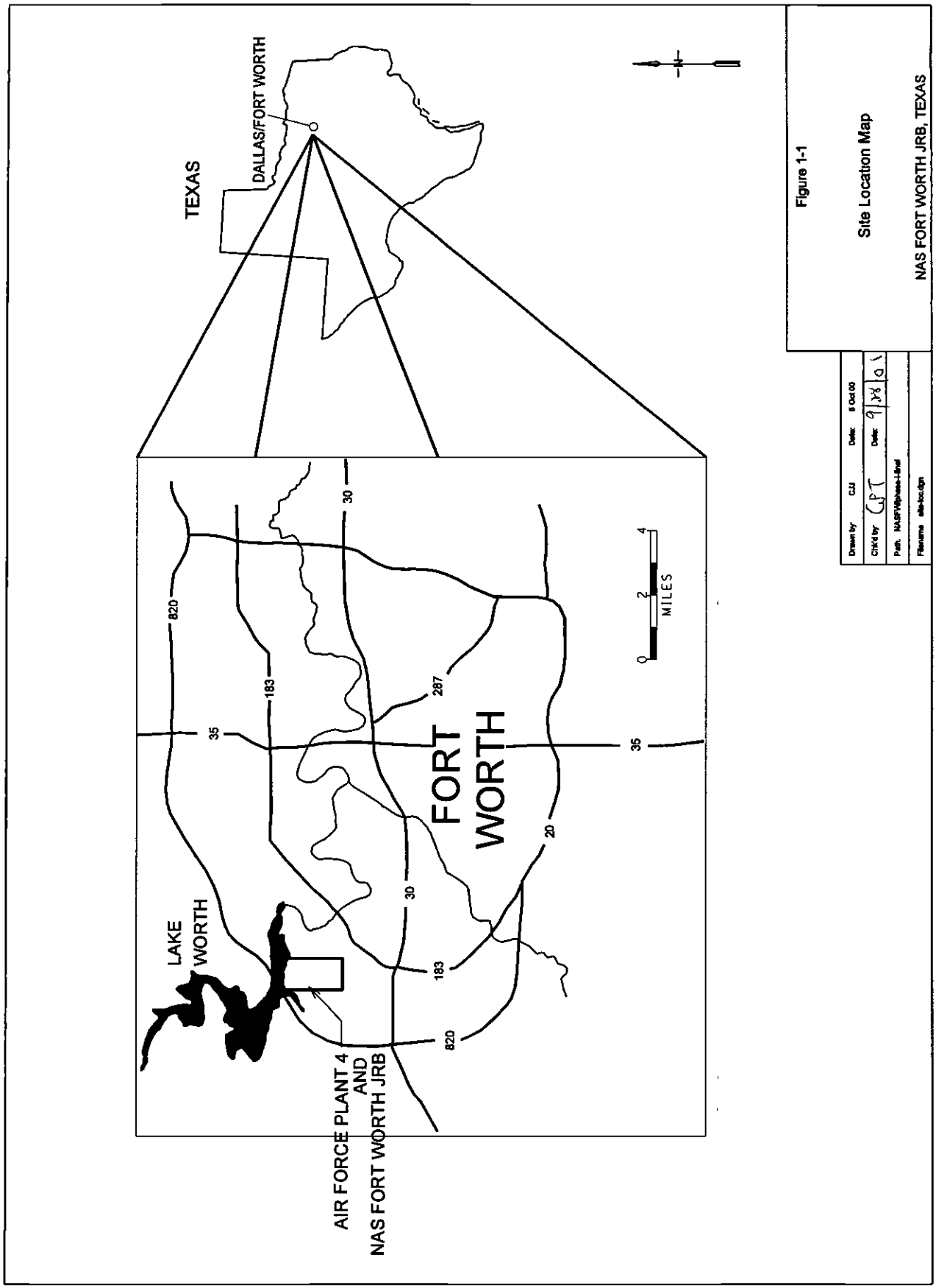
TEXAS
DALLAS/FORT WORTH
LAKE WORTH
AIR FORCE PLANT 4 AND NAS FORT WORTH JRB
FORT WORTH
820
183
35
30
287
20
0
2
4
MILES
Figure 1-1
Site Location Map
NAS FORT WORTH JRB, TEXAS
Drawn by: CJJ
Date: 6 Oct 00
Chk'd by: CPT
Date: 9/28/01
Path: NASFWphase-I-final
Filename: site-loc.dgn

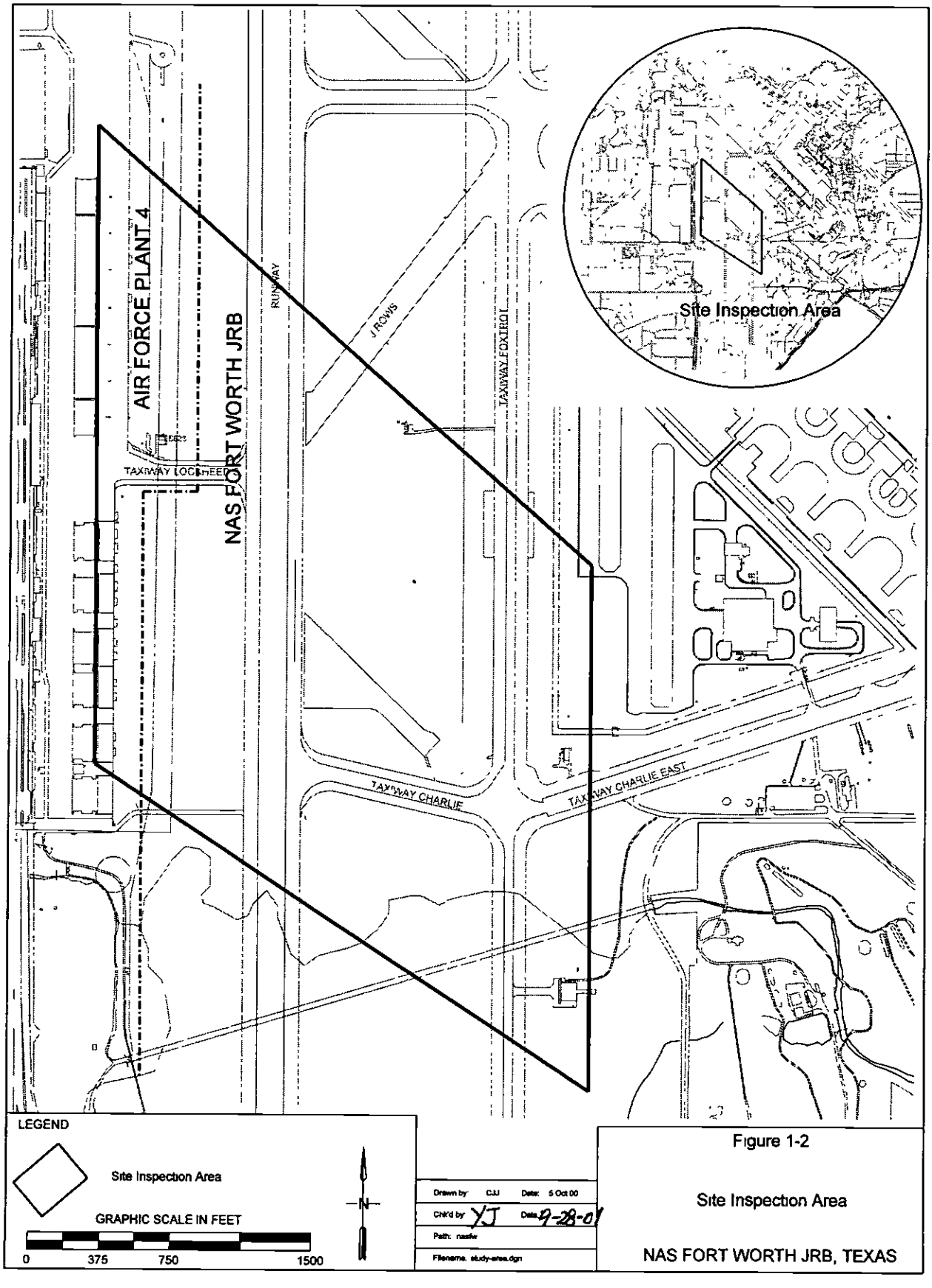

Figure 1-2

Site Inspection Area

NAS FORT WORTH JRB, TEXAS

1.1.1.1 Installation History and Present Mission

Before the initial base construction in 1941, the area that is now occupied by the NAS Fort Worth JRB consisted of woods and pasture in an area called White Settlement. The NAS Fort Worth JRB started as a modest dirt runway built to service the aircraft manufacturing plant formerly located at AFP 4's current location. Figure 1-2 presents the geographic relationship between AFP 4 and the NAS Fort Worth JRB in the study area.

In August 1942, the base was opened as Tarrant Field Airdrome and was used to train pilots to fly B-24 bombers under the jurisdiction of the Gulf Coast Army Air Field Training Command. In May 1943, the field was re-designated as Fort Worth Army Air Field with continued use as a training facility for pilots. The Strategic Air Command (SAC) assumed control of the installation in 1946, and the base served as the headquarters for the Eighth Air Force. It was renamed Carswell AFB in 1948, and the 7th Bomber Wing became the base host unit. The Headquarters 19th Air Division was relocated to Carswell AFB in 1951, where it remained until September 1988 (Kearney 1989).

The SAC mission remained at Carswell AFB until 1992, when the Air Combat Command assumed control of the base upon disestablishment of SAC. In October 1994, the U.S. Navy assumed responsibility for much of the facility, and its name was changed from Carswell AFB to NAS Fort Worth JRB. The NAS Dallas and elements of Glenview and Memphis NASs were combined and joined to NAS Fort Worth JRB to streamline naval operations into one central area. The principal activities on the base have been maintaining and servicing bombers, fuel tankers, and fighter jet aircraft (Kearney 1989).

AFP 4 became operational in 1942 when Consolidated Aircraft began manufacturing the B-24 bomber for national defense during World War II. In 1953, General Dynamics took over operation of the manufacturing facility. Since 1953, AFP 4 has produced B-36, B-58, and F-111 aircraft. The plant currently produces F-16 aircraft. In addition to F-16 aircraft, AFP 4 produces spare parts, radar units, and missile components. On 1 March 1993, Lockheed, Forth Worth Company, took over operations of AFP 4 as a successor to General Dynamics (HydroGeoLogic, Inc. [HGL] 2000a).

1.1.1.2 Industrial Activities

Major industrial operations that have been performed at the NAS Fort Worth JRB include the following: maintenance of jet engines, aerospace ground equipment (AGE), fuel systems, weapons systems, pneudraulic systems, and general and special purpose vehicles; aircraft corrosion control; and non-destructive inspection activities. Most of the liquid wastes that have been generated by industrial operations can be characterized as waste oils, recoverable fuels, spent solvents, and spent cleaners (CH2M HILL 1984).

Waste oils generally refer to lubricating fluids/oils and, to a lesser extent, hydraulic fluids. Recoverable fuels refer to fuels drained from aircraft tanks and other base vehicles, such as jet propulsion grade 4 fuel (JP-4) and unleaded gasoline. Spent solvents and cleaners refer to stripping liquids used for degreasing and cleaning of the following: aircraft, aircraft systems and parts, electronic components, and vehicles. Spent solvents and cleaners include PD-680 (petroleum naphtha) and various chlorinated organic compounds. Specific types of degreasing solvents used by the USAF have changed over the years. Carbon tetrachloride was commonly used in the 1950s until it was replaced by TCE around 1960. Since then, TCE and 1,1,1-trichloroethane (1,1,1-TCA) have been used, although TCE usage has decreased in favor of 1,1,1-TCA. Today, PD-680 (Type II), 1,1,1-TCA, and to a limited extent, TCE are used. In additions, waste paint solvents and strippers are generated on-site from corrosion control activities. Typical paint solvents include the following compounds: isobutyl acetate, toluene, methyl ethyl ketone (MEK), isopropanol, naphtha, and xylene. Paint strippers generally contain such compounds as methylene chloride, toluene, ammonium hydroxide, and phenolics. Servicing and maintaining the engines and equipment of the B-52 and KC-135 aircraft generated the majority of waste liquids at Carswell AFB (CH2M HILL 1984).

Manufacturing operations at AFP 4 have resulted in the generation of various hazardous wastes that include waste oils, fuels, spent solvents, paint residues, and spent process chemicals. Throughout most of the plant's history, waste oil, solvents, and fuels were disposed at on-site landfills or were burned during fire training exercises. Chemical wastes were initially discharged to the sanitary sewer system and treated by the City of Fort Worth's treatment system. In the 1970s, chemical process wastes were treated on site at a newly constructed chemical waste treatment system before being discharged to the sanitary sewer system. Currently, a contractor disposes waste oils and solvents, and burning of these wastes has been discontinued. Chemical wastes continue to be treated on site. AFP 4 was placed on the National Priorities List (NPL) in August 1990.

1.1.1.3 Waste Disposal Operations

Wastes have been generated and disposed of at the NAS Fort Worth JRB since the beginning of industrial operations in 1942. Historical waste management practices at the NAS Fort Worth JRB were presented in the *Phase I Initial Assessment Report* (CH2M HILL 1984), the *Phase I Remedial Investigation Report* (Radian Corporation [Radian] 1989), and the *Site Characterization Summary Informal Technical Information Report* (CH2M HILL 1996a), and are summarized in the following paragraphs:

1942–1970: The majority of waste oils, recovered fuels, spent solvents, and cleaners were burned at the fire department training areas during practice exercises. Some waste oils and spent solvents were disposed of through contractor removal, while some waste paints (contaminated with thinners and solvents), waste oils, and PD-680 are suspected of having been disposed of in the base landfills. Some waste oils, recovered fuels, spent solvents, and cleaners were also discharged to sanitary and storm sewers. These discharges occurred primarily at the washracks. In 1955,

an oil/water separator (OWS, Facility 1190) was installed to recover waste materials discharged from the washracks. Non-aqueous materials from OWSs were pumped out and disposed of through contractor removal. Aqueous discharge from OWSs was pumped into the sanitary sewers.

1971–1975: During this period, most waste oils, spent solvents, and cleaners were disposed of by contractor removal. A private contractor would pump the materials from OWSs, 55-gallon drums, and bowsers. Recovered JP-4 continued to be stored at the fire training areas and burned in practice exercises. Recovered JP-4 was also reused in AGE operations. Some waste paints (contaminated with thinners and solvents), waste oils, and PD-680 are suspected of having been disposed of in the base landfills. Some waste oils, solvents, and cleaners were discharged into sanitary sewer drains, primarily at the washracks that discharge to the Facility 1190 OWS. This OWS was routinely pumped out by a private contractor, and the recovered materials were removed from the base by the contractor.

1976–1982: The majority of waste oils, spent solvents, and cleaners were disposed of through services contracted either directly or through the Defense Reutilization and Marketing Office (DRMO). Recovered JP-4 was stored at the fire department training areas and burned during practice exercises. Recovered JP-4 was also used in AGE operations. PD-680 used at the washracks was discharged to the Facility 1190 OWS, which discharged to the sanitary sewers.

1983–Present: Waste oils, solvents, and cleaners are collected in 55-gallon drums and temporarily (less than 90 days) stored at 12 hazardous waste accumulation points located throughout the base. They are subsequently disposed of by contractor removal through DRMO. Recovered JP-4 and other fuels (mogas and unleaded gasoline) are stored at the fire department training area for subsequent burning in practice exercises or reuse in AGE operations. Waste paint solvents or thinners and strippers such as toluene, isobutyl acetate, MEK, isopropanol, naphtha, and xylene are also temporarily stored before removal. Removal of waste oils and PD-680 (Type II) from OWSs is also handled by off-base contractors through DRMO.

1.2 OBJECTIVES

The primary area of interest for this SI, as defined by the USAF, is located along the boundary between AFP 4 and NAS Fort Worth JRB (Figure 1-2).

Previous delineation of the paleochannel was based on soil boring logs and was estimated using limited data points (Parsons Engineering 1998). The paleochannel is estimated to be approximately 800 feet wide in the SI Area. The alluvial deposits are heterogeneous,

ranging from clean gravel to tight clay, and the paleochannel may not be smooth and straight. The objectives of this SI were to (1) further refine the geometry of the paleochannel, (2) map the distribution of the basal gravel, and (3) refine the geometry of the regional TCE plume.

1.3 SCOPE OF WORK

The scope of work associated with the Phase 1 SI included both field and non-field tasks. Field tasks included the following:

- Seismic survey, 864 shot points, with spacing of 10 feet.
- Seismic velocity survey, two locations (LF05-02 and WHGLTA302).
- Electrical imaging survey, 2,100 meters, with electrode spacing of 6 meters.
- Installation of two soil borings (BSAICTA001 and BSAICTA006).
- Installation of four monitoring wells (WSAICTA002, WSAICTA003, WSAICTA004, and WSAICTA005).
- Collection of six soil samples, one from each soil boring/monitoring well.
- Collection of 20 groundwater samples.
- Land survey of geophysical, soil boring, and monitoring well locations.

Other project tasks included laboratory analysis, data management, data quality validation, data analysis, and report preparation. Analytical parameters are summarized in Table 1-1. Detailed descriptions of these tasks are presented in later sections of this report. All work was conducted in accordance with the final approved scoping documents (AFCEE 2000).

Table 1-1
Data Quality Levels and Use of Field and Laboratory Data

Sampling Matrix	Parameters	Analytical Method	Field/Lab Analysis	Data Quality Level	Intended Use
Surface Soil	VOCs	OVA	Field	Screening	Field screening for selecting samples for lab analysis
Subsurface Soil	VOCs	OVA	Field	Screening	Field screening for selecting samples for lab analysis
Soil	VOCs	8260B	Lab	Definitive	Nature/extent of contaminants
	Total Organic Carbon	SW9060	Lab	Definitive	Natural attenuation potential
Groundwater	VOCs	8260B	Lab	Definitive	Nature/extent of contaminants
	Alkalinity	SW310 1	Lab	Definitive	Natural attenuation potential
	Ethane, Ethene, Methane	RSK-175	Lab	Definitive	Natural attenuation potential
	Chloride	E300	Lab	Definitive	Natural attenuation potential
	Total Suspended Solids	E160.2	Lab	Definitive	Water quality
	Arsenic	SW7060A	Lab	Definitive	Nature/extent of contaminants
	Nitrate	E300	Lab	Definitive	Natural attenuation potential
	Sulfate	E300	Lab	Definitive	Natural attenuation potential
	Total Organic Carbon	SW9060	Lab	Definitive	Natural attenuation potential
	Ferrous Iron (Fe^{2+})	Colorimetric (Hach Kit)	Field	Definitive	Natural attenuation potential

VOC volatile organic compound
OVA organic vapor analyzer

2. ENVIRONMENTAL SETTING

The climate, physiography, geology, hydrology, biology, and demographics of the NAS Fort Worth JRB area are described in this section. These data were primarily derived from the Summary of Remediation Projects at AFP 4 Carswell AFB (Environmental Science and Engineering, Incorporated [ESE] 1994) and the Remedial Investigation/Feasibility Study reports (Radian 1989a, 1991).

2.1 PHYSIOGRAPHIC PROVINCE

NAS Fort Worth JRB is located along the border zone between two physiographic provinces. The southeastern part of the base is situated within the Grand Prairie section of the Central Lowlands Physiographic Province. Most of NAS Fort Worth JRB is located within this province. This region is characterized by broad, eastward-sloping terrace surfaces that are interrupted by westward-facing escarpments. The land surface is typically grass covered and treeless except for isolated stands of upland timber. The northwestern part of the NAS Fort Worth JRB area is situated within the Western Cross-Timbers Physiographic Province. This area is characterized by rolling topography and a heavy growth of post and blackjack oaks (Radian 1989). Surface elevations for this region range from about 850 feet above National Geodetic Vertical Datum (NGVD) west of NAS Fort Worth JRB, to approximately 550 feet above NGVD along the eastern side of the base.

2.2 REGIONAL GEOLOGY

The geologic units of interest for the region, from youngest to oldest, are as follows: 1) the Quaternary Alluvium (including fill material and terrace deposits), 2) the Cretaceous Goodland Limestone, 3) the Cretaceous Walnut Formation, 4) the Cretaceous Paluxy Formation, 5) the Cretaceous Glen Rose Formation, and 6) the Cretaceous Twin Mountains Formation. A generalized cross-section of the geology beneath NAS Fort Worth JRB is presented in Figure 2-1 (Radian 1989). The regional dip of the stratigraphic units beneath NAS Fort Worth JRB varies from 35 to 40 feet per mile in an easterly to southeasterly direction. NAS Fort Worth JRB is located on the relatively stable Texas Craton, west of the faults that lie along the Ouachita Structural Belt. No major faults or fracture zones have been mapped near NAS Fort Worth JRB (HGL 2000a).

2.2.1 Groundwater

The water-bearing geologic formations located in the NAS Fort Worth JRB area may be divided into the following five hydrogeologic units, listed from the shallowest to the deepest: 1) an upper water-bearing zone occurring in the alluvial terrace deposits associated with the ancestral Trinity River, 2) a bedrock of predominantly dry limestone of the Goodland and Walnut Formations, 3) an aquifer in the Paluxy Sand, 4) bedrock of relatively impermeable limestone in the Glen Rose Formation, and 5) a major aquifer in the sandstone of the Twin Mountains Formation. Each of these units is examined more explicitly in the following paragraphs. The relationship between these hydrogeologic units and geologic units is illustrated in Figure 2-1 (Radian 1989).

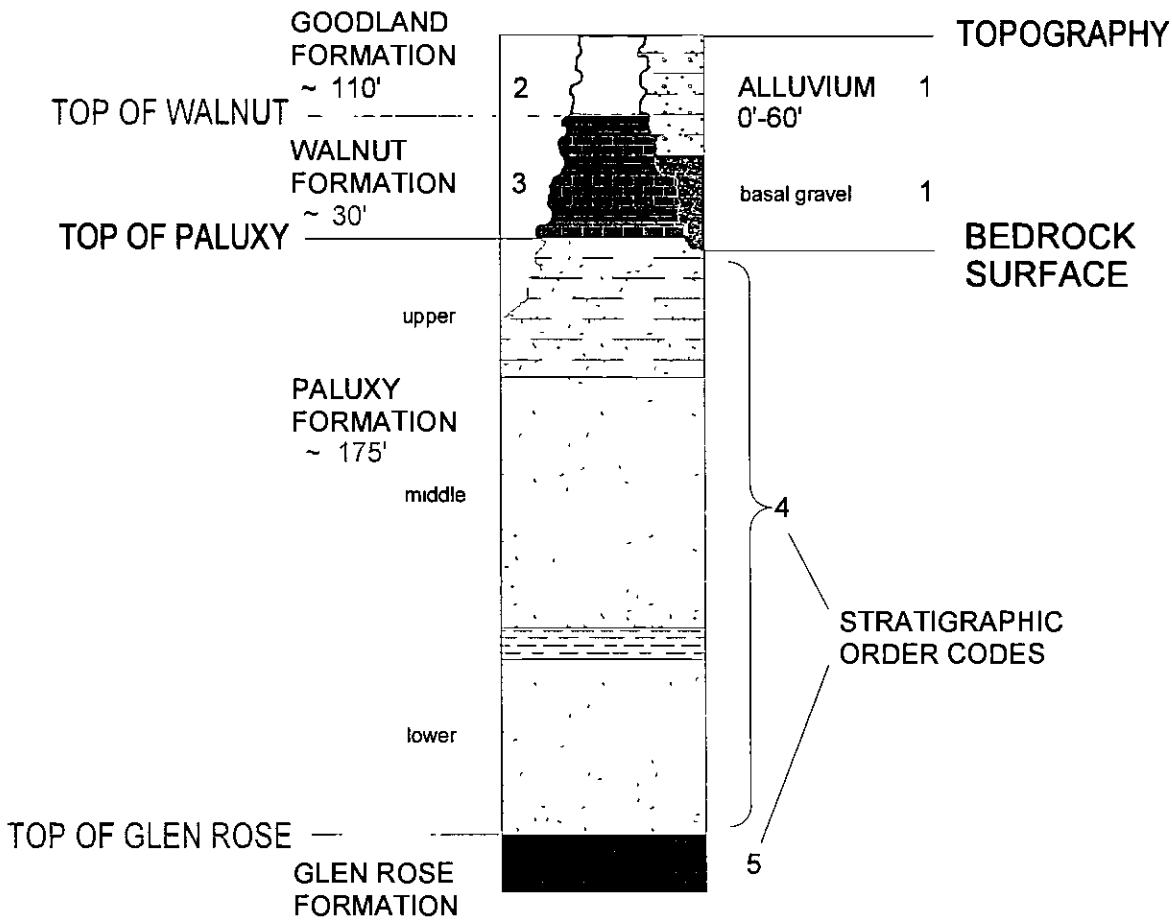

Figure 2-1

Stratigraphic Column Correlating Hydrogeologic and Geologic Units

NAS FORT WORTH JRB, TEXAS

Drawn by: CJJ	Date 5 Oct 00		
Chk'd by: YJ	Date 9-28-01		
Path nsfw			
Filename strat-geo-3.dgn			

2.2.2 Alluvial Terrace Deposits

The uppermost groundwater in the area occurs within the pore space of the grains of coarse sand and gravels deposited by the Trinity River. In some parts of Tarrant County, primarily in those areas adjacent to the Trinity River, groundwater from the terrace deposits is used for irrigation and residential use. Groundwater from the terrace deposits is rarely used as a source of potable water due to its limited distribution and susceptibility to surface/storm water pollution (CH2M HILL 1984).

Recharge to the water-bearing deposits occurs through infiltration from precipitation and from surface water bodies. Extensive on-site pavement and construction restricts this recharge. Additional recharge, however, comes from leakage in water supply lines, sewer systems, storm drains, and cooling water systems. In 1991, this leakage was calculated to be in excess of approximately 115.5 million gallons for NAS Fort Worth JRB and AFP 4 (General Dynamics Facility Management 1992). This inflow of water to the shallow aquifer affects local groundwater flow patterns and contaminant transport, along with increasing hydraulic head, which acts as the force to potentially drive water into lower aquifer systems. The estimated hydraulic conductivity of the alluvial aquifer is 4.57 gallons per day per square foot (gpd/ft^2, Radian 1989).

The groundwater flow between the Alluvial Terrace and Paluxy Aquifers is restricted by the Goodland/Walnut Formations; therefore, the alluvial terrace groundwater is not hydraulically connected to the underlying aquifers at NAS Fort Worth JRB. The primary water flow in the terrace deposits is generally eastward toward the West Fork of the Trinity River, although localized variations exist across the entire site. The hydraulic gradient across the base is variable, reflecting variations in the flow direction and localized recharge. Discharge from the aquifer occurs into on-site surface water, specifically Farmers Branch Creek (HGL 2000a).

2.2.3 Goodland/Walnut Bedrock

The groundwater within the terrace deposits is isolated from groundwater within the lower aquifers by the low permeability of the Goodland Limestone and Walnut Formations. The primary inhibitors to vertical groundwater movement within these units are the fine-grained clay and shale layers that are interbedded with layers of limestone. Some groundwater movement does occur between the individual bedding planes of both of these units, but the vertical hydraulic conductivity has been calculated to range between 1.2E-09 centimeters per second (cm/sec) to 7.3E-11 cm/sec for the NAS Fort Worth JRB and AFP 4 area. This corresponds to a vertical flow rate that ranges between 1.16E-03 feet per day (ft/day) to 5.22E-03 ft/day (ESE 1994).

In an area of AFP 4 known as the "window area", the Goodland/Walnut bedrock is breached, allowing direct contact between the alluvial terrace groundwater and the groundwater in the Paluxy Aquifer. Several wells and borings have been advanced at NAS Fort Worth JRB to the Goodland/Walnut Bedrock. There is no evidence that similar groundwater contact exists on the NAS Fort Worth JRB base property (HGL 2000a).

2.2.3.1 Paluxy Aquifer

The Paluxy Aquifer is an important source of potable groundwater for the Fort Worth area. Many of the surrounding communities, particularly White Settlement, obtain their municipal water supplies from the Paluxy Aquifer. Groundwater from the Paluxy is also used by some of the surrounding farms and ranches for agricultural purposes. Due to the extensive use of the Paluxy Aquifer, water levels have declined significantly over the years. Water levels in the NAS Fort Worth JRB vicinity have not decreased as much as in the Fort Worth area due to proximity to the Lake Worth recharge area and the fact that the base does not obtain water from the Paluxy Aquifer. Drinking water at the base is supplied by the city of Fort Worth, with surface water from Lake Worth among its water sources. Groundwater of the Paluxy Aquifer is contained within the openings created by gaps between bedding planes, cracks, and fissures in the sandstone of the Paluxy Formation. Just as the Paluxy Formation is divided into upper and lower sand members, the aquifer is likewise divided into upper and lower aquifers. The upper sand is finer grained and contains a higher percentage of shale than the lower sand. In 1989, the hydraulic conductivity and transmissivity was estimated to be 130 to 140 gpd/ft^2 and 1,263 to 13,808 gpd/ft^2, respectively (Radian 1989).

2.2.3.2 Glen Rose Aquitard

Below the Paluxy Aquifer are the fine-grained limestone, shale, marl, and sandstone beds of the Glen Rose Formation. The thickness of the formation ranges from 250 to 450 feet. Although the sands in the Glen Rose Formation yield small quantities of groundwater in the area, the relatively impermeable limestone acts as an aquitard, restricting water movement between the Paluxy Aquifer above and the Twin Mountains Aquifer below (HGL 2000a).

2.2.3.3 Twin Mountains Aquifer

The Twin Mountains Formation is the oldest and deepest water supply source used in the NAS Fort Worth JRB area. The Twin Mountains Formation occurs approximately 600 feet below NAS Fort Worth JRB, with a thickness of between 250 to 430 feet. Recharge to the Twin Mountains Aquifer occurs west of NAS Fort Worth JRB, where the formation outcrops. Groundwater movement is eastward in the downdip direction. The Twin Mountains groundwater occurs under unconfined conditions in the recharge area and becomes confined as it moves downdip. Transmissivities in the Twin Mountains Aquifer range from 1,950 to 29,700 gpd/ft^2 and average 8,450 gpd/ft^2 in Tarrant County. Permeabilities range from 8 to 165 gpd/ft^2 and average 68 gpd/ft^2 in Tarrant County (CH2M HILL 1984).

2.3 SURFACE WATER

The topography of NAS Fort Worth JRB is fairly flat except for the lower lying areas along the tributaries of the Trinity River. The land surface slopes gently northeastward toward Lake Worth and eastward toward the West Fork of the Trinity River.

NAS Fort Worth JRB is located within the Trinity River Basin, adjacent to Lake Worth. The lake is a reservoir created by damming the Trinity River at a point just northeast of the base. The surface area of the lake is approximately 2,500 acres. Lake Worth receives a limited amount of storm water runoff from NAS Fort Worth JRB during and immediately after rainfall events. Elevation of the water surface is consistent at approximately 594 feet above NGVD, the fixed elevation of the dam spillway. Part of the eastern boundary of NAS Fort Worth JRB is defined by the West Fork of the Trinity River. River flow is towards the southeast into the Gulf of Mexico. Because the Trinity River has been dammed, the 100- and 500-year flood plains do not extend more than 400 feet from the center of the river or any of its tributaries.

Surface drainage is mainly east towards the West Fork of the Trinity River. The base is partly drained by Farmers Branch Creek, a tributary of the West Fork of the Trinity River. Farmers Branch Creek begins within the community of White Settlement and flows eastward. Just south of AFP 4, Farmers Branch Creek flows under the runway within two large culverts commonly referred to as the "aqueduct." Most of the base surface runoff is intercepted by a series of storm drains and culverts, directed to oil/water separators, and discharged to the West Fork of the Trinity River downstream of Lake Worth. A small portion of the north end of the base drains directly into Lake Worth.

NAS Fort Worth JRB currently has three storm water discharge points that are subject to National Pollution Discharge Elimination System requirements. Each discharge point is monitored weekly for chemical oxygen demand, oil and grease, and pH. Permit limits have been violated on numerous occasions. In 1979, these violations prompted the USEPA to formally demand a corrective action (CH2M HILL 1984). Several additional sampling points were established to determine the flow of pollutants onto and off the base. Samples were collected for a variety of reasons (spills, fish kills, odors, and oil sheen) and parameters as circumstances dictated (Radian 1989a, b).

2.4 AIR

The climate in the Fort Worth area is classified as humid subtropical with hot summers and dry winters. Tropical maritime air masses control the weather during much of the year, but the passage of polar cold fronts and continental air masses can create large variations in winter temperatures. The average annual temperature in the area is 66 degrees Fahrenheit (°F) and monthly mean temperatures vary from 45°F in January to 86°F in July. The average daily minimum temperature in January is 35°F, and the lowest recorded temperature is 2°F. The average daily maximum temperature in July and August is 95°F, and the highest temperature ever recorded at the base was 111°F. Freezing temperatures occur at NAS Fort Worth JRB on an average of 33 days per year (TNRCC 1996).

Mean annual precipitation recorded at the base is approximately 32 inches. The wettest months are April and May, with a secondary maximum in September. The period from November to March is generally dry, with a secondary minimum in August. Snowfall

accounts for a small percentage of the total precipitation between November and March. Thunderstorm activity occurs at the base an average of 45 days per year, with the majority of the activity between April and June. Hail may fall 2 to 3 days per year. The maximum precipitation ever recorded in a 24-hour period is 5.9 inches. On the average, measurable snowfall occurs two days per year (TNRCC 1996).

Lake evaporation near NAS Fort Worth JRB is estimated to be approximately 57 inches per year. Evapotranspiration over land areas may be greater or less than lake evaporation depending on vegetative cover type and moisture availability. Average net precipitation is expected to be equal to the difference between average total precipitation and average lake evaporation, or approximately minus 25 inches per year. Mean cloud cover averages 50 percent at NAS Fort Worth JRB, with clear weather occurring frequently during the year. Some fog is present an average of 83 days per year. Wind speed averages 7 knots; however, a maximum of 80 knots has been recorded. Predominant wind direction is from the south-southwest throughout the year (TNRCC 1996).

Air quality in the Dallas-Fort Worth area meets USEPA National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, and respirable particulate matter. However, ozone levels exceed national standards, and the ozone pollution level in the area has a Federal classification of moderate. During 1996, ozone measurements showed an arithmetic mean concentration of 0.033 parts per million in North Tarrant County. Actual exceedances of the national standards for ozone concentrations was calculated to be two days for the measurement station in North Tarrant County. Additional control measures are being implemented as a result of 1990 Federal Clean Air Act mandates to bring the area into compliance with the national standard (TNRCC 1996).

2.5 ECOLOGY

Approximately 374 acres, or 14 percent, of NAS Fort Worth JRB is considered unimproved, indicating the presence of seminatural to natural biological/ecological conditions. The base lies in the Cross-Timbers and Prairies Regions of Texas, where native vegetation is characterized by alternating bands of prairies and woodlands. The higher elevations on the base are covered by native and cultivated grasses such as little bluestem, Indian grass, big bluestem, side oats, grama, and buffalo grass. Forested areas occur primarily on the lower land and along the banks of streams. Common wood species include oak, elm, pecan, hackberry, and sumac. Several non-native species such as catalpa and chinaberry are common (Radian 1989).

Typical wildlife on the base includes black-tailed jackrabbits in grassy areas along the runway. In addition, there are cottontail rabbits, gray squirrels, and opossums in the wooded areas. Common birds include mourning doves, meadowlarks, grackles, and starlings. Although not allowed on the base, hunting and trapping are a very popular forms of recreation in the nearby rural areas (Radian 1989).

Reported game fish include black bass, sunfish, and catfish, all of which can be found in Lake Worth, Farmers Branch Creek, and one small pond located on base near the golf course equipment shed. According to the Texas Department of Parks and Wildlife and the U.S. Fish and Wildlife Service, there are no threatened or endangered species known to occur on NAS Fort Worth JRB. None of the federally listed endangered plant species for Texas is known to occur within 100 miles of Tarrant County. Of the federally listed endangered animals species, only the peregrine falcon and the whooping crane are known to occasionally inhabit the area; however, none of these is suspected to reside in the vicinity of NAS Fort Worth JRB (Radian 1989).

2.6 DEMOGRAPHICS

The following sections describe the regional and site-specific demographics as they relate to the Fort Worth, Texas area, and NAS Fort Worth JRB.

2.6.1 Regional Demographics

Approximately 1,278,606 people reside within Tarrant County, Texas (U.S. Department of Commerce 1996). Of this population, 485,650 reside within the city limits of Fort Worth. Several smaller cities and villages make up the remainder of the population. The communities of White Settlement, Lake Worth, Westworth Village, River Oaks, and Sansom Park lie within a 3-mile radius of NAS Fort Worth JRB. The following populations that reside in the cities and villages are based on 1994 census data: White Settlement (city) - 16,502, Lake Worth (city) - 4,694, Westworth Village (town) - 2,502, River Oaks (city) - 6,747, and Sansom Park (city) - 4,136 (U.S. Department of Commerce 1994). Six schools are within a 2-mile radius of NAS Fort Worth JRB; the closest is 0.5 miles south (Rust Geotech [Rust] 1995).

The area surrounding NAS Fort Worth JRB is highly urbanized due to its proximity to the city of Fort Worth. The area is comprised of a combination of residential, commercial, and light industrial properties that employ the majority of local residents (Rust 1995).

2.6.2 Site-Specific Demographics

The current full-time population at NAS Fort Worth JRB is approximately 3,600 people, comprising 400 officers, 1,400 civilians, and 1,800 active reservists. Part-time military reservists increase this population to over 6,000 military personnel (CH2M HILL 1997).

Approximately 86 percent of NAS Fort Worth JRB has been developed by way of buildings, roads, parking lots, runways, and housing and recreational areas. On-site activities include various maintenance, inspection, and support activities for fuel systems, weapons, jet engines, AGE, and specialized ground equipment (HGL 1997).

2.7 SITE-SPECIFIC ENVIRONMENTAL SETTING

The following sections describe the site-specific environmental conditions in and around the AOC 20 area.

2.7.1 Site-Specific Geology

The majority of NAS Fort Worth JRB is covered by alluvium deposited by the ancestral Trinity River during flood stages. The alluvium is composed of gravel, sand, silt, and clay of varying thickness and lateral extent. The thickness of these materials ranges from 0 to 60 feet. Fill material is also included within these deposits where landfills, waste pits, excavation sites, and other construction activities have altered the original land surface. This fill material is made up of clay, silt, sand, and gravel mixtures, but may also contain debris and other waste (Radian 1989). Paleochannels, created by the ancestral Trinity River, are present within the alluvial sediments underlying AFP 4 and the former Carswell AFB. These paleochannels are typical of erosional surfaces modified by fluvial processes and are filled with sand and gravel deposits ranging in thickness from 15 to 35 feet (CH2M HILL 1996, HGL 2000). The sediments within these paleochannels are more transmissive than the surrounding sediments; consequently, they provide preferential flow pathways for the migration of contaminated groundwater.

Below the alluvial terrace, deposits are the Cretaceous-age Goodland and Walnut Formations, which form the bedrock surface beneath NAS Fort Worth JRB. Both formations consist of interbedded, fossiliferous, hard limestone and calcareous shale. The upper formation, the Goodland Limestone, is exposed on the southern portion of the base, south of White Settlement Road. The Goodland is a chalky-white, fossiliferous limestone and marl. The thickness of the Goodland Limestone ranges from 20 to 25 feet. Below the Goodland Formation is the Walnut Formation (or Walnut Clay). The Walnut Formation is exposed in a small area along the shores of Lake Worth and Meandering Road Creek (located west of AFP 4). This formation is a shell conglomerate limestone with varying amounts of clay and shale. It ranges in thickness from 25 to 35 feet throughout the site except where erosion has produced a few thinner areas. Subsurface investigations have located troughs that have been eroded into the top of the bedrock at NAS Fort Worth JRB. These troughs correspond to the paleochannels in the overlying alluvial sediments, which were created by the ancestral Trinity River (HGL 2000).

Below the Walnut Formation is the Paluxy Formation (or Paluxy Sand). The Paluxy Formation underlies all of NAS Fort Worth JRB. The formation consists of several thick sandstone layers that are separated by thin, discontinuous shale and claystone layers. Sandstones in the formation are primarily a fine- to coarse-grained sand with minor amounts of clay, sandy clay, pyrite, lignite, and shale. The lower section of the Paluxy is generally coarser-grained than the upper section (CH2M HILL 1996). Total formation thickness ranges from 130 to 175 feet, with variable thickness and occurrence

of individual layers across the site. Only one unit in this formation, a shale/silty shale, can be extensively mapped across the base.

2.7.2 Groundwater Impact

AFP 4 was placed on the NPL in August 1990 because of a large release of TCE into the groundwater arising from past operational practices at AFP 4. A release also occurred after 1990. While the source area is currently being remediated, the plume migration path is to the east of AFP 4 and extends under NAS Fort Worth JRB oriented along paleochannels. These paleochannels act as preferred pathways for groundwater flow and subsequent contaminant migration. The paleochannel that is assumed to serve as a preferential pathway for the southern lobe crosses the flightline and landfill areas of NAS Fort Worth JRB before turning east along White Settlement Road. The location of the paleochannel is based primarily on soil boring logs and logged depths to bedrock.

Previous field activities conducted to define the southern lobe of the basewide TCE plume were completed in three stages: 1) initial screening investigation, 2) well installation and lithological investigation, and 3) three bimonthly groundwater sampling events of the newly installed wells and two bimonthly sampling rounds of active recovery wells (HGL 2000a). In addition, quarterly groundwater monitoring activities were performed basewide during the same period. The results of these investigations further refined the nature and extent of volatile organic compound (VOC) contamination within the former Carswell AFB.

Based on the recent field investigations completed within the former Carswell AFB and historical investigations conducted at AFP 4, the highest TCE concentrations in groundwater occur within AFP 4. In this area, TCE concentrations exceed 20,000 micrograms per liter (µg/L) near identified source areas. Within the AOC 20 area, TCE concentrations range from 680 µg/L at the NAS Fort Worth JRB property boundary to nondetectable levels along the southeastern boundary of the plume. The TCE concentrations exceed the federal maximum contaminant level of 5 µg/L for public drinking water and must be remediated prior to leaving Federal property in accordance with the AFP 4 ROD. The permeable reactive barrier planned for installation near AOC 20 is one component of the overall groundwater remediation program (HGL 2000). Currently, there is one groundwater containment system downgradient of the study area.

2.7.3 Surface Water Impact

Farmers Branch Creek is the primary surface water drainage system in the central and southern portions of NAS Fort Worth JRB. It flows in an easterly direction through the base and converges with the West Fork Trinity River approximately 1.5 miles after exiting NAS Fort Worth JRB property. An underground aqueduct, approximately 2,800 feet in length and oriented in an west-east direction, diverts surface water from the former riverbed of Farmers Branch Creek under and through the NAS Fort Worth JRB flightline area. This aqueduct bisects the southern lobe of the regional TCE plume into two distinct northern and southern sub-lobes (HGL 2000c).

Historically, TCE has not been detected in surface water sampled in the western "upstream" section of the aqueduct; however, TCE has been detected in the eastern "downstream" section of the aqueduct. TCE contamination enters the aqueduct somewhere along its reach. It should be noted that the aqueduct crosses the paleochannel containing the regional TCE plume near Taxiway Foxtrot. Because the aqueduct intersects the saturated area of the flightline in many places, it is possible that groundwater containing TCE may enter the aqueduct through cracks in the structure. It is also possible that the TCE may enter the aqueduct through underground drainage systems connecting AFP 4 and NAS Fort Worth JRB to the aqueduct (HGL 2000c. An assessment of the aqueduct integrity is currently ongoing.

Concentrations of TCE in surface water sampled in 1997 range from 27 J µg/L at UHGLTA001-09, located at the eastern end of the aqueduct, to a high of 61 µg/L at UHGLTA006-04, which is located just downstream of an unnamed tributary of Farmers Branch Creek. This unnamed tributary drains surface water from the southern portion of the NAS Fort Worth JRB flightline area. It is intermittent in its uppermost reaches; however, along the stretch parallel to White Settlement Road, a steady flow of water appears as the tributary cuts sharply to the north to converge with Farmers Branch Creek (HGL 1997).

Surface water samples collected from the tributary contained TCE concentrations of 180 µg/L in UHGLTA010-01 (to the north of White Settlement Road) and 200 µg/L in UHGLTA017-02 (to the south of White Settlement Road). White Settlement Road parallels the axis of the southern lobe of the regional TCE plume. Springs and seeps draining groundwater from the regional TCE plume are the most likely source of the TCE detected in surface water samples collected from the unnamed tributary (HGL 1997). An ecological risk assessment of Farmers Branch Creek is currently ongoing.

3. FIELD INVESTIGATION

The purpose of this investigation was to further delineate the paleochannel in the study area. The primary objectives were as follows:

- Mapping the subsurface topography of the paleochannel, which is the surface of the Goodland/Walnut formations.
- Mapping the distribution of the gravelly deposits in the paleochannel.
- Mapping the groundwater plume pathway.

The following sections summarize the tasks completed and the procedures followed during the performance of field activities in order to obtain the necessary information to meet the objectives listed above.

3.1 FIELD INVESTIGATION PROCEDURES

Before mobilization, the following prerequisites for conducting the field activities were established:

- Identification badges were obtained for contractor personnel.
- Flightline driving permits were obtained for contractor personnel.
- The field office and primary staging area for field equipment and supplies were located at Building 1916 and the investigation derived waste (IDW) Yard.
- A site walk was performed to familiarize personnel with any identified cultural features and subsurface utilities.
- A digging permit was obtained from NAS Fort Worth JRB for all soil boring and monitoring well installations.

Site safety briefings were conducted with each subcontractor prior to performing work. Completed Site Safety Briefing Forms, as well as Daily Equipment Calibration Logs, Health and Safety/Air Monitoring Logs, Medical Data Sheets, and Health and Safety Plan Compliance Agreement Forms are located in Appendix A.

3.2 SUMMARY OF FIELD ACTIVITIES

Table 3-1 summarizes field activities performed during the SI. Details of the procedures and data collected for each task listed below are described in the following sections. Field activities were recorded in a field logbook by field personnel (Appendix B).

Table 3-1
Summary of Field Activities

Task	Quantity	Remarks
Seismic Survey	864 shot points	Spacing of 10 feet between each shot
Seismic Velocity Survey	2 locations	Wells, LF05-02 and WHGLTA302
EI Survey	4 lines, total 2,100 meters	Electrode spacing of 6 meters
Soil borings	6	
Monitoring wells	4	Conversion of 4 of the 6 soil borings into monitoring wells (2-inch PVC riser and screen and 2-foot sump)
Survey	22	Establishing geographical coordinates and elevations of 10 seismic survey points, 10 EI survey points, and 2 soil boring location
Survey	4	Establishing geographical coordinates and elevations of 4 monitoring wells
Groundwater sample collection	20	Collection of 1 sample from each of 14 wells, collection of 3 samples (top, middle, and bottom) from 3 wells at the center of the plume
Groundwater QA/QC samples	7	Collect QA/QC samples as outlined in the FSP
Soil sample collection	6	Collection of 1 sample at the soil/groundwater interface of each soil boring
Soil QA/QC samples	5	Collect QA/QC samples as outlined in the FSP

EI Electrical Imaging
FSP Field Sampling Plan
PVC polyvinyl chloride
QA/QC quality assurance/quality control

3.2.1 Seismic Survey

The seismic survey was performed from 17 October to 25 October 2000. The survey was conducted by means of the near offset seismic reflection method, which employs a small propane canister to set off charges and a geophone at the same shot point to record the resulting seismic waves.

Prior to performing the seismic survey, predetermined endpoints for each of the seismic lines were marked. These endpoints were surveyed to obtain geophysical coordinates and elevations. After the seismic survey was completed, the intersections were surveyed and the locations and elevations of the seismic shot points interpolated based on the 10-foot spacing. The seismic survey consisted of five seismic reflection lines (lines S-1 through S-5, Figure 3-1). Lines S-4 and S-5 in the field logbook actually refer to line S-4 that intersects lines S-1, S-2, and S-3 (the line was surveyed in two sections). Line S-6 in the field logbook refers to line S-5.

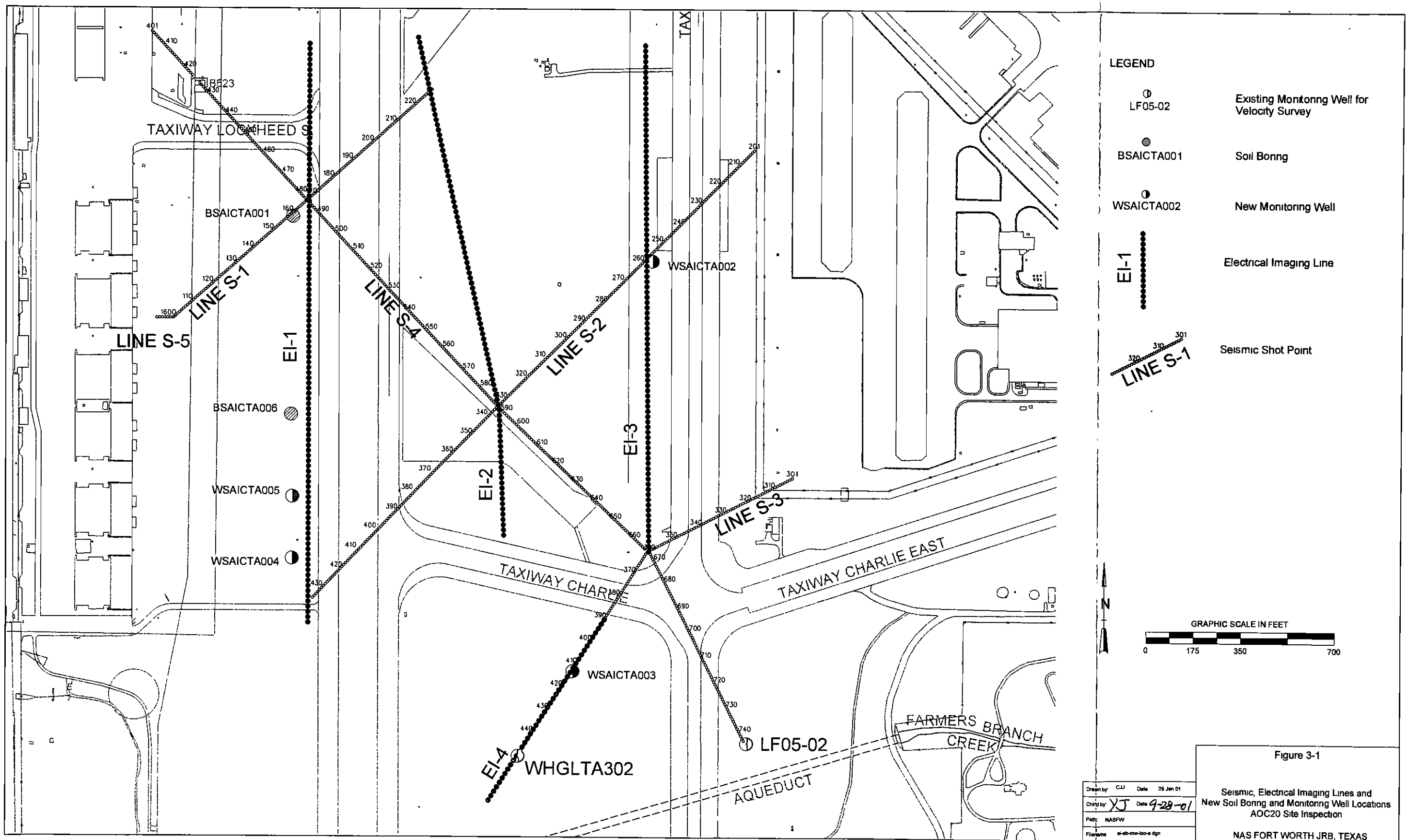

Figure 3-1

Seismic, Electrical Imaging Lines and New Soil Boring and Monitoring Well Locations AOC20 Site Inspection

NAS FORT WORTH JRB, TEXAS

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Data acquisition utilized the near offset seismic reflection method. For each seismic line, seismic shot points were spaced at 10-foot intervals. At each shot point, a minimum of six records were collected, edited, and then summed to increase the signal to noise ratio. Quality control/quality assurance procedures were conducted periodically by performing walk-away noise tests. The number of shot points for each seismic line is listed below:

Seismic Line	Number of Shot Points
S-1	128
S-2	235
S-3	149
S-4	345
S-5	7

Two velocity surveys were conducted at wells LF05-02 and WHGLTA302 using a 2-inch diameter downhole geophone tool. The check shot intervals were collected using a 3-foot vertical separation with a 3-foot offset.

Reflection profiles were produced from processed seismic and velocity survey data in conjunction with available well boring data. Reflection profiles and interpretations of each profile are presented in Appendix C. This information was used to map the bedrock topography.

3.2.2 Electrical Imaging

The electrical imaging (EI) survey was performed between 23 and 27 October 2000. EI measures the differences in electrical resistivity of subsurface materials. Typically, gravel units have a much higher resistivity than clays, and this difference will be used in mapping the gravel filling the paleochannel.

Prior to performing the electrical imaging survey, predetermined endpoints for each of the electrical imaging lines were marked. The endpoints were surveyed for horizontal coordinates and elevations. The electrical imaging survey consisted of four lines designated as EI-1 through EI-4. A dipole-dipole electrode array with spacing of 6 meters (19.7 feet) between electrodes was used to provide maximum resolution. Two cables consisting of 14 electrodes each were used to measure resistivity between each dipole, alternating between 28 dipole stations in both cables. After the resistivity was measured between the 28 dipole stations, one cable was moved and resistivity was again measured between all dipole stations. This process was continued until resistivity was measured for the linear distance between the two endpoints. The number of dipole stations for each electrical imaging line is listed below:

Electrical Imaging Line	Number of Dipole Stations
EI-1	112
EI-2	98
EI-3	98
EI-4	42

Due to the length of the cables, the electrical imaging survey exceeded the predetermined endpoints. The new endpoints were marked and surveyed at the conclusion of the fieldwork (Figure 3-1). Resistivity profiles produced from the processed data and the interpretation of each are discussed in Section 4. A copy of the EI report is included as Appendix D.

3.2.3 Paleochannel Confirmation

Six soil borings were installed to confirm the bedrock depth and gravel characteristics predicted by the seismic and EI surveys. Four of these soil borings were completed as monitoring wells (Figure 3-1).

The soil borings were installed using hollow stem augers. A professional geologist supervised and logged the installation of each soil boring according to the procedures outlined in the approved scoping documents (AFCEE 2000). Drilling activities including locations, time at sites, personnel and equipment present, materials used, samples collected, measurements taken, and other pertinent information were noted in the field logbook.

During the installation of each soil boring, unconsolidated samples for lithologic description were obtained continuously at 5-foot intervals using split spoon samplers and standard penetration test in accordance with ASTM D-1586 except where heaving sands were encountered. All samples were monitored with an OVA and examined for possible hazardous characteristics. OVA readings and lithology for each soil boring was recorded on a Well/Soil Boring Log (Appendix E).

Soil samples were collected from the soil/groundwater interface at each of the six locations for laboratory analysis. The samples were analyzed for VOCs and total organic carbon (TOC, Table 3-2).

Table 3-2 summarizes soil samples collected, including soil boring identification numbers, sample intervals, and sample numbers.

Table 3-2
Soil Sample Summary

Soil Boring ID Number	Total Depth (feet bgs)	Sample Interval (feet bgs)	Sample Number
BSAICTA001	45	27-29	BSAICTA001-01
BSAICTA001	45	27-29	BSAICTA002-01*
WSAICTA002	26	15-17	WSAICTA002-01
WSAICTA003	31	20-22	WSAICTA003-01
WSAICTA004	42	30-32	WSAICTA004-01
WSAICTA005	36	25-27	WSAICTA005-01
BSAICTA006	45	20-22	BSAICTA006-01

bgs below ground surface
* field duplicate

The soil borings not completed as monitoring wells (BSAICTA001 and BSAICTA006) were abandoned in accordance with TNRCC requirements. The locations of the soil borings and monitoring wells are depicted in Figure 3-1.

3.2.4 Groundwater Plume Characterization

To provide better characterization of the groundwater contaminant plume, four of the six soil borings (WSAICTA002, WSAICTA003, WSAICTA004, and WSAICTA005) were converted to groundwater monitoring wells. Soil boring BSAICTA006 was not converted to a monitoring well due to mechanical problems during drilling operations and the potential of cross contamination of the Paluxy aquifer. After soil borings were drilled, monitoring wells were installed using new flush-threaded, 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing and screen. The entire length of the saturated zone was screened using factory 0.010-inch slotted screen with lengths varying from 10 to 20 feet. The annular space was filled with a filter pack consisting of 16-30 silica sand extending two feet above the top of the well screen. A 2-foot bentonite seal was then placed on top of the filter pack and the remaining section of the annular space was filled with casing grout, extending from the bentonite seal to ground surface. The well surface completion consisted of a 4-foot by 4-foot by 4-inch flush-mounted concrete well pad with a freely draining valve box and a bolted locking cover placed over the casing. The casing cap was secured using numbered well seals provided by the USAF. After the surface completion cured, the identity of each well was permanently marked on the valve box cover and the casing cap. A summary of monitoring well completion information is presented in Table 3-3. Copies of the Well Completion Logs are included in Appendix E.

Table 3-3
Monitoring Well Summary

Well ID Number	Total Casing Depth (feet bgs)	Screened Interval (feet bgs)	Depth to Water (feet bgs)
WSAICTA002	26	15-25	18
WSAICTA003	31	15-30	21
WSAICTA004	42	21-41	32
WSAICTA005	36	20-35	27

bgs below ground surface
ID identification

The newly installed monitoring wells were developed no earlier than 24 hours after installation to allow for grout curing. A surge block, stainless steel bailer, and submersible pump were used to develop each well. Development continued until all drilling fluids used during well construction were removed, no sediment remained in the bottom of the well, and the stabilization criteria outlined in the Field Sampling Plan were met. Stabilization and depth measurements were recorded on Well Development Logs for each well (Appendix B). Groundwater extracted during the development of each well

was containerized, transported to the investigation-derived waste (IDW) yard, and discharged into holding tanks.

Groundwater samples were collected from each of the four new wells (WSAICTA002, WSAICTA003, WSAICTA004, and WSAICTA005) as well as ten existing wells (HM-110, HM-112, HM-113, HM-114, HM-124, HM-126, W-153, W-156, WHGLTA302, and LF05-02). Multiple groundwater samples (top, middle, and bottom) were collected from three newly installed wells (WSAICTA003, WSAICTA004, and WSAICTA005).

Prior to collecting samples from the monitoring wells, water level measurements and the total depth of each well were determined and recorded on groundwater sample collection logs. Purging was then performed to evacuate water that was stagnant in the well and may not have been representative of the aquifer. A stainless steel bladder pump or a dedicated bladder pump was used to purge each well at rate ranging from 0.15 to 0.48 liters per minute. The pump was lowered to a depth of approximately 43 percent of the saturated screened interval below the top of the water table to purge and sample each well except for wells WSAICTA003, WSAICTA004, and WSAICTA005. At these wells, the pump was lowered to three depths and sample intervals in order to determine vertical stratification of the TCE plume. During purging, water levels were checked and recorded to monitor drawdown in each well. All wells sustained less than 0.33 foot of drawdown during purging except WSAICTA002. At WSAICTA002, the drawdown was continually monitored and samples were collected once stabilization parameters were met and the water level recovered 80 percent of its static level. Temperature, pH, specific conductance, dissolved oxygen, redox potential, and turbidity were also measured and recorded on the Groundwater Sample Collection Log. Samples were collected from the purge pump once all parameters stabilized in accordance with Section 6.1.1.2 of the Field Sampling Plan. Purge water from each well was containerized, transported to the IDW yard, and discharged into holding tanks. A summary of groundwater sample collection information including water levels, total casing depth, pump depth, sample depth, and sample number is presented in Table 3-4. Copies of the Groundwater Collection Logs are included in Appendix F.

Table 3-4
Groundwater Sample Collection Summary

Location	Date	Water Level (feet btoc)	Total Depth (feet btoc)	Pump Depth (feet btoc)	Sampling Depth (feet btoc)	Sample ID Number
WSAICTA003	12/11/00	19.37	30.80	21.5	21.0-22.0	WSAICTA003-01
				24.5	24.0-25 0	WSAICTA003-02
				29 5	29.0-30.0	WSAICTA003-03
WSAICTA004	12/14/00	21.15	42.22	28.5	28.0-29.0	WSAICTA004-01
				34.5	34.0-35.0	WSAICTA004-02
				40.5	40.0-41.0	WSAICTA004-03
WSAICTA005	12/14/00	21.48	35.31	23.5	23.0-24.0	WSAICTA005-01
				27.5	27.0-28.0	WSAICTA005-02
				33.5	33.0-34 0	WSAICTA005-03

Table 3-4
Groundwater Sample Collection Summary (cont.)

Location	Date	Water Level (feet btoc)	Total Depth (feet btoc)	Pump Deptb (feet btoc)	Sampling Depth (feet btoc)	Sample ID Number
HM-110	12/08/00	27.60	35.63	31	-	HM110-01
HM-112	12/08/00	29.12	47.68	37.1	-	HM112-01
HM-112	12/08/00	29.12	47.68	37.1	-	HM112-02 (FD)
HM-113	12/08/00	30.03	47.48	40.8	-	HM113-01
HM-114	12/07/00	20.03	35.65	26.7	-	HM114-01
HM-124	12/07/00	15.89	24.35	19.5	-	HM124-01
HM-126	12/07/00	16.32	35.75	24.7	-	HM126-01
LF05-02	12/07/00	26.02	28.43	27.1	-	LF0502-01
W-153	12/07/00	22.51	39.28	29.7	-	W153-01
W-156	12/08/00	34.12	57.71	44.3	-	W156-01
WSAICTA002	12/14/00	16.57	26.04	20.6	-	WSAICTA002-01

btocbelow top of casing
FD field duplicate
ID identification

Groundwater samples were analyzed for VOCs and general water quality (Table 1-1). Samples were also analyzed in the field for ferrous iron using a colorimetric method (Hach Kit #26672-00). Field Laboratory Test Results sheets are located in Appendix G. Ferrous iron results as well as laboratory analytical reports are presented and discussed in Section 5.

3.2.5 Survey

To integrate field data, all field points were located according to the Texas State Plane Coordinate System North Central Zone. Locations were referenced to a common horizontal system (North American Datum of 1983) and elevations to a common vertical datum (NGVD, equivalent of mean sea level). Surveyed field points included endpoints, turning points, and intersections of seismic and EI lines, soil borings, and monitoring wells. For monitoring wells, surveying was completed to a vertical accuracy of 0.01 feet of elevation and a horizontal accuracy of one foot. For soil borings and geophysical points, surveying was completed to vertical accuracy 0.1 feet of elevation and a horizontal accuracy of one foot. Survey coordinates for monitoring wells and soil borings are noted on the soil boring logs (see Appendix E).

3.3 WASTE HANDLING

During performance of the field investigations for the SI, IDW and general refuse were generated. IDW consisted of monitoring well development water, monitoring well purge water, water from decontamination of drilling and sampling equipment, and soil cuttings from the drilling of soil borings. General refuse consisted of used plastic sheeting, used bailers, used personal protective equipment (PPE), and similar materials which had come

into contact with unit constituents during the field investigations, as well as empty deionized water containers, paper, and similar materials.

Soil cuttings were placed into U.S. Department of Transportation (DOT)-approved drums and sealed. These drums were delivered to the IDW yard for temporary storage and waste characterization and disposal by DFW recycling & Disposal Facility of Lewisville, Texas. On 15 March 2001, 15 drums of IDW soil were transported and disposed of at the Westside Recycling and Disposal Facility in Aledo, Texas. A copy of the waste manifest is included in Appendix H.

Wastewater generated during the SI was placed into DOT-approved drums, then sealed and labeled. The drum contents were delivered to the IDW yard for disposal by the NAS JRB Point of Contact.

Personal protective and disposable sampling equipment were placed into drums, then sealed and labeled. These drums were transported to the IDW yard for temporary storage pending proper disposal by DFW recycling & Disposal Facility of Lewisville, Texas at an off-site facility.

3.4 HEALTH AND SAFETY

Fieldwork was conducted under the Health and Safety Plan, which was submitted as part of the SI Work Plan. The site Health And Safety Officer conducted a Tailgate Safety Meeting at the beginning of each phase of field activities and at least weekly for the duration of each phase. These briefings covered chemical and physical hazards, PPE, control methods, and emergency procedures.

Level D PPE was required for all fieldwork. At a minimum, this included steel-toed boots, a hard hat, protective eyewear, and hearing protection. During fieldwork, the breathing zone was periodically monitored for organic vapors with an OVA and recorded in the field logbook.

4. DATA ASSESSMENT, RECORDS, AND REPORTING

The following sections provide an explanation for procedures that were used in the verification and maintenance of data, and how data was reported throughout the course of the investigation.

4.1 DATA ASSESSMENT

The project chemist reviewed all data received from the laboratory. This review consisted of the following:

- Sample Analysis Completeness.
- Evaluation of Holding Times and Extraction Times.
- Evaluation of QC.
- Establishment of Detection Limits.

The project chemist utilized *Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis* (USEPA 1988) and *National Functional Guidelines for Organic Data Review* (USEPA 1991c) as guidance documents for data validation.

The project chemist also reviewed the field and office sampling records made during sample collection along with the results from the field QC samples. This review consisted of the following:

- Field Record Completeness.
- Sampling and Decontamination Procedures Review.
- Identification of Valid Samples.
- Correlation of Field Test Data and Identification of Anomalous Field Test Data.

Review of the results of the field QC data such as rinsates, trip blanks, and duplicates can help in assessing sample integrity. The field data and laboratory data were reviewed and evaluated to the established data quality objectives. Data quality evaluations were performed on all NAS Fort Worth JRB samples (100 percent).

Field equipment was decontaminated with high-pressure steam cleaning between sampling locations. Continuous core or split-spoon samplers that were used to collect multiple analytical samples at one location were washed on site. The on-location decontamination procedure included using a laboratory-grade, phosphate-free detergent solution and a brush to remove attached material. The equipment was then rinsed using a

potable water rinse followed by methanol and hexane rinses and a deionized water final rinse. Field personnel wore new disposable Nitrile gloves for each sample acquisition.

Sampling events provided for four types of field QA/QC samples to identify possible contamination of the samples or sampling equipment. The field QA/QC samples included (1) duplicate samples, (2) trip blanks, (3) rinsate blanks, and (4) field blanks. Level III Data Quality Objectives were established for use on this project (Table 4-1).

The evaluation revealed that several samples exceeded the holding time. These samples are from wells that have been sampled before, and the new and old data are in general agreement. Therefore, the data is adequate for plume retirement.

Table 4-1
QA/QC Sampling Frequency

Blank Type	USEPA Data Quality Objective Levels			
	Level I	Level II	Level III	Level IV
Duplicate samples	None	None	5% per matrix per event	5% per matrix per event
Trip blanks	None	None	1 per cooler per day (VOCs only)	1 per cooler per day (VOCs only)
Equipment rinsate blanks	None	None	1 per equipment type per day	1 per equipment type per day
Field blanks	None	None	1 per decontamination water source per sampling event	1 per decontamination water source per sampling event

USEPA U S Environmental Protection Agency
VOC volatile organic compound

4.2 RECORDS AND REPORTING

Field activities were noted in field logbooks (Appendix B), geophysical survey reports (Appendices C and D), and field forms (Appendices B, E, and F). Samples were tracked through the chain-of-custody (Appendix I).

The results of the data validation are organized by medium (soil and groundwater) and further divided by constituent groupings (VOCs, TOC, and natural attenuation parameters).

Copies of the Data Validation Case Narratives are attached to their respective analytical reports in Appendix I.

5. EVALUATION OF DATA

In this section, the data collected during the SI were evaluated. The primary objectives were as follows:

- Mapping the subsurface topography of the paleochannel (the surface of the Goodland/Walnut formations).
- Mapping the distribution of the gravelly deposits in the paleochannel.
- Mapping the groundwater plume pathway.

5.1 SOIL SAMPLING RESULTS

Soil samples were collected for laboratory analysis from the soil/groundwater interface at each of the six soil borings and analyzed for VOCs and TOC. A summary of the detected analytes is presented in Table 5-1. A copy of the laboratory report for soil is included in Appendix I.

TCE was only detected in one soil boring (CBSAICTA001) at 27 to 29 feet interval water was encountered at 30 feet bgs. Therefore, the sample is within the groundwater fluctuation zone, and TCE would potentially be from the groundwater plume. The trace amount of methylene chloride detected is probably due to lab contamination.

5.2 GROUNDWATER SAMPLING RESULTS

Groundwater samples were collected from the four newly-installed groundwater monitoring wells (WSAICTA002, WSAICTA003, WSAICTA004, and WSAICTA005), and ten existing wells (HM-110, HM-112, HM-113, HM-114, HM-124, HM-126, W-153, W-156, WHGLTA302, and LF05-02). Groundwater samples were analyzed for VOCs, arsenic and natural attenuation parameters. To evaluate vertical plume stratification, groundwater samples were collected from the top, middle, and bottom of the water column in three selected wells (WSAICTA003, WSAICTA004, and WSAICTA005). The predominant VOCs detected at high concentrations are TCE and cis-1,2-dichloroethene (DCE). A summary of groundwater detection is provided in Table 5-2. A copy of the laboratory report for groundwater is included in Appendix I.

There is slight vertical stratification of TCE in groundwater (e.g. 87 µg/L near the surface and 600 µg/L at depth at WSAICA005). Most data from other wells, however, are within the same magnitude.

Table 5-1
Summary of Soil Detections

Sample Number	WSAICTA002-01	WSAICTA003-01	BSAICTA001-01	BSAICTA002-01+	WSAICTA004-01	WSAICTA005-01	BSAICTA006-01
Chain of Custody Number	S00373	S00373	S00373	S00373	S00374	S00377	S00378
Sample Location	WSAICTA002	WSAICTA003	BSAICTA001	BSAICTA001	WSAICTA004	WSAICTA005	BSAICTA006
Sample Depth (feet bgs)	15.0-17.0	20.0-22.0	27.0-29.0	27.0-29.0	30.0-32.0	25.0-27.0	20.0-22.0
Sample Date	05-Dec-00	05-Dec-00	05-Dec-00	05-Dec-00	06-Dec-00	11-Dec-00	12-Dec-00
VOCs (µg/kg)							
trichloroethene	1.15U	1.23U	10	10	1.17U	1.23U	1.02U
methylene chloride	<2.23	<2.26	<2.14	<2.11	36	28	26
Geochemical Parameters							
total organic carbon (mg/kg)	147	<0.811	<0.811	118	<0.811	<0.811	<0.811
percent moisture (%)	14.45	19.56	15.08	13.74	15.82	19.94	2.981

µg/kg microgram per kilogram
mg/kg milligram per kilogram
bgs below ground surface
U indicates analytical result less than the reporting limit shown
* Sample BSAICTA002-01 is a blind duplicate of sample BSAICTA001-01. Sample time and depths were recorded differently on the COC so that the sample could not be identified as a duplicate sample by laboratory personnel.

Table 5-2
Summary of Groundwater Detections

Sample Number	LF0502-01	HM-124-01	HM-114-01	W153-01	W153-02+	HM-126-01	W156-01	HM-113-01	HM-112-01	HM-112-02++	HM-110-01	WHGLTA302-01	WSAICTA003-01
Chain of Custody Number	S00375	S00375	S00375	S00375	S00375	S00375	S00376	S00376	S00376	S00376	S00376	S00376	S00377
Sample Location	LF05-02	HM-124	HM-114	W153	W153 (FD-1)	HM-126	W156	HM-113	HM-112	HM-112	HM-110	WHGLTA302	WSAICTA003 (21 0-22 0')
Sample Date	07-Dec-00	07-Dec-00	07-Dec-00	07-Dec-00	07-Dec-00	07-Dec-00	08-Dec-00	08-Dec-00	08-Dec-00	08-Dec-00	08-Dec-00	08-Dec-00	11-Dec-00
Organics (µg/L)													
1,1-dichloroethane	1.1	<0.106	1.4	1.2	1.3	1.3	<21.3	<5 32	<10.6	<10.6	<2.13	<5.32	<2.13
chloroform	<0.111	<0.111	<0.111	0 57 J	0.68 J	0.72 J	<22.2	<5.55	<11.1	<11.1	<2.22	<5.55	<2.22
cis-1,2-dichloroethene	290	1.8	77	110	130	170	270	79	330	340	110	2400	410
hexachlorobutadiene	<0.104	<0.104	<0 104	<0.104	<0.104	<0.104	120 J	<5.19	<10.4	<10 4	<2.08	<5.19	<2.08
tetrachloroethene	0.74 J	0.73 J	1.3	4.8	5.9	0.92 J	<17.6	<4.42	<8.83	<8.83	<1.77	<4.42	<1.77
trans-1,2-dichloroethene	24	<0.114	2.3	2.30	4.0	3.9	<22.8	29 J	<11.4	<11.4	<2.28	47 J	18 J
trichloroethene	38	4.0	520	780	910	3800	6800	520	5200	6500	540	<4.80	800
trichlorofluoromethane	<0.170	<0.170	<0.170	1.1	3.7	<0.170	<34.0	<8.50	<17.0	<17.0	<3.40	<8.50	<3.40
vinyl acetate	12	<0.102	<0.102	<0.102	<0.102	<0.102	<20.5	<5.12	<10.2	<10.2	<2.05	<5.12	<2.05
Metals (mg/L)													
arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0 001
Natural Attenuation Parameters (mg/L)													
ethane	1.7 J	<0.568	<0.568	<0.568	<0.568	<0.568	<0.568	41	<0.568	<0.568	5.6 J	56 J	5.4 J
ethene	56 J	0.9 J	0.48 J	0.31 J	0.41 J	<0.635	0.53 J	<0.635	<0.635	<0.635	<0.635	280	8.6 J
methane	1300J/4500E	40	11	4.6 J	5.5 J	37	9.0 J	48	5.3 J	4.8 J	<0.856	5600J/24000E	520
alkalinity, total (as $CaCO_3$)	432	230	316	316	338	254	294	140	306	308	328	460	354
chloride(as Cl)	5.98	0.901	17.9	23 6	24 0	14.4	23.1	3 63	19.3	19.0	9 67	18.2	12.4
nitrogen, nitrate (as N)	0.12	0.55	2.3	5.3	5.4	2.8	5.8	<0.205	5.3	5.2	1 9	<0.205	0.47
sulfate (as SO_4)	10.3	6.34	11.0	14.6	15.2	31.6	35.7	5.27	86.4	90.7	34.3	55.1	23.9
total organic carbon	17	8.1	9.3	8.4	8.9	9.6	7.3	6.2	7.9	7.5	6 1	12	19
dissolved oxygen*	4.66	5.04	5.18	4.23	4.23	4.19	4.67	3.98	5.24	5.24	5 00	4.27	6.49
total suspended solids	100	5.0	30	<4	<4	<4	<4	15	4 0	<4	31	650	750
ferrous iron **	0.47	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0 00	0.00	0 34	2 49	0.06
Other Parameters													
ORP (mV)*	24	151	186	159	159	191	201	-20	170	170	160	-78	214
turbidity (NTU)*	272.0	0 0	40.4	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	179.0	51 6
specific conductivity (mS/cm)*	0.754	0 401	0.630	0.709	0.709	0.687	0.761	0.273	0.838	0.838	0.645	0.831	0.728
pH	6.44	6.80	6.60	6.76	6.76	6.63	6 81	6.88	6.79	6.79	6.81	6.78	6.84
temperature (°C)*	14.6	20.9	20.5	21.7	21.7	20.0	16.1	17.8	20 5	20.5	21.2	18.7	15.5

mV millivolt
ORP oxidation-reduction potential
N nitrogen
°C degrees Celsius
mg/L milligram per liter
mS/cm microSiemens per centimeter
µg/L microgram per liter
$CaCO_3$ calcium carbonate
NTU nephelometric turbidity units
SO_4 sulfate
Cl chloride
E The measurement exceeded the upper calibration limit, therefore the concentration was estimated
J The compound was positively identified and the associated value is an estimated concentration
< indicates result less than reporting limit shown
* Dissolved oxygen, ORP, turbidity, specific conductivity, pH, and temperature were analyzed in the field at the time of sampling using a Horiba U-22 Water Quality Meter
** Ferrous iron was analyzed in the field using Hach Fe^{2+} kit.
+ Sample W153-02 was a blind duplicate of sample W153-01
++ Sample HM-112-02 was a blind duplicate of sample HM-112-01
+++ Sample WSAICTA003-04 was a blind duplicate of sample WSAICTA003-03.

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Table 5-2
Summary of Groundwater Detections (cont.)

Sample Number	WSAICTA003-02	WSAICTA003-03	WSAICTA003-04	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
Chain of Custody Number	S00377	S00377	S00377	S00379	S00379	S00379	S00379	S00379	S00379	S00379
Sample Location	WSAICTA003 (24.0-25.0')	WSAICTA003 (29.0-30.0')	WSAICTA003 (29.0-30.0')	WSAICTA002	WSAICTA004 (28.0-29.0')	WSAICTA004 (34.0-35.0')	WSAICTA004 (40.0-41.0')	WSAICTA005 (23 0-24.0')	WSAICTA005 (27.0-28.0')	WSAICTA005 (33 0-34.0')
Sample Date	11-Dec-00	11-Dec-00	11-Dec-00	14-Dec-00	14-Dec-00	14-Dec-00	14-Dec-00	14-Dec-00	14-Dec-00	14-Dec-00
Organics (µg/L)										
1,1-dichloroethane	<5.32	<2 13	<2.13	<0.106	<0.213	<0.532	<0.532	<0.106	<0.213	<0 532
chloroform	<5.55	<2.22	<2.22	<0.111	<0.222	<0 555	<0.555	<0.111	<0.222	<0 555
cis-1,2-dichloroethene	470	500	400	1.2	9.6	21	23	11	86	84
hexachlorobutadiene	<5 19	<2.08	<2.08	<0.104	<0.208	<0.519	<0.519	<0.104	<0.208	<0 519
tetrachloroethene	<4.42	<1.77	<1.77	<0.088	<0.177	<0.442	<0.442	<0 088	<0.177	<0.442
trans-1,2-dichloroethene	<5.70	29	18 J	<0 114	<0.228	<0.570	<0.570	<0.114	1.1 J	<0.570
trichloroethene	1100	980	910	21	100	230	270	87	600 E	600
trichlorofluoromethane	<8.50	<3.40	<3.40	<0.170	<0.340	<0.850	<0 850	<0.170	<0.340	<0.850
vinyl acetate	<5.12	<2.05	<2.05	<0.102	<0 205	<0.512	<0.512	<0.102	<0.205	<0.512
Metals (mg/L)										
arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0 001	<0.001	<0.001	<0.001
Natural Attenuation Parameters (mg/L)										
ethane	9.9 J	13 J	11 J/25 J	1.6 J	1.5 J	1.9 J	1.3 J	0.82 J	0.66 J	0.73 J
ethene	28 J	<6.35	<6.35	3.8 J	3.0 J	3.0 J	1.9 J	1.8 J	1.7 J	1.6 J
methane	580	640J/2300E	560	23	18	18	14	14	9.6	13
alkalinity, total (as $CaCO_3$)	334	332	320	852	384	388	366	360	330	328
chloride(as Cl)	11.8	12.2	12.6	4.87	4.32	6.09	7.14	7.04	12.10	11.60
nitrogen, nitrate (as N)	0.63	0.67	0.65	0.40	0.89	1.1	1.2	0.26	1.6	1.5
sulfate (as SO_4)	23.3	23.4	48.4	31.2	21.2	20.9	21.7	12.3	33.7	32.3
total organic carbon	13	13	12	2.4	30	25	1.9	1.6	1.5	1.5
dissolved oxygen*	6.67	6.57	6.57	6.05	6.04	5.07	4 62	6.37	5.61	5.56
total suspended solids	380	60	100	770	180	190	65	97	61	55
ferrous iron **	0.22	0.10	0 19	0.22	0.11	0.04	0.00	0 00	0.00	0.00
Other Parameters										
ORP (mV)*	67	66	66	338	253	243	231	289	266	237
turbidity (NTU)*	51.0	50.7	50.7	50.9	9.0	30.7	8 6	9.9	7.0	3.9
specific conductivity (mS/cm)*	0.688	0.688	0.688	0.848	0.780	0.753	0.750	0 649	0.710	0.736
pH	6.85	6.85	6.85	6.69	6.60	6.70	6 72	6.73	6.29	6.13
temperature (°C)*	15.9	15.8	15.8	16.1	15.9	16.5	18.5	18.1	18.2	17.8

mV millivolt
ORP oxidation-reduction potential
N nitrogen
°C degrees Celsius
mg/L milligram per liter
mS/cm microSiemens per centimeter
µg/L microgram per liter
$CaCO_3$ calcium carbonate
NTU nephelometric turbidity units
SO_4 sulfate
Cl chloride
E The measurement exceeded the upper calibration limit, therefore the concentration was estimated
J The compound was positively identified and the associated value is an estimated concentration
< indicates result less than reporting limit shown
* Dissolved oxygen, ORP, turbidity, specific conductivity, pH, and temperature were analyzed in the field at the time of sampling using a Horiba U-22 Water Quality Meter.
** Ferrous iron was analyzed in the field using Hach Fe^{2+} kit
+ Sample W153-02 was a blind duplicate of sample W153-01.
++ Sample HM-112-02 was a blind duplicate of sample HM-112-01
+++ Sample WSAICTA003-04 was a blind duplicate of sample WSAICTA003-03.

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5.3 BEDROCK TOPOGRAPHY

Bedrock in the AOC 20 area consists of limestone, marl, shale, and limey clay of the Goodland/Walnut Formation. Two topographic maps of the bedrock were generated from available existing soil boring log data and seismic data. Figure 5-1 depicts the bedrock topography using existing data as well as the soil data collected during this SI. Figure 5-2 shows bedrock topography using existing data, the recently collected soil boring log data, and the new seismic data.

Analysis of the soil boring logs indicated that bedrock material was absent at wells WJETA083 and WJEUS008.

The bedrock topography map based on a combination of soil boring log data and seismic data appears much more complex than the topography map based on soil borings alone, indicating potential small channels within the large channel. There appears to be some additional linear features trending northeast to southwest. The seismic data used in preparation of the topographic map were calibrated with soil borings in close proximity to the shot points, and has an estimated maximum error of ± 2 feet. The only exception is at seismic Line 3 around WHGLTA302 (11 feet error) and WSAICTA003 (5 feet error). Abundant fill material was observed in this area, resulting in differing velocities from other areas. At the time of seismic survey, there were no suitable wells for the velocity survey in that area. Therefore, the data from point 390 to 445 at Line 3 were not used in the contouring of the bedrock elevation. The velocity at WSAICTA003 should be measured to make these data usable.

A special extrapolation was placed at the center of the paleochannel to highlight the suspected deep incision. Because there was not adequate boring control, the channel was contoured with a dashed line and its location should be field-verified.

5.4 BASAL GRAVEL DISTRIBUTION

In AFP 4 and NAS Forth Worth JRB, the Alluvial Terrace deposits have been characterized as two general units: clay and basal gravel. Analysis of soil boring logs in the AOC 2 area indicated that only a few boring logs (e.g., W-153) document significant amounts of gravel. Distribution of these gravels appears to be random and does not correlate with the paleochannel. A gravel distribution map is presented in Figure 5-3.

Interpretation of Figure 5-3 should be performed with caution because the actual amount of gravel is difficult to log with typical drilling equipment (2" split spoon). Its distribution could be under-represented. For this reason, an additional geophysical method was used to map the channel.

Figure 5-4 presents four profiles constructed from the EI survey. Approximate lithology is represented by resistivity and reflected by color contrast [except for the northern section of line 1 (colored red) where the concrete taxiway interfered with data collection].

Bedrock (shown using warm colors) has a higher resistivity than the TA deposits (shown using cool colors). Warmer colors appearing within the TA deposits indicate higher gravel content, and cooler colors indicate higher clay content. The TA deposits are apparently quite heterogeneous.

5.5 REFINEMENT OF GROUNDWATER PLUME GEOMETRY

Groundwater samples collected around Landfill 5 (from WHGLTA302, LF05-02, and WSAICTA003) exhibited relatively higher concentrations of cis-1,2-DCE as well as methane and ethene, indicating potential biodegradation in this area. Although analysis of the sample collected from WHGLTA302 indicated that some TCE was degraded all the way to ethene, a significant amount of cis-1,2-DCE was present, indicating localized partial degradation.

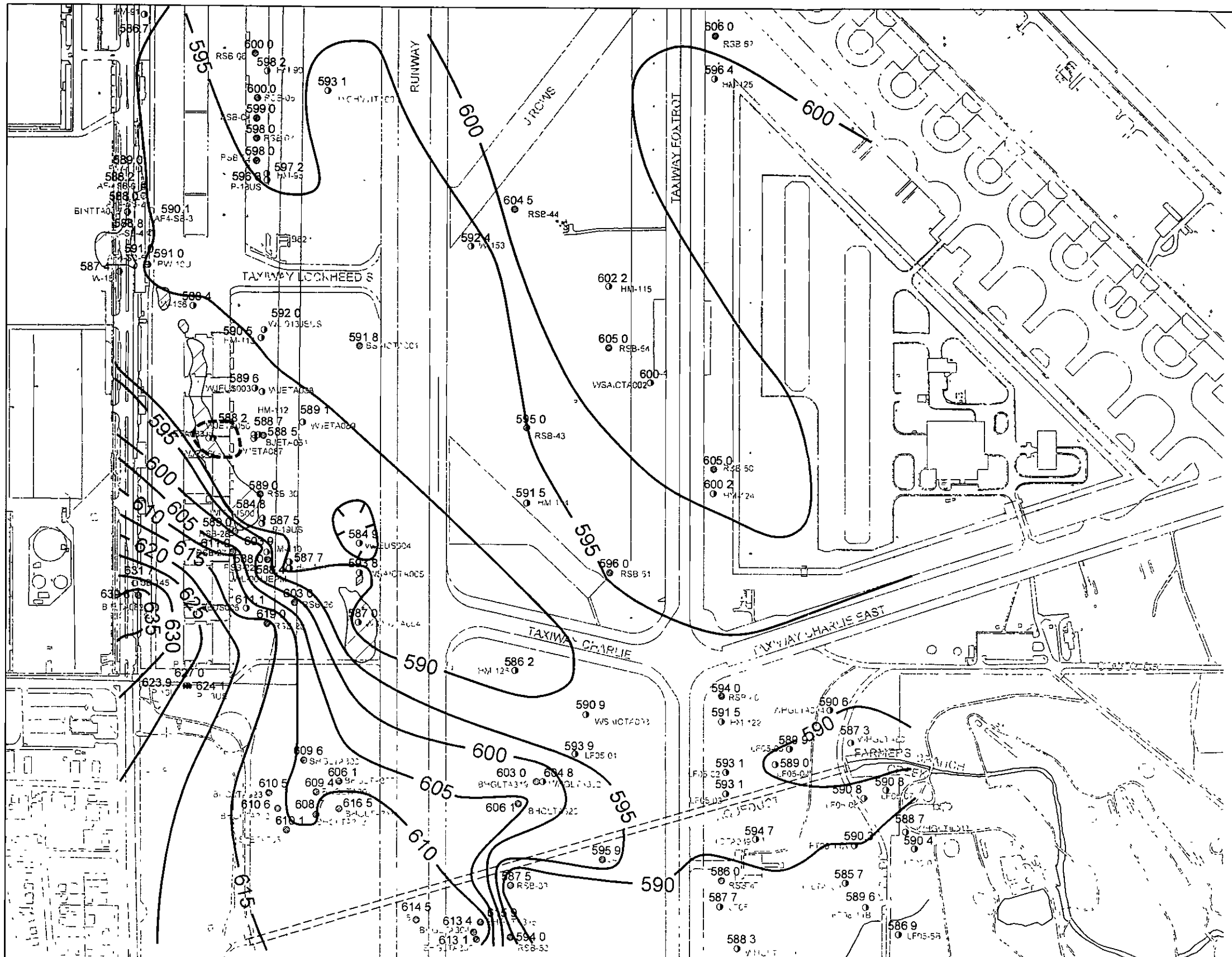
Two comprehensive groundwater isoconcentration maps were created using groundwater analytical results from samples collected during the Phase I SI (Table 5-2) and data from basewide groundwater conducted in October 2000 (Appendix I). If multiple chemical data existed for a particular well, the highest chemical concentration was selected as representative. Because biodegradation has been documented, two separate isoconcentration maps were prepared to illustrate the plume. Figure 5-5 depicts the distribution of TCE and the Figure 5-6 depicts the distribution of total solvents.

5.6 NATURAL ATTENUATION PARAMETERS

Natural attenuation of TCE involves both physical and chemical processes. This section focuses on the assessment of the chemical (including biochemical) process. The TCE degradation process is evaluated through the presence of daughter products (mainly 1,2-DCE, vinyl chloride, and ethene) and anaerobic conditions.

1,2-DCE was present in every sample but was significantly elevated in WHGLTA302, LF05-01, and LF05-02 (Table 5-2, Figure 5-5, and Appendix I). In wells WHGLTA302, LF05-01, and LF05-02, ethene was detected (up to 280 μ/L). There is also a trace amount of vinyl chloride in LF05-02.

Two areas of the aquifer are under reduced condition (reduced oxidation-reduction potential [ORP], elevated methane, iron, and nitrate contents) (Figure 5-5). The elevated concentration of methane indicates the presence of organic carbons in the area between Taxiway Charlie and the aqueduct. The data appear to suggest that degradation is occurring near sources at AFP 4 and increases along the pathways in areas with fill materials.



LEGEND

Window Area (Parsons, 1998)

600 — Bedrock Elevation Contour (feet above mean seal level) Contour Interval 5 feet

Soil Boring

HM-124 — Monitoring Well

687 0 — Goodland/Walnut Surface Elevation (feet)

Area Goodland/Walnut Missing

N

GRAPHIC SCALE IN FEET

0 250 500 1000

Drawn by: CJJ	Date: 30 Jan 01
Chk'd by: XJ	Date: 9-28-01
Path: NASFWphase-I-final	
Filename: surf-ele-cont.dgn	

Figure 5-1

Goodland/Walnut Surface Elevation Contour Map Based on Soil Boring Data Site Inspection

NAS FORT WORTH JRB, TEXAS

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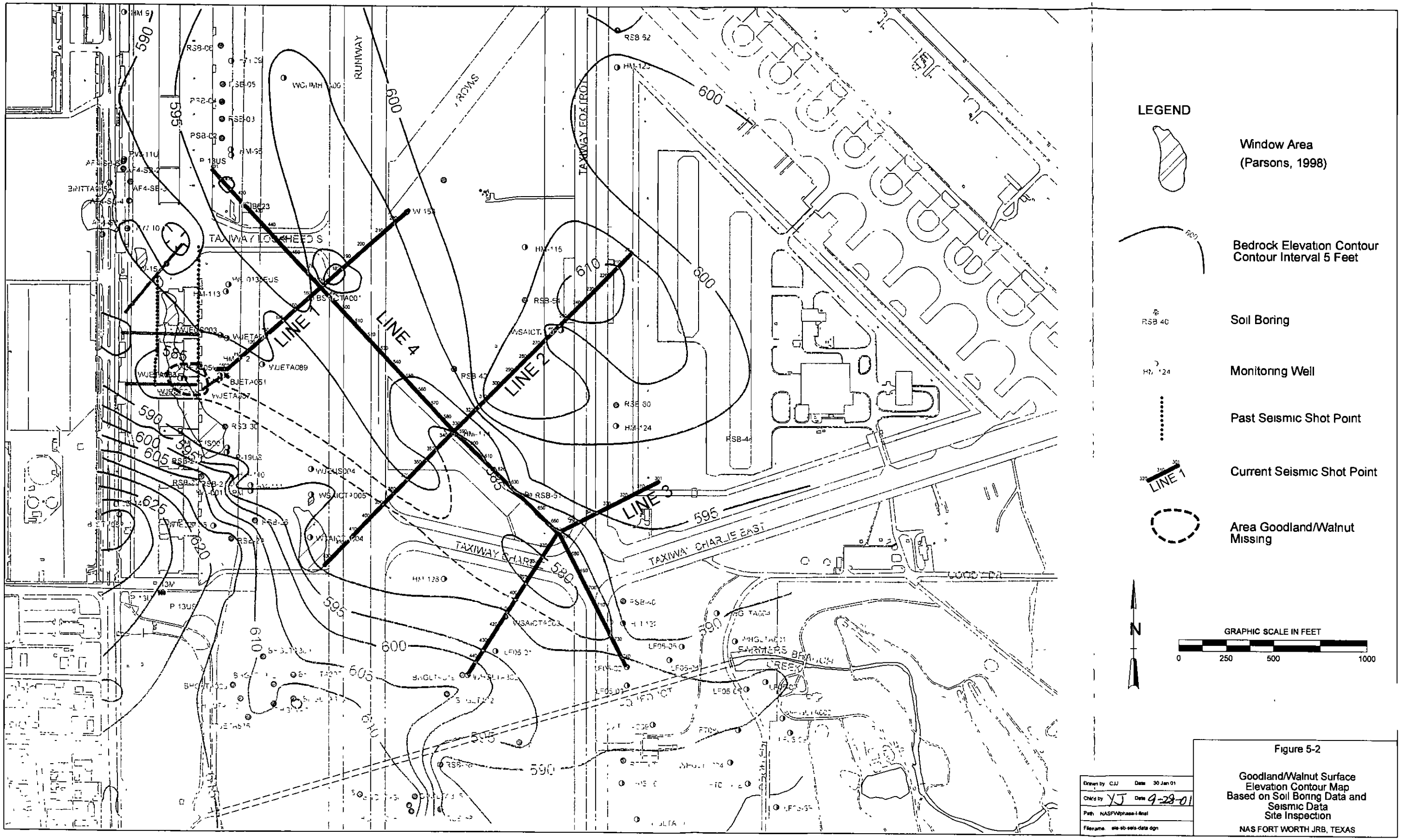

Drawn by CJJ Date 30 Jan 01
Chk'd by YJ Date 9-28-01
Path NASFWphase-I-final
Filename site-sb-seis-data.dgn

Figure 5-2

Goodland/Walnut Surface Elevation Contour Map Based on Soil Boring Data and Seismic Data Site Inspection

NAS FORT WORTH JRB, TEXAS

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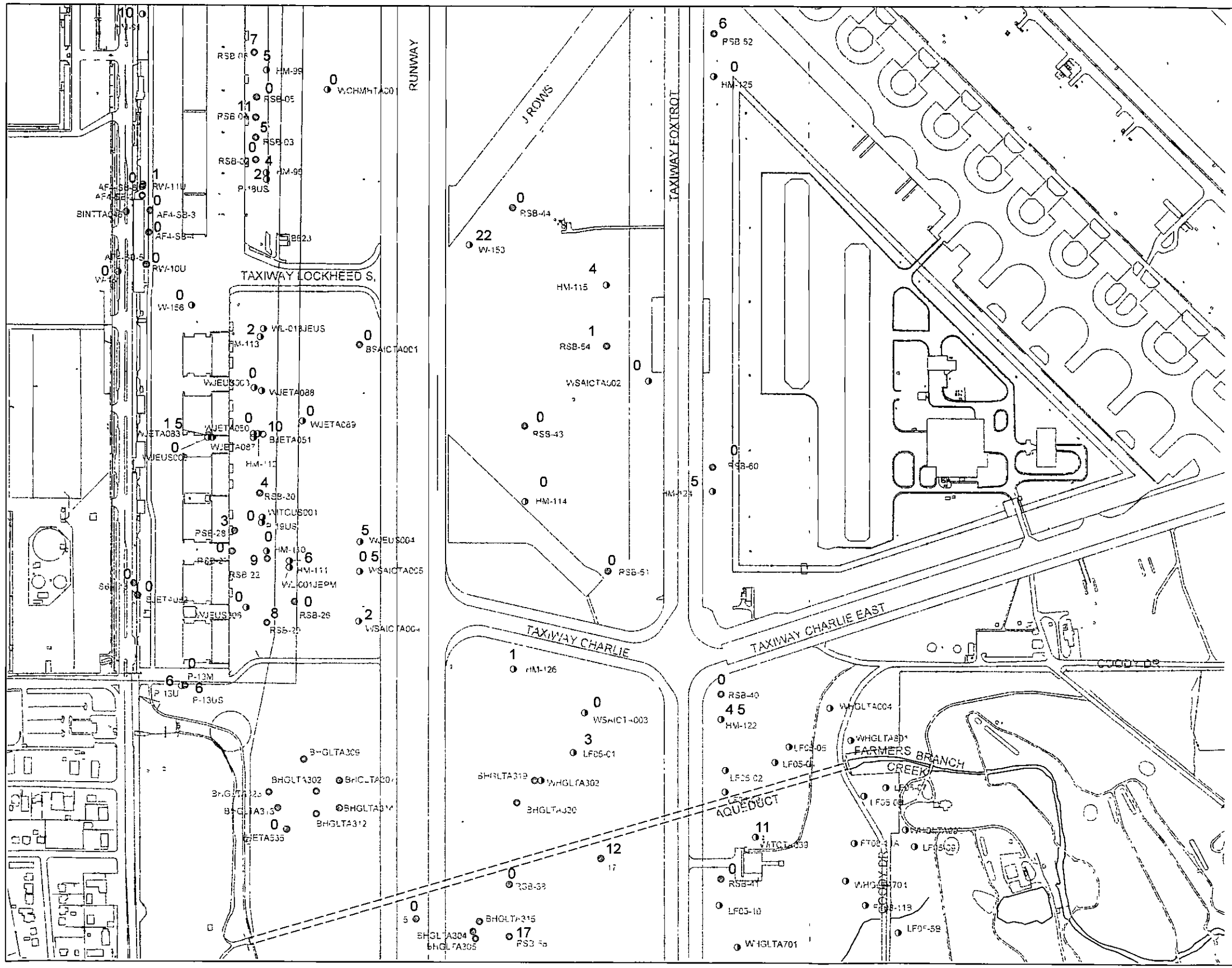

LEGEND

RSB-4C	Soil Boring
HM-124	Monitoring Well
1	Gravel Thickness (Feet)

Drawn by: CJJ	Date 30 Jan 01
Chkd by: XJ	Date 9-28-01
Path: NASFWgh-l-final	
Filename: grav-thick-sl.dgn	

Figure 5-3

Gravel Distribution Map
Site Inspection

NAS FORT WORTH JRB, TEXAS

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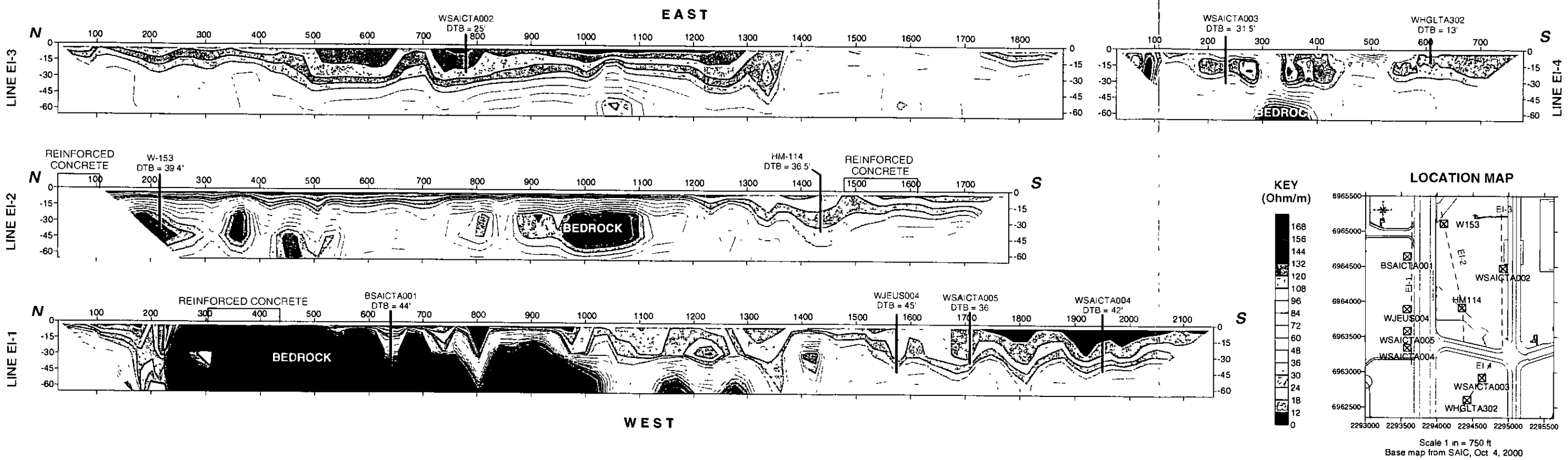

NOTES

Roll-along resistivity survey performed Oct 23-27, 2000 using Advanced Geosciences, Inc, Sting R1 IP and Swift controller unit

DTB = Depth to bedrock

Horizontal scale 1 in = 100 ft (approximate)
Vertical scale 1 in = 50 ft (approximate)
Vertical exaggeration = 2x

DES	LSB	11/05/00
DRN	LSB	11/05/00
CHK	PJH	12/05/00
REV	PJH	1/23/01
APP		
PROJ MGR	PJH	10/30/00
OPER		

PROJECT
Ft Worth Naval Air Station Joint Reserve Base

SHEET TITLE
Figure 5-4 Electrical Imaging Profiles

The HUTCHINSON GROUP, Ltd
4280 OLD WM. PENN HWY
MURRYSVILLE PENNSYLVANIA 15668

SAIC Channel Delineation Study

DRAWING NO
102300-001

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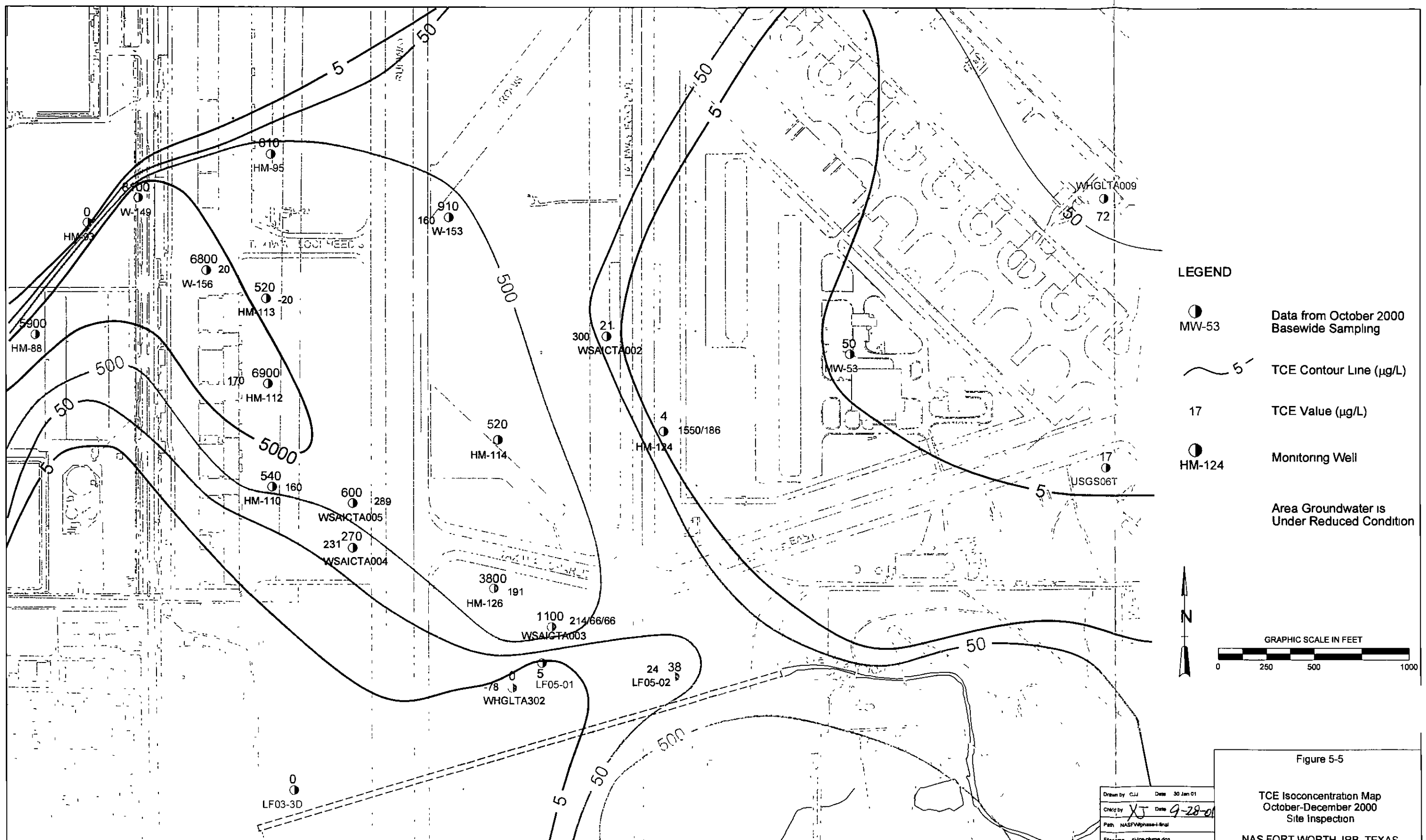

Figure 5-5

TCE Isoconcentration Map
October-December 2000
Site Inspection

NAS FORT WORTH JRB, TEXAS

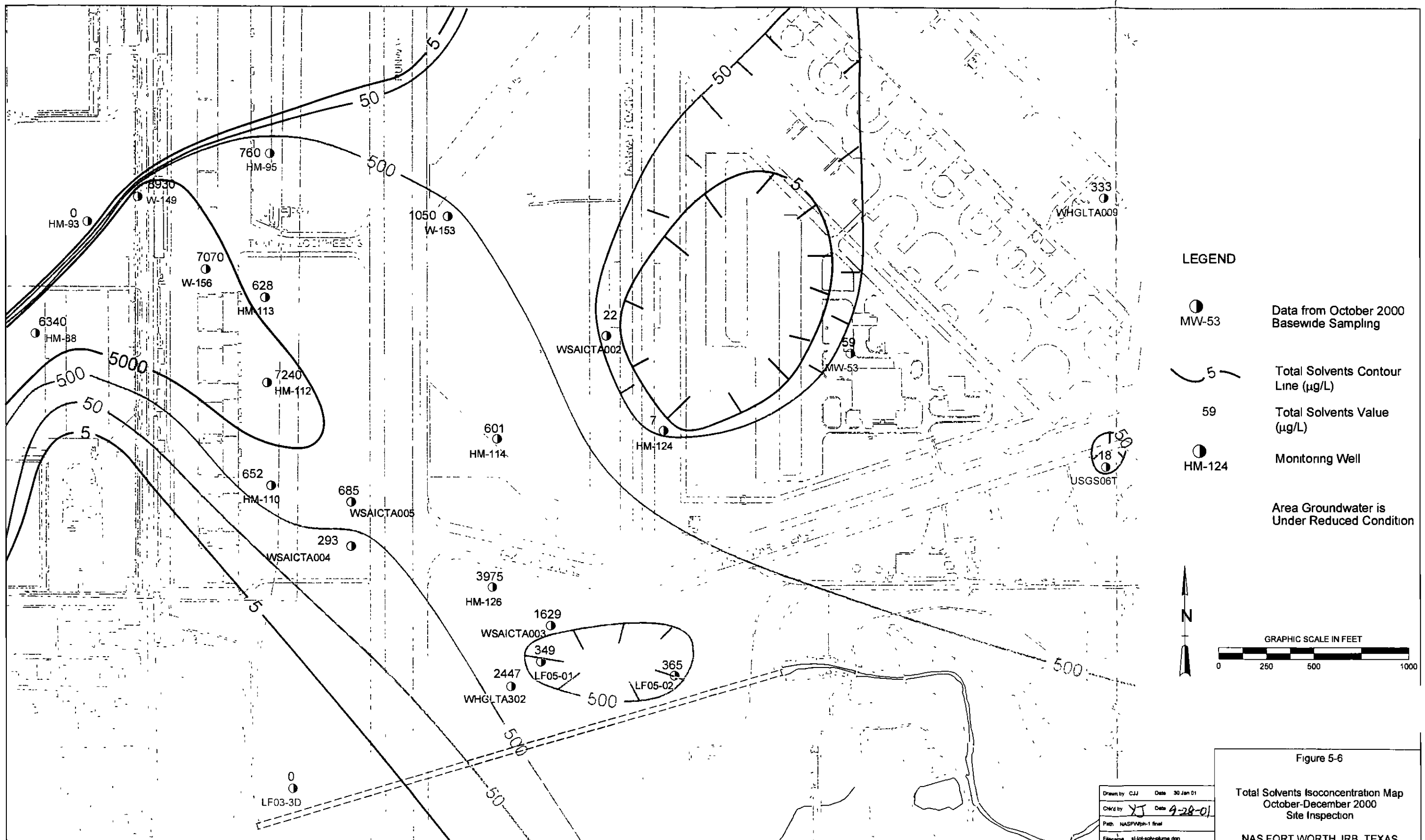

Figure 5-6

Total Solvents Isoconcentration Map
October-December 2000
Site Inspection

NAS FORT WORTH JRB, TEXAS

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5.7 PREFERENTIAL CONTAMINANT TRANSPORT PATHWAYS

Data indicate that a narrow deep incision may be located within the broad paleochannel (see Figures 5-1 and Figure 5-2). Also, the centerline of the plume (Figures 5-5 and 5-6) is parallel to the channel and the hydraulic gradient (Figure 5-7). This appears to suggest that the paleochannel was the primary pathway for contaminant migration from upgradient sources. At the time of this SI, the most concentrated portion of the residual plume (TCE concentrations greater than 1,000 μg/L) was contained in or next to this narrow band, with a width of less than 500 feet. The diluted plume was more than 2,000 feet wide. However, the most concentrated portion of the plume was contained in or adjacent to a narrow band less than 500 feet wide. There was a slight vertical stratification, but it was within the same order of magnitude.

5.8 CONCEPTUAL SITE MODEL

The essential points based on historical data and this SI are summarized in Table 5-3.

Table 5-3
Conceptual Site Model Summary for AOC 20

Site Identification	AOC 20, NAS Ft. Worth, Texas
Site Description	Runway and Taxiway: Fill material may be a result of past waste or trash disposal.
Contaminants and Contaminated Media	Soil gas: not investigated. Soil: Minor VOCs (primarily TCE) in the groundwater fluctuation zone. Fill materials in the area between Taxiway Charlie and the aqueduct appear to contain organic carbon and may contain additional sources of TCE. Groundwater: Primarily TCE and TCE degradation products. The apparent source is located at AFP 4. Presence of organic materials in the fill material caused anaerobic conditions in the groundwater in the area between Taxiway Charlie and the aqueduct with elevated concentration of methane and iron and reduced concentrations of nitrate and ORP. Surface Water: Beyond SI scope.
Migration Pathways	Groundwater: Migrates from west to the east into and off the study area. The thickest aquifer and the highest groundwater contamination is adjacent to a narrow band (potentially less than 500 ft) in the paleochannel. Surface water: No surface water body within the SI area. Air: Potential for volatilization from soil and groundwater to ambient and aqueduct air.
Potentially Exposed Population	Human health receptors may include base personnel or downgradient users of surface or groundwater; ecological receptors may include local terrestrial or aquatic life.
Risk Estimate	Concentration of TCE and its degradation products in groundwater exceeded human-health-risk-based concentrations. Ecological risk unknown.

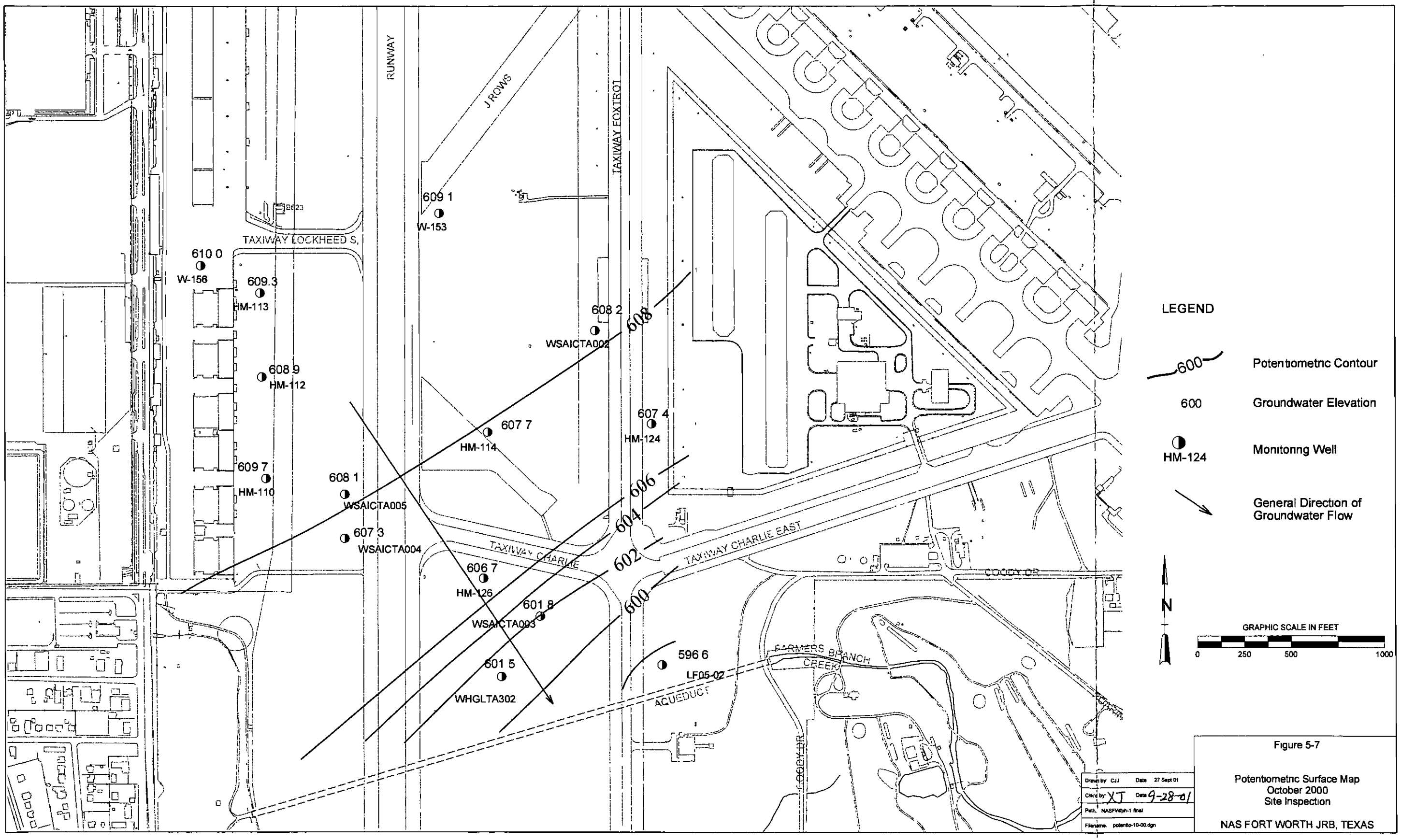

Figure 5-7

Potentiometric Surface Map
October 2000
Site Inspection

NAS FORT WORTH JRB, TEXAS

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6. SUMMARY AND CONCLUSIONS

The results of this SI are in general agreement with the existing geological interpretation (e.g., Parsons Engineering 1998) at AOC 20. A summary of the findings follows:

- The northwest to southeast-trending paleochannel was apparent in the bedrock topographic maps, with one potential narrow (approximately 50 ft wide) lineament. The most concentrated portion of the plume (TCE concentrations greater than 1,000 μg/L) was less than 500 feet wide and generally coincident with the paleochannel.

- The alluvial aquifer was heterogeneous, and did not appear to contain a significant amount of gravel.

- Biodegradation is occurring at the source areas at AFP 4 and in the area between Taxiway Charlie and the aqueduct. Degradation products of TCE (DCE, vinyl chloride, and ethane) were present. Due to the limited scope of the project, the areas where bioactivities are active were not completely defined. The major part of the aquifer is under aerobic condition, while two areas show highly reduced condition: HM-113 and the former river channel between Taxiway Charlie and the aqueduct. TCE in some wells is nearly completely degraded to daughter products in this former river-channel area.

- TCE concentration decreases to near non-detect from AFP4 to the aqueduct due to natural attenuation and increased bioactivities in the area with lots of fill materials. However, its concentration increases again downgradient, suggesting additional sources to the south of the study area.

- The TCE plume had a slight vertical stratification, but the concentrations were generally within the same order of magnitude.

- There is an abundant amount of fill materials in the area between Taxiway Charlie and the aqueduct, presumably the former river bed, where increased TCE biodegradation is occurring, suggesting the presence of unnatural organic matters in the fill materials.

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7. REFERENCES

Air Force Center for Environmental Excellence AFCEE. 2000. *AOC 20 Site Inspection, NAS Fort Worth JRB, Texas, Final Scoping Documents*, November.

A. T. Kearney. 1989. *RCRA Facility Assessment - Preliminary Review/Visual Site Inspection*. Carswell Air Force Base, Texas.

CH2M HILL. 1984. *Installation Restoration Program Records Search.* Carswell Air Force Base, Texas.

CH2M HILL. 1996a. *Site Characterization Summary - Informal Technical Information Report*. NAS Fort Worth JRB, Carswell Field, Texas.

CH2M HILL. 1996b. *Interim Draft Base-Wide Quality Assurance Project Plan.* NAS Fort Worth JRB, Carswell Field, Texas.

CH2M HILL. 1997. *Draft RCRA Facility Investigation Work Plan for Area of Concern 2*, (TCE Groundwater Plume).

Environmental Science and Engineering Incorporated. 1994. *Summary of Remediation Projects at AFP 4 and Carswell Air Force Base*.

General Dynamics Facility Management. 1992. *Memorandum of Telephone Conversation Regarding AFP 4 Water Balance Between General Dynamics Facility Management and Chem-Nuclear Geotech.* Memorandum dated December 15, 1992.

HydroGeoLogic, Inc. 1997. *Draft Report RCRA Facility Investigation.* Carswell AFB, Texas.

HydroGeoLogic, Inc. 1999a. *Draft Basewide Groundwater Sampling and Analysis Program,* January 1999 Quarterly Report. NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. 1999b. *Draft Basewide Groundwater Sampling and Analysis Program*, July 1999 Quarterly Report. NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. 2000. *Final Basewide Quality Assurance Project Plan.* NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. 2000. *Draft Final Groundwater Sampling and Analysis Program, April 2000 Quarterly Report.* NAS Fort Worth JRB, Texas.

HydroGeoLogic, Inc. 2000. *Final Work Plan, Data Gap Investigation of the Southern Lobe TCE Plume*. NAS Fort Worth JRB, Texas.

Interpre'tech/SeisPulse. 1998. *Report of Geophysical Seismic Reflection Surveys Conducted for the U.S. Geological Survey at Air Force Plant 4.* Fort Worth, Texas.

Parsons Engineering Science, Inc. 1998. *Technical Report on the Geology of Air Force Plant 4 and Naval Air Station Fort Worth Joint Reserve Base*, Fort Worth, Texas. Prepared for Aeronautical System Center – Environment Directorate, Wright-Patterson Air Force Base, Ohio and AFCEE, Brooks Air Force Base, Texas.

Radian Corporation. 1989. *Installation Restoration Program RI/FS, Stage 2 Draft Final Technical Report.* Carswell Air Force Base, Texas.

Radian Corporation. 1991. *Installation Restoration Program RI, Stage 2 Final Report.* Carswell Air Force Base, Texas.

Rust Geotech. 1995. *Remedial Investigation and Preliminary Assessment/Site Inspection Report*, AFP 4.

Texas Natural Resource Conservation Commission, Office of Air Quality. 1996. *Air Quality in Texas: Dallas/Fort Worth.* Obtained from TNRCC Internet Home Page.

U.S. Department of Commerce. 1994. *1990 Census of Population, Cities and Villages in Tarrant County, Texas.* Bureau of the Census, Washington, D.C.

U.S. Department of Commerce. 1996. *1990 Census of Population, Tarrant County, Texas.* Bureau of the Census, Washington, D.C.

U.S. Environmental Protection Agency. 1988. *Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis.*

U.S. Environmental Protection Agency. 1991. National Functional Guidelines for Organic Data Review.

TAB

Appendix A

APPENDIX A

Site Safety Briefing Forms
Daily Equipment Calibration Logs
Health and Safety/Air Monitoring Logs
Medical Data Sheets
Health and Safety Plan Compliance Agreement Forms

(This section intentionally left blank.)

SITE SAFETY BRIEFING FORM

Project AOC 20 SITE INSPECTION, NAS FW JRB

Date 05 DEC 00 Time

Location NAS FORT WORTH JRB, TEXAS

Type of Work SOIL BORING AND MONITOR WELL INSTALLATION

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment

LEVEL D, steel-toed boots, hard hat, nitrile gloves, ear plugs.

Chemical Hazards

Contaminated groundwater and decontamination solutions

Physical Hazards

Cold stress, materials handling, utility hazards, heavy equipment, slip, trip + fall

Emergency Procedures

Administer first aid for minor injuries or transport to hospital for major.

Hospital/Clinic Harris Hospital Phone 911 or 817-782-6330

Hospital Address 1301 Pennsylvania Avenue

Special Equipment Drilling rig.

Other

Follow all flight line safety procedures discussed in flight line driving course

ATTENDEES

Name (Printed)	Signature
Richard Houde	Richard Houde
JOHN TALBOT	[illegible]
Martin Casarez	[illegible]
Robert Joiner	[illegible]

Meeting Conducted by: DAVID LOWAK

Site Safety Officer: DAVID LOWAK [illegible]

SITE SAFETY BRIEFING FORM

Project AOC 20 SITE INSPECTION, NAS FW JRB

Date 11 DEC 00 Time 1420

Location NAS FORT WORTH JRB

Type of Work Installation of monitor wells

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment

Level D, steel-toed boots, hard hat, nitrile gloves, ear plugs

Chemical Hazards

Contaminated groundwater and decontamination solutions.

Physical Hazards

Cold stress, pesticide handling, utility hazards, heavy equipment, slip, trip & fall

Emergency Procedures

Administer first aid for minor injuries or transport to hospital for major

Hospital/Clinic Harris Methodist Phone 911 or 817-782-6330

Hospital Address 1301 Pennsylvania Ave

Special Equipment Drilling rig.

Other

Follow all flight line safety procedures, Radio contact w/ Navy FW Tower

ATTENDEES

Name (Printed)	Signature
Richard Houde	Richard Houde
JOHN TALBOT	John Talbot
Martin Casarez	[illegible]
Robert Joiner	[illegible]

Meeting Conducted by: DAVID LOWAK [signature]

Site Safety Officer: DAVID LOWAK

DAILY EQUIPMENT CALIBRATION LOG

Project Name: AOC 20 SITE INSPECTION, NAS FW JRB

DATE/TIME	INITIALS	INSTRUMENT	CALIBRATION SOLUTION OR GAS CONCENTRATION	ADJUSTMENTS REQUIRED/ COMMENTS
05 DEC 00 0630	DL	580B OVM S/N 580U-60090-327	100ppm Isobutylene lot # 45670	NONE
06 DEC 00 0725	DL	580B OVM 580U-60090-327	100ppm Isobutylene lot # 45670	NONE
07 DEC 00 0743	DL	Horiba U-22 9012023	100-4 pH standard solution lot # 909004	NONE
07 DEC 00 0750	DL	580B OVM 580U-60090-327	100 ppm Isobutylene lot # 45670	NONE
08 DEC 00 0755	DL	580B OVM 580U-60090-327	100 ppm Isobutylene lot # 45670	NONE
08 DEC 00 0755	DL	Horiba U-22 9012023	100-4 pH standard solution lot # 909004	NONE
09 DEC 00 0805	DL	580B OVM 580U-60090-327	100ppm Isobutylene lot # 45670	NONE
09 DEC 00 0805	DL	Horiba U-22 9012023	100-4 pH standard solution lot # 909004	NONE
10 DEC 00 0825	DL	580B OVM 580U-60090-327	100 ppm Isobutylene lot # 45670	NONE

DAILY EQUIPMENT CALIBRATION LOG

Project Name: AOC 20 Site Inspection, NAS FW JRB

DATE/TIME	INITIALS	INSTRUMENT	CALIBRATION SOLUTION OR GAS CONCENTRATION	ADJUSTMENTS REQUIRED/ COMMENTS
10 Dec 00 0825	DL	Horiba U-22 9012023	100-4 pH standard solution lot # 909004	None
11 Dec 00 0735	DL	580B OVM 580U-60090-327	100ppm isobutylene lot # 45670	None
11 Dec 00 0735	DL	Horiba U-22 9012023	100-4 pH standard solution lot # 909004	None
12 Dec 00 0940	DL	580B OVM 580U-60090-327	100 ppm isobutylene lot # 45670	None
13 Dec 00 1250	DL	580B OVM 580U-60090-327	100 ppm Isobutylene lot # 45670	None
13 Dec 00 1300	DL	Horiba U-22 9012023	100-4 pH standard solution lot # ~~45670~~ 909004	None
14 Dec 00 0840	DL	580B OVM 580U-60090-327	100 ppm isobutylene lot # 45670	None
14 Dec 00 0840	DL	Horiba U-22 9012023	100-4 pH standard solution lot# 909004	None

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 05 Dec 00 Logged by: David Lowak

Weather: Cool (40-50°F), partly cloudy, E breeze

Field Tasks: Installation of soil borings and monitor wells.

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Hoode - SAIC
John Talbot - Vortex Drilling
Martin Casarez - Vortex Drilling
Robert Joiner - Vortex Drilling

SAIC Personnel (or subs) working in restricted zone:

~~None~~ All of the above.

SAIC Site Visitors:

Michael Dodyk - AFCEE
Andrea West - Unitec

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0750-0935	580B OVM	Vapor Emissions	0 - 1.0 ppm	WSAICTA002
1035-1235	580B OVM	Vapor Emissions	0 - 1.6 ppm	WSAICTA003
1425-1615	580B OVM	Vapor Emissions	0 ppm	BSAICTA001

Background: 0 ppm - Vapor emissions

Exclusion zone:

0 ppm - Vapor emissions

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 06 DEC 00 Logged by: DAVID LOWAK

Weather: Cool (40-50°F), cloudy, ESE breeze (move to NNW), light precipitation early morning

Field Tasks: Installation of monitor wells.

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Hoode - SAIC
John Talbot - Vortex Drilling
Martin Casarez - Vortex Drilling
Robert Jonier - Vortex Drilling

SAIC Personnel (or subs) working in restricted zone:

All of the above

SAIC Site Visitors:

NONE

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0735-1045	580B OVM	Vapor Emissions	0 ppm	WSAICTA004

Background:

Opp

Exclusion zone:

Opp

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 07 Dec 00 Logged by: David Lowak

Weather: Cool (30-50°F), clear w/ N breeze, morning frost

Field Tasks: Sample monitor wells

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Houde - SAIC

SAIC Personnel (or subs) working in restricted zone:

David Lowak
Richard Houde

SAIC Site Visitors:

None

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0837	580 B OVM	Organic Vapors	0 ppm	LF05-02
1203	580B OVM	Organic Vapors	0 ppm	HM-124
1313	580B OVM	Organic Vapors	0 ppm	HM-114
1427	580B OVM	Organic Vapors	0 ppm	W153
1602	580B OVM	Organic Vapors	0 ppm	HM-126

.689 93

Background:

0 ppm

Exclusion zone:

0ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 08 Dec 00 Logged by: David Lowak

Weather: Cool (40-50°F), partly cloudy, NW breeze

Field Tasks: Monitor well sampling

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Houde - SAIC

SAIC Personnel (or subs) working in restricted zone:

David Lowak
Richard Houde

SAIC Site Visitors:

Andrea West - UNITEC

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0740	580B OVM	Organic Vapors	9.0 ppm	W154
0941	580B OVM	Organic Vapors	0 ppm	HM-113
1057	580B OVM	Organic Vapors	1.4 ppm	HM-112
1202	580B OVM	Organic Vapors	0 ppm	HM-110
1420	580B OVM	Organic Vapors	0 ppm	WHGLTA302

689 95

Background:

0 ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 09 Dec 00 Logged by: David Lowak

Weather: Cool (44-60°F), partly cloudy, N wind.

Field Tasks: Monitor well development

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Houde - SAIC

SAIC Personnel (or subs) working in restricted zone:

David Lowak
Richard Houde

SAIC Site Visitors:

None

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0805	580B OVM	Organic Vapors	0ppm	WSAICTA002
1150	580B OVM	Organic Vapors	0ppm	WSAICTA003

689 . 97

Background:

0 ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 10 Dec 00 Logged by: David Lowak

Weather: Partly Cloudy, Temp: 50-60s°F, Sbreeze

Field Tasks: Monitor well development

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Hoode - SAIC

SAIC Personnel (or subs) working in restricted zone:

David Lowak
Richard Hoode

SAIC Site Visitors:

None

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0830	580B OVM	Organic Vapors	0 ppm	WSAICTA004
1420	580B OVM	Organic Vapors	0 ppm	WSAICTA002

Background:

0 ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 11 DEC 00 Logged by: DAVID LOWAK

Weather: Cold, 30°Fs, N wind, heavy gust, partly Cloudy

Field Tasks: Monitor well sampling + monitor well installation

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Houde - SAIC
John Talbot - Vortex Drilling
ROBERT Joines - Vortex Drilling
Martin Casarez - Vortex Drilling

SAIC Personnel (or subs) working in restricted zone:

David Lowak + Richard Houde for monitor well sampling.

All of the above for monitor well installation.

SAIC Site Visitors:

Andrea West - UNITEC

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0755	580B OVM	Organic Vapors	0 ppm	WSAICTA003
1442-1600	580B OVM	Organic Vapors	0 ppm	WSAICTA005

Background:

0 ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

NONE

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 12 DEC 00 Logged by: DAVID LOWAK

Weather: Cold (20°Fs), partly cloudy, 10-15mph N wind, chance of snow + sleet

Field Tasks: Monitor well istallation

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Hoode - SAIC
John Talbot - Vortex Drilling
Robert Joiner - Vortex Drilling
Martin Casarez - Vortex Drilling

SAIC Personnel (or subs) working in restricted zone:

All of the above during monitor well installation

SAIC Site Visitors:

Andrea West - UNITEC

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
1005 - 1300	580B OVM	Organic Vapors	0 ppm	☒ SAICTA006

Background:

0ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 13 Dec 00 Logged by: David Lowak

Weather: Cold (30°Fs), partly cloudy, NW wind, ice on ground

Field Tasks: Monitor well development

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC

Richard Houde - SAIC

SAIC Personnel (or subs) working in restricted zone:

David Lowak

Richard Houde

SAIC Site Visitors:

None

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
1300	580B OVM	Organic Vapors	0ppm	WSAICTA005

Background:

0 ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

HEALTH AND SAFETY/AIR MONITORING LOG

Date: 14 Dec 00 Logged by: David Lowak

Weather: Cold (30-50°F's), clear, SE breeze, ice on ground

Field Tasks: Monitor well sampling.

SAIC Personnel (or subs) working on the site (name and affiliation):

David Lowak - SAIC
Richard Hoode - SAIC

SAIC Personnel (or subs) working in restricted zone:

David Lowak
Richard Hoode.

SAIC Site Visitors:

None

Air Quality Monitoring Measurements:

Time	Instrument	Parameter	Concentration	Locations
0854	580B OVM	Organic Vapors	0ppm	WSAICTA002
1100	580B OVM	Organic Vapors	0ppm	WSAICTA004
1555	580B OVM	Organic Vapors	0ppm	WSAICTA005

689.107

Background:

0 ppm

Exclusion zone:

0 ppm

Level of PPE: Level D

Comments on other safety-related matters:

None

(including infractions, accidents, injuries, unusual occurrences, physical complaints)

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all onsite personnel and will be kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project AOC 20 SI, NAS FW JRB

Name DAVID LOWAK Home Telephone 210-493-6436

Address 4523 BLACK HICKORY WOODS SAN ANTONIO, TX 78249

Age 28 Height 6' Weight 220#

Name of Next of Kin MARLA LOWAK

Drug or other Allergies NONE

Particular Sensitivities NONE

Do You Wear Contacts? YES

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals.

NA

What medications are you presently using? NONE

Do you have any medical restrictions? No

689 109

Name, Address, and Phone Number of personal physician: NA

I am the individual described above. I have read and understand this HSP:

Signature

12-4-00

Date

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all onsite personnel and will be kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project AOC 20 SI, NAS FW JRB

Name Martin Casarez Home Telephone (210) 534-5474

Address 1515 Mission #197 San Antonio tx

Age 30 Height 6' Weight 300

Name of Next of Kin Gavino Casarez

Drug or other Allergies NONE

Particular Sensitivities NONE

Do You Wear Contacts? NO

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals.

NONE

What medications are you presently using? NONE

Do you have any medical restrictions? NO

689 111

Name, Address, and Phone Number of personal physician: None

I am the individual described above. I have read and understand this HSP:

Signature

10-4-00

Date

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all onsite personnel and will be kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project AOC 20 SI, NAS FW JRB

Name John TALBOT Home Telephone 210-384-8483

Address 3222 SWANDALE

Age 40 Height 6'3" Weight 230

Name of Next of Kin BILL TALBOT

Drug or other Allergies N/A

Particular Sensitivities N/A

Do You Wear Contacts? NO

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals.

N/A

What medications are you presently using? VIOX

Do you have any medical restrictions? NO

689 113

Name, Address, and Phone Number of personal physician: N/A

I am the individual described above. I have read and understand this HSP:

Signature

12-4-00

Date

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all onsite personnel and will be kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project AOC 20 SI, NAS FW JRB

Name ROBERT JOINER Home Telephone (210) 650-3188

Address 121 Meadow DR, CONVERSE, TX

Age 31 Height 6'0" Weight 235

Name of Next of Kin Mary Ann Joiner

Drug or other Allergies NONE

Particular Sensitivities NONE

Do You Wear Contacts? NO

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals.

NONE

What medications are you presently using? NONE

Do you have any medical restrictions? NONE

689 115

Name, Address, and Phone Number of personal physician: NONE

I am the individual described above. I have read and understand this HSP:

Signature

12-4-00

Date

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all onsite personnel and will be kept in the command post during the conduct of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project AOC 20 - NAS Ft. Worth JRB

Name Richard Houde Home Telephone 830-981-9121

Address 8535 ALYDAR CIRCLE FAIR OAKS Ranch TX 78015

Age 48 Height 5' 4" Weight 125 lbs.

Name of Next of Kin Glenda Woodruff (wife)

Drug or other Allergies None

Particular Sensitivities None

Do You Wear Contacts? No

Provide a Checklist of Previous Illnesses or Exposure to Hazardous Chemicals.

None

What medications are you presently using? Zocor (Cholesteral Lowering)

Do you have any medical restrictions? None

Name, Address, and Phone Number of personal physician:

John Matlock
8401 Data Point Drive
San Antonio, TX 78229
210-949-2202

I am the individual described above. I have read and understand this HSP:

Richard Houde

Signature

Dec. 01, 2000

Date

HEALTH AND SAFETY PLAN
COMPLIANCE AGREEMENT FORM

PROJECT: AOC 20 SI

CLIENT: U.S. Air Force Center for Environmental Excellence

LOCATION: NAS Fort Worth JRB, Texas

I, John F. TALBOT, have received a copy of the Health and Safety Plan for the above-referenced project. I have read the plan, understand it, and agree to comply with all its provisions. I understand that I can be prohibited from working on the project for violating any of the safety requirements specified in the plan.

Signed:

John Talbot

Signature

12-4-00

Date

Vortex

Company

HEALTH AND SAFETY PLAN AMENDMENT(S) FORM

Change in field activities or hazards: _____

_____

_____

_____

_____

_____

Proposed Amendment(s): _____

_____

_____

_____

_____

_____

_____

Proposed by: _____ Date: _____

Approved by: _____

Accepted: _____ Declined: _____ Date: _____

Amendment Number: _____

Amendment Effective Date: _____

TAB

Appendix B

APPENDIX B

Daily Field Logs

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SOKKIA™

FW NAS JRB
CARSWELL

TRANSIT FIELD BOOK

BEST AVAILABLE COPY

8152-00

689 123

16 Oct 00

Weather: Mild (60s - 80's), cloudy, rained yesterday + this morning.

0730 D Lowak arrives at NAS Fort Worth JRB Visitor's Center. Waiting on M. King of Seispulse which is to arrive at 0800.

0905 M. King of Seispulse arrives at Visitor's Center.

Travel to AFLEE office at Bldg. 1619. Meet w/ Mike Dodyk of AFLEE. M. Dodyk gives tour of Base Ops., location of Flight Line dining office, Lockheed Martin, and show us area and points on flight line w/ Andres West of UniTel.

D. Lowak reviews Work Plan + Health + Safety Plan w/ M. King. M. King fills out Medical Data Sheet and Health and Safety Plan Compliance Agreement Form.

Unable to attend a flight

BEST AVAILABLE COPY

(2)

16 Oct 00 cont

line driving training course today; prohibiting any work to be accomplished today.

Mike King + D. Lowak discuss plan for working rest of week.

D. Lowak receives key for IDW yard from M. Podyk.

1200 Break for lunch. Depart Carswell.

1300 Return from lunch. M. King returns to his Motel.

D. Lowak buys wooden stakes, marking paint, flagging tape, and first aid kit for work for the rest of the geophysical work.

Unable to work today w/o flight line driving course.

1430 D. Lowak departs to Hotel.

D. Lowak

10-16-00

BEST AVAILABLE COPY

(3)

17 Oct 00

Weather. Partly Cloudy, mild (60-70s) N breeze. Morning fog.

0740 D. Lowak arrives at Base Ops, Bldg 1425, for flight line driving course. Waiting on M. King.

0810 M. King arrives. Receive flight line driving training.

D. Lowak + M. King both receive Airfield Vehicle Operator's Certificates.

Check-out radio from Base Ops.

D. Lowak conducts Safety Meeting w/ M. King of Seispulse.

0900 Check in at Base Ops to begin seismic survey

Enter flight line area, mark all seismic end points w/ wooden stakes + orange paint.

30 Depart area for lunch

1230 Reenter flight line area and set up at S-4 NW

Shoot points at every 10 ft, marking each point w/ an orange line + labeling

(4)

17 OCT 20 cont

every 10 points.

1650 Stop seismic survey of line S-4 at point S-4-75. ~~Avoid~~ DL. There is a 40' gap between S-4-23 + S-4-24 due to interference of B623.

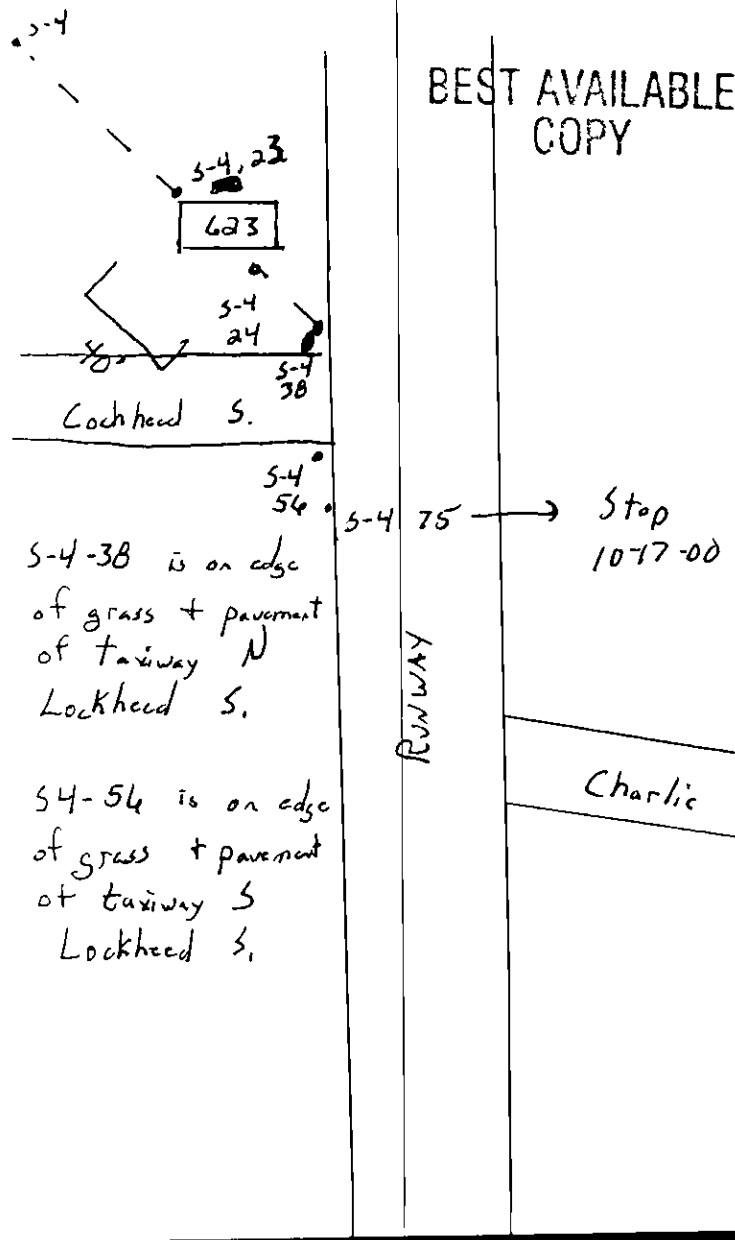
1700 Depart flight line areas

DSL

10-17-00

(5)

17 OCT 20 cont



S-4-38 is on edge of grass + pavement of taxiway N Lockheed S.

S4-56 is on edge of grass + pavement of taxiway S Lockheed S.

BEST AVAILABLE COPY

689 126

18 Oct 00

Weather: Partly cloudy, mild (60-70s), NW breeze.

0750 D. Lowak arrives @ NAS Fort Worth JRB at Base Ops, Bldg. 1425

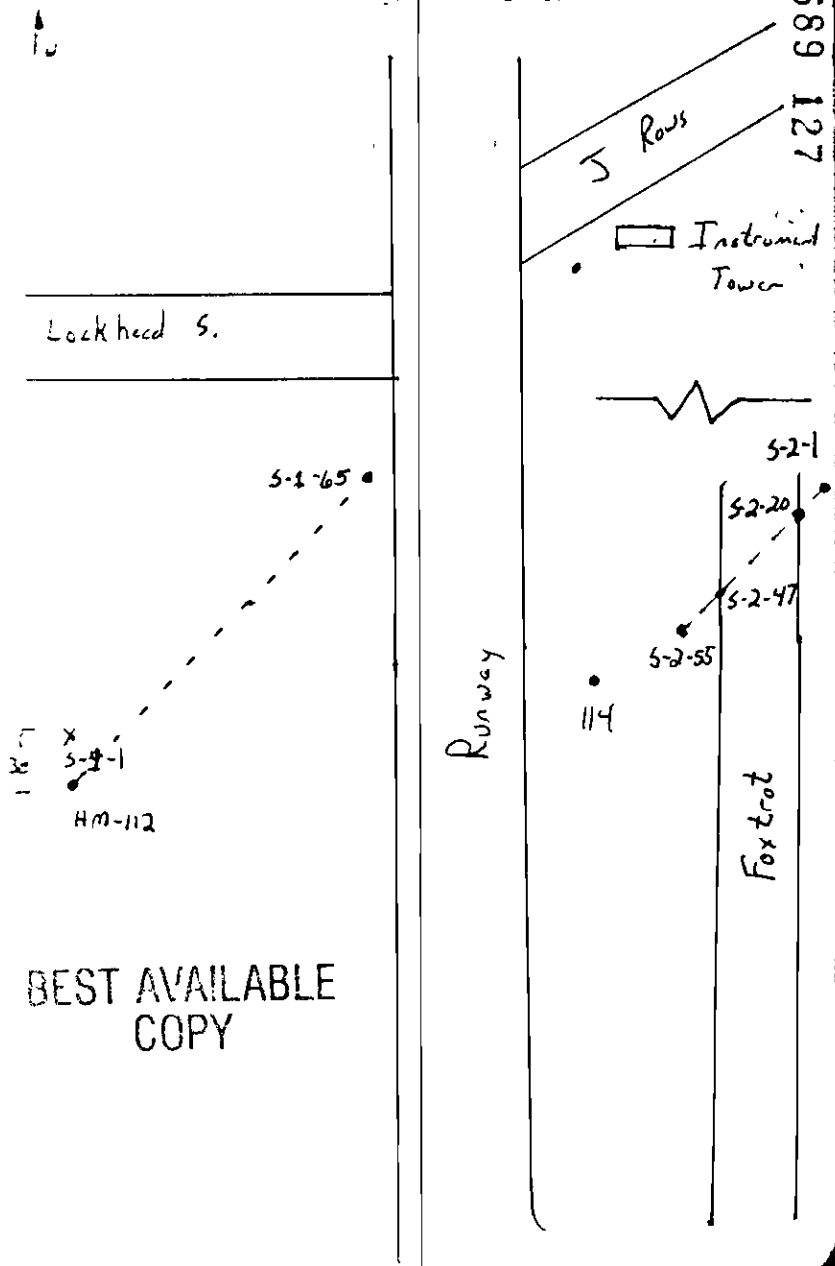
0815 M. King arrives. Check out radio from Base Ops + inform them of area we will be working in.

0840 Enter flight line. Using call sign "SP-1".
Set up on line S-1 starting from S-1 SW moving NE
- Pt S-1-1 is 38' N of well HM-112
- Sanitary sewer manhole 5' W of S-1-8
- Pt S-1-51 is on pavement of afd taxiway. Starting w/ S-1-51

1130 Stop work due to air traffic by Navy Tower. Stop @ pt S-1-65
Break for lunch.
Stop by and talk to M. Dodyk of AFLEE. Obtain Contractor's Badge

1230 Return to Base Ops. Access to

18 Oct 00 cont



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18 Oct 00 cont.

runway is prohibited for approx. 1 more hour.

1320 Move to Seismic line 2 at NE end moving SW.

- Pt S-2-16 is on pavement
- Pt S-2-20 is on E edge of taxiway Foxtrot.
- Pt S-2-47 is on W edge of taxiway Foxtrot.

1515 Stop on pt. S-2-55 Depart flight line. Return radio to Base Ops

1530 D. Lowak + M. King depart NAS JRB.

DJL

10-18-00

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19 Oct 00

weather: Partly cloudy, mild (60-70s), ESE breeze.

0800 D. Lowak arrives at Base Ops waiting on M. King.

0835 M. King arrives
Obtain radio from Base Ops.
Enter flight area + travel to line S-2, pt S-2-55 + setup equipment.

0932 Begin seismic survey at pt S-2-56 moving SW.

- Pt S-2-70 is on storm drain.

040 Update M. MacDonald of SHC

- Pt S-2-134 is 7' NNW of well HM-114.
- Pt S-2-137 is on N edge of pavement of old taxiway.

1210 Break for QA/QC procedure. Take lunch S-2-151

1240 Resume work at S-2-152.

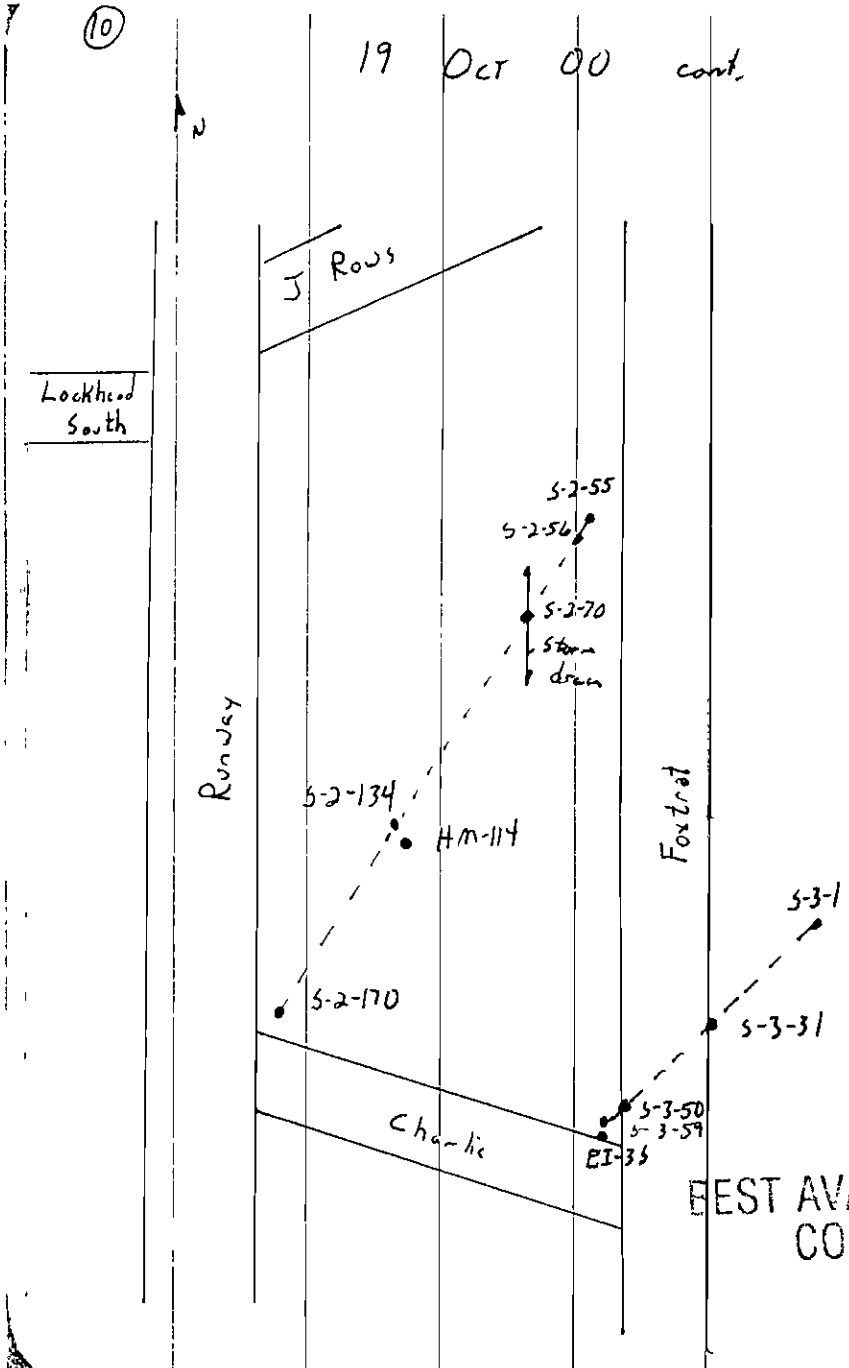
- Pt S-2-161 is on S edge of pavement of old taxiway

1310 Stop working on line S-2 at pt S-2-170.
Move to N end of line S-3.

689 128

(10)

19 Oct 00 cont.



(11)

19 Oct 00 cont

689 129

330 Begin line S-3, pt S-3-1, at NE end moving SW.

- S-3-5 + S-3-6 are over drainage culverts
- S-3-8 is over electrical lines
- S-3-13 is over electrical line for lights.
- S-3-24 is near communications lines.
- S-3-31 is on E edge of taxiway Foxtrot.
- S-3-50 is on wedge of taxiway Foxtrot

1505 Stop at pt S-3-59. Pt S-3-59 is 6' NE of survey pt E-I-3 S. M. King runs QA/QC test Breakdown + load equipment.

1550 Depart flight line + return radio.

1400 D. Lowak + Mike depart NAS JRB. D. Lowak travels to hardware store to purchase marking paint + wooden stakes

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20 Oct 00

Weather: Cloudy, humid, mild (60-70s). SSE breeze, light shower earlier this morning, chance of rain today

0700 D. Lowak arrives at Base Ops. Waiting on M. King.

0730 Enter flight line area and set up on line S-1, (S-1-66), moving NE. Holding for clearance to work on active runway.

0843 Start at Pt S-1-66.

- Pts S-1-64 thru S-1-68 are on concrete.
- Pt S-1-73 is on grass edge of Runway

Must move off runway due to air traffic.

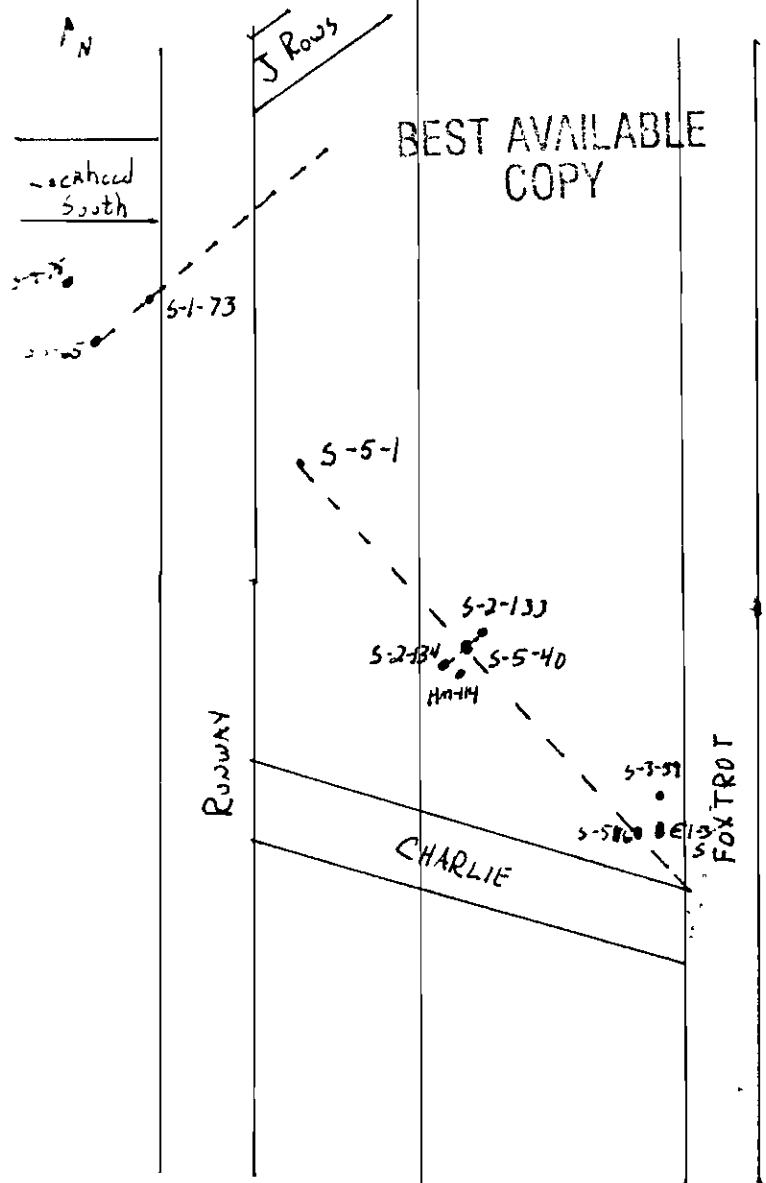
Stop at pt S-1-73

Unable to work on runway at this time, will jump over into infield & work on line S-4

1000 Begins to rain while waiting for clearance.

1020 Rain stops, move to infield area.

20 Oct 00 cont



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20 Oct 00 cont.

Start on line w/ S-4 but will name S-5 + complete gap at a later date.

- Pt S-5-40 is 6' NE of HM-114
- Line S-5 crosses line S-2 at pt. S-2-133 - S-5-40 - S-2-134

1135 Pause at pt. S-5-50 to run QA/QC procedures

1300 Stop at pt S-5-106 for lunch. Light rain starting OFF + ON.

1330 Resume seismic survey on S-5. Do not start due to rain. Call M. Bodyk of AFCEE to setup training for EI crew. Call B. Baver + inform him of progress. D. Lowak needs to get information on clearance contractor + clearing

- Pt S-5-113 is near storm drain.
- Stop at pt S-5-116.
- Pt S-5-116 is 9' NW of survey pt EI-3S.

1500 Depart flight line, return racks.

20 Oct 00 cont

1515 D. Lowak stops by Dodyk's office.

SM+P RONNIE PGR 817-979-9985

① HAVE SM+P clear

② Call Dig Tess

③ Submit Dig Permit (5 days prior)

Above are steps for clearance

SM+P OFFICE 817-366-6525

600 CALL B. Baver + inform him of clearance procedure. D. Lowak will contact SM+P for more details.

630 D. Lowak departs NAS FW JRB.

[signature]

DJL
10-20-00

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689 131

(16)

21 Oct 00

Weather: Cloudy, humid + mild (60-70s) SE breeze. Chance of rain. Rained last night.

0715 D. Lowak meets M. King at Base Ops. Obtain radio and enter flight line area.

0755 Resume work on line S-5 at pt. S-5-117

- Pt. S-5-117 is 3' S of survey pt EI-3S
- ~~Line S-3 + S-5 intersect at~~
- Acc Ps 18 → ~~S-5-116 - S-3-60 - S-5-117~~
- Pt. S-5-122 is on NW edge of Foxtrot + Charlie intersection
- Pt S-5-162 is near water line + other utilities.
- Pt S-5-174 is on SE edge of Foxtrot
- Pt S-5-184 is near utility trench Perform QA/QC at pt S-5-115
- Pt S-5-195 is 6' W of well LF05-02
- Pt. S-5-194 is 7' W of survey pt. S-4-SE

0944 Complete southern portion of line S-5 (S-4)

(17)

21 Oct 00 cont

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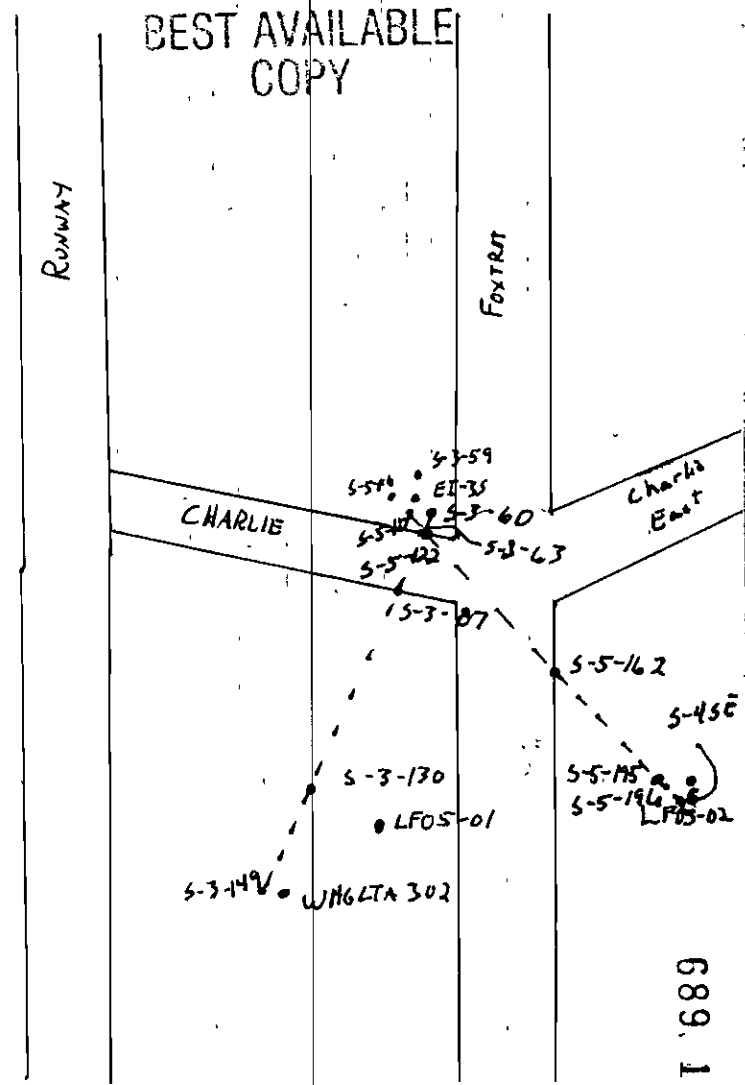

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21 Oct 00 cont.

1000 Resume work on line S-3 at pt S-3-40

- Pt S-3-060 is between pts S-5-117 + S-5-118, 9' SE of survey pt EI-35.
- Pt S-3-063 is on N edge of Charlie.
- Pt S-3-087 is on S edge of Charlie.

Perform QA/QC at pt S-3-123

- Pt S-3-130 is 69' NW of well LF05-01

1202 Complete line S-3 at pt. S-3-149

Pt. S-3-149 is 0' NE of well WHGLTA 302 + 11' NE of survey pt EI-45/5

1230 Depart flight line area + return radio. All of seismic survey completed except pts on runway. Check w/ Base Ops + runway is very active today. Will work tomorrow due to low traffic on runway.

1300 Depart NAS FU IRB.

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22 Oct 00

Weather: Cloudy, humid + mild (70's) SE breeze. Rained last night and this morning. Chance of rain today.

0700 D. Lowak arrives at Base Ops.

0725 M. King arrives.

Obtain radio from Base Ops and proceed to flight line. Unload equipment and setup to complete line S-1. Light air traffic today.

0830 Start at pt S-1-73, is on grass edge of runway.

Must stop due to rain before we get started. Waiting for rain to pass.

0840 Start work.

- Pt. S-1-114 is on E edge of runway.
- Skip of data between S-1-100 + S-1-101, 20ft interval.
- Complete Line S-1 at pt. S-1-128. M. King has 1 less pt. due to skip.
- Pt. S-1-128 is 5' N of well W153 and survey pt EI-2 N

689 133

22 OCT 00 cont.

1030 Begin work on line S-4 at pt S-4-76 moving SE
- pt. S-4-76 thru S-4-97 are on concrete.
- Line S-4 intersects line S-1 at pt S-1-65 + S-4-85
- Pt S-4-94 is on W edge of runway.

1110 Stop work for air traffic.
1135 Resume work.
1205 Stop work for air traffic. Malfunction w/ radio, inform tower. Escorted from flight line. Exchange radios
1310 Break for lunch.
1400 Return from lunch, return to flight line & set up to
1417 resume work on line S-4. at pt. S-4-127.
- Pt S-4-137 is on E edge of runway
- Pt S-4-149 6' NW of pt S-5-1 of line 5

1455 Complete line S-4 @ pt S-4-149. Load equipment. Too wet to work on line S-3

22 Oct 00 cont.

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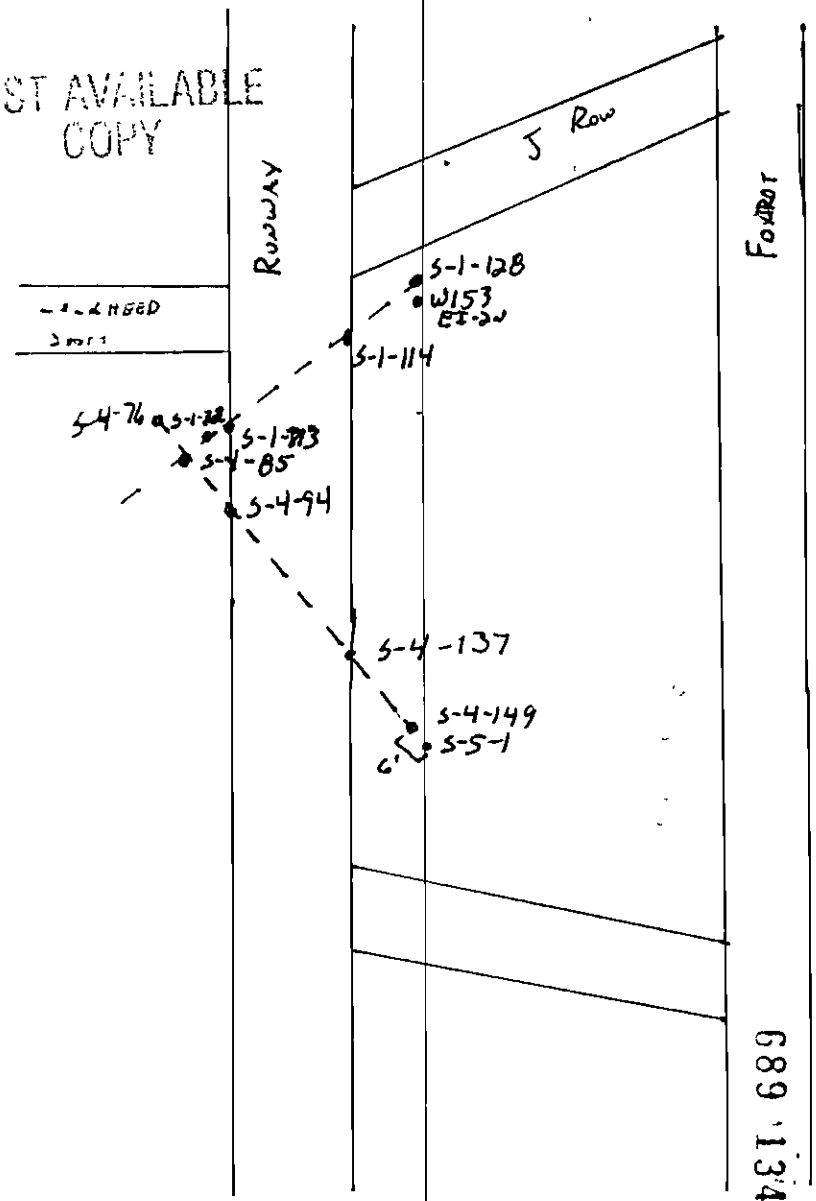

22 Oct 00 cont

1530 Depart flight line and return radio due to moist ground @ S-3. Will meet Seispulse (M. King) + P. Hutchinson of Hutchinson Group who will be performing EI work at Visitor's Center @ 0745. Seispulse will complete seismic survey tomorrow if access to runway is permitted. Perform the velocity surveys on Tuesday.

1600 D. Lowak departs NAS FW JRB.

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DSL
10-22-00

23 Oct 00

Weather: Cloudy, humid, mild (70s), SE breeze, light drizzle this morning, rained light yesterday on/off. Chance of rain today.

0730 D. Lowak arrives at Visitor's Center, waiting on Seispulse + his EI subcontractor.

0745 Seispulse arrives. Obtain visitor's pass for EI sub. Travel to Base Ops. M. King obtains radios.

0815 D. Lowak reviews H+SP, receives medical info. from Hutchinson group personnel + conduct a health + safety meeting.

0830 D. Lowak + M. King proceed to flightline while Hutchinson Group personnel (Peter + Lara) proceed to flightline driving course.

0935 Start work on line S-2 at pt S-2-171 moving SW. Unable to start due to aircraft departures, should be able to start @ 1030.

1045 Hutchinson Group on flight line

669 135

23 Oct 00 cont

setting up on line EI-2 starting at the NW end moving SE

1230 Begin seismic survey of line S-2 at pt S-2-171.

- Pt S-2-184 is on pavement N shoulder of Carlic
- Pt S-2-186 is on E edge of runway
- Pt S-2-232 is on W edge of runway

1350 Complete line S-2 at pt S-2-235.

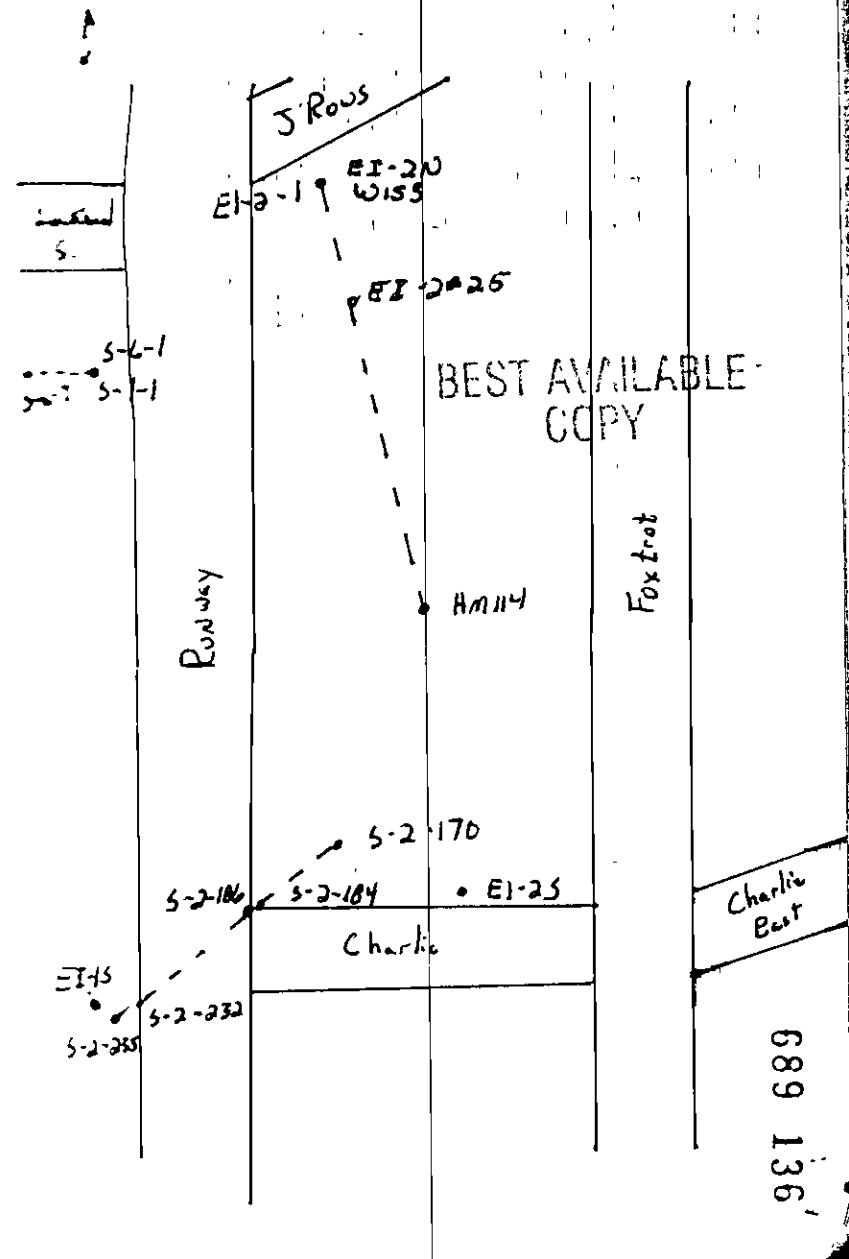
- Pt. S-2-235 is 9' ~~SE~~ SE of survey pt. EI-1 S

1400 Move to pt. S-1-1, will shoot pts to tie in old USGS line (Line 6).
Shoot 7 pts toward Lockheed
Complete seismic survey

1420 Break for lunch.

1500 Return from lunch.
EI guys begin line EI2 at survey pt EI-2N, W153
Contacts are spaced every 10 m (18ft) starting at EI-2N

23 Oct 00 cont



23 Oct 00 cont.

1555 Begins to rain, rains off/on
1745 Stop electrical imaging
1755 Depart flight line + return radios
1800 D. Lovak + Hutchinson Group depart NAS FW JRB.

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DJL
10-23-00

24 Oct 00 cont.

Weather: Cloudy, humid, mild (70s)
SE breeze, morning fog.
Rained last night, chance of rain today

0730 D. Lovak arrives at Base Ops.
Peter + Laura of Hutchinson Group arrive. Obtain radio from Base Ops. + proceed to flight line.

0800 Resume work on line EI-2

- Station EI-2-63 is 3' N of HM-114
  4' SW of seismic pt S-5-40
  2' E of seismic pt S-2-134

Hutchinson Group having problems w/ electrical imaging due to surface moisture.

1330 Break for lunch

1400 Return from lunch, resume work on line EI-2.

- Stations EI-2-66 thru EI-2-73 are on asphalt of old taxiway.

Hutchinson Group having equipment problems

1530 M. King of seismic pulse on site.

1600 Hutchinson Group departs site.
M. King + D. Lovak at well W-153 to perform velocity test. Dedicated bladder pump in well.

(28)

24 Oct 00 cont

Unable to perform velocity survey at W153, instrument will not drop to TD of well approx. 39.4'.

1630 Hutchinson Group returns to site.

M. King is unable to locate a well suitable for velocity survey. Call Y. Jin of SAIC + discuss options, may use velocity surveys performed in the past.

Hutchinson Group must obtain new cable to perform work. Load old cable.

1730 D. Lowak + M. King depart flightline.

1800 Hutchinson Group ~~departs~~ remains on flightline.

D. Lowk departs NAS FW JRB.

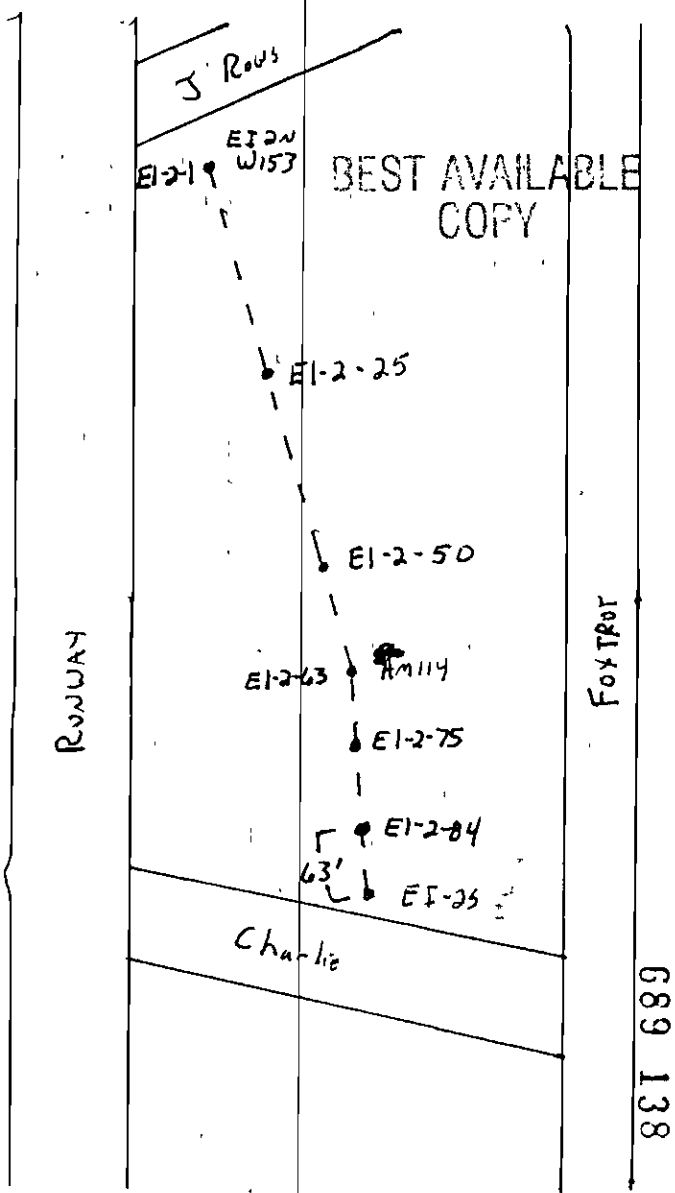
Unable to contact SMEP about clearance procedures.

Will call B. Bauer and inform him of possible schedule delay due to EI survey

Hutchinson Group completes EI-2.

(29)

24 Oct 00 cont



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25 Oct 00

Weather: Cloudy, morning fog, mild (70s) SE wind. 40% chance of storms today.

0800 D. Lowak meets Hutchinson Group at Base Ops. Obtain radio + proceed to flightline area after informing Base Ops Commander of work to be done today.

Hutchinson Group completed line EI-2 at station EI-2-84.

- EI-2-84 is 63' NNW of survey pt. EI-2S.

Move to work on EI-1.

- Start at EI-1 N and moving S.
- Station EI-1-1 is on survey pt. EI-1N

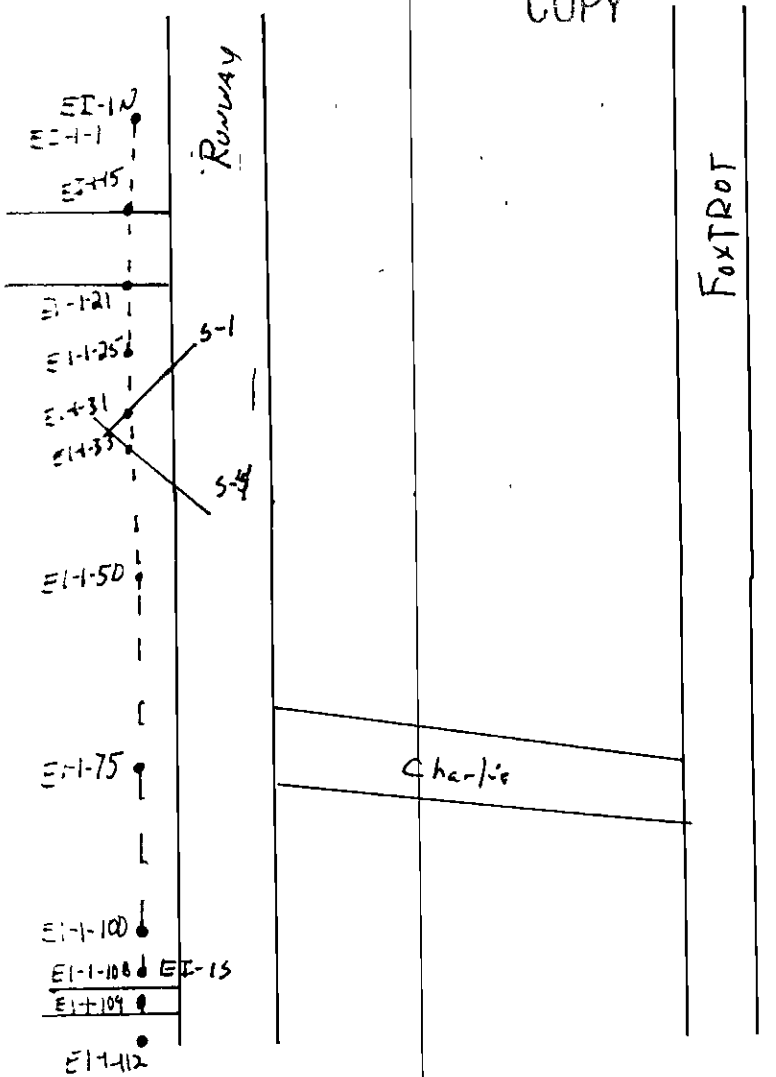
0930 Start first roll.

1030 M. Ke King on site.

1130 D. Lowak + M. King perform velocity survey @ LF05-02 at 3' lifts + hammer 3' from vertical.

1155 Complete 1st velocity survey. Move to complete 2nd velocity survey

25 Oct 00 cont



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25 Oct 00 cont

1205 Perform Seccond velocity survey at WH6LTA302. 3' lift + hammer 3' from well.

1245 D. Lowak + M. King depart flight line. Hutchinson group remains on flightline.
D. Lowak breaks for lunch
M. King of Seisplus is done w/ all seismic work.

1340 Return from lunch.
Receive call from M. Brooter of SM+P about procedures for obtaining dig permits
① Mark locations in white.
② Fax map to SM+P
③ Call Dig-Tess
④ Call City of Fort Worth
⑤ Get SM+P to sign dig permit + insert Dig-Tess confirmation # on permit
⑥ Submit dig permit to M. Dodyk so he can submit to NAVY.
⑦ Received signed + approved permit.

1400 Call B. Bauer + report progess of geophysical work.

25 Oct 00 cont

1445 Call M. Dodyk of AFLEE + give progress update.
- Seismic line S-1 crosses over EI-1 at S-1-68 and ~~EI-1-31~~ EI-1-31
- Seismic line S-4 crosses over EI-1 at S-4-88. and EI-1-33
- Survey pt EI-1S/S-2SW is between stations EI-1-107 + EI-1-108 12' S of EI-1-107 6' N of EI-1-108
- Station EI-1-109 is in middle of asphalt road.
- Seismic pt S-2-235 is 6' E of station EI-1-108
- EI line ends at station EI-1-112 which is 78' S of survey pt EI-1S/S-2SW.

1930 Complete line EI-1.
Load equipment depart flightline

2000 Return radio to Base Ops. Depart NAS FW JRB.

689 140

26 Oct 00

Weather: Cloudy, humid, mild (70s), S breeze, chance of rain.

0745 D. Lowak arrives at Base Ops.

0800 Hutchinson Group arrives, obtain radio + proceed to flightline. Set up on line EI-3 at S end. on survey point EI-3S moving N. Station EI-3-1 is on survey pt, 3' NNE of pt S-5-117, and 6' SW of pt S-3-59. Spacing of stations is 6m (18ft).

0910 Start test of EI-3.

1040 Speak w/ Jim about marking soil boring locations at

S-1-40	S-3-63
S-2-58	S-3-128
S-2-127	S-4-44 (middle of Lockheed)
S-3-25	S-5-89

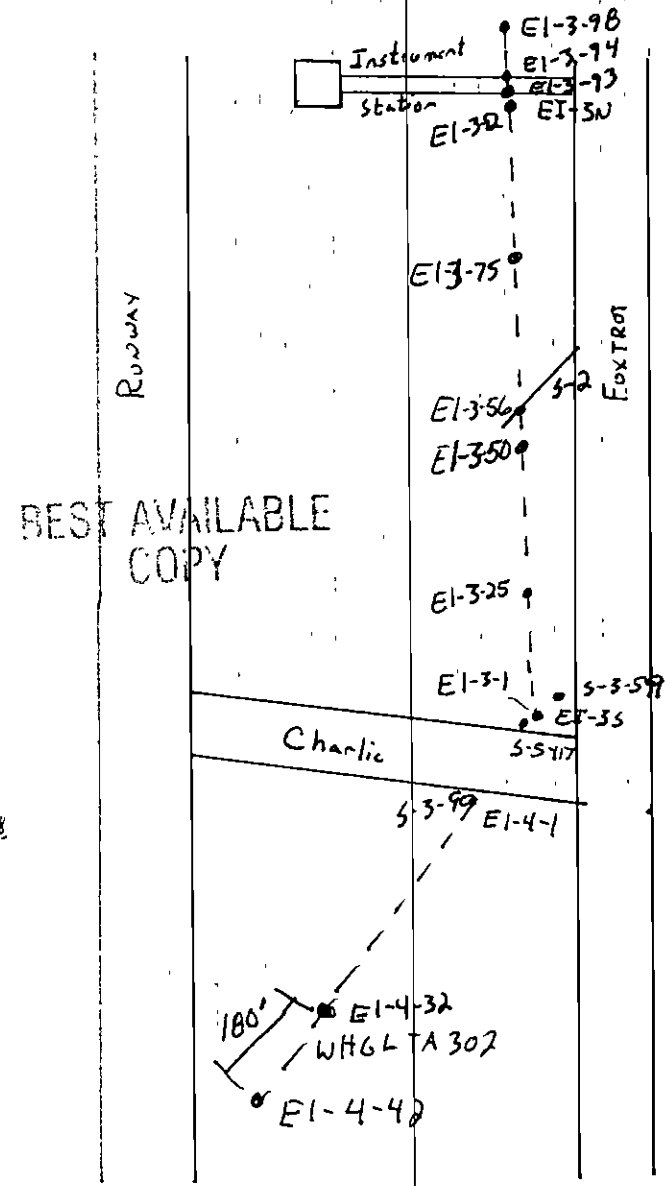
Will not mark at pt S-4-44.

1200 Break for lunch.

1300 Return from lunch, resume work on EI-3

Seismic line 5a crosses EI-3 at pt S-2-41 6' S of EI-3-56

26 Oct 00 cont



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26 Oct 00 cont.

- E1-3 runs past survey pt. E1-3N
- Station E1-3-92 is on survey point E1-3N
- Line E1-3 ends @ station E1-3-92
- Concrete road between stations E1-3-93 + E1-3-94

1600 Complete line E1-3, move to S side of taxiway Charlie to setup for line E1-4.

- ~~E~~ Station E1-4-1 starts at NE end on seismic pt S-3-90. moving SW.

1620 Start E1-4 test.

- E1-4-32 is at survey point E1-45/535 and well WH6LTA302
- Line E1-4 ends at station E1-4-42, 180' SW of survey pt E1-45/535.

1845 Complete line E1-4, load equipment, depart flight line.

1900 D. Lowak + Hutchinson Group depart MAS FW SRB.

27 Oct 00

Weather: Partly cloudy, humid, mild (70s) S breeze. Slight chance of showers.

0800 D. Lowak meets Hutchinson Group at Base Ops. Obtain radio and proceed to flightline. Hutchison Group will redo line E1-2. Setup starting at survey pt. E1-2S.

- ~~Pt~~ Station E1-2-1 is on survey pt. E1-2S.
- Station E1-2-15 is on S side of old concrete taxiway
- Station E1-2-23 is on N side of old concrete taxiway

★ Unable to collect data on concrete

- Station E1-2-25 is 6' SE of well HM-114, + 9' S of seismic S-2-134
- Station E1-2-26 is on seismic pt S-5-39

0945 Light drizzle starts.

1220 Break for lunch. Return Keys to M. Podyk + get him progress report.

1320 Return to site + resume work on line E1-2. Report into to Jim + M. MacDonald.

689 142

27 Oct 00 cont.

- Station E1-2-87 is 7' S of survey pt. E1-2N + well W153
- Station E1-2BB is 11' N of survey pt E1-2N + W153.
- Station E1-2-92 is on S edge of old taxiway
- Stations E1-2-93 thru E1-2-98 are on concrete, unable to collect data at these stations.
- Line E1-2 ends at station E1-2-98.

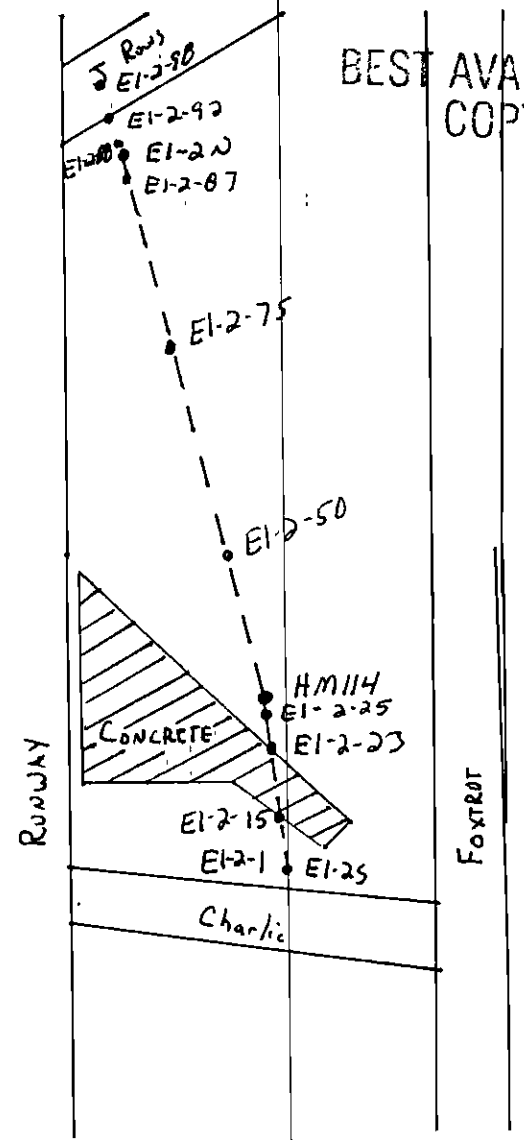
1600 Complete line E1-2

Load equipment.

Mark following SB Locations:

Location #	Reference
SAIC SB1	S-1-60
SAIC SB2	N of WJEUS004 E1-2
SAIC SB3	S of WTJUES004
SAIC SB4	S of WJEUS004
SAIC SB5	S-2-127
SAIC SB6	E1-2-75
SAIC SB7	S-2-58
SAIC SB8	S-5-89
SAIC SB9	S-3-128
SAIC SB10	S-3-108
SAIC SB11	S-3-25

27 Oct 00 cont.



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27 OCT 00 CONT

1730 D. Lowak + Hutchinson Group depart flight line, return radio. Receive print-outs of El lines Hutchinson Group departs.

1745 D. Lowak departs NAS Fort Worth JRB for D/FW Airport to return to San Antonio.

DJL 10-27-00

DIGGING PERMIT

03 Nov 00
- Call Dig-Tess 1-800-344-8377 Will notify: SWBT, AT+T Nexcom, + TXU Electric + Gas.
Confirmation # 003081650

07 Nov 00
- Recieve call from Dave Kraichtfield of AT+T Nexcom. Stated no cable servicing barracks.
Phone #: 800-372-1125, prompt 5

08 Nov 00
- Fax a map + a copy of digging permit to Mike Brantor of SM+P. Will clear area 1 day after given notice.
Phone # 817-633-~~4365~~ 4085
Fax # 817-633-4365

10 Nov 00
- Fax a map to Scott Neystel of FW water.
Phone # 817-212-2642
Fax # 817-877-8912

DIGGING PERMIT CONT.

14 Nov 00 Recieve call from Joe of Fort Worth Water 817-871-8296. Verbal clearance on all 11 locations. Nearest water line: 16" line 140' S of Charlie. No markings reported

15 Nov 00 Contact Mike Brantor of SM+P to start clearance

16 Nov 00 Call DIG-TESS to update ticket. New confirmation number: 003211621. Good until 01 DEC 00.

17 Nov 00 Receive call from AT+T Mexican All clear.

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04 DEC 00

:30 D. Lowak + R. Hoode meet Vortex (Eugen, Martin + Robert) at Visitor's Center to obtain visitor's passes.

:00 Arrive at T-Line. Vortex crew + R. Hoode attend flight line driving course.

D. Lowak meets w/ M. Dodyk of AFCEE, inform him of schedule, obtain keys to IDW yard + well custody seals.

:00 Enter IDW yard to store equipment after briefing Base Ops of SAIC's schedule. Vortex fills out medical data sheets + reviews HSP.

:00 Depart IDW yard, will begin work tomorrow @ 0630

Call B. Bauer to inform of progress.

DSZ
12-4-00

689-145

05 DEC 00

Weather: Cool (30-50s), partly cloudy NE breeze.

0630 D. Lowak + R. Hoade arrive at IDW yard. Waiting on Vortex. Prepare supplies for today. ~~Conduct~~ PL

Calibrate OVM, Model 580B SN 580V-60090-327, w/ 100ppm isobutylene, lot # 45670, to 99.9 ppm.

0650 Vortex at IDW yard. Conduct safety mtg.

0710 Obtain radios from Base Ops

0730 Set up on SB7, phone line marked 5' to E, storm drain marked 5' to W.

Hand dig to 3', clear

0750 Begin drilling WSAILTA002

Air Monitoring:

0-5'	0ppm	20-25'	0ppm
5-10'	0 ppm	25-26'	0ppm
10-15'	1.0 ppm		
15-20'	0 ppm		

0759 Collect AB down wind of rig exhaust. AB120500

05 DEC 00 cont

:[illegible] Collect EB from split spoon EB120500

:[illegible] Collect soil sample from WSAIL TA002 from 15-17' WSAIL TA002-01.

Water @ 17-18'

Goodland @ 25'

TD - 26'

Set well @ 26'

1' - 2" PVC sump

10' - 2" 10 slot PVC screen

15' - 2" PVC riser

Sand well w/ 16-30 sand

:[illegible]35 Complete well.

Load drums. Move to SB10

:25 Set up on SB10

R. Utilities marked in red 6' to S + 7' to N

Hand dig to 3'

:35 Begin drilling WSAIL TA003

Air Monitoring:

0-5'	0ppm	20-25'	0ppm
5-10'	0ppm	25-30'	0ppm
10-15'	0ppm	30-35'	1.6 ppm
15-20'	0ppm		

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689 146

05 Dec 00 cont

1103 Collect soil sample from WSAICTA003 @ 20-22'
WSAICTA003-01
Water @ 21'
Goodland @ 30.5'
Set well @ 31'
1'- 2" PVC sump
15'- 2" 10 slot PVC screen
15'- 2" PVC riser
Sand w/ 16-30 sand.

1235 Complete well. Load drums

1300 Break for lunch.

1340 Return from lunch, travel to SB1
Lines marked in red paint 15' to SW + 10' to NE
"OK" marked at location
Set up on location.

1425 Start drilling. BSAICTA001
Air Monitoring:

0-5'	0 ppm	15-20'	0 ppm
5-10'	0 ppm	20-25	0 ppm
10-15'	0 ppm	25-30	0 ppm
		30-35	0 ppm

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05 Dec 00 cont

Collect soil sample of BSAICTA001 @ 27-29', BSAICTA001-01 @ 1523
Collect duplicate at same depth. Send duplicate, will name sample BSAICTA002-01 w/ time of 539 + depth of 20.5-22.5.
[illegible]:15 M. Dodyk + A. West on site to check on progress. Locate wells in area to sample later this week. Coordinated w/ A. West to gain access to Lockheed Area
[illegible]:30 M. Dodyk + A. West depart site.
[illegible]:5 Complete BSAICTA001
Water @ 30'
Goodland @ 44'
Load 3 drums.
[illegible]:50 Depart site
Return to IDW yard. Unload
2 drums from WSAICTA002
2 drums from WSAICTA003.
3 drums from BSAICTA001.
740 SAIC + Vortex depart IDW yard.
830 Deliver samples to FedEX
COC 500373
Air bill # 823100396310

689 147

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06 Dec 00

Weather: Cloudy, cool (40-50's)
Wind move from ESE breeze. - Light precipitation NNW early morning hours

0645 D. Lowak + R. Hoode meet Vortex crew (Eugen, Martin + Robert) at IDW yard. Obtain radios from Base Ops. Travel to west side of runway via perimeter road.

0725 Set up on SB4. "OK" written in red pen. Calibrate OVM. Model 580B, SN 5800-60090-327 w/ 100 ppm isobutylene, lot # 45670, to 101 ppm

0735 Begin drilling WSAILTA004.
Air Monitoring:

0-5'	0ppm	25-30'	0ppm
5-10'	0ppm	30-35'	0ppm
10-15'	0ppm	35-40'	0ppm
15-20'	0ppm	40-45'	0ppm
20-25'	0ppm		

0746 Collect EB from split spoon EB120600

0829 Collect soil sample from WSAILTA004, 30-32', WSAILTA004-03

06 Dec 00 cont

WSAILTA004:
Water @ 32
Bedrock @ 42 TD: 42
Set well:
1' 2" PVC sump
20' 2" 10 slot PVC screen
2' 2" PVC riser
Let solids settle before sanding well. Sand w/ 16-30 sand.

1045 Complete well. Load 3 drums + clean area.
Drill rig + truck stuck in soft soil. Able to get trucks from well site. Soil very soft at next 2 locations. Call Vortex's main office + Bob Bauer of SAIC to discuss problem. Decide to cease drilling operations at this time. Vortex will complete surface completions tomorrow. Will reschedule installation of 2 wells at a later time.

1230 Depart site. Return to IDW yard to unload equipment.

530 Deliver samples to FedEx COCH 500324, Airbill# 8231003963 20

689 148

07 DEC 00

Weather: Cool (30-50s °F) clear w/ N breeze. Morning Frost.

0700 D. Lowak + R. Houde meet Vortex at IDW yard. Load supplies for well completions SAIC prepares for groundwater sampling.
Obtain radios from Base Ops.

0730 Arrive at WSAICTA002 to prepare well completion for concrete. SAIC calibrates equipment.

0743 Calibrate Horiba U-22 SN 9012023 w/ 100-4 pH standard solution, lot # 909004,
pH: 3.91 ORP: 316 mV
Cond: 4.53 mS/cm DO: 9.24 mg/L
Turb: 0 NTU Temp: 11.6 °C
Calibration complete.

0750 Calibrate OVM, Model 580B, SN 580U-60090-327, w/ 100ppm isobutylene, lot # 45670, to 100 ppm.

0755 Complete work @ WSAICTA002
Move to WSAICTA003

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07 DEC 00 cont

0820 Complete prep work at WSAICTA003.

0825 SAIC arrives at LF0502 to sample well, Vortex depart to prep WSAICTA004
Open well, ~~bra~~ DL Well seal # 0438634 was broken, lock was locked.

0856 Collect EB from bladder pump EB120700.

0930 Concrete truck arrives
Vortex pours pads at WSAICTA002 + WSAICTA003

0945 Sample LF05-02, LF05-02-01
Decon equipment.
Vortex travels to WSAICTA004 to pour pad + seal boring
Install seal 0438991 on well LF05-02. Move to HM-124

1001 Sample HM-124, HM124-01.
Move to HM-114.
Vortex completes concrete work.
Return to IDW yard to decon equipment.

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07 Dec 00 cont

1350 Sample HM-114, HM11401
Move to W153

1505 Sample W-153, W153-01, collect duplicate at well. Label W153-02 w/ time of 1524.
Use dedicated pump to purge + sample.

1631 Sample HM-126, HM126-01.
Decon equipment.

1700 Depart site.
Return to IDW yard to discharge purge water.
Pack samples for shipment + analyze samples for iron.

1900 Deliver samples to Fed Ex.
COC # 500375
Air bill # 8231 0039 6331.

DSL
12-7-00

08 Dec 00

Weather: Partly cloudy, sunny, (40-50°F)
NW breeze

0700 D. Lowak + R. Houde arrive at IDW yard to load purge water drum

0715 Meet A. West to gain access to Lockheed area.

0730 Arrive @ well W-156 to sample well.

0755 A. West departs site.
Calibrate OVM, Model 580B, SN 5800-60090-327, w/ 100ppm isobutylene lot # 45670, to 101.ppm
Calibrate Horiba U-22, SN 9012023, w/ 100-4 pH standard solution, lot # 909004,
pH: 4.01 DO: 9.99 mg/L
Cond: 4.65 mS/cm Temp: 10.3°C
Turb: 0 NTU ORP: 327 mV

0813 Collect EB from bladder pump. EB120800.

0859 Sample W-156, W-156-01.
Move to HM-113.

0905 Sample HM-113, HM113-01.
Move to HM-112

689'150

08 DEC 00 cont.

1121 Sample HM-112, HM112-01
Collect field duplicate at well HM112-02, marked w/ a time of 1135.
Use dedicated bladder pump to purge + sample well.
Move to HM-110.

1210 Report progress of field work to Bob Baker.

1232 Sample HM-110, HM110-01.

1300 Depart Lockheed area return badges. Break for lunch.

1400 Return to NAS FW SRB + obtain radio from Base Ops proceed to WH6LTA302.
Purge well dry w/ bladder pump. Allow well to recharge 80% before sampling w/ Teflon bailer.

1543 Sample WH6LTA302.
sample # WH6LTA302-01.
Decon equipment.

1600 Depart site. Return radio to Base Ops.

1615 Arrive at 10W yard

08 DEC 00 cont.

to discharge purge water
Pack samples for shipment.
Analyze samples for ferrous iron.
1515 Deliver samples to FedEx.
COC # 500376.
Airbill # 823100396342.

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DSL
12-8-00

689 151

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09 Dec 00

Weather. Cool (44-60°F), partly cloudy to cloudy, N wind.

0745 D. Lovak + R. Hovde arrive at IDW yard to load purge water drums. Proceed to Base Ops to obtain radio + enter flight line area

0805 Arrive at WSAILTA002 to develope well.

Calibrate OVM, Model 580B. SN 5800-6090-327, w/ 100 ppm isobutylene, lot # 45670, to 99.8 ppm

Calibrate Horiba U-22, SN 9012023 w/ 100-4 pH standard solution, lot # 909004.

pH: 4.02 DO: 9.50 mg/L

Cond. 4.57 mS/cm Temp: 14.4 °C

Turb: 0 NTU ORP: 332 mV

Calibration complete

0820 Open well. 0ppm

Bail 3 gal of heavy sediment water from well. Surge well. Begin to pump Unable to maintain constant flow.

09 Dec 00 cont

Surge well + continue pumping. Still unable to maintain constant flow. Continue to surge + pump Pump intermittently, allowing for well to recharge.

.35 Only extracted 18 gal, flowing very slowly, turbidity over 1000 NTU

.44 Depart WSAILTA002 to allow well to recharge. Development not complete.

Move to WSAILTA003.

50 Arrive at WSAILTA003.

OVM rdg: 0ppm

Bail 3 gal of heavy sedimented water from well. Well drying.

Unable to pump at constant rate w/ pump. Pump intermittently Pump 0.5 -1.0 gal every 10 min Turbidity is dropping rapidly.

.52 Complete development of WSAILTA003. Pumped 15 gal from well. Turbidity stabilized at 9.7 to 10.3 NTU.

Final TD of well, 30.82'

Move back to WSAILTA002.

500 Resume development of WSAILTA002.

09 DEC 00 cont.

Still unable to maintain a constant flow from WSAICTA002. Water not clearing.

- Mark following locations for survey:
  - ① Intersection of S-2 + EI-3 — S2EI3
  - ② N end of EI-3 — EI3N2
  - ③ N end of EI-4 — EI4N2
  - ④ S end of EI-4 — EI4S2

  Unable to locate North end EI-2.
- Install ID plates on wells WSAICTA002 + WSAICTA003. Photograph wells.

1620 Stop development of WSAICTA002. Development not complete, will resume tomorrow. Return radio to Base Ops.

1640 Return to IDW yard. Discharge development water, unload drums.

1700 Depart Base.

DJR
12-9-00

10 DEC 00

Weather: Partly cloudy. Temps (50-60s °F) S breeze.

0800 D. Lopak + R. Hoode arrive at IDW yard to load drums for transporting development water. Obtain radio from Base Ops.

0825 Arrive at WSAICTA004 to develope well. Calibrate OVM, Model 580B, SN 580V-60090-327 w/ 100 ppm isobutylene, lot # 45670, to 100.2 ppm.

Calibrate Horiba U-22, SN 9012023 w/ 100-4 pH standard solution lot # 909004.

pH: 4.01 — DO: 9.30 mg/L
Cond: 4.48 mS/cm — Temp: 16.9 °C
Turb. 0 NTU — ORP: 329 mV
Calibration complete

0830 Open well ~~5000~~ WSAICTA004, OVM rdg. 0ppm. Bail 2 gal of thick, heavy sediment water. Surge well. Begin pumping. Able to maintain flowrate of 1-2 gpm. Pump max

0915 Surge well, resume pumping.

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10 DEC 00 cont

1037 Depart WSAICTA004 to discharge development water 2 full drums 105 gal
Will return to complete development
Discharge 105 gal of development water at IDW yard.

1125 Return to WSAICTA004 to complete development.

1311 Complete development of WSAICTA004. Pump 225 gal
Turbidity down to 5.6 NTU
Final rdg: WL: 21.21'
TD: 42.24'

1320 Depart location. Proceed to IDW yard to discharge development water

1340 Discharge 120 gal of development water at IDW yard.

1420 Arrive at WSAICTA002 to continue development. OVM rds. 0ppm
Mark following locations for survey:

1. Intersection of S-1 + S4 — S1S4
2. Intersection of S-1 + EI-1 — S1EI1
3. Intersection of S-4 + EI-1 — S4EI1
4. SW end of S-1 — S1SW2
5. BSAICTA001

10 DEC 00 cont.

Could not locate south end of EI-1 or west end of seismic line 5.

Complete development of WSAICTA002.
Only able to maintain turbidity of well at 60 NTU.
Final measurements:
WL: 16.52'
TD: 26.04'

1550 Depart flight line. Return radio to Base Ops. Proceed to IDW yard + discharge development water.

1605 Depart NAS FW SRB.

DJL
12-16-00

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11 DEC 00

Weather. Cold (30-40s). N winds + gust partly cloudy. Artic front moving through area.

0715 D. Lewak + R. Houde arrive at IDW yard load drum for purge water.
Proceed to Base Ops to obtain radios.

0735 Arrive at WSAILTA003 to sample well.
Calibrate OVM, Model 580B, SN 5800-60090-327, w/ 100 ppm isobutylene, lot # 45670, to 99.7 ppm.
Calibrate Horiba U-22, SN 9012023, w/ 100-4 pH standard solution, lot # 909004.
pH: 4.00 DO: 10.56 mg/L
Cond: 8.455 mS/cm Temp: 14.1 °C
Turb: 0 NTU ORP: 330 mV
Calibration complete.

0750 Collect EB from Bladder pump EB121100-01.

0912 Sample WSAILTA003- at depth of 21-22', WSAILTA003-01.

11 DEC 00 cont

1155 Sample WSAILTA003 at depth of 24-25'. WSAILTA003-02.

1232 Sample WSAILTA003 at depth 29-30'. WSAILTA003-03.
Collect field duplicate, WSAILTA003-04. Write depth of 35-36' on COC w/ a time of 1059 for blind duplicate.
Install well seal 0438997 upon departure.

30 Depart site.
Call M. Dodyk to update on progress. He states he will be out ~~W~~ Tues + Weds at a state official may visit site today. Call + confirm all samples were received by PDP.
Break for lunch

:: Arrive at IDW yard, waiting on Vortex.

:: Vortex arrives, proceed to drilling location.

:: Set up on SB3. Conduct safety meeting

11 Dec 00 cont

Red paint markings 2' E of locations. Move locations over 5' to W to minimize risk of hitting utility.

1442 Begin drilling WSAILTA005.

Air Monitoring:

0-5'	0 ppm	25-30'	0ppm
5-10'	0 ppm	30-35'	0ppm
10-15'	0 ppm	35-37'	0ppm
15-20'	0ppm		
20-25'			

1505 A. West of Unitec on site observing drilling operations

1513 Collect EB from split spoon. EB 121100-02.

1532 Collect soil sample at WSAILTA005 @ 25-27'

WSAILTA005-01

Water @ 27'

Goodland @ 36', TD 36'

Set well.

1' - 2" PVC Sump

15' - 2" 10 slot PVC screen

20' - 2" PVC riser

1545 A. West departs site

11 Dec 00 cont.

Sand well w/ 16-30 sand.

1620 Complete well.

Clean area, Pour surface completion.

1745 Depart site. Return to IDW yard to stage drill rig.

Return radios to Base Ops

1815 Depart base.

Pack samples for shipment & analyze sample for Iron.

1940 Deliver samples to FedEx

COC # 500377

Airbill # 823100396353.

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DJL 12-11-00

689 156

12 Dec 00

Weather: Cold (20s °F), partly cloudy, Winds (15-20 mph) from the N
Possible afternoon sleet + snow.

0730 D. Lowak + R. Houde obtain radios from Base Ops. Proceed to IDW yard to meet Vortex.
Vortex arrives. Move to site. Drill rig has frozen radiator. Water tank on rig frozen solid.

0940 Arrive on site, at SB2.
Red paint marking utility 2' E of location. Move location 3' to W to be 5' from markings.
A. West from Unitec on site to observe drilling
Calibrate OVM, Model 580B, SN 5800-60090-327 w/ 100 ppm isobutylene, lot # 45670, to 99.4 ppm.

1005 Start drilling ☒SAILTA006
Air monitoring.

0-5'	0 ppm	20-25'	0 ppm
5-10'	0 ppm	25-30'	0 ppm
10-15'	0 ppm	30-35'	0 ppm
15-20'	0 ppm	35-40	0 ppm

12 Dec 00 cont

Collect EB from split spoon.
EB121200
Collect soil sample from ☒SAILTA006, 20-22'
☒SAILTA006-01.
A. West departs site.
Air Monitoring Cont:
40-45' 0 ppm
~~45-50 12-12 ppm~~
Center rod lodged in augers.
Possibly drilled into Poloxy aquifer
Call Jim + B. Beaver + inform them of events + that there is 46' of footage remaining on contract. Drill rig has also developed a hydraulic leak due to cold weather.
Decision was made to pull out of hole & grout hole, and drilling is complete. Will possibly sample one additional existing well.
Drilling begin to abandon boring.
300 Complete boring. Grout hole
330 Depart site.
Return to IDW yard to unload drums.

689 157

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12 DEC 00 cont.

Unload 3 drums from WSAICTA005 + 2 drums from BSAICTA006.

★ 15 IDW drums generated during drilling operations.

1415 Vortex departs NAS FW JRB. Complete w/ job. Lock gate. D. Lowak + R. Houde travel to fill CO_2 tanks. Purchase CO_2 @ FW Welding Supply. Pack samples for shipment

1520 Deliver samples to FedEx COC # 500378 Airbill # 823100396364.

1745 Return to NAS FW JRB to return radios to Base Ops. Delayed due to traffic + sleet. Will return radios tomorrow. Depart base. Receive call from B. Bauer, No further samples of existing wells. Remaining work: sample WSAICTA002 sample WSAICTA004, develope + sample WSAICTA005.

13 DEC 00

Weather: Cold. (30s°F), partly cloudy NW wind, ice on ground.

330 D. Lowak + R. Houde arrive at IDW yard to load drums for development water

[illegible] Arrive at WSAICTA005 to develope well

Calibrate OVM model 580B SN 580V-60090-327 w/ 100ppm isobutylene, lot # 45670. to 99.7ppm.

310 Begin well development

OVM rdg: 0ppm

Bail 4 gal of heavy sediment water from well. Surge well

Begin pump @ approx 1-1.5gpm

Calibrate Horiba U-22, SN 10120239~~09004~~, w/ 100-4 pH standard solution, lot # 909004

pH: 4.02 DO. 10.00 mg/L

Cond: 4.67 mS/cm Temp: 14.4°C

Turb: 0 NTU ORP: 314 mV

Calibration complete.

350 Surge well + resume pumping. Water settled up.

689 158

(70)

13 DEC 00 cont

1545 Complete development of WSAICTA005. Pumped 120 gal.
Final Measurements:
TD: 35.31
WL: 21.60
Mark locations WSAICTA005 + BSAICTA006 for surveyor
1600 Depart site.
Return to IDW yard to discharge development water.
Wash soil drums.
1700 Depart base

DSL
12-13-00

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(71)

14 DEC 00

[illegible] Cold (30-50°F's), clear, SE breeze, ice on ground.
[illegible]:15 D. Lovak + R. Hood arrive at IDW yard to load drum for purge water.
Decon bladder pump
[illegible]:59 Collect EB from bladder pump EB121400.
[illegible]:20 Return 2 radios from Monday to Base Ops. Obtain 1 charged radio for today.
[illegible]:40 Arrive @ WSAICTA002 to sample well.
Calibrate OVM, Model 580B, SN, 5800-60090-327, w/ 100 ppm isobutylene, lot # 45670, to 101 ppm.
Calibrate Horiba U-22, SN 9012023, w/ 100-4 pH standard solution, lot # 909004.

pH: 4.00	Temp: 11.94 °C
Cond: 4.60 mS/cm	DO: 4.0 mg/L
Turb: 0 NTU	ORP: 390 mV

Calibration complete.
[illegible]:49 Sample WSAICTA002-1
WSAICTA002-01

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14 Dec 00 cont.

1055 Arrive at WSAICTA004 to sample well at 3 depths.

1139 Sample WSAICTA004 at depth of 28-29', WSAICTA004-01.

1235 Sample WSAICTA004 at depth of 34-35'. WSAICTA004-02.

1337 Sample WSAICTA004 at depth of 40-41', WSAICTA004-03.

1400 Depart site for lunch. Return to IDW yard. Discharge purge water + drop drum. Report to McDodyk of progress.

1440 Deliver extra sample containers + cooler to FedEx to be shipped back to PDP. Air bill # 823100396489.

1530 Return to IDW yard to load drum. Proceed to flight line.

1550 Arrive at WSAICTA005

1636 Sample WSAICTA005 at depth of 23-24', WSAICTA005-01

1706 Sample WSAICTA005 at depth of 27-28', WSAICTA005-02

14 Dec 00 cont

1732 Sample WSAICTA005 at depth of 33-34', WSAICTA005-03. Load equipment

1800 Depart site. Return to IDW yard. Discharge purge water. Decon equipment + water drums. Load drums + equipment. Depart IDW yard, lock gate.

1900 Return keys + extra well seals to M. Dodyk. Inform him that we are finished & coordinate the arrival of surveyors next week. Depart base. Pack samples + equipment for shipment.

2000 Deliver samples + equipment to FedEx:

COC # 500379 2 coolers

Airbill #s: 823100396467

823100396478

Equipment to Response Rentals

Airbill # 823100396445

2000-2045 Analyze samples for Iron

TAB

Appendix C

APPENDIX C

Seismic Survey Report

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REPORT OF GEOPHYSICAL SEISMIC REFLECTION SURVEYS CONDUCTED FOR S.A.I.C.

AT

NAVAL AIR STATION
FORT WORTH, TEXAS

Interpre'Tech / SeisPulse LLC.
Geophysical Investigations for
Geotechnical Services
432 Greenbrae
Medford, Oregon 97504
Office (541) 734-0808, Fax (541) 734-0890

Interpre'Tech / SeisPulse LLC.
432 Greenbrae
Medford, Oregon 97504
(541) 734-0808

January 3, 2001

Mr. Robert Bouer
Project Manager
S.A.I.C.
4242 Woodcock, Suite 150
San Antonio, Texas 78228

Re: Seismic Reflection Survey, NAS Fort Worth, Texas.

Dear Mr. Bouer:

Interpre'Tech / SeisPulse LLC. is pleased to present the results of our seismic reflection geophysical survey conducted on the southern end of NAS Fort Worth, Texas. Our results are presented in standard seismic section presentation form with an associated structural cross section interpretation presented in a Microsoft Excel format.

We appreciate the opportunity to be of service to **S.A.I.C.** on this project. Comments on this report are welcome and should you have any questions regarding our report of geophysical activities, please do not hesitate to contact this office.

Very truly yours,
Interpre'Tech / SeisPulse LLC.

J. Michael King, M.Sc.
Member

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APPENDIX

A. SHOT-POINT MAP, SEISMIC PROFILES, EXCEL SPREADSHEETS AND VELOCITY SURVEYS

I. INTRODUCTION

The geophysical investigation was conducted at the area within the southern and central portion of the flight line at NAS Fort Worth, Texas. We understand that generally within our study area, Quaternary terrace alluvial deposits consisting of sand, silt and clay overlie Cretaceous rocks of the Walnut Formation. For purposes of this report, the Cretaceous rocks are grouped together and generally referred to as "bedrock". Our goal was to determine the depth to bedrock (Walnut Fm.) along the selected profile lines.

In October, 2000, ***Interpre'Tech / SeisPulse LLC.*** contracted with S.A.I C. to acquire seismic reflection data within the flight line area using the ***SeisPulse*** **Development Corporation** "Vertical Reflection Profile" (VRP) method of seismic survey and the ***SeisPulse*** seismic source (patent). The primary purpose of the study was to map the top of "bedrock".

The investigation required a certain amount of "ground truthing" that included ties with borings for depth-time calibration. A total of eight (8) borings were used as calibration points. The boring names are noted on the attached seismic sections (Appendix A).

II. DATA ACQUISITION

Data for this investigation were acquired using one active channel of a 12-channel Geometrics S-12 seismograph and a Mark Products geophones (Mark 40A). All data was recorded at a ¼-ms sample interval and a record length of 512 ms.

Data acquisition utilized the ***SeisPulse*** VRP method of seismic reflection survey which employs near vertical ray paths rather than a multiplicity of source and receiver stations that have common depth points (CDP). The CDP methods sums a collection of recorded traces from common source-receiver offsets to increase the signal to noise level while the VRP method sums a number of vertical acquired traces, at a single station, to arrive at an increase in the signal to noise ratio.

The ***SeisPulse*** seismic source was mounted on a two wheeled cart. The system operates using propane as the seismic energy source. After the small propane bottle is connected to the ***SeisPulse*** source, propane gas is injected and exploded in a combustion chamber attached to a shock tube. The expanding gas forms a pressure ridge inside the shock tube and strikes the ground forming the elastic shock wave. A geophone is placed 1-foot away from the base of the seismic source.

While one person operated the seismic source and receiving geophone, another person acquired the data on the cart. A minimum of six (6) records were collected at each shot point location. The records were edited and then summed together to increase the signal to noise ratio. This rational assumes that all the reflective energy arrives at the same time and thus be additive, while noise is random and will not be additive.

After all the records of the station were evaluated for consistent signal shape and a good signal to noise ratio was achieved, the truck moved to the next station and the process repeated. A measuring tape was used to determine the distance between stations.

Reflection Profiles

The investigation resulted in the acquisition of five (5) seismic reflection lines. One (1) line was orientated east-west, one (1) line was orientated northwest-southeast and three (3) lines were orientated northeast-southwest. Each lines are separated into fifty (50) station segments (for ease of presentation) and they are presented with a west orientation on the left of each seismic section. The seismic data were acquired on 10-foot shot point spacing. Individual seismic reflection "picks" of events were made at the trough above the peak associated with the top of bedrock. These picks will and do vary with the frequency of the reflector. Lower frequency reflectors may indicate a change in reflective interface (i.e., weathered bedrock to competent bedrock).

Topographically, the area can best be described as relatively flat. Due to the slight elevation change of the surface topography, the interpreted seismic data is presented without elevation corrections and are presented as a flat horizontal ground surface. The elevation data at each location was provided by SAIC and was integrated into the interpreted structural cross section. These elevations were incorporated in the Microsoft Excel spreadsheet format (Appendix A).

Available well boring data, supplied by Dr. Jin, provided the depth to bedrock data that was converted to time using an average velocity, and plotted on the seismic sections (Appendix A).

Velocity Surveys

Two (2) down-hole velocity survey were completed at WHGLTA302 and LF05-02. Data were acquired using a 2-inch diameter down hole geophone tool. The check shot intervals were collected using 3 foot vertical separation with a 3 foot offset. Boring WHGLTA302 had an average velocity of 1,229 ft/sec from the surface to the top of the Walnut Formation, while boring LF05-02 had an average velocity of 1,723 ft/sec through this same alluvial interval. Eliminating the low average velocity observed in boring WHGLTA302 and averaging the time tie velocities generated by all other tie borings along the seismic lines, an average velocity of 1,600 ft/sec was found as a "best fit" velocity and was used as a constant velocity across the survey. The low average velocity associated with boring WHGLTA302 appears to be localized since a similar error is observed at LF50-01 (68 ft. east of line 3), but increases in correlation velocity to 1,409 ft/sec at boring SB-10, which is located 400 feet to the northeast . The extent of this localization and its cause might be associated with local geological conditions in the area.

This velocity data, along with the other correlation borings, provided a generalized average velocity through the alluvial section (1,600 ft/sec) which was used to convert time to depth in the mapping of the bedrock (Walnut Fm.).

Quality Control/Quality Assurance

Since we deal in "near field" effects, one method of controlling the quality of shallow seismic data acquisition is the assurance that the data acquired is in fact a reflection and not another source of wave energy. One of the most common methods is to conduct a walk-away noise test.

This test is conducted by providing a stationary source and moving a geophone (receiver) at one foot increments away from the source to a typical distance of 9 to 11-feet enabling the identification of the groundroll (the direct surface wave between the source and receiver) and the reflector. The ground roll, moving at a constant velocity, will appear sloped while the reflector should appear coherent and flat.

Interpretation of the walk away noise test indicates that a 1-foot geophone offset (viewed at trace #1) from the seismic source will allow the identification of a 35-ms reflector and deeper reflection events.

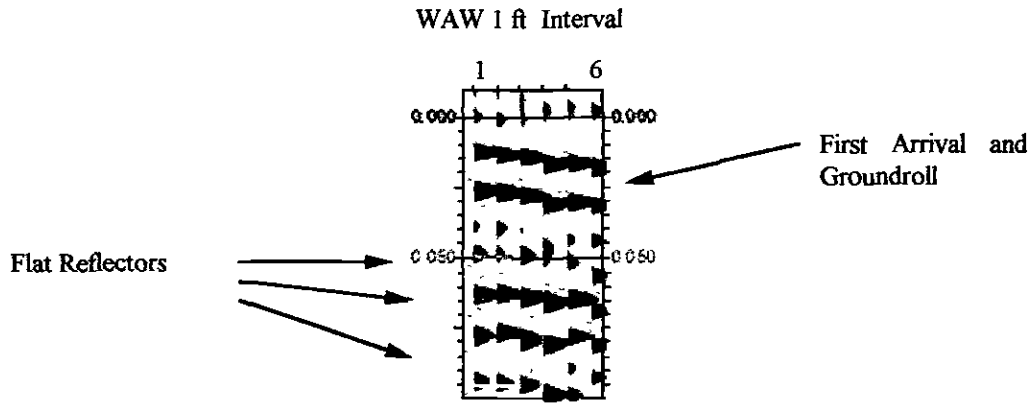


Figure 1, Walkaway noise test.

III. DATA PROCESSING

The seismic data processing was completed on a microcomputer using ***EavesDropper***, a set of commercial data processing algorithms available from the Kansas Geological Survey. The processed data was exported to ***Seismic Micro Technology Kingdom Suite*** for time picking and coloring. The final sections were exported to ***Adobe Illustrator*** for final drafting. The initial data processing flow was similar to those used to process seismic data in oil and gas exploration with the exception of the algorithms necessary to provide time variant filtering and spectral whitening.

Table 1. Data processing flow.

1. Conversion from Geometrics to KGS EavesDropper format
2. Edit traces
3. Sort Data
4. Scale (500-ms window)
5. Filter - bp (HZ) 15 45 60 90
6. Migration
7. Residual statics (10-ms window, 3-ms maximum shift)
8. Stack

Numerous band pass filters were applied to the data in an effort to determine the optimum filter parameters. Final data processing was completed using a band pass filter whose frequencies were (15 45 60 90 HZ). Migration was used to suppress out of plane noise, refraction's, and boundary effects (edge or end effects).

IV. INTERPRETIVE RESULTS

Final Sections

The primary objective of the reflection seismic survey was to identify and map the top of bedrock surface. Identification of coherent events for the raw field records was essential for the proper identification and timing of reflection events on the final seismic sections. Geologic descriptions of the borings provided the identification of the reflection event associated with the bedrock interface.

Deviations in calculated depth of bedrock reflectors from actual boring depths varied due to the use of a constant velocity throughout the survey area. Seismic depth deviations from actual can also be an indicator of the seismic survey accuracy within localized areas.

While near surface interval velocities may vary from station to station resulting in slight shifts in the accuracy of the depth to bedrock, frequency and amplitude variations in the "peak" identified with the top of the "bedrock" may represent changes in the interface between the overlying unconsolidated sediments and bedrock material. Density changes are often caused by rock fracturing, water saturation and transitions from weathered bedrock to competent bedrock. Actual identification of these density changes would require extensive geophysical laboratory investigations and computer modeling.

Table 3. Comparison of Soil Boring depths to calculated seismic depths.

The following Soil Borings are on, or near, a seismic point.

Depth to Walnut Seismic (ft)	Depth to Walnut Soil Boring (ft)	Closest Soil Boring	Difference (ft)
42	44	SB-1	2
37	39	W153	2
23	25	SB-7	2
38	38	HM-114	0
28	17	WHGLTA302	-11*
36	31	SB-10	-5*
51	51	HM-112	0
25	27	LF05-02	2

*The boring is located in an area of lower velocity alluvial material.

The final seismic time sections are presented in both a variable-area wiggle trace and amplitude display for user preference. The final interpretation of the seismic data incorporates a peak which has a red colored line time pick. The timed traces were converted to depth using a constant average velocity and are presented both in spreadsheet and cross section form (Appendix A.).

Table 3 presents a comparison of Walnut bedrock depths between soil borings to their companion seismic shot points. The seismic time horizon was converted to depth using an average velocity of 1,600 ft/sec across the survey site. The results of this comparison (except in the area of low velocity) suggest that the average seismic depth error ranges between 0 ft to +2 ft. This error is most likely caused by using one "best fit" average velocity throughout the site, the exception being the area near SB-10 and WHGLTA302. It is suggested that a velocity gradient be applied within this area of low average velocity. Any near surface changes or geologic variations from the ground surface to the top of the Walnut bedrock surface will and can cause a deviation from the average "best fit" velocity.

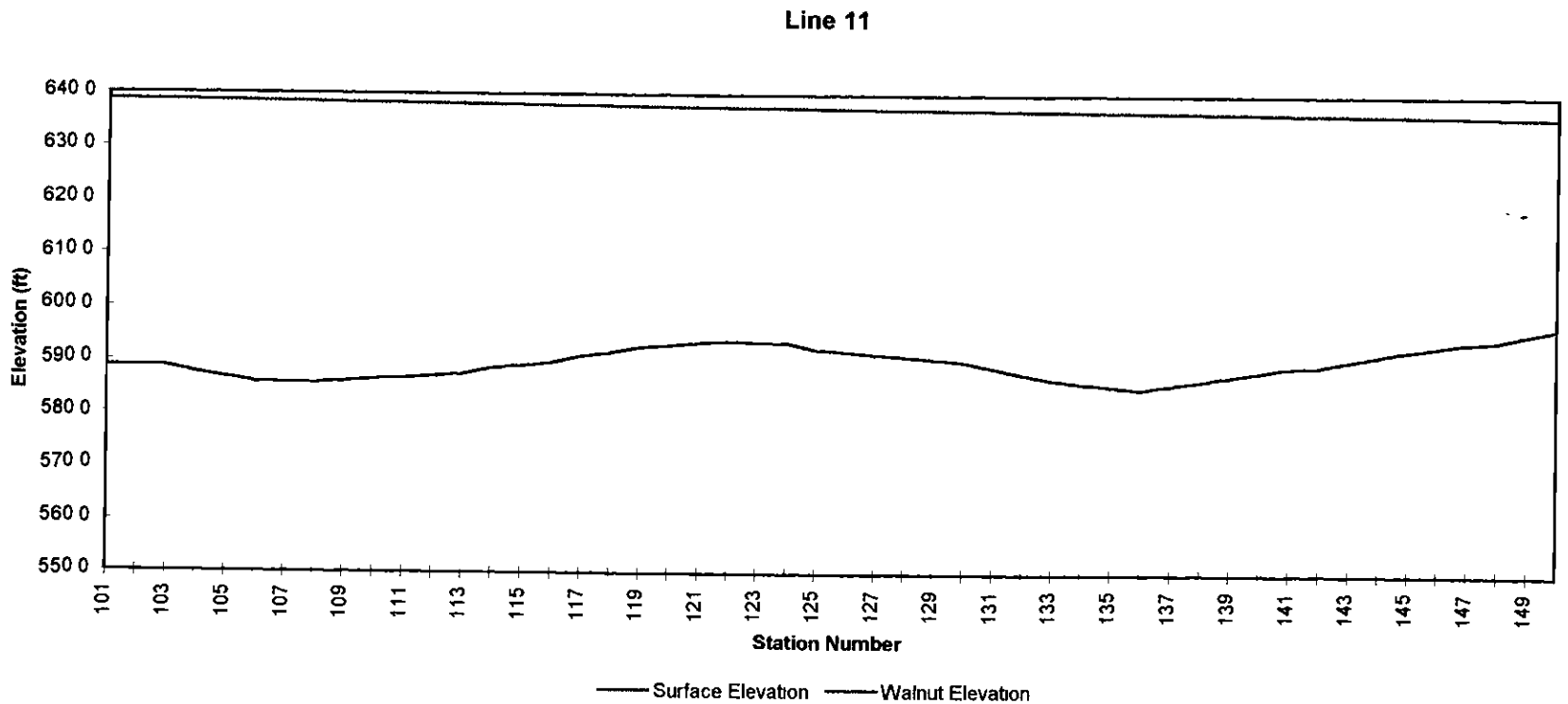
V. LIMITATIONS

While the methodology of seismic reflection has been successfully utilized by earth scientists since 1927, certain variables are inherent in the conversion from the time domain to depth. These variables include, but are not limited to, field acquisition parameters, data processing parameters, individual interpretation, spatial velocity, temporal displacement and spatial frequency.

Interpre'Tech / SeisPulse LLC. has provided for the exclusive use of the **S.A.I.C.** its findings, conclusions, and professional advice after preparing such information in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the field of geophysics. This acknowledgment is in lieu of all warranties either expressed or implied.

* * *

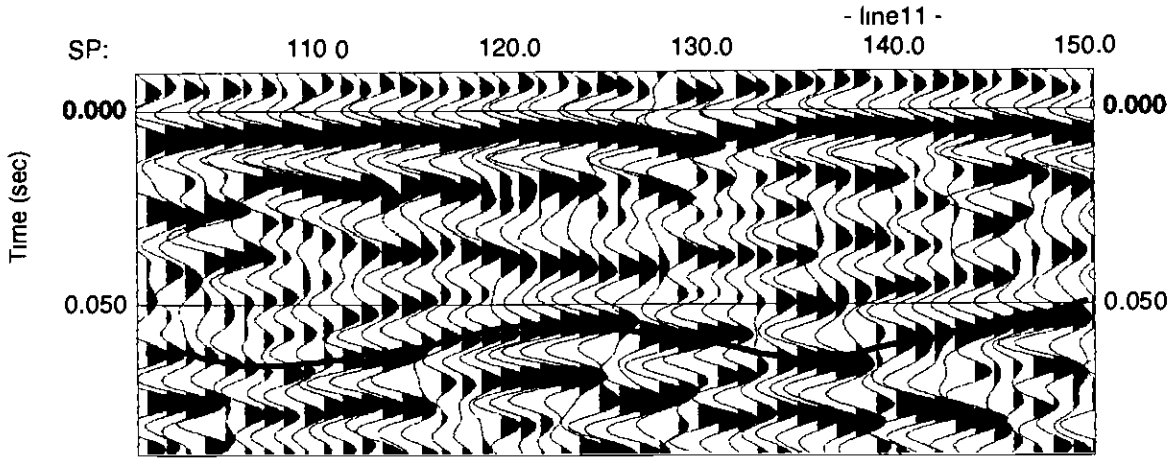
APPENDIX


Line 11
640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
Elevation (ft)
101
103
105
107
109
111
113
115
117
119
121
123
125
127
129
131
133
135
137
139
141
143
145
147
149
Station Number
Surface Elevation
Walnut Elevation

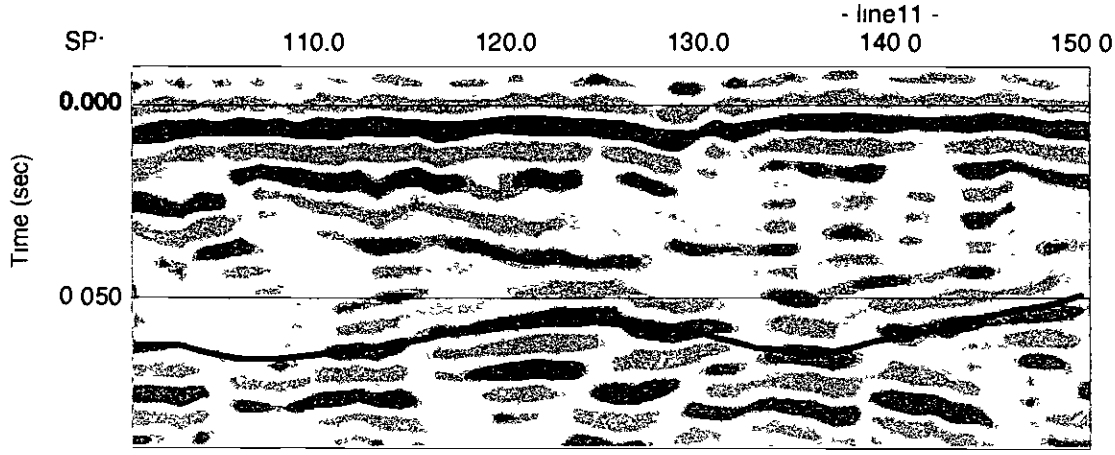
689 173

NAS-2000 Line 11

Station No	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
HM-112	2293140	6964217		51		638 7	587 7	Hm112 (51')
101	2293140	6964255	0.063	50	101	638 7	588 7	
102	2293148	6964262	0.063	50	102	638 7	588.7	
103	2293155	6964268	0.063	50	103	638 6	588.6	
104	2293163	6964275	0 064	51	104	638.6	587 4	
105	2293170	6964282	0 065	52	105	638.5	586.5	
106	2293178	6964288	0.066	53	106	638 5	585 7	
107	2293185	6964295	0 066	53	107	638.4	585 6	
108	2293193	6964302	0.066	53	108	638 3	585.5	
109	2293200	6964308	0.066	52	109	638.3	585 9	
110	2293208	6964315	0.065	52	110	638.2	586.2	
111	2293215	6964322	0 065	52	111	638.2	586 6	
112	2293222	6964328	0.064	51	112	638.1	586.9	
113	2293230	6964335	0.064	51	113	638 1	587 3	
114	2293237	6964342	0.062	50	114	638.0	588 4	
115	2293245	6964348	0.061	49	115	638.0	589.0	
116	2293252	6964355	0 061	48	116	637.9	589.5	
117	2293260	6964362	0.059	47	117	637.9	590.8	
118	2293267	6964369	0.058	46	118	637 8	591.4	
119	2293275	6964375	0 057	45	119	637.8	592.5	
120	2293282	6964382	0.056	45	120	637.7	592.8	
121	2293290	6964389	0.055	44	121	637.6	593.3	
122	2293297	6964395	0.055	44	122	637 6	593 7	
123	2293305	6964402	0 055	44	123	637.5	593.4	
124	2293312	6964409	0.055	44	124	637.5	593.5	
125	2293320	6964415	0.057	45	125	637.4	592.2	
126	2293327	6964422	0.057	46	126	637 4	591.8	
127	2293334	6964429	0.058	46	127	637 3	591.3	
128	2293342	6964435	0 058	46	128	637.3	590 9	
129	2293349	6964442	0.059	47	129	637 2	590.4	
130	2293357	6964449	0.059	47	130	637.2	590 0	
131	2293364	6964456	0.060	48	131	637 1	588.9	
132	2293372	6964462	0.062	49	132	637 1	587.7	
133	2293379	6964469	0.063	50	133	637.0	586 6	
134	2293387	6964476	0.064	51	134	637.0	586.0	
135	2293394	6964482	0 064	51	135	636.9	585.4	
136	2293402	6964489	0.065	52	136	636.8	584.8	
137	2293409	6964496	0.064	51	137	636.8	585 7	
138	2293417	6964502	0.063	50	138	636 7	586.5	
139	2293424	6964509	0.062	49	139	636.7	587.3	
140	2293432	6964516	0.061	48	140	636.6	588.2	
141	2293439	6964522	0.060	48	141	636 6	589 0	
142	2293446	6964529	0.059	47	142	636.5	589.3	
143	2293454	6964536	0.058	46	143	636.5	590.3	
144	2293461	6964543	0.056	45	144	636.4	591 4	
145	2293469	6964549	0.055	44	145	636.4	592.4	
146	2293476	6964556	0.054	43	146	636 3	593 1	
147	2293484	6964563	0 053	42	147	636.3	593.9	
148	2293491	6964569	0.053	42	148	636.2	594.2	
149	2293499	6964576	0.051	41	149	636.2	595 4	
150	2293506	6964583	0 050	40	150	636 1	596.5	



Wiggle Trace



Amplitude

Seismic Reflection Line 11

NAS Fort Worth, Texas

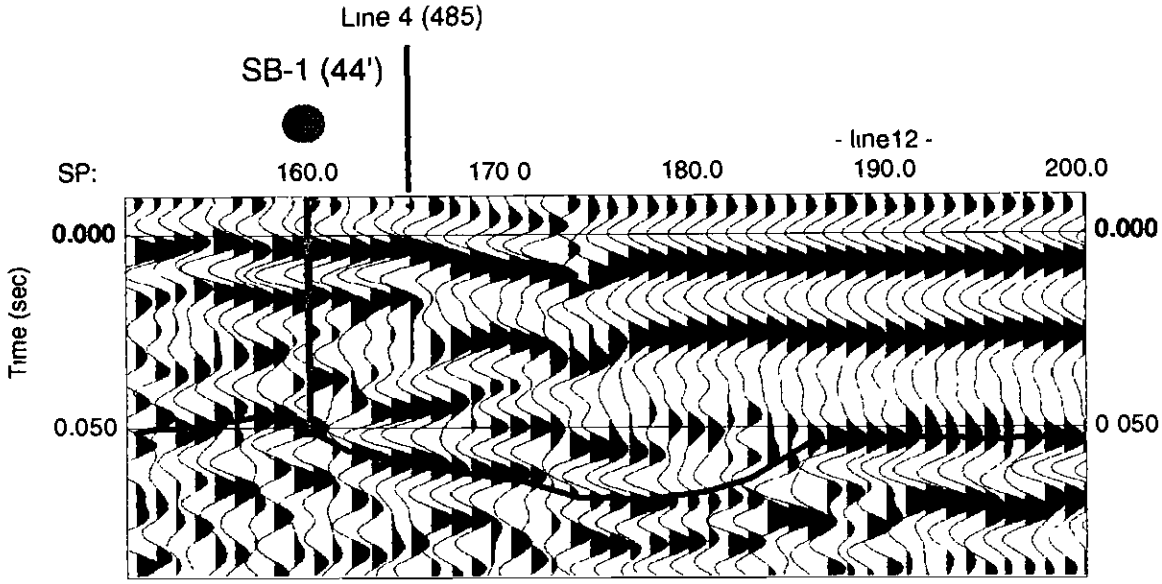
Explanation.

Soil Boring

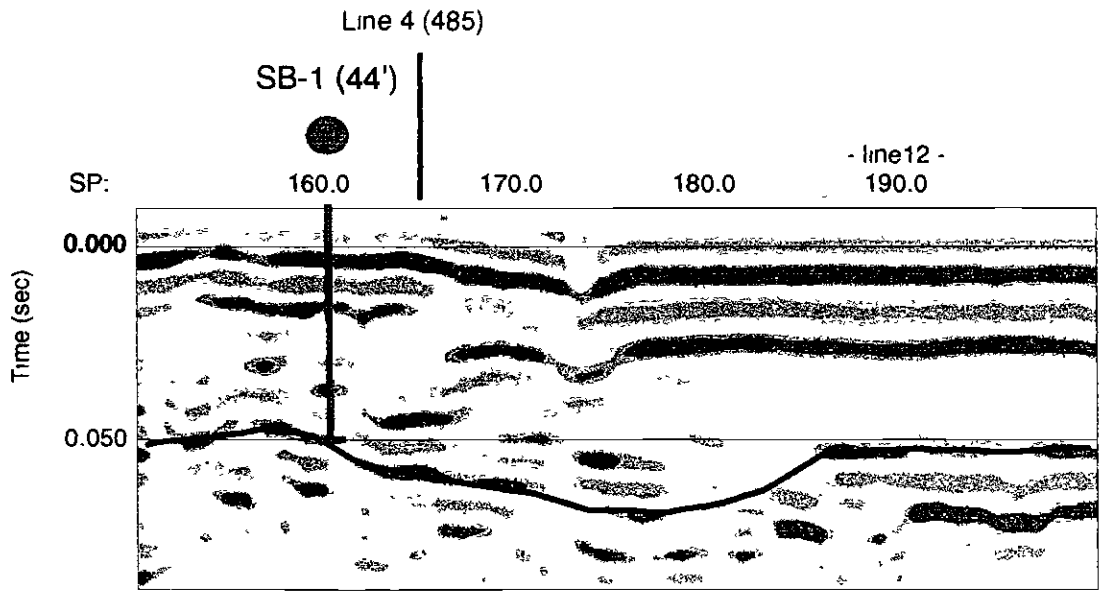
Bedrock

Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541 734 0808



Wiggle Trace



Amplitude

Seismic Reflection Line 12

NAS Fort Worth, Texas

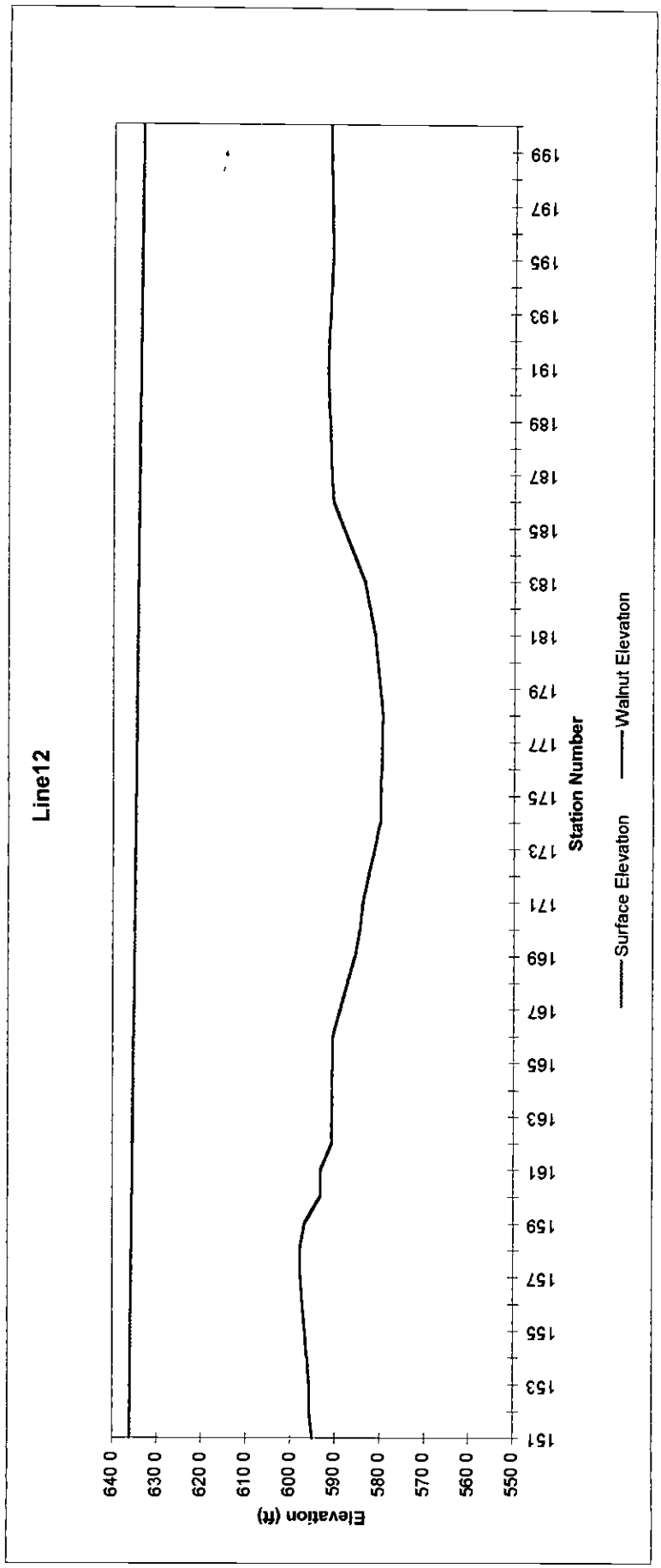
Explanation

Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541 734 0808


Line12
Elevation (ft)
640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
151
153
155
157
159
161
163
165
167
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171
173
175
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179
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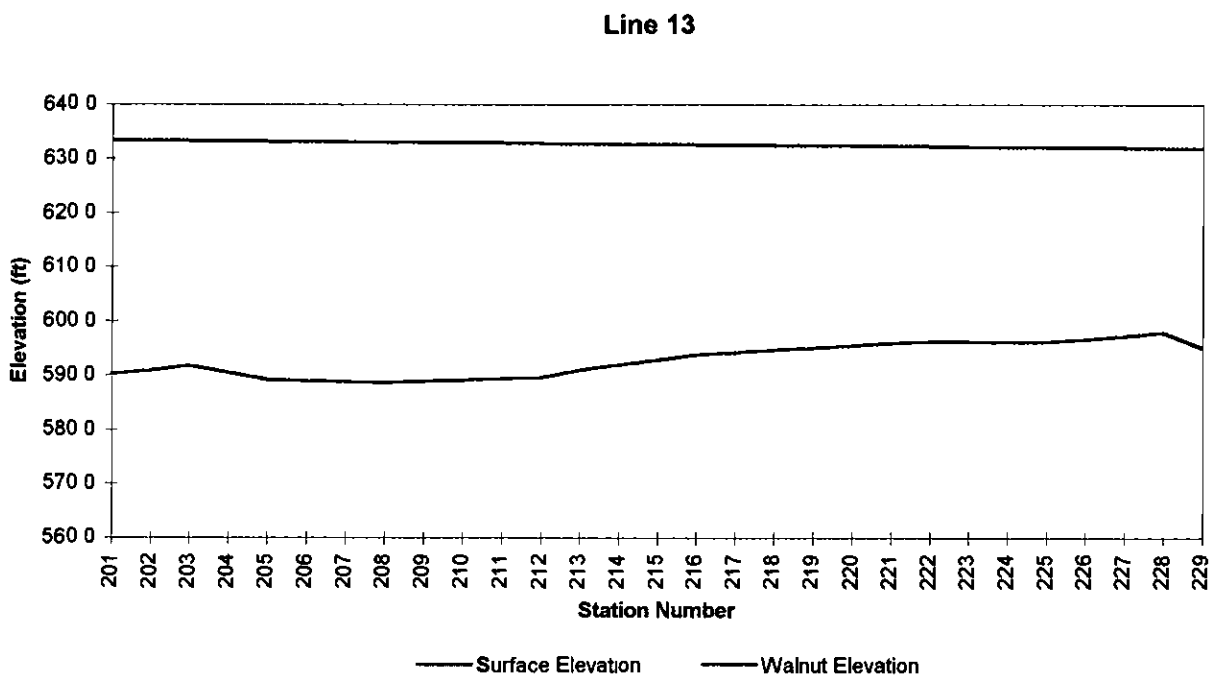
183
185
187
189
191
193
195
197
199
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 12

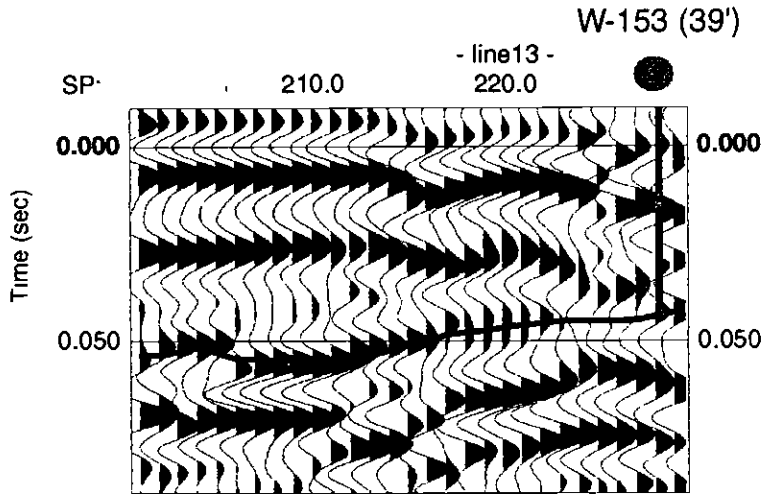
Station No	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
151	2293514	6964589	0 052	41	151	636 0	594 8	
152	2293521	6964596	0.051	40	152	636.0	595.6	
153	2293529	6964603	0.051	40	153	635 9	595.5	
154	2293536	6964609	0 050	40	154	635 9	596.0	
155	2293544	6964616	0.049	39	155	635.8	596 6	
156	2293551	6964623	0.048	39	156	635.8	597.1	
157	2293559	6964630	0 048	38	157	635 7	597 6	
158	2293566	6964636	0.048	38	158	635.7	597 7	
159	2293573	6964643	0 049	39	159	635 6	596 7	
160	2293581	6964650	0.053	42	160	635.6	593 2	SB-1 (44')
161	2293588	6964656	0 053	42	161	635 5	593 1	
162	2293596	6964663	0.056	45	162	635.5	590 7	
163	2293603	6964670	0.056	45	163	635 4	590 6	
164	2293611	6964676	0.056	45	164	635 3	590 5	
165	2293618	6964683	0.056	45	165	635.3	590 5	
166	2293626	6964690	0.056	45	166	635.2	590.4	Line 4 (484)
167	2293633	6964696	0.058	46	167	635.2	588 8	
168	2293641	6964703	0.060	48	168	635.1	587.1	
169	2293648	6964710	0.062	50	169	635.1	585 5	
170	2293656	6964717	0.063	51	170	635.0	584.4	
171	2293663	6964723	0 064	51	171	635 0	583 8	
172	2293671	6964730	0.066	52	172	634.9	582.5	
173	2293678	6964737	0.067	54	173	634 9	581 3	
174	2293685	6964743	0 069	55	174	634.8	580.0	
175	2293693	6964750	0.069	55	175	634 8	579 9	
176	2293700	6964757	0.069	55	176	634.7	579.7	
177	2293708	6964763	0 069	55	177	634 7	579.6	
178	2293715	6964770	0.069	55	178	634.6	579 4	
179	2293723	6964777	0 068	55	179	634.5	580 0	
180	2293730	6964783	0.067	54	180	634.5	580 6	
181	2293738	6964790	0.067	53	181	634.4	581 2	
182	2293745	6964797	0 065	52	182	634 4	582 4	
183	2293753	6964803	0.064	51	183	634.3	583.5	
184	2293760	6964810	0.061	48	184	634 3	585.9	
185	2293768	6964817	0.058	46	185	634.2	588.2	
186	2293775	6964824	0 055	44	186	634.2	590 6	
187	2293783	6964830	0.054	43	187	634 1	590.9	
188	2293790	6964837	0.054	43	188	634.1	591.2	
189	2293797	6964844	0 053	43	189	634.0	591 4	
190	2293805	6964850	0.053	42	190	634 0	591 7	
191	2293812	6964857	0.053	42	191	633.9	591.9	
192	2293820	6964864	0 053	42	192	633.9	591 7	
193	2293827	6964870	0.053	42	193	633.8	591.4	
194	2293835	6964877	0 053	43	194	633 7	591 1	
195	2293842	6964884	0.054	43	195	633 7	590.9	
196	2293850	6964890	0.053	43	196	633.6	591 0	
197	2293857	6964897	0 053	42	197	633.6	591.1	
198	2293865	6964904	0 053	42	198	633.5	591 2	
199	2293872	6964911	0.053	42	199	633.5	591 3	
200	2293880	6964917	0.053	42	200	633 4	591 4	


Line 13
640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
Elevation (ft)
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
Station Number
Surface Elevation
Walnut Elevation

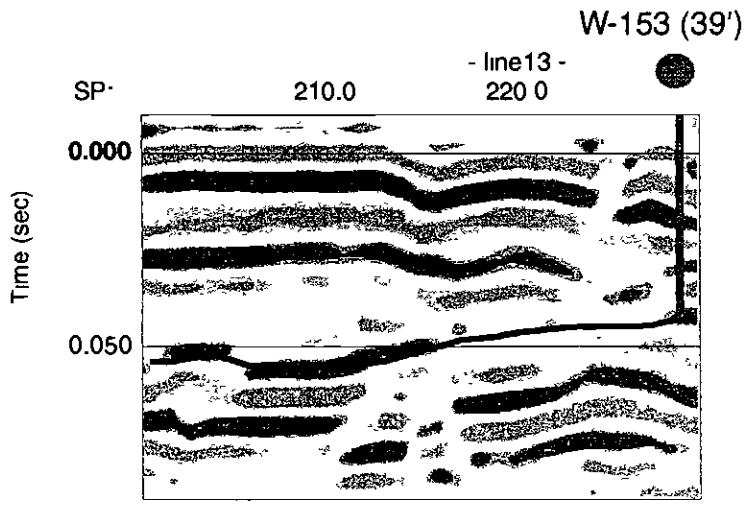
689 179

NAS-2000 Line 13

Station No	Easting	Northing	Time	Depth	Station No	ELEV	Elevation	Note 2
201	2293895	6964931	0 054	43	201	633 3	590.1	
202	2293902	6964937	0.053	43	202	633.3	590 7	
203	2293910	6964944	0 052	42	203	633 2	591.6	
204	2293917	6964951	0.054	43	204	633.2	590.4	
205	2293924	6964957	0 055	44	205	633 1	589.1	
206	2293932	6964964	0 055	44	206	633.0	588.9	
207	2293939	6964971	0.055	44	207	633.0	588 7	
208	2293947	6964977	0.056	44	208	632 9	588.5	
209	2293954	6964984	0.055	44	209	632.9	588.8	
210	2293962	6964991	0.055	44	210	632.8	589 0	
211	2293969	6964998	0.054	44	211	632 8	589.3	
212	2293977	6965004	0.054	43	212	632.7	589 5	
213	2293984	6965011	0.052	42	213	632.7	590.9	
214	2293992	6965018	0.051	41	214	632.6	591.8	
215	2293999	6965024	0 050	40	215	632.6	592 8	
216	2294007	6965031	0 049	39	216	632.5	593.7	
217	2294014	6965038	0.048	38	217	632.5	594.1	
218	2294022	6965044	0 047	38	218	632 4	594.6	
219	2294029	6965051	0.047	37	219	632.4	595 0	
220	2294036	6965058	0.046	37	220	632 3	595 4	
221	2294044	6965064	0 046	36	221	632.2	595.8	
222	2294051	6965071	0.045	36	222	632 2	596.2	
223	2294059	6965078	0.045	36	223	632.1	596 1	
224	2294066	6965085	0 045	36	224	632 1	596.1	
225	2294074	6965091	0.045	36	225	632.0	596 0	
226	2294081	6965098	0 044	35	226	632 0	596 6	
227	2294089	6965105	0.044	35	227	631.9	597 1	
228	2294096	6965111	0 043	34	228	631 9	597.9	
229	2294104	6965118	0.046	37	229	631.8	595.0	W153 (39')
W-153	2294096	6965106		39	W-153	631 9	592 9	



Wiggle Trace



Amplitude

Seismic Reflection Line 13

NAS Fort Worth, Texas

Explanation

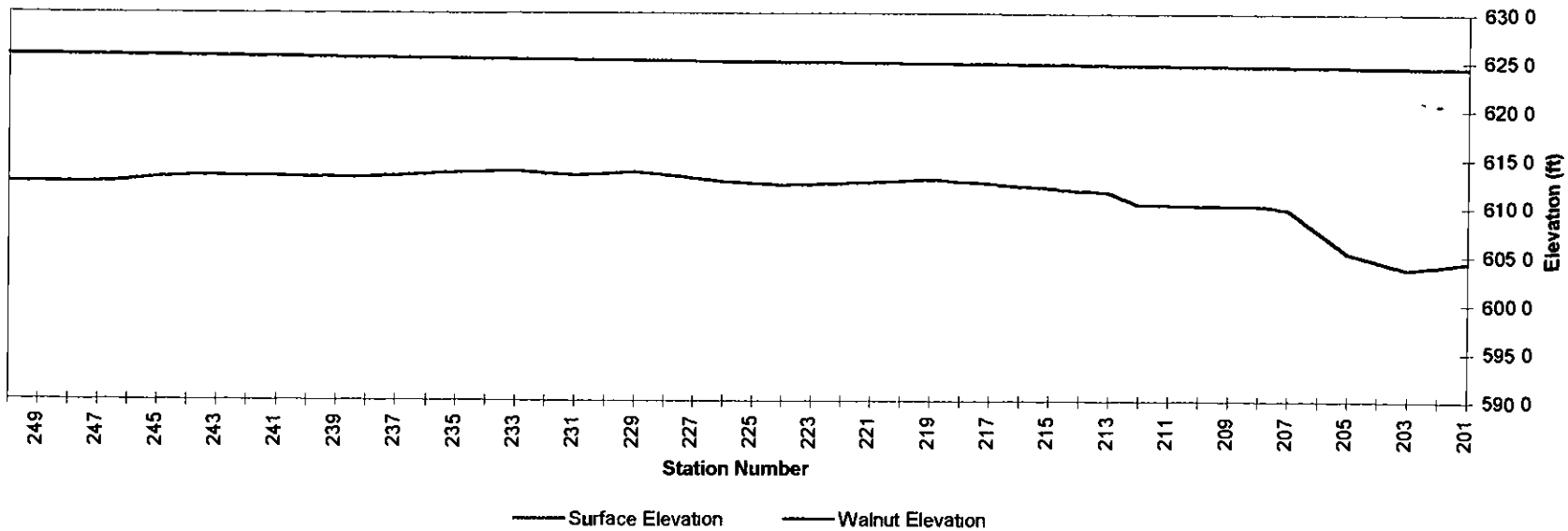
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

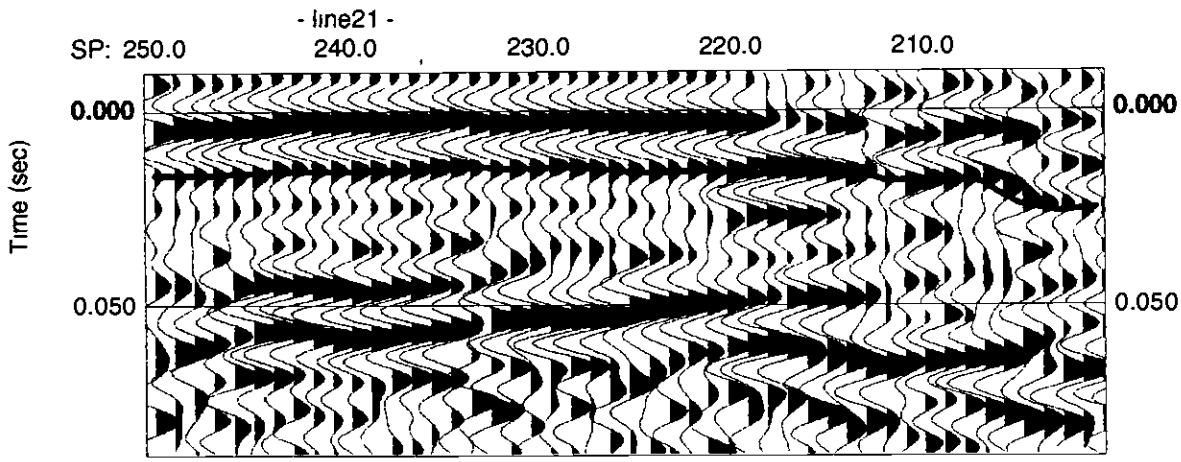
432 Green Brae
Medford, OR 97504
541 734 0808

Line 21

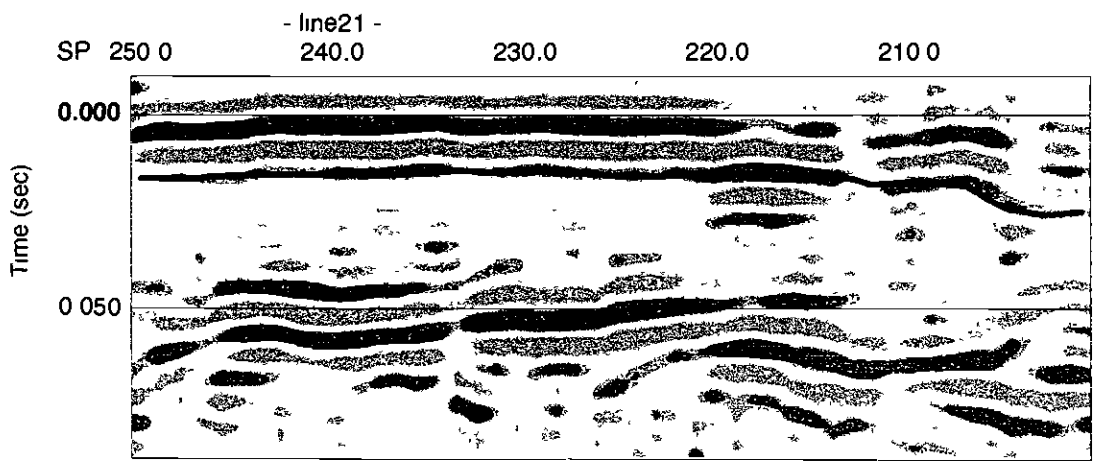

630 0
625 0
620 0
615 0
610 0
605 0
600 0
595 0
590 0
Elevation (ft)
249
247
245
243
241
239
237
235
233
231
229
227
225
223
221
219
217
215
213
211
209
207
205
203
201
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 21

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Notes
201	2295301	6964893	0.025	20	201	624 3	604.3	
202	2295293	6964886	0.026	20	202	624.3	603.9	
203	2295286	6964878	0.026	21	203	624 4	603 6	
204	2295279	6964871	0.025	20	204	624 4	604 4	
205	2295272	6964864	0.024	19	205	624.4	605.2	
206	2295265	6964856	0 021	17	206	624.4	607 4	
207	2295258	6964849	0.019	15	207	624.5	609 7	
208	2295250	6964842	0.018	14	208	624.5	610 1	
209	2295243	6964834	0.018	14	209	624.5	610 1	
210	2295236	6964827	0.018	14	210	624.6	610.2	
211	2295229	6964820	0 018	14	211	624.6	610.2	
212	2295222	6964812	0.018	14	212	624 6	610.2	
213	2295215	6964805	0 017	13	213	624.6	611.4	
214	2295207	6964798	0.016	13	214	624.7	611 7	
215	2295200	6964790	0 016	13	215	624.7	611.9	
216	2295193	6964783	0.016	13	216	624 7	612.1	
217	2295186	6964776	0.016	12	217	624.7	612.3	
218	2295179	6964768	0.015	12	218	624.8	612 6	
219	2295172	6964761	0 015	12	219	624.8	612.8	
220	2295164	6964754	0.015	12	220	624 8	612.6	
221	2295157	6964746	0.016	12	221	624 9	612 5	
222	2295150	6964739	0.016	13	222	624 9	612.4	
223	2295143	6964732	0 016	13	223	624.9	612.3	
224	2295136	6964724	0 016	13	224	624.9	612.1	
225	2295128	6964717	0.016	13	225	625.0	612 4	
226	2295121	6964710	0.016	12	226	625.0	612.6	
227	2295114	6964702	0.015	12	227	625.0	612.9	
228	2295107	6964695	0.015	12	228	625.1	613.2	
229	2295100	6964688	0.015	12	229	625.1	613.5	
230	2295093	6964680	0 015	12	230	625.1	613 3	
231	2295085	6964673	0.015	12	231	625 1	613.1	
232	2295078	6964666	0.015	12	232	625.2	613 4	
233	2295071	6964658	0.015	12	233	625.2	613.6	
234	2295064	6964651	0.015	12	234	625.2	613 5	
235	2295057	6964644	0.015	12	235	625.2	613 4	
236	2295050	6964636	0.015	12	236	625.3	613.3	
237	2295042	6964629	0.015	12	237	625.3	613.1	
238	2295035	6964622	0 016	12	238	625.3	612 9	
239	2295028	6964614	0.016	12	239	625 4	613.0	
240	2295021	6964607	0 016	12	240	625.4	613.0	
241	2295014	6964600	0.016	12	241	625 4	613.0	
242	2295007	6964592	0.016	12	242	625.4	613 0	
243	2294999	6964585	0.016	12	243	625.5	613.1	
244	2294992	6964578	0 016	12	244	625 5	613.1	
245	2294985	6964570	0.016	13	245	625.5	612 9	
246	2294978	6964563	0 016	13	246	625 6	612.6	
247	2294971	6964555	0.017	13	247	625.6	612.4	
248	2294964	6964548	0 017	13	248	625.6	612.4	
249	2294956	6964541	0 017	13	249	625.6	612.4	
250	2294949	6964533	0.017	13	250	625.7	612.5	



Wiggle Trace



Amplitude

Seismic Reflection Line 21

NAS Fort Worth, Texas

Explanation

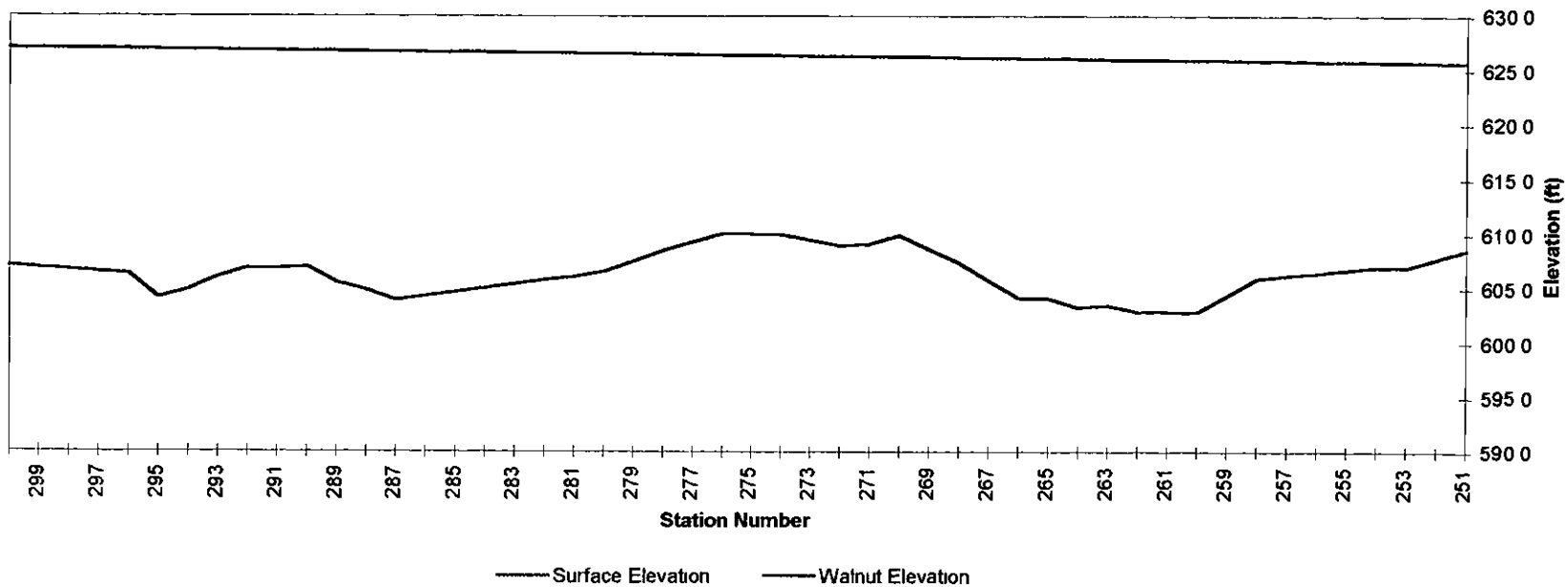
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

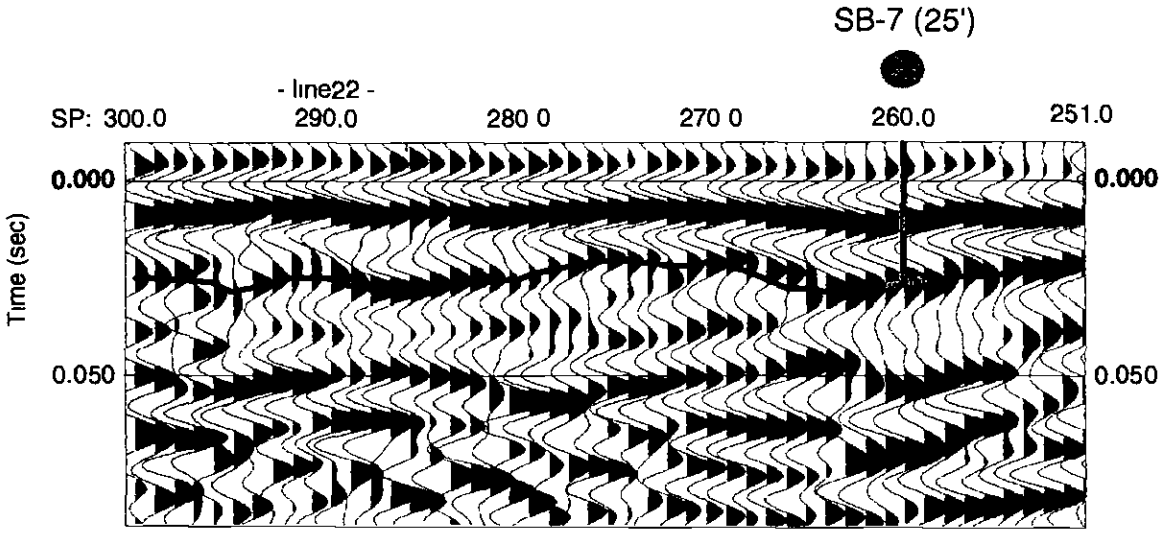
432 Green Brae
Medford, OR 97504
541 734 0808

Line 22

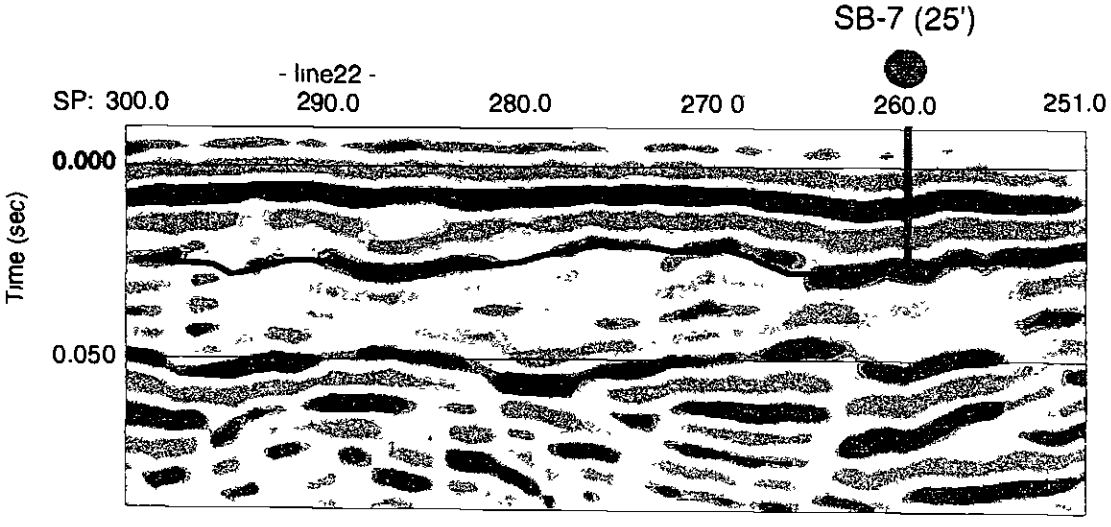

630 0
625 0
620 0
615 0
610 0
605 0
600 0
595 0
590 0
Elevation (ft)
299
297
295
293
291
289
287
285
283
281
279
277
275
273
271
269
267
265
263
261
259
257
255
253
251
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 22

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Notes
251	2294942	6964526	0 022	17	251	625 7	608.5	
252	2294935	6964519	0 023	18	252	625 7	607.7	
253	2294928	6964511	0 024	19	253	625 7	606 9	
254	2294921	6964504	0.024	19	254	625.8	607.0	
255	2294913	6964497	0.024	19	255	625.8	606.7	
256	2294906	6964489	0 024	19	256	625.8	606 4	
257	2294899	6964482	0.025	20	257	625.9	606.2	
258	2294892	6964475	0.025	20	258	625.9	605 9	
259	2294885	6964467	0 027	22	259	625.9	604 3	
260	2294878	6964460	0.029	23	260	625.9	602.8	SB-7 (25')
261	2294870	6964453	0.029	23	261	626.0	602 9	
262	2294863	6964445	0.029	23	262	626.0	602.9	
263	2294856	6964438	0.028	23	263	626 0	603.4	
264	2294849	6964431	0.029	23	264	626 1	603.3	
265	2294842	6964423	0.028	22	265	626.1	604.1	
266	2294835	6964416	0 028	22	266	626 1	604.1	
267	2294827	6964409	0 026	20	267	626.1	605 7	
268	2294820	6964401	0.024	19	268	626 2	607.4	
269	2294813	6964394	0.022	18	269	626 2	608.6	
270	2294806	6964387	0 021	16	270	626.2	609.8	Storm Drain
271	2294799	6964379	0.022	17	271	626.2	609 0	
272	2294792	6964372	0 022	17	272	626.3	608 9	
273	2294784	6964365	0.021	17	273	626.3	609.4	
274	2294777	6964357	0.021	16	274	626.3	609 9	
275	2294770	6964350	0.021	16	275	626.4	610.0	
276	2294763	6964343	0 021	16	276	626.4	610.0	
277	2294756	6964335	0.022	17	277	626.4	609 2	
278	2294748	6964328	0 023	18	278	626.4	608.4	
279	2294741	6964321	0.024	19	279	626 5	607 5	
280	2294734	6964313	0.025	20	280	626.5	606 5	
281	2294727	6964306	0 026	20	281	626 5	606.0	
282	2294720	6964299	0.026	21	282	626.6	605 8	
283	2294713	6964291	0.027	21	283	626.6	605 4	
284	2294705	6964284	0.027	22	284	626 6	605.0	
285	2294698	6964277	0.028	22	285	626.6	604.6	
286	2294691	6964269	0 028	22	286	626.7	604.3	
287	2294684	6964262	0 029	23	287	626 7	603.9	
288	2294677	6964255	0.027	22	288	626.7	604 8	
289	2294670	6964247	0.027	21	289	626.7	605.5	
290	2294662	6964240	0.025	20	290	626.8	607.0	
291	2294655	6964233	0.025	20	291	626.8	606 8	
292	2294648	6964225	0 025	20	292	626.8	606 8	
293	2294641	6964218	0.026	21	293	626.9	606.1	
294	2294634	6964211	0 028	22	294	626.9	604 9	
295	2294627	6964203	0 029	23	295	626.9	604.1	
296	2294619	6964196	0 026	21	296	626.9	606.3	
297	2294612	6964189	0.026	20	297	627 0	606 5	
298	2294605	6964181	0 025	20	298	627 0	606 7	
299	2294598	6964174	0.025	20	299	627.0	606.9	
300	2294591	6964167	0 025	20	300	627 1	607 1	



Wiggle Trace



Amplitude

Seismic Reflection Line 22

NAS Fort Worth, Texas

Explanation.

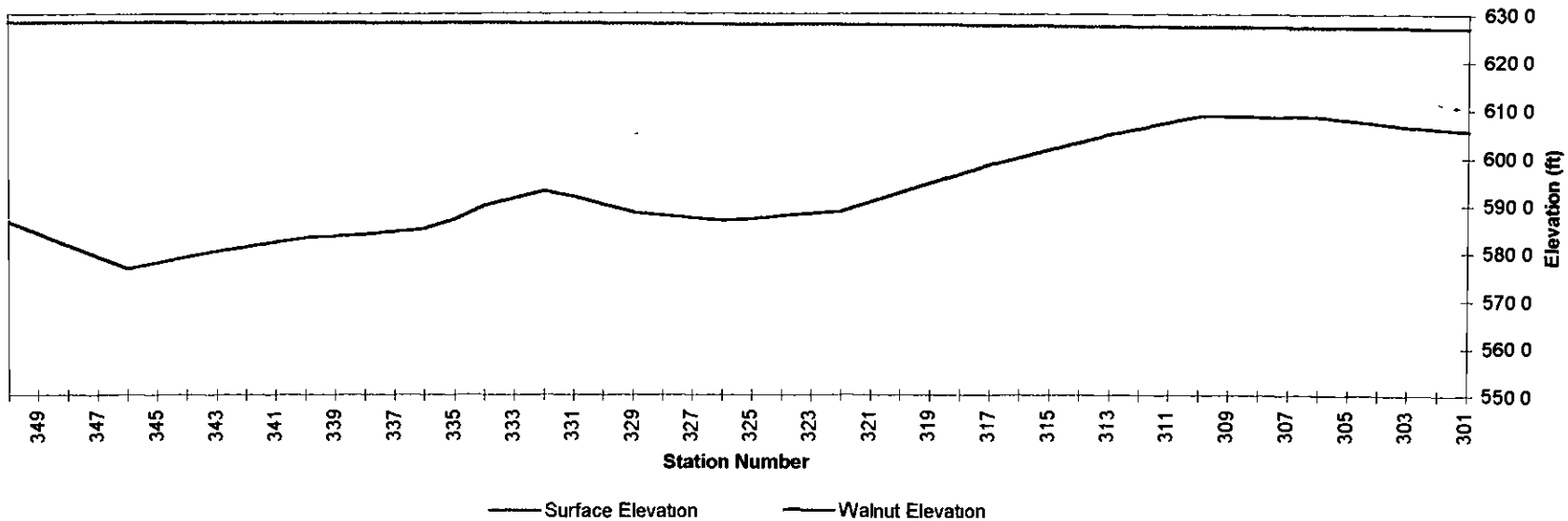
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

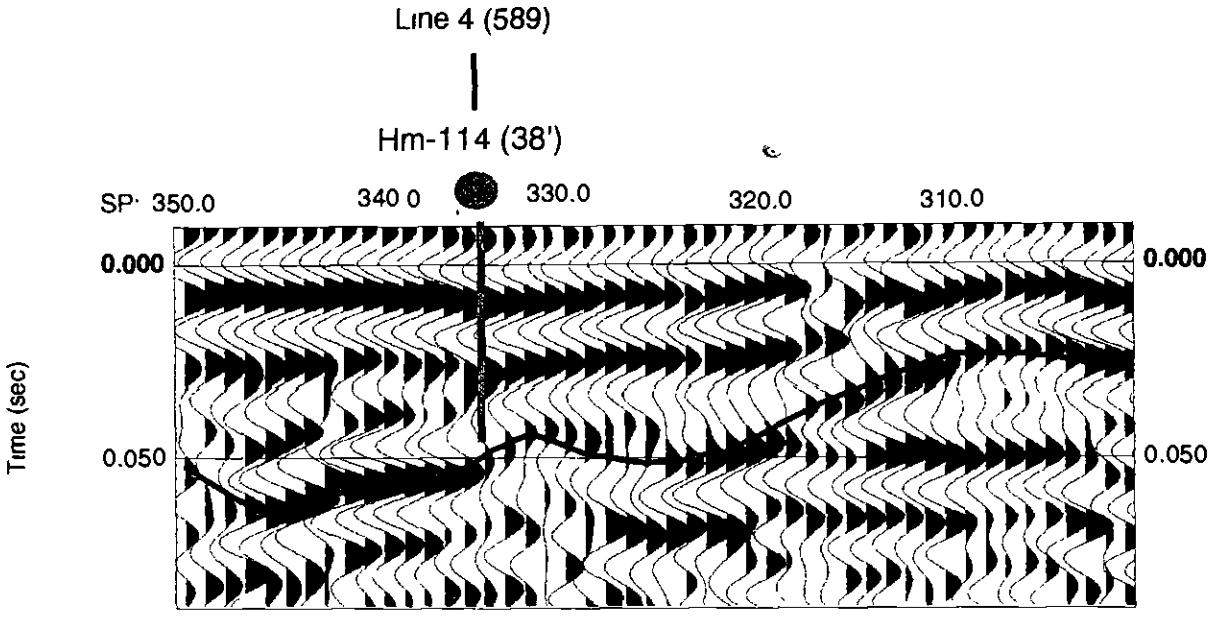
432 Green Brae
Medford, OR 97504
541.734 0808

Line 23

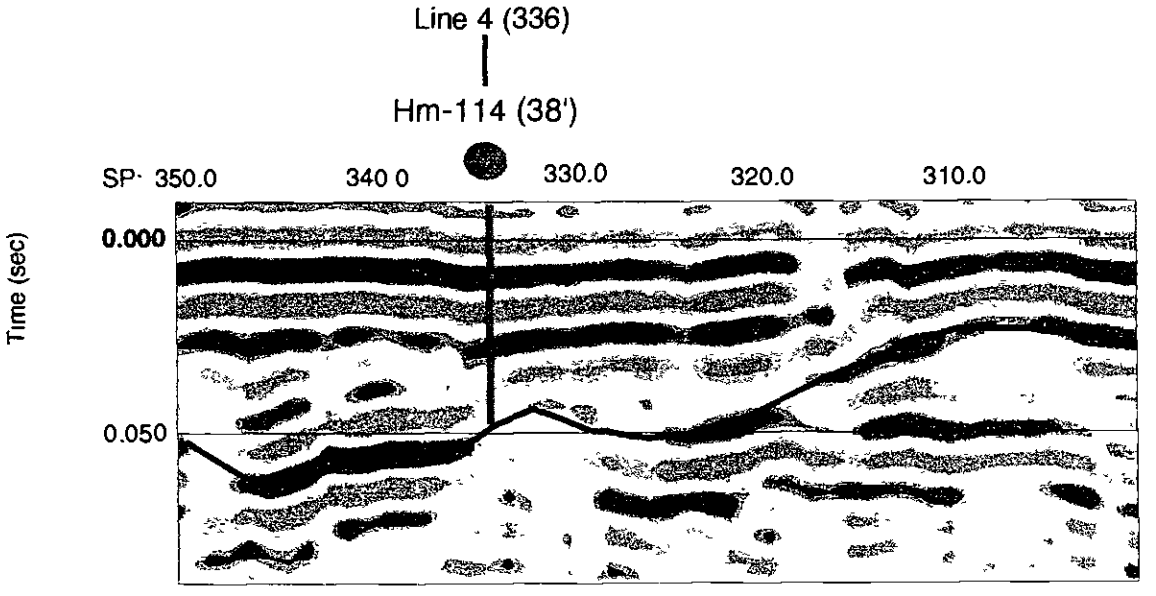

630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
Elevation (ft)
349
347
345
343
341
339
337
335
333
331
329
327
325
323
321
319
317
315
313
311
309
307
305
303
301
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 23

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Notes
301	2294584	6964159	0.027	22	301	627.1	605.5	
302	2294576	6964152	0.027	21	302	627.1	605 9	
303	2294569	6964145	0.026	21	303	627.1	606 3	
304	2294562	6964137	0.025	20	304	627.2	607 0	
305	2294555	6964130	0.024	19	305	627.2	607 7	
306	2294548	6964123	0.024	19	306	627.2	608.4	
307	2294541	6964115	0.024	19	307	627 2	608.4	
308	2294533	6964108	0.024	19	308	627 3	608.5	
309	2294526	6964101	0.024	19	309	627 3	608 5	
310	2294519	6964093	0 024	19	310	627.3	608.5	
311	2294512	6964086	0.025	20	311	627.4	607.2	
312	2294505	6964079	0.027	21	312	627.4	605.9	
313	2294498	6964071	0.029	23	313	627.4	604.6	
314	2294490	6964064	0 031	24	314	627.4	603 0	
315	2294483	6964057	0.033	26	315	627.5	601.5	
316	2294476	6964049	0.035	28	316	627.5	599.9	
317	2294469	6964042	0.037	29	317	627.5	598.3	
318	2294462	6964035	0.039	31	318	627.6	596.4	
319	2294455	6964027	0 042	33	319	627.6	594.4	
320	2294447	6964020	0.044	35	320	627.6	592.4	
321	2294440	6964012	0.047	37	321	627.6	590.4	
322	2294433	6964005	0 049	39	322	627.7	588.5	
323	2294426	6963998	0 050	40	323	627.7	588 0	
324	2294419	6963990	0.050	40	324	627.7	587 5	
325	2294412	6963983	0 051	41	325	627 7	586.9	
326	2294404	6963976	0 052	41	326	627.8	586 6	
327	2294397	6963968	0.051	41	327	627.8	587 1	
328	2294390	6963961	0.050	40	328	627 8	587.7	
329	2294383	6963954	0 050	40	329	627 9	588.3	
330	2294376	6963946	0.048	38	330	627.9	589 9	
331	2294369	6963939	0.046	36	331	627.9	591.5	
332	2294361	6963932	0.044	35	332	627 9	592.7	
333	2294354	6963924	0 046	37	333	628.0	591.2	
334	2294347	6963917	0.048	38	334	628.0	589.6	HM114-Line4 (589)
HM-114	2294352	6963912	0.052	41	335	628.0	586 8	
335	2294340	6963910	0.054	43	336	628 0	584 8	
336	2294333	6963902	0 055	44	337	628.1	584 3	628 0
337	2294326	6963895	0.056	44	338	628 1	583.7	
338	2294319	6963888	0.056	45	339	628.1	583.3	
339	2294312	6963881	0.057	45	340	628.1	582 9	
340	2294305	6963873	0.058	46	341	628.1	582 0	
341	2294298	6963866	0.059	47	342	628 1	581.1	
342	2294291	6963859	0.060	48	343	628.2	580.2	
343	2294285	6963851	0.062	49	344	628.2	579.0	
344	2294278	6963844	0 063	50	345	628.2	577 8	
345	2294271	6963837	0.065	52	346	628 2	576 6	
346	2294264	6963830	0.062	49	347	628 2	579.0	
347	2294257	6963822	0 059	47	348	628.2	581.4	
348	2294250	6963815	0.056	44	349	628 3	583 9	
349	2294243	6963808	0 053	42	350	628 3	586.3	
350	2294236	6963800	0.048	38	351	628 3	589 9	



Wiggle Trace



Amplitude

Seismic Reflection Line 23

NAS Fort Worth, Texas

Explanation.

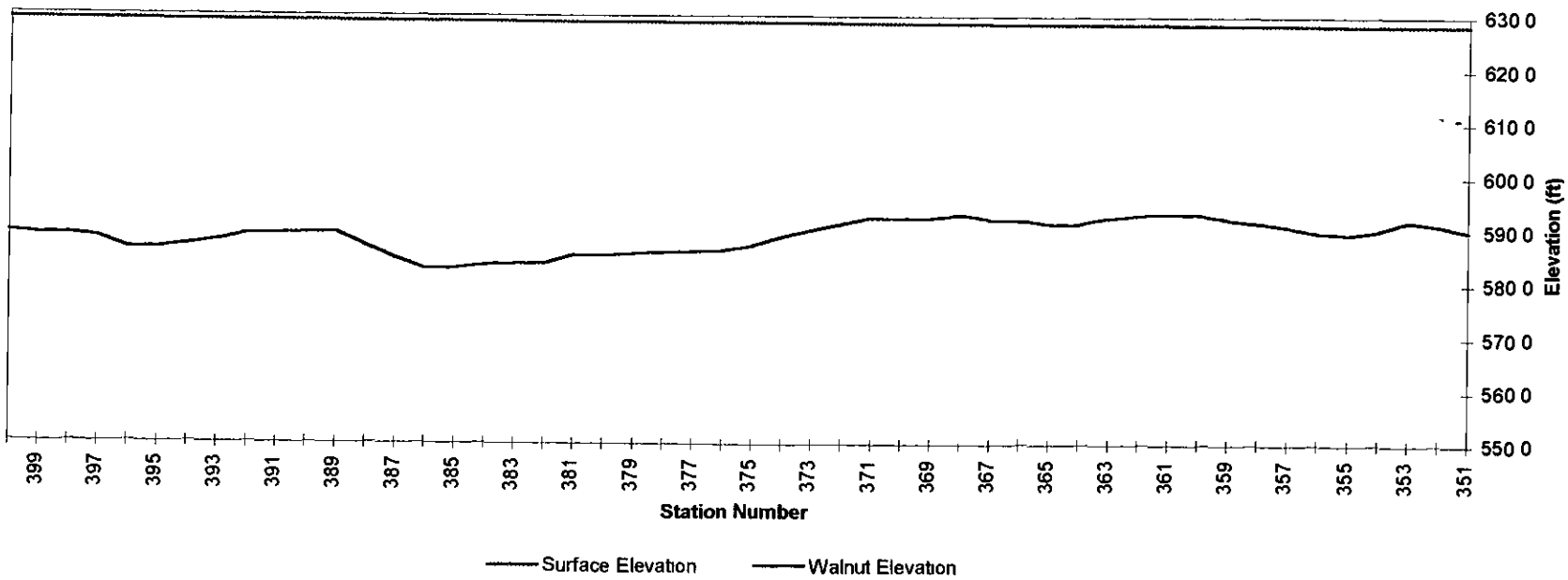
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

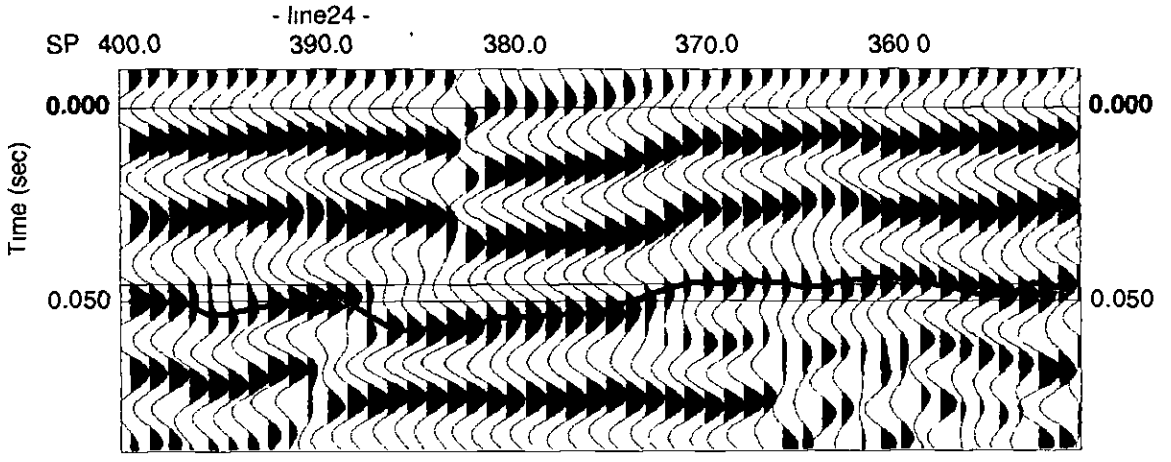
432 Green Brae
Medford, OR 97504
541 734 0808

Line 24

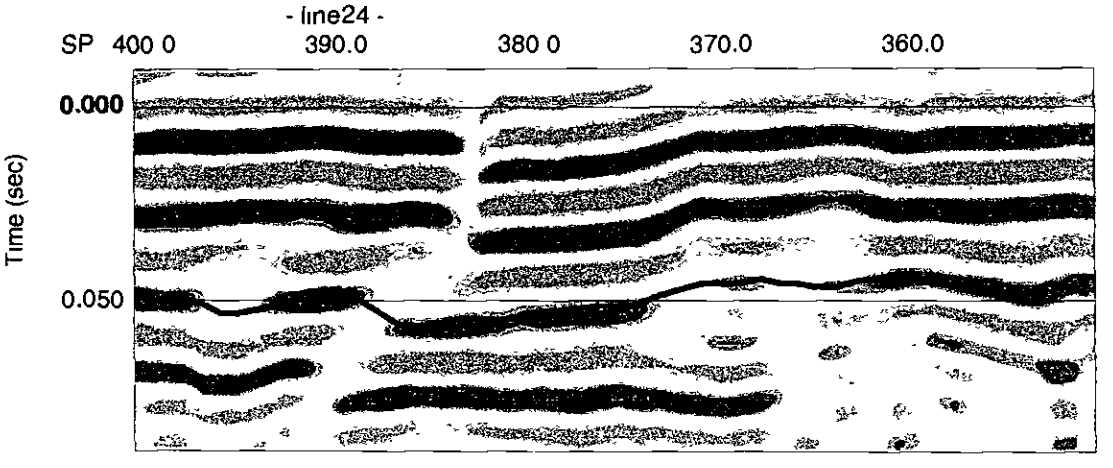

630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
Elevation (ft)
399
397
395
393
391
389
387
385
383
381
379
377
375
373
371
369
367
365
363
361
359
357
355
353
351
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 24

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Notes
351	2294229	6963793	0.047	37	352	628.3	591.1	waw 1001
352	2294222	6963786	0 046	36	353	628 3	591.9	
353	2294216	6963778	0.048	38	354	628.3	590 1	
354	2294209	6963771	0.049	39	355	628.4	589.3	
355	2294202	6963764	0.048	39	356	628.4	589.7	
356	2294195	6963757	0.047	38	357	628 4	590.7	
357	2294188	6963749	0.046	37	358	628 4	591 5	
358	2294181	6963742	0.045	36	359	628.4	592.1	
359	2294174	6963735	0.044	35	360	628 4	593.0	
360	2294167	6963727	0.044	35	361	628 5	593.1	
361	2294160	6963720	0.044	36	362	628 5	592.9	
362	2294153	6963713	0 045	36	363	628.5	592.3	
363	2294146	6963705	0 046	37	364	628.5	591 3	
364	2294140	6963698	0.047	37	365	628.5	591.2	
365	2294133	6963691	0.046	37	366	628 5	592 0	
366	2294126	6963684	0 046	37	367	628.6	592.0	
367	2294119	6963676	0 045	36	368	628 6	592.9	
368	2294112	6963669	0 046	36	369	628.6	592 2	
369	2294105	6963662	0.046	36	370	628.6	592.1	
370	2294098	6963654	0.046	36	371	628.6	592.2	
371	2294091	6963647	0 047	38	372	628 6	591.0	
372	2294084	6963640	0 049	39	373	628 7	589.9	
373	2294077	6963633	0.050	40	374	628.7	588.6	
374	2294070	6963625	0.052	42	375	628 7	586.9	
375	2294064	6963618	0.053	43	376	628.7	586.1	
376	2294057	6963611	0 054	43	377	628.7	585 9	
377	2294050	6963603	0.054	43	378	628.7	585.7	
378	2294043	6963596	0 054	43	379	628.8	585.4	
379	2294036	6963589	0 055	44	380	628.8	585 1	
380	2294029	6963581	0.055	44	381	628.8	585.2	
381	2294022	6963574	0 057	45	382	628.8	583 6	
382	2294015	6963567	0 057	45	383	628.8	583.5	
383	2294008	6963560	0.057	45	384	628.9	583.4	
384	2294001	6963552	0.058	46	385	628.9	582.7	
385	2293995	6963545	0.058	46	386	628 9	582.6	
386	2293988	6963538	0.056	44	387	628.9	584 5	
387	2293981	6963530	0.053	42	388	628 9	586.9	
388	2293974	6963523	0 050	40	389	628.9	589 3	
389	2293967	6963516	0.050	40	390	629.0	589.2	
390	2293960	6963509	0.050	40	391	629 0	589 0	
391	2293953	6963501	0.050	40	392	629 0	589.0	
392	2293946	6963494	0.052	41	393	629 0	587 8	
393	2293939	6963487	0.053	42	394	629 0	587.0	
394	2293932	6963479	0.054	43	395	629.0	586.2	
395	2293925	6963472	0.054	43	396	629.1	586.3	
396	2293919	6963465	0.051	41	397	629.1	588.3	
397	2293912	6963457	0.050	40	398	629.1	588.9	
398	2293905	6963450	0.050	40	399	629.1	588.7	
399	2293898	6963443	0.050	40	400	629 1	589.2	
400	2293891	6963436	0 051	41	401	629.1	588 5	



Wiggle Trace



Amplitude

Seismic Reflection Line 24

NAS Fort Worth, Texas

Explanation

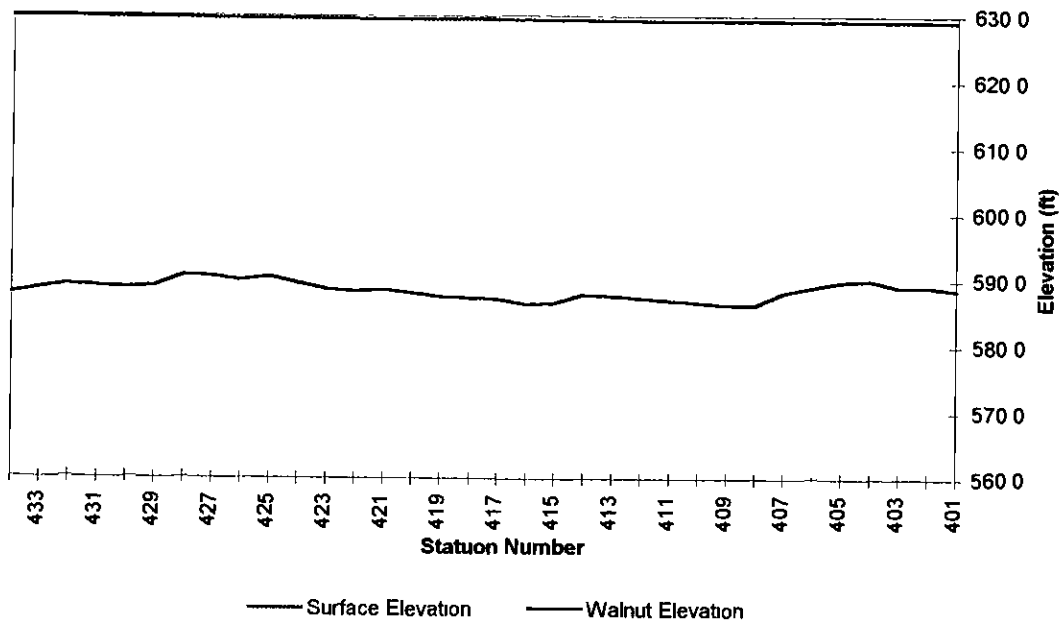
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

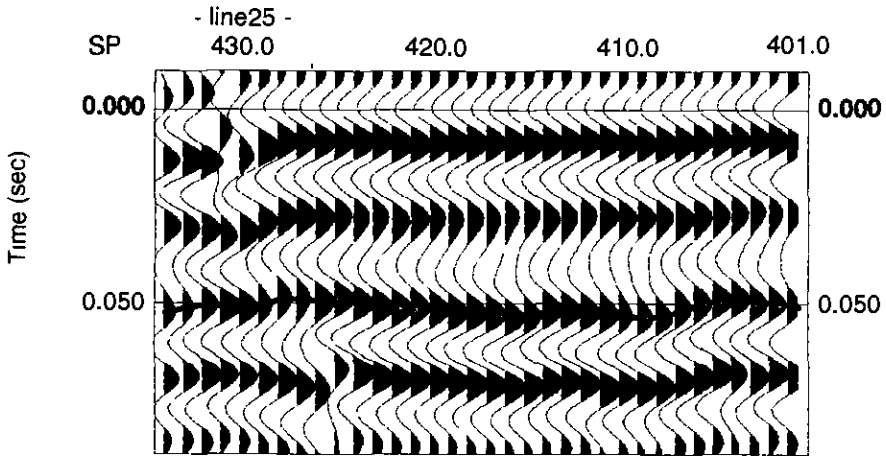
432 Green Brae
Medford, OR 97504
541 734 0808

Line 25

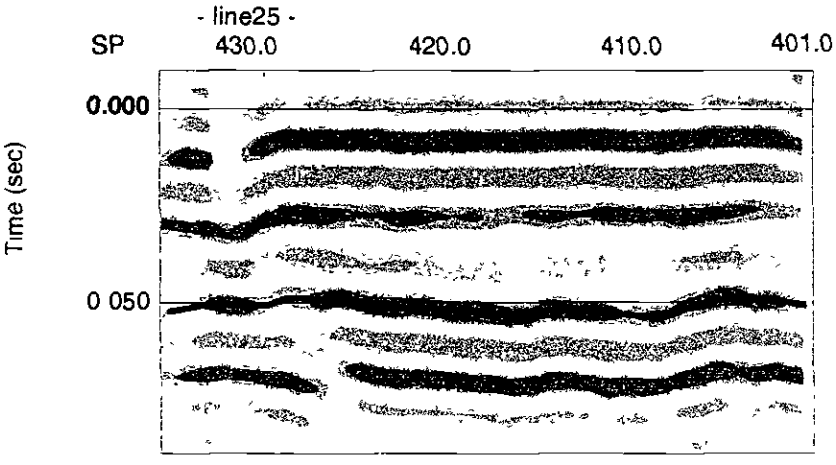

630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
Elevation (ft)
433
431
429
427
425
423
421
419
417
415
413
411
409
407
405
403
401
Statuon Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 25

Station No	Easting	Northing	Time	Depth	Station No	ELEV	Elevation	Notes
401	2293884	6963428	0.050	40	402	629 2	589 0	
402	2293877	6963421	0 050	40	403	629.2	589.0	
403	2293870	6963414	0.049	39	404	629 2	590 0	
404	2293863	6963406	0 049	39	405	629.2	589.8	
405	2293856	6963399	0.050	40	406	629 2	589 0	
406	2293849	6963392	0 051	41	407	629 2	588 1	
407	2293843	6963385	0.054	43	408	629.3	586.3	
408	2293836	6963377	0.054	43	409	629.3	586.2	
409	2293829	6963370	0.053	43	410	629.3	586.7	
410	2293822	6963363	0 053	42	411	629 3	587 0	
411	2293815	6963355	0 053	42	412	629.3	587.3	
412	2293808	6963348	0.052	42	413	629.3	587.6	
413	2293801	6963341	0 052	42	414	629 4	587 8	
414	2293794	6963333	0 053	43	415	629 4	586 6	
415	2293787	6963326	0.054	43	416	629.4	586.3	
416	2293780	6963319	0.053	42	417	629 4	587 1	
417	2293774	6963312	0 053	42	418	629.4	587 3	
418	2293767	6963304	0.053	42	419	629.4	587.4	
419	2293760	6963297	0.052	41	420	629 5	588 0	
420	2293753	6963290	0 051	41	421	629 5	588.5	
421	2293746	6963282	0.051	41	422	629.5	588.3	
422	2293739	6963275	0.051	41	423	629.5	588 6	
423	2293732	6963268	0.050	40	424	629 5	589 5	
424	2293725	6963260	0 049	39	425	629.5	590.4	
425	2293718	6963253	0 050	40	426	629.6	589.9	
426	2293711	6963246	0.049	39	427	629 6	590 4	
427	2293704	6963239	0 049	39	428	629.6	590.6	
428	2293698	6963231	0 051	41	429	629.6	589 0	
429	2293691	6963224	0.051	41	430	629.6	588.7	
430	2293684	6963217	0 051	41	431	629.6	588.9	
431	2293677	6963209	0 051	40	432	629 7	589.2	
432	2293670	6963202	0.051	41	433	629.7	588.6	
433	2293663	6963195	0 052	42	434	629.7	587 8	
434	2293656	6963188						



Wiggle Trace



Amplitude

Seismic Reflection Line 25

NAS Fort Worth, Texas

Explanation.

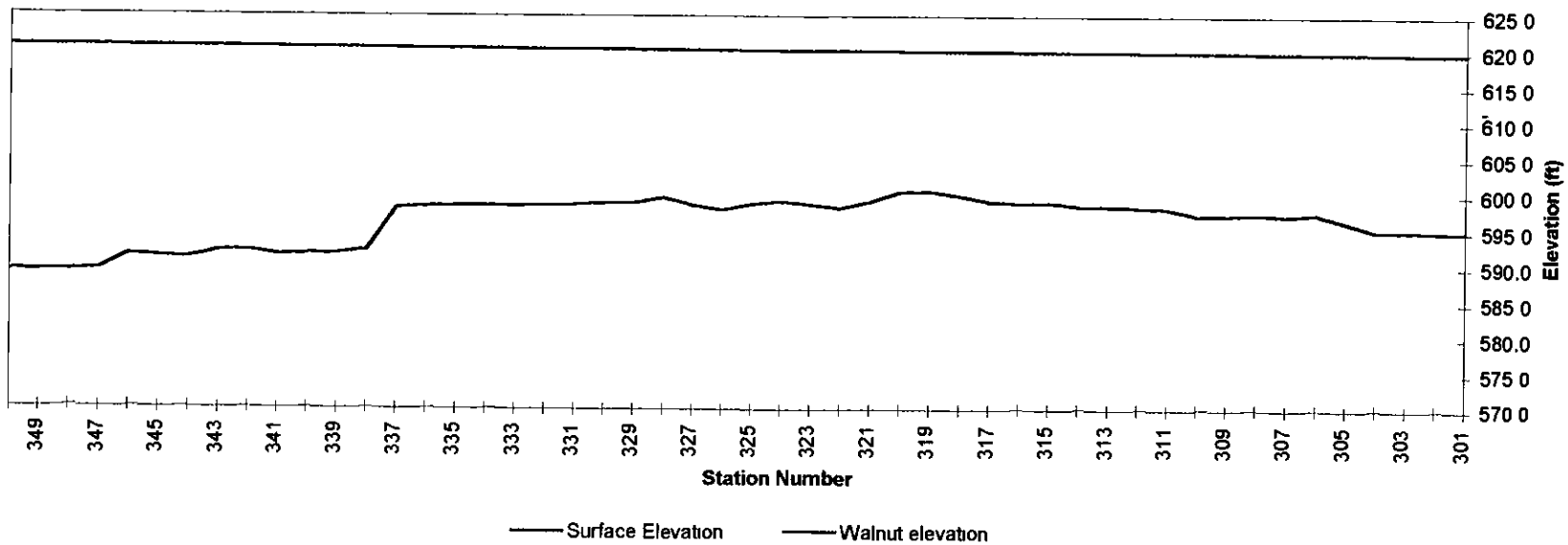
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

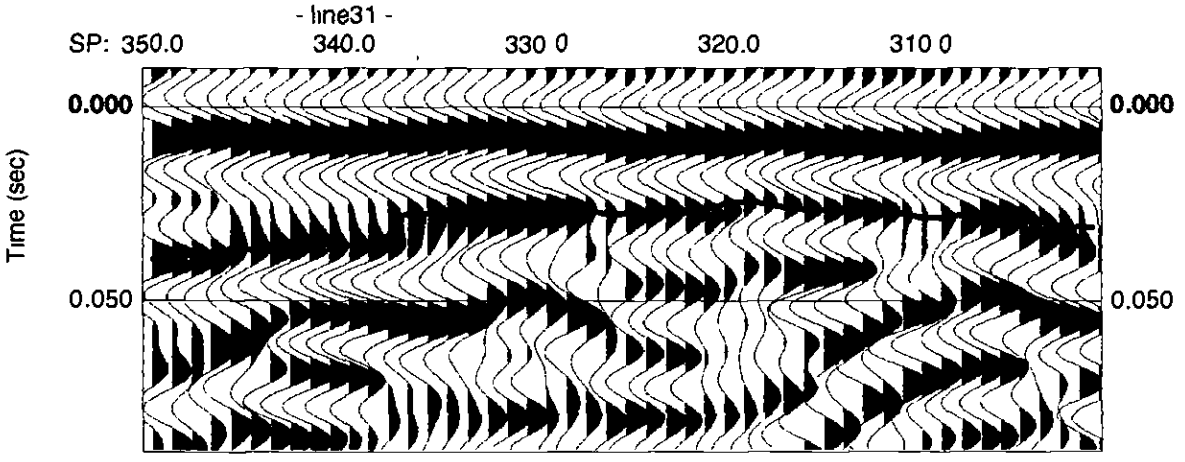
432 Green Brae
Medford, OR 97504
541 734.0808

Line 31

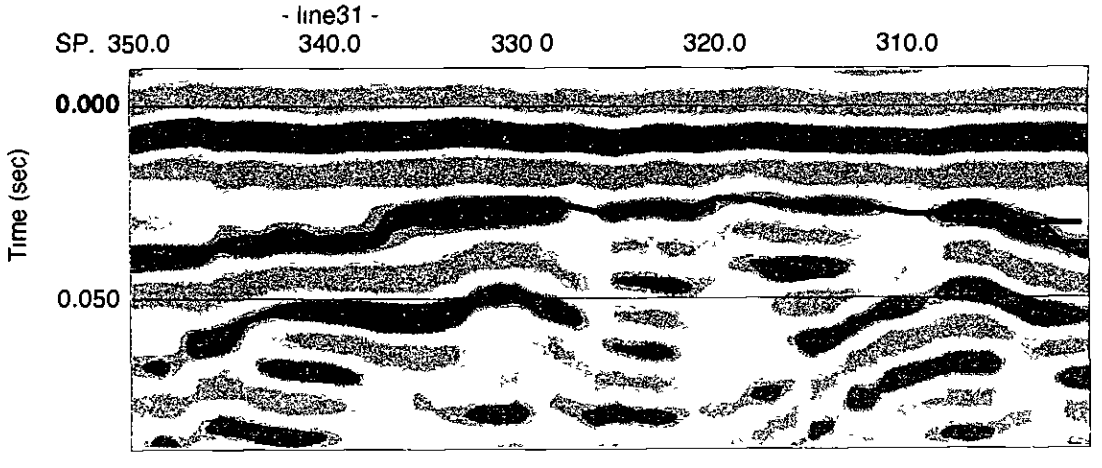

625 0
620 0
615 0
610 0
605 0
600 0
595 0
590.0
585 0
580.0
575 0
570 0
Elevation (ft)
349
347
345
343
341
339
337
335
333
331
329
327
325
323
321
319
317
315
313
311
309
307
305
303
301
Station Number
Surface Elevation
Walnut elevation

NAS-2000 Line 31

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note
	2295447	6963653				619.8		
301	2295447	6963653	0 031	25	301	619 8	595 0	
302	2295438	6963648	0.031	25	302	619 8	595.0	
303	2295428	6963644	0 031	25	303	619.8	595.0	
304	2295419	6963639	0.031	25	304	619 8	595.0	
305	2295410	6963634	0 030	24	305	619.9	596 3	
306	2295401	6963629	0.028	22	306	619.9	597.5	
307	2295392	6963625	0.029	23	307	619 9	597 1	
308	2295383	6963620	0.028	23	308	619.9	597 4	
309	2295373	6963615	0.028	23	309	619 9	597.2	
310	2295364	6963610	0 028	23	310	620.0	597 2	
311	2295355	6963606	0.027	22	311	620 0	598.1	
312	2295346	6963601	0 027	22	312	620.0	598.3	
313	2295337	6963596	0 027	22	313	620.0	598.4	
314	2295328	6963591	0.027	21	314	620 0	598.6	
315	2295319	6963587	0 026	21	315	620.0	599 0	
316	2295309	6963582	0.026	21	316	620 1	598.9	
317	2295300	6963577	0 026	21	317	620.1	599 1	
318	2295291	6963572	0 025	20	318	620.1	599.9	
319	2295282	6963568	0.024	20	319	620.1	600 6	
320	2295273	6963563	0 025	20	320	620 1	600.4	
321	2295264	6963558	0 026	21	321	620 1	599 0	
322	2295255	6963553	0.028	22	322	620.2	598.1	
323	2295245	6963549	0 027	22	323	620 2	598.6	
324	2295236	6963544	0.026	21	324	620.2	599 0	
325	2295227	6963539	0 027	22	325	620.2	598 7	
326	2295218	6963534	0.028	22	326	620.2	597.9	
327	2295209	6963530	0.027	22	327	620.2	598.5	
328	2295200	6963525	0 026	21	328	620.3	599 6	
329	2295190	6963520	0.027	22	329	620 3	598 7	
330	2295181	6963515	0 027	22	330	620 3	598 7	
331	2295172	6963511	0.027	22	331	620.3	598.5	
332	2295163	6963506	0.027	22	332	620.3	598 4	
333	2295154	6963501	0.028	22	333	620.3	598.3	
334	2295145	6963496	0.027	22	334	620.4	598.5	
335	2295136	6963492	0.027	22	335	620 4	598 4	
336	2295126	6963487	0.028	22	336	620.4	598 3	
337	2295117	6963482	0 028	22	337	620 4	598 0	
338	2295108	6963478	0.035	28	338	620.4	592.1	
339	2295099	6963473	0 036	29	339	620 4	591 6	
340	2295090	6963468	0.036	29	340	620.5	591.5	
341	2295081	6963463	0 036	29	341	620 5	591 4	
342	2295072	6963459	0.036	28	342	620.5	592.1	
343	2295062	6963454	0.036	29	343	620 5	591.9	
344	2295053	6963449	0.037	30	344	620.5	590.9	
345	2295044	6963444	0.037	29	345	620.5	591 1	
346	2295035	6963440	0 036	29	346	620.6	591.4	
347	2295026	6963435	0.039	31	347	620.6	589 3	
348	2295017	6963430	0.039	31	348	620 6	589 1	
349	2295007	6963425	0.039	32	349	620.6	589.1	
350	2294998	6963421	0.039	32	350	620 6	589.1	



Wiggle Trace



Amplitude

Seismic Reflection Line 31

NAS Fort Worth, Texas

Explanation.

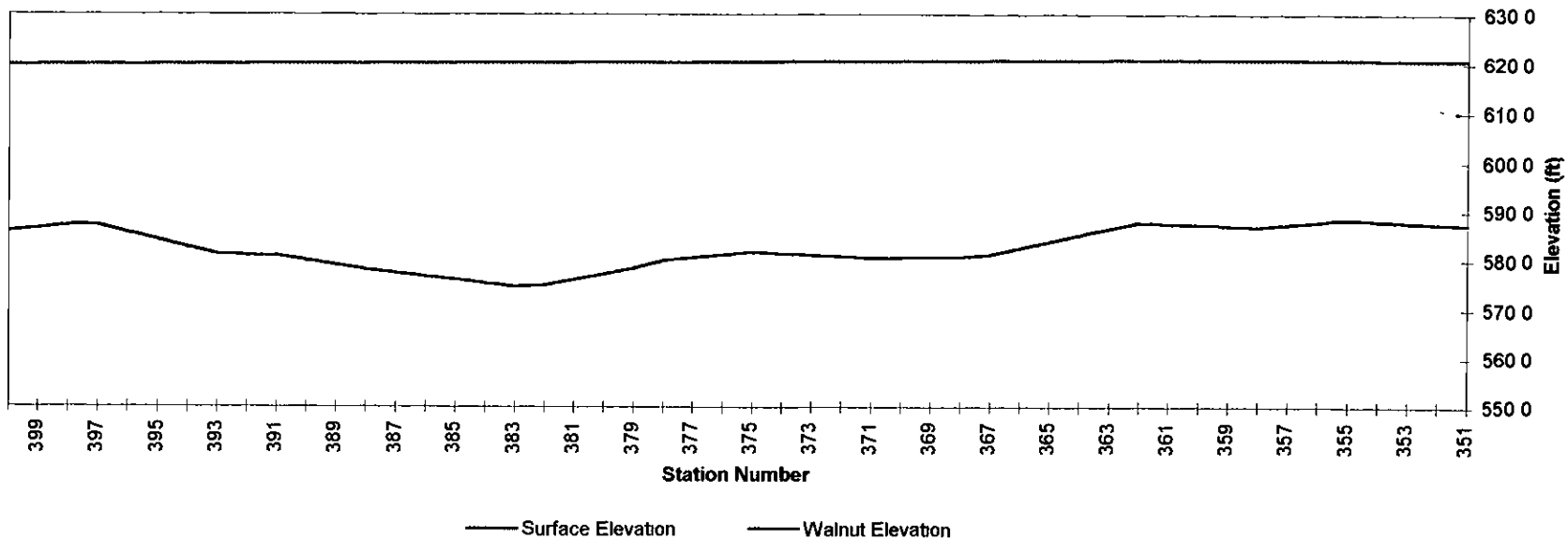
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

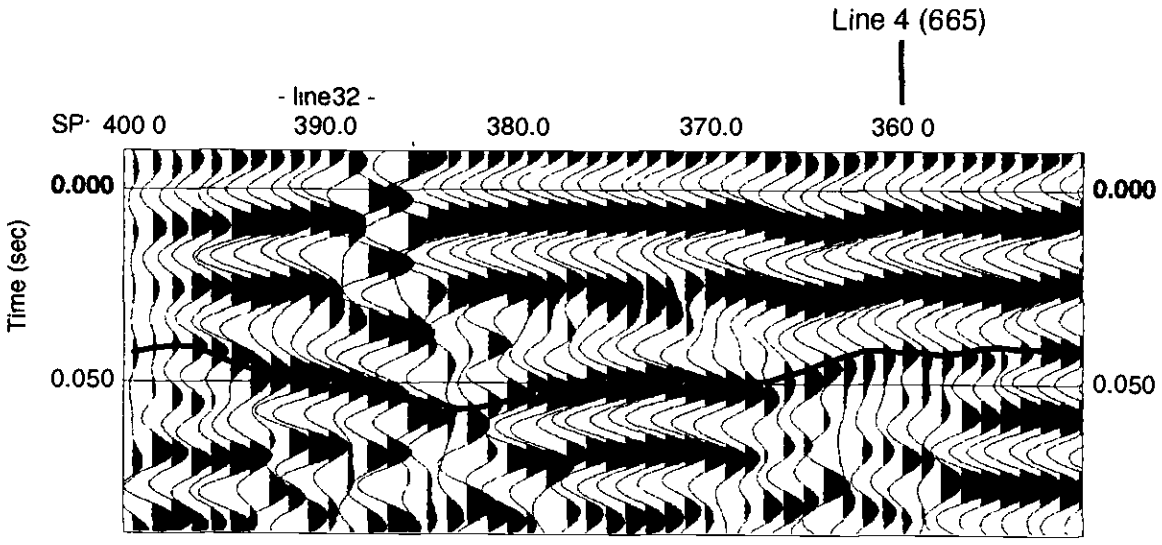
432 Green Brae
Medford, OR 97504
541 734 0808

Line 32

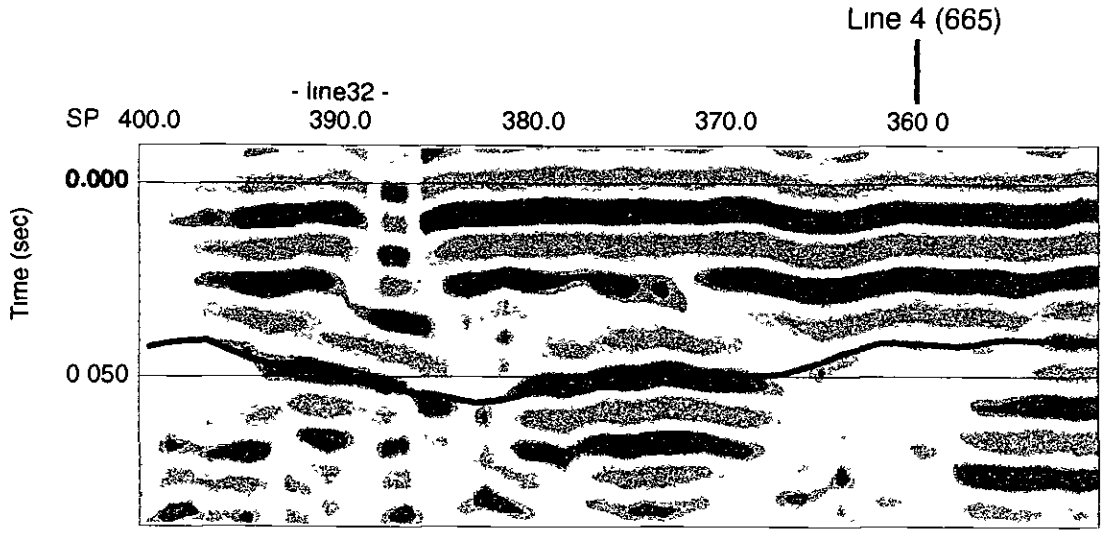

630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
Elevation (ft)
399
397
395
393
391
389
387
385
383
381
379
377
375
373
371
369
367
365
363
361
359
357
355
353
351
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 32

Station No.	Easting	Northing	Time	Depth	Station No	ELEV	Elevation	Note
351	2294989	6963416	0 042	34	351	620 6	587.0	
352	2294980	6963411	0.042	33	352	620 7	587 4	
353	2294971	6963406	0 041	33	353	620 7	587.7	
354	2294962	6963402	0.041	33	354	620 7	588 0	
355	2294953	6963397	0 041	32	355	620 7	588.3	
356	2294943	6963392	0 041	33	356	620.7	587.8	
357	2294934	6963387	0.042	33	357	620.7	587 3	
358	2294925	6963383	0 043	34	358	620.8	586.8	
359	2294916	6963378	0 042	34	359	620.8	587.0	
EI3S	2294912	6963374	0.042	34	360	620 8	587 2	
360	2294907	6963373	0 042	33	361	620 8	587.4	Station 359 -Line4 (665)
361	2294901	6963365	0 042	33	362	620.7	587.5	620 8
362	2294896	6963356	0.043	34	363	620 7	586 3	
363	2294891	6963347	0 045	36	364	620.7	585 0	
364	2294885	6963339	0 046	37	365	620 7	583.7	
365	2294880	6963330	0.048	38	366	620 6	582 3	
366	2294875	6963322	0.050	40	367	620.6	581.0	
367	2294869	6963313	0.050	40	368	620 6	580 6	
368	2294864	6963305	0 050	40	369	620.5	580.5	
369	2294859	6963296	0.050	40	370	620 5	580 5	
370	2294853	6963287	0.050	40	371	620 5	580.5	
371	2294848	6963279	0 050	40	372	620 5	580 7	
372	2294843	6963270	0.049	39	373	620 4	581.0	
373	2294837	6963262	0.049	39	374	620.4	581.3	
374	2294832	6963253	0 049	39	375	620 4	581 6	
375	2294827	6963245	0.049	39	376	620.3	581.0	
376	2294821	6963236	0.050	40	377	620.3	580 4	
377	2294816	6963227	0.051	40	378	620.3	579.8	
378	2294811	6963219	0.053	42	379	620.3	578.3	
379	2294805	6963210	0.054	43	380	620 2	577.1	
380	2294800	6963202	0.055	44	381	620.2	576 0	
381	2294795	6963193	0 057	45	382	620.2	574.8	
382	2294789	6963185	0.057	46	383	620 1	574 5	
383	2294784	6963176	0.056	45	384	620 1	575.2	
384	2294779	6963167	0.055	44	385	620.1	575 9	
385	2294773	6963159	0 054	43	386	620.0	576.6	
386	2294768	6963150	0.053	43	387	620 0	577.3	
387	2294763	6963142	0 053	42	388	620.0	578.0	
388	2294757	6963133	0.051	41	389	620 0	578.9	
389	2294752	6963125	0 050	40	390	619.9	579.8	
390	2294747	6963116	0.049	39	391	619 9	580.7	
391	2294741	6963107	0.049	39	392	619.9	580 9	
392	2294736	6963099	0.049	39	393	619 8	581.0	
393	2294731	6963090	0 047	37	394	619.8	582.5	
394	2294725	6963082	0.045	36	395	619.8	584 0	
395	2294720	6963073	0 043	34	396	619.8	585 5	
396	2294715	6963065	0 041	33	397	619 7	586.9	
397	2294709	6963056	0.041	33	398	619.7	586.9	
398	2294704	6963047	0 042	33	399	619 7	586.3	
399	2294699	6963039	0.043	34	400	619 6	585 6	
400	2294693	6963030	0 044	35	401	619.6	584.7	



Wiggle Trace



Amplitude

Seismic Reflection Line 32

NAS Fort Worth, Texas

Explanation

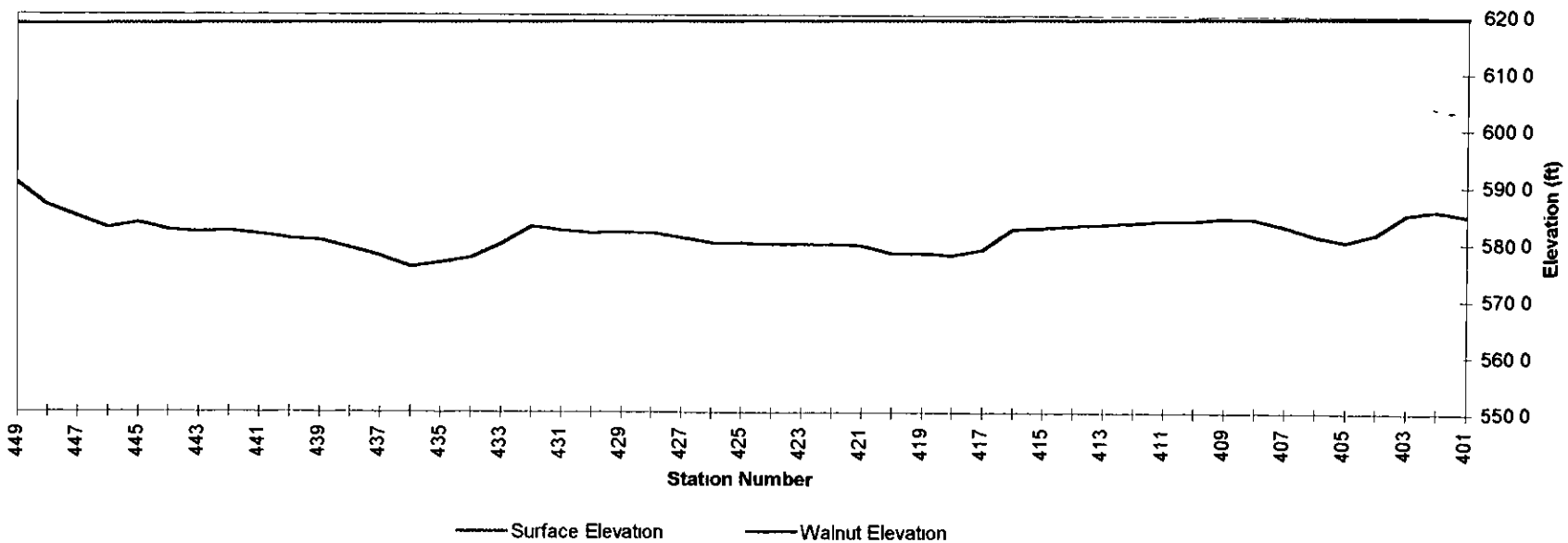
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541 734 0808

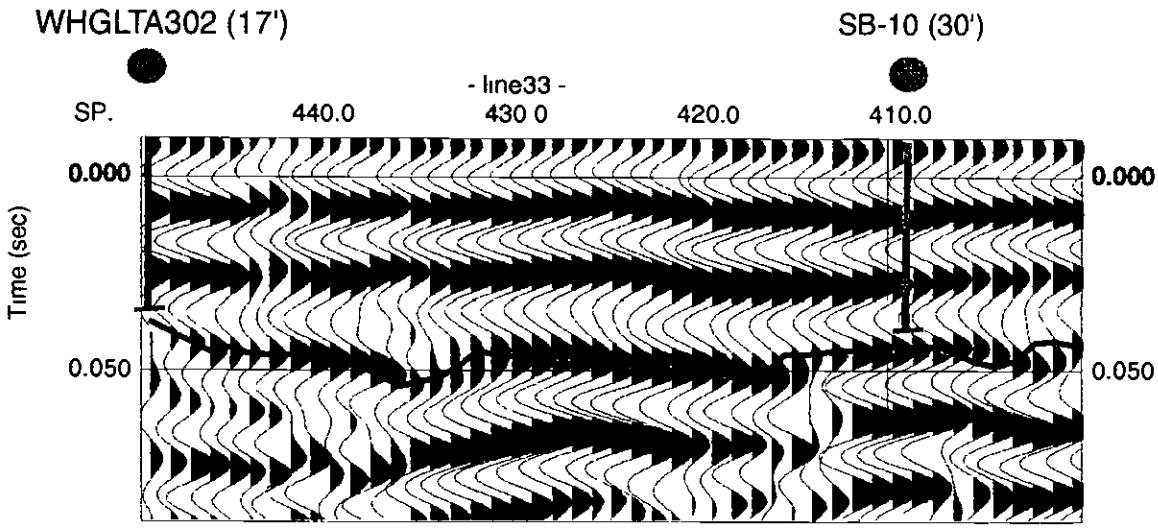
Line 33



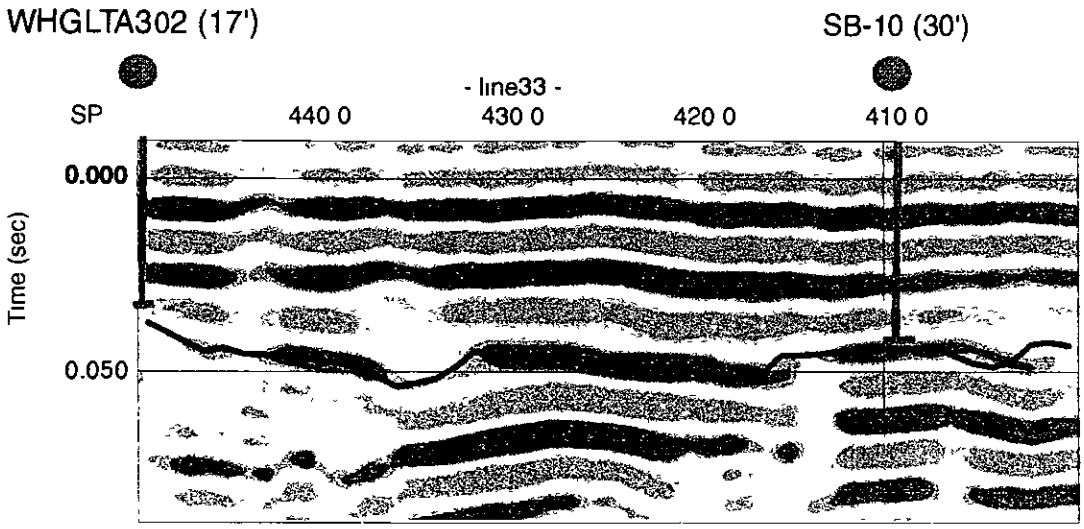
689 203

NAS-2000 Line 33

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note
401	2294688	6963022	0 042	34	402	619.6	585 7	
402	2294683	6963013	0.043	35	403	619.6	585.0	
403	2294677	6963005	0.047	38	404	619.5	581.5	
404	2294672	6962996	0.049	39	405	619 5	580 2	
405	2294667	6962987	0 048	38	406	619.5	581.2	
406	2294661	6962979	0.046	37	407	619.4	582.8	
407	2294656	6962970	0.044	35	408	619 4	584 1	
408	2294651	6962962	0 044	35	409	619 4	584.3	
409	2294645	6962953	0.044	36	410	619 4	583.8	
410	2294640	6962944	0 044	36	411	619.3	583.8	
411	2294635	6962936	0.045	36	412	619.3	583 5	
412	2294629	6962927	0 045	36	413	619 3	583.2	
413	2294624	6962919	0 045	36	414	619.2	582 9	
414	2294619	6962910	0.046	37	415	619 2	582.5	
415	2294613	6962902	0 046	37	416	619.2	582.3	
416	2294608	6962893	0.051	41	417	619 2	578 6	
417	2294603	6962884	0 052	41	418	619 1	577 7	
418	2294597	6962876	0.051	41	419	619.1	578 1	
419	2294592	6962867	0.051	41	420	619 1	578.1	
420	2294587	6962859	0.050	40	421	619.0	579.4	
421	2294581	6962850	0 049	39	422	619 0	579 7	
422	2294576	6962842	0.049	39	423	619.0	579.6	
423	2294571	6962833	0 049	39	424	619 0	579 6	
424	2294565	6962824	0.049	39	425	618.9	579.8	
425	2294560	6962816	0.049	39	426	618 9	579 9	
426	2294554	6962807	0 048	38	427	618 9	580.7	
427	2294549	6962799	0.046	37	428	618.8	581 7	
428	2294544	6962790	0.046	37	429	618 8	581 7	
429	2294538	6962782	0.047	37	430	618.8	581.6	
430	2294533	6962773	0 046	37	431	618.8	582 0	69 ft. NW of LF05-01(25')
431	2294528	6962764	0.045	36	432	618 7	582.7	
432	2294522	6962756	0 049	39	433	618.7	579.6	
433	2294517	6962747	0 052	41	434	618 7	577.2	
434	2294512	6962739	0.053	42	435	618.6	576.3	
435	2294506	6962730	0 054	43	436	618.6	575.5	
436	2294501	6962722	0.051	41	437	618 6	577 5	
437	2294496	6962713	0 050	40	438	618.6	578.8	
438	2294490	6962704	0 048	38	439	618.5	580 1	
439	2294485	6962696	0.048	38	440	618 5	580 5	
440	2294480	6962687	0 047	37	441	618.5	581.2	
441	2294474	6962679	0 046	37	442	618 4	581 8	
442	2294469	6962670	0.046	37	443	618 4	581 5	
443	2294464	6962662	0 046	36	444	618 4	582.0	
444	2294458	6962653	0.044	35	445	618 4	583.2	
445	2294453	6962644	0 045	36	446	618 3	582 3	
446	2294448	6962636	0.043	34	447	618.3	584.3	
447	2294442	6962627	0 040	32	448	618 3	586 3	
448	2294437	6962619	0.035	28	449	618.2	590.2	
449	2294432	6962610				618 2		8 ft. NE of WHGLTA302 (17')
	2294424	6962602						



Wiggle Trace



Amplitude

Seismic Reflection Line 33

NAS Fort Worth, Texas

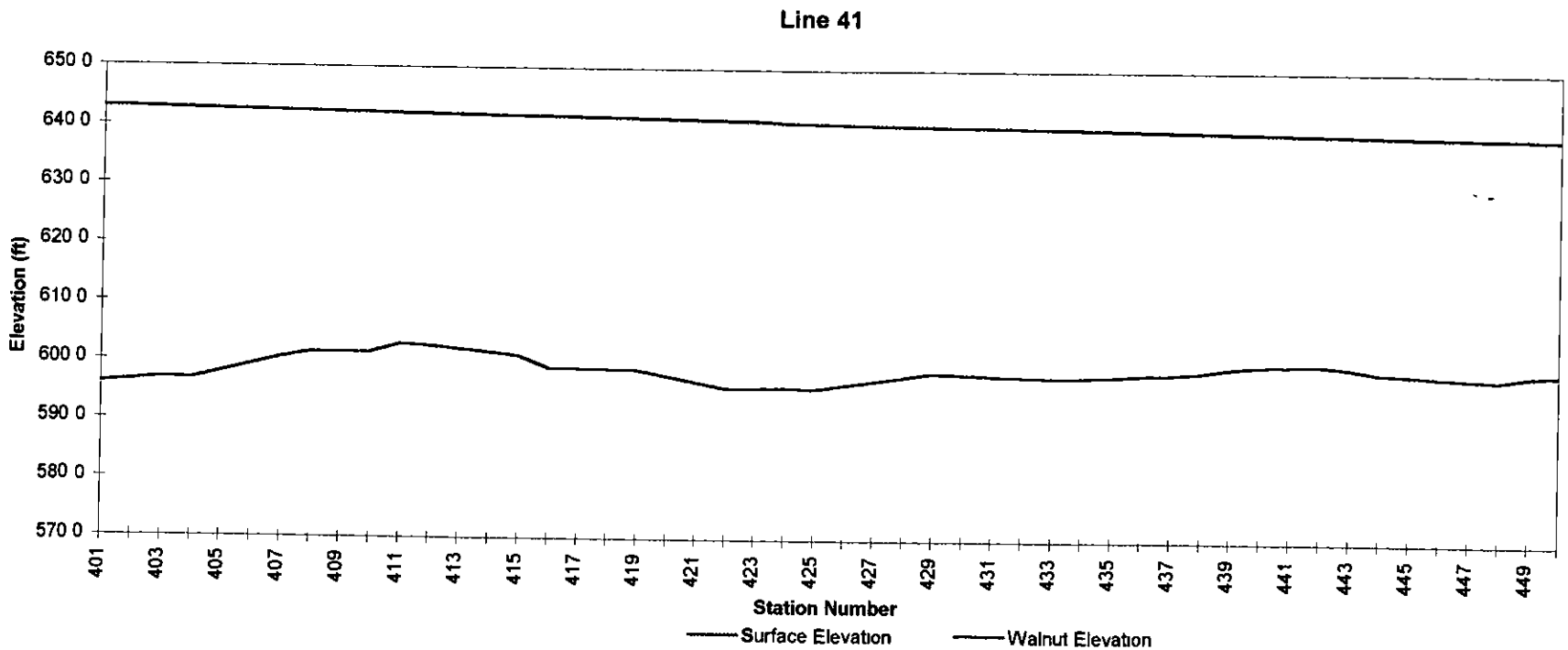
Explanation:

Soil Boring

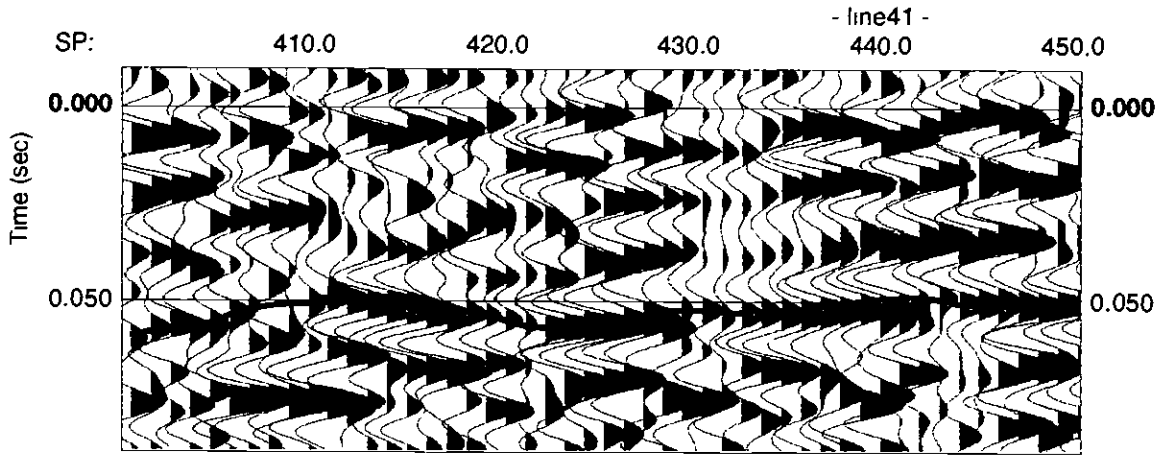
Bedrock

Interpre'Tech/Seispulse LLC

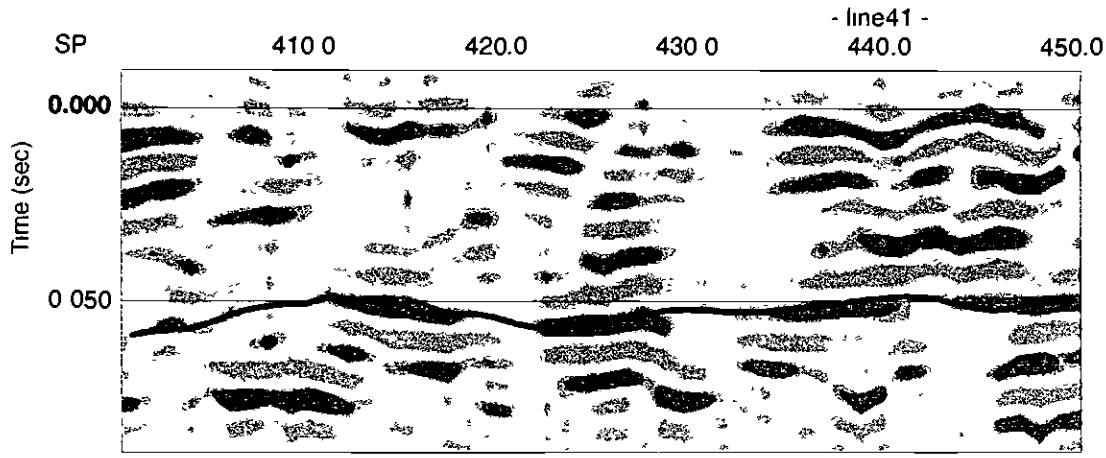
432 Green Brae
Medford, OR 97504
541 734 0808


Line 41
650 0
640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
Elevation (ft)
401
403
405
407
409
411
413
415
417
419
421
423
425
427
429
431
433
435
437
439
441
443
445
447
449
Station Number
Surface Elevation
Walnut Elevation

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
401	2293060	6965331	0.059	47	401	642.9	595.9	
402	2293066	6965324	0.058	46	402	642.8	596.4	
403	2293073	6965316	0 057	46	403	642 8	596.9	
404	2293080	6965309	0 058	46	404	642 7	596.7	
405	2293087	6965301	0.056	45	405	642.6	598.0	
406	2293094	6965294	0.054	43	406	642.5	599.2	
407	2293100	6965286	0.053	42	407	642.5	600 5	
408	2293107	6965279	0.051	41	408	642.4	601.3	
409	2293114	6965272	0.051	41	409	642.3	601.4	
410	2293121	6965264	0.051	41	410	642.2	601.4	
411	2293128	6965257	0.049	39	411	642.1	602.7	
412	2293134	6965249	0 050	40	412	642.1	602 5	
413	2293141	6965242	0.050	40	413	642.0	602 0	
414	2293148	6965235	0.051	40	414	641 9	601.5	
415	2293155	6965227	0.051	41	415	641 8	600.9	
416	2293162	6965220	0.054	43	416	641.8	599 0	
417	2293168	6965212	0.054	43	417	641.7	598.9	
418	2293175	6965205	0 054	43	418	641.6	598.8	
419	2293182	6965198	0 054	43	419	641 5	598.7	
420	2293189	6965190	0.055	44	420	641 4	597.7	
421	2293195	6965183	0.056	45	421	641.4	596 7	
422	2293202	6965175	0.057	46	422	641.3	595.7	
423	2293209	6965168	0.057	46	423	641 2	595.7	
424	2293237	6965138	0.056	45	424	640.9	595 9	Skip 40 ft between 423-424
425	2293243	6965130	0 057	45	425	640.8	595.6	
426	2293250	6965123	0.056	44	426	640.7	596.3	
427	2293257	6965116	0.055	44	427	640.7	597 1	
428	2293264	6965108	0.054	43	428	640.6	597.8	
429	2293271	6965101	0 053	42	429	640 5	598 5	
430	2293277	6965093	0 053	42	430	640 4	598.3	
431	2293284	6965086	0.053	42	431	640.3	598.1	
432	2293291	6965079	0.053	42	432	640 3	598.0	
433	2293298	6965071	0 053	42	433	640.2	597.8	
434	2293305	6965064	0.053	42	434	640.1	597 8	
435	2293311	6965056	0.053	42	435	640.0	598.0	
436	2293318	6965049	0 052	42	436	640.0	598 4	
437	2293325	6965042	0.052	41	437	639 9	598 5	
438	2293332	6965034	0 051	41	438	639.8	598.9	
439	2293338	6965027	0.050	40	439	639.7	599 6	
440	2293345	6965019	0.050	40	440	639.6	600.0	
441	2293352	6965012	0 049	39	441	639.6	600.2	
442	2293359	6965005	0.049	39	442	639.5	600.3	
443	2293366	6964997	0.050	40	443	639.4	599.8	
444	2293372	6964990	0.051	40	444	639.3	598.9	
445	2293379	6964982	0.051	41	445	639.2	598.6	
446	2293386	6964975	0 051	41	446	639.2	598.4	
447	2293393	6964968	0 051	41	447	639 1	598 1	
448	2293400	6964960	0.052	41	448	639.0	597.8	
449	2293406	6964953	0.050	40	449	638 9	598.7	
450	2293413	6964945	0.050	40	450	638.9	599.0	



Wiggle Trace



Amplitude

Seismic Reflection Line 41

NAS Fort Worth, Texas

Explanation

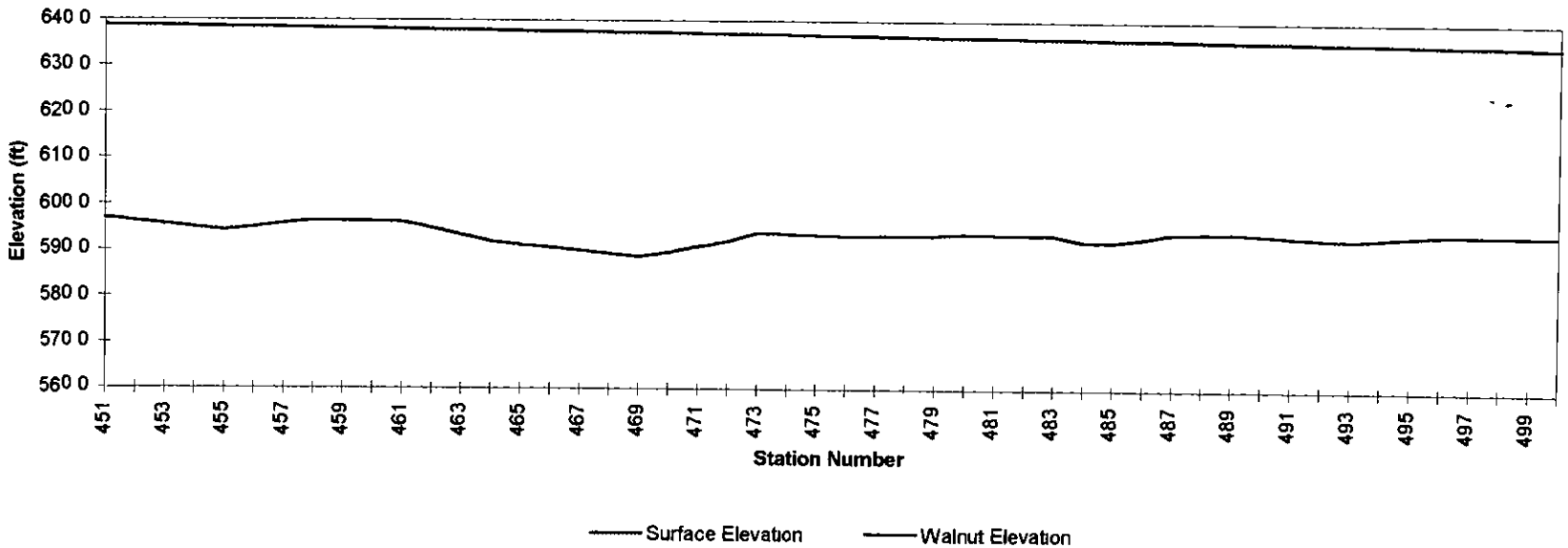
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

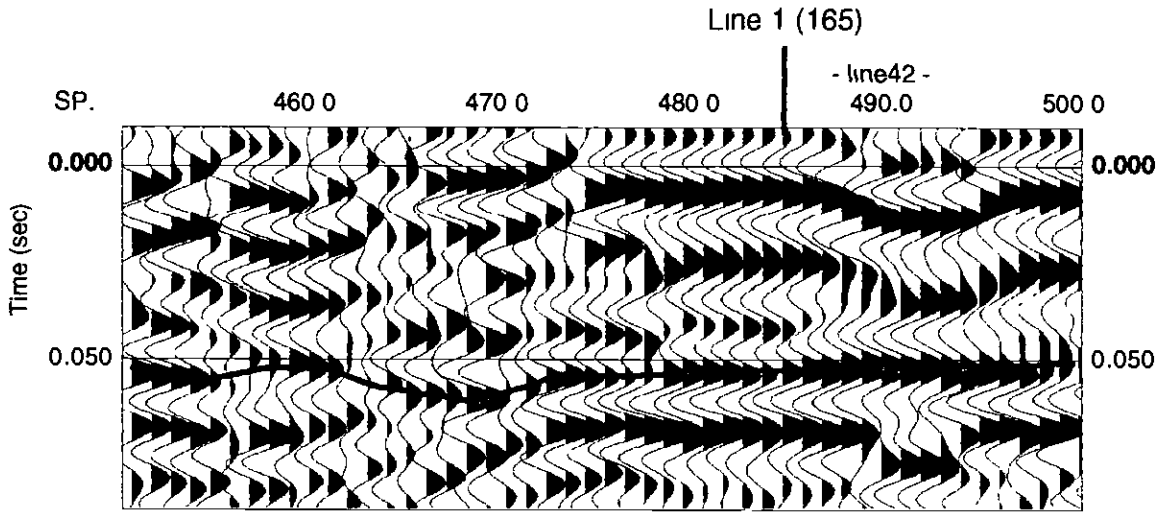
432 Green Brae
Medford, OR 97504
541 734 0808

Line 42

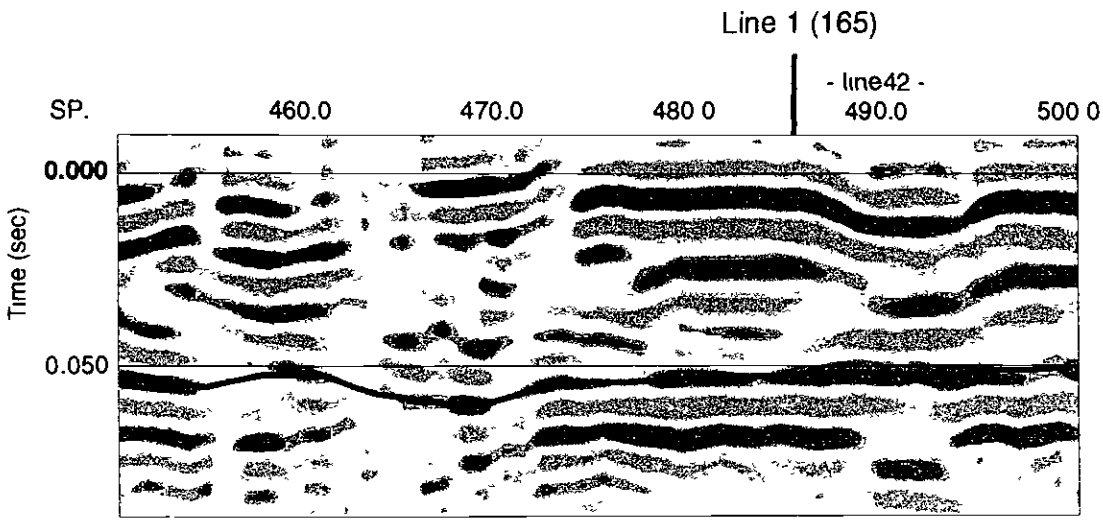

640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
Elevation (ft)
451
453
455
457
459
461
463
465
467
469
471
473
475
477
479
481
483
485
487
489
491
493
495
497
499
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 42

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
451	2293420	6964938	0.053	42	451	638.8	596.8	
452	2293427	6964931	0 053	43	452	638.7	596.1	
453	2293433	6964923	0.054	43	453	638.6	595.4	
454	2293440	6964916	0.055	44	454	638 5	594.7	
455	2293447	6964908	0 056	44	455	638.5	594.1	
456	2293454	6964901	0.055	44	456	638 4	594.8	
457	2293461	6964893	0.054	43	457	638.3	595.5	
458	2293467	6964886	0.053	42	458	638.2	596.2	
459	2293474	6964879	0 053	42	459	638.2	596.2	
460	2293481	6964871	0 053	42	460	638 1	596.1	
461	2293488	6964864	0.053	42	461	638.0	596.0	
462	2293495	6964856	0.054	43	462	637 9	594.6	
463	2293501	6964849	0 056	45	463	637.8	593.2	
464	2293508	6964842	0.058	46	464	637.8	591.8	
465	2293515	6964834	0.058	47	465	637 7	591.1	
466	2293522	6964827	0.059	47	466	637.6	590.5	
467	2293529	6964819	0.060	48	467	637.5	589.8	
468	2293535	6964812	0.060	48	468	637.5	589 2	
469	2293542	6964805	0 061	49	469	637.4	588.6	
470	2293549	6964797	0.060	48	470	637.3	589 5	
471	2293556	6964790	0.058	46	471	637.2	590.8	
472	2293562	6964782	0 057	45	472	637.1	591.9	
473	2293569	6964775	0.054	43	473	637 1	593.9	
474	2293576	6964768	0.054	43	474	637.0	593.6	
475	2293583	6964760	0.054	43	475	636.9	593.4	
476	2293590	6964753	0.055	44	476	636 8	593.2	
477	2293596	6964745	0.054	43	477	636.7	593.3	
478	2293603	6964738	0 054	43	478	636.7	593 3	
479	2293610	6964731	0.054	43	479	636.6	593.4	
480	2293617	6964723	0.054	43	480	636 5	593 7	
481	2293624	6964716	0.054	43	481	636 4	593.6	
482	2293630	6964708	0.054	43	482	636.4	593 6	
483	2293637	6964701	0.054	43	483	636 3	593.5	
484	2293644	6964694	0 055	44	484	636.2	592.2	
485	2293651	6964686	0.055	44	485	636.1	592.1	Line 1 (165)
486	2293657	6964679	0.054	43	486	636.0	592.8	
487	2293664	6964671	0.053	42	487	636.0	594.0	
488	2293671	6964664	0.052	42	488	635.9	594.1	
489	2293678	6964656	0 052	42	489	635.8	594.2	
490	2293685	6964649	0.052	42	490	635.7	593.8	
491	2293691	6964642	0 053	42	491	635.7	593 5	
492	2293698	6964634	0.053	43	492	635 6	593.1	
493	2293705	6964627	0 054	43	493	635.5	592.7	
494	2293712	6964619	0 053	42	494	635.4	593.2	
495	2293719	6964612	0.052	42	495	635.3	593 6	
496	2293725	6964605	0.052	41	496	635.3	594.1	
497	2293732	6964597	0 051	41	497	635.2	594.1	
498	2293739	6964590	0 051	41	498	635 1	594 1	
499	2293746	6964582	0 051	41	499	635.0	594.1	
500	2293753	6964575	0.051	41	500	635 0	594.2	



Wiggle Trace



Amplitude

Seismic Reflection Line 42

NAS Fort Worth, Texas

Explanation

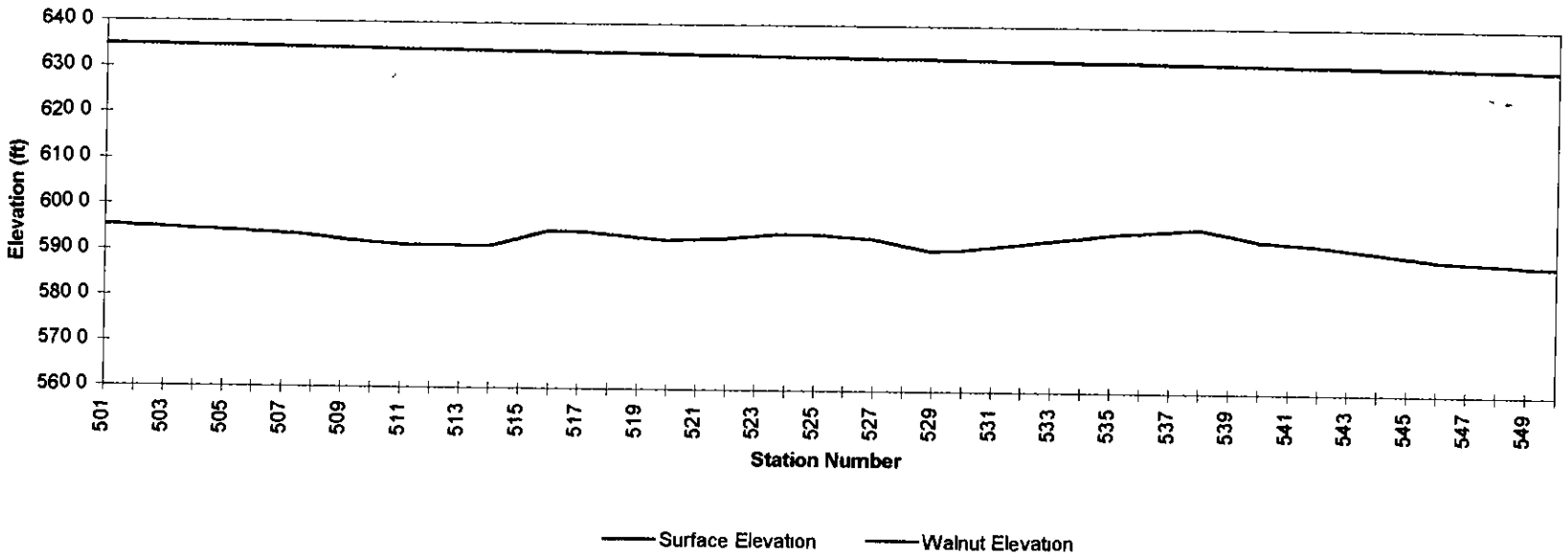
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

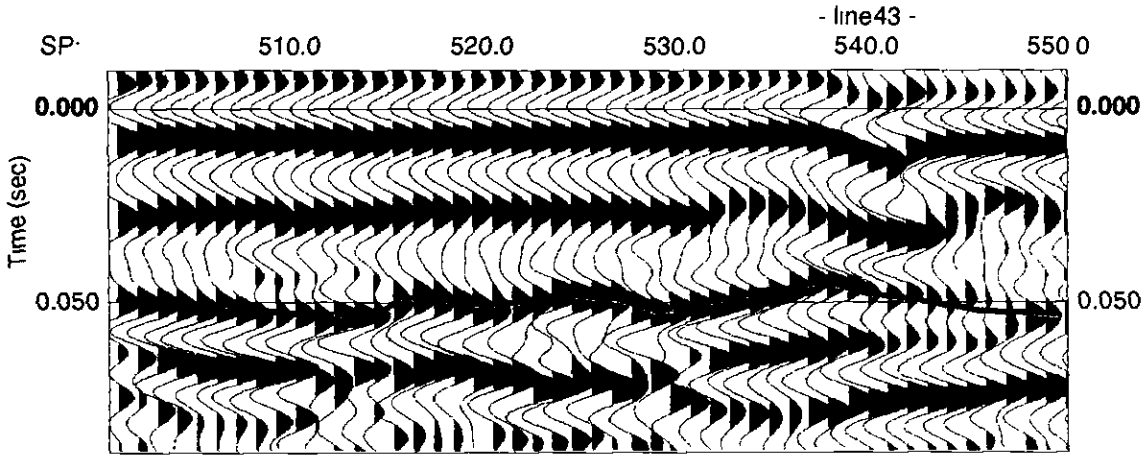
432 Green Brae
Medford, OR 97504
541 734 0808

Line 43

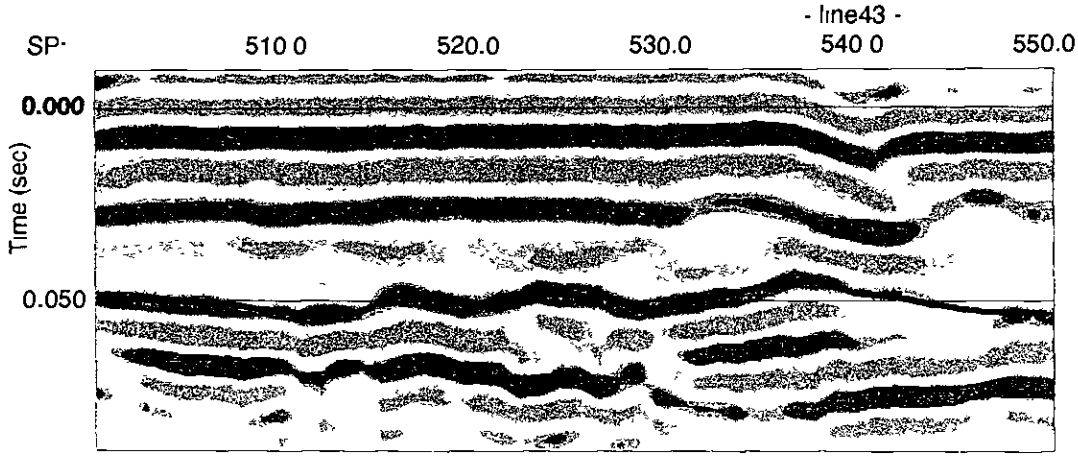

640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
Elevation (ft)
501
503
505
507
509
511
513
515
517
519
521
523
525
527
529
531
533
535
537
539
541
543
545
547
549
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 43

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
501	2293759	6964568	0.050	40	501	634.9	595 3	
502	2293766	6964560	0.050	40	502	634 8	595.0	
503	2293773	6964553	0.050	40	503	634.7	594 7	
504	2293780	6964545	0 050	40	504	634.6	594 4	
505	2293786	6964538	0.051	40	505	634.6	594.2	
506	2293793	6964531	0 051	41	506	634.5	593.8	
507	2293800	6964523	0 051	41	507	634.4	593.5	
508	2293807	6964516	0.052	41	508	634.3	593.1	
509	2293814	6964508	0.053	42	509	634 2	592 2	
510	2293820	6964501	0.053	42	510	634.2	591.8	
511	2293827	6964494	0 054	43	511	634.1	591.3	
512	2293834	6964486	0.054	43	512	634 0	591.2	
513	2293841	6964479	0.054	43	513	633.9	591.1	
514	2293848	6964471	0.054	43	514	633.9	591.1	
515	2293854	6964464	0.051	41	515	633 8	592.8	
516	2293861	6964457	0 049	39	516	633.7	594.5	
517	2293868	6964449	0.049	39	517	633.6	594.4	
518	2293875	6964442	0.050	40	518	633.5	593 8	
519	2293882	6964434	0.050	40	519	633 5	593.2	
520	2293888	6964427	0 051	41	520	633.4	592.6	
521	2293895	6964419	0.051	40	521	633 3	592 9	
522	2293902	6964412	0 050	40	522	633.2	593.2	
523	2293909	6964405	0 049	39	523	633.2	593.8	
524	2293915	6964397	0.049	39	524	633.1	594 3	
525	2293922	6964390	0 049	39	525	633.0	594.2	
526	2293929	6964382	0 049	39	526	632.9	593.7	
527	2293936	6964375	0.050	40	527	632.8	593.2	
528	2293943	6964368	0 051	41	528	632.8	592.0	
529	2293949	6964360	0 053	42	529	632 7	590.7	
530	2293956	6964353	0.052	42	530	632.6	591.0	
531	2293963	6964345	0.051	41	531	632 5	591 7	
532	2293970	6964338	0.050	40	532	632.4	592.4	
533	2293977	6964331	0 049	39	533	632.4	593.2	
534	2293983	6964323	0.048	38	534	632.3	593.9	
535	2293990	6964316	0 047	38	535	632.2	594.6	
536	2293997	6964308	0.046	37	536	632.1	595.1	
537	2294004	6964301	0.046	37	537	632.1	595.5	
538	2294010	6964294	0.045	36	538	632.0	596.0	
539	2294017	6964286	0 047	37	539	631 9	594.7	
540	2294024	6964279	0 048	38	540	631.8	593.4	
541	2294031	6964271	0.049	39	541	631 7	592.9	
542	2294038	6964264	0 049	39	542	631.7	592.5	
543	2294044	6964257	0.050	40	543	631.6	591.7	
544	2294051	6964249	0.051	41	544	631.5	590.9	
545	2294058	6964242	0.052	41	545	631.4	590 1	
546	2294065	6964234	0.053	42	546	631.4	589.4	
547	2294072	6964227	0.053	42	547	631.3	589 1	
548	2294078	6964220	0 053	42	548	631.2	588.8	
549	2294085	6964212	0.053	43	549	631 1	588 5	
550	2294092	6964205	0.054	43	550	631.0	588.2	



Wiggle Trace



Amplitude

Seismic Reflection Line 43

NAS Fort Worth, Texas

Explanation

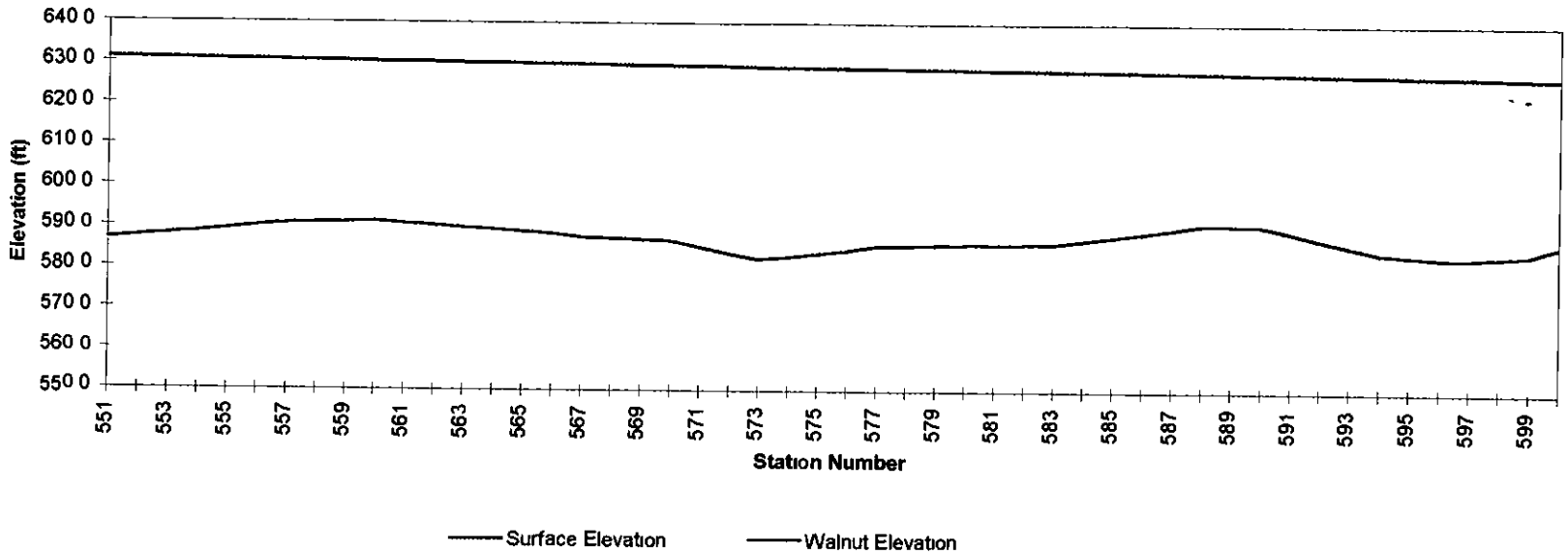
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

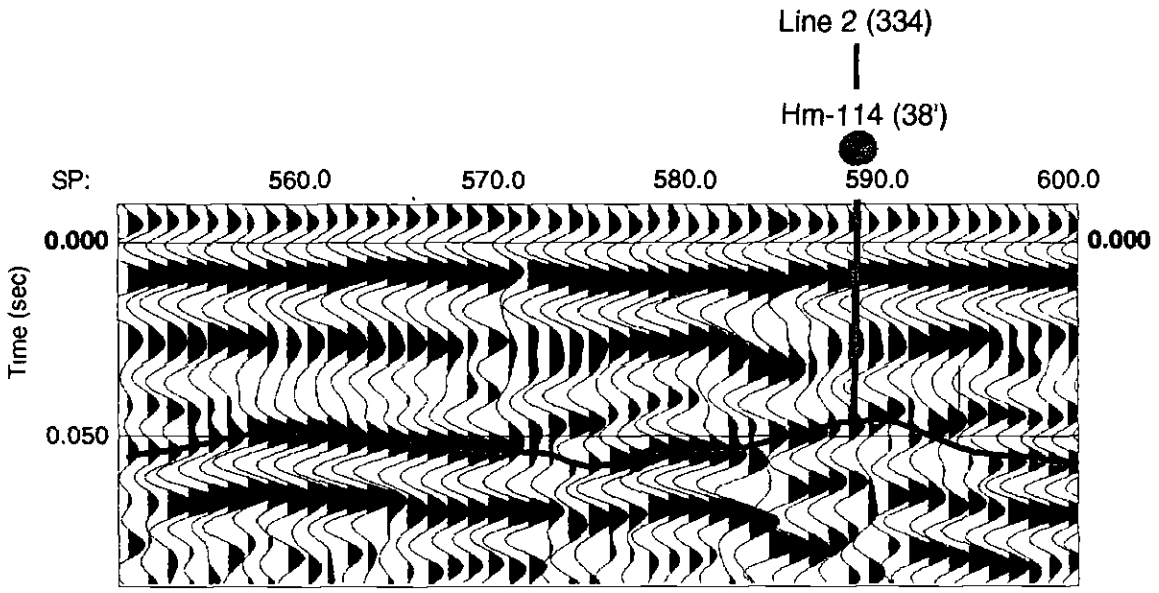
432 Green Brae
Medford, OR 97504
541 734 0808

Line 44

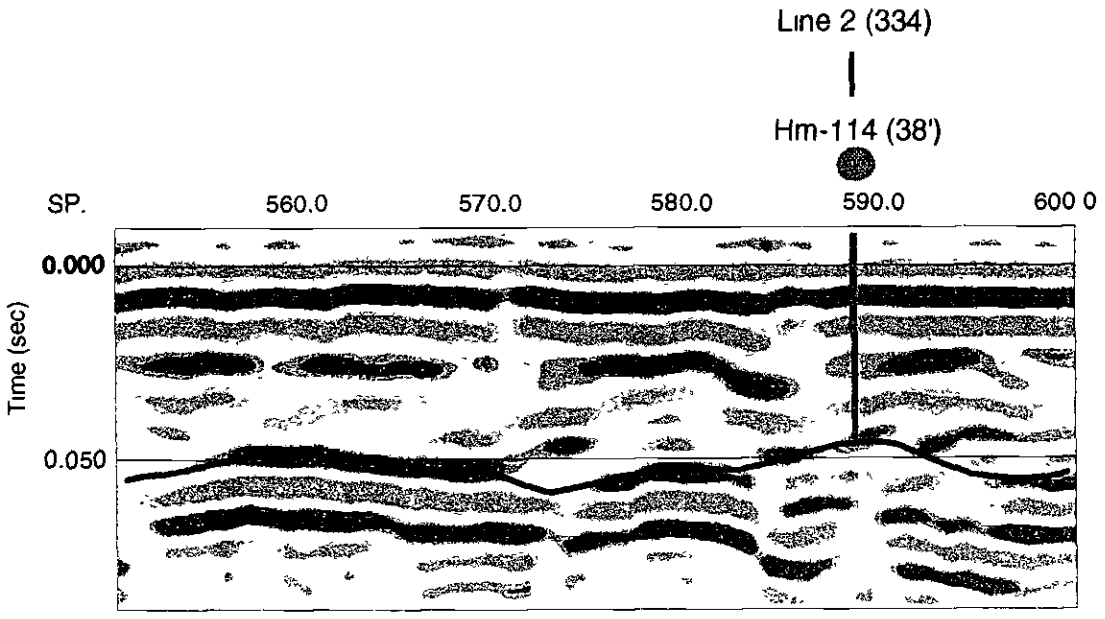

640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
Elevation (ft)
551
553
555
557
559
561
563
565
567
569
571
573
575
577
579
581
583
585
587
589
591
593
595
597
599
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 44

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
551	2294099	6964197	0.056	44	551	631 0	586.6	
552	2294106	6964190	0.055	44	552	630.9	587 2	
553	2294112	6964182	0 054	43	553	630 8	587 7	
554	2294119	6964175	0 053	42	554	630 7	588.3	
555	2294126	6964168	0.052	42	555	630.7	589.1	
556	2294133	6964160	0.051	41	556	630.6	589 8	
557	2294139	6964153	0.050	40	557	630 5	590 5	
558	2294146	6964145	0.050	40	558	630 4	590.7	
559	2294153	6964138	0 049	39	559	630.3	590.9	
560	2294160	6964131	0.049	39	560	630.3	591.1	
561	2294167	6964123	0.050	40	561	630.2	590 6	
562	2294173	6964116	0.050	40	562	630 1	590 1	
563	2294180	6964108	0.051	40	563	630.0	589.6	
564	2294187	6964101	0.051	41	564	629.9	589.1	
565	2294194	6964094	0 052	41	565	629.9	588.7	
566	2294201	6964086	0.052	42	566	629.8	588 2	
567	2294207	6964079	0.053	42	567	629.7	587 3	
568	2294214	6964071	0.053	43	568	629.6	587.0	
569	2294221	6964064	0.054	43	569	629.6	586.8	
570	2294228	6964057	0.054	43	570	629.5	586 5	
571	2294234	6964049	0.056	44	571	629.4	585 0	
572	2294241	6964042	0.057	46	572	629.3	583.5	
573	2294248	6964034	0.059	47	573	629.2	582.0	
574	2294255	6964027	0 058	46	574	629.2	582.8	
575	2294262	6964020	0 057	46	575	629.1	583.5	
576	2294268	6964012	0.056	45	576	629.0	584.2	
577	2294275	6964005	0.055	44	577	628.9	585.3	
578	2294282	6963997	0.054	43	578	628 9	585 5	
579	2294289	6963990	0.054	43	579	628.8	585.7	
580	2294296	6963983	0 054	43	580	628.7	585.9	
581	2294302	6963975	0.053	43	581	628.6	586.0	
582	2294309	6963968	0.053	43	582	628.5	586.0	
583	2294316	6963960	0.053	42	583	628 5	586.1	
584	2294323	6963953	0.052	41	584	628.4	586 9	
585	2294330	6963945	0 051	41	585	628.3	587.8	
586	2294336	6963938	0.050	40	586	628 2	588.6	
587	2294343	6963931	0.048	38	587	628.2	589.8	
588	2294350	6963923	0.047	37	588	628.1	590.9	
589	2294356	6963916	0.047	37	589	628 0	590.8	HM 114 (38+ft) Line 2 (334)
	2294352	6963912	0 046	37	590	627.9	590.7	
590	2294363	6963909	0.047	37	591	627.8	589.0	628 0
591	2294370	6963902	0.049	39	592	627.7	587.3	
592	2294377	6963895	0 051	40	593	627.6	585.6	
593	2294385	6963888	0 053	42	594	627.5	583.9	
594	2294392	6963881	0 055	44	595	627.5	583.5	
595	2294399	6963874	0.055	44	596	627.4	583.0	
596	2294406	6963867	0.056	44	597	627.3	582 9	
597	2294413	6963860	0.056	44	598	627.2	583 4	
598	2294420	6963853	0.055	44	599	627.1	583.9	
599	2294427	6963846	0 054	43	600	627.0	586.2	WAW
600	2294434	6963839	0.051	41	601	626 9	585.9	



Wiggle Trace



Amplitude

Seismic Reflection Line 44

NAS Fort Worth, Texas

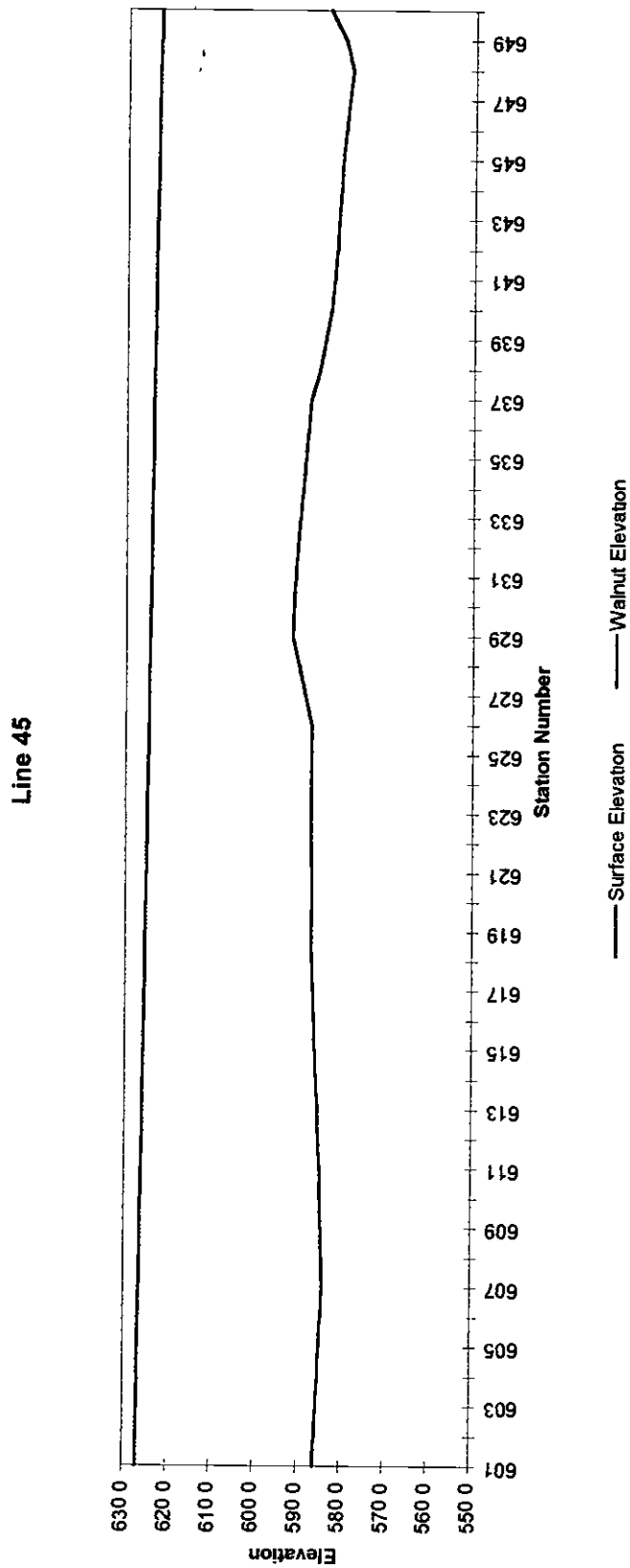
Explanation.

Soil Boring

Bedrock

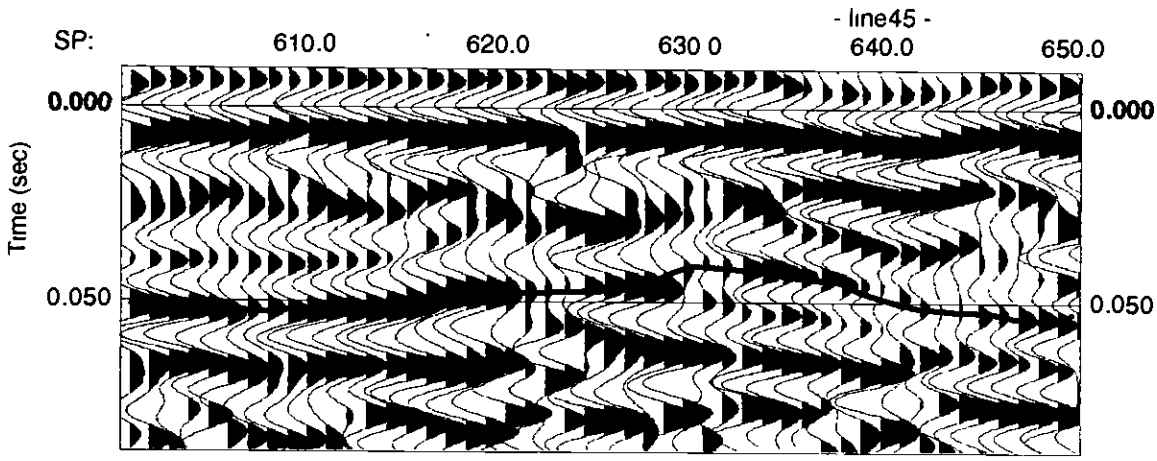
Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541 734 0808

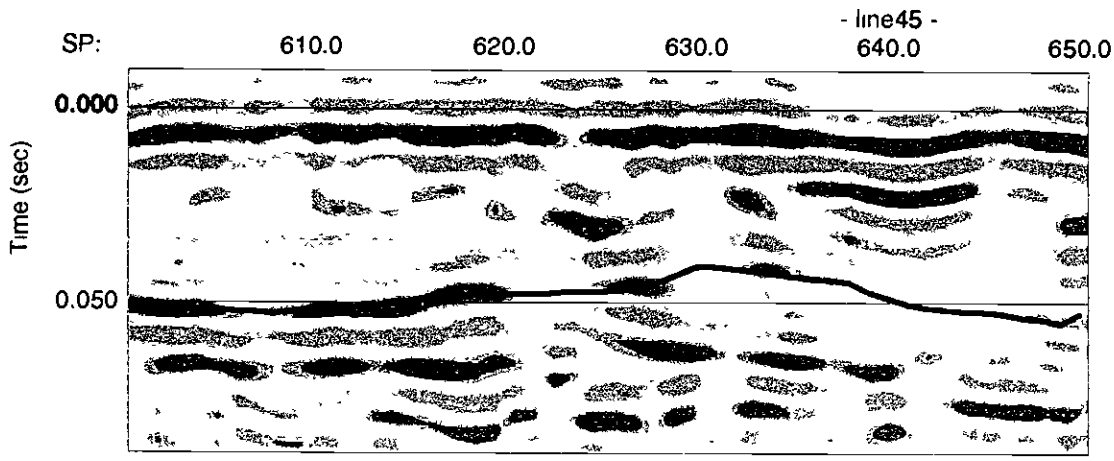

Line 45
Elevation
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
601
603
605
607
609
611
613
615
617
619
621
623
625
627
629
631
633
635
637
639
641
643
645
647
649
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 45

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation
600	2294434	6963839	0.051	41	601	626.9	585 9
601	2294442	6963832	0.051	41	602	626.8	585.6
602	2294449	6963825	0.052	41	603	626.7	585.2
603	2294456	6963818	0 052	41	604	626.6	584.9
604	2294463	6963811	0.052	42	605	626.5	584.6
605	2294470	6963804	0.052	42	606	626 4	584.3
606	2294477	6963797	0.053	42	607	626.3	583.9
607	2294484	6963790	0.053	42	608	626 3	584.1
608	2294491	6963783	0.053	42	609	626.2	584 4
609	2294499	6963776	0.052	42	610	626 1	584 6
610	2294506	6963769	0.052	41	611	626 0	584.8
611	2294513	6963762	0 052	41	612	625 9	585 1
612	2294520	6963755	0 051	41	613	625.8	585 4
613	2294527	6963748	0 051	40	614	625.7	585.7
614	2294534	6963741	0.050	40	615	625.6	586.0
615	2294541	6963734	0.050	40	616	625.5	586.3
616	2294548	6963727	0 049	39	617	625.4	586.5
617	2294556	6963720	0 049	39	618	625.3	586 7
618	2294563	6963713	0 048	39	619	625.2	586.9
619	2294570	6963706	0.048	38	620	625.1	586.7
620	2294577	6963699	0.048	38	621	625 0	586 8
621	2294584	6963692	0.048	38	622	625.0	587.0
622	2294591	6963685	0.048	38	623	624 9	587.0
623	2294598	6963678	0.047	38	624	624.8	587 0
624	2294605	6963671	0 047	38	625	624.7	587 0
625	2294612	6963664	0 047	38	626	624.6	587.0
626	2294620	6963657	0.047	38	627	624.5	588.5
627	2294627	6963650	0 045	36	628	624.4	590.0
628	2294634	6963643	0 043	34	629	624.3	591 5
629	2294641	6963636	0.041	33	630	624.2	591 2
630	2294648	6963629	0 041	33	631	624.1	590.9
631	2294655	6963622	0.042	33	632	624.0	590.4
632	2294662	6963615	0 042	34	633	623 9	589.8
633	2294669	6963608	0 043	34	634	623 8	589.2
634	2294677	6963601	0.043	35	635	623.7	588.6
635	2294684	6963594	0.044	35	636	623.7	588.1
636	2294691	6963587	0.045	36	637	623 6	587 5
637	2294698	6963580	0.045	36	638	623.5	585 5
638	2294705	6963573	0.048	38	639	623.4	584.2
639	2294712	6963566	0.049	39	640	623.3	582.9
640	2294719	6963559	0 051	40	641	623 2	582 2
641	2294726	6963552	0.051	41	642	623 1	581.5
642	2294734	6963545	0.052	42	643	623.0	581.1
643	2294741	6963538	0.052	42	644	622.9	580.8
644	2294748	6963531	0.053	42	645	622.8	580.4
645	2294755	6963524	0.053	42	646	622.7	579 7
646	2294762	6963517	0.054	43	647	622 6	578 9
647	2294769	6963510	0.055	44	648	622.5	578.1
648	2294776	6963503	0.056	44	649	622.4	580 0
649	2294783	6963496	0.053	42	650	622.4	583 6



Wiggle Trace



Amplitude

Seismic Reflection Line 45

NAS Fort Worth, Texas

Explanation.

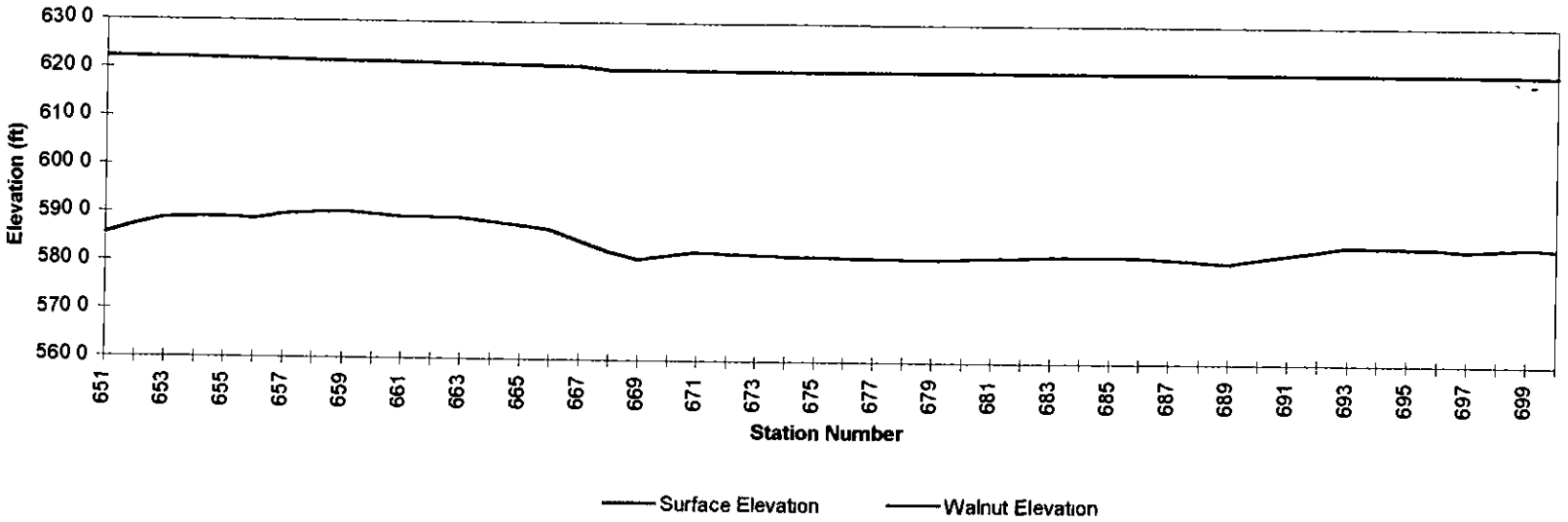
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

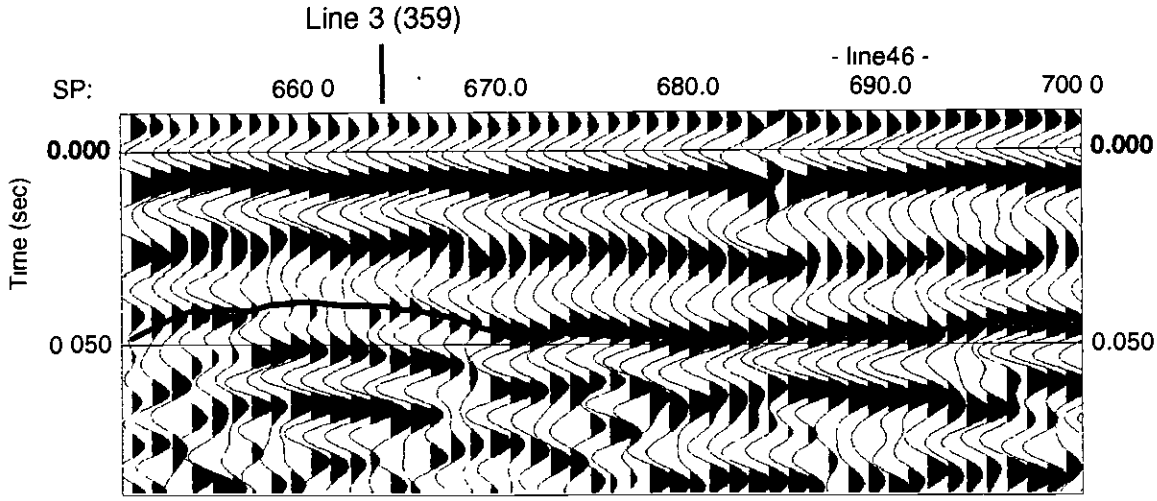
432 Green Brae
Medford, OR 97504
541 734 0808

Line 46


630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
Elevation (ft)
651
653
655
657
659
661
663
665
667
669
671
673
675
677
679
681
683
685
687
689
691
693
695
697
699
Station Number
Surface Elevation
Walnut Elevation

NAS-2000 Line 46

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
650	2294791	6963489	0.049	39	651	622 3	585.5	
651	2294798	6963482	0 046	37	652	622.2	587.4	
652	2294805	6963475	0 044	35	653	622.1	588.8	
653	2294812	6963468	0 042	33	654	622.0	588.9	
654	2294819	6963461	0.041	33	655	621 9	589.1	
655	2294826	6963454	0.041	33	656	621 8	588.6	
656	2294833	6963448	0 042	33	657	621 7	589.7	
657	2294840	6963441	0.040	32	658	621 6	590.0	
658	2294848	6963434	0 040	32	659	621 5	590 3	
659	2294855	6963427	0 039	31	660	621 4	589.8	
660	2294862	6963420	0 040	32	661	621.3	589.3	
661	2294869	6963413	0.040	32	662	621.2	589.2	
662	2294876	6963406	0 040	32	663	621.1	589.1	
663	2294883	6963399	0.040	32	664	621.1	588 4	
664	2294890	6963392	0.041	33	665	621.0	587.6	Line 3 (359)
665	2294897	6963385	0.042	33	666	620 8	586.8	
666	2294912	6963371	0 043	34	667	620 7	584 4	
	2294912	6963374	0.044	35	668	620.0	582.3	
667	2294919	6963364	0.045	36	669	620.0	580 8	620 8
668	2294923	6963354	0 047	38	670	620.0	581.6	
669	2294928	6963345	0.049	39	671	620 0	582.4	
670	2294933	6963336	0.048	38	672	620.0	582.2	
671	2294937	6963327	0.047	38	673	620.0	582.0	
672	2294942	6963317	0 047	38	674	620.0	581.8	
673	2294946	6963308	0 048	38	675	620 0	581 6	
674	2294951	6963299	0.048	38	676	620.0	581.5	
675	2294956	6963290	0.048	38	677	620.0	581 4	
676	2294960	6963281	0.048	38	678	620.0	581 3	
677	2294965	6963271	0 048	39	679	620 0	581.2	
678	2294969	6963262	0 048	39	680	620.0	581.4	
679	2294974	6963253	0.049	39	681	620.0	581 6	
680	2294979	6963244	0.048	39	682	620 0	581.8	
681	2294983	6963234	0.048	38	683	620.0	582 0	
682	2294986	6963225	0.048	38	684	620.0	582.0	
683	2294992	6963216	0.048	38	685	620.0	582.0	
684	2294997	6963207	0 048	38	686	620.0	582 0	
685	2295002	6963198	0.048	38	687	620 0	581.6	
686	2295006	6963188	0.048	38	688	620.0	581 2	
687	2295011	6963179	0 048	38	689	620.0	580.8	
688	2295015	6963170	0.049	39	690	620.0	581.7	
689	2295020	6963161	0.049	39	691	620.0	582 6	
690	2295025	6963151	0 048	38	692	620 0	583.5	
691	2295029	6963142	0.047	37	693	620.0	584 4	
692	2295034	6963133	0.046	37	694	620.0	584.3	
693	2295038	6963124	0.045	36	695	620 0	584.2	
694	2295043	6963114	0.045	36	696	620 0	584.1	
695	2295048	6963105	0 045	36	697	620.0	583 6	
696	2295052	6963096	0 045	36	698	620.0	584.0	
697	2295057	6963087	0.046	36	699	620 0	584 4	
698	2295061	6963078	0.045	36	700	620.0	584.1	



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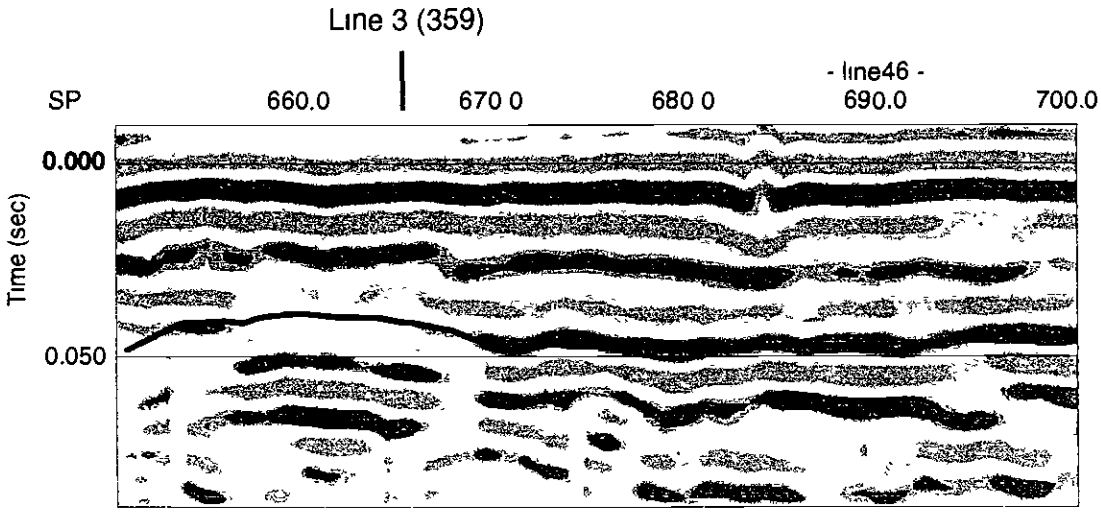


Amplitude

Seismic Reflection Line 46

NAS Fort Worth, Texas

Explanation.

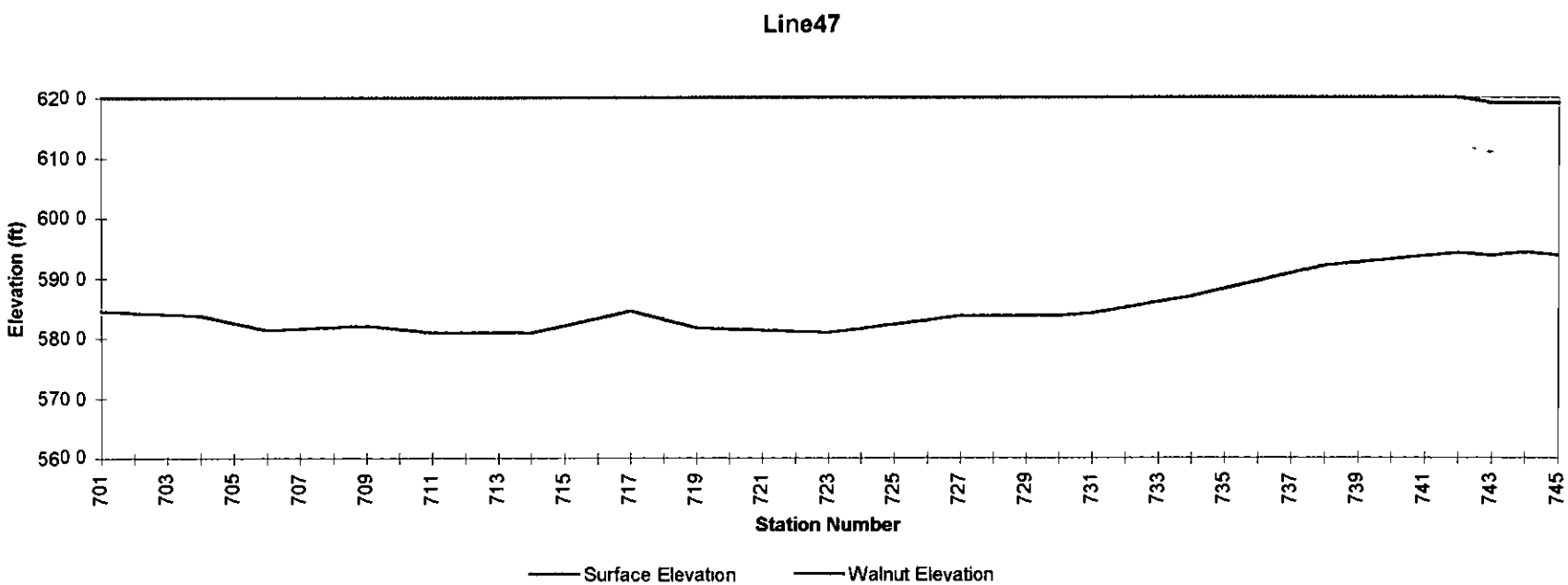
Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541 734 0808

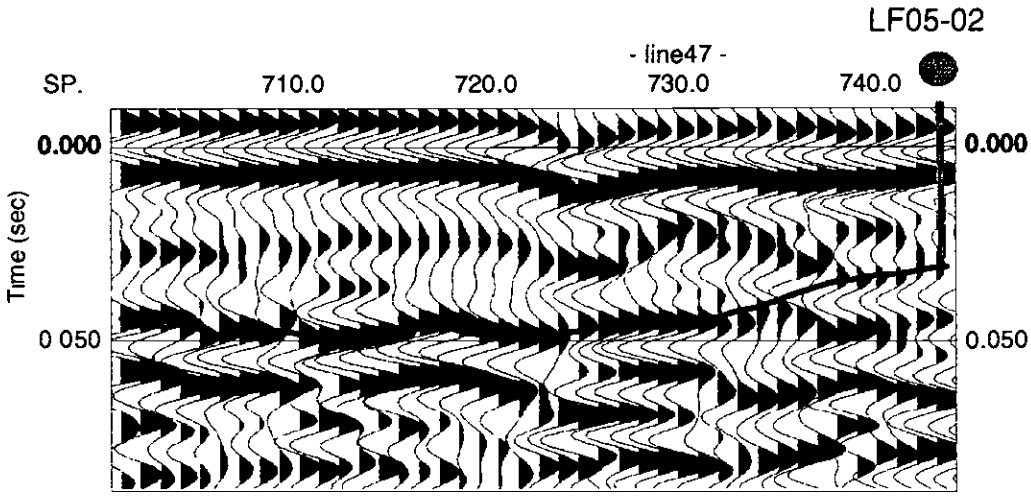
NAS Line 47



689 224

NAS-2000 Line 47

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note 2
699	2295066	6963068	0.045	36	701	620 0	584 4	
700	2295071	6963059	0 045	36	702	620 0	584 1	
701	2295075	6963050	0.045	36	703	620 0	583.9	
702	2295080	6963041	0 046	36	704	620.0	583 6	
703	2295084	6963031	0.047	38	705	620.0	582.4	
704	2295089	6963022	0.049	39	706	620 0	581.2	
705	2295094	6963013	0.048	39	707	620.0	581.5	
706	2295098	6963004	0 048	38	708	620.0	581 7	
707	2295103	6962995	0.048	38	709	620.0	582.0	
708	2295107	6962985	0.048	39	710	620.0	581.4	
709	2295112	6962976	0.049	39	711	620.0	580.8	
710	2295117	6962967	0.049	39	712	620.0	580.8	
711	2295121	6962958	0 049	39	713	620.0	580 8	
712	2295126	6962948	0.049	39	714	620 0	580.8	
713	2295130	6962939	0 048	38	715	620.0	582 0	
714	2295135	6962930	0.046	37	716	620 0	583 2	
715	2295140	6962921	0 045	36	717	620.0	584.4	
716	2295144	6962911	0.046	37	718	620.0	583.0	
717	2295149	6962902	0.048	38	719	620 0	581 6	
718	2295153	6962893	0.048	39	720	620.0	581.4	
719	2295158	6962884	0 049	39	721	620 0	581.2	
720	2295163	6962875	0 049	39	722	620.0	581.0	
721	2295167	6962865	0 049	39	723	620.0	580.8	
722	2295172	6962856	0.048	38	724	620 0	581 5	
723	2295176	6962847	0.047	38	725	620.0	582.2	
724	2295181	6962838	0.046	37	726	620 0	582.9	
725	2295186	6962828	0.046	36	727	620.0	583 6	
726	2295190	6962819	0 046	36	728	620.0	583.6	
727	2295195	6962810	0.046	36	729	620.0	583.6	
728	2295199	6962801	0.046	36	730	620.0	583.6	
729	2295204	6962792	0.045	36	731	620 0	584.0	
730	2295209	6962782	0 044	35	732	620.0	584.9	
731	2295213	6962773	0.043	34	733	620.0	585 9	
732	2295218	6962764	0.042	33	734	620 0	586.8	
733	2295222	6962755	0.040	32	735	620.0	588.1	
734	2295227	6962745	0.038	31	736	620 0	589.4	
735	2295232	6962736	0 037	29	737	620.0	590 7	
736	2295236	6962727	0.035	28	738	620.0	592.0	
737	2295241	6962718	0.034	27	739	620.0	592 5	
738	2295245	6962708	0.034	27	740	620.0	593.1	
739	2295250	6962699	0.033	26	741	620.0	593.6	
740	2295255	6962690	0 032	26	742	620.0	594.1	
741	2295259	6962681	0.032	25	743	619.0	593 7	
742	2295264	6962672	0 031	25	744	619.0	594.2	
743	2295268	6962662	0.032	25	745	619.0	593.7	6 ft W of LF05-02 (27')
744	2295273	6962653						
745	2295278	6962644						
	2295283	6962644						
F05-02	2295279	6962653						



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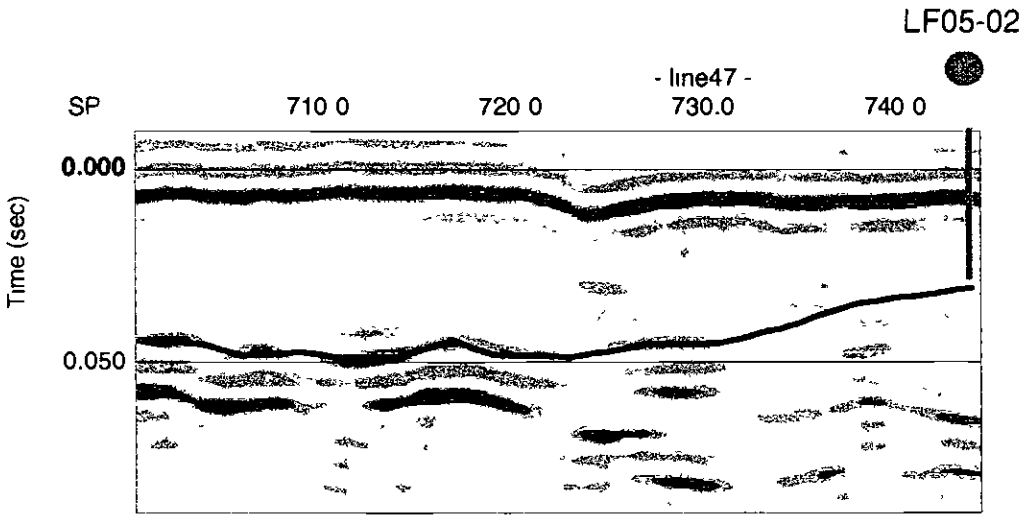


Amplitude

Seismic Reflection Line 47

NAS Fort Worth, Texas

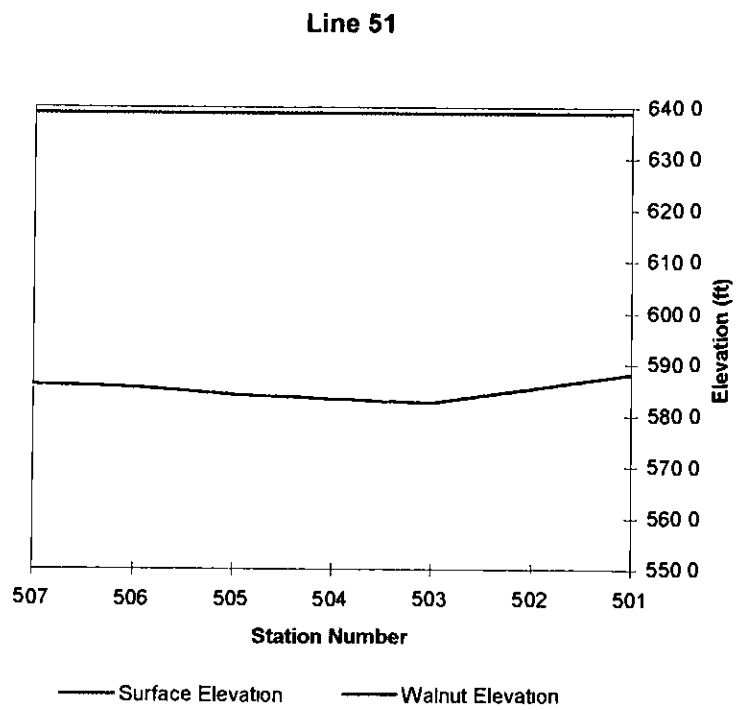
Explanation

Soil Boring

Bedrock

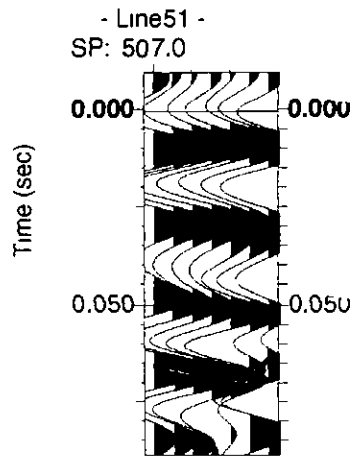
Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541 734 0808

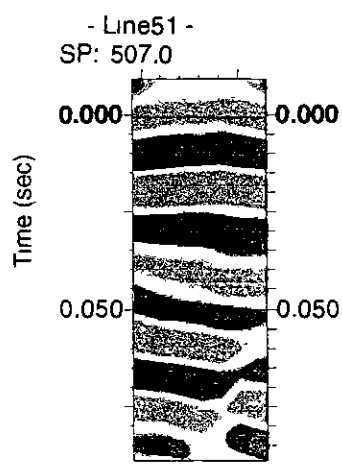

Line 51
640 0
630 0
620 0
610 0
600 0
590 0
580 0
570 0
560 0
550 0
Elevation (ft)
507
506
505
504
503
502
501
Station Number
Surface Elevation
Walnut Elevation

689 227

Station No.	Easting	Northing	Time	Depth	Station No.	ELEV	Elevation	Note
501	2293140	6964255	0.064	51	501	638 7	587.9	38 ft North of Hm112 (51')
502	2293130	6964255	0 067	54	502	638.7	585.1	
503	2293120	6964255	0.071	56	503	638 7	582 3	
504	2293110	6964255	0.070	56	504	638 7	583 1	
505	2293100	6964255	0.069	55	505	638.7	583.9	
506	2293090	6964255	0.067	53	506	638 7	585.4	
507	2293080	6964255	0.066	53	507	638 7	585.9	



Wiggle Trace



Amplitude

Seismic Reflection Line 51

NAS Fort Worth, Texas

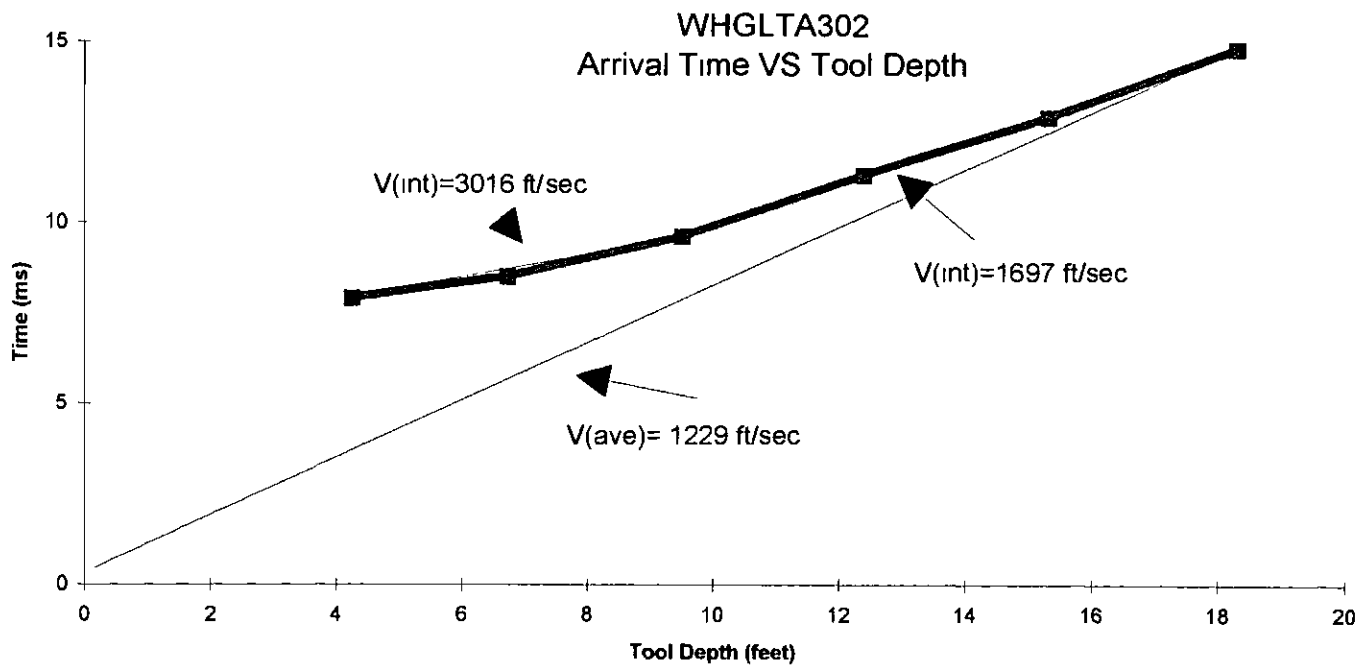
Explanation

Soil Boring

Bedrock

Interpre'Tech/Seispulse LLC

432 Green Brae
Medford, OR 97504
541.734 0808


WHGLTA302
Arrival Time VS Tool Depth
V(int)=3016 ft/sec
V(int)=1697 ft/sec
V(ave)= 1229 ft/sec
Time (ms)
Tool Depth (feet)
0
5
10
15
0
2
4
6
8
10
12
14
16
18
20

689 230

WHGLTA302 DOWN-HOLE VELOCITY TEST

WHGLTA302
3-ft Lift

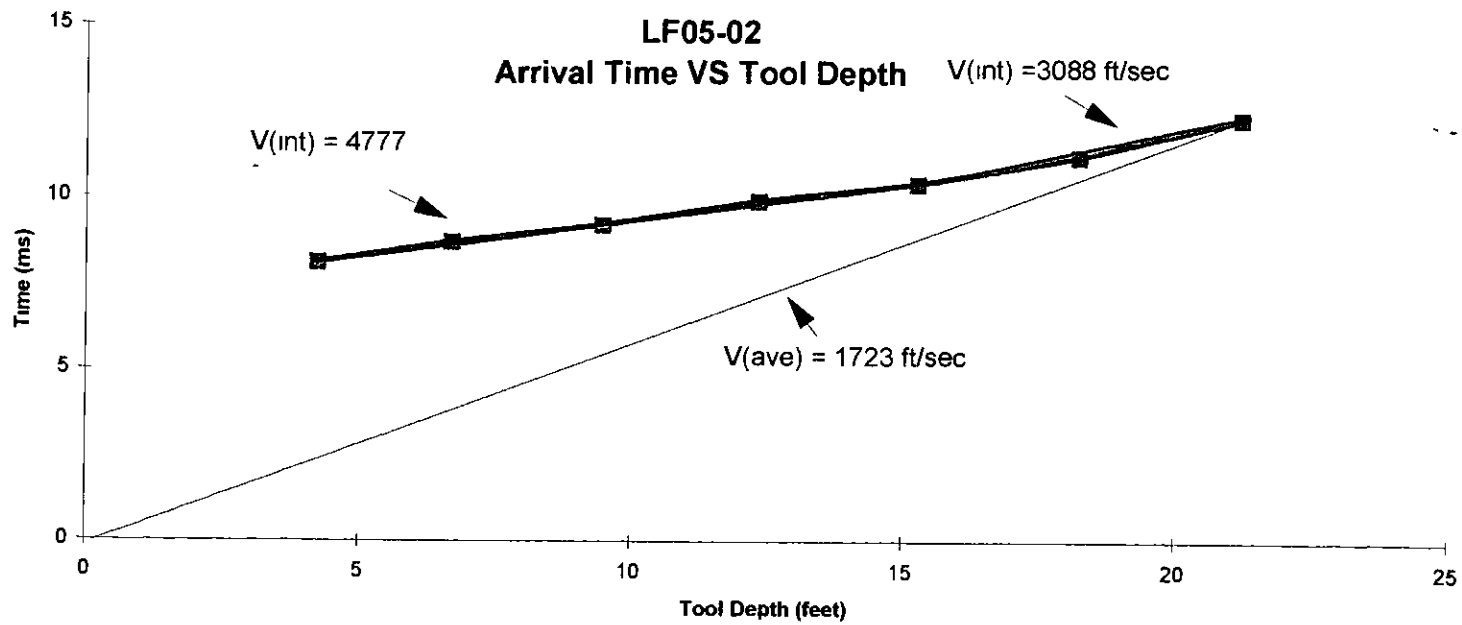
Hammer offset (ft)	Tool Depth (ft)	Offset Correction (ft)	First Arrival Time (ms)
3	3	4.2	7 9
3	6	6 7	8.5
3	9	9 5	9.6
3	12	12 4	11 3
3	15	15.3	12 9
3	18	18.2	14 8

Regression (4.2to 9.5 ft)

Slope X 1000	3016
R Squared	0.98

Regression (9.5 to 12.4 ft)

Slope X 1000	1697
R Squared	1.00


LF05-02
Arrival Time VS Tool Depth
V(int) =3088 ft/sec
V(int) = 4777
V(ave) = 1723 ft/sec
Time (ms)
Tool Depth (feet)
0
5
10
15
20
25

LF05-02
3-ft Lift

Hammer offset (ft)	Tool Depth (ft)	Offset Correction (ft)	First Arrival Time (ms)
3	3	4 2	8 1
3	6	6.7	8.7
3	9	9 5	9 2
3	12	12 4	9 9
3	15	15 3	10 4
3	18	18.2	11 2
3	21	21.2	12 3

Regression (4.2 to 15.3 ft)

Slope X 1000	4777
R Squared	-0.99

Regression (15.3 to 18.2 ft)

Slope X 1000	3088
R Squared	-1.00

TAB

Appendix D

APPENDIX D

Electrical Imaging Report

689 236

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IMAGING THE WORLD ONE SITE AT A TIME

the HUTCHINSON GROUP, Ltd.

Geophysical Site Investigations

CHANNEL DELINEATION STUDY of the FORT WORTH NAVAL AIR STATION JOINT RESERVE BASE using RESISTIVITY SOUNDING

Prepared for
SAIC
San Antonio, TX

November 27, 2000
Revised
January 25, 2001

4280 Old William Penn Highway ♦ Murrysville, PA 15668 ♦ 724-325-3996 ♦ Fax 724-733-7901
www.geo-image.com

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Plate 1 Resistivity Profiles

1.0 INTRODUCTION

1.1 Background

Groundwater within the paleo-Trinity river channels located at the Fort Worth Naval Air Station (NAS) tests positive for hydrocarbons. The location of these channels in three-dimensional space is a prerequisite to the recovery of the hydrocarbons and remediation of the groundwater. SAIC has proposed to install a reactive slurry wall in the path of the hydrocarbons as a remediation response.

1.2 Work Scope

SAIC contracted with SeisPulse and subcontractor, the Hutchinson Group, Ltd., to image paleo-Trinity River channels using resistivity imaging techniques at the NAS Four resistivity lines were collected from October 23 to 27, 2000 using dipole-dipole resistivity imaging techniques for a total of over 6,890 linear feet. The lines were collected adjacent to the active runway at NAS. Data processing included an inversion algorithm to convert apparent resistivity measurements to true ground resistivity readings.

2.0 RESISTIVITY THEORY

2.1 Introduction

Electrical resistance is based upon Ohm's Law:

$$R = \frac{V}{I} \qquad \textbf{(1)}$$

Where, resistance, **R**, is equal to the difference between the current flow, **I**, and voltage differential, **V**. However, resistivity depends upon the bulk property and geometry of the material. Consequently, resistivity is measured in Ohm-meters.

Currents are carried through earth materials by motion of the ions in connate water. Ions in connate water come from the dissociation of salts and provide for the flow of electric current. Further, resistivity decreases in water-bearing rocks and earth materials with increasing:

a Fractional volume of the rock occupied by water;
b. Salinity content of the water;
c Permeability of the pore spaces; and,
d. Temperature

Materials that lack pore space (i.e., limestone, igneous rocks) or lack water in the pore space will show high resistivity (Mooney, 1958) Most earthen materials, however, show medium to low resistivity. The channel material at NAS is estimated to have resistivity values of less than 40 Ohm-meters. Bedrock (i e., Navarro Shale) is estimated at greater than 40 Ohm-meters.

2.2 Dipole-Dipole Survey

In homogeneous ground, the apparent resistivity is the true ground resistivity; however, in heterogeneous ground, the apparent resistivity represents a weighted average of all formations through which the current passes. Many electrode placements have been proposed (for examples see Reynold, 1998); however, dipole-dipole configurations have proven to be the most effective configuration for imaging shallow channels in bedrock settings. The following dipole-dipole configuration was used in the collection of data:

$$R_I = \pi n(n+1)(n+2)a\frac{\Delta V}{I} \qquad \textbf{(2)}$$

Where, $\mathbf{R}_t$, resistivity, is related to the number of poles, n, and pole spacing, **a**, is from Ohm's Law.

Maximum imaging of the channel is based upon dipole-dipole spacing and pole spacing for this survey was derived from:

$$D = \frac{BA}{2} + \frac{AM}{2} \qquad \textbf{(3)}$$

Where, the depth, **D**, is a function of the pole spacing for the electrodes, **A**, **B**, and **M**. The pole spacing for the collection of data in the range of interest for NAS is 6 meters.

2.3 Resistivity Meter

The resistivity survey was performed using the Sting R1 IP coupled with the Swift controller (Advanced Geosciences, Inc., Austin TX). The length of the lines dictated the use of roll-along survey techniques, whereby data is continuously collected as the cables are repositioned.

The survey was conducted using a 200-volt DC source, stainless-steel poles, and Swift cables

2.4 Survey Dimensions

Four dipole-dipole resistivity survey lines were collected at NAS. The 2,205-foot long survey Line EI-1 is located along on the east side of active Runway 17 from south of Bravo taxiway to the narrow paved road across from Charlie taxiway. The 1,929-foot long survey Line EI-2 was located in the grassy median between Foxtrot taxiway and Runway 17 and began at Charlie taxiway and ended south of Bravo taxiway. The 1,929-foot long survey Line EI-3 is located along the eastern edge of Foxtrot from Charlie taxiway to just south of Bravo taxiway. Survey Line EI-4, 827 feet long, is located in the grassy median between Runway 17 and Foxtrot taxiway and south of Charlie taxiway.

2.5 Data Inversion

A forward modeling subroutine was used to calculate the apparent resistivity values using the RES2DINV program (Loke, 1998). This program is based upon the smoothness-constrained least-squares method (deGroot-Hedlin and Constable, 1990; Loke and Barker, 1996). The smoothness-constrained least-squares method is based upon the following equation:

$$J^T g = (J^T J + \mu F) d \qquad \textbf{(4)}$$

Where, **F** is a function of the horizontal and vertical flatness filter, **J** is the matrix of partial derivatives, **μ** is the damping factor, **d** is the model perturbation vector and **g** is the discrepancy vector.

The RES2DINV program divides the subsurface 2D into a number of rectangular blocks. The resistivities of each block are then calculated to produce an apparent resistivity pseudosection. The pseudosection is compared to the actual measurements for consistency. A measure of the difference is given by the root-mean-squared error.

3.0 INTERPRETATION

3.1 Introduction

The four lines show that the paleo-Trinity River channels occur in the area of interest. These channels are shallow (less than 45 feet) and are oriented somewhat east-west Profiles of the measured apparent resistivities, calculated apparent resistivity, and inverse model of the resistivity (in Ohm-meter) show the profile of these channels and possibly the main thalweg to these channel.

3.2 Line EI-1

Line EI-1 was collected from the north to the south. Channel sediments from Line EI-1 (east of Runway 17) show a resistivity of less than 40 Ohm-meters, bedrock is over 40 Ohm-meters. Line EI-1 crossed the Lockheed-Martin reinforced concrete taxiway (96 to 132 meters) and imaging beneath the cement was not possible.

Line EI-1 imaged two channels, a northern channel and a southern channel. The northern channel starts approximately at the reinforced concrete and continues south to record 1400 (in feet). Most of the northern channel is approximately 30 feet deep with deeper areas up to 45 feet Borings BSAICTA001 and WJEUS004 penetrated deeper portions of the channel (probably thalwegs) to 45 feet. The thalweg at record 1200 feet to 1,250 feet shows the presence of a clay plug at the base of the channel.

The southern channel starts at approximately 1450 feet and continues to the south, beyond the end of the line. The southern channel is up to 42 feet deep and was penetrated by WSAICA005 and WSAICA004 This channel has a fairly regular depth profile with an average depth of about 35 feet. The northern portion of the channel is shallower than the southern portion and a small clay plug is located at 1,575 feet.

3.3 Line EI-2

Line EI-2 was collected from the south to the north Nominal resistivities of the channel are 40 Ohm-meters or less. Two channels are depicted on Line EI-2 and represent a westward continuation of the northern and southern channels shown on Line EI-1. Line EI-2 crossed a former runway (record 1,480 feet to 1,620 feet) and little resistivity information was collected beneath the reinforced concrete.

Paleo-channel sediment thicknesses range from 27 feet to 39 feet; however, the northern channel appears to thin from the north to the south. The southern channel ranges from about record 1,100 feet to beyond the end of the line.

The northern channel was difficult to image due to the presence of the concrete. The

northern channel ranges from approximately record 900 feet to beyond the end of the line to the north. This portion of the channel appears to be shallow (30 to 35 feet deep); however, the loss of information at the end of the line limited the quality of the line to the north. A well log (W-153) shows that the channel is actually 39 feet to the north instead of 15 feet.

3.4 Line EI-3

Line EI-3 was collected from the south to the north. Nominal resistivities for the channel sands are less than 40 Ohm-meters. The southern channel is well displayed on Line EI-3 The channel is 1,000 feet wide (range 400 feet to 1,400 feet) and shows a depth of 30 feet, with local depths to 40 feet. The channel sands end abruptly against bedrock to the north and thin to the south

Boring WSAICA002 penetrated the channel to 25 feet which is 5 feet shallower than the resistivity shows the channel depth to be.

3.5 Line EI-4

Line EI-1 was collected from the north to the south. Line EI-4 is located south of Charlie taxiway and shows the southern channel. The southern channel ranges from north of the line to record 400 feet and averages 30 feet in depth.. The southern channel image is disturbed (record 90 feet) through an anomaly suggestive of buried cultural features (i e., pipe).

A third channel is depicted on Line EI-4 (record 550 feet to the southern end of the profile). This channel was not imaged on any other line The channel is estimated to be up to 24 feet deep.

3.6 Bedrock

Bedrock is well displayed on the resistivity profiles and several conclusions can be drawn from this work:

1 Bedrock is denser and poorly fractured to the east. The western line (EI-3) shows that the bedrock is not as competent;
2. The surface of the bedrock channel interface is rugose, indicating numerous channel cuts into the Navarro;
3. The rugosity of the channel-bedrock interface appears to be controlled by bedrock fractures; several fractured zones are evident on the profiles (line EI-1, record 1350 feet); and,
4. Bedrock occurs very near to the surface in several locations.

4.0 CONCLUSION

Two channels to the paleo-Trinity River were imaged through dipole-dipole resistivity profile mapping. The two channels, one to the north and one to the south, show downcutting into the Navarro Shale to be about 30 feet with a maximum downcutting of about 45 feet locally. The channel fill shows a resistivity of 40 Ohm-meters or less.

The resistivity results agree well with the interpretation provided by borings installed by SAIC and others. Nine boring depths, interpreted to end in bedrock were placed on the profiles and only one boring showed inconsistent depths (Line EI-2; Well W-153). This well is very close to the end of the line and processing was not able to capture the true character of the channel at this point.

Well BSAICTA001 reached refusal at 44 feet in a location where the resistivity predicted 35 feet; however, several factors may have provided the spurious interpretation:

1. The line may not have been collected at the exact location of the well; and,
2. The line is also near an undershoot of the line (i.e., reinforced concrete).

The resistivity profiles were able to image the nature of the bedrock. The bedrock surface is rugose and the rock quality (or facies) changes appreciably from the east to the west. Bedrock appears to be more competent to the east and less so to the west

5.0 REFERENCES

deGroot-Hedlin, C. and Constable, S., 1990, Occam's inversion to generate smooth, two-dimensional models from magnetotelluric data. Geophysics, V. 55, 1613-1624.

Loke, M. N , 1998. RES2DINV Program for Resistivity Data. Privately published computer program.

Loke, M. N., and Barker, R. D., 1996, Rapid least-squares inversion of apparent resistivity pseudosection by quasi-Newton method. Geophysical Prospecting, V. 44, 131-152.

Mooney, H. M., 1958, A qualitative approach to electrical resistivity interpretation. Pure and Applied Geophysics, V. 40, 164-171.

Reynolds, J. M., 1997, An Introduction to Applied and Environmental Geophysics`: New York, NY, Wiley, 796 p.

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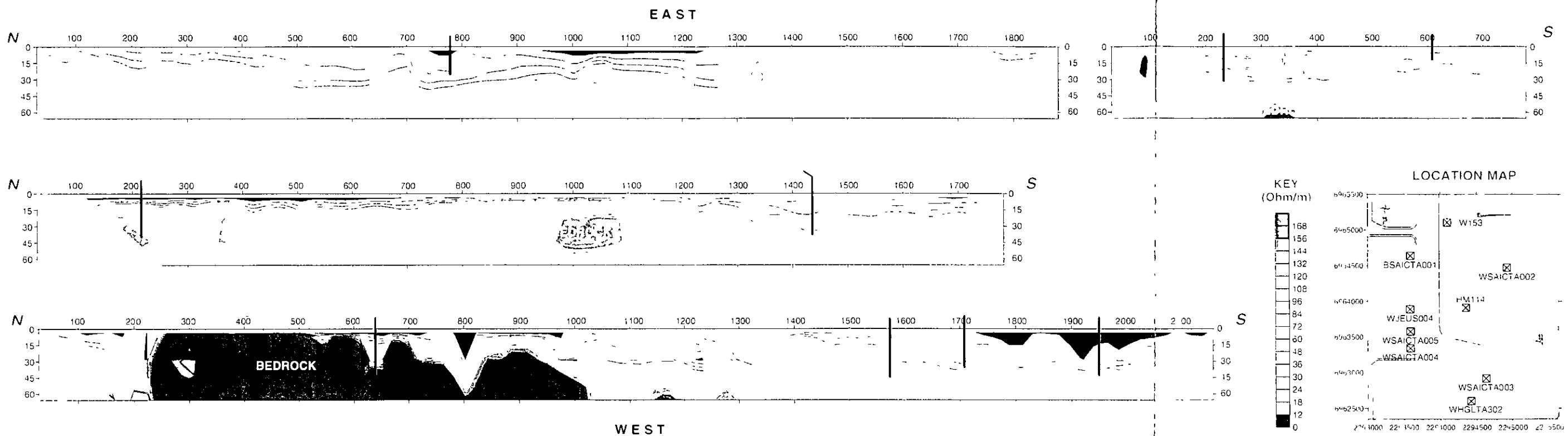
PLATES



NOTES

Roll along resistivity survey performed Oct 23 27 2000 using Advanced Geosciences Inc Sting R1 IP and Swift controller unit

DTB = Depth to bedrock

Horizontal scale 1 in = 100 ft (approximate)
Vertical scale 1 in = 50 ft (approximate)
Vertical exaggeration = 2x

PROJECT	Ft Worth Naval Air Station Joint Reserve Base
SHEET TITLE	Plate 1 Resistivity Profiles
SAIC Channel Delineation Study	DRAWING NO 102300-001

LocID	Distance (m)	Distance (ft)	Easting	Northing
El1N	0	0	2293646	6965287
2	6	20	2293646	6965267
3	12	39	2293646	6965247
4	18	59	2293646	6965228
5	24	79	2293646	6965208
6	30	98	2293646	6965188
7	36	118	2293646	6965169
8	42	138	2293646	6965149
9	48	157	2293646	6965129
10	54	177	2293646	6965110
11	60	197	2293646	6965090
12	66	217	2293646	6965070
13	72	236	2293646	6965051
14	78	256	2293646	6965031
15	84	276	2293646	6965011
16	90	295	2293646	6964992
17	96	315	2293646	6964972
18	102	335	2293646	6964952
19	108	354	2293646	6964933
20	114	374	2293646	6964913
21	120	394	2293646	6964893
22	126	413	2293646	6964873
23	132	433	2293646	6964854
24	138	453	2293646	6964834
25	144	472	2293646	6964814
26	150	492	2293646	6964795
27	156	512	2293646	6964775
28	162	532	2293646	6964755
29	168	551	2293646	6964736
30	174	571	2293646	6964716
31	180	591	2293646	6964696
32	186	610	2293646	6964677
33	192	630	2293646	6964657
34	198	650	2293646	6964637
35	204	669	2293646	6964618
36	210	689	2293646	6964598
37	216	709	2293646	6964578
38	222	728	2293646	6964558
39	228	748	2293646	6964539
40	234	768	2293646	6964519
41	240	787	2293646	6964499
42	246	807	2293646	6964480
43	252	827	2293646	6964460
44	258	846	2293646	6964440
45	264	866	2293646	6964421
46	270	886	2293646	6964401
47	276	906	2293646	6964381
48	282	925	2293646	6964362

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Surveyed and Estimated EI Points

LocID	Distance (m)	Distance (ft)	Easting	Northing
49	288	945	2293646	6964342
50	294	965	2293646	6964322
51	300	984	2293646	6964303
52	306	1004	2293646	6964283
53	312	1024	2293646	6964263
54	318	1043	2293646	6964244
55	324	1063	2293646	6964224
56	330	1083	2293646	6964204
57	336	1102	2293646	6964184
58	342	1122	2293646	6964165
59	348	1142	2293646	6964145
60	354	1161	2293646	6964125
61	360	1181	2293646	6964106
62	366	1201	2293646	6964086
63	372	1221	2293646	6964066
64	378	1240	2293646	6964047
65	384	1260	2293646	6964027
66	390	1280	2293646	6964007
67	396	1299	2293646	6963988
68	402	1319	2293646	6963968
69	408	1339	2293646	6963948
70	414	1358	2293646	6963929
71	420	1378	2293646	6963909
72	426	1398	2293646	6963889
73	432	1417	2293646	6963869
74	438	1437	2293646	6963850
75	444	1457	2293646	6963830
76	450	1476	2293646	6963810
77	456	1496	2293646	6963791
78	462	1516	2293646	6963771
79	468	1536	2293646	6963751
80	474	1555	2293646	6963732
81	480	1575	2293646	6963712
82	486	1595	2293646	6963692
83	492	1614	2293646	6963673
84	498	1634	2293646	6963653
85	504	1654	2293646	6963633
86	510	1673	2293646	6963614
87	516	1693	2293646	6963594
88	522	1713	2293646	6963574
89	528	1732	2293646	6963554
90	534	1752	2293646	6963535
91	540	1772	2293646	6963515
92	546	1791	2293646	6963495
93	552	1811	2293646	6963476
94	558	1831	2293646	6963456
95	564	1850	2293646	6963436
96	570	1870	2293646	6963417

Surveyed and Estimated EI Points

LocID	Distance (m)	Distance (ft)	Easting	Northing	
97	576	1890	2293646	6963397	
98	582	1910	2293646	6963377	
99	588	1929	2293646	6963358	
100	594	1949	2293646	6963338	
101	600	1969	2293646	6963318	
102	606	1988	2293646	6963299	
103	612	2008	2293646	6963279	
104	618	2028	2293646	6963259	
105	624	2047	2293646	6963240	
106	630	2067	2293646	6963220	
107	636	2087	2293646	6963200	
108	642	2106	2293646	6963180	
109	648	2126	2293646	6963161	
110	654	2146	2293646	6963141	
111	660	2165	2293646	6963121	
112	666	2185	2293646	6963102	
EI2S	0	0	2294374	6963433	
2	6	20	2294373	6963453	
3	12	39	2294373	6963473	
4	18	59	2294372	6963493	
5	24	79	2294371	6963512	
6	30	98	2294370	6963532	
7	36	118	2294370	6963552	
8	42	138	2294369	6963572	
9	48	157	2294368	6963592	
10	54	177	2294367	6963611	
11	60	197	2294367	6963631	
12	66	217	2294366	6963651	
13	72	236	2294365	6963671	
14	78	256	2294364	6963690	
15	84	276	2294364	6963710	
16	90	295	2294363	6963730	
17	96	315	2294362	6963750	
18	102	335	2294361	6963770	
19	108	354	2294361	6963789	
20	114	374	2294360	6963809	
21	120	394	2294359	6963829	
22	126	413	2294358	6963849	
23	132	433	2294358	6963869	
24	138	453	2294357	6963888	
25	144	472	2294356	6963908	6' se of HM-114
26	150	492	2294352	6963927	
27	156	512	2294348	6963947	
28	162	532	2294343	6963966	
29	168	551	2294339	6963985	
30	174	571	2294335	6964004	
31	180	591	2294331	6964023	
32	186	610	2294327	6964043	

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Surveyed and Estimated EI Points

LocID	Distance (m)	Distance (ft)	Easting	Northing
33	192	630	2294323	6964062
34	198	650	2294318	6964081
35	204	669	2294314	6964100
36	210	689	2294310	6964120
37	216	709	2294306	6964139
38	222	728	2294302	6964158
39	228	748	2294298	6964177
40	234	768	2294293	6964196
41	240	787	2294289	6964216
42	246	807	2294285	6964235
43	252	827	2294281	6964254
44	258	846	2294277	6964273
45	264	866	2294273	6964293
46	270	886	2294268	6964312
47	276	906	2294264	6964331
48	282	925	2294260	6964350
49	288	945	2294256	6964370
50	294	965	2294252	6964389
51	300	984	2294247	6964408
52	306	1004	2294243	6964427
53	312	1024	2294239	6964446
54	318	1043	2294235	6964466
55	324	1063	2294231	6964485
56	330	1083	2294227	6964504
57	336	1102	2294222	6964523
58	342	1122	2294218	6964543
59	348	1142	2294214	6964562
60	354	1161	2294210	6964581
61	360	1181	2294206	6964600
62	366	1201	2294202	6964619
63	372	1221	2294197	6964639
64	378	1240	2294193	6964658
65	384	1260	2294189	6964677
66	390	1280	2294185	6964696
67	396	1299	2294181	6964716
68	402	1319	2294177	6964735
69	408	1339	2294172	6964754
70	414	1358	2294168	6964773
71	420	1378	2294164	6964793
72	426	1398	2294160	6964812
73	432	1417	2294156	6964831
74	438	1437	2294151	6964850
75	444	1457	2294147	6964869
76	450	1476	2294143	6964889
77	456	1496	2294139	6964908
78	462	1516	2294135	6964927
79	468	1536	2294131	6964946
80	474	1555	2294126	6964966

Surveyed and Estimated EI Points

LocID	Distance (m)	Distance (ft)	Easting	Northing	
81	480	1575	2294122	6964985	
82	486	1595	2294118	6965004	
83	492	1614	2294114	6965023	
84	498	1634	2294110	6965042	
85	504	1654	2294106	6965062	
86	510	1673	2294101	6965081	
87	516	1693	2294097	6965100	7' s of EI-2N
88	522	1713	2294093	6965119	
89	528	1732	2294089	6965139	
90	534	1752	2294085	6965158	
91	540	1772	2294081	6965177	
92	546	1791	2294076	6965196	
93	552	1811	2294072	6965215	
94	558	1831	2294068	6965235	
95	564	1850	2294064	6965254	
96	570	1870	2294060	6965273	
97	576	1890	2294055	6965292	
98	582	1910	2294051	6965312	
EI3S	0	0	2294912	6963374	
2	6	20	2294912	6963393	
3	12	39	2294911	6963413	
4	18	59	2294911	6963433	
5	24	79	2294911	6963452	
6	30	98	2294911	6963472	
7	36	118	2294910	6963492	
8	42	138	2294910	6963511	
9	48	157	2294910	6963531	
10	54	177	2294910	6963551	
11	60	197	2294910	6963571	
12	66	217	2294909	6963590	
13	72	236	2294909	6963610	
14	78	256	2294909	6963630	
15	84	276	2294909	6963649	
16	90	295	2294909	6963669	
17	96	315	2294908	6963689	
18	102	335	2294908	6963708	
19	108	354	2294908	6963728	
20	114	374	2294908	6963748	
21	120	394	2294908	6963768	
22	126	413	2294907	6963787	
23	132	433	2294907	6963807	
24	138	453	2294907	6963827	
25	144	472	2294907	6963846	
26	150	492	2294907	6963866	
27	156	512	2294906	6963886	
28	162	532	2294906	6963905	
29	168	551	2294906	6963925	
30	174	571	2294906	6963945	

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Surveyed and Estimated EI Points

LocID	Distance (m)	Distance (ft)	Easting	Northing
31	180	591	2294905	6963964
32	186	610	2294905	6963984
33	192	630	2294905	6964004
34	198	650	2294905	6964024
35	204	669	2294905	6964043
36	210	689	2294904	6964063
37	216	709	2294904	6964083
38	222	728	2294904	6964102
39	228	748	2294904	6964122
40	234	768	2294904	6964142
41	240	787	2294903	6964161
42	246	807	2294903	6964181
43	252	827	2294903	6964201
44	258	846	2294903	6964221
45	264	866	2294903	6964240
46	270	886	2294902	6964260
47	276	906	2294902	6964280
48	282	925	2294902	6964299
49	288	945	2294902	6964319
50	294	965	2294902	6964339
51	300	984	2294901	6964358
52	306	1004	2294901	6964378
53	312	1024	2294901	6964398
54	318	1043	2294901	6964417
55	324	1063	2294901	6964437
56	330	1083	2294900	6964457
57	336	1102	2294900	6964477
58	342	1122	2294900	6964496
59	348	1142	2294900	6964516
60	354	1161	2294899	6964536
61	360	1181	2294899	6964555
62	366	1201	2294899	6964575
63	372	1221	2294899	6964595
64	378	1240	2294899	6964614
65	384	1260	2294898	6964634
66	390	1280	2294898	6964654
67	396	1299	2294898	6964674
68	402	1319	2294898	6964693
69	408	1339	2294898	6964713
70	414	1358	2294897	6964733
71	420	1378	2294897	6964752
72	426	1398	2294897	6964772
73	432	1417	2294897	6964792
74	438	1437	2294897	6964811
75	444	1457	2294896	6964831
76	450	1476	2294896	6964851
77	456	1496	2294896	6964870
78	462	1516	2294896	6964890

Surveyed and Estimated EI Points

LocID	Distance (m)	Distance (ft)	Easting	Northing	
79	468	1536	2294896	6964910	
80	474	1555	2294895	6964930	
81	480	1575	2294895	6964949	
82	486	1595	2294895	6964969	
83	492	1614	2294895	6964989	
84	498	1634	2294894	6965008	
85	504	1654	2294894	6965028	
86	510	1673	2294894	6965048	
87	516	1693	2294894	6965067	
88	522	1713	2294894	6965087	
89	528	1732	2294893	6965107	
90	534	1752	2294893	6965127	
91	540	1772	2294893	6965146	
92	546	1791	2294893	6965166	EI-3N
93	552	1811	2294893	6965186	
94	558	1831	2294892	6965205	
95	564	1850	2294892	6965225	
96	570	1870	2294892	6965245	
97	576	1890	2294892	6965264	
98	582	1910	2294892	6965284	
EI-4-1	0	0	2294747	6963116	Seismic line 3 point 390
2	6	20	2294736	6963099	
3	12	39	2294726	6963083	
4	18	59	2294715	6963066	
5	24	79	2294705	6963050	
6	30	98	2294695	6963033	
7	36	118	2294684	6963017	
8	42	138	2294674	6963000	
9	48	157	2294663	6962983	
10	54	177	2294653	6962967	
11	60	197	2294643	6962950	
12	66	217	2294632	6962934	
13	72	236	2294622	6962917	
14	78	256	2294611	6962901	
15	84	276	2294601	6962884	
16	90	295	2294591	6962867	
17	96	315	2294580	6962851	
18	102	335	2294570	6962834	
19	108	354	2294559	6962818	
20	114	374	2294549	6962801	
21	120	394	2294539	6962785	
22	126	413	2294528	6962768	
23	132	433	2294518	6962752	
24	138	453	2294507	6962735	
25	144	472	2294497	6962718	
26	150	492	2294486	6962702	
27	156	512	2294476	6962685	
28	162	532	2294466	6962669	

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Surveyed and Estimated El Points

LocID	Distance (m)	Distance (ft)	Easting	Northing	
29	168	551	2294455	6962652	
30	174	571	2294445	6962636	
31	180	591	2294434	6962619	
32	186	610	2294424	6962602	El4S S3S
33	192	630	2294414	6962586	
34	198	650	2294403	6962569	
35	204	669	2294393	6962553	
36	210	689	2294382	6962536	
37	216	709	2294372	6962520	
38	222	728	2294362	6962503	
39	228	748	2294351	6962487	
40	234	768	2294341	6962470	
41	240	787	2294330	6962453	
42	246	807	2294320	6962437	

TAB

Appendix E

APPENDIX E

Well/Soil Boring Logs
Well Completion Logs
State of Texas Well Reports

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SAIC® An Employee-Owned Company

WELL/SOIL BORING LOG

Contract/DO#. F41624-00-D-8030/0007	Site ID. ---	Location ID· BSAICTA006	
Loc. Class Code. BH	Loc. Prox Code I	Northing. 6963890.4	Easting 2293581.4
Ground Surface Elevation. 630 69'	Estab. Co : SAIC	Drilling Comp./Excav Co. VTXS	Top Casing Elevation· ---
Construction Method: HS	Borehole Depth. 45'	Borehole Diameter. 8"	Location Description. (FP #2), 175' W. OF ACTIVE RUNWAY & NW OF CHARLIE
Logged By: RICHARD HOUDE	Logging Company SAIC	Log/Estab Date. 12 DECEMBER 2000	Start Time. 1005 / Finish Time. 1300

Depth Below Surface (Ft)	Interval	Type & Number	Feet Driven	Feet Recovered	OVA (ppm)	Blow Count/6"	Lithology Code	Strat Order #	USCS Code	Soil Description: Major Constituents, Minor Constituents, Color, Density, Moisture, etc	Comments & Symbol	Well Construction
0	0/5	CR	-	-	-	-	CLAY	1	CL	CLAY DARK BROWN/BROWN, SOME GRAVEL, SLIGHTLY MOIST		BORE HOLE ONLY, NO WELL DETAILS
							SILT	1	ML	SILT LIGHT BROWN/TAN, GRAVELLY (LIMESTONE), DRY-TO-SLIGHTLY MOIST	3'	
5	5/7	SS1	2	0 5	0	33	CLAY	1	CLGC	CLAY VERY GRAVELLY (LIMESTONE), < 1/2" DIA., SILTY, SLIGHTLY SANDY, DRY-TO-SLIGHTLY MOIST	5'	
	7/10	CR	-	-	-	-	SILT	1	ML	SILT @ 10' VERY HARD (INDURATED), DRY, FEW SMALL GRAVEL, SPLIT SPOON BOUNCING ON HARD SURFACE, @ 12'-15' CUTTINGS ARE RED BROWN, VERY DRY SILT, FINE/VERY FINE GRAINED SAND, DRY	7'	
10	10/12	SS2	2	NR	-	55						
	12/15	CR	-	-	-	-						
15	15/17	SS3	2	0 4	0	100	SILT	1	MLGP	SILT LIGHT BROWN, GRAVELLY (LIMESTONE) 1/2" DIA , SLIGHTLY SANDY (VERY FINE GRAINED), SLIGHTLY MOIST, FIRM	15'	
	17/18	CR	-	-	-	-						
	18/20	SS4	2	0 1	0	100	CLAY	1	CLGC	GRAVELY CLAY BROWN/YELLOWISH BROWN, GRAVELLY (LIMESTONE, 1/4"-1/2" DIA.), VERY SILTY, SLIGHTLY MOIST	18'	
20	20/22	SS5	2	0 2	0	10/23/17					SAMPLE 20'-22' BSAICTA006-01	
	22/23	CR	-	-	-	-					WET @ 23'	
	23/25	SS6	2	0 4	0	27/53	GVL	1	GCGP	GRAVEL RED BROWN, WET @ 23', SILTY, CLAY LENS AT BOTTOM OF SPOON (23'-25')	23'	
25	25/45	CR	-	-	-	-	SAND	1	SPSM	SAND SAND (FINE/VERY FINE GRAINED) AND SILT, WET, DRILLED THROUGH OCCASIONAL THIN GRAVEL LENS/BEDS	25' COULD NOT DRILL AND SAMPLE PAST 45', FLOWING SANDS CAME UP INTO CENTER OF AUGER, COULD NOT PULL CENTER ROD OUT	
30												
35												
							LS	1	CM	LIMESTONE/CLAY 38'-39 DRILLED LIKE HARD LIMESTONE AND CLAY OR LARGE GRAVEL,	38'	
40							CLAY	1	CLSC	SANDY CLAY DRILLED LIKE SANDY/SILTY CLAY	39'	
							SAND	1	SPSM	SAND DRILLED LIKE WET SAND, VERY SOFT. RAPID PENETRATION RATE, SAND INSIDE AUGER WAS LIGHT BROWN, FINE GRAINED, SLIGHTLY SILTY	43'	
45											TD @ 45	
50												

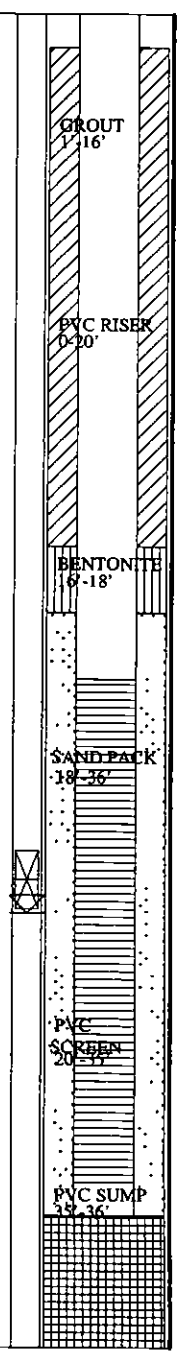
SAIC® An Employee-Owned Company

WELL/SOIL BORING LOG

Contract/DO#: F41624-00-D-8030/0007	Site ID: ---	Location ID. WSAICTA005	
Loc Class Code: WL	Loc. Prox Code: I	Northing: 6963578.0	Easting: 2293587.3
Ground Surface Elevation: 629 76'	Estab Co.. SAIC	Drilling Comp./Excav. Co. VTXS	Top Casing Elevation: 629 55'
Construction Method. HS	Borehole Depth· 36'	Borehole Diameter. 8"	Location Description· (FP #3) 175' W. OF ACTIVE RUNWAY, W/NW OF CHARLIE
Logged By: RICHARD HOUDE	Logging Company: SAIC	Log/Estab. Date: 11 DECEMBER 2000	Start Time. 1442 / Finish Time· 1600

Depth Below Surface (Ft)	Interval	Type & Number	Feet Driven	Feet Recovered	OVA (ppm)	Blow Count/6"	Lithology Code	Strat Order #	USCS Code	Soil Description Major Constituents, Minor Constituents Color, Density, Moisture, etc	Comments & Symbol
0	0/5	CR	-	-	-	-	CLAY	1	CL	CLAY GRASS @ SURFACE BROWN CLAY, CALCAREOUS NODULES, SLIGHTLY SILTY, MOIST, COHESIVE	
5	5/7	SS1	2	0 8	0	10/23/16	CLAY	1	CLML	CLAY RED BROWN, SLIGHTLY SILTY, ABUNDANT CALCAREOUS NODULES, SLIGHTLY MOIST, FIRM, MEDIUM PLASTICITY, LARGE GRAVEL CLAST STUCK IN END OF SPOON @ 5'-7' INTERVAL, @ 10' RED BROWN/GRAY MOTTLED, SLIGHTLY SILTY, FEW CLAY BALLS (<1/4"), SLIGHTLY MOIST, FIRM, PLANT ROOTLETS (BLACK VEINLETS), @ 20' RED BROWN/GRAY MOTTLED, SLIGHTLY SILTY (<10%), SLIGHTLY MOIST, FIRM, LOW PLASTICITY	5'
	7/10	CR	-	-	-	-					
10	10/12	SS2	2	2	0	15/36/25					
	12/15	CR	-	-	-	36					
15	15/17	SS3	2	2	0	10/15/16					
	17/20	CR	-	-	-	-					
20	20/22	SS4	2	1 2	0 5	30/32/28					
	22/25	CR	-	-	-	-	SILT	1	ML	SILT	22'
25	25/27	SS5	2	1 0	0 9	5/7/16	SILT	1	MLCL	SILT RED BROWN/GRAY, VERY CLAYEY, CLAY LENS (2" THICK) VERY MOIST, WET AND SOFT AT VERY BOTTOM OF SPLIT SPOON @ 25'-27' INTERVAL	SAMPLE 25'-27' 25' WSAICTA005-01 WATER @ 27'
	27/36	CR	-	-	-	-	SAND	1	SPSM	SAND SILTY, RED BROWN CUTTINGS (SILTY/SANDY/MUDDY SLURRY), @ 34' DRILLED A 6" GRAVEL LENS/BED	27'
30											
35									SPGP	GRAVEL LENS	34' 34 5'
									SPSM		
							LS	2	CM	LIMESTONE VERY HARD/REFUSAL @ 36', PROBABLY LIMESTONE BEDROCK	TD @ 36' REFUSAL @ 36'
40											

Well Construction:



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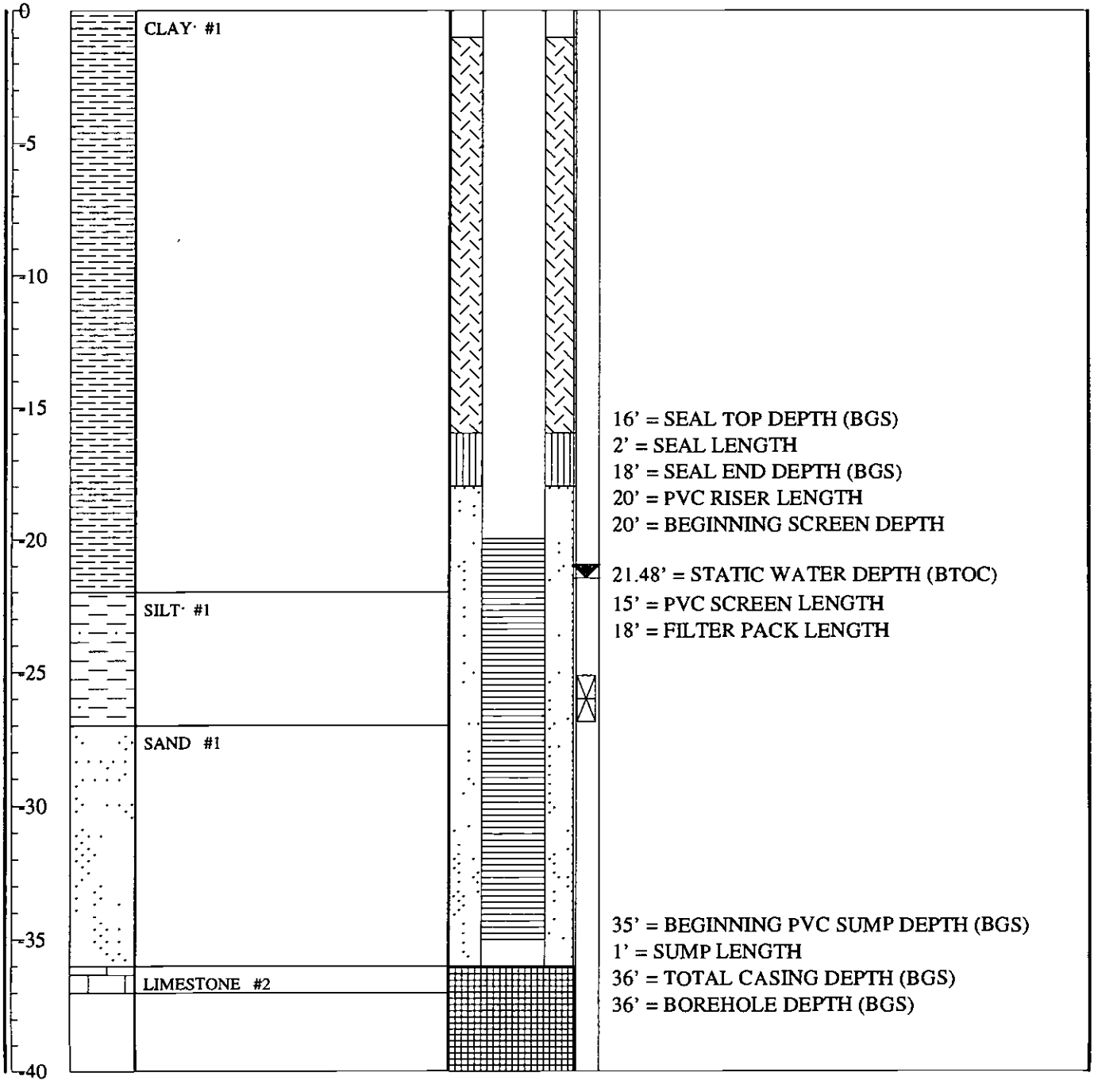
SAIC An Employee-Owned Company	WELL COMPLETION LOG		Contract/DO#: F41625-00-D-8030/0007
	Site ID: ---	Location ID. WSAICTA005	Well Owner Code. NAS - JRB
Estab. Company: SAIC	Installed By. VTXS	Logged By: RICHARD HOUDE	Completion Method Code. GS
Installation Date. 11 DECEMBER 2000	Well Type Classification Code. MNW		Geologic Completion Zone: W
Sole Source Aquifer Code. NCSA	Top Casing Elevation(msl)(MPELEV): 629.55'		Casing Inside Diameter: 2"
Costruction Material Code: PVC	Screen Diameter: 2"		Screen Slot Size 0.010"
Screen Percent Open: 14 3%	Filter Pack Type. SAND		Filter Pack Grain Size: 16-30
Static Water Depth (Ft.). 21.48'	Sounding Depth (Ft.): 35.31'		Dry Well: N
Borehole Diameter: 8"	Ground Surface Elevation: 629.76'		Date Drafted. 12/21/2000

LITHOFACIES AND STRATIGRAPHIC ORDER NUMBER

WELL CONSTRUCTION DIAGRAM

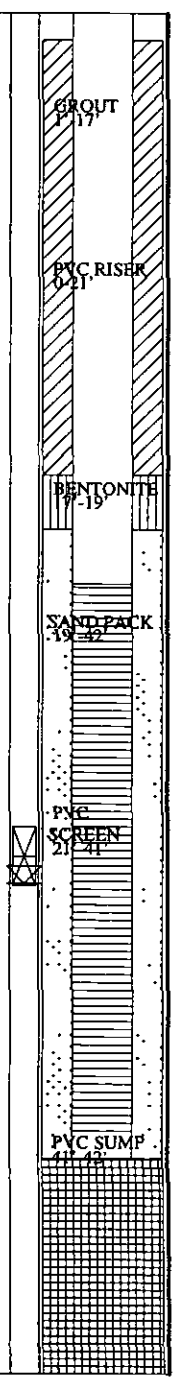


WELL/SOIL BORING LOG

SAIC — An Employee-Owned Company

Contract/DO#: F41624-00-D-8030/0007	Site ID: ---	Location ID: WSAICTA004	
Loc. Class Code WL	Loc. Prox. Code I	Northing. 6963343.8	Easting. 2293586.3
Ground Surface Elevation 628.99'	Estab. Co.: SAIC	Drilling Comp./Excav. Co. VTXS	Top Casing Elevation: 628.40'
Construction Method. HS	Borehole Depth: 42'	Borehole Diameter 8"	Location Description. (FP #4) W. OF ACTIVE RNWY., SW/W OF CHARLIE
Logged By RICHARD HOUDE	Logging Company: SAIC	Log/Estab Date: 06 DECEMBER 2000	Start Time: 0735 / Finish Time: 1045

Depth Below Surface (Ft)	Interval	Type & Number	Feet Driven	Feet Recovered	OVA (ppm)	Blow Count/6"	Lithology Code	Strat Order #	USCS Code	Soil Description (Major Constituents, Minor Constituents, Color, Density, Moisture, etc.)	Comments & Symbol
0	0/5	CR	-	-	-	-	CLAY	1	CL	CLAY GRASS @ SURFACE, CLAY, DARK GRAY, MOIST, PLASTIC, COHESIVE	
5	5/7	SS1	2	1 0	0 4	6/8/15	CLAY	1	CLSP	CLAY DARK BROWN/BROWN, SANDY (FINE GRAINED), SILTY, SMALL CALICHE NODULES, SLIGHTLY MOIST, FIRM	5'
	7/10	CR	-	-	-	-					
10	10/12	SS2	2	2	4 3	18/23/35	CLAY CLAY	1 1	CLGC CL	CLAY RED BROWN/GRAY, SILTY IN UPPER 6" OF SPOON, FEW LARGE GRAVEL (LIMESTONE) IN UPPER 4" OF SPOON, FIRM, SLIGHTLY MOIST, LOW PLASTICITY	10' 10 5'
	12/15	CR	-	-	-	-					
15	15/17	SS3	2	2	0 9	8/8/13	CLAY	1	CLML	CLAY CLAY RED BROWN, SILTY, FEW SMALL CALICHE NODULES, SLIGHTLY MOIST, FIRM	15'
	17/20	CR	-	-	-	-	SILT	1	ML	SILT	17'
20	20/22	SS4	2	0 7	0 9	3/5/5	SILT	1	MLSC	SILT RED BROWN, SLIGHTLY SANDY (VERY FINE/FINE GRAINED), CLAYEY, VERY MOIST, SOFT, VERY PLASTIC	20'
	22/25	CR	-	-	-	-	SILT	1	ML	SILT	22'
25	25/27	SS5	2	1 7	1 6	3/4/5	CLAY	1	CLSC	CLAY RED BROWN, SILTY, SANDY (VERY FINE/FINE GRAINED), VERY MOIST, SOFT, HIGHLY PLASTIC	25'
	27/28	CR	-	-	-	-					
	28/30	SS6	2	2	1 1	3/4/5					
30	30/32	SS7	2	2	1 1	5/6/7					SAMPLE 30'-32' WSAICTA004-01 WATER @ 32'
	32/34	SS8	2	2	1 4	5/6/12	CLAY	1	CLSM	CLAY RED BROWN, WET, VERY SILTY, SANDY LENS (FINE GRAINED), SOFT, VERY PLASTIC	32'
35	34/40	CR	-	-	-	-	SILT	1	MLSM	SILT LOG CUTTINGS, RED BROWN, WET, SOFT, CLAYEY WITH FINE GRAINED SAND	34'
							SILT	1	MLCL	SILT DRILLED LIKE CLAY @ 38'-40'	38'
40	40/42	SS9	2	0 3	2 4	36/38//37	GVCL LS	1 2	GCSC CM	GRAVELY CLAY RED BROWN, GRAVELLY CLAY, COARSE GRAINED SAND, VERY FINE GRAINED GRAVELS, FIRM, PLASTIC LIMESTONE REFUSAL @ 42', BIT WOULD NOT PENETRATE, PROBABLY GOODLAND LIMESTONE	40' TD @ 42' REFUSAL @ 42'
45											
50											



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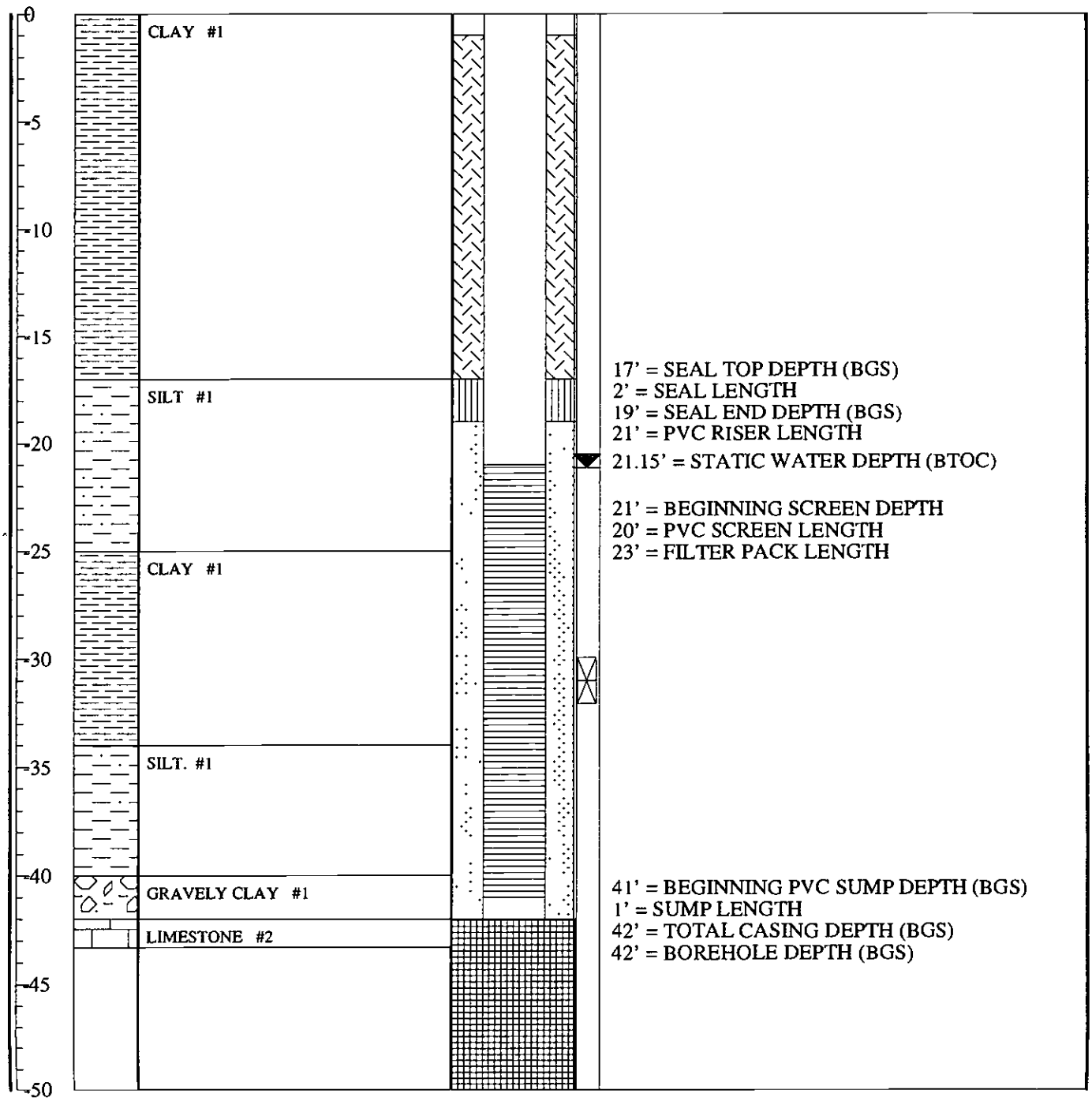
SAIC An Employee-Owned Company	WELL COMPLETION LOG		Contract/DO# F41625-00-D-8030/0007
	Site ID: ---	Location ID: WSAICTA004	Well Owner Code: NAS - JRB
Estab Company SAIC	Installed By VTXS	Logged By: RICHARD HOUDE	Completion Method Code GS
Installation Date. 06 DECEMBER 2000	Well Type Classification Code: MNW		Geologic Completion Zone: W
Sole Source Aquifer Code: NCSA	Top Casing Elevation(msl)(MPELEV). 628 40'		Casing Inside Diameter. 2"
Costruction Material Code: PVC	Screen Diameter 2"		Screen Slot Size 0.010"
Screen Percent Open 14 3%	Filter Pack Type. SAND		Filter Pack Grain Size 16-30
Static Water Depth (Ft.) 21 15'	Sounding Depth (Ft.). 42.22'		Dry Well: N
Borehole Diameter. 8"	Ground Surface Elevation: 628 99'		Date Drafted 01/16/2001

LITHOFACIES AND STRATIGRAPHIC ORDER NUMBER	WELL CONSTRUCTION DIAGRAM

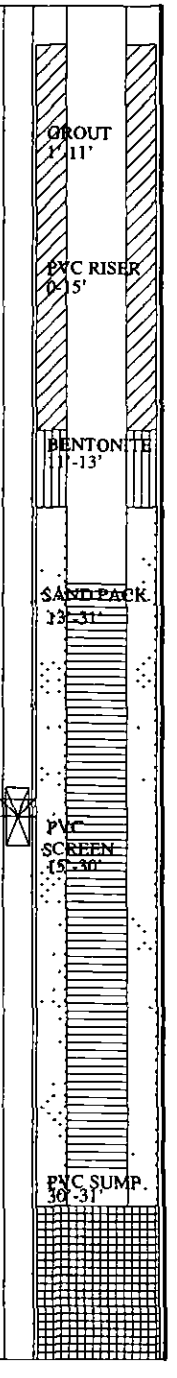


WELL/SOIL BORING LOG

SAIC — An Employee-Owned Company

Contract/DO#: F41624-00-D-8030/0007	Site ID: ---	Location ID: WSAICTA003	
Loc. Class Code WL	Loc. Prox. Code: I	Northing. 6962921 1	Easting. 2294630.4
Ground Surface Elevation: 621.42'	Estab. Co.. SAIC	Drilling Comp /Excav. Co VTXS	Top Casing Elevation. 621.14'
Construction Method: HS	Borehole Depth. 31'	Borehole Diameter: 8"	Location Description (FP #10) S. OF CHARLIE, W. OF FOXTROT
Logged By: RICHARD HOUDE	Logging Company. SAIC	Log/Estab. Date: 05 DECEMBER 2000	Start Time: 1035 / Finish Time: 1235

Depth Below Surface (Ft)	Interval	Type & Number	Feet Driven	Feet Recovered	OVA (ppm)	Blow Count/6"	Lithology Code	Strat Order #	USCS Code	Soil Description (Major Constituents, Minor Constituents, Color, Density, Moisture, etc)	Comments & Symbol
0	0/5	CR	-	-	-	-	CLAY	1	CL	CLAY GRASS @ SURFACE, DARK GRAY CLAY, SMALL CALICHE NODULES (1/4"), LIMESTONE GRAVEL, MOIST/SLIGHTLY MOIST, FIRM, COHESIVE, PLASTIC	
									CLSC		
5	5/7	SS1	2	1 2	2 5	3/12/20					6'
							CLAY	1	CLSC	CLAY BROWN CLAY, SILTY, SANDY, SLIGHTLY MOIST, FRIABLE, SOME GRAVEL, MIXED LS & CHERT, SUBROUNDED-TO-SUBANGULAR	
	7/10	CR	-	-	-	-					
10	10/12	SS2	2	1 8	3 5	6/10/8	CLAY	1	CLGC	CLAY DARK GRAY CLAY, SCATTERED SMALL GRAVEL AND BROWN SAND (FINE GRAIN) IN 1" THICK SEAMS, SILTY, SLIGHTLY MOIST	10'
	12/13	CR	-	-	-	-					13'
	13/15	SS3	2	1 5	3 8	5/5/5	CLAY	1	CLSP	CLAY DARK BROWN/DARK GRAY CLAY ABUNDANT CALICHE NODULES, SILTY, SANDY, SLIGHTLY MOIST, FIRM, @ 15' VERY SANDY, SILTY, SMALL GRAVEL, SLIGHTLY MOIST, FIRM, @ 17' DARK GRAY, SILTY, SLIGHTLY SANDY, SLIGHTLY MOIST, COHESIVE, PLASTIC	
15	15/17	SS4	2	1 6	8 6	4/4/6					
	17/19	SS5	2	0 2	4 8	6/13/17	CLAY	1	CLML		
	19/20	CR	-	-	-	-	CLAY	1	CLSP	CLAY DARK GRAY, SLIGHTLY SILTY, SLIGHTLY DAMP, 2" THICK SAND SEAM IN BOTTOM OF SPOON, MEDIUM GRAINED, GRAY, WET	19'
20	20/22	SS6	2	0 3	5 4	4/10/18					SAMPLE 20'-22' WSAICTA003-01
											21' WATER @ 21'
	22/25	CR	-	-	-	-	SAND	1	SP	SAND SAMPLE AT 25' IS FINE-TO-MEDIUM GRAINED SAND, LIGHT BROWN, WET, LOOSE, FRIABLE, AT 27' SANDS ARE FLOWING/HEAVING, DRILLING THROUGH INTERVAL	
25	25/27	SS7	2	2	42	11/13/19					
	27/31	CR	-	-	-	-					
30	31/33	SS8	-	0 1	13	50	LS	2	CM	LIMESTONE. VERY HARD LIMESTONE, SPLIT SPOON RECOVERED ONLY 1"-2" OF FOSSILIFEROUS LIMESTONE, DARK GRAY, SLIGHTLY MOIST, ODOR	30 5 TD @ 31'
35											



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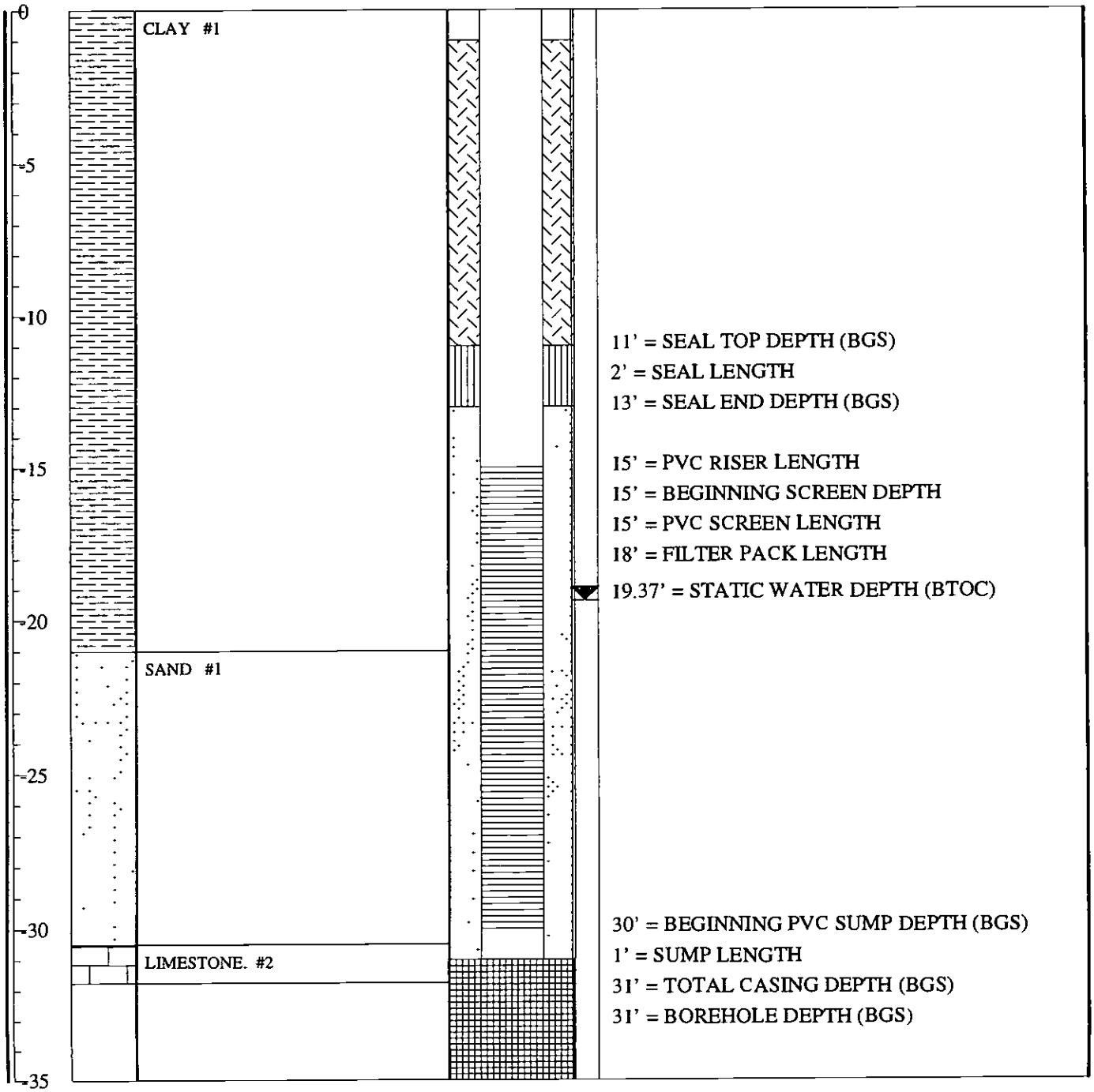
WELL COMPLETION LOG

An Employee-Owned Company

Contract/DO#. F41625-00-D-8030/0007			
Site ID: ---	Location ID WSAICTA003		Well Owner Code: NAS - JRB
Estab Company: SAIC	Installed By. VTXS	Logged By· RICHARD HOUDE	Completion Method Code GS
Installation Date: 05 DECEMBER 2000	Well Type Classification Code. MNW		Geologic Completion Zone: W
Sole Source Aquifer Code. NCSA	Top Casing Elevation(msl)(MPELEV). 621 14'		Casing Inside Diameter· 2"
Costruction Material Code: PVC	Screen Diameter. 2"		Screen Slot Size: 0.010"
Screen Percent Open 14 3%	Filter Pack Type SAND		Filter Pack Grain Size: 16-30
Static Water Depth (Ft) 19.37'	Sounding Depth (Ft): 30.80'		Dry Well. N
Borehole Diameter: 8"	Ground Surface Elevation: 621 42'		Date Drafted. 01/16/2001

LITHOFACIES AND STRATIGRAPHIC ORDER NUMBER

WELL CONSTRUCTION DIAGRAM

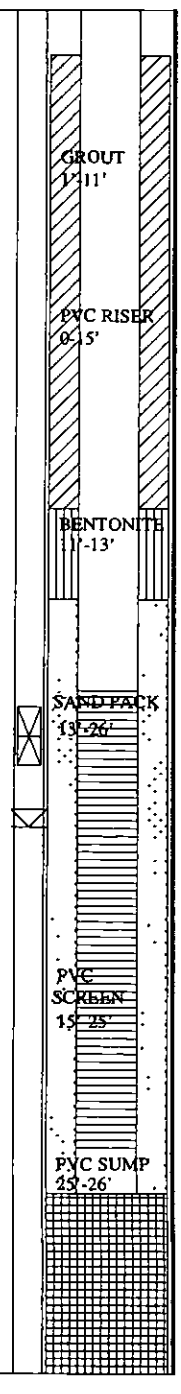


SAIC® An Employee-Owned Company

WELL/SOIL BORING LOG

Contract/DO#: F41624-00-D-8030/0007	Site ID. ---	Location ID. WSAICTA002	
Loc. Class Code: WL	Loc. Prox. Code I	Northing: 6964473 1	Easting: 2294921.6
Ground Surface Elevation: 625.06'	Estab Co: SAIC	Drilling Comp./Excav Co VTXS	Top Casing Elevation 624 79'
Construction Method: HS	Borehole Depth: 26'	Borehole Diameter: 8"	Location Description: (FP #7) W. OF FOXTROT & N. OF TAXIWY. CHARLIE
Logged By: RICHARD HOUDE	Logging Company. SAIC	Log/Estab. Date. 05 DECEMBER 2000	Start Time. 0750 / Finish Time: 0935

Depth Below Surface (Ft)	Interval	Type & Number	Feet Driven	Feet Recovered	OVA (ppm)	Blow Count/6"	Lithology Code	Strat Order #	USCS Code	Soil Description: Major Constituents, Minor Constituents, Color, Density, Moisture, etc	Comments & Symbol
0	0/3	HD	-	-	-	-	CLAY	1	CL	CLAY HAND DIG TO 3', DARK GRAY CLAY, MOIST, STICKY, PLASTIC, @5' DARK BROWN CLAY, FEW CALICHE NODULES, SLIGHTLY MOIST, FIRM, LARGER CALICHE NODULES IN BOTTOM 2" OF SPOON (APPROX 6'), @ 7' BROWN CLAY, SLIGHTLY MOIST, CALICHE NODULES, PLASTIC	
	3/5	CR	-	-	-	-					
5	5/7	SS1	2	1 2	3 5	8/17/22					
	7/10	CR	-	-	-	-					
10	10/12	SS2	2	1 9	3	16/17/12	SILT	1	MLGP	SILT BROWN/LIGHT BROWN SILT, CALICHE NODULES, 3" OF GRAVEL @ 10', LS CLASTS SUBANGULAR-TO-SUBROUNDED, 1/4" DIAM, SLIGHTLY MOIST, SOFT, PLASTIC	10'
	12/15	CR	-	-	-	-					
15	15/17	SS3	2	1 7	3 8	6/5/9	SAND	1	SPML	SAND RED BROWN SAND, FEW GRAVEL, VERY MOIST, SOFT, FINE GRAINED SAND, SLIGHTLY SILTY	15' SAMPLE 15'-17' WSAICTA002-01
	17/20	CR	-	-	-	-					WATER @ 18'
20	20/22	SS4	2	0 4	16	10/24/33	CLAY	1	CL	CLAY LIGHT GRAY/BROWN CLAY, MOIST, FIRM, THIN BEDDED	20'
	22/25	CR	-	-	-	-	SAND	1	SPML	SAND LIGHT BROWN SAND, WET, SAND AND SILT IN CUTTINGS (THICK MUSHY MUD)	22'
25	25/27	SS5	2	0 33	99	80	LS	2	CM	LIMESTONE LIGHT GRAY/LIGHT BROWN LIMESTONE FRAGMENTS, FIRM CLAY, SLIGHTLY MOIST, POSSIBLE FOSSIL FRAGMENTS?, REFUSAL AFTER OF 4" OF PENETRATION IN BEDROCK	25' TD @ 26'
30											



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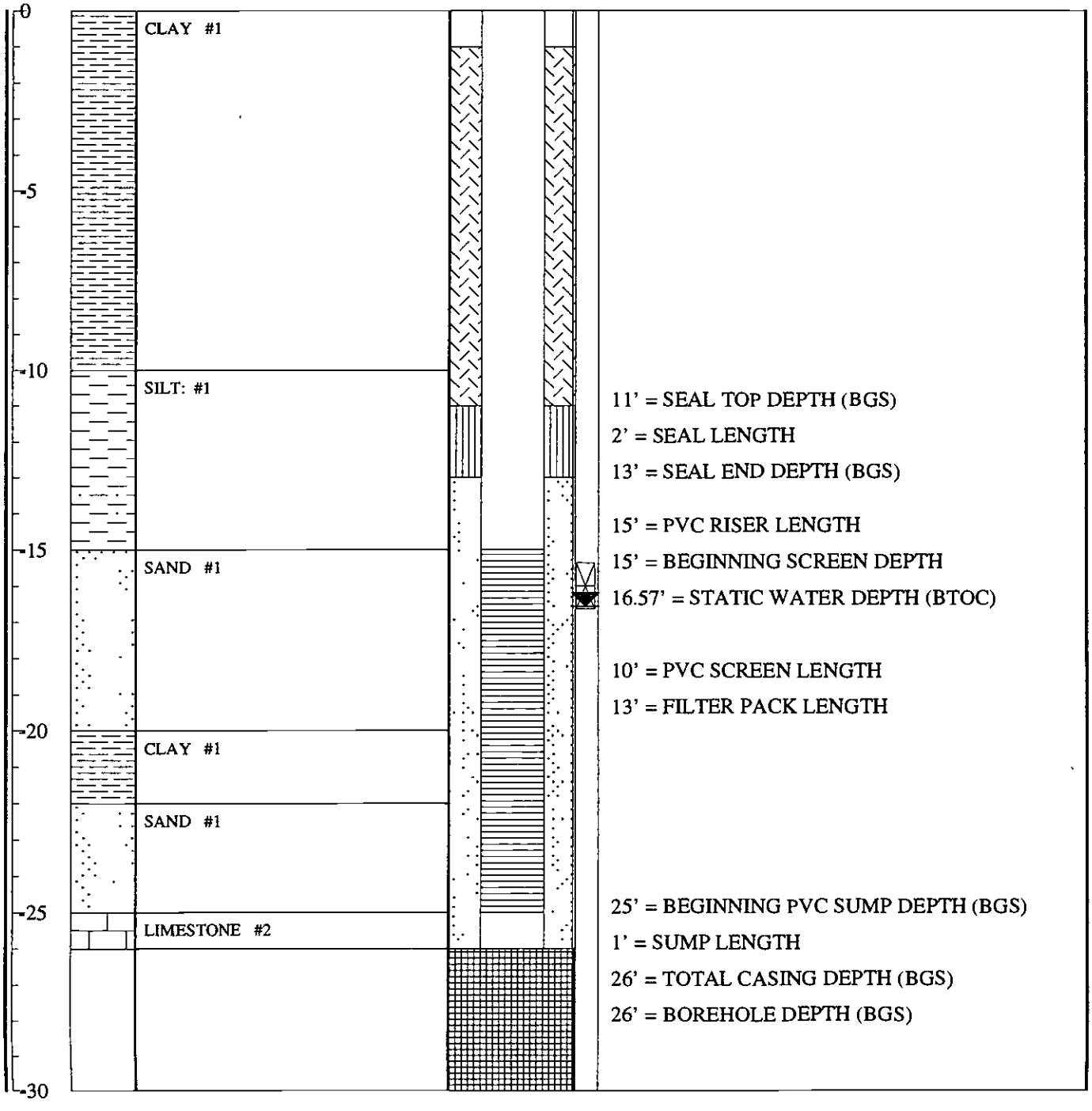
SAIC An Employee-Owned Company	**WELL COMPLETION LOG**		Contract/DO# F41625-00-D-8030/0007
Site ID: ---	Location ID: WSAICTA002		Well Owner Code. NAS - JRB
Estab Company· SAIC	Installed By. VTXS	Logged By: RICHARD HOUDE	Completion Method Code: GS
Installation Date: 05 DECEMBER 2000	Well Type Classification Code. MNW		Geologic Completion Zone: W
Sole Source Aquifer Code: NCSA	Top Casing Elevation(msl)(MPELEV): 624 79'		Casing Inside Diameter: 2"
Costruction Material Code: PVC	Screen Diameter: 2"		Screen Slot Size: 0.010"
Screen Percent Open: 14.3%	Filter Pack Type: SAND		Filter Pack Grain Size. 16-30
Static Water Depth (Ft). 16.57'	Sounding Depth (Ft)· 26 04'		Dry Well· N
Borehole Diameter: 8"	Ground Surface Elevation 625.06'		Date Drafted: 01/16/2001

LITHOFACIES AND STRATIGRAPHIC ORDER NUMBER

WELL CONSTRUCTION DIAGRAM



WELL/SOIL BORING LOG

SAIC — An Employee-Owned Company

Contract/DO#: F41624-00-D-8030/0007	Site ID. ---	Location ID: BSAICTA001	
Loc Class Code: BH	Loc. Prox Code I	Northing 6964639.7	Easting: 2293586 1
Ground Surface Elevation: 635 83'	Estab Co. SAIC	Drilling Comp./Excav. Co VTXS	Top Casing Elevation. ---
Construction Method HS	Borehole Depth· 45'	Borehole Diameter: 8"	Location Description (FP #1) W. OF RUNWAY; SO OF LOCKHEED S TAXIWAY
Logged By. RICHARD HOUDE	Logging Company SAIC	Log/Estab. Date. 05 DECEMBER 2000	Start Time 1425 / Finish Time. 1615

Depth Below Surface (Ft)	Interval	Type & Number	Feet Driven	Feet Recovered	OVA (ppm)	Blow Count/6"	Lithology Code	Strat Order #	USCS Code	Soil Description (Major Constituents, Minor Constituents, Color, Density, Moisture, etc)	Comments & Symbol	Well Construction
0	0/5	CR	-	-	-	-	FILL	1	SP	CONCRETE POURED SLAB	0 2'	BORE HOLE ONLY, NO WELL DETAILS
							CLAY	1	CL	FILL. SAND TO 1 0', DARK GRAY, MEDIUM GRAINED	1'	
5	5/7	SS1	2	1 0	2	5/12/18				CLAY DARK GRAY, SMALL CALICHE NODULES, FIRM, SLIGHTLY MOIST PLASTIC, @ 5' DARK GRAY/DARK BROWN, SLIGHTLY SILTY, SLIGHTLY MOIST, FEW CALICHE NODULES, FIRM, FAINT ODOR	7'	
	7/10	CR	-	-	-	-	SILT	1	ML	SILT LIGHT BROWN/BROWN MOTTLED, FEW BLACK ROOTLETS, SLIGHTLY MOIST, FIRM, CRUMBLEY/FRIABLE, @ 15' LIGHT BROWN/BROWN, FEW SMALL DARK BROWN CLAY BALLS (1/2" DIAM), SLIGHTLY MOIST, CRUMBLEY		
10	10/12	SS2	2	2	1 9	10/12/23						
	12/15	CR	-	-	-	-						
15	15/17	SS3	2	2	2 5	10/26/35						
	17 5/19 5	SS4	2	2	2 5	6/22/34	SILT	1	MLCL	SILT SILT WITH CLAY LENSES, LIGHT BROWN TO BROWN-TO-GRAY, SLIGHTLY MOIST, CRUMBLEY, SLIGHTLY PLASTIC IN CLAY LENSES	17 5'	
20	20/22	SS5	2	0 6	2 2	16/16/12	SILT	1	ML	SILT RED BROWN SILT, SLIGHTLY MOIST, CRUMBLEY, @ 22 5' RED BROWN SILT, MOIST-TO-VERY MOIST AT BASE OF SPLIT SPOON, SLIGHTLY SANDY (VERY FINE GRAINED), CRUMBLEY	20'	
	22 5/24 5	SS6	2	2	3 2	10/15/15						
25	25/27	SS7	2	2	3 2	10/17/13	SILT	1	MLSM	SILT RED BROWN SILT, SANDY (VERY FINE GRAINED), VERY MOIST, GRAY SILT LENSES, FIRM, SATURATED AT 30', RED BROWN SILT, VERY FINE GRAINED SAND, DRILLED FROM 32' TO 44' SOFT HEAVING & FLOWING SILT AND SAND	25'	
	27/29	SS8	2	0 5	3 5	5/7/7					SAMPLE 27'-29' BSAICTA001-01 DUPLICATE BSAICTA002-01	
30	29/30	CR	-	-	-	-					WATER @ 30'	
	30/32	SS9	2	1 0	7 3	5/7/7						
	32/44	CR	-	-	-	-						
35												
40												
45	44/45	CR	-	-	-	-	LS	2	CM	LIMESTONE. POSSIBLY GOODLAND FM	44' TD @ 45'	
	45/47	SS10	2	NR	-	50	NSNR		NDPS			
50												

689 270

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

Page 1 of 11

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 44 - 2

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) X N↑

6) Drilling Date
Started 12 - 13 - 00
Completed 12 - 13 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	13

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	3"	*Asphalt at surface*
3"	9"	*Base coarse, gvl/silt/clay*
9"	1.5	*Tan silty/clayey v. fine flour texture, dry*
1 5	5	*Clay, blk, silt, firm, sl. moist, dk. red clay @ 4'*
5	11	*Clay, brown to tan, firm, to stiff, silty, caliche nodules, sl. moist, incr. gvl (1/8-1/4"), moist 7-11'*
11	13	*clay, tan w/white caliche mottling, sl. silty, firm to stiff, sl. moist, few blk. rootlets*

SS040SB076

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other BENTONITE
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia. (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 2' ft to 0 ft # of sacks used 1
Bentonite /Grout 13' ft to 2' ft. # of sacks used 4.5
Method Used HAND
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination N/A ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well From (ft)	To (ft)	Cement/Bentonite placed in well From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level
Static level NONE ft below Date 12-13-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water NONE Depth of Strata NA
Was a chemical analysis made? ☐ Yes ☒ No

12) Packers Type Depth
NONE

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature	License No.	Date	Signature	Date
Licensed Driller/Pump Installer	3256M	12-13-00	Apprentice	

689 271

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

Section 32.005 of the Texas Water Code, concerning confidential information in the Reporting of Well Logs, reads as follows

> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department. Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size, and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft)	To (ft)	Description and color of formation material

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water.well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 44 - 2

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) X N↑

6) Drilling Date
Started 12 - 13 - 00
Completed 12 - 13 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	13

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	2"	*Asphalt at surface*
2"	8"	*Gravel/silt(base coarse)*
8"	1.5	*Black clay, firm, sl. moist*
1.5	5	*Black clay, fine gvls(1/8"), firm, moist*
5	11	*Clay, brown to tan, some gvl(1/8-1/4"), silty, caliche nodules, firm, sl. moist to 7'; w/incr red-brown in gvl(1-8-1/2"), firm, sl. moist*
11	13	*Clay, tan, silty, stiff, some caliche mottling(white), sl. moist*

SS040SB077

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other BENTONITE
If Gravel Packed give the interval from ft. to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 2' ft to 0 ft # of sacks used 1
Bentonite /Grout 13' ft to 2' ft # of sacks used 4.5
Method Used HAND
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination N.A ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well From (ft)	To (ft)	Cement/Bentonite placed in well From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level NONE ft below Date 12-13-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water NONE Depth of Strata N/A
Was a chemical analysis made? ☐ Yes ☒ No

12) Packers Type Depth
NONE

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature License No. 3256M 12-13-00
Licensed Driller/Pump Installer Date

Signature
Apprentice Date

689 273

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

Section 32 005 of the Texas Water Code, concerning confidential information in the Reporting of Well Logs, reads as follows

> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size, and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft)	Description and color of formation material

689 274

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 44 - 2

3) Type of Work
☒ New Well ☐ Deepening
☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic
☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) X N↑

6) Drilling Date
Started 12 - 13 - 00
Completed 12 - 13 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	13

7) Drilling Method (check) ☐ Driven
☐ Air Rotary ☐ Mud Rotary ☒ Bored
☐ Air Hammer ☐ Cable Tool ☐ Jetted
☐ Other

From (ft)	To (ft)	Description and color of formation material
0	5	*Grass at surface; Black clay, silty, firm, moist*
5	7	*Dk. brown/brown clay, some caliche gvl(1/8"), firm, sl. moist*
7	10	*Brown/red brown clay, caliche nodules, some gvl (1/8-1/4"), firm, sl. moist*
10	11	*Tan clay, silty, moist, firm*
11	13	*Tan clay, few white caliche mottles, silty, stiff, sl. moist*

SS040SB078

8) Borehole Completion ☐ Open Hole ☐ Straight Wall
☐ Under-reamed ☐ Gravel Packed ☒ Other BENTONITE
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia. (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 1' ft to 0 ft # of sacks used 1/2
Bentonite /Grout 13' ft. to 1' ft # of sacks used 4.5
Method Used HAND
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination NA ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level NONE ft below Date 12-21-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water NONE Depth of Strata NA
Was a chemical analysis made? ☐ Yes ☒ No

12) Packers Type Depth
NONE

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature	License No.	Date	Signature	Date
	3256M	12-13-00		
Licensed Driller/Pump Installer			Apprentice	

689 275

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft)	To (ft.)	Description and color of formation material

689-276

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 44 - 2

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) X N↑

6) Drilling Date
Started 12 - 13 - 00
Completed 12 - 13 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	13

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	3	*Grass at surface, Fill: blk & red-brn. clay w/gvl(1/4")*
3	5	*Black clay, gvl(1/8-1/4"), firm, sl. moist*
5	8	*Black clay, silty, fine gvls(>1/8"), firm/stiff, sl. moist*
8	11	*Brown to tan clay, silty w/gvl(1/8-1/4"), firm, sl. moist, some caliche*
11	13	*Tan clay, silty, some caliche, firm to stiff, sl moist*

SS040SB079

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other BENTONITE
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 1' ft to 0 ft. # of sacks used 1/2
Bentonite /Grout 13' ft to 1' ft # of sacks used 4.5
Method Used HAND
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination NA ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well From (ft)	To (ft)	Cement/Bentonite placed in well From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc., ft.

11) Water Level
Static level NONE ft below Date 12-13-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft. drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water NONE Depth of Strata N.A
Was a chemical analysis made? ☐ Yes ☒ No

12) Packers Type Depth
NONE

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature	License No.	Date	Signature	Date
	3256M	12-13-00		
Licensed Driller/Pump Installer			Apprentice	

689 .277

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft)	To (ft)	Description and color of formation material

Attention Owner
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

3) Type of Work
☒ New Well ☐ Deepening
☐ Reconditioning

Lat. | Long. | Grid # 68 - 36 - 8

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic
☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12 - 13 - 00
Completed 12 - 13 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	25

7) Drilling Method (check) ☐ Driven
☐ Air Rotary ☐ Mud Rotary ☐ Bored
☐ Air Hammer ☐ Cable Tool ☐ Jetted
☐ Other

From (ft)	To (ft)	Description and color of formation material
0	4"	*Asphalt*
4"	6"	*Base coarse*
6"	3	*Black clay, fine gvl, firm, sl. moist*
3	5	*Red brown clay w/gvl & caliche, silty*
5	18	*Tan clay, v. gravelly(1/4-3/4"), silt; w/decr in gvl*
		mostly silty clay17-18'
18	22	*Tan clay, silty sandy, stiff, sl. moist*
22	24	*Silty clay, tan, hard & gravelly 22-23'; white LS gvl*
		23-24'
24	25	*Tan & white silty-sandy clay, moist*

SS050SB438

8) Borehole Completion ☐ Open Hole ☐ Straight Wall
☐ Under-reamed ☐ Gravel Packed ☒ Other BENTONITE
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia. (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 2' ft to 0 ft # of sacks used 1.5
Bentonite /Grout 25' ft to 2' ft # of sacks used 9
Method Used HAND
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination NA ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level NONE ft below Date 12-13-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of Water NONE Depth of Strata NA
Was a chemical analysis made? ☐ Yes ☒ No

12) Packers

Type	Depth
NONE	

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature	License No.	Date	Signature	
	3256M	12-13-00		
Licensed Driller/Pump Installer		Date	Apprentice	Date

689 279

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft)	Description and color of formation material

689-280

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

Page 6 of 11

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 36 - 8

3) Type of Work
☒ New Well ☐ Deepening
☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic
☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑
X

6) Drilling Date
Started 12 - 13 - 00
Completed 12 - 13 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	25

7) Drilling Method (check) ☐ Driven
☐ Air Rotary ☐ Mud Rotary ☒ Bored
☐ Air Hammer ☐ Cable Tool ☐ Jetted
☐ Other

From (ft)	To (ft)	Description and color of formation material
0	2"	*Asphalt*
2"	6"	*Base coarse, silt & gvl (1/2")*
6"	2	*Fill: black & red brown clay*
2	4	*Clay, black, some gvl, firm, sl. moist*
4	6	*Dk. red brn. clay, v. gravelly(1/8-1/2"), firm, sl. moist, some caliche*
6	10	*Clay, red-brn., silty, v. gravelly(1/4-1/2"), firm,moist*
10	18	*Brn/tan, silt & gravel, moist, sl. moist 12-18'*
18	24	*Clay, v. silty, some sand, mottled red-brn.& white stiff, sl. moist; clayey gvl(1/4-3/4") 22-24'*
24	25	*Clayey gvl, tan & white,v. calc., dry to sl. moist*
		SS050SB439

8) Borehole Completion ☐ Open Hole ☐ Straight Wall
☐ Under-reamed ☐ Gravel Packed ☒ Other BENTONITE
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 2' ft to 0 ft # of sacks used 1.5
Bentonite /Grout 25' ft to 2' ft # of sacks used 9
Method Used HAND
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination NA ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level
Static level NONE ft below Date 12-13-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft. drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water NONE Depth of Strata NA
Was a chemical analysis made? ☐ Yes ☒ No

12) Packers Type Depth
NONE

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature	License No. 3256M	12-13-00	Signature	
Licensed Driller/Pump Installer		Date	Apprentice	Date

689 281

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

Section 32 005 of the Texas Water Code, concerning confidential information in the Reporting of Well Logs, reads as follows

> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size, and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft.)	Description and color of formation material

689 282

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address: water.well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

Page 7 of 11

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 36 - 8

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12 - 14 - 00
Completed 12 - 14 - 00

Diameter of Hole

Dia. (in)	From (ft)	To (ft)
8	0	26

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	2"	*Asphalt*
2"	1	*Base coarse, silt/gvl*
1	2	*Fill: base coarse, lg. rocks/concrete*
2	5	*Clay: black, silty gvls(1/8-1/4"), firm, sl. moist*
5	7.5	*Clay: blk., silty, firm, sl. moist; incr. gvls(1/4-1/2")*
7.5	10	*Clay brn./tan, silty, gvls(1/4-1/2"), firm, sl. moist*
10	16	*Silty Rk-flour & gvl(1/4-3/4"), tan; 13-15' gvl*
		1/2-1" common
16	20	*Silty tan Rk-flour & gvl (1/8-1/2") LS & chert*
20	23	*Silty tan Rk-flour & abundant gvl (1/4-3/4")*
23	26	*Silty tan Rk-flour & gvl(1/8-1/4"),v. hard, calc. zone*
		SS050SB440

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other
If Gravel Packed give the interval from ft. to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 0 ft to 2 ft # of sacks used 1
Bentonite /Grout 2 ft to 26 ft # of sacks used 10
Method Used Hand mix
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level N/A ft below Date
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water Depth of Strata
Was a chemical analysis made? ☐ Yes ☐ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature	License No.	Date	Signature	
James E. Neal	4868WPKT	1/08/01		
Licensed Driller/Pump Installer		Date	Apprentice	Date

689 283

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From (ft)	To (ft.)	Description and color of formation material

689 284

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For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water.well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

Lat. | Long. | Grid # 68 - 36 - 8

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12 - 14 - 00
Completed 12 - 14 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	26

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	5	*Grass at surface, Clay:blk., silty, fine gvls(1.4-1/2"), firm, moist*
5	6	*Clay:dk. red/brn., silty,firm,some gvl(1/8"),sl. moist*
6	12	*Clay· red/brn., silty, stiff, sl. moist*
12	18	*Clay silty, tan, rk-flour & gvl(1/4-3/4")*
18	20	*Clay. silty, tan & white, stiff, sl. moist*
20	25	*Clay silty, white, firm, sl. moist*
25	26	*Clayey gravel: tan & white, calc., gvls(1/4-3/4"), sl. moist, firm*

SS050SB441

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia. (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 0 ft to 2 ft # of sacks used 1
Bentonite /Grout 2 ft to 26 ft # of sacks used 10
Method Used Hand mix
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level N/A ft below Date
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water Depth of Strata
Was a chemical analysis made? ☐ Yes ☐ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature James E. Neal	License No. 4868WPKT	01/08/01	Signature	
Licensed Driller/Pump Installer		Date	Apprentice	Date

689 285

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft.)	Description and color of formation material

689 286

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

Page 9 of 11

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

Lat. | Long. | Grid # 68 - 36 - 8

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12 - 14 - 00
Completed 12 - 14 - 00

Diameter of Hole

Dia. (in)	From (ft)	To (ft)
8	0	25

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	3	*Grass at surface; Clay blk., silty, sm. gvls(1/8-1/4"), firm, moist*
3	4	*Silty & v gravelly*
4	5	*Clay: dk. brn/red brn., silty, v. gvlly(1/4-1/2"), firm/ stiff, sl. moist*
5	10	*Clay: red brn., silty, w/abundant gvls(1/4-1"); 8-10' tan silty clay*
10	18	*Clay: silty, tan w/ gvl(1/8-1/4"), firm, sl. moist; 15-18' incr. silt, decr. gvl size*
18	20	*Clay: tan w/white caliche veins, silt gvl(1/4-1/2"), stiff, sl. moist*

SS050SB442 (over)

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia. (in)	New Or Used	Steel, Plastic etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 0 ft to 2 ft # of sacks used 2
Bentonite /Grout 2 ft to 25 ft # of sacks used 10
Method Used Hand mix
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well From (ft)	To (ft)	Cement/Bentonite placed in well From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level
Static level N/A ft below Date
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water Depth of Strata
Was a chemical analysis made? ☐ Yes ☐ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature [signature] License No. 4868WPKT 01/08/01
Licensed Driller/Pump Installer Date

Signature Apprentice Date

TDLR FORM 004WWD Copies to TDLR - Owner - Driller/Pump Installer Form provided by Forms On-A-Disk, Inc Dallas, Texas (214) 340-9429

689 287

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft)	To (ft)	Description and color of formation material
20	22	*Clayey gvl(1/4-1/2"), silty, some sand*
		stiff, sl. moist
22	24	*Clay tan, silty, sandy, few gvls(1/4-*
		3/4"), firm/stiff
24	25	*Clayey gvl: tan, calc. (gvl. 1/4-3/4"),*
		stiff, sl. moist

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P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address: water well@license state tx us

WELL REPORT

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A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
KELLY AIR FORCE BASE		SAN ANTONIO	TEXAS	78241

2) WELL LOCATION

County	Physical Address	City	State	Zip
BEXAR		SAN ANTONIO	TEXAS	78241

3) Type of Work
☒ New Well ☐ Deepening
☐ Reconditioning

Lat. | Long. | Grid # 68 - 36 - 8

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic
☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑
X

6) Drilling Date
Started 12 - 14 - 00
Completed 12 - 14 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	11

7) Drilling Method (check) ☐ Driven
☐ Air Rotary ☐ Mud Rotary ☒ Bored
☐ Air Hammer ☐ Cable Tool ☐ Jetted
☐ Other

From (ft)	To (ft)	Description and color of formation material
0	2	*Grass at surface; Fill: brn. clay, silty, some gvls (1/4-1/2"), firm, moist*
2	5	*Clay: black, stiff, firm, moist*
5	9	*Clay. dk. brn/black, silty, firm, some gvl; 7-9' incr. gvl size(1/2-3/4")*
9	11	*Clay gray(stained), silty, firm, moist, HC odor*

KY078SB018

8) Borehole Completion ☐ Open Hole ☐ Straight Wall
☐ Under-reamed ☐ Gravel Packed ☒ Other
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 0 ft to 2 ft # of sacks used 2
Bentonite /Grout 2 ft to 11 ft # of sacks used 3
Method Used Hand mix
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level N/A ft below Date
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft. drawdown after hrs

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☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water Depth of Strata
Was a chemical analysis made? ☐ Yes ☐ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature James E. Neal | License No. 4868WPKT | 01/08/01 | Signature
Licensed Driller/Pump Installer | Date | Apprentice | Date

689 289

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From (ft)	To (ft)	Description and color of formation material

689 290

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2) WELL LOCATION

County	Physical Address	City	State	Zip
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Lat. | Long. | Grid # 68 - 36 - 8

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12 - 14 - 00
Completed 12 - 14 - 00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	10

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

From (ft)	To (ft)	Description and color of formation material
0	5	*Grass at surface; Clay. black, silty, some gvls (1/4-1/2"), firm, moist*
5	8	*Clay: dk. brn., silty, fine gvl(1 8-1/4"), firm, moist*
8	9.5	*Clay: gray(stained), silty, firm, moist, 1" gvl layer*
9.5	10	*Clay· red brn./tan, sl. stained veinlets, silty, sl. odor, caliche, stiff, sl. moist*

KY078SB019

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other
If Gravel Packed give the interval from ft. to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 0 ft to 2 ft # of sacks used 1
Bentonite /Grout 2 ft to 10 ft. # of sacks used 3
Method Used Hand mix
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well | Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft

11) Water Level
Static level N/A ft below Date
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water Depth of Strata
Was a chemical analysis made? ☐ Yes ☐ No

12) Packers

Type	Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature James E. Neal | License No. 4868WPKT | 01/08/01
Licensed Driller/Pump Installer | Date

Signature | Apprentice | Date

TDLR FORM 004WWD Copies to TDLR - Owner - Driller/Pump Installer Form provided by Forms On-A-Disk, Inc Dallas, Texas (214) 340-9429

689 291

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

Section 32 005 of the Texas Water Code, concerning confidential information in the Reporting of Well Logs, reads as follows

> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled. Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size. and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft)	Description and color of formation material

689 292

Attention Owner.
Confidentiality Privilege Notice
on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address: water.well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
CARSWELL A. F. B.		FORT WORTH	TEXAS	76127

2) WELL LOCATION

County	Physical Address	City	State	Zip
TARRANT		FORT WORTH	TEXAS	76127

Lat. | Long. | Grid # 32 - 13 - 8

3) Type of Work
☒ New Well ☐ Deepening
☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic
☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑
X

6) Drilling Date
Started 12-05-00
Completed 12-05-00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	45

7) Drilling Method (check) ☐ Driven
☐ Air Rotary ☐ Mud Rotary ☑ Bored
☐ Air Hammer ☐ Cable Tool ☐ Jetted
☐ Other HSA

From (ft)	To (ft)	Description and color of formation material
0	0.6	*Concrete*
0.6	1	*Sand: dk. gray, med. gr.*
1	5	*Dk. gray clay, sm. caliche nodules, firm, sl. damp, plastic*
5	10	*Dk gray/dk. brn. clay, sl. silty, sl. damp, firm, few caliche nodules, faint odor*
10	15	*Lt. brn./brn. mottled, few blk. rootlets, sl. moist, firm crumbley/friable*
15	17.5	*Lt. brn./brn., few dk. brn. clay balls(1/2"), sl. moist crumbley*
17.5	19 5	*Silt w/clay lenses, lt. brn./brn./gray, sl moist,*

FP#1-BSAICTA001 *(over)*

8) Borehole Completion ☐ Open Hole ☐ Straight Wall
☐ Under-reamed ☐ Gravel Packed ☐ Other
If Gravel Packed give the interval from ft to ft

Casing, Blank Pipe, and Well Screen Data

Dia (in)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg, if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
		N/A			

9) Cementing Data
Cementing from 45 ft to 0 ft # of sacks used N/A
Bentonite /Grout ft to ft # of sacks used
Method Used TRUCK
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ft
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☑ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level
Static level 30 ft below Date 12-5-00
Artesian Flow gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield. gpm with ft drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☑ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water GROUND Depth of Strata 30'
Was a chemical analysis made? ☐ Yes ☑ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature	License No.	Date	Signature	Date
John E Tullos	3180M	12-29-00	J. D. Sandoval	12-29-00
Licensed Driller/Pump Installer			Apprentice	

689 293

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled. Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department. The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size, and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft.)	Description and color of formation material
17.5	19.5	*crumbley, sl. plastic in clay lens*
19.5	22	*Red brn. silt, sl. moist, crumbley*
22	24.5	*Red brn. silt, moist/v. moist, crumbley*
		sl. sandy(v. fine gr.)
24.5	30	*Red brn. silt, sandy, v. fine gr, v.*
		damp, gray silt lenses, firm
30	45	*Wet @ 30', red brn. silt, v. fine gr.*
		sand; silt/sand, soft from 32-44'; like
		LS, hard

689 294

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P.O. Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address water.well@license.state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
CARSWELL A. F. B.		FORT WORTH	TEXAS	76127

2) WELL LOCATION

County	Physical Address	City	State	Zip
TARRANT		FORT WORTH	TEXAS	76127

3) Type of Work Lat. | Long. | Grid # 32 - 13 - 8

☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☒ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell

If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date

Started 12-05-00

Completed 12-05-00

Diameter of Hole

Dia. (in)	From (ft)	To (ft)
8	0	26

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☑ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other HSA

From (ft)	To (ft)	Description and color of formation material
0	5	*Grass at surface;Dk. gray clay: damp, sticky, plastic*
5	7	*Dk. brn. clay: few caliche nodules, sl. moist, firm*
7	10	*Brn. clay: sl. damp, caliche nodules, plastic*
10	15	*Brn./lt. brn. silt: caliche nodules; 3" gravel @ 10', LS, subang subrnd. 1/4-1" dia., sl. moist, soft,plastic*
15	17	*Red brn., few gravel, v. damp, soft, fine gr. sand, sl. silty*
17	20	*Red brn. sand: fine gr., v. damp; water @ 18'*
20	22	*Lt. gray/brn. clay: moist, firm, thin bedded*
22	25	*Lt brn., mush, wet sand/silt*
25	26	*Lt gray/lt. brn., firm, sl. damp ,fossil frags; LS@25'*

FP#7-WSAICTA002

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☑ Gravel Packed ☑ Other 13 to 11 Bentonite

If Gravel Packed give the interval from 26 ft. to 13 ft.

Casing, Blank Pipe, and Well Screen Data

Dia. (in.)	New Or Used	Steel, Plastic, etc Perf., Slotted, etc Screen Mfg., if commercial	Setting (ft) From	To	Gage Casing Screen
2	N	SCH. 40 PVC	26	25	SUMP
2	N	SCH. 40 PVC .010	25	15	SCREEN
2	N	SCH. 40 PVC	15	0	RISER

9) Cementing Data

Cementing from 2 ft to 0 ft. # of sacks used N/A

Bentonite /Grout 11 ft to 2 ft # of sacks used 2

Method Used TRUCK / PUMP

Cementing By VORTEX DRILLING, INC.

Distance to septic system field or other concentrated contamination ____ ft

Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well. Cement/Bentonite placed in well.

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion

☑ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☐ Approved Alternative Procedure Used

14) Type Pump N/A

☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other

Depth to pump bowls, cylinder, jet, etc., ft.

11) Water Level

Static level 18 ft below Date 12-5-00

Artesian Flow ____ gpm Date ____

15) Water Test N/A

Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated

Yield gpm with ft. drawdown after hrs

16) Water Quality

Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☑ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water GROUND Depth of Strata 20
Was a chemical analysis made? ☐ Yes ☑ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature	License No. 3180M	Date	Signature	Date
John E. Talbot		12-29-00	J. P. Sinclair	12-29-00
Licensed Driller/Pump Installer			Apprentice	

TDLR FORM 004WWD Copies to TDLR - Owner - Driller/Pump Installer Form provided by Forms On-A-Disk, Inc · Dallas, Texas (214) 340-9429

689 295

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft.)	Description and color of formation material

689 296

Attention Owner: Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program

P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616

Toll free (800) 803-9202 Email address water well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
CARSWELL A. F. B.		FORT WORTH	TEXAS	76127

2) WELL LOCATION

County	Physical Address	City	State	Zip
TARRANT		FORT WORTH	TEXAS	76127

Lat. | Long. | Grid # 32 - 13 - 8

3) Type of Work

☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☒ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell

If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date

Started 12-05-00

Completed 12-05-00

Diameter of Hole		
Dia. (in)	From (ft)	To (ft)
8	0	31

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☑ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other HSA

From (ft)	To (ft)	Description and color of formation material
0	5	*Grass at surface; Dk. gray clay, sm. caliche nodules, few sm. (1/4") LS gravel, moist/sl. moist, firm, cohesive plastic*
5	10	*Brn. clay, some gravel, silty, sandy, friable, sl. damp mixed gravel types, subrnd., subang.*
10	13	*Dk. gray clay, sl. damp, firm, scattered sm. grvl & brn. sand in seams(<1" thick), silty*
13	15	*Dk. brn/dk. gray, abundant caliche nodules, firm, sl. damp, silty, sandy*
15	17	*Brn/gray clay, v. sandy, silty, firm, sl. damp, sm. grvl*
17	20	*Dk. gray clay, silty, sl. sandy, sl. damp, cohesive*

FP#10-WSAICTA003 (over)

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☑ Gravel Packed ☑ Other 13 TO 11 BENTONITE

If Gravel Packed give the interval from 31 ft. to 13 ft.

Casing, Blank Pipe, and Well Screen Data

Dia. (in.)	New Or Used	Steel, Plastic, etc Perf., Slotted, etc Screen Mfg., if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
2	N	SCH. 40 PVC	31	30	SUMP
2	N	SCH. 40 PVC .010	30	15	SCREEN
2	N	SCH. 40 PVC	15	0	RISER

9) Cementing Data

Cementing from 2 ft. to 0 ft # of sacks used N/A

Bentonite /Grout 11 ft. to 2 ft. # of sacks used 2

Method Used TRUCK/PUMP

Cementing By VORTEX DRILLING, INC.

Distance to septic system field or other concentrated contamination ____ ft.

Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well | Cement/Bentonite placed in well.

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion

☑ Specified Surface Slab Installed

☐ Specified Surface Sleeve Installed

☐ Pitless Adapter Used

☐ Approved Alternative Procedure Used

14) Type Pump N/A

☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder

☐ Other

Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level

Static level 19.37 ft below Date 12-6-00

Artesian Flow ____ gpm Date ____

15) Water Test N/A

Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated

Yield: gpm with ft. drawdown after hrs

16) Water Quality

Did you knowingly penetrate any strata which contain undesirable constituents?

☐ Yes ☑ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?

Type of water GROUND Depth of Strata 20

Was a chemical analysis made? ☐ Yes ☑ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD | City SAN ANTONIO | State TEXAS | Zip 78240

Signature [signature] License No. 3180M | 12-29-00 | Signature [signature] | 12-29-00

Licensed Driller/Pump Installer | Date | Apprentice | Date

689 297

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft.)	Description and color of formation material
17	20	*plastic*
20	25	*Dk. gray clay, sl. silty, sl. damp, 2"*
		sand @ 25', med. grained, wet, gray
		sand; water @ 21'
25	30.5	*Sand, lt. brn. fine/med grain, wet,*
		loose/friable
30.5	31	*LS (v. hard), +/- 1 to 2" fossiliterons*
		LS dk. gray, sl. damp, odor

689 298

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address. water well@license state tx us

WELL REPORT

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A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
CARSWELL A. F. B.		FORT WORTH	TEXAS	76127

2) WELL LOCATION

County	Physical Address	City	State	Zip
TARRANT		FORT WORTH	TEXAS	76127

Lat. | Long. | Grid # 32 - 13 - 8

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☒ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12-06-00
Completed 12-06-00

Diameter of Hole

Dia. (in)	From (ft)	To (ft)
8	0	42

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☑ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other HSA

From (ft)	To (ft)	Description and color of formation material
0	5	*Dk. gray clay, moist, plastic, cohesive*
5	10	*Dk. brn/brn. clay, sandy(fine gr.), silty, sm. caliche nodules, sl. moist, firm*
10	15	*Red brn./gray clay, lg. LS grvl. @ 10.4", silty @ 10.6", firm, sl. moist, low plasticity*
15	20	*Red brn., silty, sl. moist, firm, few sm. caliche nod.*
20	25	*Red brn. silt, sl. sandy, v. fine/fine gr., clayey, v. moist, soft, v. plastic*
25	32	*Red brn., silty, sandy, v. fine/fine gr., v. moist, soft, highly plastic*
32	34	*Wet, v. silty, sandy lens, fine gr., red brn., soft,*

FP#4-WSAICTA004 *(over)*

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☑ Gravel Packed ☑ Other 19'TO17' BENTONITE
If Gravel Packed give the interval from 42 ft. to 19 ft.

Casing, Blank Pipe, and Well Screen Data

Dia. (in.)	New Or Used	Steel, Plastic, etc Perf, Slotted, etc Screen Mfg., if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
2	N	SCH. 40 PVC	42	41	SUMP
2	N	SCH. 40 PVC .010	41	21	SCREEN
2	N	SCH. 40 PVC	21	0	RISER

9) Cementing Data
Cementing from 2 ft. to 0 ft. # of sacks used N/A
Bentonite /Grout 17 ft. to 2 ft. # of sacks used 2
Method Used TRUCK / PUMP
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft.
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours
Casing left in well · Cement/Bentonite placed in well

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion
☑ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☐ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ____ ft.

11) Water Level
Static level 21.15 ft below Date 12-6-00
Artesian Flow ____ gpm Date ____

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft. drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☑ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water GROUND Depth of Strata 20
Was a chemical analysis made? ☐ Yes ☑ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature John E. Talbot License No. 3180M — Licensed Driller/Pump Installer — Date 12-29-00

Signature [illegible] — Apprentice — Date 12-29-00

TDLR FORM 004WWD Copies to TDLR - Owner - Driller/Pump Installer

Form provided by Forms On-A-Disk, Inc. · Dallas, Texas · (214) 340-9429

689 299

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

Section 32 005 of the Texas Water Code, concerning confidential information in the Reporting of Well Logs, reads as follows·

> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department. The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size, and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential

From (ft.)	To (ft.)	Description and color of formation material
32	34	*v. plastic*
34	40	*Red brn. clay& fine sand, soft/wet/silt*
40	42	*Graveley clay, coarse sand, v fine*
		gravels, wet, firm plastic, red brn.

689 300

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address: water.well@license state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

Page 5 of 6

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
CARSWELL A. F. B.		FORT WORTH	TEXAS	76127

2) WELL LOCATION

County	Physical Address	City	State	Zip
TARRANT		FORT WORTH	TEXAS	76127

Lat. | Long. | Grid # 32 - 13 - 8

3) Type of Work
☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☒ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date
Started 12-11-00
Completed 12-11-00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	36

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☑ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other HSA

From (ft)	To (ft)	Description and color of formation material
0	5	*Grass at surface; Brn. clay, calc. nodules, damp, cohesive, sl. plastic, sl. silty*
5	10	*Red brn., sl. silty, firm, abund. calc. nodules, sl. damp, firm, med. plasticity, lg. gravel @ 10'*
10	20	*Red brn./gray mottled, firm, sl. silty, sl. damp, few clay balls < .25", organic rootlets*
20	25	*Red brn./gray mottled, sl. moist, firm, low plasticity, sl. silty(<10%)*
25	34	*Silt, v. clayey, clay lens(2"), red brn./gray, v. damp, wet @ 27', soft*
34	36	*Gravel bed/lens @ 34.5'; LS bedrock @ 36'*

FP#3-WSAICTA005

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☑ Gravel Packed ☑ Other 18TO16 BENTONITE
If Gravel Packed give the interval from 36 ft. to 18 ft.

Casing, Blank Pipe, and Well Screen Data

Dia. (in.)	New Or Used	Steel, Plastic, etc. Perf., Slotted, etc Screen Mfg., if commercial	Setting (ft) From	Setting (ft) To	Gage Casing Screen
2	N	SCH. 40 PVC	36	35	SUMP
2	N	SCH. 40 PVC .010	35	20	SCREEN
2	N	SCH. 40 PVC	20	0	RISER

9) Cementing Data
Cementing from 2 ft to 0 ft # of sacks used N/A
Bentonite /Grout 16 ft to 2 ft. # of sacks used 2
Method Used TRUCK / PUMP
Cementing By VORTEX DRILLING, INC.
Distance to septic system field or other concentrated contamination ____ ft.
Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well From (ft)	To (ft)	Cement/Bentonite placed in well From (ft)	To (ft)	Sacks used

10) Surface Completion
☑ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☐ Approved Alternative Procedure Used

14) Type Pump N/A
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other
Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level
Static level 21.48 ft below Date 12-11-00
Artesian Flow ____ gpm Date

15) Water Test N/A
Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield gpm with ft. drawdown after hrs

16) Water Quality
Did you knowingly penetrate any strata which contain undesirable constituents?
☐ Yes ☑ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?
Type of water GROUND Depth of Strata 22
Was a chemical analysis made? ☐ Yes ☐ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature [signature] License No. 3180M — Licensed Driller/Pump Installer — Date 12-29-00

Signature [signature] — Apprentice — Date 12-29-00

TDLR FORM 004WWD Copies to TDLR - Owner - Driller/Pump Installer Form provided by Forms On-A-Disk, Inc Dallas, Texas - (214) 340-9429

689 301

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

Section 32 005 of the Texas Water Code, concerning confidential information in the Reporting of Well Logs, reads as follows

> "Every licensed driller drilling, deepening, or otherwise altering a water well within this State shall make and keep a legible and accurate well log in accordance with the department rule on forms prescribed by the department. Not later than the 60th day after the completion or cessation of drilling, deepening, or otherwise altering the well, the licensed driller shall deliver or transmit by certified mail a copy of the well log to the department and to the owner of the well or the person for whom the well was drilled. Each copy of a well log, other than a department copy, must include the name, mailing address, and telephone number of the department. The well log shall be recorded at the time of drilling, and must show the depth, thickness, and character of the strata penetrated, the location of water-bearing strata, the depth, size, and character of casing installed, and any other information required by department rule The department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner or person for whom the well was drilled.

The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential.

From (ft.)	To (ft.)	Description and color of formation material

689 302

Attention Owner:
Confidentiality Privilege Notice on reverse side of owner's copy

For: S. A. I. C.

Texas Department of License and Regulation

Water Well Driller/Pump Installer Program
P O Box 12157 Austin, Texas 78711 (512) 463-7880 FAX (512) 463-8616
Toll free (800) 803-9202 Email address: water.well@license.state tx us

WELL REPORT

This form must be completed and filed with the department and owner within 60 days upon completion of the well

A. WELL IDENTIFICATION AND LOCATION DATA

1) OWNER

Name	Address	City	State	Zip
CARSWELL A. F. B.		FORT WORTH	TEXAS	76127

2) WELL LOCATION

County	Physical Address	City	State	Zip
TARRANT		FORT WORTH	TEXAS	76127

3) Type of Work Lat. | Long. | Grid # 32 - 13 - 8

☒ New Well ☐ Deepening ☐ Reconditioning

4) Proposed Use (check) ☐ Monitor ☒ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell

If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) N↑ X

6) Drilling Date

Started 12-12-00

Completed 12-12-00

Diameter of Hole

Dia (in)	From (ft)	To (ft)
8	0	45

7) Drilling Method (check) ☐ Driven ☐ Air Rotary ☐ Mud Rotary ☒ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other HSA

From (ft)	To (ft)	Description and color of formation material
0	3	*Grass at surface; Dk. brn./brn. clay, sl. moist, some gravel*
3	5	*Lt. brn./tan silt, dry, graveley, sl. moist*
5	10	*clay, v. graveley, silty, sl. sandy, dry/sl. damp, LS clasts(<1/2")*
10	12	*V. hard silt, dry, few sm. gravels*
12	15	*V. dry silt, fine/v. fine sand, red brn. dry*
15	18	*Lt. brn., graveley, sl. moist, firm, LS (1/2"), sl. sandy, v. fine gr.*
18	20	*LS gravel, sl. silty, sl. moist, brn./ yellow brn.*
20	23	*Graveley clay, v. silty, LS clasts 1/4-1/2", sl. moist*

FP#2-BSAICTA006 (over)

8) Borehole Completion ☐ Open Hole ☐ Straight Wall ☐ Under-reamed ☐ Gravel Packed ☒ Other Plug

If Gravel Packed give the interval from ft. to ft.

Casing, Blank Pipe, and Well Screen Data

Dia. (in.)	New Or Used	Steel, Plastic, etc. Perf, Slotted, etc Screen Mfg., if commercial	Setting (ft) From	To	Gage Casing Screen
		N/A			

9) Cementing Data

Cementing from 2 ft. to 0 ft. # of sacks used 2

Bentonite /Grout 45 ft to 2 ft. # of sacks used 9

Method Used HAND/ Pump

Cementing By VORTEX DRILLING, INC.

Distance to septic system field or other concentrated contamination ____ ft.

Method of verification of above distance

13) Plugged ☐ Well plugged within 48 hours

Casing left in well Cement/Bentonite placed in well.

From (ft)	To (ft)	From (ft)	To (ft)	Sacks used

10) Surface Completion

☐ Specified Surface Slab Installed
☐ Specified Surface Sleeve Installed
☐ Pitless Adapter Used
☒ Approved Alternative Procedure Used

14) Type Pump N/A

☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other

Depth to pump bowls, cylinder, jet, etc, ft.

11) Water Level

Static level 21.18 ft below Date 12-12-00

Artesian Flow ____ gpm Date ____

15) Water Test N/A

Type Test ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated

Yield gpm with ft. drawdown after hrs

16) Water Quality

Did you knowingly penetrate any strata which contain undesirable constituents?

☐ Yes ☒ No If yes, did you submit a REPORT OF UNDESIRABLE WATER?

Type of water GROUND Depth of Strata 23

Was a chemical analysis made? ☐ Yes ☒ No

12) Packers Type Depth

Company or Individual's Name (type or print) VORTEX DRILLING, INC.

Address 4412 BLUEMEL ROAD City SAN ANTONIO State TEXAS Zip 78240

Signature	License No.	Date	Signature	Date
John E. Talbot	3180M	12-29-00	J. D. S[illegible]	12-29-00
Licensed Driller/Pump Installer			Apprentice	

TDLR FORM 004WWD Copies to TDLR - Owner - Driller/Pump Installer Form provided by Forms On-A-Disk, Inc Dallas, Texas · (214) 340-9429

689 303

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The last sentence specifies the means whereby you may, if you wish, assure that logs of your wells will be kept confidential.

From (ft)	To (ft.)	Description and color of formation material
23	25	*Wet @ 23', red brn. silty clay lens*
25	45	*Wet silt & fine/v. fine sand, occ. thin*
		gravel; LS or lg. gravel @ 38-39';
		more clayey from 39-42'; softer from
		43-45', like wet sand; lt. brn. fine gr.
		sand, sl. silty @ 45'

TAB

Appendix F

APPENDIX F

Groundwater Sample Collection Logs
Well Development Logs

689 .306.

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Science Applications International Corporation
An Employee Owned Company

689 307

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: D / O

Location I.D.: HM-110 Northing*: ____ Easting*: ____

Loc. Class. Code: WL Elevation*: ____ Date Est.*: ____

Establishing Co.*: ____ Drilling Co *: ____

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Foster Parent Logging Company: SAIC

1. Well Depth 35.63 ft Below Top of Casing (BTOC)
   (Sounding/Borehole Depth)
2. Casing Diameter* 4 inches
3. Water level 27.60 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry
   If Dynamic Production Rate ____ GPM Pump Depth ____ ft
   Recovery Depth ____ ft Recovery Time ____
5. H = Height of water in well (line 1.-line 3.) 8.03 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] NA gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] 5.24 gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number. 580U-60090-327

Breathing Zone: 0 ppm

Well Condition: Good, Dedicated bladder pump in well, Bust well seal 0438649, replace w/ seal 0438993

Date Collected 12-8-00 (Log Date) Time: 1202 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

 Checked by ____ Date ____

Revision 4, 3/13/00

689 308

Science Applications International Corporation
An Employee Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1212	0.2	27.64	6.80	21.1	0	5.08	159	0.649	Clear
1215	0.4	27.69	6.81	21.1	0	5.14	154	0.642	Clear
1218	0.6	27.69	6.81	21.1	0	5.18	157	0.643	Clear
1221	0.9	27.74	6.82	21.2	0	5.13	159	0.646	Clear
1224	1.2	27.79	6.82	21.2	0	5.02	156	0.645	Clear
1227	1.5	27.90	6.81	21.2	0	4.98	157	0.645	Clear
1230	1.7	27.90	6.82	21.2	0	5.04	159	0.645	Clear
1232	Sample	27.90	6.81	21.2	0	5.00	160	0.645	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 27.60 ft BTOC Final Water Level: 27.90 ft BTOC

At least 0.3 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40mL vials HCl, 1-1L poly, 1-250mL poly H_2SO_4
3-40mL vials H_2SO_4, 1-500mL poly HNO_3, 2-125mL poly

Sample ID: HM110-01

Samples Collected By: DL + RH

Comments: Use dedicated bladder pump to purge + sample well.

Checked by _____ Date _____

Revision 2 5/5/98

Science Applications International Corporation
An Employee Owned Company

689 309

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lowax + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: Hm-112 Northing*: ____ Easting*: ____

Loc. Class. Code: WL Elevation*: ____ Date Est.*: ____

Establishing Co.*: ____ Drilling Co *: ____

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Foster Parent Logging Company: SAIC

1 Well Depth 47.68 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2. Casing Diameter* 4 inches

3 Water level 29.12 ft BTOC

4 Measurement Type: (Static) / Dynamic / Dry

If Dynamic Production Rate ____ GPM Pump Depth ____ ft

Recovery Depth ____ ft Recovery Time ____

5. H = Height of water in well (line 1 - line 3) 18.56 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] NA gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] 12.12 gallons

6c. SIX INCH WELL. One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 1.4 ppm Instrument Number 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good. Dedicated bladder pump in well. No well seal, lock only

Date Collected: 12-8-00 (Log Date) Time: 1057 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

689 310

Science Applications International Corporation
An Employee Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1101	0.1	29.12	7.00	18.4	0	5.88	173	0.830	Clear
1104	0.3	29.20	6.82	19.4	0	5.90	185	0.829	Clear
1107	0.5	29.25	6.80	20.4	0	5.42	169	0.834	Clear
1110	0.7	29.25	6.79	20.5	0	5.38	169	0.837	Clear
1113	1.0	29.25	6.79	20.6	0	5.30	168	0.836	Clear
1116	1.2	29.25	6.80	20.6	0	5.29	167	0.837	Clear
1119	1.5	29.25	6.80	20.5	0	5.25	169	0.839	Clear
1121	Sample	29.25	6.79	20.5	0	5.24	170	0.838	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 29.12 ft BTOC Final Water Level: 29.25 ft BTOC

At least 0.12 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 6 - 40 mL vials HCl, 2 - 1L poly, 2 - 250 mL poly H_2SO_4
6 - 40 mL vials H_2SO_4, 2 - 500 mL poly HNO_3, 4 - 125 mL poly

Sample ID: HM112-01 + HM112-02 (FD)

Samples Collected By: DL + RH

Comments: Use dedicated bladder pump to purge + sample
Label field duplicate (HM112-02) w/ time of 1135, actually collected sample as sample

Checked by ____ Date ____

Revision 2 5/5/98

Science Applications International Corporation
An Employee Owned Company

689 311

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lowak + R Hoade

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: HM-113 Northing*: ____ Easting*: ____

Loc. Class. Code: WL Elevation*: ____ Date Est.*: ____

Establishing Co.*: ____ Drilling Co.*: ____

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Foster Parent Logging Company: SAIC

1. Well Depth 47.48 ft Below Top of Casing (BTOC) (Sounding/Borehole Depth)
2. Casing Diameter* 4 inches
3. Water level 30.03 ft BTOC
4. Measurement Type: (Static) Dynamic / Dry
   If Dynamic: Production Rate ____ GPM Pump Depth ____ ft
   Recovery Depth ____ ft Recovery Time ____
5. H = Height of water in well (line 1 - line 3.) 17.45 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] NA gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] 11.39 gallons

6c SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number. 580U-60090-527

Breathing Zone: 0 ppm

Well Condition: No well seal, lock only. Instrumentation in well.

Date Collected: 12-8-00 (Log Date) Time 0941 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

 Checked by ____ Date ____

Revision 4 3/13/00

689 312

Science Applications International Corporation
An Employee Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
0946	0.2	30.08	6.56	16.3	40	5.75	36	0.336	Slightly Cloudy
0951	0.4	30.08	6.83	17.4	99.6	4.90	9	0.316	Slightly Cloudy
0954	0.6	30.09	6.92	17.6	98.9	4.62	-5	0.301	Slightly Cloudy
0957	0.8	30.10	6.84	17.9	96.0	4.24	-20	0.276	Slightly Cloudy
1000	1.0	30.17	6.83	18.0	63.0	4.18	-18	0.276	Clear
1004	1.4	30.19	6.88	17.9	0	4.06	-25	0.273	Clear
1007	1.6	30.21	6.87	17.8	0	3.99	-18	0.270	Clear
1010	1.8	30.21	6.88	17.8	0	3.97	-20	0.273	Clear
1013	2.0	30.22	6.89	17.9	0	3.97	-21	0.273	Clear
1015	Sample	30.20	6.88	17.8	0	3.98	-20	0.273	Clear

SAMPLE DATA

Purging Method Bladder Pump Sampling Method Bladder Pump

Original Water Level: 30.03 ft BTOC Final Water Level 30.20 ft BTOC

At least 0.18 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3 - 40 mL vials HCl, 1 - 1L poly, 1 - 250 mL poly H_2SO_4, 3 - 40 mL vials H_2SO_4, 1 - 500 mL poly HNO_3, 2 - 125 mL poly

Sample ID: HM113-01

Samples Collected By DL + RH

Comments

Checked by ___ Date ___

Revision 2 5/5/93

689 313

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB **Project Manager** Bob Bower

Field Team: D. Lowak + R. Houck

Site I.D.: ___ **Site Name:** AOC 20 **Location Proximity Code.** (1) O

Location I.D.: HM 114 **Northing*:** ___ **Easting*:** ___

Loc. Class. Code: WL **Elevation*:** ___ **Date Est *:** ___

Establishing Co.*: ___ **Drilling Co *:** ___

Excavation Co.*: ___ **Constr. Method.*:** HS

Location Description: Foster Parent **Logging Company:** SAIC

1 Well Depth 35.65 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2 **Casing Diameter*** 4 inches

3 **Water level** 20.03 ft BTOC

4 **Measurement Type** (Static) / Dynamic / Dry

If Dynamic: **Production Rate** ___ GPM **Pump Depth** ___ ft

Recovery Depth ___ ft **Recovery Time** ___

5 H = Height of water in well (line 1 -line 3.) 15.62 ft

6a. TWO INCH WELL One Casing Volume [H x 0.163] NA gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] 10.20 gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing 0 ppm Instrument Number 5800-60090-327

Breathing Zone. 0 ppm

Well Condition: Good. Instrument in well, Leave in well, sampling pump adjacent to instrument Do not break well seal 0194477

Date Collected 12-7-00 **(Log Date)** Time 1313 **(Log Time)**

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

689 314

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1324	~~20.03~~ 0.2	20.03	6.56	20.4	39.2	6.40	194	0.614	Clear
1327	0.5	20.08	6.50	20.4	40.4	5.55	189	0.621	Clear
1330	0.8	20.03	6.55	20.5	41.0	5.41	187	0.626	Clear
1333	1.1	20.03	6.59	20.4	40.5	5.33	188	0.626	Clear
1336	1.5	20.03	6.57	20.7	40.2	5.09	184	0.626	Clear
1339	1.9	20.03	6.58	20.5	40.3	5.16	187	0.627	Clear
1342	2.4	20.03	6.59	20.6	41.0	5.18	184	0.628	Clear
1345	2.7	20.03	6.60	20.5	40.5	5.20	187	0.630	Clear
1348	3.3	20.03	6.59	20.4	40.6	5.17	185	0.630	Clear
1350	Sample	20.03	6.60	20.5	40.4	5.18	186	0.630	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 20.03 ft BTOC Final Water Level 20.03 ft BTOC

At least 0.32 casing volumes have been evacuated before sampling.

Odor/Sheen NONE

Analytical Methods SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3 - 40 mL vials HCl, 1 - 1L poly, 1 - 250 mL poly H_2SO_4
3 - 40 mL vials H_2SO_4, 1 - 500 mL poly HNO_3, 2 - 125 mL poly

Sample ID. HM114-01

Samples Collected By RH + DL

Comments

Science Applications International Corporation
An Employee-Owned Company

689 315

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB **Project Manager** BOB BAUER

Field Team: D. LOWAK + R. HOUDE

Site I.D.: ____ **Site Name:** AOC 20 **Location Proximity Code:** (1) O

Location I.D.: HM-124 **Northing*:** ____ **Easting*:** ____

Loc. Class. Code: WL **Elevation*:** ____ **Date Est *:** ____

Establishing Co.*: ____ **Drilling Co *** ____

Excavation Co.*: ____ **Constr. Method.*:** HS

Location Description: FOSTER PARENT **Logging Company:** SAIC

1 Well Depth 24.35 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2 **Casing Diameter*** 4 inches

3 **Water level** 15.89 ft BTOC

4. **Measurement Type** (Static) / Dynamic / Dry

If Dynamic: **Production Rate** ____ GPM **Pump Depth** ____ ft

Recovery Depth ____ ft **Recovery Time** ____

5. H = Height of water in well (line 1 -line 3.) 8.46 ft

6a TWO INCH WELL: One Casing Volume [H x 0.163] NA gallons

6b. FOUR INCH WELL One Casing Volume [H x 0.653] 5.52 gallons

6c. SIX INCH WELL One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number 580U-60090-327

Breathing Zone 0 ppm

Well Condition: Good, No well seal, lock only.

Date Collected 12-7-00 **(Log Date)** Time 1203 **(Log Time)**

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

689 316

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1211	0.1	16.01	6.59	20.9	0	5.42	157	0.418	Clear
1214	0.4	16.03	6.76	21.1	0	5.07	140	0.415	Clear
1217	0.7	16.05	6.79	21.0	0	4.87	146	0.419	Clear
1220	1.1	16.07	6.76	20.9	0	4.92	149	0.411	Clear
1223	1.4	16.09	6.78	20.8	0	5.01	148	0.406	Clear
1226	1.7	16.10	6.80	20.9	0	5.05	151	0.404	Clear
1229	2.1	16.11	6.79	20.9	0	5.06	152	0.400	Clear
1231	Sample	16.11	6.80	20.9	0	5.04	151	0.401	Clear

SAMPLE DATA

Purging Method Bladder Pump Sampling Method: Bladder Pump

Original Water Level 15.89 ft BTOC Final Water Level 16.11 ft BTOC

At least 0.38 casing volumes have been evacuated before sampling.

Odor/Sheen. None

Analytical Methods SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes. 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4
3-40 mL vials H_2SO_4, 1-500 mL poly HNO_3, 2-125 mL poly

Sample ID HM124-01

Samples Collected By DL + RH

Comments No custody seal on well, only lock

Science Applications International Corporation
An Employee-Owned Company

689 317

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW SRB **Project Manager** Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D : ___ **Site Name:** AOC 20 **Location Proximity Code** (1) 0

Location I.D.: HM-124 **Northing*:** ___ **Easting*:** ___

Loc Class Code. WL **Elevation*** ___ **Date Est *.** ___

Establishing Co.*: ___ **Drilling Co *.** ___

Excavation Co.*: ___ **Constr. Method.*:** HS

Location Description: Foster Parent **Logging Company:** SAIC

1 Well Depth 35.75 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2 **Casing Diameter*** 4 inches

3 **Water level** 16.32 ft BTOC

4 **Measurement Type** (Static) / Dynamic / Dry

If Dynamic **Production Rate** ___ GPM **Pump Depth** ___ ft

Recovery Depth ___ ft **Recovery Time** ___

5 H = Height of water in well (line 1 -line 3) 19.43 ft

6a TWO INCH WELL One Casing Volume [H x 0 163] NA gallons

6b FOUR INCH WELL One Casing Volume [H x 0 653] 12.69 gallons

6c SIX INCH WELL One Casing Volume [H x 1 469] NA gallons

Vapor Monitoring:

Well Casing 0 ppm Instrument Number 580U-60090-327

Breathing Zone 0 ppm

Well Condition: Good Intermediate well, no well seal

Date Collected 12-7-00 (Log Date) Time 1602 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of **foster parent**

689 318

Science Applications International Corporation
An Employee Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1611	0.3	16.34	6.62	19.8	0	5.03	209	0.679	Clear
1614	0.6	16.32	6.62	20.1	0	4.40	200	0.696	Clear
1617	0.9	16.32	6.57	19.9	0	4.14	196	0.698	Clear
1620	1.2	16.32	6.60	20.1	0	4.15	192	0.694	Clear
1623	1.5	16.32	6.62	20.0	0	4.18	192	0.688	Clear
1626	1.9	16.32	6.62	19.9	0	4.11	191	0.687	Clear
1629	2.4	16.32	6.64	20.0	0	4.13	189	0.686	Clear
1631	Sample	~~Sample~~ 16.32	6.63	20.0	0	4.17	191	0.687	Clear

SAMPLE DATA

Purging Method Bladder Pump Sampling Method Bladder Pump

Original Water Level 16.32 ft BTOC Final Water Level 16.32 ft BTOC

At least 0.19 casing volumes have been evacuated before sampling

Odor/Sheen None

Analytical Methods SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes 3 - 40 mL vials HCl, 1 - 1L poly, 1 - 250 mL poly H_2SO_4
3 - 40 mL vials H_2SO_4, 1 - 500 mL poly HNO_3, 2 - 125 mL poly

Sample ID HM126-01

Samples Collected By DL + RH

Comments

Science Applications International Corporation
An Employee Owned Company

689 319

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FWJRB Project Manager: BOB BAUER

Field Team: D LOWAK + ROHOUDE

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: LE05-02 Northing*: ____ Easting*: ____

Loc. Class. Code: WL Elevation*: ____ Date Est.*: ____

Establishing Co.*: ____ Drilling Co *: ____

Excavation Co *: ____ Constr. Method.*: HS

Location Description: FOSTER PARENT Logging Company: SAIC

1. Well Depth 28.43 ft Below Top of Casing (BTOC)
   (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 26.02 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry
   If Dynamic: Production Rate ____ GPM Pump Depth ____ ft
   Recovery Depth ____ ft Recovery Time ____
5. H = Height of water in well (line 1.-line 3.) 2.41 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 0.39 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number: 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good. Well seal #0438634 was broken upon arrival. well was locked. Install well seal # 0438991 upon departure.

Date Collected: 12-7-00 (Log Date) Time 0837 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

689 320

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
0933	0.20	26.03	6.30	9.7	96.2	8.02	149	0.832	Deep red color
0939	0.40	26.03	6.26	10.1	75	6.78	144	0.821	Deep red color
0945	0.60	26.03	6.28	10.3	38	6.51	131	0.819	Red tint
0951	0.80	26.03	6.32	10.4	19	6.26	117	0.809	Red tint
0958	1.05	26.04	6.41	10.7	279	7.69	72	0.774	Deep red color
1005	1.30	26.04	6.43	11.0	285	5.78	57	0.776	Deep red color
1012	1.60	26.04	6.39	11.6	261	5.38	39	0.775	Red tint
1017	1.80	26.04	6.44	12.2	250	5.25	33	0.771	Red tint
1022	2.00	26.04	6.42	12.7	255	5.14	27	0.769	Red tint
1027	2.20	26.04	6.41	12.7	258	5.02	27	0.765	Red tint
1032	2.40	26.04	6.38	13.9	257	4.71	25	0.758	Red tint
1035	2.60	26.05	6.37	14.1	260	4.70	25	0.755	Red tint
1039	2.75	26.05	6.40	14.7	268	4.71	25	0.751	Red tint
1044	2.95	26.05	6.43	14.6	271	4.65	24	0.755	Red tint
1045	Sample	26.05	6.44	14.6	272	4.66	24	0.754	Red tint

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 26.02 ft BTOC Final Water Level 26.05 ft BTOC

At least 7.51 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4, 3-40 mL vials H_2SO_4, 1-500 mL poly HNO_3, 2-125 mL poly

Sample ID: LF0502-01

Samples Collected By DL + RH

Comments

Checked by ____ Date ____

Revision 2 5/5/98

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Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB **Project Manager** Bob Bauer

Field Team: D. Lowak + Roode

Site I.D.: ____ **Site Name:** AOC 20 **Location Proximity Code:** (I) O

Location I.D.: W153 **Northing*:** ____ **Easting*:** ____

Loc. Class. Code: WL **Elevation*:** ____ **Date Est.*:** ____

Establishing Co.*: ____ **Drilling Co.*:** ____

Excavation Co.*: ____ **Constr. Method.*:** HS

Location Description: Foster Parent **Logging Company:** SAIC

1. **Well Depth** 39.28 **ft Below Top of Casing (BTOC)**
   (Sounding/Borehole Depth)
2. **Casing Diameter*** 2 **inches**
3. **Water level** 22.51 **ft BTOC**
4. **Measurement Type:** (Static) / Dynamic / Dry
   If Dynamic: **Production Rate** ____ **GPM** **Pump Depth** ____ **ft**
   Recovery Depth ____ **ft** **Recovery Time** ____
5. **H = Height of water in well (line 1.-line 3.)** 16.77 **ft**

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 2.73 gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm **Instrument Number:** 580U-60090-327

Breathing Zone: 0 ppm

Well Condition: Good, Dedicated bladder pump in well
Remove seal # 0438686, replace w/ 0438992

Date Collected: 12-7-00 **(Log Date)** **Time:** 1427 **(Log Time)**

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

689 322

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1439	0.2	22.51	6.75	21.9	5.9	6.27	169	0.710	Clear
1442	0.5	22.51	6.68	21.8	73.3	4.80	171	0.709	Slightly Cloudy
1445	0.8	22.51	6.70	21.8	69.4	4.52	167	0.709	Slightly Cloudy
1448	1.2	22.51	6.70	21.8	40.9	4.43	163	0.709	Slightly Cloudy
1451	1.6	22.51	6.74	21.7	26.6	4.40	164	0.708	Slightly Cloudy
1454	1.9	22.51	6.74	21.7	3.0	4.30	161	0.709	Clear
1457	2.3	22.51	6.76	21.7	2.4	4.27	160	0.710	Clear
1500	2.6	22.51	6.75	21.7	2.3	4.26	160	0.709	Clear
1503	3.0	22.51	6.76	21.8	2.0	4.21	159	0.708	Clear
1505	Sample	22.51	6.76	21.7	2.1	4.23	159	0.709	Clear

SAMPLE DATA

Purging Method: 22" Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 22.51 ft BTOC Final Water Level: 22.51 ft BTOC

At least 1.10 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, IRON

Container types and volumes: 6 - 40mL vials HCl, 2 - 1L poly, 2 - 250mL poly H_2SO_4
6 - 40mL vials H_2SO_4, 2 - 500mL poly HNO_3, 4 - 125mL poly

Sample ID: W153-01 + W153-02 (Field duplicate)

Samples Collected By: DL + RH

Comments: Remove seal # 0438686, replace w/ 0438992
Duplicate marked w/ time 1524
Use dedicated bladder pump to purge + sample well

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB **Project Manager** Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ____ **Site Name:** AOC 20 **Location Proximity Code:** (I) O

Location I.D.: W-154 **Northing*:** ____ **Easting*:** ____

Loc. Class. Code: WL **Elevation*:** ____ **Date Est.*:** ____

Establishing Co.*: ____ **Drilling Co *:** ____

Excavation Co.*: ____ **Constr. Method.*:** HS

Location Description: Foster Parent **Logging Company:** SAIC

1. Well Depth 57.71 ft Below Top of Casing (BTOC)
   (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 34.12 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry
   If Dynamic **Production Rate** ____ GPM **Pump Depth** ____ ft
   Recovery Depth ____ ft **Recovery Time** ____
5. H = Height of water in well (line 1.-line 3.) 23.59 ft

6a TWO INCH WELL: One Casing Volume [H x 0.163] 3.85 gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 9.0 ppm Instrument Number. SBOU-60090-327

Breathing Zone: 0.0 ppm

Well Condition: Good, no well seal, lock only

Date Collected: 12-8-00 (Log Date) Time 0740 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

689 324

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
0832	0.2	34.20	6.56	17.4	0	7.19	267	0.716	Clear
0835	0.4	34.24	6.65	18.5	0	4.65	250	0.720	Clear
0838	0.7	34.27	6.60	17.9	0	4.75	237	0.747	Clear
0841	1.0	34.34	6.65	16.6	0	4.68	225	0.754	Clear
0844	1.3	34.45	6.79	16.0	0	4.66	221	0.761	Clear
0847	1.6	34.51	6.79	16.2	0	4.68	202	0.768	Clear
0850	1.9	34.47	6.80	16.0	0	4.62	201	0.760	Clear
0853	2.0	34.45	6.81	16.3	0	4.67	202	0.762	Clear
0856	2.3	34.41	6.81	16.2	0	4.69	200	0.760	Clear
0859	Sample	34.40	6.81	16.1	0	4.67	201	0.761	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 34.12 ft BTOC Final Water Level: 34.40 ft BTOC

At least 0.6 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4, 3-40mL vials H_2SO_4, 1-500mL poly HNO_3, 2-125 mL poly

Sample ID: W156-01

Samples Collected By: DL + RH

Comments:

Checked by ____ Date ____

Revision 2 5/5/98

Science Applications International Corporation
An Employee Owned Company

689 325

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: WHGLTA302 Northing*: ____ Easting*: ____

Loc. Class. Code: WL Elevation*: ____ Date Est.*: ____

Establishing Co.*: ____ Drilling Co *: ____

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Foster Parent Logging Company: SAIC

1 Well Depth 22.88 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2. Casing Diameter* 2 inches

3 Water level 20.25 ft BTOC

4 Measurement Type: (Static) / Dynamic / Dry

If Dynamic Production Rate ____ GPM Pump Depth ____ ft

Recovery Depth ____ ft Recovery Time ____

5 H = Height of water in well (line 1 - line 3.) 2.63 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 0.43 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number 580U-60090-327

Breathing Zone: 0 ppm

Well Condition: Good, Tubing in well. Well seal 0438640 broken upon arrival. Replace w/ 0438994 upon departure

Date Collected: 12-8-00 (Log Date) Time: 1420 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

 Checked by ____ Date ____

Revision 4 3/13/00

689 326

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1448	0.2	20.90	6.70	17.6	999+	4.31	-68	0.830	Cloudy tan
1452	0.3	21.90	6.69	17.7	999+	4.24	-67	0.830	Cloudy tan
1455	0.4	22.70	6.72	18.0	~~75~~ 1523	4.24	-64	0.829	Slightly Cloudy
1458	0.5	Dry	6.73	18.5	157	4.23	-67	0.830	Slightly Cloudy
1543	Sample	20.75	6.78	18.7	179	4.27	-78	0.831	Slightly Cloudy

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method Teflon Bailer

Original Water Level: 20.25 ft BTOC Final Water Level 20.75 ft BTOC

At least 1 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes 3-40mL vials HCl, 1-1L poly, 1-250mL poly H_2SO_4
3-40mL vials H_2SO_4, 1-500mL poly HNO_3, 2-125mL poly

Sample ID: WHGLTA302-01

Samples Collected By DL + RH

Comments Purge well dry at 0.5 gal. Wait until recharged
80% WL. 20.75 Collect sample w/ bailer

Checked by _____ Date _____

Revision 2 5/5/98

Science Applications International Corporation
An Employee-Owned Company

689 327

GROUNDWATER SAMPLE COLLECTION LOG

Project Name: AOC 20 SI, NAS FW JRB Project Manager: BOB BAUER

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (1) 0

Location I.D.: WSAICTA002 Northing*: 6964473.1 Easting*: 2294921.6

Loc. Class. Code: WL Elevation*: 624.79 Date Est.*: 05 DEC 00

Establishing Co.*: SAIC Drilling Co.*: VORTEX DRILLING

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: ~~FOSTER PARENT~~ Flight Line Logging Company: SAIC

1. Well Depth 26.04 ft Below Top of Casing (BTOC) (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 16.57 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry

   If Dynamic Production Rate ____ GPM Pump Depth ____ ft

   Recovery Depth ____ ft Recovery Time ____

5. H = Height of water in well (line 1 - line 3.) 9.47 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 1.54 gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good Install well seal 0438995 upon departure

Date Collected: 12-14-00 (Log Date) Time: 0854 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

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Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
0906	0.2	16.95	6.55	15.6	900	6.52	395	0.861	Cloudy
0909	0.3	17.35	6.80	15.4	400	6.52	373	0.830	Slightly cloudy
0913	0.5	17.43	6.68	15.5	207	6.04	373	0.849	Slightly cloudy
0917	0.7	17.55	6.62	15.5	142	6.02	369	0.847	Slightly cloudy
0920	0.9	17.60	6.65	15.5	78.2	6.06	360	0.851	Slightly cloudy
0923	1.1	17.65	6.66	15.5	50.3	6.08	357	0.851	Slightly cloudy - clear
0927	1.4	17.75	6.67	15.5	51.1	6.03	353	0.853	Clear
0930	1.6	17.80	6.66	15.6	50.8	6.05	345	0.854	Clear
0934	1.9	17.95	6.69	15.7	51.4	6.07	343	0.852	Clear
0937	2.2	17.98	6.68	16.3	50.9	6.02	342	0.849	Clear
0940	2.5	18.05	6.69	16.2	51.2	6.04	340	0.846	Clear
0943	2.8	18.02	6.68	16.1	51.4	6.06	339	0.847	Clear
0946	3.1	17.99	6.68	16.2	50.8	6.03	339	0.849	Clear
0949	Sample	18.00	6.69	16.1	50.9	6.05	338	0.848	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 16.57 ft BTOC Final Water Level: 18.00 ft BTOC

At least 2.01 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4, 3-40 mL vials H_2SO_4, 1-500 mL poly HNO_3, 2-125 mL poly

Sample ID: WSAICTA002-01

Samples Collected By: DL + RH

Comments: Unable to adjust flow to minimize drawdown. Continue pursing until parameters stabilize.

Checked by ____ Date ____

Revision 2 5/5/98

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

21-22'

Project Name: AOC 20 SI, NAS FWJRB Project Manager: Bob Bauer

Field Team: D. Iowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: WSAICTA003 Northing*: 6962921.2 Easting*: 2294630.4

Loc. Class. Code: WL Elevation*: 621.14 Date Est.*: 05 Dec 00

Establishing Co.*: SAIC Drilling Co.*: Vortex Drilling

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Flight line, S of Taxiway C Logging Company: SAIC

1 Well Depth 30.80 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2 Casing Diameter* 2 inches

3 Water level 19.37 ft BTOC

4 Measurement Type: (Static) / Dynamic / Dry

If Dynamic: Production Rate ____ GPM Pump Depth ____ ft

Recovery Depth ____ ft Recovery Time ____

5 H = Height of water in well (line 1.-line 3) 11.43 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 1.86 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number: 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good, Install well seal 0438997 upon departure

Date Collected 12-11-00 (Log Date) Time 0755 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

689 330

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
0833	.20	19.51	6.66	15.3	52	11.15	249	0.738	Sl. Cloudy
0838	.25	19.53	6.76	15.3	50	9.95	244	0.747	Slightly Cloudy
0843	.30	19.54	6.79	15.3	51	9.45	237	0.745	Slightly Cloudy
0846	.32	19.54	6.80	15.4	50	9.20	233	0.746	Slightly Cloudy
0849	.35	19.57	6.81	15.4	51	9.02	230	0.744	Slightly Cloudy
852	.37	19.57	6.81	15.4	50	8.91	226	0.741	Slightly Cloudy
8.55	.39	19.56	6.83	15.4	50	8.75	223	0.739	Slightly Cloudy
8.58	0.41	19.57	6.83	15.4	52.3	6.50	219	0.734	Slightly Cloudy
0901	0.44	19.58	6.83	15.5	53.1	6.55	217	0.732	Slightly Cloudy
0904	0.49	19.58	6.82	15.5	52.3	6.57	216	0.730	Slightly Cloudy
0907	0.52	19.58	6.83	15.5	52.9	6.54	215	0.729	Slightly Cloudy
0910	0.55	19.58	6.84	15.5	51.7	6.50	214	0.728	Slightly Cloudy
0912	Sample	1958	6.84	15.5	51.6	6.49	214	0.728	Slightly Cloudy

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 19.37 ft BTOC Final Water Level: 19.58 ft BTOC

At least 0.3 casing volumes have been evacuated before sampling

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4, 3-40 mL vials H_2SO_4, 1-500 mL poly HNO_3, 2-125 mL poly

Sample ID: W SAIL TA003-01

Samples Collected By: DL + RH

Comments: Sample from 21-22 ft

Checked by _____ Date _____

Revision 2 5/5/98

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

24-25'

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lovck + R. Houde

Site I.D.: ___ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: WSAICTA003 Northing*: 6962921.1 Easting*: 2294630.4

Loc. Class. Code: WL Elevation*: 621.14 Date Est.*: 05 DEC 00

Establishing Co.*: SAIC Drilling Co *: Vortex Drilling

Excavation Co.*: Constr. Method.*: HS

Location Description: Flight line: S at Taxiway C Logging Company: SAIC

1. Well Depth 30.80 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 19.37 ft BTOC
4 Measurement Type: (Static) / Dynamic / Dry
If Dynamic Production Rate ___ GPM Pump Depth ___ ft
Recovery Depth ___ ft Recovery Time ___
5 H = Height of water in well (line 1 - line 3) 11.43 ft
6a. TWO INCH WELL: One Casing Volume [H x 0.163] 1.86 gallons
6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons
6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number: 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good, Install well seal 0438997 upon departure

Date Collected 12-11-00 (Log Date) Time: 0755 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

 Checked by ___ Date ___

Revision 4 3/13/00

689 332

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
0925	.20	19.60	6.76	15.7	57	6.97	124	0.717	Sl. Cloudy
928	.22	19.62	6.79	15.8	56	6.94	108	0.713	Sl. Cloudy
931	.24	19.61	6.83	15.9	54	6.87	107	0.711	Sl. Cloudy
934	.27	19.63	6.84	15.9	54	6.78	102	0.710	Sl. Cloudy
937	.30	19.62	6.86	15.9	52	6.78	100	0.703	Sl. cloudy
940	.33	19.61	6.84	15.9	51	6.75	78	0.699	Sl. Cloudy
943	.36	19.64	6.83	15.8	50	6.72	77	0.694	Sl. cloudy
946	.39	19.65	6.81	15.8	51	6.73	74	BH ~~0.692~~	Sl. Cloudy
949	.41	19.65	6.83	15.8	51	6.70	70	0.691	Sl. Cloudy
952	.45	19.64	6.84	15.9	50	6.69	68	0.688	Sl. Cloudy
SAMPLE 0955	.48	19.65	6.85	15.9	51	6.67	67	0.688	Sl. Cloudy

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method Bladder Pump

Original Water Level: 19.37 ft BTOC Final Water Level 19.65 ft BTOC

At least 0.3 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40mL vials HCl, 1-1L poly, 1-250mL poly H_2SO_4
3-40mL vials H_2SO_4, 1-500mL poly HNO_3, 2-125mL poly

Sample ID: WSAICTA003-02

Samples Collected By DL/RH

Comments Sampled from 2425'

Checked by ____ Date ____

Revision 2 5/5/98

Science Applications International Corporation
An Employee-Owned Company

689 333

GROUNDWATER SAMPLE COLLECTION LOG

29 - 30'

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Baver

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (1) 0

Location I.D.: WSAILTA003 Northing*: 6962921.1 Easting*: 2294630.4

Loc. Class. Code: WL Elevation*: 621.14 Date Est.*: 05 DEC 00

Establishing Co.*: SAIC Drilling Co *: Vortex Drilling

Excavation Co.*: Constr. Method.*: HS

Location Description: Flight Line, S of Taxiway C Logging Company: SAIC

1 Well Depth 30.80 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2. Casing Diameter* 2 inches

3 Water level 19.37 ft BTOC

4 Measurement Type: (Static) / Dynamic / Dry

If Dynamic Production Rate ____ GPM Pump Depth ____ ft

Recovery Depth ____ ft Recovery Time ____

5 H = Height of water in well (line 1.-line 3) 11.43 ft

6a TWO INCH WELL: One Casing Volume [H x 0.163] 1.86 gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0 653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number 580U-60090-327

Breathing Zone: 0 ppm

Well Condition: Good. Install well seal 0438997 upon departure

Date Collected 12-11-00 (Log Date) Time: 0755 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4, 3/13/00

689 334

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1013	0.20	19.65	6.84	15.9	51	6.67	72	0.688	Slightly Cloudy
1017	0.23	19.66	6.85	15.8	50.2	6.70	72	0.690	Slightly Cloudy
1020	0.26	19.67	6.86	15.8	50.4	6.69	69	0.690	Slightly Cloudy
1023	0.30	19.68	6.84	15.8	50.7	6.59	68	0.689	Slightly Cloudy
1026	0.33	19.70	6.86	15.8	51.2	6.61	67	0.688	Slightly Cloudy
1029	0.36	19.69	6.85	15.8	50.9	6.58	67	0.689	Slightly Cloudy
1032	Sample	19.69	6.85	15.8	50.7	6.57	66	0.688	Slightly Cloudy

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 19.37 ft BTOC Final Water Level 19.69 ft BTOC

At least 0.2 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 63-40 mL vials HCl, 2-1L poly 2-250mL H_2SO_4 63-40 mL vials H_2SO_4, 2-500mL HNO_3, 4-125mL poly

Sample ID: WSAHCTA003-03 + WSAHCTA003-04 (FD)

Samples Collected By DL + RH

Comments Collect sample from 29-30', collect duplicate at this depth. On COC depth stated 35-36' w/ time of 1059. (Blind duplicate).

Checked by _____ Date _____

Revision 2 5/5/98

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

28-29'

Project Name: AOC 20 SI, NAS FW JRB Project Manager: Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) / O

Location I.D.: WSAICTA004 Northing*: 6963343.8 Easting*: 2293586.3

Loc. Class. Code: W L Elevation*: 628.40 Date Est.*: 06 Dec 00

Establishing Co.*: SAIC Drilling Co.*: Vortex Drilling

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: ~~Foster Parent~~ Flight Line Logging Company: SAIC

1. Well Depth 42.22 ft Below Top of Casing (BTOC) (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 21.15 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry

   If Dynamic Production Rate ____ GPM Pump Depth ____ ft

   Recovery Depth ____ ft Recovery Time ____

5. H = Height of water in well (line 1.-line 3.) 21.07 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 3.43 gallons

6b. FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number: 580U-60090-327

Breathing Zone: 0 ppm

Well Condition: Good Install well seal 0438999 upon departure

Date Collected 12-14-00 (Log Date) Time: 1100 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

  Checked by ____ Date ____

Revision 4 3/13/00

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Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1113	0.2	21.10	6.50	15.8	332	6.55	274	0.802	Slightly Cloudy
1117	0.4	21.18	6.57	15.7	162	6.40	276	0.787	Slightly Cloudy
1121	0.6	21.20	6.56	15.8	44	6.29	268	0.767	Slightly Cloudy-Clear
1124	0.8	21.20	6.58	15.8	10.2	6.18	265	0.764	Clear
1127	1.0	21.20	6.57	15.9	10.0	6.10	260	0.782	Clear
1130	1.2	21.20	6.58	15.8	8.7	6.05	~~259~~ 255	0.779	Clear
1133	1.4	21.20	6.59	15.9	8.1	6.06	254	0.776	Clear
1136	1.6	21.20	6.60	15.9	9.2	6.05	253	0.779	Clear
1139	Sample	21.20	6.60	15.9	9.0	6.04	253	0.780	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 21.15 ft BTOC Final Water Level 21.20 ft BTOC

At least 0.47 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40 mL vials HCl, 1-1L poly, 1-250mL poly H_2SO_4
3-40 mL vials H_2SO_4, 1-500 mL poly HNO_3, 2-125mL poly

Sample ID: WSAICTA004-01

Samples Collected By DL + RH

Comments Sample collected from depth of 28-29'

Checked by _____ Date _____

Revision 2 5/5/98

Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

34-35'

Project Name: AOC 20 SI, NAS FW JRB Project Manager: Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ___ Site Name: AOC 20 Location Proximity Code: (I) / O

Location I.D.: WSAICTA004 Northing*: 69633438 Easting*: 2293586.3

Loc. Class. Code: WL Elevation*: 628.40 Date Est *: 06 DEC 00

Establishing Co.*: SAIC Drilling Co.*: Vortex Drilling

Excavation Co.*: ___ Constr. Method.*: HS

Location Description: Fos Flight Line Logging Company: SAIC

1. Well Depth 4222 ft Below Top of Casing (BTOC)
   (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 21.15 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry
   If Dynamic Production Rate ___ GPM Pump Depth ___ ft
   Recovery Depth ___ ft Recovery Time ___
5. H = Height of water in well (line 1.-line 3) 21.07 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 3.43 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number: 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good Install well seal 0438999 upon departure

Date Collected: 12-14-00 (Log Date) Time: 1100 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ___ Date ___

Revision 4 3/13/00

689 338

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1155	0.2	21.20	6.64	15.9	76	6.16	269	0.750	Slightly Cloudy
1158	0.4	21.20	6.61	15.8	15.6	6.02	264	0.778	Clear
1202	0.6	21.20	6.69	15.9	30.4	6.09	265	0.750	Slightly Cloudy-Clear
1205	0.8	21.20	6.67	15.9	34.9	6.04	265	0.767	Slightly Cloudy-Clear
1209	1.0	21.20	6.64	15.9	30.0	5.85	257	0.764	Slightly Cloudy-Clear
1213	1.3	21.20	6.66	15.9	32.4	5.90	257	0.760	Slightly Cloudy-Clear
1217	1.6	21.20	6.67	16.4	28.5	5.07	252	0.759	Slightly Cloudy-Clear
1220	1.9	21.20	6.67	16.4	29.0	5.06	245	0.758	Slightly Cloudy-Clear
1224	2.2	21.20	6.68	16.3	30.2	5.09	248	0.755	Slightly Cloudy-Clear
1228	2.5	21.20	6.70	16.4	30.9	5.07	246	0.754	Slightly Cloudy-Clear
1232	2.8	21.20	6.70	16.5	30.0	5.09	244	0.754	Slightly Cloudy Clear
1235	Sample	21.20	6.70	16.5	30.7	5.07	243	0.753	Slightly Cloudy-Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 21.15 ft BTOC Final Water Level 21.20 ft BTOC

At least ~ 0.82 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4
3-40 mL vials H_2SO_4, 1-500 mL HNO_3, 2-125 mL poly

Sample ID: WSAIC TA004-02

Samples Collected By DL + RH

Comments Sample collected at depth of 34-35'.

Checked by _____ Date _____

Revision 2 5/5/98

Science Applications International Corporation
An Employee Owned Company

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GROUNDWATER SAMPLE COLLECTION LOG

40-41'

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: 1 0

Location I D.: WSAICTA004 ___ Northing*: ~~2293586.3~~ 6963343B Easting*: 2293586.3

Loc. Class. Code: WL Elevation*: 628.40 Date Est *: 06 Dec 00

Establishing Co.*: SAIC Drilling Co *: Vortex Drilling

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Flight Line Logging Company: SAIC

1. Well Depth 42.22 ft Below Top of Casing (BTOC)
   (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 21.15 ft BTOC
4. Measurement Type: Static / Dynamic / Dry
   If Dynamic Production Rate ____ GPM Pump Depth ____ ft
   Recovery Depth ____ ft Recovery Time ____
5. H = Height of water in well (line 1.-line 3) 21.07 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 3.43 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0 653] NA gallons

6c SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number. 5800-60090-327

Breathing Zone. 0 ppm

Well Condition: Good. Install well seal 0438999 upon departure

Date Collected 12-14-00 (Log Date) Time: 1100 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

  Checked by ____ Date ____

Revision 4, 3/13/00

689 340

Science Applications International Corporation
An Employee-Owned Company

GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1250	0.5	21.20	6.69	18.5	909	5.37	257	0.751	Cloudy
1255	~~0.75~~ 0.75	21.20	6.66	18.5	632	5.23	256	0.744	Cloudy
1300	1.0	21.20	6.66	18.4	518	5.13	254	0.754	Cloudy
1305	1.25	21.20	6.65	18.4	381	5.16	252	0.752	Cloudy
1310	1.5	21.20	6.67	18.4	108	4.82	249	0.751	Cloudy
1315	1.75	21.20	6.67	18.4	78	4.62	248	0.752	Slightly Cloudy
1320	2.0	21.20	6.68	18.4	30.9	4.61	243	0.749	Slightly Cloudy-Clear
1325	2.25	21.20	6.69	18.3	17.4	4.60	236	0.751	Clear
1328	2.5	21.20	6.70	18.3	8.4	4.63	235	0.747	Clear
1331	2.75	21.20	6.70	18.5	7.6	4.60	234	0.751	Clear
1334	3.0	21.20	6.71	18.4	8.0	4.64	232	0.748	Clear
1337	Sample	21.20	6.72	18.5	8.6	4.62	231	0.750	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 21.15 ft BTOC Final Water Level 21.20 ft BTOC

At least 0.87 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes: 3-40-ml vials HCl, 1-1L poly, 1-250 ml poly H_2SO_4
3-40-ml vials H_2SO_4, 1-500 ml poly HNO_3, 2-125 ml poly

Sample ID: W SMCTA004-03

Samples Collected By DL + RH

Comments Pump stirred up silt in sump.
Sample collected from depth of 40-41'.

Checked by ____ Date ____

Revision 2 5/5/98

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GROUNDWATER SAMPLE COLLECTION LOG

2324'

Project Name: AOC 20 SI, NAS FU SRB Project Manager: Bob Bauer

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) / O

Location I.D.: WSAICTA005 Northing*: 6963578.0 Easting*: 2293587.3

Loc. Class. Code: WL Elevation*: 629.55 Date Est.*: 11 Dec 00

Establishing Co.*: SAIC Drilling Co.*: Vortex Drilling

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: Flight Line Logging Company: SAIC

1 Well Depth 35.31 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2 Casing Diameter* 2 inches

3 Water level 21.48 ft BTOC

4 Measurement Type: (Static) / Dynamic / Dry

If Dynamic: Production Rate ____ GPM Pump Depth ____ ft

Recovery Depth ____ ft Recovery Time ____

5 H = Height of water in well (line 1 - line 3) 13.83 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 2.25 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number 580U-60090-327

Breathing Zone: 0 ppm

Well Condition: Good. Install well seal # 0438996 upon departure

Date Collected: 12-14-00 (Log Date) Time: 1555 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

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GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1400	0.25	21.52	~~6.99~~	21.17.8	128	7.43	321	0.631	Slightly Cloudy
1405	0.5	21.52	6.62	18.0	76	7.00	310	0.630	Slightly Cloudy
1410	0.75	21.52	6.63	18.0	21.1	6.95	301	0.643	Slightly Cloudy-Clear
1415	1.0	21.52	6.68	18.0	12.8	6.56	300	0.645	Clear
1420	1.25	21.52	6.71	18.1	10.2	6.60	290	0.650	Clear
1425	1.5	21.52	6.72	18.0	10.1	6.58	291	0.649	Clear
1428	1.7	21.52	6.70	18.0	9.8	6.42	291	0.649	Clear
1431	2.0	21.52	6.72	18.1	9.7	6.41	290	0.649	Clear
1434	2.2	21.52	6.74	18.0	10.1	6.38	289	0.649	Clear
1436	Sample	21.52	6.73	18.1	9.9	6.37	289	0.649	

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method. Bladder Pump

Original Water Level: 21.48 ft BTOC Final Water Level 21.52 ft BTOC

At least 0.98 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes 3-40mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4
3-40mL vials H_2SO_4, 1-500mL poly HNO_3, 2-125mL poly

Sample ID: WSAICTA005-01

Samples Collected By DL + RH

Comments Sample collected at 23-24'

Checked by _____ Date

Revision 2 5/5/98

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GROUNDWATER SAMPLE COLLECTION LOG

27 28'

Project Name: AOC 20 SI, NAS FW JRB Project Manager Bob Bauer

Field Team: D. Lowe & R. Houde

Site I.D.: ___ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: WSAIC TA005 Northing*: 6963578.0 Easting*: 22935873

Loc. Class. Code: WL Elevation*: 629.55 Date Est.*: 11 Dec 00

Establishing Co.*: SAIC Drilling Co *: Vortex Drilling

Excavation Co.*: ___ Constr. Method.*: HS

Location Description: Flight Line Logging Company: SAIC

1 Well Depth 35.31 ft Below Top of Casing (BTOC)
(Sounding/Borehole Depth)

2 Casing Diameter* 2 inches

3 Water level 21.48 ft BTOC

4 Measurement Type: (Static) / Dynamic / Dry

If Dynamic Production Rate ___ GPM Pump Depth ___ ft

Recovery Depth ___ ft Recovery Time ___

5 H = Height of water in well (line 1.-line 3) 13.83 ft

6a. TWO INCH WELL: One Casing Volume [H x 0.163] 2.25 gallons

6b FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons

6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number. 5800-60090-327

Breathing Zone: 0 ppm

Well Condition: Good. Install well seal 0438996 upon departure

Date Collected. 12-14-00 (Log Date) Time: 1555 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

  Checked by ___ Date ___

Revision 4, 3/13/00

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Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp. (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1646	0.3	21.52	6.54	18.0	27.8	5.83	278	0.681	Clear
1649	0.5	21.54	6.54	18.0	21.2	5.75	278	0.690	Clear
1652	0.8	21.55	6.40	18.1	20.7	5.70	273	0.698	Clear
1655	1.1	21.55	6.35	18.3	12.4	5.66	269	0.701	Clear
1658	1.4	21.55	6.32	18.2	8.3	5.67	268	0.707	Clear
1701	1.7	21.55	6.30	18.2	6.9	5.64	267	0.709	Clear
1704	2.0	21.55	6.30	18.1	7.2	5.64	266	0.710	Clear
1706	Sample	21.55	6.29	18.2	7.0	5.61	266	0.710	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level 21.48 ft BTOC Final Water Level 21.55 ft BTOC

At least 0.89 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MEE, Iron

Container types and volumes 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4
3-40 mL vials H_2SO_4, 1 500mL poly HNO_3, 2-125 mL poly

Sample ID: WSAICTA005-02

Samples Collected By DL + RH

Comments Sample collected @ ~~26-27'~~ DL 27-28'

Checked by _ Date

Revision 2 5/5/98

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GROUNDWATER SAMPLE COLLECTION LOG

33 34'

Project Name: AOC 20 SI, NAS FW JRB Project Manager: BOB BAUER

Field Team: D. Lowak + R. Houde

Site I.D.: ____ Site Name: AOC 20 Location Proximity Code: (I) O

Location I.D.: WSAICTA 005 Northing*: 696357.8.0 Easting*: 2293587.3

Loc. Class. Code: UL Elevation*: 629.55 Date Est.*: 11 DEC 00

Establishing Co.*: SAIC Drilling Co.*: VORTEX DRILLING

Excavation Co.*: ____ Constr. Method.*: HS

Location Description: FLIGHT LINE Logging Company: SAIC

1. Well Depth 35.31 ft Below Top of Casing (BTOC)
   (Sounding/Borehole Depth)
2. Casing Diameter* 2 inches
3. Water level 21.48 ft BTOC
4. Measurement Type: (Static) / Dynamic / Dry
   If Dynamic Production Rate ____ GPM Pump Depth ____ ft
   Recovery Depth ____ ft Recovery Time ____
5. H = Height of water in well (line 1.-line 3) 13.83 ft
6a. TWO INCH WELL: One Casing Volume [H x 0.163] 2.25 gallons
6b. FOUR INCH WELL: One Casing Volume [H x 0.653] NA gallons
6c. SIX INCH WELL: One Casing Volume [H x 1.469] NA gallons

Vapor Monitoring:

Well Casing: 0 ppm Instrument Number 5600-60090-327

Breathing Zone: 0 ppm

Well Condition: Good, Install well seal 0438996 upon departure

Date Collected 12-14-00 (Log Date) Time: 1555 (Log Time)

* Information is required only if the well has not been sampled previously and can be obtained from the brass tag or project manager. If the well has been sampled previously, this information is optional and complete location description with the note of foster parent.

Checked by ____ Date ____

Revision 4 3/13/00

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Science Applications International Corporation
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GROUNDWATER SAMPLE COLLECTION LOG

EVACUATION STABILIZATION TEST DATA

Time	Volume Purged (gal)	Water Level (ft BTOC)	pH	Temp (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Specific Conductance (mS/cm)	Appearance
1712	0.3	21.59	6.18	18.0	39.8	6.34	253	0.716	Clear
1715	0.6	21.62	6.14	17.9	10.8	5.80	244	0.735	Clear
1718	0.8	21.62	6.15	17.8	5.3	5.66	241	0.734	Clear
1721	1.1	21.63	6.16	17.8	3.8	5.62	242	0.736	Clear
1724	1.4	21.63	6.10	17.8	2.9	5.60	238	0.736	Clear
1727	1.7	21.64	6.14	17.8	3.5	5.58	238	0.736	Clear
1730	2.0	21.64	6.12	17.8	4.0	5.57	237	0.736	Clear
1733	Sample	21.65	6.13	17.8	3.9	5.56	237	0.736	Clear

SAMPLE DATA

Purging Method: Bladder Pump Sampling Method: Bladder Pump

Original Water Level: 2.48 ft BTOC Final Water Level: 21.65 ft BTOC

At least 0.89 casing volumes have been evacuated before sampling.

Odor/Sheen: None

Analytical Methods: SW8260, SW9060, E160.2, SW9056, SM2320, SW7060, MBE, Iron

Container types and volumes: 3-40 mL vials HCl, 1-1L poly, 1-250 mL poly H_2SO_4, 3-40 mL vials H_2SO_4, 1-500 mL poly HNO_3, 2-125 mL poly

Sample ID: WSAILTA005-03

Samples Collected By: DL + RH

Comments: Sampled collected from 33-34'

Checked by _____ Date _____

Revision 2 5/5/98

SAIC
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Well Development Log

IRPIMS WELL NUMBER: WSAILTA002

PROJECT: AOC 20 SI NAS FW SRB

LOGGED BY: D. Lowax / R. Hovde

LOCATION: Flight Line

STATIC WATER LEVEL BEFORE DEVELOPMENT: 16.52 0824 09 Dec 00

STATIC WATER LEVEL AFTER DEVELOPMENT: 16.52 1542 10 Dec 00

TIME/DATE DEVELOPMENT STARTED: 0824 / 09 Dec 00

TIME/DATE DEVELOPMENT ENDED: 1542 / 10 Dec 00

QUANTITY OF WATER DISCHARGED DURING DEVELOPMENT: 33

METHOD OF SURGING WELL: Surge block.

TYPE, SIZE/CAPACITY OF PUMP OR BAILER USED FOR DEVELOPMENT:

Stainless steel bailer + D.C. Purge pump (1.0-2.0 gpm)

TOTAL DEPTH OF WELL BEFORE DEVELOPMENT(SOUNDING): 23.44 0824 09 Dec 00

TOTAL DEPTH OF WELL AFTER DEVELOPMENT(SOUNDING): 26.04 1542 10 Dec 00

DEVELOPMENT RECORD

TIME	VOLUME REMOVED	pH	mS/cm COND.	°C TEMP.	NTU TURBIDITY	APPEARANCE
0934	11 gal	6.60	0.759	18.3	994+	Silty, tan in color
1044	17	6.76	0.818	19.5	999+	Light tan, cloudy
1116	20	6.70	0.787	19.4	999+	Light tan, cloudy
1507	23	6.80	0.838	19.2	798	Cloudy
1610	25	6.89	0.766	19.2	810	Cloudy
1427	27	6.70	0.834	21.4	499	Cloudy
1458	29	6.74	0.830	21.2	139	Slightly Cloudy
1509	30	6.73	0.829	21.2	54	Clear
1517	31	6.79	~~0.82~~ 0.810	21.0	55	Clear
1529	32	6.81	0.820	20.9	59	Clear
1540	33	6.82	0.820	20.9	60	Clear

10 Dec 00 ↓

SAIC
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Well Development Log

IRPIMS WELL NUMBER: WSAICTA003

PROJECT: AOC 20 SI NAS FW JRB

LOGGED BY: D. Lowak / R. Houde

LOCATION: Flight Line

STATIC WATER LEVEL BEFORE DEVELOPMENT: 19.30 1154 09 DEC 00

STATIC WATER LEVEL AFTER DEVELOPMENT: 20.42 1452 09 DEC 00

TIME/DATE DEVELOPMENT STARTED: 1154 / 09 DEC 00

TIME/DATE DEVELOPMENT ENDED: 1452 / 09 DEC 00

QUANTITY OF WATER DISCHARGED DURING DEVELOPMENT: 15 gal

METHOD OF SURGING WELL: Surge block

TYPE, SIZE/CAPACITY OF PUMP OR BAILER USED FOR DEVELOPMENT:

Stainless steel bailer + D.C. purge pump (1.0-2.0 gpm)

TOTAL DEPTH OF WELL BEFORE DEVELOPMENT (SOUNDING): 28.40 1154 09 DEC 00

TOTAL DEPTH OF WELL AFTER DEVELOPMENT (SOUNDING): 30.82 1452 09 DEC 00

DEVELOPMENT RECORD

TIME	VOLUME REMOVED	pH	COND.	TEMP.	TURBIDITY	APPEARANCE
1322	7.0 gal	6.84	0.661	20.8	999	Cloudy - Tan
1343	7.5 gal	6.83	0.666	19.7	218	Slighty Cloudy
1353	10 g	6.82	0.631	19.7	76.2	Slighty cloudy
1403	11 g	7.01	0.632	19.2	39.8	Sl. Cloudy / Clear
1413	12 g	6.92	0.636	19.5	13	Clear
1423	13 g	6.93	0.644	19.5	9.7	Clear
1433	14 g	6.92	0.662	19.7	9.9	Clear
1443	15 g	6.94	0.652	19.9	10.3	Clear

SAIC
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Well Development Log

IRPIMS WELL NUMBER: WSAICTA004

PROJECT: NAS FW JRB AOC 8 & 20 SI

LOGGED BY: D. Lowak / R. Hardc

LOCATION: Flight Line

STATIC WATER LEVEL BEFORE DEVELOPMENT: 20.90 0838 10 DEC 00

STATIC WATER LEVEL AFTER DEVELOPMENT: 21.21 1311 10 DEC 00

TIME/DATE DEVELOPMENT STARTED: 0838 / 10 Dec 00

TIME/DATE DEVELOPMENT ENDED: 1311 / 10 Dec 00

QUANTITY OF WATER DISCHARGED DURING DEVELOPMENT: 225

METHOD OF SURGING WELL: Surge block

TYPE, SIZE/CAPACITY OF PUMP OR BAILER USED FOR DEVELOPMENT:

Stainless steel bailer + DC Purse pump (1-2 spm)

TOTAL DEPTH OF WELL BEFORE DEVELOPMENT (SOUNDING): 38.70 10 DEC 00 0838

TOTAL DEPTH OF WELL AFTER DEVELOPMENT (SOUNDING): 42.24 1311 10 DEC 00

DEVELOPMENT RECORD

TIME	VOLUME REMOVED	pH	COND.	TEMP.	TURBIDITY	APPEARANCE
0910	15 gal	6.64	0.677	17.1	+999	Cloudy - Lt. Brown
0940	50 gal	6.65	0.653	18.7	+999	Cloudy - Lt. Tan
0948	55 gal	6.67	0.707	18.2	+999	Cloudy - Lt. Tan
0956	65 g	6.65	0.684	17.9	785	Cloudy
1010	75 g	6.78	0.704	18.9	950	Cloudy
1018	83 g	6.77	0.672	18.5	519	Sl. cloudy
1021	85 g	6.76	0.692	18.9	127	Sl. Cloudy
1034	105	6.74	0.700	19.2	105	Clear
1147	127	6.67	0.656	19.5	95	Clear
1230	185	6.86	0.710	20.1	93	Clear
1235	190	6.85	0.683	20.0	40.5	Clear
1240	195	6.86	0.687	20.1	28.1	Clear
1250	205	6.89	0.700	20.1	8.7	Clear
1300	215	6.89	0.698	20.1	4.4	Clear
1310	225	6.88	0.701	20.1	5.6	Clear

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Well Development Log

IRPIMS WELL NUMBER: WSAICTA005

PROJECT: AOC 20 SF NAS JRB FW

LOGGED BY: D. Louck / R. Houde

LOCATION: Flight Line, W of Runway

STATIC WATER LEVEL BEFORE DEVELOPMENT: 21.15 1300 13 DEC 00

STATIC WATER LEVEL AFTER DEVELOPMENT: 21.60 1545 13 DEC 00

TIME/DATE DEVELOPMENT STARTED: 1300 / 13 DEC 00

TIME/DATE DEVELOPMENT ENDED: 1545 / 13 DEC 00

QUANTITY OF WATER DISCHARGED DURING DEVELOPMENT: 120 gal

METHOD OF SURGING WELL: Surge block

TYPE, SIZE/CAPACITY OF PUMP OR BAILER USED FOR DEVELOPMENT:

Stainless steel Bailer, D.L. purge pump (1-2 gpm)

TOTAL DEPTH OF WELL BEFORE DEVELOPMENT (SOUNDING): 30.60 1300 13 DEC 00

TOTAL DEPTH OF WELL AFTER DEVELOPMENT (SOUNDING): 35.31 1545 13 DEC 00

DEVELOPMENT RECORD

TIME	VOLUME REMOVED	pH	mS/cm COND.	°C TEMP.	NTU TURBIDITY	APPEARANCE
1347	20 gal	6.70	0.810	18.7	~~0.8~~ 999+	Cloudy, tan
1408	40	6.75	0.705	18.9	999+	Cloudy, tan tint
1415	50	6.84	0.695	19.3	451.0	Cloudy
1426	65	6.82	0.704	19.2	244	Slightly cloudy
1442	75	6.84	0.690	19.2	148	Slightly Cloudy
1453	82	6.86	0.690	19.3	42.2	Clear
1459	88	6.87	0.685	19.5	21.1	Clear
1504	93	6.87	0.686	19.4	15.3	Clear
1509	98	6.88	0.700	19.5	10.2	Clear
1516	105	6.89	0.701	19.4	9.7	Clear
1522	110	6.90	0.705	19.5	9.9	Clear
1539	120	6.91	0.700	19.4	9.8	Clear

TAB

Appendix G

APPENDIX G

Field Laboratory Test Results

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FIELD LABORATORY TEST RESULTS

PROJECT NAME: AOC 20 SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-8030 /0007
PROJECT MANAGER: BOB BAUER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FICKLEN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	EB120700		LF0502-01		HM124-01		HM114-01		W153-01	
Location ID	EB1		LF05-02		HM-124		HM-114		W153	
Date Analyzed	07 DEC 00		07 DEC 00		07 DEC 00		07 DEC 00		07 DEC 00	
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	1750	0.00	1755	0.47	1800	0.00	1805	0.00	1810	0.00
Redox Potential (mV)			1045	24	1231	151	1350	186	1505	159
Dissolved Oxygen (mg/L)			1045	4.66	1231	5.04	1350	5.18	1505	4.23
Turbidity (NTU)			1045	272	1231	0.0	1350	40.4	1505	2.1
pH			1045	6.44	1231	6.80	1350	6.60	1505	6.74
Temperature (°C)			1045	14.6	1231	20.9	1350	20.5	1505	21.7
Sp. Conductivity (mS/cm)			1045	0.754	1231	0.401	1350	0.630	1505	0.709
									~~1505~~	

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146.
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22.

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Science Applications International Corporation
An Employee Owned Company

FIELD LABORATORY TEST RESULTS

689-355

PROJECT NAME: AOC 20SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-8030/0007
PROJECT MANAGER: BOB BAUER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FLICKLIN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	W153-02		HM126-01							
Location ID	W153		HM-126							
Date Analyzed	07 DEC 00		07 DEC 00							
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	1814	0.00	1819	0.00						
Redox Potential (mV)	1505	159	1631	191						
Dissolved Oxygen (mg/L)	1505	4.23	1631	4.19						
Turbidity (NTU)	1505	2.1	1631	0.0						
pH	1505	6.76	1631	6.63						
Temperature (°C)	1505	21.7	1631	20.0						
Sp. Conductivity (mS/cm)	1505	0.709	1631	0.687						

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146.
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22.

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FIELD LABORATORY TEST RESULTS

PROJECT NAME: AOC 20 SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-8030/0007
PROJECT MANAGER: BOB BAUER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FICKLEN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	EB120800		W156-01		HM113-01		HM 112-01		HM112-02	
Location ID	EB1		W-156		HM-113		HM-112		HM-112	
Date Analyzed	08 DEC 00		08 DEC 00		08 DEC 00		08 DEC 00		08 DEC 00	
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	1729	0.00	1734	0.01	1738	0.06	1743	0.00	1748	0.00
Redox Potential (mV)			0859	201	1015	-20	1121	170	1121	170
Dissolved Oxygen (mg/L)			0859	4.67	1015	3.98	1121	5.24	1121	5.24
Turbidity (NTU)			0859	0.0	1015	0.0	1121	0.0	1121	0.0
pH			0859	6.81	1015	6.88	1121	6.79	1121	6.79
Temperature (°C)			0859	16.1	1015	17.8	1121	20.5	1121	20.5
Sp. Conductivity (mS/cm)			0859	0.761	1015	0.273	1121	0.838	1121	0.838

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146.
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22

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FIELD LABORATORY TEST RESULTS

689 351

PROJECT NAME: AOC 20 SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-B030/0007
PROJECT MANAGER: BOB BAUER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FICKLEN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	AM110-01		W1H6LTA302-01							
Location ID	HM-110		W1H6LTA302							
Date Analyzed	08 DEC 00		08 DEC 00							
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	1753	0.34	1758	2.49						
Redox Potential (mV)	1232	160	1543	-78						
Dissolved Oxygen (mg/L)	1232	5.00	1543	4.27						
Turbidity (NTU)	1232	0.0	1543	179						
pH	1232	6.61	1543	6.78						
Temperature (°C)	1232	21.2	1543	18.7						
Sp. Conductivity (mS/cm)	1232	0.645	1543	0.831						

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22.

Science Applications International Corporation
An Employee Owned Company

FIELD LABORATORY TEST RESULTS

PROJECT NAME: AOC 20 SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-B030 / 0007
PROJECT MANAGER: BOB BAKER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FICKLEN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	EB121100-01		WSAICTA003-01		WSAICTA003-02		WSAICTA003-03		WSAICTA003-04	
Location ID	EB1		WSAICTA003 (21-22')		WSAICTA003 (24-25)		WSAICTA003 (29-30)		WSAICTA003 (29-30)	
Date Analyzed	11 DEC 00		11 DEC 00		11 DEC 00		11 DEC 00		11 DEC 00	
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	1921	0.00	1926	0.06	1930	0.22	1935	0.10	1939	0.19
Redox Potential (mV)			0912	214	0955	67	1032	66	1032	66
Dissolved Oxygen (mg/L)			0912	6.49	0955	6.67	1032	6.57	1032	6.57
Turbidity (NTU)			0912	51.6	0955	51.0	1032	50.7	1032	50.7
pH			0912	6.84	0955	6.85	1032	6.85	1032	6.85
Temperature (°C)			0912	15.5	0955	15.9	1032	15.8	1032	15.8
Sp. Conductivity (mS/cm)			0912	0.728	0955	0.688	1032	0.688	1032	0.688

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146.
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22.

689 558

Science Applications International Corporation
An Employee Owned Company

FIELD LABORATORY TEST RESULTS

PROJECT NAME: AOC 20 SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-8030 /0007
PROJECT MANAGER: BOB BAUER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FICKLEN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	EB121400		WSAICTA002-01		WSAICTA004-01		WSAICTA004-02		WSAICTA004-03	
Location ID	EB1		WSAICTA002		WSAICTA004 (28-29')		WSAICTA004 (34-35)		WSAICTA004 (40-41')	
Date Analyzed	14 DEC 00		14 DEC 00		14 DEC 00		14 DEC 00		14 DEC 00	
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	2013	0.00	2018	0.22	2022	0.11	2027	0.04	2031	0.00
Redox Potential (mV)			0949	338	1139	253	1235	243	1337	231
Dissolved Oxygen (mg/L)			0949	6.05	1139	6.04	1235	5.07	1337	4.62
Turbidity (NTU)			0949	50.9	1139	9.0	1235	DL ~~5.07~~ 30.7	1337	8.6
pH			0949	6.69	1139	6.60	1235	6.70	1337	6.72
Temperature (°C)			0949	16.1	1139	15.9	1235	16.5	1337	18.5
Sp. Conductivity (mS/cm)			0949	0.848	1139	0.780	1235	0.753	1337	0.750

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146.
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22

689 359

Science Applications International Corporation
An Employee Owned Company

FIELD LABORATORY TEST RESULTS

689 360

PROJECT NAME: AOC 20 SI, NAS FW JRB
CONTRACT NUMBER: F41624-00-D-8030/0007
PROJECT MANAGER: BOB BAUER
FIELD LABORTORY TECHNICIAN: DAVID LOWAK

NAS FORT WORTH JRB PROJECT MANAGER: DON FICKLEN
NAS FORT WORTH JRB IRP SITE NUMBER: AOC 20
FIELD TEAM LEADER: DAVID LOWAK

Sample ID	WSAICTA005-01		WSAICTA005-02		WSAICTA005-03					
Location ID	WSAICTA005 (23-24')		WSAICTA005 (27-28')		WSAICTA005 (33-34')					
Date Analyzed	14 DEC 00		14 DEC 00		14 DEC 00					
	Time	Result	Time	Result	Time	Result	Time	Result	Time	Result
Ferrous Iron (mg/L)	2037	0.00	2041	0.00	2045	0.00				
Redox Potential (mV)	1636	289	1706	266	1732	237				
Dissolved Oxygen (mg/L)	1636	6.37	1706	5.61	1732	5.56				
Turbidity (NTU)	1636	~~18.1~~ 9.9	1706	7.0	1732	3.9				
pH	1636	6.73	1706	6.29	1732	6.13				
Temperature (°C)	1636	18.1	1706	18.2	1732	17.8				
Sp. Conductivity (mS/cm)	1636	0.649	1706	0.710	1732	0.736				

NOTES:
1) Ferrous iron analyzed by Hach Spectrophotometer, Model DR/2000, using method 8146.
2) Redox potential, turbidity, pH, temperature, dissolved oxygen, and specific conductivity analyzed by Horiba Water Quality Checker, Model U-22.

TAB

Appendix H

APPENDIX H

Waste Disposal Records

689 363

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689 364

19924

Waste Management of Texas, Inc.
P.O. Box 719
Lewisville, TX 75067
(972) 316-2296 / FAX (972) 316-2298

NON-HAZARDOUS MANIFEST

GENERATOR ADDRESS: Naval Air Station Ft. Worth JRB
Bldg. 1619, P.O.BOX 27008
CITY/ST: Carswell AFB, TX 76127-0008
PHONE: (817) 782-7167

ID#: 65004
TX0571924042
SAME

Mail manifest to: SAIC
LOCATION: 4242 Woodcork #150
San Antonio, Tx. 78228
Attn: David Lowak

Description of Waste Materials	Approval Number	Quantity	Units
Soil cuttings	WS-14601	15	Drums

I hereby certify that the above described materials are not hazardous wastes as defined by 40 CFR Part 261 and does not contain free liquids as defined by 40 CFR Part 260 10 or any applicable state law. Have been fully and accurately described, classified and packaged, and are in proper condition for transportation according to applicable regulations.

MICHAEL R DODYK — Michael R Dodyk — 15 Mar 01
Generator Authorized Agent Name (Print) — Signature — Delivery Date

TRANSPORTER

TRANSPORTER NAME: Bell Construction
ADDRESS: 118 Sunny Dale Ct.
CITY/ST: Springtown, Tx. 76082
TRANSPORTER: 817-822-0946

DRIVER NAME(Print): Michael D Bell
TRUCK NUMBER:
PHONE#:

I hereby acknowledge receipt of the above described materials were received from the generator listed above and delivered to the disposal facility listed below without incident.

Driver Signature — 03/15/01 Shipment Date — Driver Signature — 03/15/01 Delivery Date

DISPOSAL FACILITY

SITE NAME: Westside Recycling and Disposal Facility
ADDRESS: 12280 U.S. Hwy 80 W., Aledo, Tx. 76008

PHONE NUMBER: 817-244-3500
PERMIT #: 1019A

I hereby acknowledge receipt of the above described materials.

Sandi Miller — Sandi Miller — 3/15/01
Name of Authorized Agent (Print) — Signature — Receipt Date

D-Drum C-Carton B-Bag P-Pounds Y-Yards O-Other

White-Original Canary-Disposer Retain Pink-Transporter Retain Gold-Generator Retain

TAB

Appendix I

689.366

APPENDIX I

Laboratory Report – Soil and Groundwater

689.367

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DATA VALIDATION REPORT
AOC 20 S.I.
Carswell NAS, Fort Worth, TEXAS

SAIC PROJECT No.:	F41624-00-D-8030/0007
LABORATORY:	PDP Analytical, Houston Texas
SDG NUMBER:	6454, 6460, 6462, 6466, 6467,6476, 6482
REVIEWER:	Oscar Martinez
ANALYSES:	Volatile Organic Compounds (VOCs) by SW-846 Method 8260B Total Organic Compounds(TOC) by SW-846 Method 9060 Arsenic by SW-846 Method 7060A Chloride by EPA Method 300 Nitrate by EPA Method 300 Sulfate by EPA Method 300 Alkalinity by EPA Method 310.1 Total Suspended Solids by EPA Method 160.2 Methane, Ethane, Ethene by SW-846 Method 3810 Modified
DATE:	April 2001

INTRODUCTION

Based on the Chains of Custody Nos. S00373 – S00379, the samples listed in Table 1 were collected on December 5, 6, 7, 8, 11, 12 and 14, 2000 and relinquished by the SAIC field sampling team to the FedEx courier. The samples were submitted to PDP Analytical Laboratory, Houston, TX, for the above listed analyses. Data were validated using criteria and qualifiers in the Basewide Quality Assurance Project Plan for NAS Fort Worth JRB, Texas, Test Methods for Evaluating Solid Wastes, Physical and Chemical Methods SW-846, Third Edition and its updates (USEPA, 1986). When applicable, additional validation guidance was obtained from the National Functional Guidelines for Organic Data Review (USEPA February 1994 Revision), and the National Functional Guidelines for Inorganic Data Review (USEPA 1989). Copies of the data review checklists and analytical reports were included as appendices to this report.

The analytical data covered in this validation report were determined to be of known accuracy and precision as qualified. Representativeness and data comparability were maintained based on compliance with the field sampling procedures and the use of analytical methods defined in the project Sampling and Analysis Plan. The overall quality of the data in this package was acceptable with the qualifications identified in the attached validation summary. Data completeness by method and matrix are presented in Table 2.

DATA VALIDATION REPORT
AOC 20 S.I.
Carswell NAS, Fort Worth, TEXAS

				QC)
37.	BSAICTA006-01	S00378-03	6476.003	Soil Sample (20-22)
38.	TB121400	S00379-01	6482.001	Trip Blank 1 (Water QC)
39.	EB121400	S00379-02	6482.002	Equipment Blank 1 (Water QC)
40.	WSAICTA002-01	S00379-03	6482.003	Groundwater(0-0)
41.	WSAICTA004-01	S00379-04	6482.004	Groundwater(28-29)
42.	WSAICTA004-02	S00379-05	6482.005	Groundwater(34-35)
43.	WSAICTA004-03	S00379-06	6482.006	Groundwater(40-41)
44.	TB121400-02	S00379-07	6482.007	Trip Blank 2 (Water QC)
45.	WSAICTA005-01	S00379-08	6482.008	Groundwater (23-24)
46.	WSAICTA005-02	S00379-09	6482.009	Groundwater (27-28)
47.	WSAICTA005-03	S00379-10	6482.010	Groundwater (33-34)
48.				

Table 2 - Completeness*

Analysis	Percent Completeness	
	Water	Soil
VOCs by SW8260B	98	100*
TOC by SW9060	100	100
Arsenic by SW7060A	100	
Chloride EPA 300	100	
Nitrate EPA 300	100	
Sulfate EPA 300	100	
Methane, Ethane and Ethene Modified 3810	100	
Alkalinity Method SM2320	100	
Total Suspended Solid EPA 160.2	100	

* Completeness is defined as:

$$\text{Percent Completeness} = \frac{\text{number of valid results (i.e. non - R flagged) results}}{\text{number of possible results}}$$

include site closure or cleanup compliance, SAIC did not apply any qualifier. It is our professional judgement that the data were usable for the project objective.

7.0 SYSTEM PERFORMANCE

Samples were received at the laboratory in good condition and all samples were useable. A complete review of the laboratory data collected during this sampling event was performed. Upon completion of the review, the following was noted; no significant differences were found for field QC samples or lab duplicates for any of the analytes. The data can be considered comparable to other data similarly collected and analyzed.

9.0 NARRATIVES

9.1 An overall evaluation of the ground water and soil samples collected indicates that the sampling procedures and laboratory analyses were conducted in an acceptable manner. All of the data has been qualified according to the findings in the sections listed above. The goal of 95 percent completeness has been met. All MDLs were sufficiently sensitive for detection of analytes at or below backround and the NAS QAPP values. No sensitivity issues were found affecting data found in this method.

Arsenic by SW7060A

1.0 SAMPLING DOCUMENTATION

All samples were received intact and in good condition. The coolers were accompanied by numbered chains of custody (COCs) with appropriate signatures. Sample information including cooler temperature, sampling date and time, containers, field IDs and analyses requested were legibly indicated on the COCs.

2.0 TECHNICAL HOLDING TIMES

All samples were extracted and analyzed within their technical holding time.

3.0 INSTRUMENT CALIBRATION

3.1 INITIAL CALIBRATION

3.1.1 No deficiencies were noted for the standard(s) and blank. All standards and blank were within acceptance criteria.

3.1.2 No deficiencies were noted for the calibration blank. All blanks were within acceptance criteria.

3.1.2

3.2 CALIBRATION VERIFICATION

3.1.3 No deficiencies were noted for interference check solution. All ICS standards and blank were within acceptance criteria.

4.0 ANALYSIS OF BLANKS

4.1 METHOD OR DIGESTION BLANKS

3.1.4 No deficiencies were noted for method and digestion blanks. All blanks were within acceptance criteria.

5.0 QUALITY CONTROL PARAMETERS

5.1 LABORATORY CONTROL SAMPLES

3.1.5 No deficiencies were noted for Laboratory Control Samples. All standards and blank were within acceptance criteria.

5.2 INTERFERENCE CHECK SOLUTION

5.2.1 No deficiencies were noted for the interference check solution.

5.3 DILUTION TEST AND POST DIGESTION SPIKE ADDITION

- A five-fold dilution test was not performed on the prep batch. The results for associated samples EB121100-01, WSAICTA003-01, WSAICTA003-02, WSAICTA003-03 and WSAICTA003-04 should be flagged "UJ".

- A five-fold dilution test was not performed on the prep batch. The results for associated samples EB120700, LF0502-01, HM124-01, HM114-01, W153-01, W153-02 and HM 126-01 should be flagged "UJ".
- A five-fold dilution test was not performed on the prep batch. The results for associated samples EB121400-01, WSAIC002-01, WSAICTA004-01, WSAICTA004-02, WSAICTA004-03, WSAUCTA005-01, WSAICTA005-02 and WSAICTA005-03 should be flagged "UJ".

- A five-fold dilution test was not performed on the prep batch. The results for associated samples EB120800, W156-01, HM113-01, HM112-01, HM112-02, HM110-01 and WHGLTA302-01 should be flagged "UJ".
-

5.3.1 All sample results were nondetect. A post digestion spike was run instead of the Dilution or spike addition sample. The post digestion spike recoveries were within acceptance criteria.

5.4 MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSES

5.4.1 No deficiencies were noted for the matrix spike and dupicate analyses

7.0 SYSTEM PERFORMANCE

Samples were received at the laboratory in good condition and all samples were useable. A complete review of the laboratory data collected during this sampling event was performed. Upon completion of the review, the following was noted; no significant differences were found for field QC samples or lab duplicates for any of the analytes. The data can be considered comparable to other data similarly collected and analyzed.

9.0 NARRATIVES

9.1 An overall evaluation of the ground water samples collected indicates that the sampling procedures and laboratory analyses were conducted in an acceptable manner. All of the data has been

qualified according to the findings in the sections listed above. The goal of 95 percent completeness has been met. All MDLs were sufficiently sensitive for detection of analytes at or below backround the NAS QAPP values. No sensitivity issues were found affecting data found in this method.

Methane, Ethane and Ethene
By RSK-175 (3810-MOD)

Approximately

1.0 SAMPLING DOCUMENTATION

All samples were received intact and in good condition. The coolers were accompanied by numbered chains of custody (COCs) with appropriate signatures. Sample information including cooler temperature, sampling date and time, containers, field IDs and analyses requested were legibly indicated on the COCs.

2.0 TECHNICAL HOLDING TIMES

All samples were analyzed within their respective holding times.

3.0 INSTRUMENT CALIBRATION AND TUNING

3.1 INITIAL CALIBRATION

3.1.2 No deficiencies were noted.

3.3 CONTINUING CALIBRATION VERIFICATION

3.3.1 No deficiencies were noted.

4.0 ANALYSIS OF BLANKS

4.1 METHOD OR PREPARATION BLANKS

No deficiencies were noted.

4.1 EQUIPMENT BLANKS

No deficiencies were noted.

4.2 TRIP BLANK (APPLICABLE TO VOC SAMPLES ONLY)

No deficiencies were noted.

5.4 AMBIENT BLANK (APPLICABLE TO VOC SAMPLES ONLY)

No deficiencies were noted..

5.0 QUALITY CONTROL PARAMETERS

Methane, Ethane and Ethene
By RSK-175 (3810-MOD)

5.1 LABORATORY CONTROL SAMPLES

No deficiencies were noted. The LCS met acceptance criteria.

5.4 MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSES

No deficiencies were noted.

7.0 SYSTEM PERFORMANCE

Samples were received at the laboratory in good condition and all samples were useable. A complete review of the laboratory data collected during this sampling event was performed. Upon completion of the review, the following was noted; no significant differences were found for field QC samples or lab duplicates for any of the analytes. The data can be considered comparable to other data similarly collected and analyzed. All analytical results were within parameters except for WSAICTA003-01, which should be qualified "J". The results were above the MDL but below the RL. Results below the MDL were flagged "R"

9.0 NARRATIVES

9.1 An overall evaluation of the ground water samples collected indicates that the sampling procedures and laboratory analyses were conducted in an acceptable manner. All of the data has been qualified according to the findings in the sections listed above. The goal of 95 percent completeness has been met. All MDLs were sufficiently sensitive for detection of analytes at or below backround the NAS QAPP values. No sensitivity issues were found affecting data found in this method.

Anions by EPA-300

1.0 SAMPLING DOCUMENTATION

1.1 All samples were received intact and in good condition. The coolers were accompanied by numbered chains of custody (COCs) with appropriate signatures. Sample information including cooler temperature, sampling date and time, containers, field IDs and analyses requested were legibly indicated on the COCs.

2.0 TECHNICAL HOLDING TIMES

2.1 All samples were analyzed within their respective holding times.

3.0 INSTRUMENT CALIBRATION

3.1 INITIAL CALIBRATION

3.1.2 No deficiencies were noted.

3.2 CALIBRATION VERIFICATION

3.2.2 No deficiencies were noted.

4.0 ANALYSIS OF BLANKS

4.1 METHOD OR DIGESTION BLANKS

5.2.1 No deficiencies were noted.

5.0 QUALITY CONTROL PARAMETERS

5.1 LABORATORY CONTROL SAMPLES

5.1.1 No deficiencies were noted.

5.4 MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSES

5.4.1 Deficiencies were noted in the MS/MSD recoveries for the tabulated samples below.

10.0 NARRATIVES

9.1

SAIC® Science Applications International Corporation
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Chain of Custody Number: S00- 374	NAS Fort Worth JRB, Texas Project Manager (Print): Don Ficklen	Field Team Leader (Print): David Lowak	Laboratory: PDP Analytical Services
Contractor: SAIC	Project Name: AOC 20 S.I. – NAS FT. WORTH JRB	Sampler's Name (Print): David Lowak	Laboratory Contract Number: 4400032539
Contract Number / Delivery Order: F41624-00-D-8030/0007	NAS Fort Worth JRB, Texas Site Number: AOC 20	Sampler's Signature: [signature]	ANALYSES REQUESTED

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060								
1	TB120600	TB1	WQ	NA	00.0	00.0	06 DEC 00	0746	001A	2	X									6460.001
2	EB120600	EB1	WQ	SS	00.0	00.0	06 DEC 00	0746	011A	4	X	X								.002
3	WSAICTA004-01	N1	SO	SS	30.0	32.0	06 DEC 00	0829	011A	4	X	X								.003
4																				~~.004~~
5																				RB
6																				
7																				
8																				

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
[signature]	12-6-00 1515	Rachel Brown	12/07/00 10:00
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time

PROTOCOL (circle one): HAZWRAP (EPA) OTHER

QC LEVEL (circle one): 1 2 (3) 4 5

FOR LABORATORY USE ONLY

CONDITIONS OF SAMPLES UPON RECEIPT

CHAIN OF CUSTODY	Y	N	ICE
REQUEST FOR ANAL	Y	N	TEMP
CUSTODY SEAL	Y	N	pH

SAMPLE CONDITION

Sampled Shipped Via (circle one): UPS (FED-EX) AIRBORNE BUS HAND OTHER

Waybill Number: 823100396320

REMARKS: SW8260 - VOC
SW9060 - TOC

689 378

0000005

PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6460	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received three (3) samples on 12/07/00. These samples were scheduled for a 21 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No.8231-0039-6320. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

TOC

For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

For this parameter, no analytical problems were encountered with the analysis of these samples.

The ICV for Bromomethane was outside acceptance limits. However, this target analyte was not detected in any of the samples.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. For soil samples, the LCS spike recoveries for Bromomethane and Chloroethane were outside the acceptance limits. However, these target analytes were not detected in any of the samples. All other Quality Control (QC) samples met acceptance limits

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/15/2000 10:07

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB120600	EB120700MS	EB120700MSD	PREP BLANK
SAMPLE ID	6460.002	6462.002MS	6462.002MSD	TOCB059
SAMPLE MATRIX	WATER	WATER	WATER	
DATE SAMPLED	12/6/00	12/7/00	12/7/00	
DATE RECEIVED	12/7/00	12/8/00	12/8/00	
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	ND	24	24	ND
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-01700	A-01700	A-01700	A-01700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059	TOCL059	TOCL059	
LCSD ID	TOCL059D	TOCL059D	TOCL059D	
MS ID	6462.002MS		6462.002MS	
MSD ID	6462.002MSD			
DUP ID				

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/22/2000	16:58

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	WSAICA004-01	WSAICTA002-01MS	WSAICTA002-01MSD	PREP BLANK
SAMPLE ID	6460.003	6454.004MS	6454.004MSD	TOCB062
SAMPLE MATRIX	SOIL	SOIL	SOIL	
DATE SAMPLED	12/6/00	12/5/00	12/5/00	
DATE RECEIVED	12/7/00	12/6/00	12/6/00	
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1.19	1.17	1.17	1
RESULTS	ND	518	491	ND
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
QUALIFIER				
% MOISTURE	15.82	14.45	14.45	
ANALYST	HT	HT	HT	HT
CONTAINER ID				
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC062	TOC062	TOC062	TOC062
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB062	TOCB062	TOCB062	TOCB062
LCS ID	TOCL062	TOCL062	TOCL062	
LCSD ID				
MS ID	6454.004MS		6454.004MS	
MSD ID	6454.004MSD			
DUP ID				

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: TB120600	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6460.001	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/6/00		DATE RECEIVED	: 12/7/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/20/2000	9:51

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120600
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6460.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/6/00	DATE RECEIVED	: 12/7/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/20/2000 9:51

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9825.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 18:47

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L
Benzene	0.090	1.0 UG/L	ND	UG/L
Bromobenzene	0.153	1.0 UG/L	ND	UG/L
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L
Bromoform	0.119	1.0 UG/L	ND	UG/L
Bromomethane	0.149	2.0 UG/L	ND	UG/L
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L
Chloroethane	0.122	2.0 UG/L	ND	UG/L
Chloroform	0.111	1.0 UG/L	ND	UG/L

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PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120600
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6460.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/6/00	DATE RECEIVED	: 12/7/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/20/2000 9:51

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	106
4-Bromofluorobenzene	10 UG/L	86 - 115	102
Dibromofluoromethane	10 UG/L	86 - 118	104
Toluene-d8	10 UG/L	88 - 110	95

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120600
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6460.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/6/00	DATE RECEIVED	: 12/7/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/20/2000 9:51

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICA004-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6460.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/6/00	DATE RECEIVED	: 12/7/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

% MOISTURE	: 15.82	ANALYST	: JK
CONTAINER ID	: A	DATE ANALYZED	: 12/11/00
INSTRUMENT FILE	: G2956.D	INSTRUMENT ID	: G-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 19:20

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	1.57	5.9 UG/KG	ND	UG/KG	
1,1,1-Trichloroethane	1.41	5.9 UG/KG	ND	UG/KG	
1,1,2,2-Tetrachloroethane	4.61	5.9 UG/KG	ND	UG/KG	
1,1,2-Trichloroethane	1.27	5.9 UG/KG	ND	UG/KG	
1,1-Dichloroethane	1.47	5.9 UG/KG	ND	UG/KG	
1,1-Dichloroethene	1.43	5.9 UG/KG	ND	UG/KG	
1,1-Dichloropropene	1.21	5.9 UG/KG	ND	UG/KG	
1,2,3-Trichlorobenzene	1.52	5.9 UG/KG	ND	UG/KG	
1,2,3-Trichloropropane	5.04	5.9 UG/KG	ND	UG/KG	
1,2,4-Trichlorobenzene	1.44	5.9 UG/KG	ND	UG/KG	
1,2,4-Trimethylbenzene	1.06	5.9 UG/KG	ND	UG/KG	
1,2-Dibromo-3-chloropropane	4.10	5.9 UG/KG	ND	UG/KG	
1,2-Dibromoethane (EDB)	1.54	5.9 UG/KG	ND	UG/KG	
1,2-Dichlorobenzene	1.22	5.9 UG/KG	ND	UG/KG	
1,2-Dichloroethane	1.77	5.9 UG/KG	ND	UG/KG	
1,2-Dichloropropane	1.42	5.9 UG/KG	ND	UG/KG	
1,3,5-Trimethylbenzene	1.00	5.9 UG/KG	ND	UG/KG	
1,3-Dichlorobenzene	0.998	5.9 UG/KG	ND	UG/KG	
1,3-Dichloropropane	2.53	5.9 UG/KG	ND	UG/KG	
1,4-Dichlorobenzene	0.981	5.9 UG/KG	ND	UG/KG	
1-Chlorohexane	1.45	5.9 UG/KG	ND	UG/KG	
2,2-Dichloropropane	1.47	5.9 UG/KG	ND	UG/KG	
2-Chlorotoluene	0.943	5.9 UG/KG	ND	UG/KG	
4-Chlorotoluene	0.886	5.9 UG/KG	ND	UG/KG	
Benzene	1.44	5.9 UG/KG	ND	UG/KG	
Bromobenzene	1.65	5.9 UG/KG	ND	UG/KG	
Bromochloromethane	1.56	5.9 UG/KG	ND	UG/KG	
Bromodichloromethane	1.18	5.9 UG/KG	ND	UG/KG	
Bromoform	1.97	5.9 UG/KG	ND	UG/KG	
Bromomethane	1.92	5.9 UG/KG	ND	UG/KG	
Carbon tetrachloride	1.33	5.9 UG/KG	ND	UG/KG	
Chlorobenzene	1.03	5.9 UG/KG	ND	UG/KG	
Chloroethane	1.64	5.9 UG/KG	ND	UG/KG	
Chloroform	1.54	5.9 UG/KG	ND	UG/KG	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICA004-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6460.003
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/6/00	DATE RECEIVED :	12/7/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:16

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	1.61	5.9 UG/KG	ND	UG/KG	
cis-1,2-Dichloroethene	1.40	5.9 UG/KG	ND	UG/KG	
cis-1,3-Dichloropropene	1.09	5.9 UG/KG	ND	UG/KG	
Dibromochloromethane	1.99	5.9 UG/KG	ND	UG/KG	
Dibromomethane	1.44	5.9 UG/KG	ND	UG/KG	
Dichlorodifluoromethane	1.91	5.9 UG/KG	ND	UG/KG	
Ethyl benzene	1.01	5.9 UG/KG	ND	UG/KG	
Hexachlorobutadiene	2.80	5.9 UG/KG	ND	UG/KG	
Isopropylbenzene	1.05	5.9 UG/KG	ND	UG/KG	
m/p-xylene	1.17	5.9 UG/KG	ND	UG/KG	
Methyl tert-butyl ether	1.19	5.9 UG/KG	ND	UG/KG	
Methylene chloride	2.16	5.9 UG/KG	36	UG/KG	
n-Butylbenzene	2.08	5.9 UG/KG	ND	UG/KG	
n-Propylbenzene	0.977	5.9 UG/KG	ND	UG/KG	
Naphthalene	3.63	5.9 UG/KG	ND	UG/KG	
o-Xylene	0.958	5.9 UG/KG	ND	UG/KG	
p-Isopropyltoluene	1.56	5.9 UG/KG	ND	UG/KG	
sec-Butylbenzene	1.14	5.9 UG/KG	ND	UG/KG	
Styrene	1.20	5.9 UG/KG	ND	UG/KG	
tert-Butylbenzene	0.982	5.9 UG/KG	ND	UG/KG	
Tetrachloroethene	0.890	5.9 UG/KG	ND	UG/KG	
Toluene	1.18	5.9 UG/KG	ND	UG/KG	
trans-1,2-Dichloroethene	1.36	5.9 UG/KG	ND	UG/KG	
trans-1,3-Dichloropropene	1.12	5.9 UG/KG	ND	UG/KG	
Trichloroethene	1.17	5.9 UG/KG	ND	UG/KG	
Trichlorofluoromethane	1.86	5.9 UG/KG	ND	UG/KG	
Vinyl chloride	1.63	5.9 UG/KG	ND	UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	59 UG/KG	80 - 120	102
4-Bromofluorobenzene	59 UG/KG	74 - 121	105
Dibromofluoromethane	59 UG/KG	80 - 120	101
Toluene-d8	59 UG/KG	81 - 117	99

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICA004-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6460.003
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/6/00	DATE RECEIVED :	12/7/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:16

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :GV087A	PREP BLANK ID :GVBLK087	LCS ID :GVLCS087
MS ID :6454.004MS	MSD ID :6454.004MSD	

SAIC International Corporation
An Employee Owned Company

Chain of Custody Number	NAS Fort Worth JRB, Texas Project Manager (Print)	Field Team Leader (Print)	Laboratory
S00- 375	Don Ficklen	David Lowak	PDP Analytical Services
Contractor	**Project Name**	**Sampler's Name (Print)**	**Laboratory Contract Number**
SAIC	AOC 20 S.I. – NAS FT. WORTH JRB	Richard Houde	4400032539
Contract Number / Delivery Order	**NAS Fort Worth JRB, Texas Site Number**	**Sampler's Signature**	**ANALYSES REQUESTED**
F41624-00-D-8030/0007	AOC 20	Richard Houde	

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060	E160.2	9056	SM2320	7060	9056	MEE		
1	TB120700	TB1	WQ	NA	00.0	00.0	07 DEC 00	0856	001A	2	X							6462		.001
2	EB120700	EB1	WQ	BP	00.0	00.0	07 DEC 00	0856	011A	10	X	X	X	X	X	X	X	X		.002
3	LF0502-01	N1	WG	BP	00.0	00.0	07 DEC 00	1045	011A	~~10~~ 9	X	X	X	X	X	X	X	X		.003
4	HM124-01	N1	WG	BP	00.0	00.0	07 DEC 00	1231	011A	10	X	X	X	X	X	X	X	X		.004
5	HM114-01	N1	WG	BP	00.0	00.0	07 DEC 00	1350	011A	10	X	X	X	X	X	X	X	X		.005
6	W153-01	N1	WG	BP	00.0	00.0	07 DEC 00	1505	001A	10	X	X	X	X	X	X	X	X		.006
7	W153-02	N1	WG	BP	00.0	00.0	07 DEC 00	1524	001A	10	X	X	X	X	X	X	X	X		.007
8	HM126-01	N1	WG	BP	00.0	00.0	07 DEC 00	1631	011A	10	X	X	X	X	X	X	X	X		.008

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	PROTOCOL (circle one)
Richard Houde	07 DEC 00 1915	Rachael Brown	12/8/00 9:00	HAZWRAP (EPA) OTHER
				QC LEVEL (circle one)
Relinquished By (Signature)	**Date/Time**	**Received By (Signature)**	**Date/Time**	1 2 (3) 4 5
				FOR LABORATORY USE ONLY
				CONDITIONS OF SAMPLES UPON RECEIPT
Relinquished By (Signature)	**Date/Time**	**Received By (Signature)**	**Date/Time**	CHAIN OF CUSTODY Y N ICE
				REQUEST FOR ANAL Y N TEMP
				CUSTODY SEAL Y N pH

Sampled Shipped Via (circle one)	Waybill Number:	SAMPLE CONDITION
UPS (FED-EX) AIRBORNE BUS HAND OTHER	8231-0039-6331	

REMARKS:
SW8260 - VOC
SW9060 - TOC
E160.2 - TSS
SW9056 - CHLORIDE
SM2320 - Alkalinity
SW7060 - Arsenic
SW9056 - Nitrate
MEE - Methane, ethane, + ethene

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PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6462	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received eight (8) samples on 12/08/00. These samples were scheduled for a 21 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No.8231-0039-6331. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

ALKALINITY

Results ranged from 36.0 mg/L to 438 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

CHLORIDE

Results ranged from Non-Detect (ND) to 17.9 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

METALS by GFAA

GFAA instrumentation was utilized for the determination of Arsenic to achieve the requested detection limits for this project. All samples were Non-Detect (ND) for this element. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

DISSOLVED GASES

Sample 6462.003 required a dilution due to the fact Methane exceeded the linear range of the instrument. The samples was diluted and reanalyzed to bring the target analyte concentration within the calibration range. Both analyses have been provided for your review.

PDP ANALYTICAL SERVICES
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Episode No: 6462	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

NITRATE

Results ranged from Non-Detect (ND) to 5.4 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

SULFATE

Results ranged from Non-Detect (ND) to 31.6 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

TOC

Results ranged from 1.0 mg/L to 17 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

TSS

Results ranged from Non-Detect (ND) to 100 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

Samples 6462.003, 6462.005, 6462.006, 6462.007 and 6462.008 contained target analyte concentrations that exceeded the linear range of the instrument. The samples were diluted and reanalyzed to bring the target analyte concentration within the calibration range. Both analyses have been provided for your review. No analytical problems were encountered with these samples.

Bromomethane, for ICV standard ICVB1214, was outside acceptance limits. However, this target analyte was not detected in any of the samples. The gases, for ICV standard for BICV082, were outside acceptance limits. However, these target analytes were not detected in any of the samples.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. All other Quality Control (QC) samples met acceptance limits.

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:37

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	EB120700	LF0502-01	HM124-01	HM114-01
SAMPLE ID	6462.002	6462.003	6462.004	6462.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	36.0	432	230	316
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	J	D	I	D
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
DILUTION	1	1	1	1
QC BATCH ID	ALK046.	ALK046.	ALK046.	ALK046.
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK046	ALKBLK046	ALKBLK046	ALKBLK046
LCS ID	ALKLCS046	ALKLCS046	ALKLCS046	ALKLCS046
LCSD ID	ALKLCS046D	ALKLCS046D	ALKLCS046D	ALKLCS046D
MS ID				
MSD ID				
DUP ID	6462.002DUP1	6462.002DUP1	6462.002DUP1	6462.002DUP1

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PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/18/2000 13:37

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	W153-01	W153-02	HM126-01	EB120700DUP1
SAMPLE ID	6462.006	6462.007	6462.008	6462.002DUP1
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	316	338	254	34.0
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	J	J	J	J
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
DILUTION	1	1	1	1
QC BATCH ID	ALK046.	ALK046.	ALK046.	ALK046.
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK046	ALKBLK046	ALKBLK046	ALKBLK046
LCS ID	ALKLCS046	ALKLCS046	ALKLCS046	ALKLCS046
LCSD ID	ALKLCS046D	ALKLCS046D	ALKLCS046D	ALKLCS046D
MS ID				
MSD ID				
DUP ID	6462.002DUP1	6462.002DUP1	6462.002DUP1	6462.002DUP1

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/27/2000	15:00

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	EB120700	LF0502-01	HM124-01	HM114-01
SAMPLE ID	6462.002	6462.003	6462.004	6462.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	ND	5.98	0.901	17.9
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/23/00	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1	1
INSTRUMENT FILE	1223A111.D14	1223A111.D15	1223A111.D12	1223A111.D13
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01	IC01
PRE-PREP BLANK ID				
PREP BLANK ID	ICPBLK01	ICPBLK01	ICPBLK01	ICPBLK01
LCS ID	ICPLCS01	ICPLCS01	ICPLCS01	ICPLCS01
LCSD ID				
MS ID	6462.002MS	6462.002MS	6462.002MS	6462.002MS
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	6462.002MSD
DUP ID				

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PDP Analytical Services

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/27/2000	15:00

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	W153-01	W153-02	HM126-01	EB120700MS
SAMPLE ID	6462.006	6462.007	6462.008	6462.002MS
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	23.6	24.0	14.4	1.20
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/23/00	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1	1
INSTRUMENT FILE	1223A111.D16	1223A111.D17	1223A111.D18	1223A111.D20
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01	IC01
PRE-PREP BLANK ID				
PREP BLANK ID	ICPBLK01	ICPBLK01	ICPBLK01	ICPBLK01
LCS ID	ICPLCS01	ICPLCS01	ICPLCS01	ICPLCS01
LCSD ID				
MS ID	6462.002MS	6462.002MS	6462.002MS	
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	
DUP ID				

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/27/2000 15:00

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	EB120700MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6462.002MSD	ICPBLK01	ICPLCS01
SAMPLE MATRIX	WATER		
DATE SAMPLED	12/7/00		
DATE RECEIVED	12/8/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2
RESULTS	1.02	ND	0.985
UNITS	MG/L	MG/L	MG/L
QUALIFIER			
ANALYST	GSR	GSR	GSR
CONTAINER ID			
DATE ANALYZED	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1
INSTRUMENT FILE	1223A111.D22	1223A111.D10	1223A111.D11
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01
PRE-PREP BLANK ID			
PREP BLANK ID	ICPBLK01	ICPBLK01	ICPBLK01
LCS ID	ICPLCS01		
LCSD ID			
MS ID	6462.002MS		
MSD ID			
DUP ID			

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120700
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.002
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME : SAIC
PROJECT NAME : CARSWELL
PROJECT NUMBER : AOC 20 S.I.
DATE SAMPLED : 12/7/00
SAMPLE MATRIX : WATER

CLIENT SAMPLE ID : EB120700A
LAB SAMPLE ID : 6462.002A1
DATE RECEIVED : 12/8/00
PRINTED ON : 12/29/2000 14:44
% MOISTURE :

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	0.046 MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM124-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.004
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM114-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.005
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.006
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.007
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/8/00
DATE SAMPLED	: 12/7/00	PRINTED ON	: 12/29/2000 14:44
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120700
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: D
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08126.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:15		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	5.4	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 10
INSTRUMENT FILE	: C08129.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:48		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	50 UG/L	1.7	UG/L	J
Ethene	6.35	50 UG/L	56	UG/L	
Methane	8.56	50 UG/L	4500	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 21D
INSTRUMENT FILE	: C08230.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:18		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	119	1000 UG/L	ND	UG/L	
Ethene	133	1000 UG/L	ND	UG/L	
Methane	180	1000 UG/L	1300	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE004 PREP BLANK ID :MEEBLK004 LCS ID :MEELCS003

LCSD ID :MEELCS003D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM124-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: D
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C05130.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:59		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	0.90	UG/L	J
Methane	0.856	5.0 UG/L	40	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002	PREP BLANK ID :MEEBLK002	LCS ID :MEELCSD01
LCSD ID :MEELCSD01D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM114-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08131.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:09		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	0.48	UG/L	JK
Methane	0.856	5.0 UG/L	11	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002	PREP BLANK ID :MEEBLK002	LCS ID :MEELCS001
LCSD ID :MEELCS001D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: D
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08132.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:18		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	0.31	UG/L	NR
Methane	0.856	5.0 UG/L	4.6	UG/L	J

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002	PREP BLANK ID :MEEBLK002	LCS ID :MEELCS001
LCSD ID :MEELCS001D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08134.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:40		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	0.41	UG/L	J
Methane	0.856	5.0 UG/L	5.5	UG/L	J

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: DR	CONTAINER ID	: D
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08135.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:48		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	37	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/27/2000	15:00

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	EB120700	LF0502-01	HM124-01	HM114-01
SAMPLE ID	6462.002	6462.003	6462.004	6462.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	ND	0.12	0.55	2.3
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/23/00	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1	1
INSTRUMENT FILE	1223A111.D14	1223A111.D15	1223A111.D12	1223A111.D13
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01	IC01
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK01	ICBLK01	ICBLK01	ICBLK01
LCS ID	ICLCS01	ICLCS01	ICLCS01	ICLCS01
LCSD ID				
MS ID	6462.002MS	6462.002MS	6462.002MS	6462.002MS
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	6462.002MSD
DUP ID				

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/27/2000 15:01

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	W153-01	W153-02	HM126-01	EB120700MS
SAMPLE ID	6462.006	6462.007	6462.008	6462.002MS
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	5.3	5.4	2.8	1.1
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/23/00	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1	1
INSTRUMENT FILE	1223A111.D16	1223A111.D17	1223A111.D18	1223A111.D20
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01	IC01
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK01	ICBLK01	ICBLK01	ICBLK01
LCS ID	ICLCS01	ICLCS01	ICLCS01	ICLCS01
LCSD ID				
MS ID	6462.002MS	6462.002MS	6462.002MS	
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	
DUP ID				

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/27/2000 15:01

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	EB120700MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6462.002MSD	ICBLK01	ICLCS01
SAMPLE MATRIX	WATER		
DATE SAMPLED	12/7/00		
DATE RECEIVED	12/8/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1
RESULTS	0.82	ND	0.89
UNITS	MG/L	MG/L	MG/L
QUALIFIER			
ANALYST	GSR	GSR	GSR
CONTAINER ID			
DATE ANALYZED	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1
INSTRUMENT FILE	1223A111.022	1223A111.D10	1223A111.D11
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01
PRE-PREP BLANK ID			
PREP BLANK ID	ICBLK01	ICBLK01	ICBLK01
LCS ID	ICLCS01		
LCSD ID			
MS ID	6462.002MS		
MSD ID			
DUP ID			

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/27/2000	15:00

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	EB120700	LF0502-01	HM124-01	HM114-01
SAMPLE ID	6462.002	6462.003	6462.004	6462.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	ND	10.3	6.34	11.0
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/23/00	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1	1
INSTRUMENT FILE	1223A111.D14	1223A111.D15	1223A111.D12	1223A111.D13
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01	IC01
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK01	ICBLK01	ICBLK01	ICBLK01
LCS ID	ICLCS01	ICLCS01	ICLCS01	ICLCS01
LCSD ID				
MS ID	6462.002MS	6462.002MS	6462.002MS	6462.002MS
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	6462.002MSD
DUP ID				

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/27/2000	15:00

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	W153-01	W153-02	HM126-01	EB120700MS
SAMPLE ID	6462.006	6462.007	6462.008	6462.002MS
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	14.6	15.2	31.6	2.24
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/23/00	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1	1
INSTRUMENT FILE	1223A111.D16	1223A111.D17	1223A111.D18	1223A111.D20
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01	IC01
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK01	ICBLK01	ICBLK01	ICBLK01
LCS ID	ICLCS01	ICLCS01	ICLCS01	ICLCS01
LCSD ID				
MS ID	6462.002MS	6462.002MS	6462.002MS	
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/27/2000 15:00

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	EB120700MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6462.002MSD	ICBLK01	ICLCS01
SAMPLE MATRIX	WATER		
DATE SAMPLED	12/7/00		
DATE RECEIVED	12/8/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5
RESULTS	1.44	ND	1.69
UNITS	MG/L	MG/L	MG/L
QUALIFIER			
ANALYST	GSR	GSR	GSR
CONTAINER ID			
DATE ANALYZED	12/23/00	12/23/00	12/23/00
DILUTION	1	1	1
INSTRUMENT FILE	1223A111.D22	1223A111.D10	1223A111.D11
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC01	IC01	IC01
PRE-PREP BLANK ID			
PREP BLANK ID	ICBLK01	ICBLK01	ICBLK01
LCS ID	ICLCS01		
LCSD ID			
MS ID	6462.002MS		
MSD ID			
DUP ID			

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/15/2000 10:05

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB120700	LF0502-01	HM124-01	HM114-01
SAMPLE ID	6462.002	6462.003	6462.004	6462.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	1.0	17	8.1	9.3
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059	TOCL059	TOCL059	TOCL059
LCSD ID	TOCL059D	TOCL059D	TOCL059D	TOCL059D
MS ID	6462.002MS	6462.002MS	6462.002MS	6462.002MS
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	6462.002MSD
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/15/2000 10:05

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	W153-01	W153-02	HM126-01	EB120700MS
SAMPLE ID	6462.006	6462.007	6462.008	6462.002MS
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	8.4	8.9	9.6	24
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059	TOCL059	TOCL059	TOCL059
LCSD ID	TOCL059D	TOCL059D	TOCL059D	TOCL059D
MS ID	6462.002MS	6462.002MS	6462.002MS	
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/15/2000	10:10

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB120700MSD	PREP BLANK	LAB CONTROL SAMP	LAB CONTROL SAMP
SAMPLE ID	6462.002MSD	TOCB059	TOCL059	TOCL059D
SAMPLE MATRIX	WATER			
DATE SAMPLED	12/7/00			
DATE RECEIVED	12/8/00			
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	24	ND	22.2	22.2
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059			
LCSD ID	TOCL059D			
MS ID	6462.002MS			
MSD ID				
DUP ID				

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:36

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	EB120700	LF0502-01	HM124-01	HM114-01
SAMPLE ID	6462.002	6462.003	6462.004	6462.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/7/00	12/7/00	12/7/00	12/7/00
DATE RECEIVED	12/8/00	12/8/00	12/8/00	12/8/00
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	ND	100	5.0	30
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	J	D	J	D
DATE ANALYZED	12/12/00	12/12/00	12/12/00	12/12/00
QC BATCH ID	TSS108	TSS108	TSS108	TSS108
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK108	TSSBLK108	TSSBLK108	TSSBLK108
LCS ID	TSSLCS108	TSSLCS108	TSSLCS108	TSSLCS108
LCSD ID	TSSLCS108D	TSSLCS108D	TSSLCS108D	TSSLCS108D
DUP ID	6455.002DUP1	6455.002DUP1	6455.002DUP1	6455.002DUP1

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:36

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	W153-01	W153-02	HM126-01	PREP BLANK
SAMPLE ID	6462.006	6462.007	6462.008	TSSBLK108
SAMPLE MATRIX	WATER	WATER	WATER	
DATE SAMPLED	12/7/00	12/7/00	12/7/00	
DATE RECEIVED	12/8/00	12/8/00	12/8/00	
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	ND	ND	ND	ND
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	J	J	J	
DATE ANALYZED	12/12/00	12/12/00	12/12/00	12/12/00
QC BATCH ID	TSS108	TSS108	TSS108	TSS108
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK108	TSSBLK108	TSSBLK108	TSSBLK108
LCS ID	TSSLCS108	TSSLCS108	TSSLCS108	
LCSD ID	TSSLCS108D	TSSLCS108D	TSSLCS108D	
DUP ID	6455.002DUP1	6455.002DUP1	6455.002DUP1	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB120700
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9826.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 19:21

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L
Benzene	0.090	1.0 UG/L	ND	UG/L
Bromobenzene	0.153	1.0 UG/L	ND	UG/L
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L
Bromoform	0.119	1.0 UG/L	ND	UG/L
Bromomethane	0.149	2.0 UG/L	ND	UG/L
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L
Chloroethane	0.122	2.0 UG/L	ND	UG/L
Chloroform	0.111	1.0 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	TB120700
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6462.001
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/7/00	DATE RECEIVED :	12/8/00
SAMPLE MATRIX :	WATER	PRINTED ON :	12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	107
4-Bromofluorobenzene	10 UG/L	86 - 115	104
Dibromofluoromethane	10 UG/L	86 - 118	106
Toluene-d8	10 UG/L	88 - 110	94

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: TB120700	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6462.001	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/7/00		DATE RECEIVED	: 12/8/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/28/2000	11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120700
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9827.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 19:55

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L
Benzene	0.090	1.0 UG/L	ND	UG/L
Bromobenzene	0.153	1.0 UG/L	ND	UG/L
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L
Bromoform	0.119	1.0 UG/L	ND	UG/L
Bromomethane	0.149	2.0 UG/L	ND	UG/L
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L
Chloroethane	0.122	2.0 UG/L	ND	UG/L
Chloroform	0.111	1.0 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	EB120700
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6462.002
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/7/00	DATE RECEIVED :	12/8/00
SAMPLE MATRIX :	WATER	PRINTED ON :	12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND	UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	ND	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	ND	UG/L	
o-Xylene	0.067	1.0 UG/L	ND	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	0.84	UG/L	J
Toluene	0.099	1.0 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	3.4	UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	106
4-Bromofluorobenzene	10 UG/L	86 - 115	102
Dibromofluoromethane	10 UG/L	86 - 118	104
Toluene-d8	10 UG/L	88 - 110	94

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	EB120700
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6462.002
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/7/00	DATE RECEIVED	:	12/8/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	12/28/2000 11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9828.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 20:29

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.106	1.0 UG/L	1.1	UG/L
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L
Benzene	0.090	1.0 UG/L	ND	UG/L
Bromobenzene	0.153	1.0 UG/L	ND	UG/L
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L
Bromoform	0.119	1.0 UG/L	ND	UG/L
Bromomethane	0.149	2.0 UG/L	ND	UG/L
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L
Chloroethane	0.122	2.0 UG/L	ND	UG/L
Chloroform	0.111	1.0 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	310 UG/L	E
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	0.74 UG/L	J
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	24 UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	38 UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	12 UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	99
4-Bromofluorobenzene	10 UG/L	86 - 115	103
Dibromofluoromethane	10 UG/L	86 - 118	103
Toluene-d8	10 UG/L	88 - 110	96

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01		
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003		
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B		
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00		
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000	11:36	

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-010L1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.0030L1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 5
INSTRUMENT FILE	: B9917.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 13:12

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.570	5.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.439	5.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	1.14	5.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.841	5.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.586	5.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.532	5.0 UG/L	ND	UG/L
1,1-Dichloropropene	0.544	5.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.570	5.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	1.15	5.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.580	5.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.301	5.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	1.70	5.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.570	5.0 UG/L	NO	UG/L
1,2-Dichlorobenzene	0.536	5.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.696	5.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.994	5.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.404	5.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.564	5.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.712	5.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.442	5.0 UG/L	ND	UG/L
1-Chlorohexane	0.804	5.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.972	5.0 UG/L	ND	UG/L
2-Chlorotoluene	0.512	5.0 UG/L	ND	UG/L
4-Chlorotoluene	0.540	5.0 UG/L	ND	UG/L
Benzene	0.448	5.0 UG/L	ND	UG/L
Bromobenzene	0.766	5.0 UG/L	ND	UG/L
Bromochloromethane	0.851	5.0 UG/L	ND	UG/L
Bromodichloromethane	0.724	5.0 UG/L	ND	UG/L
Bromoform	0.593	5.0 UG/L	ND	UG/L
Bromomethane	0.745	10 UG/L	ND	UG/L
Carbon tetrachloride	0.487	5.0 UG/L	ND	UG/L
Chlorobenzene	0.511	5.0 UG/L	ND	UG/L
Chloroethane	0.608	10 UG/L	ND	UG/L
Chloroform	0.555	5.0 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: LF0502-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.003DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.820	10 UG/L	ND	UG/L
cis-1,2-Dichloroethene	0.562	5.0 UG/L	290	UG/L
cis-1,3-Dichloropropene	0.808	5.0 UG/L	ND	UG/L
Dibromochloromethane	0.828	5.0 UG/L	ND	UG/L
Dibromomethane	0.780	5.0 UG/L	ND	UG/L
Dichlorodifluoromethane	1.38	10 UG/L	ND	UG/L
Ethyl benzene	0.310	5.0 UG/L	ND	UG/L
Hexachlorobutadiene	0.519	5.0 UG/L	ND	UG/L
Isopropylbenzene	0.400	5.0 UG/L	ND	UG/L
m/p-xylene	0.400	5.0 UG/L	ND	UG/L
Methyl tert-butyl ether	0.932	10 UG/L	ND	UG/L
Methylene chloride	0.932	10 UG/L	ND	UG/L
n-Butylbenzene	0.694	5.0 UG/L	ND	UG/L
n-Propylbenzene	0.336	5.0 UG/L	ND	UG/L
Naphthalene	0.587	5.0 UG/L	ND	UG/L
o-Xylene	0.336	5.0 UG/L	ND	UG/L
p-Isopropyltoluene	0.420	5.0 UG/L	ND	UG/L
sec-Butylbenzene	0.422	5.0 UG/L	ND	UG/L
Styrene	0.460	5.0 UG/L	ND	UG/L
tert-Butylbenzene	0.420	5.0 UG/L	ND	UG/L
Tetrachloroethene	0.442	5.0 UG/L	ND	UG/L
Toluene	0.494	5.0 UG/L	ND	UG/L
trans-1,2-Dichloroethene	0.570	5.0 UG/L	24	UG/L
trans-1,3-Dichloropropene	0.580	5.0 UG/L	ND	UG/L
Trichloroethene	0.480	5.0 UG/L	40	UG/L
Trichlorofluoromethane	0.850	5.0 UG/L	ND	UG/L
Vinyl chloride	0.512	5.0 UG/L	13	UG/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	50 UG/L	80 - 120	90
4-Bromofluorobenzene	50 UG/L	86 - 115	98
Dibromofluoromethane	50 UG/L	86 - 118	96
Toluene-d8	50 UG/L	88 - 110	98

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: LF0502-01DL1	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6462.003DL1	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/7/00		DATE RECEIVED	: 12/8/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/28/2000	11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM124-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:48

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: B9925.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 18:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L
Benzene	0.090	1.0 UG/L	ND	UG/L
Bromobenzene	0.153	1.0 UG/L	ND	UG/L
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L
Bromoform	0.119	1.0 UG/L	ND	UG/L
Bromomethane	0.149	2.0 UG/L	ND	UG/L
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L
Chloroethane	0.122	2.0 UG/L	ND	UG/L
Chloroform	0.111	1.0 UG/L	ND	UG/L

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM124-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:48

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	1.8	UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	ND	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	ND	UG/L	
o-Xylene	0.067	1.0 UG/L	ND	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	0.73	UG/L	J
Toluene	0.099	1.0 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	4.0	UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	104
4-Bromofluorobenzene	10 UG/L	86 - 115	105
Dibromofluoromethane	10 UG/L	86 - 118	108
Toluene-d8	10 UG/L	88 - 110	109

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM124-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:48

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM114-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9830.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 21:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.106	1.0 UG/L	1.4	UG/L
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L
Benzene	0.090	1.0 UG/L	ND	UG/L
Bromobenzene	0.153	1.0 UG/L	ND	UG/L
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L
Bromoform	0.119	1.0 UG/L	ND	UG/L
Bromomethane	0.149	2.0 UG/L	ND	UG/L
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L
Chloroethane	0.122	2.0 UG/L	ND	UG/L
Chloroform	0.111	1.0 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	HM114-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6462.005
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/7/00	DATE RECEIVED :	12/8/00
SAMPLE MATRIX :	WATER	PRINTED ON :	12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	76	UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	ND	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	ND	UG/L	
o-Xylene	0.067	1.0 UG/L	ND	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	1.3	UG/L	
Toluene	0.099	1.0 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	2.3	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	500	UG/L	E
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	107
4-Bromofluorobenzene	10 UG/L	86 - 115	103
Dibromofluoromethane	10 UG/L	86 - 118	105
Toluene-d8	10 UG/L	88 - 110	94

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM114-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM114-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.005DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 10
INSTRUMENT FILE	: B9918.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 13:47

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	1.14	10 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.878	10 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	2.28	10 UG/L	ND UG/L	
1,1,2-Trichloroethane	1.68	10 UG/L	ND UG/L	
1,1-Dichloroethane	1.17	10 UG/L	ND UG/L	
1,1-Dichloroethene	1.06	10 UG/L	ND UG/L	
1,1-Dichloropropene	1.09	10 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	1.14	10 UG/L	ND UG/L	
1,2,3-Trichloropropane	2.31	10 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	1.16	10 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.602	10 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	3.39	10 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	1.14	10 UG/L	ND UG/L	
1,2-Dichlorobenzene	1.07	10 UG/L	ND UG/L	
1,2-Dichloroethane	1.39	10 UG/L	ND UG/L	
1,2-Dichloropropane	1.99	10 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.808	10 UG/L	ND UG/L	
1,3-Dichlorobenzene	1.13	10 UG/L	ND UG/L	
1,3-Dichloropropane	1.43	10 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.883	10 UG/L	ND UG/L	
1-Chlorohexane	1.61	10 UG/L	ND UG/L	
2,2-Dichloropropane	1.94	10 UG/L	ND UG/L	
2-Chlorotoluene	1.02	10 UG/L	ND UG/L	
4-Chlorotoluene	1.08	10 UG/L	ND UG/L	
Benzene	0.897	10 UG/L	ND UG/L	
Bromobenzene	1.53	10 UG/L	ND UG/L	
Bromochloromethane	1.70	10 UG/L	ND UG/L	
Bromodichloromethane	1.45	10 UG/L	ND UG/L	
Bromoform	1.19	10 UG/L	ND UG/L	
Bromomethane	1.49	20 UG/L	ND UG/L	
Carbon tetrachloride	0.974	10 UG/L	ND UG/L	
Chlorobenzene	1.02	10 UG/L	ND UG/L	
Chloroethane	1.22	20 UG/L	ND UG/L	
Chloroform	1.11	10 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM114-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.005DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.64	20 UG/L	ND	UG/L
cis-1,2-Dichloroethene	1.13	10 UG/L	77	UG/L
cis-1,3-Dichloropropene	1.62	10 UG/L	ND	UG/L
Dibromochloromethane	1.66	10 UG/L	ND	UG/L
Dibromomethane	1.56	10 UG/L	ND	UG/L
Dichlorodifluoromethane	2.77	20 UG/L	ND	UG/L
Ethyl benzene	0.621	10 UG/L	ND	UG/L
Hexachlorobutadiene	1.04	10 UG/L	ND	UG/L
Isopropylbenzene	0.800	10 UG/L	ND	UG/L
m/p-xylene	0.800	10 UG/L	ND	UG/L
Methyl tert-butyl ether	1.86	20 UG/L	ND	UG/L
Methylene chloride	1.86	20 UG/L	ND	UG/L
n-Butylbenzene	1.39	10 UG/L	ND	UG/L
n-Propylbenzene	0.672	10 UG/L	ND	UG/L
Naphthalene	1.17	10 UG/L	ND	UG/L
o-Xylene	0.672	10 UG/L	ND	UG/L
p-Isopropyltoluene	0.840	10 UG/L	ND	UG/L
sec-Butylbenzene	0.845	10 UG/L	ND	UG/L
Styrene	0.920	10 UG/L	ND	UG/L
tert-Butylbenzene	0.840	10 UG/L	ND	UG/L
Tetrachloroethene	0.883	10 UG/L	ND	UG/L
Toluene	0.989	10 UG/L	ND	UG/L
trans-1,2-Dichloroethene	1.14	10 UG/L	ND	UG/L
trans-1,3-Dichloropropene	1.16	10 UG/L	ND	UG/L
Trichloroethene	0.960	10 UG/L	520	UG/L
Trichlorofluoromethane	1.70	10 UG/L	ND	UG/L
Vinyl chloride	1.02	10 UG/L	ND	UG/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	100 UG/L	80 - 120	88
4-Bromofluorobenzene	100 UG/L	86 - 115	97
Dibromofluoromethane	100 UG/L	86 - 118	94
Toluene-d8	100 UG/L	88 - 110	99

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	HM114-01DL1
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6462.005DL1
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/7/00	DATE RECEIVED	:	12/8/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	12/28/2000 11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9831.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 22:10

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	1.2	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	D.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	0.57	UG/L	J

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	99	UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	ND	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	ND	UG/L	
o-Xylene	0.067	1.0 UG/L	ND	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	4.8	UG/L	
Toluene	0.099	1.0 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	2.3	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	690	UG/L	E
Trichlorofluoromethane	0.170	1.0 UG/L	1.1	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	104
4-Bromofluorobenzene	10 UG/L	86 - 115	103
Dibromofluoromethane	10 UG/L	86 - 118	103
Toluene-d8	10 UG/L	88 - 110	96

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	W153-01
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6462.006
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/7/00	DATE RECEIVED	:	12/8/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	12/28/2000 11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.006DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 10
INSTRUMENT FILE	: B9919.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 14:21

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	1.14	10 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.878	10 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	2.28	10 UG/L	ND	UG/L
1,1,2-Trichloroethane	1.68	10 UG/L	ND	UG/L
1,1-Dichloroethane	1.17	10 UG/L	ND	UG/L
1,1-Dichloroethene	1.06	10 UG/L	ND	UG/L
1,1-Dichloropropene	1.09	10 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	1.14	10 UG/L	ND	UG/L
1,2,3-Trichloropropane	2.31	10 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	1.16	10 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.602	10 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	3.39	10 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	1.14	10 UG/L	ND	UG/L
1,2-Dichlorobenzene	1.07	10 UG/L	ND	UG/L
1,2-Dichloroethane	1.39	10 UG/L	ND	UG/L
1,2-Dichloropropane	1.99	10 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.808	10 UG/L	ND	UG/L
1,3-Dichlorobenzene	1.13	10 UG/L	ND	UG/L
1,3-Dichloropropane	1.43	10 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.883	10 UG/L	ND	UG/L
1-Chlorohexane	1.61	10 UG/L	ND	UG/L
2,2-Dichloropropane	1.94	10 UG/L	ND	UG/L
2-Chlorotoluene	1.02	10 UG/L	ND	UG/L
4-Chlorotoluene	1.08	10 UG/L	ND	UG/L
Benzene	0.897	10 UG/L	ND	UG/L
Bromobenzene	1.53	10 UG/L	ND	UG/L
Bromochloromethane	1.70	10 UG/L	ND	UG/L
Bromodichloromethane	1.45	10 UG/L	ND	UG/L
Bromoform	1.19	10 UG/L	ND	UG/L
Bromomethane	1.49	20 UG/L	ND	UG/L
Carbon tetrachloride	0.974	10 UG/L	ND	UG/L
Chlorobenzene	1.02	10 UG/L	ND	UG/L
Chloroethane	1.22	20 UG/L	ND	UG/L
Chloroform	1.11	10 UG/L	ND	UG/L

689 449

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	W153-01DL1
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6462.006DL1
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/7/00	DATE RECEIVED :	12/8/00
SAMPLE MATRIX :	WATER	PRINTED ON :	12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	1.64	20 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	1.13	10 UG/L	110	UG/L	
cis-1,3-Dichloropropene	1.62	10 UG/L	ND	UG/L	
Dibromochloromethane	1.66	10 UG/L	ND	UG/L	
Dibromomethane	1.56	10 UG/L	ND	UG/L	
Dichlorodifluoromethane	2.77	20 UG/L	ND	UG/L	
Ethyl benzene	0.621	10 UG/L	ND	UG/L	
Hexachlorobutadiene	1.04	10 UG/L	ND	UG/L	
Isopropylbenzene	0.800	10 UG/L	ND	UG/L	
m/p-xylene	0.800	10 UG/L	ND	UG/L	
Methyl tert-butyl ether	1.86	20 UG/L	ND	UG/L	
Methylene chloride	1.86	20 UG/L	ND	UG/L	
n-Butylbenzene	1.39	10 UG/L	ND	UG/L	
n-Propylbenzene	0.672	10 UG/L	ND	UG/L	
Naphthalene	1.17	10 UG/L	ND	UG/L	
o-Xylene	0.672	10 UG/L	ND	UG/L	
p-Isopropyltoluene	0.840	10 UG/L	ND	UG/L	
sec-Butylbenzene	0.845	10 UG/L	ND	UG/L	
Styrene	0.920	10 UG/L	ND	UG/L	
tert-Butylbenzene	0.840	10 UG/L	ND	UG/L	
Tetrachloroethene	0.883	10 UG/L	5.5	UG/L	J
Toluene	0.989	10 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	1.14	10 UG/L	ND	UG/L	
trans-1,3-Dichloropropene	1.16	10 UG/L	ND	UG/L	
Trichloroethene	0.960	10 UG/L	780	UG/L	
Trichlorofluoromethane	1.70	10 UG/L	ND	UG/L	
Vinyl chloride	1.02	10 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	100 UG/L	80 - 120	90
4-Bromofluorobenzene	100 UG/L	86 - 115	98
Dibromofluoromethane	100 UG/L	86 - 118	95
Toluene-d8	100 UG/L	88 - 110	99

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	W153-010L1
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6462.006DL1
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/7/00	DATE RECEIVED	:	12/8/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	12/28/2000 11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: F
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: B9920.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 15:35

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	1.3	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	0.68	UG/L	J

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	120	UG/L	E
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	ND	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	ND	UG/L	
o-Xylene	0.067	1.0 UG/L	ND	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	5.9	UG/L	
Toluene	0.099	1.0 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	4.0	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	880	UG/L	E
Trichlorofluoromethane	0.170	1.0 UG/L	3.7	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	98
4-Bromofluorobenzene	10 UG/L	86 - 115	104
Dibromofluoromethane	10 UG/L	86 - 118	105
Toluene-d8	10 UG/L	88 - 110	111

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	W153-02
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6462.007
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/7/00	DATE RECEIVED	:	12/8/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	12/28/2000 11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W153-02DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.007DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: F
DATE ANALYZED	: 12/19/00	DILUTION	: 20
INSTRUMENT FILE	: B9923.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:19

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	2.28	20 UG/L	ND	UG/L
1,1,1-Trichloroethane	1.76	20 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	4.56	20 UG/L	ND	UG/L
1,1,2-Trichloroethane	3.36	20 UG/L	ND	UG/L
1,1-Dichloroethane	2.34	20 UG/L	ND	UG/L
1,1-Dichloroethene	2.13	20 UG/L	ND	UG/L
1,1-Dichloropropene	2.18	20 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	2.28	20 UG/L	ND	UG/L
1,2,3-Trichloropropane	4.62	20 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	2.32	20 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	1.20	20 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	6.78	20 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	2.28	20 UG/L	ND	UG/L
1,2-Dichlorobenzene	2.14	20 UG/L	ND	UG/L
1,2-Dichloroethane	2.79	20 UG/L	ND	UG/L
1,2-Dichloropropane	3.97	20 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	1.62	20 UG/L	ND	UG/L
1,3-Dichlorobenzene	2.26	20 UG/L	ND	UG/L
1,3-Dichloropropane	2.85	20 UG/L	ND	UG/L
1,4-Dichlorobenzene	1.77	20 UG/L	ND	UG/L
1-Chlorohexane	3.21	20 UG/L	ND	UG/L
2,2-Dichloropropane	3.89	20 UG/L	ND	UG/L
2-Chlorotoluene	2.05	20 UG/L	ND	UG/L
4-Chlorotoluene	2.16	20 UG/L	ND	UG/L
Benzene	1.79	20 UG/L	ND	UG/L
Bromobenzene	3.07	20 UG/L	ND	UG/L
Bromochloromethane	3.40	20 UG/L	ND	UG/L
Bromodichloromethane	2.90	20 UG/L	ND	UG/L
Bromoform	2.37	20 UG/L	ND	UG/L
Bromomethane	2.98	40 UG/L	ND	UG/L
Carbon tetrachloride	1.95	20 UG/L	ND	UG/L
Chlorobenzene	2.04	20 UG/L	ND	UG/L
Chloroethane	2.43	40 UG/L	ND	UG/L
Chloroform	2.22	20 UG/L	ND	UG/L

689.455

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	W153-02DL1
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6462.007DL1
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/7/00	DATE RECEIVED :	12/8/00
SAMPLE MATRIX :	WATER	PRINTED ON :	12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	3.28	40 UG/L	ND	UG/L
cis-1,2-Dichloroethene	2.25	20 UG/L	130	UG/L
cis-1,3-Dichloropropene	3.23	20 UG/L	ND	UG/L
Dibromochloromethane	3.31	20 UG/L	ND	UG/L
Dibromomethane	3.12	20 UG/L	ND	UG/L
Dichlorodifluoromethane	5.54	40 UG/L	ND	UG/L
Ethyl benzene	1.24	20 UG/L	ND	UG/L
Hexachlorobutadiene	2.08	20 UG/L	ND	UG/L
Isopropylbenzene	1.60	20 UG/L	ND	UG/L
m/p-xylene	1.60	20 UG/L	ND	UG/L
Methyl tert-butyl ether	3.73	40 UG/L	ND	UG/L
Methylene chloride	3.73	40 UG/L	ND	UG/L
n-Butylbenzene	2.77	20 UG/L	ND	UG/L
n-Propylbenzene	1.34	20 UG/L	ND	UG/L
Naphthalene	2.35	20 UG/L	ND	UG/L
o-Xylene	1.34	20 UG/L	ND	UG/L
p-Isopropyltoluene	1.68	20 UG/L	ND	UG/L
sec-Butylbenzene	1.69	20 UG/L	ND	UG/L
Styrene	1.84	20 UG/L	ND	UG/L
tert-Butylbenzene	1.68	20 UG/L	ND	UG/L
Tetrachloroethene	1.77	20 UG/L	ND	UG/L
Toluene	1.98	20 UG/L	ND	UG/L
trans-1,2-Dichloroethene	2.28	20 UG/L	ND	UG/L
trans-1,3-Dichloropropene	2.32	20 UG/L	ND	UG/L
Trichloroethene	1.92	20 UG/L	910	UG/L
Trichlorofluoromethane	3.40	20 UG/L	ND	UG/L
Vinyl chloride	2.05	20 UG/L	ND	UG/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	200 UG/L	80 - 120	105
4-Bromofluorobenzene	200 UG/L	86 - 115	105
Dibromofluoromethane	200 UG/L	86 - 118	110
Toluene-d8	200 UG/L	88 - 110	108

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: W153-02DL1	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6462.007DL1	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/7/00		DATE RECEIVED	: 12/8/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/28/2000	11:36

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: B9921.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 16:09

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	1.3	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	0.72	UG/L	J

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	120	UG/L	E
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	ND	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	ND	UG/L	
o-Xylene	0.067	1.0 UG/L	ND	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	0.92	UG/L	J
Toluene	0.099	1.0 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	3.9	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	1900	UG/L	E
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	107
4-Bromofluorobenzene	10 UG/L	86 - 115	107
Dibromofluoromethane	10 UG/L	86 - 118	111
Toluene-d8	10 UG/L	88 - 110	108

PDP Analytical Services
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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: HM126-01	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6462.008	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/7/00		DATE RECEIVED	: 12/8/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/28/2000	11:36

BATCH QUALITY CONTROL SAMPLE IDS

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

ANALYST	: JC	CONTAINER ID	: C
DATE ANALYZED	: 12/19/00	DILUTION	: 100
INSTRUMENT FILE	: B9924.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:54

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	11.4	100 UG/L	ND	UG/L
1,1,1-Trichloroethane	8.78	100 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	22.8	100 UG/L	ND	UG/L
1,1,2-Trichloroethane	16.8	100 UG/L	ND	UG/L
1,1-Dichloroethane	11.7	100 UG/L	ND	UG/L
1,1-Dichloroethene	10.6	100 UG/L	ND	UG/L
1,1-Dichloropropene	10.9	100 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	11.4	100 UG/L	ND	UG/L
1,2,3-Trichloropropane	23.1	100 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	11.6	100 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	6.02	100 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	33.9	100 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	11.4	100 UG/L	ND	UG/L
1,2-Dichlorobenzene	10.7	100 UG/L	ND	UG/L
1,2-Dichloroethane	13.9	100 UG/L	ND	UG/L
1,2-Dichloropropane	19.9	100 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	8.08	100 UG/L	ND	UG/L
1,3-Dichlorobenzene	11.3	100 UG/L	ND	UG/L
1,3-Dichloropropane	14.2	100 UG/L	ND	UG/L
1,4-Dichlorobenzene	8.83	100 UG/L	ND	UG/L
1-Chlorohexane	16.1	100 UG/L	ND	UG/L
2,2-Dichloropropane	19.4	100 UG/L	ND	UG/L
2-Chlorotoluene	10.2	100 UG/L	ND	UG/L
4-Chlorotoluene	10.8	100 UG/L	ND	UG/L
Benzene	8.97	100 UG/L	ND	UG/L
Bromobenzene	15.3	100 UG/L	ND	UG/L
Bromochloromethane	17.0	100 UG/L	ND	UG/L
Bromodichloromethane	14.5	100 UG/L	ND	UG/L
Bromoform	11.9	100 UG/L	ND	UG/L
Bromomethane	14.9	200 UG/L	ND	UG/L
Carbon tetrachloride	9.74	100 UG/L	ND	UG/L
Chlorobenzene	10.2	100 UG/L	ND	UG/L
Chloroethane	12.2	200 UG/L	ND	UG/L
Chloroform	11.1	100 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-826DB
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000 11:36

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	16.4	200 UG/L	ND UG/L	
cis-1,2-Dichloroethene	11.2	100 UG/L	170 UG/L	
cis-1,3-Dichloropropene	16.2	100 UG/L	ND UG/L	
Dibromochloromethane	16.6	100 UG/L	ND UG/L	
Dibromomethane	15.6	100 UG/L	ND UG/L	
Dichlorodifluoromethane	27.7	200 UG/L	ND UG/L	
Ethyl benzene	6.21	100 UG/L	ND UG/L	
Hexachlorobutadiene	10.4	100 UG/L	ND UG/L	
Isopropylbenzene	8.00	100 UG/L	ND UG/L	
m/p-xylene	8.00	100 UG/L	ND UG/L	
Methyl tert-butyl ether	18.6	200 UG/L	ND UG/L	
Methylene chloride	18.6	200 UG/L	ND UG/L	
n-Butylbenzene	13.9	100 UG/L	ND UG/L	
n-Propylbenzene	6.72	100 UG/L	ND UG/L	
Naphthalene	11.7	100 UG/L	ND UG/L	
o-Xylene	6.72	100 UG/L	ND UG/L	
p-Isopropyltoluene	8.40	100 UG/L	ND UG/L	
sec-Butylbenzene	8.45	100 UG/L	ND UG/L	
Styrene	9.20	100 UG/L	ND UG/L	
tert-Butylbenzene	8.40	100 UG/L	ND UG/L	
Tetrachloroethene	8.83	100 UG/L	ND UG/L	
Toluene	9.89	100 UG/L	ND UG/L	
trans-1,2-Dichloroethene	11.4	100 UG/L	ND UG/L	
trans-1,3-Dichloropropene	11.6	100 UG/L	ND UG/L	
Trichloroethene	9.60	100 UG/L	3800 UG/L	
Trichlorofluoromethane	17.0	100 UG/L	ND UG/L	
Vinyl chloride	10.2	100 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	1,000 UG/L	80 - 120	95
4-Bromofluorobenzene	1,000 UG/L	86 - 115	105
Dibromofluoromethane	1,000 UG/L	86 - 118	105
Toluene-d8	1,000 UG/L	88 - 110	111

PDP Analytical Services
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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM126-01DL1		
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6462.008DL1		
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B		
DATE SAMPLED	: 12/7/00	DATE RECEIVED	: 12/8/00		
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/28/2000	11:36	

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV81	PREP BLANK ID : BVBLK81	LCS ID : BVLCS81

Science Applications International Corporation
An Employee Owned Company

Chain of Custody Number	NAS Fort Worth JRB, Texas Project Manager (Print)	Field Team Leader (Print)	Laboratory
S00-373		David Lowak	PDP Analytical Services
Contractor	**Project Name**	**Sampler's Name (Print)**	**Laboratory Contract Number**
SAIC	AOC 20 S.I. – NAS FT. WORTH JRB	DAVID LOWAK	4400032539
Contract Number / Delivery Order	**NAS Fort Worth JRB, Texas Site Number**	**Sampler's Signature**	**ANALYSES REQUESTED**
F41624-00-D-8030/0007	AOC 20	[signature]	

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060							
1	TB120500	TB1	WQ	NA	00.0	00.0	05 DEC 00	0759	001A	2	X							6454.00	
2	AB120500	AB1	WQ	G	00.0	00.0	05 DEC 00	0759	101A	3	X								.002
3	EB120500	EB1	WQ	SS	00.0	00.0	05 DEC 00	0814	111A	4	X	X							00[illegible]
4	WSAICTA002-01	N1	SO	SS	15.0	17.0	05 DEC 00	0818	111A	4	X	X							00[illegible]
5	WSAICTA003-01	N1	SO	SS	20.0	22.0	05 DEC 00	1103	111A	4	X	X							.00[illegible]
6	BSAICTA001-01	N1	SO	SS	27.0	29.0	05 DEC 00	1523	111A	4	X	X							.00[illegible]
7	BSAICTA002-01	N1	SO	SS	20.5	22.5	05 DEC 00	1539	111A	4	X	X							00[illegible]
8																			

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	PROTOCOL (circle one)
[signature]	12-5-00 1830	Rachael Brown	12/06/00 9:00	HAZWRAP (EPA) OTHER
				QC LEVEL (circle one)
Relinquished By (Signature)	**Date/Time**	**Received By (Signature)**	**Date/Time**	1 2 (3) 4 5
				FOR LABORATORY USE ONLY
				CONDITIONS OF SAMPLES UPON RECEIPT
Relinquished By (Signature)	**Date/Time**	**Received By (Signature)**	**Date/Time**	CHAIN OF CUSTODY Y N ICE
				REQUEST FOR ANAL Y N TEMP
				CUSTODY SEAL Y N pH

Sampled Shipped Via (circle one)	Waybill Number:	SAMPLE CONDITION
UPS (FED-EX) AIRBORNE BUS HAND OTHER	823100396310	

REMARKS:
SW8260 - VOC
SW9060 - TOC

PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6454	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received seven (7) samples on 12/06/00. These samples were scheduled for a 21 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No.8231-0039-6310. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

TOC

For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

For this parameter, no analytical problems were encountered with the analysis of these samples.

The ICV for Bromomethane was outside acceptance limits. However, this target analyte was not detected in any of the samples.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. For soil samples, the LCS spike recoveries for Bromomethane and Chloroethane were outside the acceptance limits. However, these target analytes were not detected in any of the samples. All other Quality Control (QC) samples met acceptance limits

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/15/2000	10:09

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB120500	EB120700MS	EB120700MSD	PREP BLANK
SAMPLE ID	6454.003	6462.002MS	6462.002MSD	TOCB059
SAMPLE MATRIX	WATER	WATER	WATER	
DATE SAMPLED	12/5/00	12/7/00	12/7/00	
DATE RECEIVED	12/6/00	12/8/00	12/8/00	
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	ND	24	24	ND
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059	TOCL059	TOCL059	
LCSD ID	TOCL059D	TOCL059D	TOCL059D	
MS ID	6462.002MS		6462.002MS	
MSD ID	6462.002MSD			
DUP ID				

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB120500
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 12:07

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9822.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	TB120500
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6454.001
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/5/00	DATE RECEIVED :	12/6/00
SAMPLE MATRIX :	WATER	PRINTED ON :	12/19/2000 12:07

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	106
4-Bromofluorobenzene	10 UG/L	86 - 115	102
Dibromofluoromethane	10 UG/L	86 - 118	104
Toluene-d8	10 UG/L	88 - 110	96

PDP Analytical Services
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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: TB120500	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6454.001	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/5/00		DATE RECEIVED	: 12/6/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/19/2000	12:07

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: AB120500
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 12:07

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9819.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 15:25

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: AB120500
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 12:07

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	98
4-Bromofluorobenzene	10 UG/L	86 - 115	101
Dibromofluoromethane	10 UG/L	86 - 118	100
Toluene-d8	10 UG/L	88 - 110	97

PDP Analytical Services
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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: AB120500
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 12:07

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120500
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 12:07

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 12/14/00	DILUTION	: 1
INSTRUMENT FILE	: B9823.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:40

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120500
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 12:07

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	105
4-Bromofluorobenzene	10 UG/L	86 - 115	103
Dibromofluoromethane	10 UG/L	86 - 118	104
Toluene-d8	10 UG/L	88 - 110	95

PDP Analytical Services
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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: EB120500	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6454.003	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/5/00		DATE RECEIVED	: 12/6/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 12/19/2000	12:07

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV76A	PREP BLANK ID : BVBLK76	LCS ID : BVLCS76
MS ID : 6454.002MS	MSD ID : 6454.002MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA002-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

% MOISTURE	: 14.45	ANALYST	: JK
CONTAINER ID	: B	DATE ANALYZED	: 12/11/00
INSTRUMENT FILE	: G2950.D	INSTRUMENT ID	: G-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 16:18

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	1.54	5.8 UG/KG	ND UG/KG	
1,1,1-Trichloroethane	1.39	5.8 UG/KG	ND UG/KG	
1,1,2,2-Tetrachloroethane	4.54	5.8 UG/KG	ND UG/KG	
1,1,2-Trichloroethane	1.25	5.8 UG/KG	ND UG/KG	
1,1-Dichloroethane	1.45	5.8 UG/KG	ND UG/KG	
1,1-Dichloroethene	1.40	5.8 UG/KG	ND UG/KG	
1,1-Dichloropropene	1.19	5.8 UG/KG	ND UG/KG	
1,2,3-Trichlorobenzene	1.50	5.8 UG/KG	ND UG/KG	
1,2,3-Trichloropropane	4.96	5.8 UG/KG	ND UG/KG	
1,2,4-Trichlorobenzene	1.42	5.8 UG/KG	ND UG/KG	
1,2,4-Trimethylbenzene	1.05	5.8 UG/KG	ND UG/KG	
1,2-Dibromo-3-chloropropane	4.03	5.8 UG/KG	ND UG/KG	
1,2-Dibromoethane (EDB)	1.52	5.8 UG/KG	ND UG/KG	
1,2-Dichlorobenzene	1.20	5.8 UG/KG	ND UG/KG	
1,2-Dichloroethane	1.74	5.8 UG/KG	ND UG/KG	
1,2-Dichloropropane	1.40	5.8 UG/KG	ND UG/KG	
1,3,5-Trimethylbenzene	0.987	5.8 UG/KG	ND UG/KG	
1,3-Dichlorobenzene	0.982	5.8 UG/KG	ND UG/KG	
1,3-Dichloropropane	2.49	5.8 UG/KG	ND UG/KG	
1,4-Dichlorobenzene	0.965	5.8 UG/KG	ND UG/KG	
1-Chlorohexane	1.42	5.8 UG/KG	ND UG/KG	
2,2-Dichloropropane	1.45	5.8 UG/KG	ND UG/KG	
2-Chlorotoluene	0.927	5.8 UG/KG	ND UG/KG	
4-Chlorotoluene	0.872	5.8 UG/KG	ND UG/KG	
Benzene	1.41	5.8 UG/KG	ND UG/KG	
Bromobenzene	1.63	5.8 UG/KG	ND UG/KG	
Bromochloromethane	1.53	5.8 UG/KG	ND UG/KG	
Bromodichloromethane	1.16	5.8 UG/KG	ND UG/KG	
Bromoform	1.94	5.8 UG/KG	ND UG/KG	
Bromomethane	1.89	5.8 UG/KG	ND UG/KG	
Carbon tetrachloride	1.31	5.8 UG/KG	ND UG/KG	
Chlorobenzene	1.01	5.8 UG/KG	ND UG/KG	
Chloroethane	1.61	5.8 UG/KG	ND UG/KG	
Chloroform	1.51	5.8 UG/KG	ND UG/KG	

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA002-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6454.004
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/5/00	DATE RECEIVED :	12/6/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:16

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.58	5.8 UG/KG	ND UG/KG	
cis-1,2-Dichloroethene	1.38	5.8 UG/KG	ND UG/KG	
cis-1,3-Dichloropropene	1.08	5.8 UG/KG	ND UG/KG	
Dibromochloromethane	1.96	5.8 UG/KG	ND UG/KG	
Dibromomethane	1.41	5.8 UG/KG	ND UG/KG	
Dichlorodifluoromethane	1.88	5.8 UG/KG	ND UG/KG	
Ethyl benzene	0.996	5.8 UG/KG	ND UG/KG	
Hexachlorobutadiene	2.75	5.8 UG/KG	ND UG/KG	
Isopropylbenzene	1.04	5.8 UG/KG	ND UG/KG	
m/p-xylene	1.16	5.8 UG/KG	ND UG/KG	
Methyl tert-butyl ether	1.17	5.8 UG/KG	ND UG/KG	
Methylene chloride	2.13	5.8 UG/KG	ND UG/KG	
n-Butylbenzene	2.05	5.8 UG/KG	ND UG/KG	
n-Propylbenzene	0.962	5.8 UG/KG	ND UG/KG	
Naphthalene	3.57	5.8 UG/KG	ND UG/KG	
o-Xylene	0.942	5.8 UG/KG	ND UG/KG	
p-Isopropyltoluene	1.53	5.8 UG/KG	ND UG/KG	
sec-Butylbenzene	1.13	5.8 UG/KG	ND UG/KG	
Styrene	1.18	5.8 UG/KG	ND UG/KG	
tert-Butylbenzene	0.966	5.8 UG/KG	ND UG/KG	
Tetrachloroethene	0.876	5.8 UG/KG	ND UG/KG	
Toluene	1.17	5.8 UG/KG	ND UG/KG	
trans-1,2-Dichloroethene	1.34	5.8 UG/KG	ND UG/KG	
trans-1,3-Dichloropropene	1.10	5.8 UG/KG	ND UG/KG	
Trichloroethene	1.15	5.8 UG/KG	ND UG/KG	
Trichlorofluoromethane	1.83	5.8 UG/KG	ND UG/KG	
Vinyl chloride	1.61	5.8 UG/KG	ND UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	58 UG/KG	80 - 120	92
4-Bromofluorobenzene	58 UG/KG	74 - 121	96
Dibromofluoromethane	58 UG/KG	80 - 120	94
Toluene-d8	58 UG/KG	81 - 117	92

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	WSAICTA002-01
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6454.004
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/5/00	DATE RECEIVED	:	12/6/00
SAMPLE MATRIX	:	SOIL	PRINTED ON	:	1/19/2001 16:16

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :GV087A	PREP BLANK ID :GVBLK087	LCS ID :GVLCS087
MS ID :6454.004MS	MSD ID :6454.004MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

% MOISTURE	: 19.56	ANALYST	: JK
CONTAINER ID	: B	DATE ANALYZED	: 12/11/00
INSTRUMENT FILE	: G2951.D	INSTRUMENT ID	: G-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 16:48

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	1.64	6.2 UG/KG	ND	UG/KG	
1,1,1-Trichloroethane	1.48	6.2 UG/KG	ND	UG/KG	
1,1,2,2-Tetrachloroethane	4.83	6.2 UG/KG	ND	UG/KG	
1,1,2-Trichloroethane	1.33	6.2 UG/KG	ND	UG/KG	
1,1-Dichloroethane	1.54	6.2 UG/KG	ND	UG/KG	
1,1-Dichloroethene	1.49	6.2 UG/KG	ND	UG/KG	
1,1-Dichloropropene	1.26	6.2 UG/KG	ND	UG/KG	
1,2,3-Trichlorobenzene	1.59	6.2 UG/KG	ND	UG/KG	
1,2,3-Trichloropropane	5.28	6.2 UG/KG	ND	UG/KG	
1,2,4-Trichlorobenzene	1.51	6.2 UG/KG	ND	UG/KG	
1,2,4-Trimethylbenzene	1.11	6.2 UG/KG	ND	UG/KG	
1,2-Dibromo-3-chloropropane	4.29	6.2 UG/KG	ND	UG/KG	
1,2-Dibromoethane (EDB)	1.62	6.2 UG/KG	ND	UG/KG	
1,2-Dichlorobenzene	1.28	6.2 UG/KG	ND	UG/KG	
1,2-Dichloroethane	1.85	6.2 UG/KG	ND	UG/KG	
1,2-Dichloropropane	1.49	6.2 UG/KG	ND	UG/KG	
1,3,5-Trimethylbenzene	1.05	6.2 UG/KG	ND	UG/KG	
1,3-Dichlorobenzene	1.04	6.2 UG/KG	ND	UG/KG	
1,3-Dichloropropane	2.65	6.2 UG/KG	ND	UG/KG	
1,4-Dichlorobenzene	1.03	6.2 UG/KG	ND	UG/KG	
1-Chlorohexane	1.51	6.2 UG/KG	ND	UG/KG	
2,2-Dichloropropane	1.54	6.2 UG/KG	ND	UG/KG	
2-Chlorotoluene	0.986	6.2 UG/KG	ND	UG/KG	
4-Chlorotoluene	0.928	6.2 UG/KG	ND	UG/KG	
Benzene	1.50	6.2 UG/KG	ND	UG/KG	
Bromobenzene	1.73	6.2 UG/KG	ND	UG/KG	
Bromochloromethane	1.63	6.2 UG/KG	ND	UG/KG	
Bromodichloromethane	1.24	6.2 UG/KG	ND	UG/KG	
Bromoform	2.06	6.2 UG/KG	ND	UG/KG	
Bromomethane	2.01	6.2 UG/KG	ND	UG/KG	
Carbon tetrachloride	1.39	6.2 UG/KG	ND	UG/KG	
Chlorobenzene	1.07	6.2 UG/KG	ND	UG/KG	
Chloroethane	1.71	6.2 UG/KG	ND	UG/KG	
Chloroform	1.61	6.2 UG/KG	ND	UG/KG	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA003-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6454.005
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/5/00	DATE RECEIVED :	12/6/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:16

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.68	6.2 UG/KG	ND UG/KG	
cis-1,2-Dichloroethene	1.47	6.2 UG/KG	ND UG/KG	
cis-1,3-Dichloropropene	1.15	6.2 UG/KG	ND UG/KG	
Dibromochloromethane	2.08	6.2 UG/KG	ND UG/KG	
Dibromomethane	1.50	6.2 UG/KG	ND UG/KG	
Dichlorodifluoromethane	1.99	6.2 UG/KG	ND UG/KG	
Ethyl benzene	1.06	6.2 UG/KG	ND UG/KG	
Hexachlorobutadiene	2.93	6.2 UG/KG	ND UG/KG	
Isopropylbenzene	1.10	6.2 UG/KG	ND UG/KG	
m/p-xylene	1.23	6.2 UG/KG	ND UG/KG	
Methyl tert-butyl ether	1.24	6.2 UG/KG	ND UG/KG	
Methylene chloride	2.26	6.2 UG/KG	ND UG/KG	
n-Butylbenzene	2.18	6.2 UG/KG	ND UG/KG	
n-Propylbenzene	1.02	6.2 UG/KG	ND UG/KG	
Naphthalene	3.80	6.2 UG/KG	ND UG/KG	
o-Xylene	1.00	6.2 UG/KG	ND UG/KG	
p-Isopropyltoluene	1.63	6.2 UG/KG	ND UG/KG	
sec-Butylbenzene	1.20	6.2 UG/KG	ND UG/KG	
Styrene	1.26	6.2 UG/KG	ND UG/KG	
tert-Butylbenzene	1.03	6.2 UG/KG	ND UG/KG	
Tetrachloroethene	0.931	6.2 UG/KG	ND UG/KG	
Toluene	1.24	6.2 UG/KG	ND UG/KG	
trans-1,2-Dichloroethene	1.43	6.2 UG/KG	ND UG/KG	
trans-1,3-Dichloropropene	1.17	6.2 UG/KG	ND UG/KG	
Trichloroethene	1.23	6.2 UG/KG	ND UG/KG	
Trichlorofluoromethane	1.95	6.2 UG/KG	ND UG/KG	
Vinyl chloride	1.71	6.2 UG/KG	ND UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	62 UG/KG	80 - 120	96
4-Bromofluorobenzene	62 UG/KG	74 - 121	95
Dibromofluoromethane	62 UG/KG	80 - 120	97
Toluene-d8	62 UG/KG	81 - 117	98

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	WSAICTA003-01
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6454.005
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/5/00	DATE RECEIVED	:	12/6/00
SAMPLE MATRIX	:	SOIL	PRINTED ON	:	1/19/2001 16:16

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :GV087A	PREP BLANK ID :GVBLK087	LCS ID :GVLCS087
MS ID :6454.004MS	MSD ID :6454.004MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: BSAICTA001-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

% MOISTURE	: 15.08	ANALYST	: JK
CONTAINER ID	: B	DATE ANALYZED	: 12/11/00
INSTRUMENT FILE	: G2954.D	INSTRUMENT ID	: G-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 18:20

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	1.56	5.9 UG/KG	ND	UG/KG	
1,1,1-Trichloroethane	1.40	5.9 UG/KG	ND	UG/KG	
1,1,2,2-Tetrachloroethane	4.57	5.9 UG/KG	ND	UG/KG	
1,1,2-Trichloroethane	1.26	5.9 UG/KG	ND	UG/KG	
1,1-Dichloroethane	1.46	5.9 UG/KG	ND	UG/KG	
1,1-Dichloroethene	1.41	5.9 UG/KG	ND	UG/KG	
1,1-Dichloropropene	1.20	5.9 UG/KG	ND	UG/KG	
1,2,3-Trichlorobenzene	1.51	5.9 UG/KG	ND	UG/KG	
1,2,3-Trichloropropane	5.00	5.9 UG/KG	ND	UG/KG	
1,2,4-Trichlorobenzene	1.43	5.9 UG/KG	ND	UG/KG	
1,2,4-Trimethylbenzene	1.06	5.9 UG/KG	ND	UG/KG	
1,2-Dibromo-3-chloropropane	4.06	5.9 UG/KG	ND	UG/KG	
1,2-Dibromoethane (EDB)	1.53	5.9 UG/KG	ND	UG/KG	
1,2-Dichlorobenzene	1.21	5.9 UG/KG	ND	UG/KG	
1,2-Dichloroethane	1.75	5.9 UG/KG	ND	UG/KG	
1,2-Dichloropropane	1.41	5.9 UG/KG	ND	UG/KG	
1,3,5-Trimethylbenzene	0.995	5.9 UG/KG	ND	UG/KG	
1,3-Dichlorobenzene	0.989	5.9 UG/KG	ND	UG/KG	
1,3-Dichloropropane	2.51	5.9 UG/KG	ND	UG/KG	
1,4-Dichlorobenzene	0.972	5.9 UG/KG	ND	UG/KG	
1-Chlorohexane	1.43	5.9 UG/KG	ND	UG/KG	
2,2-Dichloropropane	1.46	5.9 UG/KG	ND	UG/KG	
2-Chlorotoluene	0.934	5.9 UG/KG	ND	UG/KG	
4-Chlorotoluene	0.879	5.9 UG/KG	ND	UG/KG	
Benzene	1.42	5.9 UG/KG	ND	UG/KG	
Bromobenzene	1.64	5.9 UG/KG	ND	UG/KG	
Bromochloromethane	1.54	5.9 UG/KG	ND	UG/KG	
Bromodichloromethane	1.17	5.9 UG/KG	ND	UG/KG	
Bromoform	1.95	5.9 UG/KG	ND	UG/KG	
Bromomethane	1.90	5.9 UG/KG	ND	UG/KG	
Carbon tetrachloride	1.32	5.9 UG/KG	ND	UG/KG	
Chlorobenzene	1.02	5.9 UG/KG	ND	UG/KG	
Chloroethane	1.62	5.9 UG/KG	ND	UG/KG	
Chloroform	1.53	5.9 UG/KG	ND	UG/KG	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: BSAICTA001-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.59	5.9 UG/KG	ND UG/KG	
cis-1,2-Dichloroethene	1.39	5.9 UG/KG	ND UG/KG	
cis-1,3-Dichloropropene	1.09	5.9 UG/KG	ND UG/KG	
Dibromochloromethane	1.97	5.9 UG/KG	ND UG/KG	
Dibromomethane	1.42	5.9 UG/KG	ND UG/KG	
Dichlorodifluoromethane	1.89	5.9 UG/KG	ND UG/KG	
Ethyl benzene	1.00	5.9 UG/KG	ND UG/KG	
Hexachlorobutadiene	2.77	5.9 UG/KG	ND UG/KG	
Isopropylbenzene	1.04	5.9 UG/KG	ND UG/KG	
m/p-xylene	1.16	5.9 UG/KG	ND UG/KG	
Methyl tert-butyl ether	1.18	5.9 UG/KG	ND UG/KG	
Methylene chloride	2.14	5.9 UG/KG	ND UG/KG	
n-Butylbenzene	2.06	5.9 UG/KG	ND UG/KG	
n-Propylbenzene	0.969	5.9 UG/KG	ND UG/KG	
Naphthalene	3.59	5.9 UG/KG	ND UG/KG	
o-Xylene	0.949	5.9 UG/KG	ND UG/KG	
p-Isopropyltoluene	1.54	5.9 UG/KG	ND UG/KG	
sec-Butylbenzene	1.13	5.9 UG/KG	ND UG/KG	
Styrene	1.19	5.9 UG/KG	ND UG/KG	
tert-Butylbenzene	0.974	5.9 UG/KG	ND UG/KG	
Tetrachloroethene	0.882	5.9 UG/KG	ND UG/KG	
Toluene	1.17	5.9 UG/KG	ND UG/KG	
trans-1,2-Dichloroethene	1.35	5.9 UG/KG	ND UG/KG	
trans-1,3-Dichloropropene	1.11	5.9 UG/KG	ND UG/KG	
Trichloroethene	1.16	5.9 UG/KG	10 UG/KG	
Trichlorofluoromethane	1.84	5.9 UG/KG	ND UG/KG	
Vinyl chloride	1.62	5.9 UG/KG	ND UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	59 UG/KG	80 - 120	94
4-Bromofluorobenzene	59 UG/KG	74 - 121	95
Dibromofluoromethane	59 UG/KG	80 - 120	94
Toluene-d8	59 UG/KG	81 - 117	89

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: BSAICTA001-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :GV087A	PREP BLANK ID :GVBLK087	LCS ID :GVLCS087
MS ID :6454.004MS	MSD ID :6454.004MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: BSAICTA002-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6454.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/5/00	DATE RECEIVED	: 12/6/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:16

% MOISTURE	: 13.74	ANALYST	: JK
CONTAINER ID	: B	DATE ANALYZED	: 12/11/00
INSTRUMENT FILE	: G2955.D	INSTRUMENT ID	: G-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 18:50

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	1.53	5.8 UG/KG	ND	UG/KG	
1,1,1-Trichloroethane	1.38	5.8 UG/KG	ND	UG/KG	
1,1,2,2-Tetrachloroethane	4.50	5.8 UG/KG	ND	UG/KG	
1,1,2-Trichloroethane	1.24	5.8 UG/KG	ND	UG/KG	
1,1-Dichloroethane	1.44	5.8 UG/KG	ND	UG/KG	
1,1-Dichloroethene	1.39	5.8 UG/KG	ND	UG/KG	
1,1-Dichloropropene	1.18	5.8 UG/KG	ND	UG/KG	
1,2,3-Trichlorobenzene	1.48	5.8 UG/KG	ND	UG/KG	
1,2,3-Trichloropropane	4.92	5.8 UG/KG	ND	UG/KG	
1,2,4-Trichlorobenzene	1.41	5.8 UG/KG	ND	UG/KG	
1,2,4-Trimethylbenzene	1.04	5.8 UG/KG	ND	UG/KG	
1,2-Dibromo-3-chloropropane	4.00	5.8 UG/KG	ND	UG/KG	
1,2-Dibromoethane (EDB)	1.51	5.8 UG/KG	ND	UG/KG	
1,2-Dichlorobenzene	1.19	5.8 UG/KG	ND	UG/KG	
1,2-Dichloroethane	1.72	5.8 UG/KG	ND	UG/KG	
1,2-Dichloropropane	1.39	5.8 UG/KG	ND	UG/KG	
1,3,5-Trimethylbenzene	0.979	5.8 UG/KG	ND	UG/KG	
1,3-Dichlorobenzene	0.974	5.8 UG/KG	ND	UG/KG	
1,3-Dichloropropane	2.47	5.8 UG/KG	ND	UG/KG	
1,4-Dichlorobenzene	0.957	5.8 UG/KG	ND	UG/KG	
1-Chlorohexane	1.41	5.8 UG/KG	ND	UG/KG	
2,2-Dichloropropane	1.43	5.8 UG/KG	ND	UG/KG	
2-Chlorotoluene	0.920	5.8 UG/KG	ND	UG/KG	
4-Chlorotoluene	0.865	5.8 UG/KG	ND	UG/KG	
Benzene	1.40	5.8 UG/KG	ND	UG/KG	
Bromobenzene	1.61	5.8 UG/KG	ND	UG/KG	
Bromochloromethane	1.52	5.8 UG/KG	ND	UG/KG	
Bromodichloromethane	1.15	5.8 UG/KG	ND	UG/KG	
Bromoform	1.92	5.8 UG/KG	ND	UG/KG	
Bromomethane	1.87	5.8 UG/KG	ND	UG/KG	
Carbon tetrachloride	1.30	5.8 UG/KG	ND	UG/KG	
Chlorobenzene	1.00	5.8 UG/KG	ND	UG/KG	
Chloroethane	1.60	5.8 UG/KG	ND	UG/KG	
Chloroform	1.50	5.8 UG/KG	ND	UG/KG	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	BSAICTA002-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6454.007
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/5/00	DATE RECEIVED :	12/6/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:16

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.57	5.8 UG/KG	ND UG/KG	
cis-1,2-Dichloroethene	1.37	5.8 UG/KG	ND UG/KG	
cis-1,3-Dichloropropene	1.07	5.8 UG/KG	ND UG/KG	
Dibromochloromethane	1.94	5.8 UG/KG	ND UG/KG	
Dibromomethane	1.40	5.8 UG/KG	ND UG/KG	
Dichlorodifluoromethane	1.86	5.8 UG/KG	ND UG/KG	
Ethyl benzene	0.988	5.8 UG/KG	ND UG/KG	
Hexachlorobutadiene	2.73	5.8 UG/KG	ND UG/KG	
Isopropylbenzene	1.03	5.8 UG/KG	ND UG/KG	
m/p-xylene	1.15	5.8 UG/KG	ND UG/KG	
Methyl tert-butyl ether	1.16	5.8 UG/KG	ND UG/KG	
Methylene chloride	2.11	5.8 UG/KG	ND UG/KG	
n-Butylbenzene	2.03	5.8 UG/KG	ND UG/KG	
n-Propylbenzene	0.954	5.8 UG/KG	ND UG/KG	
Naphthalene	3.54	5.8 UG/KG	ND UG/KG	
o-Xylene	0.935	5.8 UG/KG	ND UG/KG	
p-Isopropyltoluene	1.52	5.8 UG/KG	ND UG/KG	
sec-Butylbenzene	1.12	5.8 UG/KG	ND UG/KG	
Styrene	1.17	5.8 UG/KG	ND UG/KG	
tert-Butylbenzene	0.958	5.8 UG/KG	ND UG/KG	
Tetrachloroethene	0.869	5.8 UG/KG	ND UG/KG	
Toluene	1.16	5.8 UG/KG	ND UG/KG	
trans-1,2-Dichloroethene	1.33	5.8 UG/KG	ND UG/KG	
trans-1,3-Dichloropropene	1.09	5.8 UG/KG	ND UG/KG	
Trichloroethene	1.14	5.8 UG/KG	10 UG/KG	
Trichlorofluoromethane	1.81	5.8 UG/KG	ND UG/KG	
Vinyl chloride	1.59	5.8 UG/KG	ND UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	58 UG/KG	80 - 120	95
4-Bromofluorobenzene	58 UG/KG	74 - 121	95
Dibromofluoromethane	58 UG/KG	80 - 120	94
Toluene-d8	58 UG/KG	81 - 117	89

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	BSAICTA002-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6454.007
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/5/00	DATE RECEIVED :	12/6/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:16

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :GV087A	PREP BLANK ID :GVBLK087	LCS ID :GVLCS087
MS ID :6454.004MS	MSD ID :6454.004MSD	

SAIC International Corporation ® An Employee Owned Company

Chain of Custody Number	NAS Fort Worth JRB, Texas Project Manager (Print)	Field Team Leader (Print)	Laboratory
S00- 376	Don Ficklen	David Lowak	PDP Analytical Services
Contractor	**Project Name**	**Sampler's Name (Print)**	**Laboratory Contract Number**
SAIC	AOC 20 S.I. – NAS FT. WORTH JRB	David Lowak	4400032539
Contract Number / Delivery Order	**NAS Fort Worth JRB, Texas Site Number**	**Sampler's Signature**	**ANALYSES REQUESTED**
F41624-00-D-8030/0007	AOC 20		

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060	E160.2	9056	SM2320	7060	9056	MEE		
1	TB120800	TB1	WQ	NA	00.0	00.0	08 DEC 00	0813	001A	2	X									
2	EB120800	EB1	WQ	BP	00.0	00.0	08 DEC 00	0813	011A	10	X	X	X	X	X	X	X	X		
3	W156-01	N1	WG	BP	00.0	00.0	08 DEC 00	0859	011A	10	X	X	X	X	X	X	X	X		
4	HM113-01	N1	WG	BP	00.0	00.0	08 DEC 00	1015	011A	10	X	X	X	X	X	X	X	X		
5	HM112-01	N1	WG	BP	00.0	00.0	08 DEC 00	1121	001A	10	X	X	X	X	X	X	X	X		
6	HM112-02	N1	WG	BP	00.0	00.0	08 DEC 00	1135	001A	10	X	X	X	X	X	X	X	X		
7	HM110-01	N1	WG	BP	00.0	00.0	08 DEC 00	1232	001A	10	X	X	X	X	X	X	X	X		
8	WHGLTA302-01	N1	WG	B	00.0	00.0	08 DEC 00	1543	001A	10	X	X	X	X	X	X	X	X		

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
[signature]	12-8-00 1845	R. Brown	12/11/00 9:30
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time

PROTOCOL (circle one): HAZWRAP (EPA) OTHER

QC LEVEL (circle one): 1 2 (3) 4 5

FOR LABORATORY USE ONLY

CONDITIONS OF SAMPLES UPON RECEIPT

CHAIN OF CUSTODY	Y	N	ICE
REQUEST FOR ANAL	Y	N	TEMP
CUSTODY SEAL	Y	N	pH

SAMPLE CONDITION

Sampled Shipped Via (circle one): UPS (FED-EX) AIRBORNE BUS HAND OTHER

Waybill Number: 823100396342

REMARKS:

SW8260-VOC
SW9060-TOC
E160.2 - TSS
SW9056 - Chloride, ~~sulfate~~
SM2320 - Alkalinity
SW 7060 - Arsenic
SW 9056 - sulfate

000003

689 487

PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6466	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received eight (8) samples on 12/11/00. These samples were scheduled for a 21 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No.8231-0039-6342. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

ALKALINITY

For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

CHLORIDE

Chloride concentrations for samples 6466.003 and 6466.008 exceeded the linear calibration range of the instrument and required a dilution. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

METALS – GFAA

All samples were Non-Detect for arsenic. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

DISSOLVED GASES

Sample 6466.008 required a dilution because the target analytes exceeded the upper linear range of the instrument. The initial analysis and the dilution did not correlate because the initial analysis concentrations so greatly exceeded the upper linear range (i.e. 65 ug/L) of the instrument. For this parameter, no analytical problems were encountered with the analysis of these samples.

PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6466	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

All Quality Control (QC) samples met acceptance limits.

ANIONS

Sample 6466.005 and 6466.006 required a dilution because sulfate exceeded the upper linear range of the instrument. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

TOC

For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

Samples 6466.001, 6466.002, 6466.003, 6466.004, 6466.005, 6466.006, 6466.008 displayed surrogate recoveries slightly above the normal acceptance limits. The samples could not be reanalyzed because of holding time considerations.

Sample 6466.007 was analyzed outside method holding times. The sample did contain a elevated level of Trichloroethene. The sample was screened within the analytical holding time and the concentration of Trichloroethene in the screen sample and the analytical acquisition were comparable. The screening data, analytical quantitation report, has been included in the raw data portion of the package.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. All other Quality Control (QC) samples met acceptance limits

The gases for the Initial Calibration Verification (ICVB10401) were above the acceptance limits. However, non of these compounds were detected in the samples.

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:36

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	EB120800	W156-01	HM113-01	HM112-01
SAMPLE ID	6466.002	6466.003	6466.004	6466.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	10.0	294	140	306
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
DILUTION	1	1	1	1
QC BATCH ID	ALK046.	ALK046.	ALK046.	ALK046.
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK046	ALKBLK046	ALKBLK046	ALKBLK046
LCS ID	ALKLCS046	ALKLCS046	ALKLCS046	ALKLCS046
LCSD ID	ALKLCS046D	ALKLCS046D	ALKLCS046D	ALKLCS046D
MS ID				
MSD ID				
DUP ID	6462.002DUP1	6462.002DUP1	6462.002DUP1	6462.002DUP1

689 491

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/18/2000 13:36

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	HM112-02	HM110-02	WHGLTA302-01	EB120700DUP1
SAMPLE ID	6466.006	6466.007	6466.008	6462.002DUP1
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/7/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/8/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	308	328	460	34.0
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	J
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
DILUTION	1	1	1	1
QC BATCH ID	ALK046.	ALK046.	ALK046.	ALK046.
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK046	ALKBLK046	ALKBLK046	ALKBLK046
LCS ID	ALKLCS046	ALKLCS046	ALKLCS046	ALKLCS046
LCSD ID	ALKLCS046D	ALKLCS046D	ALKLCS046D	ALKLCS046D
MS ID				
MSD ID				
DUP ID	6462.002DUP1	6462.002DUP1	6462.002DUP1	6462.002DUP1

PDP Analytical Services
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LABDRATDRY REPDRT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/28/2000	15:12

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	EB120800	W156-01	W156-01DL	HM113-01
SAMPLE ID	6466.002	6466.003	6466.003DL1	6466.004
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHDD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATIDN LIMIT	0.2	0.2	0.4	0.2
RESULTS	ND	31.2	23.1	3.63
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER		E		
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTIDN	1	1	2	1
INSTRUMENT FILE	122600B1.D14	122600B1.D15	122600B1.D23	122600B1.D16
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	ICLCS02
LCSD ID				
MS ID	6466.004MS	6466.004MS	6466.004MS	6466.004MS
MSD ID	6466.004MSD	6466.004MSD	6466.004MSD	6466.004MSD
DUP ID				

689.493

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/28/2000 15:12

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	HM112-01	HM112-02	HM110-02	WHGLTA302-01
SAMPLE ID	6466.005	6466.006	6466.007	6466.008
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	1
RESULTS	19.3	19.0	9.67	18.2
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	1	1	1	5
INSTRUMENT FILE	122600B1.D17	122600B1.D19	122600B1.D20	122600B1.D21
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	ICLCS02
LCSD ID				
MS ID	6466.004MS	6466.004MS	6466.004MS	6466.004MS
MSD ID	6466.004MSD	6466.004MSD	6466.004MSD	6466.004MSD
DUP ID				

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/28/2000 15:12

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	HM113-01MS	HM113-01MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6466.004MS	6466.004MSD	ICBLK02	ICLCS02
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/8/00	12/8/00		
DATE RECEIVED	12/11/00	12/11/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	4.28	4.22	ND	0.923
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122600B1.D26	122600B1.D27	122600B1.D10	122600B1.D13
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02		
LCSD ID				
MS ID		6466.004MS		
MSD ID				
DUP ID				

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380
PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB120800
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.002
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/11/00
DATE SAMPLED	: 12/8/00	PRINTED ON	: 1/5/2001 16:53
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380
PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W156-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.003
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/11/00
DATE SAMPLED	: 12/8/00	PRINTED ON	: 1/5/2001 16:53
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

689 497

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380
PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM113-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.004
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/11/00
DATE SAMPLED	: 12/8/00	PRINTED ON	: 1/5/2001 16:53
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380
PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.005
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/11/00
DATE SAMPLED	: 12/8/00	PRINTED ON	: 1/5/2001 16:53
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

689 499

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PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.006
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/11/00
DATE SAMPLED	: 12/8/00	PRINTED ON	: 1/5/2001 16:53
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380
PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM110-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.007
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/11/00
DATE SAMPLED	: 12/8/00	PRINTED ON	: 1/5/2001 16:53
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

689 501

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380
PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME : SAIC
PROJECT NAME : CARSWELL
PROJECT NUMBER : AOC 20 S.I.
DATE SAMPLED : 12/8/00
SAMPLE MATRIX : WATER

CLIENT SAMPLE ID : WHGLTA302-01
LAB SAMPLE ID : 6466.008
DATE RECEIVED : 12/11/00
PRINTED ON : 1/5/2001 16:53
% MOISTURE :

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/12/00	12/12/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1077				

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: E8120800
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08136.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:57		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	5.6	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

689 503

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: W156-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08137.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 17:05		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	0.53	UG/L	R
Methane	0.856	5.0 UG/L	9.0	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM113-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:09

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08138.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 17:12		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	41	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	48	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002	PREP BLANK ID :MEEBLK002	LCS ID :MEELCS001
LCSD ID :MEELCS001D		

689 505

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08139.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 17:19		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	5.3	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08140.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 17:27		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	4.8	UG/L	J

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCSD01D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM110-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 1
INSTRUMENT FILE	: C08141.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 17:35		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	5.6	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WHGLTA302-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: RJS	CONTAINER ID	: A
DATE ANALYZED	: 12/11/00	DILUTION	: 10
INSTRUMENT FILE	: C08143.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 17:54		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	50 UG/L	56	UG/L	
Ethene	6.35	50 UG/L	280	UG/L	
Methane	8.56	50 UG/L	24000	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE002 PREP BLANK ID :MEEBLK002 LCS ID :MEELCS001

LCSD ID :MEELCS001D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WHGLTA302-01DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.008DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 1050
INSTRUMENT FILE	: C08231.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:28		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	596	5200 UG/L	ND	UG/L	
Ethene	667	5200 UG/L	ND	UG/L	
Methane	899	5200 UG/L	5600	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE004 PREP BLANK ID :MEEBLK004 LCS ID :MEELCS003

LCSD ID :MEELCS003D

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	:	SAIC	PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	:	CARSWELL	PRINTED ON	:	12/28/2000 13:52

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	EB120800	W156-01	HM113-01	HM112-01
SAMPLE ID	6466.002	6466.003	6466.004	6466.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	ND	5.8	ND	5.3
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122600B1.D14	122600B1.D15	122600B1.D16	122600B1.D17
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	ICLCS02
LCSD ID				
MS ID	6466.004MS	6466.004MS	6466.004MS	6466.004MS
MSD ID	6466.004MSD	6466.004MSD	6466.004MSD	6466.004MSD
DUP ID				

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/28/2000	13:52

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	HM112-02	HM110-02	WHGLTA302-01	HM113-01MS
SAMPLE ID	6466.006	6466.007	6466.008	6466.004MS
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	5.2	1.9	ND	0.71
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122600B1.D19	122600B1.D20	122600B1.D21	122600B1.D26
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	ICLCS02
LCSD ID				
MS ID	6466.004MS	6466.004MS	6466.004MS	
MSD ID	6466.004MSD	6466.004MSD	6466.004MSD	
DUP ID				

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/28/2000	13:52

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	HM113-01MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6466.004MSD	ICBLK02	ICLCS02
SAMPLE MATRIX	WATER		
DATE SAMPLED	12/8/00		
DATE RECEIVED	12/11/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1
RESULTS	0.73	ND	0.93
UNITS	MG/L	MG/L	MG/L
QUALIFIER			
ANALYST	GSR	GSR	GSR
CONTAINER ID			
DATE ANALYZED	12/27/00	12/27/00	12/27/00
DILUTION	1	1	1
INSTRUMENT FILE	122600B1.D27	122600B1.D10	122600B1.D13
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02
PRE-PREP BLANK ID			
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02		
LCSD ID			
MS ID	6466.004MS		
MSD ID			
DUP ID			

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/28/2000	13:52

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	EB120800	W156-01	HM113-01	HM112-01
SAMPLE ID	6466.002	6466.003	6466.004	6466.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	ND	35.7	5.27	105
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				E
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122600B1.D14	122600B1.D15	122600B1.D16	122600B1.D17
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	ICLCS02
LCSD ID				
MS ID	6466.004MS	6466.004MS	6466.004MS	6466.004MS
MSD ID	6466.004MSD	6466.004MSD	6466.004MSD	6466.004MSD
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/28/2000	13:52

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	HM112-01DL	HM112-02	HM112-02DL	HM110-02
SAMPLE ID	6466.005DL1	6466.006	6466.006DL1	6466.007
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	5	0.5	5	0.5
RESULTS	86.4	103	90.7	34.3
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER		E		
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	10	1	10	1
INSTRUMENT FILE	122600B1.D24	122600B1.D19	122600B1.D25	122600B1.D20
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	ICLCS02
LCSD ID				
MS ID	6466.004MS	6466.004MS	6466.004MS	6466.004MS
MSD ID	6466.004MSD	6466.004MSD	6466.004MSD	6466.004MSD
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/28/2000	13:52

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	WHGLTA302-01	HM113-01MS	HM113-01MSD	PREP BLANK
SAMPLE ID	6466.008	6466.004MS	6466.004MSD	ICBLK02
SAMPLE MATRIX	WATER	WATER	WATER	
DATE SAMPLED	12/8/00	12/8/00	12/8/00	
DATE RECEIVED	12/11/00	12/11/00	12/11/00	
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	2.5	0.5	0.5	0.5
RESULTS	55.1	6.75	6.72	ND
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/27/00	12/27/00	12/27/00	12/27/00
DILUTION	5	1	1	1
INSTRUMENT FILE	122600B1.D21	122600B1.D26	122600B1.D27	122600B1.D10
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC02	IC02	IC02	IC02
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK02	ICBLK02	ICBLK02	ICBLK02
LCS ID	ICLCS02	ICLCS02	ICLCS02	
LCSD ID				
MS ID	6466.004MS		6466.004MS	
MSD ID	6466.004MSD			
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	:	SAIC	PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	:	CARSWELL	PRINTED ON	:	12/15/2000 13:55

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB120800	W156-01	HM113-01	HM112-01
SAMPLE ID	6466.002	6466.003	6466.004	6466.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	1.5	7.3	6.2	7.9
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID	B	B	B	B
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059	TOCL059	TOCL059	TOCL059
LCSD ID	TOCL059D	TOCL059D	TOCL059D	TOCL059D
MS ID	6462.002MS	6462.002MS	6462.002MS	6462.002MS
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	6462.002MSD
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/15/2000	13:55

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	HM112-02	HM110-02	WHGLTA302-01	EB120700MS
SAMPLE ID	6466.006	6466.007	6466.008	6462.002MS
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/7/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/8/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	7.5	6.1	12	24
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID	B	B	B	H
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-01700	A-01700	A-01700	A-01700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059	TOCL059	TOCL059	TOCL059
LCSD ID	TOCL059D	TOCL059D	TOCL059D	TOCL059D
MS ID	6462.002MS	6462.002MS	6462.002MS	
MSD ID	6462.002MSD	6462.002MSD	6462.002MSD	
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/15/2000	13:55

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB120700MSD	PREP BLANK	LAB CONTROL SAMP	LAB CONTROL SAMP
SAMPLE ID	6462.002MSD	TOCB059	TOCL059	TOCL059D
SAMPLE MATRIX	WATER			
DATE SAMPLED	12/7/00			
DATE RECEIVED	12/8/00			
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	24	ND	22.2	22.2
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID	H			
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-01700	A-01700	A-01700	A-01700
QC BATCH ID	TOC059	TOC059	TOC059	TOC059
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB059	TOCB059	TOCB059	TOCB059
LCS ID	TOCL059			
LCSD ID	TOCL059D			
MS ID	6462.002MS			
MSD ID				
DUP ID				

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:35

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	EB120800	W156-01	HM113-01	HM112-01
SAMPLE ID	6466.002	6466.003	6466.004	6466.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/8/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/11/00
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	ND	ND	15	4.0
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/12/00	12/12/00	12/12/00	12/12/00
QC BATCH ID	TSS108	TSS108	TSS108	TSS108
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK108	TSSBLK108	TSSBLK108	TSSBLK108
LCS ID	TSSLCS108	TSSLCS108	TSSLCS108	TSSLCS108
LCSD ID	TSSLCS108D	TSSLCS108D	TSSLCS108D	TSSLCS108D
DUP ID	6455.002DUP1	6455.002DUP1	6455.002DUP1	6455.002DUP1

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:35

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	HM112-02	HM110-02	WHGLTA302-01	002DUP
SAMPLE ID	6466.006	6466.007	6466.008	6455.002DUP1
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/8/00	12/8/00	12/8/00	12/6/00
DATE RECEIVED	12/11/00	12/11/00	12/11/00	12/6/00
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	ND	31	650	28
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	
DATE ANALYZED	12/12/00	12/12/00	12/12/00	12/12/00
QC BATCH ID	TSS108	TSS108	TSS108	TSS108
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK108	TSSBLK108	TSSBLK108	TSSBLK108
LCS ID	TSSLCS108	TSSLCS108	TSSLCS108	TSSLCS108
LCSD ID	TSSLCS108D	TSSLCS108D	TSSLCS108D	TSSLCS108D
DUP ID	6455.002DUP1	6455.002DUP1	6455.002DUP1	6455.002DUP1

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB120800
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

ANALYST	: JC	CONTAINER ID	:
DATE ANALYZED	: 12/22/00	DILUTION	: 1
INSTRUMENT FILE	: B9967.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:13

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB120800
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND	UG/L
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L
Dibromomethane	0.156	1.0 UG/L	ND	UG/L
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L
m/p-xylene	0.080	1.0 UG/L	ND	UG/L
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L
Methylene chloride	0.186	2.0 UG/L	ND	UG/L
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L
Naphthalene	0.117	1.0 UG/L	ND	UG/L
o-Xylene	0.067	1.0 UG/L	ND	UG/L
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L
Styrene	0.092	1.0 UG/L	ND	UG/L
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L
Tetrachloroethene	0.088	1.0 UG/L	ND	UG/L
Toluene	0.099	1.0 UG/L	ND	UG/L
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND	UG/L
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L
Trichloroethene	0.096	1.0 UG/L	ND	UG/L
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	134
4-Bromofluorobenzene	10 UG/L	86 - 115	108
Dibromofluoromethane	10 UG/L	86 - 118	136
Toluene-d8	10 UG/L	88 - 110	96

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM113-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	8.20	100 UG/L	ND UG/L	
cis-1,2-Dichloroethene	5.63	50 UG/L	79 UG/L	
cis-1,3-Dichloropropene	8.09	50 UG/L	ND UG/L	
Dibromochloromethane	8.29	50 UG/L	ND UG/L	
Dibromomethane	7.80	50 UG/L	ND UG/L	
Dichlorodifluoromethane	13.8	100 UG/L	ND UG/L	
Ethyl benzene	3.11	50 UG/L	ND UG/L	
Hexachlorobutadiene	5.19	50 UG/L	ND UG/L	
Isopropylbenzene	4.00	50 UG/L	ND UG/L	
m/p-xylene	4.00	50 UG/L	ND UG/L	
Methyl tert-butyl ether	9.32	100 UG/L	ND UG/L	
Methylene chloride	9.32	100 UG/L	ND UG/L	
n-Butylbenzene	6.94	50 UG/L	ND UG/L	
n-Propylbenzene	3.36	50 UG/L	ND UG/L	
Naphthalene	5.87	50 UG/L	ND UG/L	
o-Xylene	3.36	50 UG/L	ND UG/L	
p-Isopropyltoluene	4.20	50 UG/L	ND UG/L	
sec-Butylbenzene	4.23	50 UG/L	ND UG/L	
Styrene	4.60	50 UG/L	ND UG/L	
tert-Butylbenzene	4.20	50 UG/L	ND UG/L	
Tetrachloroethene	4.42	50 UG/L	ND UG/L	
Toluene	4.95	50 UG/L	ND UG/L	
trans-1,2-Dichloroethene	5.70	50 UG/L	29 UG/L	J
trans-1,3-Dichloropropene	5.80	50 UG/L	ND UG/L	
Trichloroethene	4.80	50 UG/L	520 UG/L	
Trichlorofluoromethane	8.50	50 UG/L	ND UG/L	
Vinyl chloride	5.12	50 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	500 UG/L	80 - 120	121
4-Bromofluorobenzene	500 UG/L	86 - 115	109
Dibromofluoromethane	500 UG/L	86 - 118	127
Toluene-d8	500 UG/L	88 - 110	97

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: HM113-01	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6466.004	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/8/00		DATE RECEIVED	: 12/11/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 1/4/2001	15:06

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : V83	PREP BLANK ID : VBLK83	LCS ID : VLCS83
MS ID : 6466.003MS	MSD ID : 6466.003MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

ANALYST	: JC	CONTAINER ID	:
DATE ANALYZED	: 12/22/00	DILUTION	: 100
INSTRUMENT FILE	: B9971.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 19:47

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	11.4	100 UG/L	ND UG/L	
1,1,1-Trichloroethane	8.78	100 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	22.8	100 UG/L	ND UG/L	
1,1,2-Trichloroethane	16.8	100 UG/L	ND UG/L	
1,1-Dichloroethane	11.7	100 UG/L	ND UG/L	
1,1-Dichloroethene	10.6	100 UG/L	ND UG/L	
1,1-Dichloropropene	10.9	100 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	11.4	100 UG/L	ND UG/L	
1,2,3-Trichloropropane	23.1	100 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	11.6	100 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	6.02	100 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	33.9	100 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	11.4	100 UG/L	ND UG/L	
1,2-Dichlorobenzene	10.7	100 UG/L	ND UG/L	
1,2-Dichloroethane	13.9	100 UG/L	ND UG/L	
1,2-Dichloropropane	19.9	100 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	8.08	100 UG/L	ND UG/L	
1,3-Dichlorobenzene	11.3	100 UG/L	ND UG/L	
1,3-Dichloropropane	14.2	100 UG/L	ND UG/L	
1,4-Dichlorobenzene	8.83	100 UG/L	ND UG/L	
1-Chlorohexane	16.1	100 UG/L	ND UG/L	
2,2-Dichloropropane	19.4	100 UG/L	ND UG/L	
2-Chlorotoluene	10.2	100 UG/L	ND UG/L	
4-Chlorotoluene	10.8	100 UG/L	ND UG/L	
Benzene	8.97	100 UG/L	ND UG/L	
Bromobenzene	15.3	100 UG/L	ND UG/L	
Bromochloromethane	17.0	100 UG/L	ND UG/L	
Bromodichloromethane	14.5	100 UG/L	ND UG/L	
Bromoform	11.9	100 UG/L	ND UG/L	
Bromomethane	14.9	200 UG/L	ND UG/L	
Carbon tetrachloride	9.74	100 UG/L	ND UG/L	
Chlorobenzene	10.2	100 UG/L	ND UG/L	
Chloroethane	12.2	200 UG/L	ND UG/L	
Chloroform	11.1	100 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

PARAMETER	MDL	QUANTITATION LIMIT		RESULTS		QUALIFIER
Chloromethane	16.4	200	UG/L	ND	UG/L	
cis-1,2-Dichloroethene	11.2	100	UG/L	330	UG/L	
cis-1,3-Dichloropropene	16.2	100	UG/L	ND	UG/L	
Dibromochloromethane	16.6	100	UG/L	ND	UG/L	
Dibromomethane	15.6	100	UG/L	ND	UG/L	
Dichlorodifluoromethane	27.7	200	UG/L	ND	UG/L	
Ethyl benzene	6.21	100	UG/L	ND	UG/L	
Hexachlorobutadiene	10.4	100	UG/L	ND	UG/L	
Isopropylbenzene	8.00	100	UG/L	ND	UG/L	
m/p-xylene	8.00	100	UG/L	ND	UG/L	
Methyl tert-butyl ether	18.6	200	UG/L	ND	UG/L	
Methylene chloride	18.6	200	UG/L	ND	UG/L	
n-Butylbenzene	13.9	100	UG/L	ND	UG/L	
n-Propylbenzene	6.72	100	UG/L	ND	UG/L	
Naphthalene	11.7	100	UG/L	ND	UG/L	
o-Xylene	6.72	100	UG/L	ND	UG/L	
p-Isopropyltoluene	8.40	100	UG/L	ND	UG/L	
sec-Butylbenzene	8.45	100	UG/L	ND	UG/L	
Styrene	9.20	100	UG/L	ND	UG/L	
tert-Butylbenzene	8.40	100	UG/L	ND	UG/L	
Tetrachloroethene	8.83	100	UG/L	ND	UG/L	
Toluene	9.89	100	UG/L	ND	UG/L	
trans-1,2-Dichloroethene	11.4	100	UG/L	ND	UG/L	
trans-1,3-Dichloropropene	11.6	100	UG/L	ND	UG/L	
Trichloroethene	9.60	100	UG/L	5200	UG/L	
Trichlorofluoromethane	17.0	100	UG/L	ND	UG/L	
Vinyl chloride	10.2	100	UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED		QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	1,000	UG/L	80 - 120	118
4-Bromofluorobenzene	1,000	UG/L	86 - 115	109
Dibromofluoromethane	1,000	UG/L	86 - 118	125
Toluene-d8	1,000	UG/L	88 - 110	97

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-01		
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.005		
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B		
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00		
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001	15:06	

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : V83	PREP BLANK ID : VBLK83	LCS ID : VLCS83
MS ID : 6466.003MS	MSD ID : 6466.003MSD	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

ANALYST	: JC	CONTAINER ID	:
DATE ANALYZED	: 12/22/00	DILUTION	: 100
INSTRUMENT FILE	: B9972.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 20:24

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	11.4	100 UG/L	ND UG/L	
1,1,1-Trichloroethane	8.78	100 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	22.8	100 UG/L	ND UG/L	
1,1,2-Trichloroethane	16.8	100 UG/L	ND UG/L	
1,1-Dichloroethane	11.7	100 UG/L	ND UG/L	
1,1-Dichloroethene	10.6	100 UG/L	ND UG/L	
1,1-Dichloropropene	10.9	100 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	11.4	100 UG/L	ND UG/L	
1,2,3-Trichloropropane	23.1	100 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	11.6	100 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	6.02	100 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	33.9	100 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	11.4	100 UG/L	ND UG/L	
1,2-Dichlorobenzene	10.7	100 UG/L	ND UG/L	
1,2-Dichloroethane	13.9	100 UG/L	ND UG/L	
1,2-Dichloropropane	19.9	100 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	8.08	100 UG/L	ND UG/L	
1,3-Dichlorobenzene	11.3	100 UG/L	ND UG/L	
1,3-Dichloropropane	14.2	100 UG/L	ND UG/L	
1,4-Dichlorobenzene	8.83	100 UG/L	ND UG/L	
1-Chlorohexane	16.1	100 UG/L	ND UG/L	
2,2-Dichloropropane	19.4	100 UG/L	ND UG/L	
2-Chlorotoluene	10.2	100 UG/L	ND UG/L	
4-Chlorotoluene	10.8	100 UG/L	ND UG/L	
Benzene	8.97	100 UG/L	ND UG/L	
Bromobenzene	15.3	100 UG/L	ND UG/L	
Bromochloromethane	17.0	100 UG/L	ND UG/L	
Bromodichloromethane	14.5	100 UG/L	ND UG/L	
Bromoform	11.9	100 UG/L	ND UG/L	
Bromomethane	14.9	200 UG/L	ND UG/L	
Carbon tetrachloride	9.74	100 UG/L	ND UG/L	
Chlorobenzene	10.2	100 UG/L	ND UG/L	
Chloroethane	12.2	200 UG/L	ND UG/L	
Chloroform	11.1	100 UG/L	ND UG/L	

689-529

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM112-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	16.4	200 UG/L	ND UG/L	
cis-1,2-Dichloroethene	11.2	100 UG/L	340 UG/L	
cis-1,3-Dichloropropene	16.2	100 UG/L	ND UG/L	
Dibromochloromethane	16.6	100 UG/L	ND UG/L	
Dibromomethane	15.6	100 UG/L	ND UG/L	
Dichlorodifluoromethane	27.7	200 UG/L	ND UG/L	
Ethyl benzene	6.21	100 UG/L	ND UG/L	
Hexachlorobutadiene	10.4	100 UG/L	ND UG/L	
Isopropylbenzene	8.00	100 UG/L	ND UG/L	
m/p-xylene	8.00	100 UG/L	ND UG/L	
Methyl tert-butyl ether	18.6	200 UG/L	ND UG/L	
Methylene chloride	18.6	200 UG/L	ND UG/L	
n-Butylbenzene	13.9	100 UG/L	ND UG/L	
n-Propylbenzene	6.72	100 UG/L	ND UG/L	
Naphthalene	11.7	100 UG/L	ND UG/L	
o-Xylene	6.72	100 UG/L	ND UG/L	
p-Isopropyltoluene	8.40	100 UG/L	ND UG/L	
sec-Butylbenzene	8.45	100 UG/L	ND UG/L	
Styrene	9.20	100 UG/L	ND UG/L	
tert-Butylbenzene	8.40	100 UG/L	ND UG/L	
Tetrachloroethene	8.83	100 UG/L	ND UG/L	
Toluene	9.89	100 UG/L	ND UG/L	
trans-1,2-Dichloroethene	11.4	100 UG/L	ND UG/L	
trans-1,3-Dichloropropene	11.6	100 UG/L	ND UG/L	
Trichloroethene	9.60	100 UG/L	6500 UG/L	
Trichlorofluoromethane	17.0	100 UG/L	ND UG/L	
Vinyl chloride	10.2	100 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	1,000 UG/L	80 - 120	120
4-Bromofluorobenzene	1,000 UG/L	86 - 115	109
Dibromofluoromethane	1,000 UG/L	86 - 118	130
Toluene-d8	1,000 UG/L	88 - 110	100

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	HM112-02
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6466.006
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/8/00	DATE RECEIVED	:	12/11/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/4/2001 15:06

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : V83	PREP BLANK ID : VBLK83	LCS ID : VLCS83
MS ID : 6466.003MS	MSD ID : 6466.003MSD	

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM110-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 1/2/01	DILUTION	: 20
INSTRUMENT FILE	: B0109.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 19:05

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	2.28	20 UG/L	ND	UG/L	
1,1,1-Trichloroethane	1.76	20 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	4.56	20 UG/L	ND	UG/L	
1,1,2-Trichloroethane	3.36	20 UG/L	ND	UG/L	
1,1-Dichloroethane	2.34	20 UG/L	ND	UG/L	
1,1-Dichloroethene	2.13	20 UG/L	ND	UG/L	
1,1-Dichloropropene	2.18	20 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	2.28	20 UG/L	ND	UG/L	
1,2,3-Trichloropropane	4.62	20 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	2.32	20 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	1.20	20 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	6.78	20 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	2.28	20 UG/L	ND	UG/L	
1,2-Dichlorobenzene	2.14	20 UG/L	ND	UG/L	
1,2-Dichloroethane	2.79	20 UG/L	ND	UG/L	
1,2-Dichloropropane	3.97	20 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	1.62	20 UG/L	ND	UG/L	
1,3-Dichlorobenzene	2.26	20 UG/L	ND	UG/L	
1,3-Dichloropropane	2.85	20 UG/L	ND	UG/L	
1,4-Dichlorobenzene	1.77	20 UG/L	ND	UG/L	
1-Chlorohexane	3.21	20 UG/L	ND	UG/L	
2,2-Dichloropropane	3.89	20 UG/L	ND	UG/L	
2-Chlorotoluene	2.05	20 UG/L	ND	UG/L	
4-Chlorotoluene	2.16	20 UG/L	ND	UG/L	
Benzene	1.79	20 UG/L	ND	UG/L	
Bromobenzene	3.07	20 UG/L	ND	UG/L	
Bromochloromethane	3.40	20 UG/L	ND	UG/L	
Bromodichloromethane	2.90	20 UG/L	ND	UG/L	
Bromoform	2.37	20 UG/L	ND	UG/L	
Bromomethane	2.98	40 UG/L	ND	UG/L	
Carbon tetrachloride	1.95	20 UG/L	ND	UG/L	
Chlorobenzene	2.04	20 UG/L	ND	UG/L	
Chloroethane	2.43	40 UG/L	ND	UG/L	
Chloroform	2.22	20 UG/L	ND	UG/L	

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: HM110-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	3.28	40 UG/L	ND UG/L	
cis-1,2-Dichloroethene	2.25	20 UG/L	110 UG/L	
cis-1,3-Dichloropropene	3.23	20 UG/L	ND UG/L	
Dibromochloromethane	3.31	20 UG/L	ND UG/L	
Dibromomethane	3.12	20 UG/L	ND UG/L	
Dichlorodifluoromethane	5.54	40 UG/L	ND UG/L	
Ethyl benzene	1.24	20 UG/L	ND UG/L	
Hexachlorobutadiene	2.08	20 UG/L	ND UG/L	
Isopropylbenzene	1.60	20 UG/L	ND UG/L	
m/p-xylene	1.60	20 UG/L	ND UG/L	
Methyl tert-butyl ether	3.73	40 UG/L	ND UG/L	
Methylene chloride	3.73	40 UG/L	ND UG/L	
n-Butylbenzene	2.77	20 UG/L	ND UG/L	
n-Propylbenzene	1.34	20 UG/L	ND UG/L	
Naphthalene	2.35	20 UG/L	ND UG/L	
o-Xylene	1.34	20 UG/L	ND UG/L	
p-Isopropyltoluene	1.68	20 UG/L	ND UG/L	
sec-Butylbenzene	1.69	20 UG/L	ND UG/L	
Styrene	1.84	20 UG/L	ND UG/L	
tert-Butylbenzene	1.68	20 UG/L	ND UG/L	
Tetrachloroethene	1.77	20 UG/L	ND UG/L	
Toluene	1.98	20 UG/L	ND UG/L	
trans-1,2-Dichloroethene	2.28	20 UG/L	ND UG/L	
trans-1,3-Dichloropropene	2.32	20 UG/L	ND UG/L	
Trichloroethene	1.92	20 UG/L	540 UG/L	
Trichlorofluoromethane	3.40	20 UG/L	ND UG/L	
Vinyl chloride	2.05	20 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	200 UG/L	80 - 120	98
4-Bromofluorobenzene	200 UG/L	86 - 115	103
Dibromofluoromethane	200 UG/L	86 - 118	101
Toluene-d8	200 UG/L	88 - 110	92

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC		CLIENT SAMPLE ID	: HM110-02	
PROJECT NAME	: CARSWELL		LAB SAMPLE ID	: 6466.007	
PROJECT NUMBER	: AOC 20 S.I.		METHOD REFERENCE	: SW846-8260B	
DATE SAMPLED	: 12/8/00		DATE RECEIVED	: 12/11/00	
SAMPLE MATRIX	: WATER		PRINTED ON	: 1/4/2001	15:06

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV90	PREP BLANK ID : BVBLK90	LCS ID : BVLCS90
LCSD ID : BVLCS90D		

PDP Analytical Services
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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WHGLTA302-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

ANALYST	: JC	CONTAINER ID	:
DATE ANALYZED	: 12/22/00	DILUTION	: 50
INSTRUMENT FILE	: B9970.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 19:07

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	5.70	50 UG/L	ND	UG/L
1,1,1-Trichloroethane	4.39	50 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	11.4	50 UG/L	ND	UG/L
1,1,2-Trichloroethane	8.41	50 UG/L	ND	UG/L
1,1-Dichloroethane	5.86	50 UG/L	ND	UG/L
1,1-Dichloroethene	5.32	50 UG/L	ND	UG/L
1,1-Dichloropropene	5.44	50 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	5.70	50 UG/L	ND	UG/L
1,2,3-Trichloropropane	11.6	50 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	5.80	50 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	3.01	50 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	16.9	50 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	5.70	50 UG/L	ND	UG/L
1,2-Dichlorobenzene	5.36	50 UG/L	ND	UG/L
1,2-Dichloroethane	6.97	50 UG/L	ND	UG/L
1,2-Dichloropropane	9.94	50 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	4.04	50 UG/L	ND	UG/L
1,3-Dichlorobenzene	5.65	50 UG/L	ND	UG/L
1,3-Dichloropropane	7.13	50 UG/L	ND	UG/L
1,4-Dichlorobenzene	4.42	50 UG/L	ND	UG/L
1-Chlorohexane	8.04	50 UG/L	ND	UG/L
2,2-Dichloropropane	9.72	50 UG/L	ND	UG/L
2-Chlorotoluene	5.12	50 UG/L	ND	UG/L
4-Chlorotoluene	5.40	50 UG/L	ND	UG/L
Benzene	4.49	50 UG/L	ND	UG/L
Bromobenzene	7.67	50 UG/L	ND	UG/L
Bromochloromethane	8.51	50 UG/L	ND	UG/L
Bromodichloromethane	7.24	50 UG/L	ND	UG/L
Bromoform	5.93	50 UG/L	ND	UG/L
Bromomethane	7.45	100 UG/L	ND	UG/L
Carbon tetrachloride	4.87	50 UG/L	ND	UG/L
Chlorobenzene	5.11	50 UG/L	ND	UG/L
Chloroethane	6.09	100 UG/L	ND	UG/L
Chloroform	5.55	50 UG/L	ND	UG/L

689 535

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WHGLTA302-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	8.20	100 UG/L	ND UG/L	
cis-1,2-Dichloroethene	5.63	50 UG/L	2400 UG/L	
cis-1,3-Dichloropropene	8.09	50 UG/L	ND UG/L	
Dibromochloromethane	8.29	50 UG/L	ND UG/L	
Dibromomethane	7.80	50 UG/L	ND UG/L	
Dichlorodifluoromethane	13.8	100 UG/L	ND UG/L	
Ethyl benzene	3.11	50 UG/L	ND UG/L	
Hexachlorobutadiene	5.19	50 UG/L	ND UG/L	
Isopropylbenzene	4.00	50 UG/L	ND UG/L	
m/p-xylene	4.00	50 UG/L	ND UG/L	
Methyl tert-butyl ether	9.32	100 UG/L	ND UG/L	
Methylene chloride	9.32	100 UG/L	ND UG/L	
n-Butylbenzene	6.94	50 UG/L	ND UG/L	
n-Propylbenzene	3.36	50 UG/L	ND UG/L	
Naphthalene	5.87	50 UG/L	ND UG/L	
o-Xylene	3.36	50 UG/L	ND UG/L	
p-Isopropyltoluene	4.20	50 UG/L	ND UG/L	
sec-Butylbenzene	4.23	50 UG/L	ND UG/L	
Styrene	4.60	50 UG/L	ND UG/L	
tert-Butylbenzene	4.20	50 UG/L	ND UG/L	
Tetrachloroethene	4.42	50 UG/L	ND UG/L	
Toluene	4.95	50 UG/L	ND UG/L	
trans-1,2-Dichloroethene	5.70	50 UG/L	47 UG/L	J
trans-1,3-Dichloropropene	5.80	50 UG/L	ND UG/L	
Trichloroethene	4.80	50 UG/L	ND UG/L	
Trichlorofluoromethane	8.50	50 UG/L	ND UG/L	
Vinyl chloride	5.12	50 UG/L	150 UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	500 UG/L	80 - 120	133
4-Bromofluorobenzene	500 UG/L	86 - 115	111
Dibromofluoromethane	500 UG/L	86 - 118	136
Toluene-d8	500 UG/L	88 - 110	97

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WHGLTA302-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6466.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/8/00	DATE RECEIVED	: 12/11/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/4/2001 15:06

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : V83	PREP BLANK ID : VBLK83	LCS ID : VLCS83
MS ID : 6466.003MS	MSD ID : 6466.003MSD	

SAIC International Corporation
An Employee Owned Company

Chain of Custody Number S00- 379	NAS Fort Worth JRB, Texas Project Manager (Print) DON FICKLEN	Field Team Leader (Print) David Lowak	Laboratory PDP Analytical Services
Contractor SAIC	Project Name AOC 20 S.I. – NAS FT. WORTH JRB	Sampler's Name (Print) DAVID LOWAK	Laboratory Contract Number 4400032539
Contract Number / Delivery Order F41624-00-D-8030/0007	NAS Fort Worth JRB, Texas Site Number AOC 20	Sampler's Signature	ANALYSES REQUESTED

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060	E160.2	9056	SM2320	7060	9056	MEE		
1	TB121400-01	TB1	WQ	NA	00.0	00.0	14 DEC 00	0759	001A	2	X									
2	EB121400	EB1	WQ	BP	00.0	00.0	14 DEC 00	0759	011A	10	X	X	X	X	X	X	X	X		
3	WSAICTA002-01	N1	WG	BP	00.0	00.0	14DEC00	0949	011A	~~10~~ 10	X	X	X	X	X	X	X	X		
4	WSAICTA004-01	N1	WG	BP	28.0	29.0	14DEC00	1139	011A	10	X	X	X	X	X	X	X	X		
5	WSAICTA004-02	N1	WG	BP	34.0	35.0	14 DEC00	1235	011A	10	X	X	X	X	X	X	X	X		
6	WSAICTA004-03	N1	WG	BP	40.0	41.0	14 DEC 00	1337	011A	10	X	X	X	X	X	X	X	X		
7	TB121400-02	TB2	WQ	NA	00.0	00.0	14DEC00	1636	012B	2	X									
8	WSAICTA005-01	N1	WG	BP	23.0	24.0	14 DEC00	1636	012B	10	X	X	X	X	X	X	X	X		

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
[signature]	12-14-00 1940	[signature]	12/15/00 9:00
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time

PROTOCOL (circle one): HAZWRAP (EPA) OTHER

QC LEVEL (circle one): 1 2 (3) 4 5

FOR LABORATORY USE ONLY

CONDITIONS OF SAMPLES UPON RECEIPT

CHAIN OF CUSTODY	Y	N	ICE
REQUEST FOR ANAL	Y	N	TEMP
CUSTODY SEAL	Y	N	pH

Sampled Shipped Via (circle one): UPS (FED-EX) AIRBORNE BUS HAND OTHER

Waybill Number: 8231003964 67
8231 0039647 8

SAMPLE CONDITION

REMARKS:
SW8260 - VOC
SW9060 - TOC
E160.2 - TSS
SW9056 - Chloride
SM2320 - Alkalinity
SW7060 - Arsenic
SW9056 - Nitrate
MEE - Methane, Ethane, Ethene

* 2 coolers

689 537

689 538

Science Applications International Corporation
An Employee Owned Company

Chain of Custody Number	NAS Fort Worth JRB, Texas Project Manager (Print)	Field Team Leader (Print)	Laboratory
S00-379	DON FICKLEN	David Lowak	PDP Analytical Services
Contractor	**Project Name**	**Sampler's Name (Print)**	**Laboratory Contract Number**
SAIC	AOC 20 S.I. – NAS FT. WORTH JRB	DAVID LOWAK	4400032539
Contract Number / Delivery Order	**NAS Fort Worth JRB, Texas Site Number**	**Sampler's Signature**	**ANALYSES REQUESTED**
F41624-00-D-8030/0007	AOC 20	[signature]	

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060	E1608	9056	SM2320	7060	9056	MEE		
1	WSAICTA005-02	NI	WG	BP	27.0	28.0	14DEC00	1706	012B	10	X	X	X	X	X	X	X	X		
2	WSAICTA005-03	NI	WG	BP	33.0	34.0	14DEC00	1732	012B	10	X	X	X	X	X	X	X	X		
3																				
4																				
5																				
6																				
7																				
8																				

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	PROTOCOL (circle one)
[signature]	12-14-00 1940	R. Brown	12/15/00 9:00	HAZWRAP (EPA) OTHER
				QC LEVEL (circle one)
Relinquished By (Signature)	**Date/Time**	**Received By (Signature)**	**Date/Time**	1 2 (3) 4 5
				FOR LABORATORY USE ONLY
				CONDITIONS OF SAMPLES UPON RECEIPT
Relinquished By (Signature)	**Date/Time**	**Received By (Signature)**	**Date/Time**	CHAIN OF CUSTODY Y N ICE
				REQUEST FOR ANAL Y N TEMP
				CUSTODY SEAL Y N pH

Sampled ~~Shipped~~ Via (circle one)	Waybill Number:	SAMPLE CONDITION
UPS (FED-EX) AIRBORNE BUS HAND OTHER	823100396467 823100396478	

REMARKS:

* 2 coolers

00000007

PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6482	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received ten (10) samples on 12/15/00. These samples were scheduled for a 21 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No. 8231-0039-6467 and 8231-0039-3468. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

ALKALINITY

Alkalinity concentrations ranged from 8.0 mg/L to 852 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

ANIONS

Chloride concentrations ranged from Non-Detect (ND) to 12.1 mg/L. Nitrate concentrations ranged from Non-Detect (ND) to 1.6 mg/L. Sulfate concentrations ranged from Non-Detect (ND) to 33.7 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

The MS/MSD spike recoveries for Sulfate and Nitrate were outside acceptance limits. However, the LCS spike recoveries for Sulfate and Nitrate met acceptance criteria indicating the analytical system was in control. All other Quality Control (QC) samples met acceptance limits

DISSOLVED GASES

All samples contained detectable levels of Dissolved Gases. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

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Episode No: 6482	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

METALS – GFAA

All samples were Non-Detect (ND) for arsenic. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

TOC

TOC concentrations ranged from 1.5 mg/L to 25 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

TSS

TSS concentrations ranged from Non-Detect (ND) to 770 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

All volatile samples for this Episode were analyzed outside the method specified holding time. The majority of the samples required dilution to bring certain target analytes within the linear range of the instrument. Sample 6482.009 was analyzed at a 2 fold dilution, but Trichloroethene still exceeded the linear range of the instrument. However, the sample was not reanalyzed due to the fact the data was preliminary since the sample is to be recollected.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. For LCS BVLCS94, spike recoveries for 1,2,3-Trichlorobenzene, 1,2-Dibromo-3-chloropropane, Bromoform, Hexachlorobutadiene and Naphthalene were outside the acceptance limits. However, these target analytes were not detected in any of the samples. All other Quality Control (QC) samples met acceptance limits

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/21/2000 16:41

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	EB121400	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02
SAMPLE ID	6482.002	6482.003	6482.004	6482.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	8.00	852	384	388
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
DILUTION	1	1	1	1
QC BATCH ID	ALK047	ALK047	ALK047	ALK047
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK047	ALKBLK047	ALKBLK047	ALKBLK047
LCS ID	ALKLCS047	ALKLCS047	ALKLCS047	ALKLCS047
LCSD ID	ALKLCS047D	ALKLCS047D	ALKLCS047D	ALKLCS047D
MS ID				
MSD ID				
DUP ID	6482.002DUP1	6482.002DUP1	6482.002DUP1	6482.002DUP1

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PDP Analytical Services

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LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/21/2000	16:41

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
SAMPLE ID	6482.006	6482.008	6482.009	6482.010
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	366	360	330	328
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
DILUTION	1	1	1	1
QC BATCH ID	ALK047	ALK047	ALK047	ALK047
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK047	ALKBLK047	ALKBLK047	ALKBLK047
LCS ID	ALKLCS047	ALKLCS047	ALKLCS047	ALKLCS047
LCSD ID	ALKLCS047D	ALKLCS047D	ALKLCS047D	ALKLCS047D
MS ID				
MSD ID				
DUP ID	6482.002DUP1	6482.002DUP1	6482.002DUP1	6482.002DUP1

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LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/21/2000	16:41

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	EB121400DUP1	PREP BLANK	LAB CONTROL SAMP	LAB CONTROL SAMP
SAMPLE ID	6482.002DUP1	ALKBLK047	ALKLCS047	ALKLCS047D
SAMPLE MATRIX	WATER			
DATE SAMPLED	12/14/00			
DATE RECEIVED	12/15/00			
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	8.00	ND	514	514
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D			
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
DILUTION	1	1	1	1
QC BATCH ID	ALK047	ALK047	ALK047	ALK047
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK047	ALKBLK047	ALKBLK047	ALKBLK047
LCS ID	ALKLCS047			ALKLCS047
LCSD ID	ALKLCS047D			
MS ID				
MSD ID				
DUP ID	6482.002DUP1			

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	EB121400	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02
SAMPLE ID	6482.002	6482.003	6482.004	6482.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	ND	4.87	4.32	6.09
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D18	122800D1.D19	122800D1.D20	122800D1.D21
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03.	IC03.	IC03.	IC03.
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/29/2000 12:17

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
SAMPLE ID	6482.006	6482.008	6482.009	6482.010
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	7.14	7.04	12.1	11.6
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D22	122800D1.D26	122800D1.D27	122800D1.D28
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03.	IC03.	IC03.	IC03.
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	WSAICTA005-01MS	WSAICTA005-01MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6482.008MS	6482.008MSD	ICBLK03	ICLCS03
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/14/00	12/14/00		
DATE RECEIVED	12/15/00	12/15/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	7.95	7.94	ND	0.970
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D30	122800D1.D31	122800D1.D02	122800D1.D03
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03.	IC03.	IC03.	IC03.
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03		
LCSD ID				
MS ID		6482.008MS		
MSD ID				
DUP ID				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121400
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.002
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/15/00
DATE SAMPLED	: 12/14/00	PRINTED ON	: 12/22/2000 10:20
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA002-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.003
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/15/00
DATE SAMPLED	: 12/14/00	PRINTED ON	: 12/22/2000 10:20
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.004
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/15/00
DATE SAMPLED	: 12/14/00	PRINTED ON	: 12/22/2000 10:20
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.005
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/15/00
DATE SAMPLED	: 12/14/00	PRINTED ON	: 12/22/2000 10:21
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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PDP Analytical Services

LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.006
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/15/00
DATE SAMPLED	: 12/14/00	PRINTED ON	: 12/22/2000 10:21
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME : SAIC
PROJECT NAME : CARSWELL
PROJECT NUMBER : AOC 20 S.I.
DATE SAMPLED : 12/14/00
SAMPLE MATRIX : WATER

CLIENT SAMPLE ID : WSAICTA005-01
LAB SAMPLE ID : 6482.008
DATE RECEIVED : 12/15/00
PRINTED ON : 12/22/2000 10:21
% MOISTURE :

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME : SAIC
PROJECT NAME : CARSWELL
PROJECT NUMBER : AOC 20 S.I.
DATE SAMPLED : 12/14/00
SAMPLE MATRIX : WATER

CLIENT SAMPLE ID : WSAICTA005-02
LAB SAMPLE ID : 6482.009
DATE RECEIVED : 12/15/00
PRINTED ON : 12/22/2000 10:21
% MOISTURE :

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.010
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/15/00
DATE SAMPLED	: 12/14/00	PRINTED ON	: 12/22/2000 10:21
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/20/00	12/21/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1080				

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121400
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08221.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:43		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	ND	UG/L	
Ethene	0.635	10 UG/L	ND	UG/L	
Methane	0.856	10 UG/L	21	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA002-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08222.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:50		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	1.6	UG/L	J
Ethene	0.635	10 UG/L	3.8	UG/L	J
Methane	0.856	10 UG/L	23	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08223.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:59		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	1.5	UG/L	J
Ethene	0.635	10 UG/L	3.0	UG/L	J
Methane	0.856	10 UG/L	18	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08224.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:08		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	1.9	UG/L	J
Ethene	0.635	10 UG/L	3.0	UG/L	J
Methane	0.856	10 UG/L	18	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08225.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:17		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	1.3	UG/L	J
Ethene	0.635	10 UG/L	1.9	UG/L	J
Methane	0.856	10 UG/L	14	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08226.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:26		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	0.82	UG/L	J
Ethene	0.635	10 UG/L	1.8	UG/L	J
Methane	0.856	10 UG/L	14	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.009
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08227.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:36		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	0.66	UG/L	J
Ethene	0.635	10 UG/L	1.7	UG/L	J
Methane	0.856	10 UG/L	9.6	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004 PREP BLANK ID : MEEBLK004 LCS ID : MEELCS003

LCSD ID : MEELCS003D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.010
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/21/2000 16:33

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08229.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:08		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	0.73	UG/L	J
Ethene	0.635	10 UG/L	1.6	UG/L	J
Methane	0.856	10 UG/L	13	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	EB121400	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02
SAMPLE ID	6482.002	6482.003	6482.004	6482.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	ND	0.40	0.89	1.1
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D18	122800D1.D19	122800D1.D20	122800D1.D21
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
SAMPLE ID	6482.006	6482.008	6482.009	6482.010
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	1.2	0.26	1.6	1.5
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D22	122800D1.D26	122800D1.D27	122800D1.D28
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	WSAICTA005-01MS	WSAICTA005-01MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6482.008MS	6482.008MSD	ICBLK03	ICLCS03
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/14/00	12/14/00		
DATE RECEIVED	12/15/00	12/15/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	0.98	1.0	ND	0.90
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D30	122800D1.D31	122800D1.D02	122800D1.D03
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03		
LCSD ID				
MS ID		6482.008MS		
MSD ID				
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	EB121400	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02
SAMPLE ID	6482.002	6482.003	6482.004	6482.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	ND	31.2	21.2	20.9
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D18	122800D1.D19	122800D1.D20	122800D1.D21
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
SAMPLE ID	6482.006	6482.008	6482.009	6482.010
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	21.7	12.3	33.7	32.3
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D22	122800D1.D26	122800D1.D27	122800D1.D28
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:17

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	WSAICTA005-01MS	WSAICTA005-01MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6482.008MS	6482.008MSD	ICBLK03	ICLCS03
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/14/00	12/14/00		
DATE RECEIVED	12/15/00	12/15/00		
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	13.2	13.2	ND	2.19
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D30	122800D1.D31	122800D1.D02	122800D1.D03
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	IC8LK03	IC8LK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03		
LCSD ID				
MS ID		6482.008MS		
MSD ID				
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/20/2000 16:48

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB121400	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02
SAMPLE ID	6482.002	6482.003	6482.004	6482.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	3.0	2.4	30	25
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID				
DATE ANALYZED	12/19/00	12/19/00	12/19/00	12/19/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC061.	TOC061.	TOC061.	TOC061.
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB061	TOCB061	TOCB061	TOCB061
LCS ID	TOCL061	TOCL061	TOCL061	TOCL061
LCSD ID	TOCL061D	TOCL061D	TOCL061D	TOCL061D
MS ID	6482.010MS	6482.010MS	6482.010MS	6482.010MS
MSD ID	6482.010MSD	6482.010MSD	6482.010MSD	6482.010MSD
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/20/2000 16:48

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
SAMPLE ID	6482.006	6482.008	6482.009	6482.010
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	1.9	1.6	1.5	1.5
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID				
DATE ANALYZED	12/19/00	12/19/00	12/19/00	12/19/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC061.	TOC061.	TOC061.	TOC061.
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB061	TOCB061	TOCB061	TOCB061
LCS ID	TOCL061	TOCL061	TOCL061	TOCL061
LCSD ID	TOCL061D	TOCL061D	TOCL061D	TOCL061D
MS ID	6482.010MS	6482.010MS	6482.010MS	6482.010MS
MSD ID	6482.010MSD	6482.010MSD	6482.010MSD	6482.010MSD
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/20/2000	16:48

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	WSAICTA005-03MS	WSAICTA005-03MSD	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6482.010MS	6482.010MSD	TOCB061	TOCL061
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/14/00	12/14/00		
DATE RECEIVED	12/15/00	12/15/00		
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	23	24	ND	21.6
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID				
DATE ANALYZED	12/19/00	12/19/00	12/19/00	12/19/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC061.	TOC061.	TOC061.	TOC061.
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB061	TOCB061	TOCB061	TOCB061
LCS ID	TOCL061	TOCL061		
LCSD ID	TOCL061D	TOCL061D		
MS ID		6482.010MS		
MSD ID				
DUP ID				

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	ADC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/21/2000 15:52

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	EB121400	WSAICTA002-01	WSAICTA004-01	WSAICTA004-02
SAMPLE ID	6482.002	6482.003	6482.004	6482.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	ND	770	180	190
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
QC BATCH ID	TSS110	TSS110	TSS110	TSS110
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK110	TSSBLK110	TSSBLK110	TSSBLK110
LCS ID	TSSLCS110	TSSLCS110	TSSLCS110	TSSLCS110
LCSD ID	TSSLCS110D	TSSLCS110D	TSSLCS110D	TSSLCS110D
DUP ID	6488.002DUP1	6488.002DUP1	6488.002DUP1	6488.002DUP1

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/21/2000	15:52

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	WSAICTA004-03	WSAICTA005-01	WSAICTA005-02	WSAICTA005-03
SAMPLE ID	6482.006	6482.008	6482.009	6482.010
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/14/00	12/14/00	12/14/00	12/14/00
DATE RECEIVED	12/15/00	12/15/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	65	97	61	55
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
QC BATCH ID	TSS110	TSS110	TSS110	TSS110
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK110	TSSBLK110	TSSBLK110	TSSBLK110
LCS ID	TSSLCS110	TSSLCS110	TSSLCS110	TSSLCS110
LCSD ID	TSSLCS110D	TSSLCS110D	TSSLCS110D	TSSLCS110D
DUP ID	6488.002DUP1	6488.002DUP1	6488.002DUP1	6488.002DUP1

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/21/2000	15:52

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	002DUP	PREP BLANK	LAB CONTROL SAMP	LAB CONTROL SAMP
SAMPLE ID	6488.002DUP1	TSSBLK110	TSSLCS110	TSSLCS110D
SAMPLE MATRIX	WATER			
DATE SAMPLED	12/20/00			
DATE RECEIVED	12/20/00			
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	1400	ND	47	47
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	A			
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
QC BATCH ID	TSS110	TSS110	TSS110	TSS110
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK110	TSSBLK110	TSSBLK110	TSSBLK110
LCS ID	TSSLCS110			
LCSD ID	TSSLCS110D			
DUP ID	6488.002DUP1			

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121400-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/6/01	DILUTION	: 1
INSTRUMENT FILE	: B0185.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 6:24

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.D UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.D UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.D UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	TB121400-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.001
PROJECT NUMBER :	ADC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	102
4-Bromofluorobenzene	10 UG/L	86 - 115	107
Dibromofluoromethane	10 UG/L	86 - 118	111
Toluene-d8	10 UG/L	88 - 110	104

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	TB121400-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.001
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121400
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 1/6/01	DILUTION	: 1
INSTRUMENT FILE	: B0186.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 6:58

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	EB121400
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.002
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	111
4-Bromofluorobenzene	10 UG/L	86 - 115	107
Dibromofluoromethane	10 UG/L	86 - 118	116
Toluene-d8	10 UG/L	88 - 110	100

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	EB121400
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6482.002
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/14/00	DATE RECEIVED	:	12/15/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA002-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: C
DATE ANALYZED	: 1/6/01	DILUTION	: 1
INSTRUMENT FILE	: B0187.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 7:32

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA002-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	1.2 UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	21 UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	102
4-Bromofluorobenzene	10 UG/L	86 - 115	107
Dibromofluoromethane	10 UG/L	86 - 118	110
Toluene-d8	10 UG/L	88 - 110	104

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	WSAICTA002-01
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6482.003
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/14/00	DATE RECEIVED	:	12/15/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH IO : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/6/01	DILUTION	: 2
INSTRUMENT FILE	: B0180.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 3:33

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.228	2.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.176	2.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.456	2.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.336	2.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.234	2.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.213	2.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.218	2.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.228	2.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.462	2.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.232	2.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.120	2.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.678	2.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.228	2.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.214	2.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.279	2.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.397	2.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.162	2.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.226	2.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.285	2.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.177	2.0 UG/L	ND UG/L	
1-Chlorohexane	0.321	2.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.389	2.0 UG/L	ND UG/L	
2-Chlorotoluene	0.205	2.0 UG/L	ND UG/L	
4-Chlorotoluene	0.216	2.0 UG/L	ND UG/L	
Benzene	0.179	2.0 UG/L	ND UG/L	
Bromobenzene	0.307	2.0 UG/L	ND UG/L	
Bromochloromethane	0.340	2.0 UG/L	ND UG/L	
Bromodichloromethane	0.290	2.0 UG/L	ND UG/L	
Bromoform	0.237	2.0 UG/L	ND UG/L	
Bromomethane	0.298	4.0 UG/L	ND UG/L	
Carbon tetrachloride	0.195	2.0 UG/L	ND UG/L	
Chlorobenzene	0.204	2.0 UG/L	ND UG/L	
Chloroethane	0.243	4.0 UG/L	ND UG/L	
Chloroform	0.222	2.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA004-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.004
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.328	4.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.225	2.0 UG/L	9.6 UG/L	
cis-1,3-Dichloropropene	0.323	2.0 UG/L	ND UG/L	
Dibromochloromethane	0.331	2.0 UG/L	ND UG/L	
Dibromomethane	0.312	2.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.554	4.0 UG/L	ND UG/L	
Ethyl benzene	0.124	2.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.208	2.0 UG/L	ND UG/L	
Isopropylbenzene	0.160	2.0 UG/L	ND UG/L	
m/p-xylene	0.160	2.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.373	4.0 UG/L	ND UG/L	
Methylene chloride	0.373	4.0 UG/L	ND UG/L	
n-Butylbenzene	0.277	2.0 UG/L	ND UG/L	
n-Propylbenzene	0.134	2.0 UG/L	ND UG/L	
Naphthalene	0.235	2.0 UG/L	ND UG/L	
o-Xylene	0.134	2.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.168	2.0 UG/L	ND UG/L	
sec-Butylbenzene	0.169	2.0 UG/L	ND UG/L	
Styrene	0.184	2.0 UG/L	ND UG/L	
tert-Butylbenzene	0.168	2.0 UG/L	ND UG/L	
Tetrachloroethene	0.177	2.0 UG/L	ND UG/L	
Toluene	0.198	2.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.228	2.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.232	2.0 UG/L	ND UG/L	
Trichloroethene	0.192	2.0 UG/L	100 UG/L	
Trichlorofluoromethane	0.340	2.0 UG/L	ND UG/L	
Vinyl chloride	0.205	2.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	20 UG/L	80 - 120	110
4-Bromofluorobenzene	20 UG/L	86 - 115	108
Dibromofluoromethane	20 UG/L	86 - 118	114
Toluene-d8	20 UG/L	88 - 110	103

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-826DB
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 1/6/01	DILUTION	: 5
INSTRUMENT FILE	: B0182.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 4:41

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.570	5.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.439	5.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	1.14	5.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.841	5.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.586	5.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.532	5.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.544	5.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.570	5.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	1.15	5.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.580	5.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.301	5.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	1.70	5.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.570	5.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.536	5.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.696	5.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.994	5.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.404	5.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.564	5.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.712	5.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.442	5.0 UG/L	ND UG/L	
1-Chlorohexane	0.804	5.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.972	5.0 UG/L	ND UG/L	
2-Chlorotoluene	0.512	5.0 UG/L	ND UG/L	
4-Chlorotoluene	0.540	5.0 UG/L	ND UG/L	
Benzene	0.448	5.0 UG/L	ND UG/L	
Bromobenzene	0.766	5.0 UG/L	ND UG/L	
Bromochloromethane	0.851	5.0 UG/L	ND UG/L	
Bromodichloromethane	0.724	5.0 UG/L	ND UG/L	
Bromoform	0.593	5.0 UG/L	ND UG/L	
Bromomethane	0.745	10 UG/L	ND UG/L	
Carbon tetrachloride	0.487	5.0 UG/L	ND UG/L	
Chlorobenzene	0.511	5.0 UG/L	ND UG/L	
Chloroethane	0.608	10 UG/L	ND UG/L	
Chloroform	0.555	5.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.820	10 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.562	5.0 UG/L	21 UG/L	
cis-1,3-Dichloropropene	0.808	5.0 UG/L	ND UG/L	
Dibromochloromethane	0.828	5.0 UG/L	ND UG/L	
Dibromomethane	0.780	5.0 UG/L	ND UG/L	
Dichlorodifluoromethane	1.38	10 UG/L	ND UG/L	
Ethyl benzene	0.310	5.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.519	5.0 UG/L	ND UG/L	
Isopropylbenzene	0.400	5.0 UG/L	ND UG/L	
m/p-xylene	0.400	5.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.932	10 UG/L	ND UG/L	
Methylene chloride	0.932	10 UG/L	ND UG/L	
n-Butylbenzene	0.694	5.0 UG/L	ND UG/L	
n-Propylbenzene	0.336	5.0 UG/L	ND UG/L	
Naphthalene	0.587	5.0 UG/L	ND UG/L	
o-Xylene	0.336	5.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.420	5.0 UG/L	ND UG/L	
sec-Butylbenzene	0.422	5.0 UG/L	ND UG/L	
Styrene	0.460	5.0 UG/L	ND UG/L	
tert-Butylbenzene	0.420	5.0 UG/L	ND UG/L	
Tetrachloroethene	0.442	5.0 UG/L	ND UG/L	
Toluene	0.494	5.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.570	5.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.580	5.0 UG/L	ND UG/L	
Trichloroethene	0.480	5.0 UG/L	230 UG/L	
Trichlorofluoromethane	0.850	5.0 UG/L	ND UG/L	
Vinyl chloride	0.512	5.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	50 UG/L	80 - 120	101
4-Bromofluorobenzene	50 UG/L	86 - 115	105
Dibromofluoromethane	50 UG/L	86 - 118	108
Toluene-d8	50 UG/L	88 - 110	105

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	WSAICTA004-02
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6482.005
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/14/00	DATE RECEIVED	:	12/15/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 1/6/01	DILUTION	: 5
INSTRUMENT FILE	: B0183.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 5:16

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.570	5.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.439	5.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	1.14	5.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.841	5.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.586	5.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.532	5.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.544	5.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.570	5.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	1.15	5.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.580	5.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.301	5.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	1.70	5.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.570	5.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.536	5.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.696	5.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.994	5.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.404	5.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.564	5.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.712	5.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.442	5.0 UG/L	ND UG/L	
1-Chlorohexane	0.804	5.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.972	5.0 UG/L	ND UG/L	
2-Chlorotoluene	0.512	5.0 UG/L	ND UG/L	
4-Chlorotoluene	0.540	5.0 UG/L	ND UG/L	
Benzene	0.448	5.0 UG/L	ND UG/L	
Bromobenzene	0.766	5.0 UG/L	ND UG/L	
Bromochloromethane	0.851	5.0 UG/L	ND UG/L	
Bromodichloromethane	0.724	5.0 UG/L	ND UG/L	
Bromoform	0.593	5.0 UG/L	ND UG/L	
Bromomethane	0.745	10 UG/L	ND UG/L	
Carbon tetrachloride	0.487	5.0 UG/L	ND UG/L	
Chlorobenzene	0.511	5.0 UG/L	ND UG/L	
Chloroethane	0.608	10 UG/L	ND UG/L	
Chloroform	0.555	5.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA004-03
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.006
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.820	10 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.562	5.0 UG/L	23 UG/L	
cis-1,3-Dichloropropene	0.808	5.0 UG/L	ND UG/L	
Dibromochloromethane	0.828	5.0 UG/L	ND UG/L	
Dibromomethane	0.780	5.0 UG/L	ND UG/L	
Dichlorodifluoromethane	1.38	10 UG/L	ND UG/L	
Ethyl benzene	0.310	5.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.519	5.0 UG/L	ND UG/L	
Isopropylbenzene	0.400	5.0 UG/L	ND UG/L	
m/p-xylene	0.400	5.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.932	10 UG/L	ND UG/L	
Methylene chloride	0.932	10 UG/L	ND UG/L	
n-Butylbenzene	0.694	5.0 UG/L	ND UG/L	
n-Propylbenzene	0.336	5.0 UG/L	ND UG/L	
Naphthalene	0.587	5.0 UG/L	ND UG/L	
o-Xylene	0.336	5.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.420	5.0 UG/L	ND UG/L	
sec-Butylbenzene	0.422	5.0 UG/L	ND UG/L	
Styrene	D.460	5.0 UG/L	ND UG/L	
tert-Butylbenzene	0.420	5.0 UG/L	ND UG/L	
Tetrachloroethene	0.442	5.0 UG/L	ND UG/L	
Toluene	0.494	5.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.570	5.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.580	5.0 UG/L	ND UG/L	
Trichloroethene	0.480	5.0 UG/L	270 UG/L	
Trichlorofluoromethane	0.850	5.0 UG/L	ND UG/L	
Vinyl chloride	0.512	5.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	50 UG/L	80 - 120	99
4-Bromofluorobenzene	50 UG/L	86 - 115	106
Dibromofluoromethane	50 UG/L	86 - 118	108
Toluene-d8	50 UG/L	88 - 110	105

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA004-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121400-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/6/01	DILUTION	: 1
INSTRUMENT FILE	: B0188.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 8:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121400-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	NO UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	109
4-Bromofluorobenzene	10 UG/L	86 - 115	108
Dibromofluoromethane	10 UG/L	86 - 118	114
Toluene-d8	10 UG/L	88 - 110	102

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121400-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: A
DATE ANALYZED	: 1/6/01	DILUTION	: 1
INSTRUMENT FILE	: B0189.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 8:41

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	11 UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	ND UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	87 UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	99
4-Bromofluorobenzene	10 UG/L	86 - 115	106
Dibromofluoromethane	10 UG/L	86 - 118	109
Toluene-d8	10 UG/L	88 - 110	104

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	WSAICTA005-01
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6482.008
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/14/00	DATE RECEIVED	:	12/15/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.009
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: C
DATE ANALYZED	: 1/6/01	DILUTION	: 2
INSTRUMENT FILE	: B0181.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 4:07

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.228	2.0 UG/L	ND	UG/L
1,1,1-Trichloroethane	0.176	2.0 UG/L	ND	UG/L
1,1,2,2-Tetrachloroethane	0.456	2.0 UG/L	ND	UG/L
1,1,2-Trichloroethane	0.336	2.0 UG/L	ND	UG/L
1,1-Dichloroethane	0.234	2.0 UG/L	ND	UG/L
1,1-Dichloroethene	0.213	2.0 UG/L	ND	UG/L
1,1-Dichloropropene	0.218	2.0 UG/L	ND	UG/L
1,2,3-Trichlorobenzene	0.228	2.0 UG/L	ND	UG/L
1,2,3-Trichloropropane	0.462	2.0 UG/L	ND	UG/L
1,2,4-Trichlorobenzene	D.232	2.0 UG/L	ND	UG/L
1,2,4-Trimethylbenzene	0.120	2.0 UG/L	ND	UG/L
1,2-Dibromo-3-chloropropane	0.678	2.0 UG/L	ND	UG/L
1,2-Dibromoethane (EDB)	0.228	2.0 UG/L	ND	UG/L
1,2-Dichlorobenzene	0.214	2.0 UG/L	ND	UG/L
1,2-Dichloroethane	0.279	2.0 UG/L	ND	UG/L
1,2-Dichloropropane	D.397	2.0 UG/L	ND	UG/L
1,3,5-Trimethylbenzene	0.162	2.0 UG/L	ND	UG/L
1,3-Dichlorobenzene	0.226	2.0 UG/L	ND	UG/L
1,3-Dichloropropane	0.285	2.0 UG/L	ND	UG/L
1,4-Dichlorobenzene	0.177	2.0 UG/L	ND	UG/L
1-Chlorohexane	0.321	2.0 UG/L	ND	UG/L
2,2-Dichloropropane	0.389	2.0 UG/L	ND	UG/L
2-Chlorotoluene	0.205	2.0 UG/L	ND	UG/L
4-Chlorotoluene	0.216	2.0 UG/L	ND	UG/L
Benzene	0.179	2.0 UG/L	ND	UG/L
Bromobenzene	0.307	2.0 UG/L	ND	UG/L
Bromochloromethane	0.340	2.0 UG/L	ND	UG/L
Bromodichloromethane	0.290	2.0 UG/L	ND	UG/L
Bromoform	0.237	2.0 UG/L	ND	UG/L
Bromomethane	0.298	4.0 UG/L	ND	UG/L
Carbon tetrachloride	0.195	2.0 UG/L	ND	UG/L
Chlorobenzene	0.204	2.0 UG/L	ND	UG/L
Chloroethane	0.243	4.0 UG/L	ND	UG/L
Chloroform	0.222	2.0 UG/L	ND	UG/L

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.009
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.328	4.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.225	2.0 UG/L	86 UG/L	
cis-1,3-Dichloropropene	0.323	2.0 UG/L	ND UG/L	
Dibromochloromethane	0.331	2.0 UG/L	ND UG/L	
Dibromomethane	0.312	2.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.554	4.0 UG/L	ND UG/L	
Ethyl benzene	0.124	2.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.208	2.0 UG/L	ND UG/L	
Isopropylbenzene	0.160	2.0 UG/L	ND UG/L	
m/p-xylene	0.160	2.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.373	4.0 UG/L	ND UG/L	
Methylene chloride	0.373	4.0 UG/L	ND UG/L	
n-Butylbenzene	0.277	2.0 UG/L	ND UG/L	
n-Propylbenzene	0.134	2.0 UG/L	ND UG/L	
Naphthalene	0.235	2.0 UG/L	ND UG/L	
o-Xylene	0.134	2.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.168	2.0 UG/L	ND UG/L	
sec-Butylbenzene	0.169	2.0 UG/L	ND UG/L	
Styrene	0.184	2.0 UG/L	ND UG/L	
tert-Butylbenzene	0.168	2.0 UG/L	ND UG/L	
Tetrachloroethene	0.177	2.0 UG/L	ND UG/L	
Toluene	0.198	2.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.228	2.0 UG/L	1.1 UG/L	J
trans-1,3-Dichloropropene	0.232	2.0 UG/L	ND UG/L	
Trichloroethene	0.192	2.0 UG/L	600 UG/L	E
Trichlorofluoromethane	0.340	2.0 UG/L	ND UG/L	
Vinyl chloride	0.205	2.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	20 UG/L	80 - 120	103
4-Bromofluorobenzene	20 UG/L	86 - 115	107
Dibromofluoromethane	20 UG/L	86 - 118	111
Toluene-d8	20 UG/L	88 - 110	103

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.009
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-02DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.009DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/10/2001 15:38

ANALYST	: JC	CONTAINER ID	: C
DATE ANALYZED	: 1/10/01	DILUTION	: 10
INSTRUMENT FILE	: B0292.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 14:14

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	1.14	10 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.878	10 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	2.28	10 UG/L	ND UG/L	
1,1,2-Trichloroethane	1.68	10 UG/L	ND UG/L	
1,1-Dichloroethane	1.17	10 UG/L	ND UG/L	
1,1-Dichloroethene	1.06	10 UG/L	ND UG/L	
1,1-Dichloropropene	1.09	10 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	1.14	10 UG/L	ND UG/L	
1,2,3-Trichloropropane	2.31	10 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	1.16	10 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.602	10 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	3.39	10 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	1.14	10 UG/L	ND UG/L	
1,2-Dichlorobenzene	1.07	10 UG/L	ND UG/L	
1,2-Dichloroethane	1.39	10 UG/L	ND UG/L	
1,2-Dichloropropane	1.99	10 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.808	10 UG/L	ND UG/L	
1,3-Dichlorobenzene	1.13	10 UG/L	ND UG/L	
1,3-Dichloropropane	1.43	10 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.883	10 UG/L	ND UG/L	
1-Chlorohexane	1.61	10 UG/L	ND UG/L	
2,2-Dichloropropane	1.94	10 UG/L	ND UG/L	
2-Chlorotoluene	1.02	10 UG/L	ND UG/L	
4-Chlorotoluene	1.08	10 UG/L	ND UG/L	
Benzene	0.897	10 UG/L	ND UG/L	
Bromobenzene	1.53	10 UG/L	ND UG/L	
Bromochloromethane	1.70	10 UG/L	ND UG/L	
Bromodichloromethane	1.45	10 UG/L	ND UG/L	
Bromoform	1.19	10 UG/L	ND UG/L	
Bromomethane	1.49	20 UG/L	ND UG/L	
Carbon tetrachloride	0.974	10 UG/L	ND UG/L	
Chlorobenzene	1.02	10 UG/L	ND UG/L	
Chloroethane	1.22	20 UG/L	ND UG/L	
Chloroform	1.11	10 UG/L	ND UG/L	

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PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA005-02DL1
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.009DL1
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/10/2001 15:38

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.64	20 UG/L	ND UG/L	
cis-1,2-Dichloroethene	1.13	10 UG/L	59 UG/L	
cis-1,3-Dichloropropene	1.62	10 UG/L	ND UG/L	
Dibromochloromethane	1.66	10 UG/L	ND UG/L	
Dibromomethane	1.56	10 UG/L	ND UG/L	
Dichlorodifluoromethane	2.77	20 UG/L	ND UG/L	
Ethyl benzene	0.621	10 UG/L	ND UG/L	
Hexachlorobutadiene	1.04	10 UG/L	ND UG/L	
Isopropylbenzene	0.800	10 UG/L	ND UG/L	
m/p-xylene	0.800	10 UG/L	ND UG/L	
Methyl tert-butyl ether	1.86	20 UG/L	ND UG/L	
Methylene chloride	1.86	20 UG/L	ND UG/L	
n-Butylbenzene	1.39	10 UG/L	ND UG/L	
n-Propylbenzene	0.672	10 UG/L	ND UG/L	
Naphthalene	1.17	10 UG/L	ND UG/L	
o-Xylene	0.672	10 UG/L	ND UG/L	
p-Isopropyltoluene	0.840	10 UG/L	ND UG/L	
sec-Butylbenzene	0.845	10 UG/L	ND UG/L	
Styrene	0.920	10 UG/L	ND UG/L	
tert-Butylbenzene	0.840	10 UG/L	ND UG/L	
Tetrachloroethene	0.883	10 UG/L	ND UG/L	
Toluene	0.989	10 UG/L	ND UG/L	
trans-1,2-Dichloroethene	1.14	10 UG/L	ND UG/L	
trans-1,3-Dichloropropene	1.16	10 UG/L	ND UG/L	
Trichloroethene	0.960	10 UG/L	420 UG/L	
Trichlorofluoromethane	1.70	10 UG/L	ND UG/L	
Vinyl chloride	1.02	10 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	100 UG/L	80 - 120	93
4-Bromofluorobenzene	100 UG/L	86 - 115	94
Dibromofluoromethane	100 UG/L	86 - 118	98
Toluene-d8	100 UG/L	88 - 110	88

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-02DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.009DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/10/2001 15:38

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV98	PREP BLANK ID : BVBLK98	LCS ID : BVLCS98
LCSD ID : BVLCS98D		

PDP Analytical Services

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.010
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

ANALYST	: JC	CONTAINER ID	: C
DATE ANALYZED	: 1/6/01	DILUTION	: 5
INSTRUMENT FILE	: B0184.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 5:50

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.570	5.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.439	5.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	1.14	5.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.841	5.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.586	5.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.532	5.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.544	5.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.570	5.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	1.15	5.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.580	5.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.301	5.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	1.70	5.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.570	5.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.536	5.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.696	5.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.994	5.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.404	5.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.564	5.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.712	5.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.442	5.0 UG/L	ND UG/L	
1-Chlorohexane	0.804	5.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.972	5.0 UG/L	ND UG/L	
2-Chlorotoluene	0.512	5.0 UG/L	ND UG/L	
4-Chlorotoluene	0.540	5.0 UG/L	ND UG/L	
Benzene	0.448	5.0 UG/L	ND UG/L	
Bromobenzene	0.766	5.0 UG/L	ND UG/L	
Bromochloromethane	0.851	5.0 UG/L	ND UG/L	
Bromodichloromethane	0.724	5.0 UG/L	ND UG/L	
Bromoform	0.593	5.0 UG/L	ND UG/L	
Bromomethane	0.745	10 UG/L	ND UG/L	
Carbon tetrachloride	0.487	5.0 UG/L	ND UG/L	
Chlorobenzene	0.511	5.0 UG/L	ND UG/L	
Chloroethane	0.608	10 UG/L	ND UG/L	
Chloroform	0.555	5.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6482.010
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/14/00	DATE RECEIVED	: 12/15/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 15:00

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.820	10 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.562	5.0 UG/L	84 UG/L	
cis-1,3-Dichloropropene	0.808	5.0 UG/L	ND UG/L	
Dibromochloromethane	0.828	5.0 UG/L	ND UG/L	
Dibromomethane	0.780	5.0 UG/L	ND UG/L	
Dichlorodifluoromethane	1.38	10 UG/L	ND UG/L	
Ethyl benzene	0.310	5.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.519	5.0 UG/L	ND UG/L	
Isopropylbenzene	0.400	5.0 UG/L	ND UG/L	
m/p-xylene	0.400	5.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.932	10 UG/L	ND UG/L	
Methylene chloride	0.932	10 UG/L	ND UG/L	
n-Butylbenzene	0.694	5.0 UG/L	ND UG/L	
n-Propylbenzene	0.336	5.0 UG/L	ND UG/L	
Naphthalene	0.587	5.0 UG/L	ND UG/L	
o-Xylene	0.336	5.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.420	5.0 UG/L	ND UG/L	
sec-Butylbenzene	0.422	5.0 UG/L	ND UG/L	
Styrene	0.460	5.0 UG/L	ND UG/L	
tert-Butylbenzene	0.420	5.0 UG/L	ND UG/L	
Tetrachloroethene	0.442	5.0 UG/L	ND UG/L	
Toluene	0.494	5.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.570	5.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.580	5.0 UG/L	ND UG/L	
Trichloroethene	0.480	5.0 UG/L	600 UG/L	
Trichlorofluoromethane	0.850	5.0 UG/L	ND UG/L	
Vinyl chloride	0.512	5.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	50 UG/L	80 - 120	99
4-Bromofluorobenzene	50 UG/L	86 - 115	105
Dibromofluoromethane	50 UG/L	86 - 118	109
Toluene-d8	50 UG/L	88 - 110	106

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA005-03
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6482.010
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/14/00	DATE RECEIVED :	12/15/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 15:00

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV94	PREP BLANK ID : BVBLK94	LCS ID : BVLCS94
LCSD ID : BVLCS94D		

Science Applications International Corporation
An Employee Owned Company

Chain of Custody Number	NAS Fort Worth JRB, Texas Project Manager (Print)	Field Team Leader (Print)	Laboratory
S00- 377	Don Ficklen	David Lowak	PDP Analytical Services
Contractor	**Project Name**	**Sampler's Name (Print)**	**Laboratory Contract Number**
SAIC	AOC 20 S.I. – NAS FT. WORTH JRB	David Lowak	4400032539
Contract Number / Delivery Order	**NAS Fort Worth JRB, Texas Site Number**	**Sampler's Signature**	**ANALYSES REQUESTED**
F41624-00-D-8030/0007	AOC 20	[signature]	

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8260	9060	E160.2	9056	SM2320	7060	9056	MEE		
1	TB121100	TB1	WQ	NA	00.0	00.0	11 Dec 00	0750	001A	2	X								C4467.001	
2	EB121100-01	EB1	WQ	BP	00.0	00.0	11 Dec 00	0750	011A	10	X	X	X	X	X	X	X	X	.002	
3	WSAICTA003-01	N1	WG	BP	21.0	22.0	11 Dec 00	0912	011A	10	X	X	X	X	X	X	X	X	.003	
4	WSAICTA003-02	N1	WG	BP	24.0	25.0	11 Dec 00	0955	011A	10	X	X	X	X	X	X	X	X	.004	
5	WSAICTA003-03	N1	WG	BP	29.0	30.0	11 Dec 00	1032	011A	10	X	X	X	X	X	X	X	X	.005	
6	WSAICTA003-04	N1	WG	BP	35.0	36.0	11 Dec 00	1059	011A	10	X	X	X	X	X	X	X	X	.006	
7	EB121100-02	N1	WQ	SS	0.00	0.00	11 Dec 00	1513	021A	4	X	X							.007	
8	WSAICTA005-01	N1	SO	SS	25.0	27.00	11 Dec 00	1532	021A	4	X	X							.008	

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	
[signature]	1940 12-11-00	Rachel Brown	12/12/00 9:00	PROTOCOL (circle one): HAZWRAP (EPA) OTHER
				QC LEVEL (circle one): 1 2 (3) 4 5
				FOR LABORATORY USE ONLY
				CONDITIONS OF SAMPLES UPON RECEIPT
				CHAIN OF CUSTODY Y N ICE
				REQUEST FOR ANAL Y N TEMP
				CUSTODY SEAL Y N pH

Sampled Shipped Via (circle one): UPS (FED-EX) AIRBORNE BUS HAND OTHER

Waybill Number: 823100396353

SAMPLE CONDITION

REMARKS: WATER: SW8260 – VOC; SW9060 – TOC; E160.2 – TSS; SW9056 – Chloride; SM2320 – Alkalinity; SW7060 – Arsenic; SW9056 – NITRATE; MEE – Methane, Ethane, Ethene

SOIL: SW8260 – VOC; SW9060 – TOC

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PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6467	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received eight (8) samples on 12/12/00. These samples were scheduled for a 14 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No.8231-0039-6353. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

ALKALINITY

Alkalinity concentrations ranged from 20 mg/L to 354 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

ANIONS

Chloride concentrations ranged from Non-Detect (ND) to 12.6 mg/L. Sulfate concentrations ranged from Non-Detect (ND) to 52.3 mg/L. Nitrate concentrations ranged from Non-Detect (ND) to 0.67 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

The MS/MSD spike recoveries for Sulfate and Nitrate were outside acceptance limits. However, the LCS spike recoveries for Sulfate and Nitrate met acceptance criteria indicating the analytical system was in control. All other Quality Control (QC) samples met acceptance limits

METALS – GFAA

All samples were Non-Detect (ND) for Arsenic. For this parameter, no analytical problems were encountered with the analysis of these samples.

All other Quality Control (QC) samples met acceptance limits

DISSOLVED GASES

All samples contained detectable levels of Dissolved Gases. Samples 6467.004, 6467.005 and 6467.006 required a dilution because the target analytes exceeded the upper linear range of the instrument. The initial analysis and the dilution did not correlate because the initial analysis concentrations so greatly exceeded the upper linear range (i.e. 65 ug/L) of the

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Episode No: 6467	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

instrument. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits.

TOC

For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

TSS

TSS concentrations ranged from Non-Detect (ND) to 750 mg/L. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

The aqueous samples, 6467.001 – 6467.007, were analyzed outside the method holding time. Samples 6467.003, 6467.004, 6467.005, and 6467.006 required dilutions due to elevated levels of target analytes. Sample 6467.005 displayed a surrogate recovery slightly above the normal acceptance limits.

The gases for the Initial Calibration Verification (ICVB10401) were above the acceptance limits. However, none of these compounds were detected in the samples.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. For the aqueous samples, the LCS spike recoveries for Dichlorodifluoromethane were above the acceptance limits. However, this target analyte was not detected in any of the samples.

The Methylene Chloride MS recovery for the aqueous samples was above acceptance limits. However, the LCS spike recovery for Methylene Chloride was within acceptance criteria, indicating the analytical system was in control. All other Quality Control (QC) samples met acceptance limits

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/18/2000 13:34

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	EB121100-01	WSAICTA003-01	WSAICTA003-02	WSAICTA003-03
SAMPLE ID	6467.002	6467.003	6467.004	6467.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	20.0	354	334	332
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
DILUTION	1	1	1	1
QC BATCH ID	ALK046.	ALK046.	ALK046.	ALK046.
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK046	ALKBLK046	ALKBLK046	ALKBLK046
LCS ID	ALKLCS046	ALKLCS046	ALKLCS046	ALKLCS046
LCSD ID	ALKLCS046D	ALKLCS046D	ALKLCS046D	ALKLCS046D
MS ID				
MSD ID				
DUP ID	6462.002DUP1	6462.002DUP1	6462.002DUP1	6462.002DUP1

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LABORATORY REPORT

ALKALINITY (TITRIMETRIC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/18/2000 13:34

PARAMETER: Alkalinity, total (as CaCO3)

CLIENT SAMPLE ID	WSAICTA003-04	EB120700DUP1	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6467.006	6462.002DUP1	ALKBLK046	ALKLCS046
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/11/00	12/7/00		
DATE RECEIVED	12/12/00	12/8/00		
METHOD REFERENCE	EPA-310.1	EPA-310.1	EPA-310.1	EPA-310.1
QUANTITATION LIMIT	2	2	2	2
RESULTS	320	34.0	ND	520
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	J		
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
DILUTION	1	1	1	1
QC BATCH ID	ALK046.	ALK046.	ALK046.	ALK046.
PRE-PREP BLANK ID				
PREP BLANK ID	ALKBLK046	ALKBLK046	ALKBLK046	ALKBLK046
LCS ID	ALKLCS046	ALKLCS046		
LCSD ID	ALKLCS046D	ALKLCS046D		
MS ID				
MSD ID				
DUP ID	6462.002DUP1	6462.002DUP1		

PDP Analytical Services
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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:10

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	EB121100-01	WSAICTA003-01	WSAICTA003-02	WSAICTA003-03
SAMPLE ID	6467.002	6467.003	6467.004	6467.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	ND	12.4	11.8	12.2
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D13	122800D1.D14	122800D1.D15	122800D1.D16
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03.	IC03.	IC03.	IC03.
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

CHLORIDE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/29/2000 12:10

PARAMETER: Chloride as Cl

CLIENT SAMPLE ID	WSAICTA003-04	WSAICTA005-01MS	WSAICTA005-01MSD	PREP BLANK
SAMPLE ID	6467.006	6482.008MS	6482.008MSD	ICBLK03
SAMPLE MATRIX	WATER	WATER	WATER	
DATE SAMPLED	12/11/00	12/14/00	12/14/00	
DATE RECEIVED	12/12/00	12/15/00	12/15/00	
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.2	0.2	0.2	0.2
RESULTS	12.6	7.95	7.94	ND
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D17	122800D1.D30	122800D1.D31	122800D1.D02
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03.	IC03.	IC03.	IC03.
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	
LCSD ID				
MS ID	6482.008MS		6482.008MS	
MSD ID	6482.008MSD			
DUP ID				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.002
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/12/00
DATE SAMPLED	: 12/11/00	PRINTED ON	: 12/22/2000 10:22
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/13/00	12/14/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1078				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.003
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/12/00
DATE SAMPLED	: 12/11/00	PRINTED ON	: 12/22/2000 10:23
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/13/00	12/14/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1078				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/12/00
DATE SAMPLED	: 12/11/00	PRINTED ON	: 12/22/2000 10:23
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/13/00	12/14/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1078				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/12/00
DATE SAMPLED	: 12/11/00	PRINTED ON	: 12/22/2000 10:23
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/13/00	12/14/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1078				

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LABORATORY REPORT

TOTAL METALS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006
PROJECT NUMBER	: AOC 20 S.I.	DATE RECEIVED	: 12/12/00
DATE SAMPLED	: 12/11/00	PRINTED ON	: 12/22/2000 10:23
SAMPLE MATRIX	: WATER	% MOISTURE	:

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	DILU-TION	MDL	QUANTITATION LIMIT	RESULT	Q	ANA-LYST
Arsenic, Total	SW846-7060A	12/13/00	12/14/00	1	0.001	0.005 MG/L	ND MG/L		JK

QUALITY ASSURANCE/QUALITY CONTROL

QC BATCH IDs

ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID	ANALYTE	QC BATCH ID
Arsenic, Total	AAB1078				

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 1
INSTRUMENT FILE	: C08149.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 13:24		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	3.0	UG/L	J
Ethene	0.635	5.0 UG/L	0.73	UG/L	J
Methane	0.856	5.0 UG/L	5.3	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE003 PREP BLANK ID :MEEBLK003 LCS ID :MEELCS002

LCSD ID :MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08151.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 13:43		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	50 UG/L	5.4	UG/L	~~J~~
Ethene	6.35	50 UG/L	8.6	UG/L	J
Methane	8.56	50 UG/L	520	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE003	PREP BLANK ID :MEEBLK003	LCS ID :MEELCS002
LCSD ID :MEELCS002D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08153.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:09		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	50 UG/L	9.9	UG/L	J
Ethene	6.35	50 UG/L	28	UG/L	J
Methane	8.56	50 UG/L	1500	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE003 PREP BLANK ID :MEEBLK003 LCS ID :MEELCS002

LCSD ID :MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 42
INSTRUMENT FILE	: C08232.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:37		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	23.8	210 UG/L	ND	UG/L	
Ethene	26.7	210 UG/L	ND	UG/L	
Methane	35.9	210 UG/L	580	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE004 PREP BLANK ID :MEEBLK004 LCS ID :MEELCS003

LCSD ID :MEELCS003D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08155.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:30		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	50 UG/L	13	UG/L	J
Ethene	6.35	50 UG/L	ND	UG/L	
Methane	8.56	50 UG/L	2300	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE003 PREP BLANK ID :MEEBLK003 LCS ID :MEELCS002

LCSD ID :MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 84
INSTRUMENT FILE	: C08233.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:45		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	47.7	420 UG/L	ND	UG/L	
Ethene	53.3	420 UG/L	ND	UG/L	
Methane	71.9	420 UG/L	640	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE004	PREP BLANK ID :MEEBLK004	LCS ID :MEELCS003
LCSD ID :MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08158.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:01		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	50 UG/L	11	UG/L	J
Ethene	6.35	50 UG/L	ND	UG/L	
Methane	8.56	50 UG/L	1800	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE003 PREP BLANK ID :MEEBLK003 LCS ID :MEELCS002

LCSD ID :MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 42
INSTRUMENT FILE	: C08234.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:53		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	23.8	210 UG/L	25	UG/L	J
Ethene	26.7	210 UG/L	ND	UG/L	
Methane	35.9	210 UG/L	560	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE004 PREP BLANK ID :MEEBLK004 LCS ID :MEELCS003
LCSD ID :MEELCS003D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	:	CLIENT SAMPLE ID	: Prep Blank
PROJECT NAME	:	LAB SAMPLE ID	: MEEBLK003
PROJECT NUMBER	:	METHOD REFERENCE	: RSK-175
DATE SAMPLED	:	DATE RECEIVED	:
SAMPLE MATRIX	: LIQUID	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	:
DATE ANALYZED	: 12/12/00	DILUTION	: 1
INSTRUMENT FILE	: C08146.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 11:26		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs	
QC BATCH ID :MEE003	PREP BLANK ID :MEEBLK003

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME :		CLIENT SAMPLE ID :	Prep Blank
PROJECT NAME :		LAB SAMPLE ID :	MEEBLK004
PROJECT NUMBER :		METHOD REFERENCE :	RSK-175
DATE SAMPLED :		DATE RECEIVED :	
SAMPLE MATRIX :	LIQUID	PRINTED ON :	1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	:
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08218.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 13:49		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	ND	UG/L	
Ethene	0.635	5.0 UG/L	ND	UG/L	
Methane	0.856	5.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs	
QC BATCH ID :MEE004	PREP BLANK ID :MEEBLK004

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME :		CLIENT SAMPLE ID :	Lab Control Sample
PROJECT NAME :		LAB SAMPLE ID :	MEELCS002
PROJECT NUMBER :		METHOD REFERENCE :	RSK-175
DATE SAMPLED :		DATE RECEIVED :	
SAMPLE MATRIX :	LIQUID	PRINTED ON :	1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	:
DATE ANALYZED	: 12/12/00	DILUTION	: 1
INSTRUMENT FILE	: C08147.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 11:40		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	22.7	UG/L	
Ethene	0.635	5.0 UG/L	23	UG/L	
Methane	0.856	5.0 UG/L	23.9	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE003 PREP BLANK ID :MEEBLK003

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	:	CLIENT SAMPLE ID	: Lab Control Sample
PROJECT NAME	:	LAB SAMPLE ID	: MEELCS002D
PROJECT NUMBER	:	METHOD REFERENCE	: RSK-175
DATE SAMPLED	:	DATE RECEIVED	:
SAMPLE MATRIX	: LIQUID	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	:
DATE ANALYZED	: 12/12/00	DILUTION	: 1
INSTRUMENT FILE	: C08148.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 11:49		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	21.8	UG/L	
Ethene	0.635	5.0 UG/L	22	UG/L	
Methane	0.856	5.0 UG/L	22.6	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs		
QC BATCH ID :MEE003	PREP BLANK ID :MEEBLK003	LCS ID :MEELCS002

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LCS/LCSD SUMMARY REPORT

DISSOLVED GASSES

CLIENT NAME :
PROJECT NAME :
PROJECT NUMBER :

DATE RECEIVED :
PRINTED ON :1/26/2001 11:10

SAMPLE MATRIX :LIQUID

METHOD REFERENCE :RSK-175

LAB CONTROL SAMPLE

LCS SAMPLE ID :MEELCS002
CLIENT SAMPLE ID :
DATE ANALYZED :12/12/00
INSTRUMENT FILE :C08147.D

LAB CONTROL SAMPLE DUPLICATE

LCSD SAMPLE ID :MEELCS002D
CLIENT SAMPLE ID :
DATE ANALYZED :12/12/00
INSTRUMENT FILE : C08148.D

PARAMETER	UNITS	LCS TRUE VALUE	LCSD TRUE VALUE	LCS FOUND VALUE	LCSD FOUND VALUE	LCS RECOVER (%)	LCSD RECOVERY (%)	RPD	RPD LIMIT	QC LIMITS REC.
Ethane	UG/L	25.0	25.0	22.7	21.8	91	87	4.5	25	61 - 132
Ethene	UG/L	25	25	23	22	92	88	4.4	25	61 - 119
Methane	UG/L	25.0	25.0	23.9	22.6	96	90	6.5	25	63 - 121

* Indicate values outside of QC limits

RPD : 0 out of 3 outside limits
Spike Recovery : 0 out of 6 outside limits

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	:	CLIENT SAMPLE ID	: Lab Control Sample
PROJECT NAME	:	LAB SAMPLE ID	: MEELCS003
PROJECT NUMBER	:	METHOD REFERENCE	: RSK-175
DATE SAMPLED	:	DATE RECEIVED	:
SAMPLE MATRIX	: LIQUID	PRINTED ON	: 1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	:
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08219.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 13:58		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	27	UG/L	
Ethene	0.635	5.0 UG/L	25	UG/L	
Methane	0.856	5.0 UG/L	26	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :MEE004 PREP BLANK ID :MEEBLK004

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME :		CLIENT SAMPLE ID :	Lab Control Sample
PROJECT NAME :		LAB SAMPLE ID :	MEELCS003D
PROJECT NUMBER :		METHOD REFERENCE :	RSK-175
DATE SAMPLED :		DATE RECEIVED :	
SAMPLE MATRIX :	LIQUID	PRINTED ON :	1/26/2001 11:10

ANALYST	: DR	CONTAINER ID	:
DATE ANALYZED	: 12/19/00	DILUTION	: 1
INSTRUMENT FILE	: C08220.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:03		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	5.0 UG/L	28	UG/L	
Ethene	0.635	5.0 UG/L	25	UG/L	
Methane	0.856	5.0 UG/L	24	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs		
QC BATCH ID :MEE004	PREP BLANK ID :MEEBLK004	LCS ID :MEELCS003

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LCS/LCSD SUMMARY REPORT

DISSOLVED GASSES

CLIENT NAME .
PROJECT NAME :
PROJECT NUMBER :

DATE RECEIVED :
PRINTED ON :1/26/2001 11:10

SAMPLE MATRIX :LIQUID

METHOD REFERENCE :RSK-175

LAB CONTROL SAMPLE

LCS SAMPLE ID .MEELCS003
CLIENT SAMPLE ID :
DATE ANALYZED :12/19/00
INSTRUMENT FILE :C08219.D

LAB CONTROL SAMPLE DUPLICATE

LCSD SAMPLE ID :MEELCS003D
CLIENT SAMPLE ID :
DATE ANALYZED :12/19/00
INSTRUMENT FILE : C08220.D

PARAMETER	UNITS	LCS TRUE VALUE	LCSD TRUE VALUE	LCS FOUND VALUE	LCSD FOUND VALUE	LCS RECOVER (%)	LCSD RECOVERY (%)	RPD	RPD LIMIT	QC LIMITS REC.
Ethane	UG/L	25.0	25.0	27.2	27.9	109	112	2.7	25	61 - 132
Ethene	UG/L	25	25	25	25	100	100	0.0	25	61 - 119
Methane	UG/L	25.0	25.0	25.8	23.6	103	94	9.1	25	63 - 121

* Indicate values outside of QC limits

RPD : 0 out of 3 outside limits
Spike Recovery : 0 out of 6 outside limits

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/19/2000 8:04

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 1
INSTRUMENT FILE	: C08149.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 13:24		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	0.568	10 UG/L	3.0	UG/L	J
Ethene	0.635	10 UG/L	0.73	UG/L	J
Methane	0.856	10 UG/L	5.3	UG/L	J

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE003 PREP BLANK ID : MEEBLK003 LCS ID : MEELCS002

LCSD ID : MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:04

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08151.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 13:43		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	100 UG/L	5.4	UG/L	J
Ethene	6.35	100 UG/L	8.6	UG/L	J
Methane	8.56	100 UG/L	520	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE003	PREP BLANK ID : MEEBLK003	LCS ID : MEELCS002
LCSD ID : MEELCS002D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:04

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08153.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:09		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	100 UG/L	9.9	UG/L	J
Ethene	6.35	100 UG/L	28	UG/L	J
Methane	8.56	100 UG/L	1500	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE003 PREP BLANK ID : MEEBLK003 LCS ID : MEELCS002

LCSD ID : MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004DL1
PROJECT NUMBER	: AOC 2D S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:01

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 42
INSTRUMENT FILE	: C08232.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:37		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Ethane	23.8	420 UG/L	ND UG/L	
Ethene	26.7	420 UG/L	ND UG/L	
Methane	35.9	420 UG/L	580 UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:04

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08155.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 14:30		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	100 UG/L	13	UG/L	J
Ethene	6.35	100 UG/L	ND	UG/L	
Methane	8.56	100 UG/L	2300	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE003 PREP BLANK ID : MEEBLK003 LCS ID : MEELCS002

LCSD ID : MEELCS002D

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:01

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 84
INSTRUMENT FILE	: C08233.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:45		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	47.7	840 UG/L	ND	UG/L	
Ethene	53.3	840 UG/L	ND	UG/L	
Methane	71.9	840 UG/L	640	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:04

ANALYST	: DR	CONTAINER ID	: A
DATE ANALYZED	: 12/12/00	DILUTION	: 10
INSTRUMENT FILE	: C08158.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 15:01		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	5.68	100 UG/L	11	UG/L	J
Ethene	6.35	100 UG/L	ND	UG/L	
Methane	8.56	100 UG/L	1800	UG/L	E

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE003	PREP BLANK ID : MEEBLK003	LCS ID : MEELCS002
LCSD ID : MEELCS002D		

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LABORATORY REPORT

DISSOLVED GASSES

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04DL1
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006DL1
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: RSK-175
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 12/22/2000 8:01

ANALYST	: DR	CONTAINER ID	: B
DATE ANALYZED	: 12/19/00	DILUTION	: 42
INSTRUMENT FILE	: C08234.D	INSTRUMENT ID	: C-HP5890A
TIME ANALYZED	: 16:53		

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Ethane	23.8	420 UG/L	25	UG/L	J
Ethene	26.7	420 UG/L	ND	UG/L	
Methane	35.9	420 UG/L	560	UG/L	

QUALITY CONTROL DATA

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : MEE004	PREP BLANK ID : MEEBLK004	LCS ID : MEELCS003
LCSD ID : MEELCS003D		

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LABORATORY REPORT

NITRATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/29/2000 12:11

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	EB121100-01	WSAICTA003-01	WSAICTA003-02	WSAICTA003-03
SAMPLE ID	6467.002	6467.003	6467.004	6467.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	ND	0.47	0.63	0.67
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.013	122800D1.D14	122800D1.015	122800D1.016
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

NITRATE BY IDN CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/29/2000 12:11

PARAMETER: Nitrate (as N)

CLIENT SAMPLE ID	WSAICTA003-04	WSAICTA005-01MS	WSAICTA005-01MSD	PREP BLANK
SAMPLE ID	6467.006	6482.008MS	6482.008MSD	ICBLK03
SAMPLE MATRIX	WATER	WATER	WATER	
DATE SAMPLED	12/11/00	12/14/00	12/14/00	
DATE RECEIVED	12/12/00	12/15/00	12/15/00	
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.1	0.1	0.1	0.1
RESULTS	0.65	0.98	1.0	ND
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/28/00	12/28/00	12/28/00	12/28/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D17	122800D1.D30	122800D1.D31	122800D1.D02
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	
LCSD ID				
MS ID	6482.008MS		6482.008MS	
MSD ID	6482.008MSD			
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/29/2000 12:11

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	EB121100-01	WSAICTA003-01	WSAICTA003-02	WSAICTA003-03
SAMPLE ID	6467.002	6467.003	6467.004	6467.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	0.5	0.5	0.5
RESULTS	ND	23.9	23.3	23.4
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/08/00	12/08/00	12/08/00	12/08/00
DILUTION	1	1	1	1
INSTRUMENT FILE	122800D1.D13	122800D1.D14	122800D1.D15	122800D1.D16
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS	6482.008MS	6482.008MS
MSD ID	6482.008MSD	6482.008MSD	6482.008MSD	6482.008MSD
DUP ID				

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LABORATORY REPORT

SULFATE BY ION CHROMATOGRAPHY

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/29/2000	12:11

PARAMETER: Sulfate (as SO4)

CLIENT SAMPLE ID	WSAICTA003-04	WSAICTA003-04DL	WSAICTA005-01MS	WSAICTA005-01MSD
SAMPLE ID	6467.006	6467.006DL1	6482.008MS	6482.008MSD
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/14/00	12/14/00
DATE RECEIVED	12/12/00	12/12/00	12/15/00	12/15/00
METHOD REFERENCE	EPA-300	EPA-300	EPA-300	EPA-300
QUANTITATION LIMIT	0.5	1	0.5	0.5
RESULTS	52.3	48.4	13.2	13.2
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER	E			
ANALYST	GSR	GSR	GSR	GSR
CONTAINER ID				
DATE ANALYZED	12/08/00	12/08/00	12/28/00	12/28/00
DILUTION	1	2	1	1
INSTRUMENT FILE	122800D1.D17	12280001.D29	122800D1.D30	122800D1.D31
INSTRUMENT ID	A-DIONEX300	A-DIONEX300	A-DIONEX300	A-DIONEX300
QC BATCH ID	IC03	IC03	IC03	IC03
PRE-PREP BLANK ID				
PREP BLANK ID	ICBLK03	ICBLK03	ICBLK03	ICBLK03
LCS ID	ICLCS03	ICLCS03	ICLCS03	ICLCS03
LCSD ID				
MS ID	6482.008MS	6482.008MS		6482.008MS
MSD ID	6482.008MSD	6482.008MSD		
DUP ID				

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:33

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	EB121100-01	WSAICTA003-01	WSAICTA003-02	WSAICTA003-03
SAMPLE ID	6467.002	6467.003	6467.004	6467.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	ND	750	380	60
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D	D	D
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
QC BATCH ID	TSS109	TSS109	TSS109	TSS109
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK109	TSSBLK109	TSSBLK109	TSSBLK109
LCS ID	TSSLCS109	TSSLCS109	TSSLCS109	TSSLCS109
LCSD ID	TSSLCS109D	TSSLCS109D	TSSLCS109D	TSSLCS109D
DUP ID	6467.002DUP1	6467.002DUP1	6467.002DUP1	6467.002DUP1

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LABORATORY REPORT

TOTAL SUSPENDED SOLIDS (TSS)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/18/2000	13:33

PARAMETER: Total Suspended Solids

CLIENT SAMPLE ID	WSAICTA003-04	EB121100-01DUP	PREP BLANK	LAB CONTROL SAMP
SAMPLE ID	6467.006	6467.002DUP1	TSSBLK109	TSSLCS109
SAMPLE MATRIX	WATER	WATER		
DATE SAMPLED	12/11/00	12/11/00		
DATE RECEIVED	12/12/00	12/12/00		
METHOD REFERENCE	EPA-160.2	EPA-160.2	EPA-160.2	EPA-160.2
QUANTITATION LIMIT	4	4	4	4
RESULTS	100	ND	ND	48
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JA	JA	JA	JA
CONTAINER ID	D	D		
DATE ANALYZED	12/14/00	12/14/00	12/14/00	12/14/00
QC BATCH ID	TSS109	TSS109	TSS109	TSS109
PRE-PREP BLANK ID				
PREP BLANK ID	TSSBLK109	TSSBLK109	TSSBLK109	TSSBLK109
LCS ID	TSSLCS109	TSSLCS109		
LCSD ID	TSSLCS109D	TSSLCS109D		
DUP ID	6467.002DUP1	6467.002DUP1		

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/14/2000	16:24

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB121100-01	WSAICTA003-01	WSAICTA003-02	WSAICTA003-03
SAMPLE ID	6467.002	6467.003	6467.004	6467.005
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHDD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	ND	19	13	13
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-01700	A-01700	A-01700	A-01700
QC BATCH ID	TOC060	TOC060	TOC060	TOC060
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB060	TOCB060	TOCB060	TOCB060
LCS ID	TOCL060	TOCL060	TOCL060	TOCL060
LCSD ID	TOCL060D	TOCL060D	TOCL060D	TOCL060D
MS ID	6467.002MS	6467.002MS	6467.002MS	6467.002MS
MSD ID	6467.002MSD	6467.002MSD	6467.002MSD	6467.002MSD
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/14/2000 16:24

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	WSAICTA003-04	EB121100-02	EB121100-01MS	EB121100-01MSD
SAMPLE ID	6467.006	6467.007	6467.002MS	6467.002MSD
SAMPLE MATRIX	WATER	WATER	WATER	WATER
DATE SAMPLED	12/11/00	12/11/00	12/11/00	12/11/00
DATE RECEIVED	12/12/00	12/12/00	12/12/00	12/12/00
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	12	23	23	24
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
DATE ANALYZED	12/13/00	12/13/00	12/13/00	12/13/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-01700	A-01700	A-01700	A-01700
QC BATCH ID	TOC060	TOC060	TOC060	TOC060
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB060	TOCB060	TOCB060	TOCB060
LCS ID	TOCL060	TOCL060	TOCL060	TOCL060
LCSD ID	TOCL060D	TOCL060D	TOCL060D	TOCL060D
MS ID	6467.002MS	6467.002MS		6467.002MS
MSD ID	6467.002MSD	6467.002MSD		
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/28/2000 15:08

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	WSAICTA005-01	WSAICTA002-01MS	WSAICTA002-01MSD	PREP BLANK
SAMPLE ID	6467.008	6454.004MS	6454.004MSD	TOCB062
SAMPLE MATRIX	SOIL	SOIL	SOIL	
DATE SAMPLED	12/11/00	12/5/00	12/5/00	
DATE RECEIVED	12/12/00	12/6/00	12/6/00	
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1.25	1.17	1.17	1
RESULTS	ND	518	491	ND
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
QUALIFIER				
% MOISTURE	19.94	14.45	14.45	
ANALYST	HT	HT	HT	HT
CONTAINER ID				
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-01700	A-01700	A-01700	A-01700
QC BATCH ID	TOC062	TOC062	TOC062	TOC062
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB062	TOCB062	TOCB062	TOCB062
LCS ID	TOCL062	TOCL062	TOCL062	
LCSD ID				
MS ID	6454.004MS		6454.004MS	
MSD ID	6454.004MSD			
DUP ID				

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121100
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/5/01	DILUTION	: 1
INSTRUMENT FILE	: B0156.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 13:50

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121100
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	0.97 UG/L	J
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	101
4-Bromofluorobenzene	10 UG/L	86 - 115	106
Dibromofluoromethane	10 UG/L	86 - 118	107
Toluene-d8	10 UG/L	88 - 110	104

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	TB121100
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6467.001
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/11/00	DATE RECEIVED :	12/12/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/5/01	DILUTION	: 1
INSTRUMENT FILE	: B0157.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 14:24

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND UG/L	
Dibromomethane	0.156	1.0 UG/L	ND UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND UG/L	
Ethyl benzene	0.062	1.0 UG/L	ND UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND UG/L	
m/p-xylene	0.080	1.0 UG/L	ND UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND UG/L	
Methylene chloride	0.186	2.0 UG/L	0.60 UG/L	J
n-Butylbenzene	0.139	1.0 UG/L	ND UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND UG/L	
Naphthalene	0.117	1.0 UG/L	ND UG/L	
o-Xylene	0.067	1.0 UG/L	ND UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Styrene	0.092	1.0 UG/L	ND UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND UG/L	
Toluene	0.099	1.0 UG/L	ND UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND UG/L	
Trichloroethene	0.096	1.0 UG/L	ND UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	98
4-Bromofluorobenzene	10 UG/L	86 - 115	105
Dibromofluoromethane	10 UG/L	86 - 118	106
Toluene-d8	10 UG/L	88 - 110	107

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	EB121100-01
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6467.002
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/11/00	DATE RECEIVED	:	12/12/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/5/01	DILUTION	: 20
INSTRUMENT FILE	: B0160.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 16:06

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	2.28	20 UG/L	ND UG/L	
1,1,1-Trichloroethane	1.76	20 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	4.56	20 UG/L	ND UG/L	
1,1,2-Trichloroethane	3.36	20 UG/L	ND UG/L	
1,1-Dichloroethane	2.34	20 UG/L	ND UG/L	
1,1-Dichloroethene	2.13	20 UG/L	ND UG/L	
1,1-Dichloropropene	2.18	20 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	2.28	20 UG/L	ND UG/L	
1,2,3-Trichloropropane	4.62	20 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	2.32	20 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	1.20	20 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	6.78	20 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	2.28	20 UG/L	ND UG/L	
1,2-Dichlorobenzene	2.14	20 UG/L	ND UG/L	
1,2-Dichloroethane	2.79	20 UG/L	ND UG/L	
1,2-Dichloropropane	3.97	20 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	1.62	20 UG/L	ND UG/L	
1,3-Dichlorobenzene	2.26	20 UG/L	ND UG/L	
1,3-Dichloropropane	2.85	20 UG/L	ND UG/L	
1,4-Dichlorobenzene	1.77	20 UG/L	ND UG/L	
1-Chlorohexane	3.21	20 UG/L	ND UG/L	
2,2-Dichloropropane	3.89	20 UG/L	ND UG/L	
2-Chlorotoluene	2.05	20 UG/L	ND UG/L	
4-Chlorotoluene	2.16	20 UG/L	ND UG/L	
Benzene	1.79	20 UG/L	ND UG/L	
Bromobenzene	3.07	20 UG/L	ND UG/L	
Bromochloromethane	3.40	20 UG/L	ND UG/L	
Bromodichloromethane	2.90	20 UG/L	ND UG/L	
Bromoform	2.37	20 UG/L	ND UG/L	
Bromomethane	2.98	40 UG/L	ND UG/L	
Carbon tetrachloride	1.95	20 UG/L	ND UG/L	
Chlorobenzene	2.04	20 UG/L	ND UG/L	
Chloroethane	2.43	40 UG/L	ND UG/L	
Chloroform	2.22	20 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-82608
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	3.28	40 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	2.25	20 UG/L	410	UG/L	
cis-1,3-Dichloropropene	3.23	20 UG/L	ND	UG/L	
Dibromochloromethane	3.31	20 UG/L	ND	UG/L	
Dibromomethane	3.12	20 UG/L	ND	UG/L	
Dichlorodifluoromethane	5.54	40 UG/L	ND	UG/L	
Ethyl benzene	1.24	20 UG/L	ND	UG/L	
Hexachlorobutadiene	2.08	20 UG/L	ND	UG/L	
Isopropylbenzene	1.60	20 UG/L	ND	UG/L	
m/p-xylene	1.60	20 UG/L	ND	UG/L	
Methyl tert-butyl ether	3.73	40 UG/L	ND	UG/L	
Methylene chloride	3.73	40 UG/L	ND	UG/L	
n-Butylbenzene	2.77	20 UG/L	ND	UG/L	
n-Propylbenzene	1.34	20 UG/L	ND	UG/L	
Naphthalene	2.35	20 UG/L	ND	UG/L	
o-Xylene	1.34	20 UG/L	ND	UG/L	
p-Isopropyltoluene	1.68	20 UG/L	ND	UG/L	
sec-Butylbenzene	1.69	20 UG/L	ND	UG/L	
Styrene	1.84	20 UG/L	ND	UG/L	
tert-Butylbenzene	1.68	20 UG/L	ND	UG/L	
Tetrachloroethene	1.77	20 UG/L	ND	UG/L	
Toluene	1.98	20 UG/L	ND	UG/L	
trans-1,2-Dichloroethene	2.28	20 UG/L	18	UG/L	J
trans-1,3-Dichloropropene	2.32	20 UG/L	ND	UG/L	
Trichloroethene	1.92	20 UG/L	800	UG/L	
Trichlorofluoromethane	3.40	20 UG/L	ND	UG/L	
Vinyl chloride	2.05	20 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	200 UG/L	80 - 120	97
4-Bromofluorobenzene	200 UG/L	86 - 115	105
Dibromofluoromethane	200 UG/L	86 - 118	106
Toluene-d8	200 UG/L	88 - 110	106

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA003-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6467.003
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/11/00	DATE RECEIVED :	12/12/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/5/01	DILUTION	: 50
INSTRUMENT FILE	: B0163.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:50

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	5.70	50 UG/L	ND UG/L	
1,1,1-Trichloroethane	4.39	50 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	11.4	50 UG/L	ND UG/L	
1,1,2-Trichloroethane	8.41	50 UG/L	ND UG/L	
1,1-Dichloroethane	5.86	50 UG/L	ND UG/L	
1,1-Dichloroethene	5.32	50 UG/L	ND UG/L	
1,1-Dichloropropene	5.44	50 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	5.70	50 UG/L	ND UG/L	
1,2,3-Trichloropropane	11.6	50 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	5.80	50 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	3.01	50 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	16.9	50 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	5.70	50 UG/L	ND UG/L	
1,2-Dichlorobenzene	5.36	50 UG/L	ND UG/L	
1,2-Dichloroethane	6.97	50 UG/L	ND UG/L	
1,2-Dichloropropane	9.94	50 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	4.04	50 UG/L	ND UG/L	
1,3-Dichlorobenzene	5.65	50 UG/L	ND UG/L	
1,3-Dichloropropane	7.13	50 UG/L	ND UG/L	
1,4-Dichlorobenzene	4.42	50 UG/L	ND UG/L	
1-Chlorohexane	8.04	50 UG/L	ND UG/L	
2,2-Dichloropropane	9.72	50 UG/L	ND UG/L	
2-Chlorotoluene	5.12	50 UG/L	ND UG/L	
4-Chlorotoluene	5.40	50 UG/L	ND UG/L	
Benzene	4.49	50 UG/L	ND UG/L	
Bromobenzene	7.67	50 UG/L	ND UG/L	
Bromochloromethane	8.51	50 UG/L	ND UG/L	
Bromodichloromethane	7.24	50 UG/L	ND UG/L	
Bromoform	5.93	50 UG/L	ND UG/L	
Bromomethane	7.45	100 UG/L	ND UG/L	
Carbon tetrachloride	4.87	50 UG/L	ND UG/L	
Chlorobenzene	5.11	50 UG/L	ND UG/L	
Chloroethane	6.09	100 UG/L	ND UG/L	
Chloroform	5.55	50 UG/L	ND UG/L	

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1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-82608
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	8.20	100 UG/L	ND UG/L	
cis-1,2-Dichloroethene	5.63	50 UG/L	470 UG/L	
cis-1,3-Dichloropropene	8.09	50 UG/L	ND UG/L	
Dibromochloromethane	8.29	50 UG/L	ND UG/L	
Dibromomethane	7.80	50 UG/L	ND UG/L	
Dichlorodifluoromethane	13.8	100 UG/L	ND UG/L	
Ethyl benzene	3.11	50 UG/L	ND UG/L	
Hexachlorobutadiene	5.19	50 UG/L	ND UG/L	
Isopropylbenzene	4.00	50 UG/L	ND UG/L	
m/p-xylene	4.00	50 UG/L	ND UG/L	
Methyl tert-butyl ether	9.32	100 UG/L	ND UG/L	
Methylene chloride	9.32	100 UG/L	ND UG/L	
n-Butylbenzene	6.94	50 UG/L	ND UG/L	
n-Propylbenzene	3.36	50 UG/L	ND UG/L	
Naphthalene	5.87	50 UG/L	ND UG/L	
o-Xylene	3.36	50 UG/L	ND UG/L	
p-Isopropyltoluene	4.20	50 UG/L	ND UG/L	
sec-Butylbenzene	4.23	50 UG/L	ND UG/L	
Styrene	4.60	50 UG/L	ND UG/L	
tert-Butylbenzene	4.20	50 UG/L	ND UG/L	
Tetrachloroethene	4.42	50 UG/L	ND UG/L	
Toluene	4.95	50 UG/L	ND UG/L	
trans-1,2-Dichloroethene	5.70	50 UG/L	ND UG/L	
trans-1,3-Dichloropropene	5.80	50 UG/L	ND UG/L	
Trichloroethene	4.80	50 UG/L	1100 UG/L	
Trichlorofluoromethane	8.50	50 UG/L	ND UG/L	
Vinyl chloride	5.12	50 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	500 UG/L	80 - 120	90
4-Bromofluorobenzene	500 UG/L	86 - 115	104
Dibromofluoromethane	500 UG/L	86 - 118	101
Toluene-d8	500 UG/L	88 - 110	108

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.004
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/5/01	DILUTION	: 20
INSTRUMENT FILE	: B0161.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 16:41

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	2.28	20 UG/L	ND UG/L	
1,1,1-Trichloroethane	1.76	20 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	4.56	20 UG/L	ND UG/L	
1,1,2-Trichloroethane	3.36	20 UG/L	ND UG/L	
1,1-Dichloroethane	2.34	20 UG/L	ND UG/L	
1,1-Dichloroethene	2.13	20 UG/L	ND UG/L	
1,1-Dichloropropene	2.18	20 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	2.28	20 UG/L	ND UG/L	
1,2,3-Trichloropropane	4.62	20 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	2.32	20 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	1.20	20 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	6.78	20 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	2.28	20 UG/L	ND UG/L	
1,2-Dichlorobenzene	2.14	20 UG/L	ND UG/L	
1,2-Dichloroethane	2.79	20 UG/L	ND UG/L	
1,2-Dichloropropane	3.97	20 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	1.62	20 UG/L	ND UG/L	
1,3-Dichlorobenzene	2.26	20 UG/L	ND UG/L	
1,3-Dichloropropane	2.85	20 UG/L	ND UG/L	
1,4-Dichlorobenzene	1.77	20 UG/L	ND UG/L	
1-Chlorohexane	3.21	20 UG/L	ND UG/L	
2,2-Dichloropropane	3.89	20 UG/L	ND UG/L	
2-Chlorotoluene	2.05	20 UG/L	ND UG/L	
4-Chlorotoluene	2.16	20 UG/L	ND UG/L	
Benzene	1.79	20 UG/L	ND UG/L	
Bromobenzene	3.07	20 UG/L	ND UG/L	
Bromochloromethane	3.40	20 UG/L	ND UG/L	
Bromodichloromethane	2.90	20 UG/L	ND UG/L	
Bromoform	2.37	20 UG/L	ND UG/L	
Bromomethane	2.98	40 UG/L	ND UG/L	
Carbon tetrachloride	1.95	20 UG/L	ND UG/L	
Chlorobenzene	2.04	20 UG/L	ND UG/L	
Chloroethane	2.43	40 UG/L	ND UG/L	
Chloroform	2.22	20 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA003-03
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6467.005
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/11/00	DATE RECEIVED :	12/12/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	3.28	40 UG/L	ND UG/L	
cis-1,2-Dichloroethene	2.25	20 UG/L	500 UG/L	
cis-1,3-Dichloropropene	3.23	20 UG/L	ND UG/L	
Dibromochloromethane	3.31	20 UG/L	ND UG/L	
Dibromomethane	3.12	20 UG/L	ND UG/L	
Dichlorodifluoromethane	5.54	40 UG/L	ND UG/L	
Ethyl benzene	1.24	20 UG/L	ND UG/L	
Hexachlorobutadiene	2.08	20 UG/L	ND UG/L	
Isopropylbenzene	1.60	20 UG/L	ND UG/L	
m/p-xylene	1.60	20 UG/L	ND UG/L	
Methyl tert-butyl ether	3.73	40 UG/L	ND UG/L	
Methylene chloride	3.73	40 UG/L	ND UG/L	
n-Butylbenzene	2.77	20 UG/L	ND UG/L	
n-Propylbenzene	1.34	20 UG/L	ND UG/L	
Naphthalene	2.35	20 UG/L	ND UG/L	
o-Xylene	1.34	20 UG/L	ND UG/L	
p-Isopropyltoluene	1.68	20 UG/L	ND UG/L	
sec-Butylbenzene	1.69	20 UG/L	ND UG/L	
Styrene	1.84	20 UG/L	ND UG/L	
tert-Butylbenzene	1.68	20 UG/L	ND UG/L	
Tetrachloroethene	1.77	20 UG/L	ND UG/L	
Toluene	1.98	20 UG/L	ND UG/L	
trans-1,2-Dichloroethene	2.28	20 UG/L	29 UG/L	
trans-1,3-Dichloropropene	2.32	20 UG/L	ND UG/L	
Trichloroethene	1.92	20 UG/L	980 UG/L	
Trichlorofluoromethane	3.40	20 UG/L	ND UG/L	
Vinyl chloride	2.05	20 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	200 UG/L	80 - 120	84
4-Bromofluorobenzene	200 UG/L	86 - 115	119
Dibromofluoromethane	200 UG/L	86 - 118	115
Toluene-d8	200 UG/L	88 - 110	107

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-03
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.005
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: B
DATE ANALYZED	: 1/5/01	DILUTION	: 20
INSTRUMENT FILE	: B0162.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 17:15

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	2.28	20 UG/L	ND	UG/L	
1,1,1-Trichloroethane	1.76	20 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	4.56	20 UG/L	ND	UG/L	
1,1,2-Trichloroethane	3.36	20 UG/L	ND	UG/L	
1,1-Dichloroethane	2.34	20 UG/L	ND	UG/L	
1,1-Dichloroethene	2.13	20 UG/L	ND	UG/L	
1,1-Dichloropropene	2.18	20 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	2.28	20 UG/L	ND	UG/L	
1,2,3-Trichloropropane	4.62	20 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	2.32	20 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	1.20	20 UG/L	ND	UG/L	
1,2-Dibromo-3-chloropropane	6.78	20 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	2.28	20 UG/L	ND	UG/L	
1,2-Dichlorobenzene	2.14	20 UG/L	ND	UG/L	
1,2-Dichloroethane	2.79	20 UG/L	ND	UG/L	
1,2-Dichloropropane	3.97	20 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	1.62	20 UG/L	ND	UG/L	
1,3-Dichlorobenzene	2.26	20 UG/L	ND	UG/L	
1,3-Dichloropropane	2.85	20 UG/L	ND	UG/L	
1,4-Dichlorobenzene	1.77	20 UG/L	ND	UG/L	
1-Chlorohexane	3.21	20 UG/L	ND	UG/L	
2,2-Dichloropropane	3.89	20 UG/L	ND	UG/L	
2-Chlorotoluene	2.05	20 UG/L	ND	UG/L	
4-Chlorotoluene	2.16	20 UG/L	ND	UG/L	
Benzene	1.79	20 UG/L	ND	UG/L	
Bromobenzene	3.07	20 UG/L	ND	UG/L	
Bromochloromethane	3.40	20 UG/L	ND	UG/L	
Bromodichloromethane	2.90	20 UG/L	ND	UG/L	
Bromoform	2.37	20 UG/L	ND	UG/L	
Bromomethane	2.98	40 UG/L	ND	UG/L	
Carbon tetrachloride	1.95	20 UG/L	ND	UG/L	
Chlorobenzene	2.04	20 UG/L	ND	UG/L	
Chloroethane	2.43	40 UG/L	ND	UG/L	
Chloroform	2.22	20 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA003-04
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.006
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	3.28	40 UG/L	ND UG/L	
cis-1,2-Dichloroethene	2.25	20 UG/L	400 UG/L	
cis-1,3-Dichloropropene	3.23	20 UG/L	ND UG/L	
Dibromochloromethane	3.31	20 UG/L	ND UG/L	
Dibromomethane	3.12	20 UG/L	ND UG/L	
Dichlorodifluoromethane	5.54	40 UG/L	ND UG/L	
Ethyl benzene	1.24	20 UG/L	ND UG/L	
Hexachlorobutadiene	2.08	20 UG/L	ND UG/L	
Isopropylbenzene	1.60	20 UG/L	ND UG/L	
m/p-xylene	1.60	20 UG/L	ND UG/L	
Methyl tert-butyl ether	3.73	40 UG/L	ND UG/L	
Methylene chloride	3.73	40 UG/L	ND UG/L	
n-Butylbenzene	2.77	20 UG/L	ND UG/L	
n-Propylbenzene	1.34	20 UG/L	ND UG/L	
Naphthalene	2.35	20 UG/L	ND UG/L	
o-Xylene	1.34	20 UG/L	ND UG/L	
p-Isopropyltoluene	1.68	20 UG/L	ND UG/L	
sec-Butylbenzene	1.69	20 UG/L	ND UG/L	
Styrene	1.84	20 UG/L	ND UG/L	
tert-Butylbenzene	1.68	20 UG/L	ND UG/L	
Tetrachloroethene	1.77	20 UG/L	ND UG/L	
Toluene	1.98	20 UG/L	ND UG/L	
trans-1,2-Dichloroethene	2.28	20 UG/L	18 UG/L	J
trans-1,3-Dichloropropene	2.32	20 UG/L	ND UG/L	
Trichloroethene	1.92	20 UG/L	910 UG/L	
Trichlorofluoromethane	3.40	20 UG/L	ND UG/L	
Vinyl chloride	2.05	20 UG/L	ND UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	200 UG/L	80 - 120	105
4-Bromofluorobenzene	200 UG/L	86 - 115	104
Dibromofluoromethane	200 UG/L	86 - 118	109
Toluene-d8	200 UG/L	88 - 110	100

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	:	SAIC	CLIENT SAMPLE ID	:	WSAICTA003-04
PROJECT NAME	:	CARSWELL	LAB SAMPLE ID	:	6467.006
PROJECT NUMBER	:	AOC 20 S.I.	METHOD REFERENCE	:	SW846-8260B
DATE SAMPLED	:	12/11/00	DATE RECEIVED	:	12/12/00
SAMPLE MATRIX	:	WATER	PRINTED ON	:	1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

ANALYST	: JC	CONTAINER ID	: C
DATE ANALYZED	: 1/5/01	DILUTION	: 1
INSTRUMENT FILE	: B0159.D	INSTRUMENT ID	: B-HP5971A
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 15:32

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	9.2	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	2.2	UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	EB121100-02
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6467.007
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/11/00	DATE RECEIVED :	12/12/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND	UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	ND	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	1.8	UG/L	
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	8.6	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	0.58	UG/L	J
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	0.82	UG/L	J
Naphthalene	0.117	1.0 UG/L	4.1	UG/L	
o-Xylene	0.067	1.0 UG/L	3.9	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND	UG/L	
Toluene	0.099	1.0 UG/L	5.6	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	ND	UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	95
4-Bromofluorobenzene	10 UG/L	86 - 115	104
Dibromofluoromethane	10 UG/L	86 - 118	104
Toluene-d8	10 UG/L	88 - 110	106

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121100-02
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.007
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : BV93	PREP BLANK ID : BVBLK93	LCS ID : BVLCS93
LCSD ID : BVLCS93D		

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/9/2001 14:27

% MOISTURE	: 19.94	ANALYST	: JK
CONTAINER ID	: A	DATE ANALYZED	: 12/23/00
INSTRUMENT FILE	: F5669.0	INSTRUMENT ID	: F-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 00:14

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	1.00	6.2 UG/KG	ND UG/KG	
1,1,1-Trichloroethane	1.00	6.2 UG/KG	ND UG/KG	
1,1,2,2-Tetrachloroethane	1.00	6.2 UG/KG	ND UG/KG	
1,1,2-Trichloroethane	1.00	6.2 UG/KG	ND UG/KG	
1,1-Dichloroethane	1.00	6.2 UG/KG	ND UG/KG	
1,1-Dichloroethene	1.00	6.2 UG/KG	ND UG/KG	
1,1-Dichloropropene	1.00	6.2 UG/KG	ND UG/KG	
1,2,3-Trichlorobenzene	1.00	6.2 UG/KG	ND UG/KG	
1,2,3-Trichloropropane	1.00	6.2 UG/KG	ND UG/KG	
1,2,4-Trichlorobenzene	1.00	6.2 UG/KG	ND UG/KG	
1,2,4-Trimethylbenzene	1.00	6.2 UG/KG	ND UG/KG	
1,2-Dibromo-3-chloropropane	1.00	6.2 UG/KG	ND UG/KG	
1,2-Dibromoethane (EDB)	1.00	6.2 UG/KG	ND UG/KG	
1,2-Dichlorobenzene	1.00	6.2 UG/KG	ND UG/KG	
1,2-Dichloroethane	1.00	6.2 UG/KG	ND UG/KG	
1,2-Dichloropropane	1.00	6.2 UG/KG	ND UG/KG	
1,3,5-Trimethylbenzene	1.00	6.2 UG/KG	ND UG/KG	
1,3-Dichlorobenzene	1.00	6.2 UG/KG	ND UG/KG	
1,3-Dichloropropane	1.00	6.2 UG/KG	ND UG/KG	
1,4-Dichlorobenzene	1.00	6.2 UG/KG	ND UG/KG	
1-Chlorohexane	1.00	6.2 UG/KG	ND UG/KG	
2,2-Dichloropropane	1.00	6.2 UG/KG	ND UG/KG	
2-Chlorotoluene	1.00	6.2 UG/KG	ND UG/KG	
4-Chlorotoluene	1.00	6.2 UG/KG	ND UG/KG	
Benzene	1.00	6.2 UG/KG	ND UG/KG	
Bromobenzene	1.00	6.2 UG/KG	ND UG/KG	
Bromochloromethane	1.00	6.2 UG/KG	ND UG/KG	
Bromodichloromethane	1.00	6.2 UG/KG	ND UG/KG	
Bromoform	1.00	6.2 UG/KG	ND UG/KG	
Bromomethane	1.00	6.2 UG/KG	ND UG/KG	
Carbon tetrachloride	1.00	6.2 UG/KG	ND UG/KG	
Chlorobenzene	1.00	6.2 UG/KG	ND UG/KG	
Chloroethane	1.00	6.2 UG/KG	ND UG/KG	
Chloroform	1.00	6.2 UG/KG	ND UG/KG	

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PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/9/2001 14:27

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	1.00	6.2 UG/KG	ND UG/KG	
cis-1,2-Dichloroethene	1.00	6.2 UG/KG	ND UG/KG	
cis-1,3-Dichloropropene	1.00	6.2 UG/KG	ND UG/KG	
Dibromochloromethane	1.00	6.2 UG/KG	ND UG/KG	
Dibromomethane	1.00	6.2 UG/KG	ND UG/KG	
Dichlorodifluoromethane	1.00	6.2 UG/KG	ND UG/KG	
Ethyl benzene	1.00	6.2 UG/KG	ND UG/KG	
Hexachlorobutadiene	1.00	6.2 UG/KG	ND UG/KG	
Isopropylbenzene	1.00	6.2 UG/KG	ND UG/KG	
m/p-xylene	1.00	6.2 UG/KG	ND UG/KG	
Methyl tert-butyl ether	1.00	6.2 UG/KG	ND UG/KG	
Methylene chloride	1.00	6.2 UG/KG	28 UG/KG	
n-Butylbenzene	1.00	6.2 UG/KG	ND UG/KG	
n-Propylbenzene	1.00	6.2 UG/KG	ND UG/KG	
Naphthalene	1.00	6.2 UG/KG	ND UG/KG	
o-Xylene	1.00	6.2 UG/KG	ND UG/KG	
p-Isopropyltoluene	1.00	6.2 UG/KG	ND UG/KG	
sec-Butylbenzene	1.00	6.2 UG/KG	ND UG/KG	
Styrene	1.00	6.2 UG/KG	ND UG/KG	
tert-Butylbenzene	1.00	6.2 UG/KG	ND UG/KG	
Tetrachloroethene	1.00	6.2 UG/KG	ND UG/KG	
Toluene	1.00	6.2 UG/KG	ND UG/KG	
trans-1,2-Dichloroethene	1.00	6.2 UG/KG	ND UG/KG	
trans-1,3-Dichloropropene	1.00	6.2 UG/KG	ND UG/KG	
Trichloroethene	1.00	6.2 UG/KG	ND UG/KG	
Trichlorofluoromethane	1.00	6.2 UG/KG	ND UG/KG	
Vinyl chloride	1.00	6.2 UG/KG	ND UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	62 UG/KG	80 - 120	96
4-Bromofluorobenzene	62 UG/KG	74 - 121	98
Dibromofluoromethane	62 UG/KG	80 - 120	100
Toluene-d8	62 UG/KG	81 - 117	104

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/9/2001 14:27

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : FV01	PREP BLANK ID : FVBLK01	LCS ID : FVLCS01
MS ID : 6467.008MS	MSD ID : 6467.008MSD	

689 677

BEST AVAILABLE COPY

Quantitation Report (QT Reviewed)

ata File: C:\HPCHEM\1\DATA\F5669.D Vial: 13
cq On : 12/23/00 00:14 Operator: JK
ample : WSA1LTA005 Inst : F-HP5973
ab ID : 6467.008A 5G Multiplr: 1.00
S Integration Params: rteint.p
Quant Time: Jan 8 11:10 2001 Quant Results File: VSF5658.RES

uant Method : C:\HPCHEM\1\METHODS\VSF5658.M (RTE Integrator)
itle : VOA (8260A/B) - 5/6 point calibration - SOIL
ast Update : Mon Jan 08 10:59:32 2001
esponse via : Initial Calibration
ataAcq Meth : 8260A

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.18	96	1757583	50.00	ug/l	0.00
39) Chlorobenzene-d5	14.69	117	1147988	50.00	ug/L	0.00
55) 1,4-Dichlorobenzene-d4	18.45	152	505502	50.00	ug/l	0.00

System Monitoring Compounds						
2) Dibromofluoromethane	9.26	113	398666	50.14	ug/l	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.28%			
27) 1,2-Dichloroethane-d4	9.79	65	298387	48.22	ug/l	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.44%			
40) Toluene-d8	12.44	98	1586895	51.97	ug/l	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.94%			
54) 4-Bromofluorobenzene	16.56	95	503047	49.08	ug/l	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.16%			

arget Compounds						Qvalue
11) Methylene Chloride	6.70	84	179231	22.77	ug/L #	26
12) Acetone	6.06	43	96550	48.72	ug/l	88

#) = qualifier out of range (m) = manual integration
5669.D VSF5658.M Mon Jan 08 11:11:55 2001

000015

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA005-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6467.008
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/11/00	DATE RECEIVED :	12/12/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:15

% MOISTURE	: 19.94	ANALYST	: JK
CONTAINER ID	: A	DATE ANALYZED	: 12/23/00
INSTRUMENT FILE	: F5669.D	INSTRUMENT ID	: F-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 00:14

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	1.65	6.2 UG/KG	ND	UG/KG	
1,1,1-Trichloroethane	1.49	6.2 UG/KG	ND	UG/KG	
1,1,2,2-Tetrachloroethane	4.85	6.2 UG/KG	ND	UG/KG	
1,1,2-Trichloroethane	1.34	6.2 UG/KG	ND	UG/KG	
1,1-Dichloroethane	1.55	6.2 UG/KG	ND	UG/KG	
1,1-Dichloroethene	1.50	6.2 UG/KG	ND	UG/KG	
1,1-Dichloropropene	1.27	6.2 UG/KG	ND	UG/KG	
1,2,3-Trichlorobenzene	1.60	6.2 UG/KG	ND	UG/KG	
1,2,3-Trichloropropane	5.30	6.2 UG/KG	ND	UG/KG	
1,2,4-Trichlorobenzene	1.52	6.2 UG/KG	ND	UG/KG	
1,2,4-Trimethylbenzene	1.12	6.2 UG/KG	ND	UG/KG	
1,2-Dibromo-3-chloropropane	4.31	6.2 UG/KG	ND	UG/KG	
1,2-Dibromoethane (EDB)	1.62	6.2 UG/KG	ND	UG/KG	
1,2-Dichlorobenzene	1.28	6.2 UG/KG	ND	UG/KG	
1,2-Dichloroethane	1.86	6.2 UG/KG	ND	UG/KG	
1,2-Dichloropropane	1.49	6.2 UG/KG	ND	UG/KG	
1,3,5-Trimethylbenzene	1.05	6.2 UG/KG	ND	UG/KG	
1,3-Dichlorobenzene	1.05	6.2 UG/KG	ND	UG/KG	
1,3-Dichloropropane	2.66	6.2 UG/KG	ND	UG/KG	
1,4-Dichlorobenzene	1.03	6.2 UG/KG	ND	UG/KG	
1-Chlorohexane	1.52	6.2 UG/KG	ND	UG/KG	
2,2-Dichloropropane	1.54	6.2 UG/KG	ND	UG/KG	
2-Chlorotoluene	0.991	6.2 UG/KG	ND	UG/KG	
4-Chlorotoluene	0.932	6.2 UG/KG	ND	UG/KG	
Benzene	1.51	6.2 UG/KG	ND	UG/KG	
Bromobenzene	1.74	6.2 UG/KG	ND	UG/KG	
Bromochloromethane	1.64	6.2 UG/KG	ND	UG/KG	
Bromodichloromethane	1.24	6.2 UG/KG	ND	UG/KG	
Bromoform	2.07	6.2 UG/KG	ND	UG/KG	
Bromomethane	2.02	6.2 UG/KG	ND	UG/KG	
Carbon tetrachloride	1.40	6.2 UG/KG	ND	UG/KG	
Chlorobenzene	1.08	6.2 UG/KG	ND	UG/KG	
Chloroethane	1.72	6.2 UG/KG	ND	UG/KG	
Chloroform	1.62	6.2 UG/KG	ND	UG/KG	

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PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	WSAICTA005-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6467.008
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/11/00	DATE RECEIVED :	12/12/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 16:15

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	1.69	6.2 UG/KG	ND	UG/KG	
cis-1,2-Dichloroethene	1.47	6.2 UG/KG	ND	UG/KG	
cis-1,3-Dichloropropene	1.15	6.2 UG/KG	ND	UG/KG	
Dibromochloromethane	2.09	6.2 UG/KG	ND	UG/KG	
Dibromomethane	1.51	6.2 UG/KG	ND	UG/KG	
Dichlorodifluoromethane	2.00	6.2 UG/KG	ND	UG/KG	
Ethyl benzene	1.06	6.2 UG/KG	ND	UG/KG	
Hexachlorobutadiene	2.94	6.2 UG/KG	ND	UG/KG	
Isopropylbenzene	1.11	6.2 UG/KG	ND	UG/KG	
m/p-xylene	1.23	6.2 UG/KG	ND	UG/KG	
Methyl tert-butyl ether	1.25	6.2 UG/KG	ND	UG/KG	
Methylene chloride	2.27	6.2 UG/KG	28	UG/KG	
n-Butylbenzene	2.19	6.2 UG/KG	ND	UG/KG	
n-Propylbenzene	1.03	6.2 UG/KG	ND	UG/KG	
Naphthalene	3.81	6.2 UG/KG	ND	UG/KG	
o-Xylene	1.01	6.2 UG/KG	ND	UG/KG	
p-Isopropyltoluene	1.64	6.2 UG/KG	ND	UG/KG	
sec-Butylbenzene	1.20	6.2 UG/KG	ND	UG/KG	
Styrene	1.26	6.2 UG/KG	ND	UG/KG	
tert-Butylbenzene	1.03	6.2 UG/KG	ND	UG/KG	
Tetrachloroethene	0.936	6.2 UG/KG	ND	UG/KG	
Toluene	1.25	6.2 UG/KG	ND	UG/KG	
trans-1,2-Dichloroethene	1.43	6.2 UG/KG	ND	UG/KG	
trans-1,3-Dichloropropene	1.18	6.2 UG/KG	ND	UG/KG	
Trichloroethene	1.23	6.2 UG/KG	ND	UG/KG	
Trichlorofluoromethane	1.95	6.2 UG/KG	ND	UG/KG	
Vinyl chloride	1.72	6.2 UG/KG	ND	UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	62 UG/KG	80 - 120	96
4-Bromofluorobenzene	62 UG/KG	74 - 121	98
Dibromofluoromethane	62 UG/KG	80 - 120	100
Toluene-d8	62 UG/KG	81 - 117	104

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: WSAICTA005-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6467.008
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/11/00	DATE RECEIVED	: 12/12/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 16:15

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID :FV01	PREP BLANK ID :FVBLK01	LCS ID :FVLCS01
MS ID :6467.008MS	MSD ID :6467.008MSD	

Science Applications International Corporation
An Employee Owned Company

Chain of Custody Number S00-378	NAS Fort Worth JRB, Texas Project Manager (Print) Don Fichlen	Field Team Leader (Print) David Lowak	Laboratory PDP Analytical Services
Contractor SAIC	Project Name AOC 20 S.I. – NAS FT. WORTH JRB	Sampler's Name (Print) David Lowak	Laboratory Contract Number 4400032539
Contract Number / Delivery Order F41624-00-D-8030/0007	NAS Fort Worth JRB, Texas Site Number AOC 20	Sampler's Signature	ANALYSES REQUESTED

	Sample Number LNNNNNNNLL	Sample Type LLNNN	Sample Matrix See VVL	Sample Method See VVL	Begin Depth NN.N	End Depth NN.N	Date dd mmm yy NN LLL NN	Time 24 HR NNNN	Field Lot Number NNNL	Number of Contain. N	8240	9060								
1	TB121200	TB1	WQ	NA	00.0	00.0	12 DEC00	1012	001A	2	X							6476		
2	EB121200	EB1	WQ	SS	00.0	00.0	12 DEC00	1012	011A	4	X	X								.001
3	SAILTA006-01 B	N1	SO	SS	20.0	22.0	12 DEC00	1113	011A	4	X	X								.002
4																				.003
5																				
6																				
7																				
8																				

Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	
	12-12-00 1520	Rachael Brown	12/14/00 9:00	PROTOCOL (circle one): HAZWRAP (EPA) OTHER; QC LEVEL (circle one): 1 2 (3) 4 5
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	FOR LABORATORY USE ONLY
				CONDITIONS OF SAMPLES UPON RECEIPT
Relinquished By (Signature)	Date/Time	Received By (Signature)	Date/Time	CHAIN OF CUSTODY Y N ICE
				REQUEST FOR ANAL Y N TEMP
				CUSTODY SEAL Y N pH

Sampled Shipped Via (circle one): UPS (FED-EX) AIRBORNE BUS HAND OTHER

Waybill Number: 8231 0039 6364

SAMPLE CONDITION

REMARKS:
SW8260 - VOC
SW9060 - TOC

689 681

PDP ANALYTICAL SERVICES
1680 Lake Front Circle, Suite B • The Woodlands, TX 77380 • Phone (281)363-2233

Episode No: 6476	Client: SAIC	Project: Carswell AFB

SDG NARRATIVE

SAMPLE RECEIPT AND LOGIN

PDP Analytical Services received three (3) samples on 12/14/00. These samples were scheduled for a 14 day Turn-around Time (TAT) for the analytical results and EDD package.

The samples arrived via Federal Express courier, Air Bill No.8231-0039-6364. The cooler custody seals were intact upon arrival. Cooler temperature was 4°C. No login discrepancies were found during the sample login.

SAMPLE ANALYSIS NARRATIVE

TOC

The TOC result for 6476.002 was 3.1 mg/L and the TOC result for 6476.003 was 1.03 mg/Kg. For this parameter, no analytical problems were encountered with the analysis of these samples.

All Quality Control (QC) samples met acceptance limits

VOLATILES

The computer file for the method blank for soil Sample 6476.003 was corrupted and could not be printed. All QC for this analysis passed, but the method blank data could not be regenerated.

MTBE is not utilized as part of the LCS or MS/MSD spiking solutions for this project. Thus the spike recoveries indicate zero percent recovery on the summary forms, when in fact MTBE is not spiked. For the liquid LCS, VLCS024, Bromomethane was above acceptance criteria in the LCSD and Methylene Chloride was slightly below the acceptance criteria in the LCS. Neither compound was detected in the associated samples.

All other Quality Control (QC) samples met acceptance limits

PDP Analytical Services
1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	: AOC 20 S.I.	
PROJECT NAME	: CARSWELL		PRINTED ON	: 12/20/2000	16:49

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	EB121200	PREP BLANK	LAB CONTROL SAMP	LAB CONTROL SAMP
SAMPLE ID	6476.002	TOCB061	TOCL061	TOCL061D
SAMPLE MATRIX	WATER			
DATE SAMPLED	12/12/00			
DATE RECEIVED	12/14/00			
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1	1	1	1
RESULTS	3.1	ND	21.6	21.7
UNITS	MG/L	MG/L	MG/L	MG/L
QUALIFIER				
ANALYST	JK	JK	JK	JK
CONTAINER ID				
DATE ANALYZED	12/19/00	12/19/00	12/19/00	12/19/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC061.	TOC061.	TOC061.	TOC061.
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB061	TOCB061	TOCB061	TOCB061
LCS ID	TOCL061			TOCL061
LCSD ID	TOCL061D			
MS ID	6482.010MS			
MSD ID	6482.010MSD			
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	: SAIC		PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	: CARSWELL		PRINTED ON	:	12/22/2000 15:26

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	BSAICTA006-01	WSAICTA002-01MS	WSAICTA002-01MSD	PREP BLANK
SAMPLE ID	6476.003	6454.004MS	6454.004MSD	TOCB062
SAMPLE MATRIX	SOIL	SOIL	SOIL	
DATE SAMPLED	12/12/00	12/5/00	12/5/00	
DATE RECEIVED	12/14/00	12/6/00	12/6/00	
METHOD REFERENCE	SW846-9060	SW846-9060	SW846-9060	SW846-9060
QUANTITATION LIMIT	1.03	1.17	1.17	1
RESULTS	ND	518	491	ND
UNITS	MG/KG	MG/KG	MG/KG	MG/KG
QUALIFIER				
% MOISTURE	2.981	14.45	14.45	
ANALYST	HT	HT	HT	HT
CONTAINER ID				
DATE ANALYZED	12/20/00	12/20/00	12/20/00	12/20/00
DILUTION	1	1	1	1
INSTRUMENT ID	A-OI700	A-OI700	A-OI700	A-OI700
QC BATCH ID	TOC062	TOC062	TOC062	TOC062
PRE-PREP BLANK ID				
PREP BLANK ID	TOCB062	TOCB062	TOCB062	TOCB062
LCS ID	TOCL062	TOCL062	TOCL062	
LCSD ID				
MS ID	6454.004MS		6454.004MS	
MSD ID	6454.004MSD			
DUP ID				

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LABORATORY REPORT

TOTAL ORGANIC CARBON (TOC)

CLIENT NAME	:	SAIC	PROJECT NUMBER	:	AOC 20 S.I.
PROJECT NAME	:	CARSWELL	PRINTED ON	:	12/22/2000 15:26

PARAMETER: Total Organic Carbon

CLIENT SAMPLE ID	LAB CONTROL SAMP
SAMPLE ID	TOCL062
SAMPLE MATRIX	
DATE SAMPLED	
DATE RECEIVED	
METHOD REFERENCE	SW846-9060
QUANTITATION LIMIT	10
RESULTS	239
UNITS	MG/KG
QUALIFIER	
% MOISTURE	
ANALYST	HT
CONTAINER ID	
DATE ANALYZED	12/20/00
DILUTION	10
INSTRUMENT ID	A-01700
QC BATCH ID	TOC062
PRE-PREP BLANK ID	
PREP BLANK ID	TOCB062
LCS ID	
LCSD ID	
MS ID	
MSD ID	
DUP ID	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121200
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 10:38

ANALYST	: JK/JC	CONTAINER ID	: A
DATE ANALYZED	: 12/26/00	DILUTION	: 1
INSTRUMENT FILE	: E1999.D	INSTRUMENT ID	: E-HP5973
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 20:49

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	ND UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	ND UG/L	
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND UG/L	
Benzene	0.090	1.0 UG/L	ND UG/L	
Bromobenzene	0.153	1.0 UG/L	ND UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND UG/L	
Bromoform	0.119	1.0 UG/L	ND UG/L	
Bromomethane	0.149	2.0 UG/L	ND UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND UG/L	
Chloroethane	0.122	2.0 UG/L	ND UG/L	
Chloroform	0.111	1.0 UG/L	ND UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121200
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 10:38

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS	QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND	UG/L
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L
Dibromomethane	0.156	1.0 UG/L	ND	UG/L
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L
Ethyl benzene	0.062	1.0 UG/L	ND	UG/L
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L
m/p-xylene	0.080	1.0 UG/L	ND	UG/L
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L
Methylene chloride	0.186	2.0 UG/L	ND	UG/L
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L
Naphthalene	0.117	1.0 UG/L	ND	UG/L
o-Xylene	0.067	1.0 UG/L	ND	UG/L
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L
Styrene	0.092	1.0 UG/L	ND	UG/L
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L
Tetrachloroethene	0.088	1.0 UG/L	ND	UG/L
Toluene	0.099	1.0 UG/L	ND	UG/L
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND	UG/L
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L
Trichloroethene	0.096	1.0 UG/L	ND	UG/L
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	102
4-Bromofluorobenzene	10 UG/L	86 - 115	101
Dibromofluoromethane	10 UG/L	86 - 118	105
Toluene-d8	10 UG/L	88 - 110	106

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: TB121200
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.001
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 10:38

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : V024	PREP BLANK ID : VBLK024	LCS ID : VLCS024
LCSD ID : VLCS024D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121200
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.002
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001 10:38

ANALYST	: JK/JC	CONTAINER ID	: A
DATE ANALYZED	: 12/26/00	DILUTION	: 1
INSTRUMENT FILE	: E2000.D	INSTRUMENT ID	: E-HP5973
PURGE VOLUME	: 20 mL	TIME ANALYZED	: 21:22

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	0.114	1.0 UG/L	ND	UG/L	
1,1,1-Trichloroethane	0.088	1.0 UG/L	ND	UG/L	
1,1,2,2-Tetrachloroethane	0.228	1.0 UG/L	ND	UG/L	
1,1,2-Trichloroethane	0.168	1.0 UG/L	ND	UG/L	
1,1-Dichloroethane	0.117	1.0 UG/L	ND	UG/L	
1,1-Dichloroethene	0.106	1.0 UG/L	ND	UG/L	
1,1-Dichloropropene	0.109	1.0 UG/L	ND	UG/L	
1,2,3-Trichlorobenzene	0.114	1.0 UG/L	ND	UG/L	
1,2,3-Trichloropropane	0.231	1.0 UG/L	ND	UG/L	
1,2,4-Trichlorobenzene	0.116	1.0 UG/L	ND	UG/L	
1,2,4-Trimethylbenzene	0.060	1.0 UG/L	4.1	UG/L	
1,2-Dibromo-3-chloropropane	0.339	1.0 UG/L	ND	UG/L	
1,2-Dibromoethane (EDB)	0.114	1.0 UG/L	ND	UG/L	
1,2-Dichlorobenzene	0.107	1.0 UG/L	ND	UG/L	
1,2-Dichloroethane	0.139	1.0 UG/L	ND	UG/L	
1,2-Dichloropropane	0.199	1.0 UG/L	ND	UG/L	
1,3,5-Trimethylbenzene	0.081	1.0 UG/L	0.90	UG/L	J
1,3-Dichlorobenzene	0.113	1.0 UG/L	ND	UG/L	
1,3-Dichloropropane	0.142	1.0 UG/L	ND	UG/L	
1,4-Dichlorobenzene	0.088	1.0 UG/L	ND	UG/L	
1-Chlorohexane	0.161	1.0 UG/L	ND	UG/L	
2,2-Dichloropropane	0.194	1.0 UG/L	ND	UG/L	
2-Chlorotoluene	0.102	1.0 UG/L	ND	UG/L	
4-Chlorotoluene	0.108	1.0 UG/L	ND	UG/L	
Benzene	0.090	1.0 UG/L	ND	UG/L	
Bromobenzene	0.153	1.0 UG/L	ND	UG/L	
Bromochloromethane	0.170	1.0 UG/L	ND	UG/L	
Bromodichloromethane	0.145	1.0 UG/L	ND	UG/L	
Bromoform	0.119	1.0 UG/L	ND	UG/L	
Bromomethane	0.149	2.0 UG/L	ND	UG/L	
Carbon tetrachloride	0.097	1.0 UG/L	ND	UG/L	
Chlorobenzene	0.102	1.0 UG/L	ND	UG/L	
Chloroethane	0.122	2.0 UG/L	ND	UG/L	
Chloroform	0.111	1.0 UG/L	ND	UG/L	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	EB121200
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6476.002
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/12/00	DATE RECEIVED :	12/14/00
SAMPLE MATRIX :	WATER	PRINTED ON :	1/9/2001 10:38

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	0.164	2.0 UG/L	ND	UG/L	
cis-1,2-Dichloroethene	0.112	1.0 UG/L	ND	UG/L	
cis-1,3-Dichloropropene	0.162	1.0 UG/L	ND	UG/L	
Dibromochloromethane	0.166	1.0 UG/L	ND	UG/L	
Dibromomethane	0.156	1.0 UG/L	NO	UG/L	
Dichlorodifluoromethane	0.277	2.0 UG/L	ND	UG/L	
Ethyl benzene	0.062	1.0 UG/L	0.96	UG/L	J
Hexachlorobutadiene	0.104	1.0 UG/L	ND	UG/L	
Isopropylbenzene	0.080	1.0 UG/L	ND	UG/L	
m/p-xylene	0.080	1.0 UG/L	4.7	UG/L	
Methyl tert-butyl ether	0.186	2.0 UG/L	ND	UG/L	
Methylene chloride	0.186	2.0 UG/L	ND	UG/L	
n-Butylbenzene	0.139	1.0 UG/L	ND	UG/L	
n-Propylbenzene	0.067	1.0 UG/L	ND	UG/L	
Naphthalene	0.117	1.0 UG/L	1.3	UG/L	
o-Xylene	0.067	1.0 UG/L	2.0	UG/L	
p-Isopropyltoluene	0.084	1.0 UG/L	ND	UG/L	
sec-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Styrene	0.092	1.0 UG/L	ND	UG/L	
tert-Butylbenzene	0.084	1.0 UG/L	ND	UG/L	
Tetrachloroethene	0.088	1.0 UG/L	ND	UG/L	
Toluene	0.099	1.0 UG/L	3.3	UG/L	
trans-1,2-Dichloroethene	0.114	1.0 UG/L	ND	UG/L	
trans-1,3-Dichloropropene	0.116	1.0 UG/L	ND	UG/L	
Trichloroethene	0.096	1.0 UG/L	ND	UG/L	
Trichlorofluoromethane	0.170	1.0 UG/L	ND	UG/L	
Vinyl chloride	0.102	1.0 UG/L	ND	UG/L	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	10 UG/L	80 - 120	102
4-Bromofluorobenzene	10 UG/L	86 - 115	103
Dibromofluoromethane	10 UG/L	86 - 118	104
Toluene-d8	10 UG/L	88 - 110	107

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: EB121200		
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.002		
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B		
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00		
SAMPLE MATRIX	: WATER	PRINTED ON	: 1/9/2001	10:38	

BATCH QUALITY CONTROL SAMPLE IDs

QC BATCH ID : V024	PREP BLANK ID : VBLK024	LCS ID : VLCS024
LCSD ID : VLCS024D		

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: BSAICTA006-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 15:46

% MOISTURE	: 2.981	ANALYST	: JC
CONTAINER ID	: A	DATE ANALYZED	: 12/26/00
INSTRUMENT FILE	: F5679.D	INSTRUMENT ID	: F-HP5973
SAMPLE WEIGHT	: 5 g	TIME ANALYZED	: 18:54

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
1,1,1,2-Tetrachloroethane	1.36	5.1 UG/KG	ND	UG/KG	
1,1,1-Trichloroethane	1.23	5.1 UG/KG	ND	UG/KG	
1,1,2,2-Tetrachloroethane	4.00	5.1 UG/KG	ND	UG/KG	
1,1,2-Trichloroethane	1.11	5.1 UG/KG	ND	UG/KG	
1,1-Dichloroethane	1.28	5.1 UG/KG	ND	UG/KG	
1,1-Dichloroethene	1.24	5.1 UG/KG	ND	UG/KG	
1,1-Dichloropropene	1.05	5.1 UG/KG	ND	UG/KG	
1,2,3-Trichlorobenzene	1.32	5.1 UG/KG	ND	UG/KG	
1,2,3-Trichloropropane	4.38	5.1 UG/KG	ND	UG/KG	
1,2,4-Trichlorobenzene	1.25	5.1 UG/KG	ND	UG/KG	
1,2,4-Trimethylbenzene	0.924	5.1 UG/KG	ND	UG/KG	
1,2-Dibromo-3-chloropropane	3.55	5.1 UG/KG	ND	UG/KG	
1,2-Dibromoethane (EDB)	1.34	5.1 UG/KG	ND	UG/KG	
1,2-Dichlorobenzene	1.06	5.1 UG/KG	ND	UG/KG	
1,2-Dichloroethane	1.53	5.1 UG/KG	ND	UG/KG	
1,2-Dichloropropane	1.23	5.1 UG/KG	ND	UG/KG	
1,3,5-Trimethylbenzene	0.871	5.1 UG/KG	ND	UG/KG	
1,3-Dichlorobenzene	0.866	5.1 UG/KG	ND	UG/KG	
1,3-Dichloropropane	2.20	5.1 UG/KG	ND	UG/KG	
1,4-Dichlorobenzene	0.851	5.1 UG/KG	ND	UG/KG	
1-Chlorohexane	1.26	5.1 UG/KG	ND	UG/KG	
2,2-Dichloropropane	1.27	5.1 UG/KG	ND	UG/KG	
2-Chlorotoluene	0.818	5.1 UG/KG	ND	UG/KG	
4-Chlorotoluene	0.769	5.1 UG/KG	ND	UG/KG	
Benzene	1.25	5.1 UG/KG	ND	UG/KG	
Bromobenzene	1.43	5.1 UG/KG	ND	UG/KG	
Bromochloromethane	1.35	5.1 UG/KG	ND	UG/KG	
Bromodichloromethane	1.03	5.1 UG/KG	ND	UG/KG	
Bromoform	1.71	5.1 UG/KG	ND	UG/KG	
Bromomethane	1.67	5.1 UG/KG	ND	UG/KG	
Carbon tetrachloride	1.16	5.1 UG/KG	ND	UG/KG	
Chlorobenzene	0.891	5.1 UG/KG	ND	UG/KG	
Chloroethane	1.42	5.1 UG/KG	ND	UG/KG	
Chloroform	1.34	5.1 UG/KG	ND	UG/KG	

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LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME :	SAIC	CLIENT SAMPLE ID :	BSAICTA006-01
PROJECT NAME :	CARSWELL	LAB SAMPLE ID :	6476.003
PROJECT NUMBER :	AOC 20 S.I.	METHOD REFERENCE :	SW846-8260B
DATE SAMPLED :	12/12/00	DATE RECEIVED :	12/14/00
SAMPLE MATRIX :	SOIL	PRINTED ON :	1/19/2001 15:46

PARAMETER	MDL	QUANTITATION LIMIT	RESULTS		QUALIFIER
Chloromethane	1.40	5.1 UG/KG	ND	UG/KG	
cis-1,2-Dichloroethene	1.22	5.1 UG/KG	ND	UG/KG	
cis-1,3-Dichloropropene	0.950	5.1 UG/KG	ND	UG/KG	
Dibromochloromethane	1.72	5.1 UG/KG	ND	UG/KG	
Dibromomethane	1.25	5.1 UG/KG	ND	UG/KG	
Dichlorodifluoromethane	1.65	5.1 UG/KG	ND	UG/KG	
Ethyl benzene	0.878	5.1 UG/KG	ND	UG/KG	
Hexachlorobutadiene	2.43	5.1 UG/KG	ND	UG/KG	
Isopropylbenzene	0.914	5.1 UG/KG	ND	UG/KG	
m/p-xylene	1.02	5.1 UG/KG	ND	UG/KG	
Methyl tert-butyl ether	1.03	5.1 UG/KG	ND	UG/KG	
Methylene chloride	1.87	5.1 UG/KG	26	UG/KG	
n-Butylbenzene	1.81	5.1 UG/KG	ND	UG/KG	
n-Propylbenzene	0.848	5.1 UG/KG	ND	UG/KG	
Naphthalene	3.15	5.1 UG/KG	ND	UG/KG	
o-Xylene	0.831	5.1 UG/KG	ND	UG/KG	
p-Isopropyltoluene	1.35	5.1 UG/KG	ND	UG/KG	
sec-Butylbenzene	0.992	5.1 UG/KG	ND	UG/KG	
Styrene	1.04	5.1 UG/KG	ND	UG/KG	
tert-Butylbenzene	0.852	5.1 UG/KG	ND	UG/KG	
Tetrachloroethene	0.772	5.1 UG/KG	ND	UG/KG	
Toluene	1.03	5.1 UG/KG	ND	UG/KG	
trans-1,2-Dichloroethene	1.18	5.1 UG/KG	ND	UG/KG	
trans-1,3-Dichloropropene	0.972	5.1 UG/KG	ND	UG/KG	
Trichloroethene	1.02	5.1 UG/KG	ND	UG/KG	
Trichlorofluoromethane	1.61	5.1 UG/KG	ND	UG/KG	
Vinyl chloride	1.42	5.1 UG/KG	ND	UG/KG	

QUALITY CONTROL DATA

SURROGATE COMPOUND	SPIKE ADDED	QC RECOVERY LIMITS	%RECOVERY
1,2-Dichloroethane-d4	52 UG/KG	80 - 120	105
4-Bromofluorobenzene	52 UG/KG	74 - 121	100
Dibromofluoromethane	52 UG/KG	80 - 120	102
Toluene-d8	52 UG/KG	81 - 117	101

PDP Analytical Services

1680 Lake Front Circle, Suite B, The Woodlands, TX 77380

LABORATORY REPORT

VOLATILES BY GC/MS

CLIENT NAME	: SAIC	CLIENT SAMPLE ID	: BSAICTA006-01
PROJECT NAME	: CARSWELL	LAB SAMPLE ID	: 6476.003
PROJECT NUMBER	: AOC 20 S.I.	METHOD REFERENCE	: SW846-8260B
DATE SAMPLED	: 12/12/00	DATE RECEIVED	: 12/14/00
SAMPLE MATRIX	: SOIL	PRINTED ON	: 1/19/2001 15:46

BATCH QUALITY CONTROL SAMPLE IDs		
QC BATCH ID :FV02	LCS ID :FVLCS02	LCSD ID :FVLCS02D

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ADMINISTRATIVE RECORD

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