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National Uranium Resource Evaluation

MASTER

NURE AERIAL GAMMA-RAY AND MAGNETIC DETAIL SURVEY PORTIONS OF NORTHEAST WASHINGTON

FINAL REPORT

VOLUME I

DATA ACQUISITION, REDUCTION AND INTERPRETATION

CARSON HELICOPTERS, INC.

GEOSCIENCE DIVISION 32-H Blooming Glen Rd. Perkasie, Penna. 18944

November 1981

PREPARED FOR U.S. DEPARTMENT OF ENERGY
Grand Junction Office, Colorado

DISCLAIMER

This report is a result of work performed by Carson Helicopters, Inc. through a Bendix Field Engineering Corporation Subcontract, as part of the National Uranium Resource Evaluation. NURE is a program of the U.S. Department of Energy's Grand Junction, Colorado, Office to acquire and compile geologic and other information with which to assess the magnitude and distribution of uranium resources and to determine areas favorable for the occurrence of uranium in the United States.

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PREPARED FOR U. S. DEPARTMENT OF ENERGY
GRAND JUNCTION OFFICE, COLORADO
UNDER CONTRACT NO. DE-AC13-76GJ01664
AND BENDIX FIELD ENGINEERING CORPORATION
SUBCONTRACT NO. 79-350S

ABSTRACT

As part of the Department of Energy (DOE) National Uranium Evaluation Program a rotary wing detailed high sensitivity radiometric and magnetic survey was performed which encompassed 8 areas in the northeastern portion of Washington State. The total area surveyed consisted of approximately 9105 line miles.

The survey was flown with a Sikorsky S58T helicopter equipped with a high sensitivity gamma ray spectrometer and magnetometer. The airborne spectrometer system was calibrated at the DOE calibration facilities at Walker Field in Grand Junction, Colorado and at the Dynamic Test Range at Lake Mead, Arizona.

The radiometric data was corrected and normalized to 400 feet terrain clearance and identified as to rock type by correlating each sample with existing geologic map information. A multi-variate analysis was performed, which together with the radiometric and magnetic contour maps was utilized in the geochemical analysis of each area.

The survey data is presented in the form of contour maps, stacked profiles, histograms and microfiche copies of the data listings. This graphic material is presented in the individual area reports.

The results of the geologic and geochemical evaluation are presented as individual chapters of this narrative report.

The survey was awarded to LKB Resources, Inc. which completed the data acquisition and much of the data processing. In April, 1980 Carson Helicopters, Inc. and Carson Geoscience Company agreed to manage the project and to complete delivery of this final report.

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1.0 INTRODUCTION

The Northeast Washington Survey was performed under the United States Department of Energy's National Uranium Resource Evaluation (NURE) Program, which is designed to provide radioelement distribution information to assist in assessing the uraniferous material potential of the United States. All phases of this work were performed for the Grand Junction Office of Bendix Field Engineering Corporation under subcontract #79-350S.

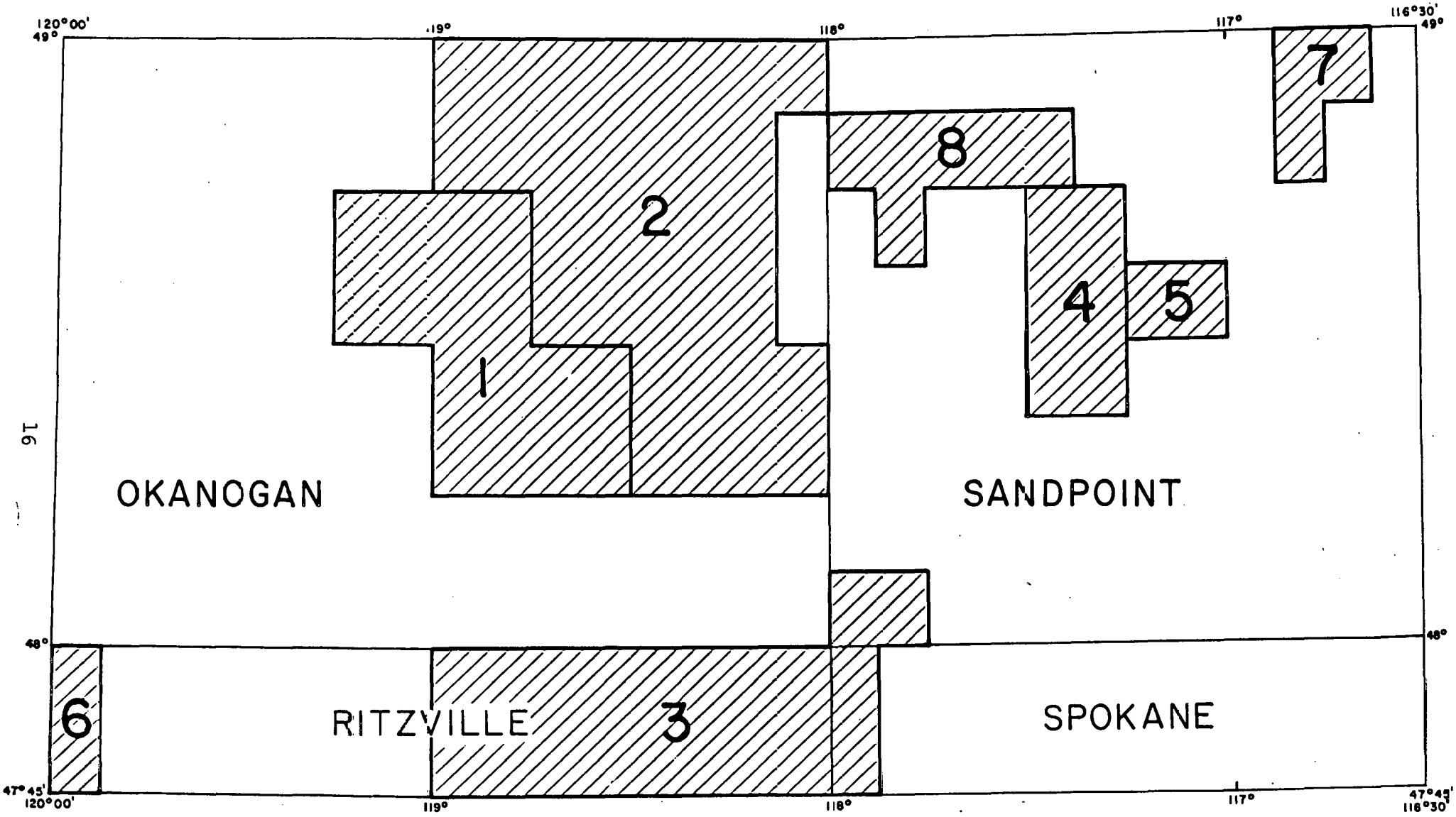
The survey was flown during the period from September to October 1979 and covered the following areas:

AREA	STATE	APPROXIMATE LINE MILES
W. Fork Sampoil River	Washington	934.5
Mt. Leona-Nancy Creek	Washington	4056.8
Midnight Sherwood Mines	Washington	2145.0
Lost Creek	Washington	490.3
Gleason Mtn.	Washington/Idaho	360.4
Chelan	Washington	238.3
Saddle Mtn.	Washington	284.8
Spirit Pluton	Washington	595.0

This report constitutes Volume I (Narrative Report) which discusses the instrumentation data reduction methods and interpretation results. The graphic data is contained in separate volumes as follows:

VOLUME	AREA
2A	W. Fork Sampoil River
2B	Mt. Leona-Nancy Creek
2C	Midnight Sherwood Mines
2D	Lost Creek
2E	Gleason Mtn.
2F	Chelan
2G	Saddle Mtn.
2H	Spirit Pluton

The radiometric and ancilliary data were digitally recorded and processed. The results are presented in the form of stacked profiles, contour maps, flight path maps, statistical tables and frequency distribution histograms. These graphical outputs are presented at a scale of 1:62,500 and are contained in the individual Volume 2 reports.



1. W. FORK SAMPOIL RIVER, WASH.
2. MT. LEONA – NANCY CREEK, WASH.
3. MIONITE – SHERWOOD MINES, WASH.
4. LOST CREEK, WASH.
5. GLEASON MTN., WASH.– IDAHO
6. CHELAN, WASH.
7. SADDLE MTN., IDAHO
8. SPIRIT PLUTON, WASH.

1.1 FIGURE 1 NORTHEAST WASHINGTON LOCATION DIAGRAM

2.0 THE AIRBORNE SYSTEM

2.1 ROTARY-WING AIRCRAFT

A Sikorsky S-58T Twin Turbine helicopter was utilized as the survey platform for the airborne radiometric survey. See Figure 2 .

All equipment was located within the cabin of the aircraft with the exception of the magnetometer which was rigidly mounted to the exterior. See Figure 3 .

2.2 INSTRUMENTATION

The primary system components include the following: See Figure 4 .

(1) Terrestrial Gamma-Ray Sensor
(2) Atmospheric Gamma-Ray Sensor
(3) Magnetometer
(4) Barometric Pressure Altimeter
(5) Radar Altimeter
(6) Temperature Sensor
(7) Data Acquisition System
(8) Recording System
(9) 35mm Tracking Camera

2.2.1 Terrestrial Sensor

This sub-system consists of two identical Scintrex GSA-77 Sensors, each containing seven crystals measuring 7 inches in diameter X 4 inches thick. The seven NaI (Tl) crystals in each sensor are arranged with six crystals mounted in a circle around one in the center. Each sensor incorporates an ultrastable high voltage supply, seven preamplifiers, a temperature control unit and a detector signal mixing circuit.

The detectors are housed in an appropriately insulated container. A heating element inside each container provides temperature stabilization to maintain detector balance. A temperature range control offers six switch-selectable temperature settings, and a temperature meter permits continued monitoring. A temperature setting of 27.5 C was maintained for most of the survey.

The central detector in each sensor contains a light emitting diode which allows the injection of a stabilization pulse which can be monitored and stabilized at any location on the pulse height spectrum. Although two such stabilization sources are available (one in each sensor) only one is used at any given time. A location above 6 MeV is used for this LED pulse.

Each of the two sensors provides a sensitive volume of 1077 inches^3 and weighs 350 lbs. These sensors draw power from the 28V helicopter system when in flight. When not flying, the sensor heaters are plugged into an external 115V power source through a 28V D.C. converter to maintain temperature control.

2.2.2 Atmospheric Sensor

This sub-system is mounted directly over a lead slab measuring 12 inches X 12 inches X 3 inches such that its field of view is limited to a solid angle of approximately 2π in the upward direction.

The detector consists of one 9 inch diameter X 5 inch thick NaI (Tl) crystal having a total sensitive volume of 318 cubic inches, and containing a light emitting diode source to provide a stabilization pulse. The weight of the atmospheric detector, including the lead shield is approximately 300 lbs.

2.2.3 Magnetometer

A modified ASQ-10 fluxgate magnetometer was employed in this system, with the observed magnetic field measurements obtained in units of 0.1 gamma.

2.2.4 Barometric Altitude Transducer

The barometric pressure instrumentation consists of an elastic pressure sensing element acting as a prime mover for positioning an electro-mechanical transducer.

2.2.5 Radar Altimeter

A Minneapolis Honeywell altimeter is used to measure helicopter to ground distance. The antenna is mounted on the underside of the helicopter. Altitude measurements are recorded to 1.0 foot. The recording range is 0-5,000 feet with an accuracy of 5 feet + 3% of actual altitude.

2.2.6 Temperature Sensor

A platinum resistance thermometer was utilized to record outside air temperature with an accuracy of 0.01°C.

2.2.7 Data Acquisition System

Signals from the terrestrial and atmospheric sensors are amplified, digitized and stored in the digital processor contained in the 1024 channel pulse height analyzer. Each sensor calibration is such that a 400 channel block contains gamma-ray intensity information for the energies 0-3 MeV and 3-6 MeV. The last 112 channels in each block are reserved for storing the stabilization pulses for the individual LED's. Two independent digital stabilizers are latched onto their appropriate LED pulse to achieve stability of the entire gamma-ray energy calibration. An oscilliscope display is available to monitor the accumulation of gamma-ray pulses during each acquisition period.

Data from the magnetometer, temperature probe, barometric altimeter, radar altimeter, clock and the preset data is fed through an A/D converter into the 1024 channel digital processor.

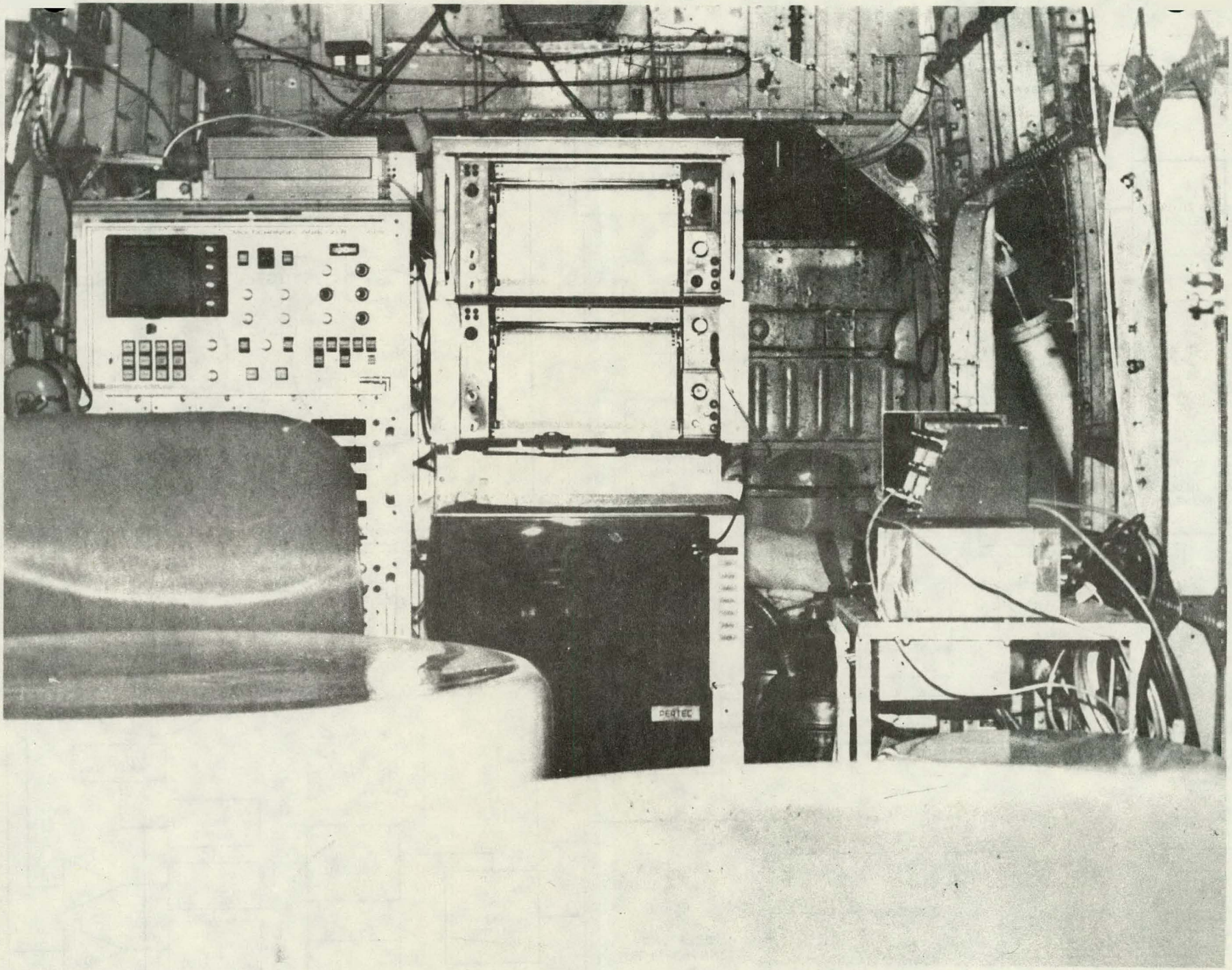
2.2.8 Recording System

The collected data is fed through a magnetic tape control to the tape unit. The data was recorded in 7 track BCD code at 800 BPI density. After each readout cycle, the system is automatically reset and a new data acquisition cycle is begun.

A permanent record of the following information is obtained for each acquisition cycle.

1. Acquisition Identification
   Four sets of six digit presettable data for
   a. Julian Day
   b. Line number
   c. Reference number (job no.)
   d. Azimuth (Flight direction)
2. Record number - (Sequential Record Count)
3. Time of day (Correlates with camera fiducials)
4. Temperature
5. Barometric altitude
6. Radar altitude
7. Scan time
8. Observed aeromagnetic reading
9. Live time in milliseconds for both terrestrial and atmospheric sensors
10. Full gamma-ray spectrum for each sensor package

2.2.9 FIG.-2 S-58T HELICOPTER



2.2.10 FIG.-3 S-58T HELICOPTER (CABIN LAYOUT)

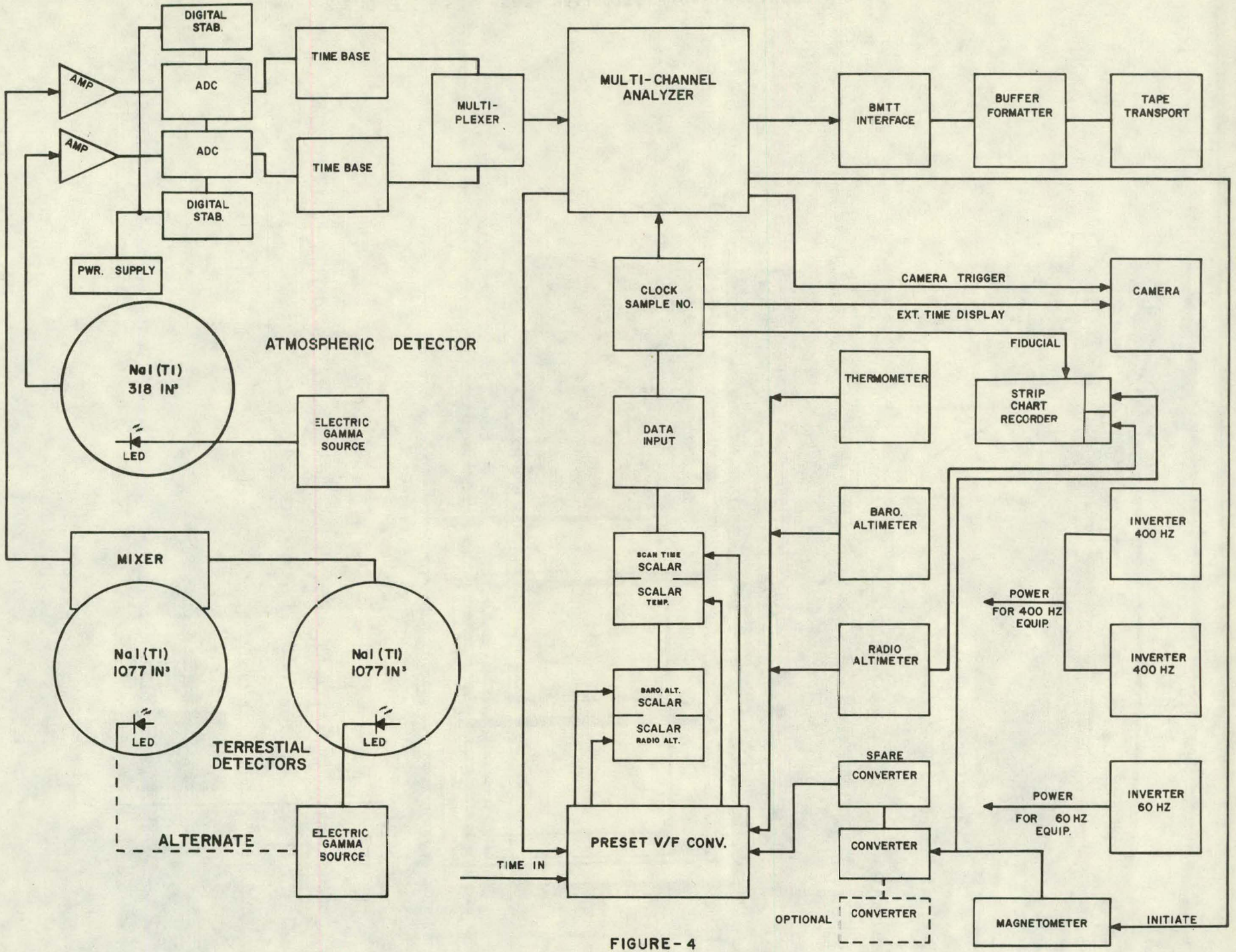


FIGURE-4

2.2.11 SYSTEM BLOCK DIAGRAM

3.0 DATA ACQUISITION

3.1 FIELD OPERATIONS

A Sikorsky S58-T helicopter (N870) was assigned to the project. Field operations commenced on the 1st of September, 1979 and were completed on the 15th of October, 1979. A total of 37 production flights were flown at an average production rate of approximately 246 line miles per flight.

Aircraft navigation was accomplished by visual methods using large scale flight charts on which the traverse and tie lines were plotted. The charts were used by the navigator in directing the pilot down line. A tracking camera was used to provide film coverage of the line flown. The tracking film and large scale maps were utilized to identify the precise aircraft track.

Terrain clearance was held as close to 400 feet as terrain and safety conditions permitted. Air speed was kept to a mean of 90 mph, in accordance with the requirement to maintain a crystal volume/air speed ratio of 20 or greater.

The system was thoroughly checked before each day's flight. In addition a test line, near the base of operations was flown prior to and following each production flight. The purpose of this test line flight, was to provide data so as to monitor ground moisture effects. The principle requirement being that the measured count rate be reproducible to within 20 percent.

A summary of the test line results is presented in the production summary, Appendix A.

4.0 DATA REDUCTION

4.1 GENERAL

Figure 5 outlines the processing sequence followed to locate, identify and reduce the gamma-ray survey data. The following sections describe the main data reduction steps consisting of the following principle operations:

4.2 Path recovery and geologic correlation
4.3 Digital data edit
4.4 Radiometric corrections
4.5 Statistical analysis
4.6 Magnetic data processing
4.7 Multivariate analysis

4.2 PATH RECOVERY AND GEOLOGIC CORRELATION

The aircraft track was established by manual identification and correlation of the 35mm tracking camera imagery with existing USGS topographic map sheets. The film images were identified on 1:62,500 and 1:24,000 scale maps from which the X and Y coordinates were read.

The coordinate data was edited by plotting the recovered path from the scaled X, Y coordinates. This was accomplished via the card edit plot program. The plotted path was inspected, any erratic variations were checked and if found in error, corrected and replotted.

The edited positional data was then transferred to the geologic map sheets from which the geologic rock units were read and correlated with the digital data by means of the digitized UTM coordinates.

4.3 DIGITAL DATA EDIT

The airborne data tapes are processed by the edit program which decodes and translates the recorded data. The multi-channel spectra for both atmospheric and terrestrial gamma-ray sensors are summed over the entire time interval required to traverse the surveyed line. The resulting spectrum is smooth enough to fit a least squares polynomial to the potassium and thorium photopeaks so as to accurately locate the channels corresponding to the maximum power points. The energy per channel is determined and the channel limits

corresponding to the primary energy bands are computed.

K = 1.365 - 1.575 MeV
U = 1.650 - 1.860 MeV
T = 2.400 - 2.805 MeV

The computation of the photopeak limits effectively compensates for any spectrum drift.

The counts/channel within each photopeak are summed, as are the total count (.4 - 3.0 MeV) and the cosmic counts (3.0 - 6.0 MeV). The summed counts are all normalized to counts per second by dividing each sum by the recorded net live time.

The ancilliary data (barometric, radar, temperature and magnetometer) are all converted to appropriate units and tested for validity. The standard deviation of the median values of the first and second differences and of the absolute values are computed for groups of 56 samples. All samples within a given group for which three or more data words deviate more than six times the standard deviation of the appropriate median are flagged as being of suspect data quality.

Program outputs consist of a raw spectral data file and a single record data file containing the summed, normalized raw spectral data. In addition, a comprehensive edit listing is generated which is reviewed for possible corrections and further provides a detailed list of the magnetic field data which is utilized for the determination of the magnetic level corrections.

4.4 RADIOMETRIC CORRECTIONS

The reformatted data, having been summed and normalized to counts per second, was further processed to remove the effects of aircraft background, cosmic radiation and atmospheric bismuth. In addition, the Compton scattering of the higher energy levels into the lower spectral windows was corrected using the spectral stripping method. The net reduced count was then tested for statistical adequacy and normalized to 400 feet altitude at standard temperature and pressure. The normalized count was converted to apparent concentration units utilizing the sensitivity factors derived from the Lake Mead Calibration Range.

4.4.1 Background Corrections

The effects of aircraft background and cosmic radiation was removed by computing their contribution to each of the primary energy windows, from empirically derived correction parameters.

The parameters, defining the contribution of these non-terrestrial radiation sources to the airborne gamma-ray measurements were determined from data obtained from high altitude overwater flights.

To derive the cosmic and aircraft background correction parameters several assumptions must be made:

(1) The background radiation, emanating from onboard sources, is a constant.

(2) Atmospheric and terrestrial radiation are effectively eliminated by flying at high altitudes over deep bodies of water.

(3) The observed count rate varies linearly with respect to the cosmic count as measured by summing over the energy band from 3.0 to 6.0 MeV.

Using these assumptions, the spectrums obtained are considered to be composed of only two components, cosmic radiation and aircraft background.

The count rate for any given window may then be expressed by the following equation:

$$C_{ij} = B_i + R_i \, Cos_j$$

where:

i, j	are the subscripts identifying the window and observation respectively.
C_{ij}	is the mean count for window i, observation j
B_i	is the background constant corresponding to window i.
R_i	is the cosmic ratio corresponding to window i

Cos_j is the summed cosmic count corresponding to observation j.

A system of observation equations was formed for each of the principal windows and solved simultaneously for the most probable values of the cosmic and background correction parameters.

4.4.2 Compton Scatter Corrections

The effects of the Compton scattering of the higher energy radiation into the lower energy bands of interest were removed by computing the scattered radiation count utilizing the following correction equations.

(1) $T_c = T_o - bUc$

(2) $U_c = U_o - T_c\alpha_o - T_c\alpha_1 H$

(3) $K_c = K_o - T_c B_o - U_c \gamma$

where:

U_c = Corrected uranium count

U_o = Uranium count corrected for aircraft background and cosmic radiation

T_o = Thorium count corrected for aircraft background and cosmic radiation

T_c = Thorium count corrected for aircraft background, cosmic radiation and scattered uranium at 2.43 MeV appearing in the thorium window

K_o = Potassium count corrected for aircraft background and cosmic radiation

K_c = Corrected potassium count

b = Fraction of uranium counts appearing in the thorium window (R. L. Grasty - A Calibration Procedure for an Airborne Gamma-ray Spectrometer)

α_o = Stripping ratio (uranium counts per thorium count at zero altitude)

α_1 = Rate of change of the uranium stripping ratio with altitude H

β_o = Stripping ratio (potassium counts per thorium count at zero altitude

γ_o = Stripping ratio (potassium counts per uranium count)

The stripping ratios α_o, β_o, γ_o and b were determined from data obtained at the Walker Field test pads. The five test pads, each having known concentrations of K, U, T, provided the necessary redundant data for the solution of the stripping ratios α_o, β_o, γ_o and the system sensitivities K_1, K_2, K_3. The several equations relating the count rates with their corresponding concentrations are as follows:

$$(4) \quad T = K_1 \times Tppm + U_c \times b$$

$$(5) \quad U = K_2 \times Uppm + T_c \times \alpha_o$$

$$(6) \quad K = K_3 \times K_{pct} + T_c \beta_o + U_c \times \gamma_o$$

where:

T, U, K = Observed counts corrected for the local background as measured at Matrix Pad No. 1

Tppm, Uppm, Kpct = Concentration values after subtracting the Matrix Pad concentration values.

α_o, β_o, γ_o, b = Unknown stripping ratios

K_1, K_2, K_3 = Unknown sensitivities

4.4.3 Atmospheric Bismuth Correction

The atmospheric detector data was sampled at the same time interval as the terrestrial detector data, 1.0 seconds per scan. However, the relative precision of the atmospheric data is significantly less than the terrestrial data. This results from the fact that the volume of the atmospheric detector is approximately one seventh that of the terrestrial system.

Since the precision index varies directly as the square root of the number of observations, the atmospheric precision was increased by averaging over a 49 sample period. This period provides a seven fold increase in the precision of the atmospheric data which approaches the precision of the terrestrial sensor.

The averaged atmospheric data was then corrected for aircraft background, cosmic radiation and Compton scatter effects resulting from thorium photons scattering into the atmospheric uranium window. Additionally, correction was made for terrestrial uranium shine-around which was considered to vary exponentially with altitude.

The actual calculations are defined by the following expression:

$$Bi\ AIR = (AUC - TUC \times SH)/ (R - SH)$$

where:

AUC = Atmospheric uranium count corrected for cosmic radiation, aircraft background and Compton scattering of thorium into the uranium window.

TUC = Terrestrial uranium count corrected for cosmic radiation, aircraft background, Compton scattering of thorium into the uranium window and corrected for atmospheric bismuth.

SH = Exponential shine-around equation

$$SH = A \times EXP\ (-uH)$$

where: A and u are empirically derived exponential coefficients.

R = Response ratio equating the atmospheric and terrestrial counts.

$$R = 1./(A + B \times H)$$

where: A and B are empirically derived linear coefficients.

4.4.4 Statistical Adequacy Test

The reduced single record count rates, (K, U, T) derived as described in the preceding sections, were tested to determine the significance of the net count rate values.

In this case significance is measured in terms of whether the net count exceeds some specified multiple of the computed standard deviation of the net count. From the paper presented by Currie (Analytical Chemistry 1968) the standard deviation of the net count may be expressed as:

$$NET = 1.41\ (B)^{\frac{1}{2}}$$

where B is the total background which in the context of this discussion is considered to be the sum of the corrections applied to the observed count.

The confidence level, suggested by Currie and commonly adopted as a standard statistical measure, is .95 or 95%. The standard normal variable (multiple of standard deviation) corresponding to the 95% level used to evaluate the single record data is therefore:

$$2.33\ (\text{obs. count} - \text{net count})^{\frac{1}{2}}$$

In summation, if the net count is less than 2.33 times the square root of the total applied correction (background) the sample is considered statistically inadequate and is flagged. The net counts are normalized to 400 feet and the ratios, U/K, U/T and T/K, are computed for all single record samples. The single record data are presented in the form of microfiche copies of the computer listings.

4.4.5 Altitude Normalization

The intensity of gamma radiation is considered to decrease exponentially with increasing distance from the source. This decrease in intensity may be defined as follows:

$$(1)\ C_h = S \exp\ (-u_h{}^h)$$

where:

C_h = the reduced count rate measured at height h above the source.

S = Source concentration expressed in counts/second.

u_h = The total attenuation coefficient compensated for air density as derived from the observed temperature and pressure.

The count rate observed at 400 feet above the source, at standard temperature of 0°C and standard pressure of 1013 millibars,is also expressed exponentially.

$$(2)\quad C_{400} = S \exp(-u_o\ 400)$$

where:

u_o = the total attenuation coefficient at standard temperature and pressure.

Equating equations 1 and 2.

$$(3)\quad C_{400} = C_h \exp(-u_o\ 400) \exp(-u_h{}^h)$$

and since $\exp(u_o\ 400)$ is a constant = K

$$(4)\quad C_{400} = K\ C_h/\exp(-u_h{}^h)$$

4.4.6 Record Averaging

The averaging interval is determined by the following criteria.

(1) The interval over which the data is averaged must be less than 1200 feet.

(2) Ninety-five percent of the averaged uranium data must pass the statistical adequacy test.

$$2.33\ (\text{average correction}/N)^{\frac{1}{2}}$$

The average correction is determined from the reduced count prior to normalization to 400 feet. Single records failing the statistical adequacy test are included when calculating the averaged record sample; the only restriction imposed is

that the single record data be within the altitude limits of 200 to 1000 feet.

The averaged data values failing the test are flagged and excluded from all further analysis. The average interval for the survey was five samples.

4.5 STATISTICAL ANALYSIS

The averaged data was statistically evaluated predicated on the assumption that the average count is normally distributed about the mean of the group to which the record belongs. The assumption is valid for all large samples consisting of 30 or more records. Statistics relating to samples consisting of fewer than 30 records are at best suspect.

The pertinent statistics defining a given sample are the mean and standard deviation. These statistics are computed for each data parameter (K, U, T, U/T, T/K) of each geologic and geochemical unit utilizing only those data values determined to be statistically adequate.

Each averaged record data parameter was evaluated, relative to the appropriate unit mean and standard deviation, by computing the standard normal variable Z.

$$Z_k = (X_k - M_k)/Sigma_k$$

where:

k = subscript identifying data parameter

X_k = Averaged record value

M_k = Mean value of parameter k

$Sigma_k$ = Standard deviation of parameter k

Z_k = Standard normal variable of averaged record parameter k

The standard normal variable is considered to have a normal distribution with a mean of zero and standard deviation of ±1.00.

Although the departure of the averaged record count from the mean of its corresponding unit may be classified as potentially anomalous, it remains for the geologic interpreter to evaluate each anomaly so as to eliminate those which are obviously caused by climatic or topographic conditions.

4.6 MAGNETIC DATA PROCESSING

The recorded magnetic total field is edited simultaneously with the gamma-ray data. The edit listing generated by the digital edit program together with the identified film intersections are the basic information required to adjust the magnetics network.

Initially a tie line is selected as a datum to which all intersecting traverses are adjusted. All other tie line and traverse line intersection values are evaluated in terms of the magnitude and linearity of the level corrections required to adjust each traverse line to agree with the corresponding tie line value.

Excessively large non-linear corrections generally indicate erroneous positional information. In practice slight positional adjustments are usually applied so as to insure the required level corrections approach linearity.

The last step in the adjustment processes was the calculation and removal of the earth's regional magnetic field component. This was computed using the 1975 IGRF Model updated to 1979. The residual magnetic field was further adjusted by adding a constant datum value of 56,000 gamma.

4.7 MULTIVARIATE ANALYSIS

A multivariate analysis was performed using the averaged record data. The results are presented graphically in the appropriate Volume II. The approach used is defined below.

The mean and standard deviation was computed for each of the three radioelements, K, eU, eTh. The mean values were computed using all significant averaged records contained within a given job area.

Significance levels were defined for each of the three elements. The level of significance was computed as the deviation of the averaged record from the mean and is expressed in terms of the standard normal variable Z.

$$Z = (X_k - M_k)/\text{Sigma } M_k$$

where:

k = Subscript identifying element

X_k = Averaged record value

M_k = Mean value of element k

$Sigma_k$ = Standard deviation of the mean for element k

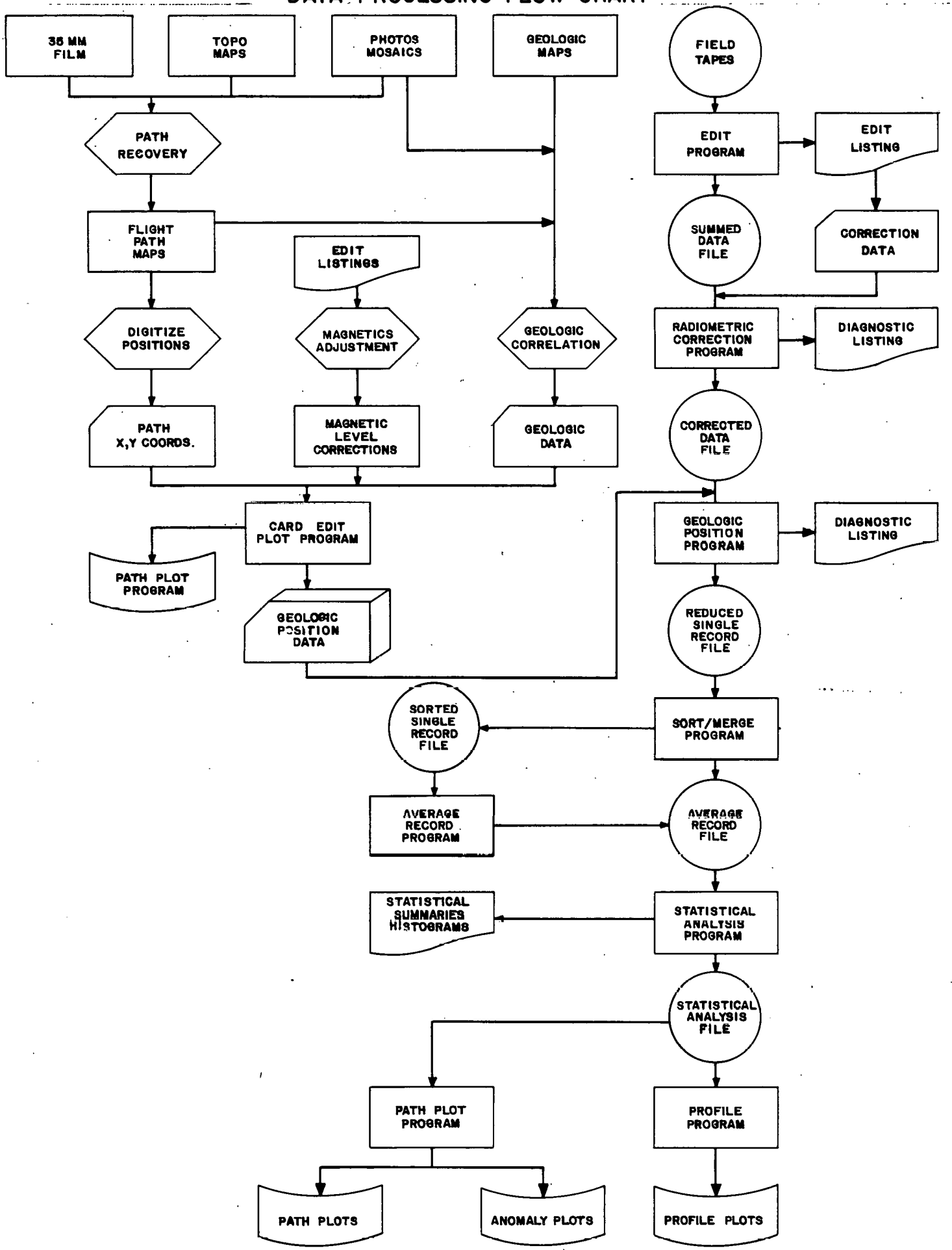
The analysis was performed using five levels for uranium and three levels each for thorium and potassium. A total of 45 levels were defined and coded.

The basic significance levels used were as follows:

eU ($<-3\sigma$, -3σ to -1σ, -1σ to $+1\sigma$, 1σ to 3σ, $>3\sigma$)

K, eTh ($<-1\sigma$, -1σ to 1σ, $>1\sigma$)

DATA PROCESSING FLOW CHART



4.7.1 FIGURE - 5

5.0 GAMMA-RAY MAGNETIC DATA PRESENTATION

5.1 GRAPHIC DATA PRESENTATION

All graphic and numeric data is organized and identified by area. The graphic data was produced at scales of 1:24,000 and 1:62,500 for inclusion in the Volume II reports. The data presented consists of the following specific items:

(1) Radiometric Multiple-Parameter Stacked Profiles
(2) Magnetic Multiple-Parameter Stacked Profiles
(3) Count Rate Histograms
(4) Single Record Data Listings
(5) Averaged Record Data Listings
(6) Radiometric and Magnetic Contour Maps
(7) Multivariate Analysis Map

5.2 RADIOMETRIC MULTIPLE-PARAMETER STACKED PROFILES

The profiles of the averaged record data contain the following information:

Flight Line Number
Appropriate Title Information
Fiducial Numbers
Residual Magnetic Profile
Radar Altimeter
Corrected total Count in CPS
Atmospheric Bismuth (Bi Air) Correction in CPS
Apparent Concentration of U in ppm
Apparent Concentration of T in ppm
Apparent Concentration of K in %
Ratio U/K
Ratio U/T
Ratio T/K
Geologic Strip Map with Flight Path

Flags appearing under the K, U, and T traces indicate that the computed average record value for the corresponding element has failed the calculated statistical adequacy test. Flags appearing under the altitude trace indicate the averaged record has exceeded the altitude limits of 200 and 700 feet.

5.3 MAGNETIC MULTIPLE-PARAMETER STACKED PROFILES

The magnetic data profiles were generated from the single record data file and contain the following information:

Flight Line Number
Appropriate Title Information
Fiducial Numbers
Barometric Altitude mmHg
Temperature in degrees centigrade
Radar terrain clearance in feet
Ground station magnetic field in gammas
Residual Magnetic Profile in gammas
Geologic Map Strip with Flight Path

Samples obtained at terrain clearances less than 200 feet and greater than 700 feet are identified by a plotted symbol appearing at the bottom of the radar altimeter trace.

5.4 HISTOGRAMS

The histograms of the apparent concentrations of U, Th, K and their associated ratios were computed for each geologic and geochemical unit, for each area and are included in Volume II. Additional information presented are the mean, standard deviation and number of records contained in each distribution plot.

5.5 DATA LISTINGS

The data listings from the reduced data tapes covering each survey area are produced on microfiche and are included in the appropriate Volume II report. Each printer page is identified by a header label specifying the survey company, survey area, year survey was flown, and line number.

5.5.1 Single Record Reduced Data Listings

The following elements are listed for each record:

HEADING	DESCRIPTION
REC	Fiducial Number (Time in seconds past midnight)
AF	Altitude Flag (Greater than 700 and less than 200 feet)
KF	Potassium Flag (Failed statistical adequacy test)
UF	Uranium Flag (Failed statistical adequacy test)
TF	Thorium Flag (Failed statistical adequacy test)
UNIT	Geologic Unit Code

LAT	Latitude in decimal degrees
LONG	Longitude in decimal degrees
TEMP	Temperature in degrees centigrade
BARM	Barometric Pressure Height in mmHg
MAG	Residual Magnetic Field in Gammas
GROSS	Total Count (.4 to 3.0 MeV) in Counts/Second
K	Apparent Concentration of K in %
U	Apparent Concentration of U in ppm
T	Apparent Concentration of T in ppm
U/K	Ratio Uranium/Potassium
U/T	Ratio Uranium/Thorium
T/K	Ratio Thorium/Potassium
COS	Cosmic Count (3 to 6 MeV) in Counts/Second
Bi	Atmospheric Bismuth Correction in Counts/Second

5.5.2 Averaged Record Data Listings

The following elements are listed for each averaged record:

HEADING	DESCRIPTION
REC	Fiducial Number of Central Records (time in seconds past midnight)
AF	Altitude Flag (Greater than 700 or less than 200 feet)
KF	Potassium Flag (Failed statistical adequacy test)
UF	Uranium Flag (Failed statistical adequacy test)
TF	Thorium Flag (Failed statistical adequacy test)
UNIT	Geologic Unit Code/or Geochemical Unit
LAT	Latitude in decimal degrees
LONG	Longitude in decimal degrees
RADR	Radar Terrain Clearance in feet
MAG	Residual Magnetic Field in Gammas
TC	Total Count (.4 to 3.0 MeV) in Counts/Second
K	Apparent Concentration of K in %
U	Apparent Concentration of U in ppm
T	Apparent Concentration of T in ppm
U/K	Ratio Uranium/Potassium
U/T	Ratio Uranium/Thorium
T/K	Ratio Thorium/Potassium
COS	Cosmic Counts/Second (3.0 to 6.0 MeV)
Bi	Atmospheric Bismuth Correction in Counts/Second
K	Potassium Standard Deviation units from the mean
U	Uranium Standard Deviation units from the mean
T	Thorium Standard Deviation units from the mean
U/K	Ratio Standard Deviation units from the mean
U/T	Ratio Standard Deviation units from the mean
T/K	Ratio Standard Deviation units from the mean

5.6 CONTOUR MAPS

Contour maps of the six gamma-ray parameters (k, eU, eTh, eU/eTh, eU/K, eTh/K) and the residual magnetic field were generated at a scale of 1:24,000 and reproduced at 62,500 scale for inclusion in the Volume II reports. The pertinent facts regarding the contour maps are presented in the legend of each.

5.7 MULTIVARIATE ANALYSIS MAP

The multivariate analysis map is a graphic presentation of the coded combinations of standard deviation units determined by computing the deviation of each averaged sample from the area mean and expressing that deviation in terms of standard normal units. The standard normal deviation is determined for each of the three radiometric parameters K, eU, eTh and is coded so as to permit depiction of all three parameters on a single map.

The multivariate codes shown on the map were derived using 5 levels for uranium and 3 levels each for thorium and potassium. A two digit code is used and permits the depiction of 45 combinations of standard normal units.

The first digit represents the nine possible combinations of potassium and thorium. The second digit represents the five uranium levels which are coded as 1, 3, 5, 7 and 9.

The codes used to represent the nine combinations of potassium and thorium are as follows:

CODE	K Level	Th Level
1	<-1σ	<-1σ
2	<-1σ	-1σ to +1σ
3	<-1σ	>1σ
4	-1σ to +1σ	<-1σ
5	-1σ to +1σ	-1σ to +1σ
6	-1σ to +1σ	>1σ
7	>1σ	>-1σ
8	>1σ	-1σ to +1σ
9	>1σ	>1σ

To each of these 9 first digit codes the 5 level uranium code is appended which results in the total of 45 levels.

The uranium level codes are as follows:

CODE	eU LEVEL
1	$<-3\sigma$
3	$>-3\sigma$ to -1σ
5	$>-1\sigma$ to $+1\sigma$
7	$>+1\sigma$ to $+3\sigma$
9	$>3\sigma$

6.0 GEOLOGY AND RADIOACTIVE MINERAL RESOURCES OF NORTHEAST WASHINGTON

6.1 GENERAL STATEMENT

This report discusses the radiometric data obtained from eight detailed surveys in northeast Washington. The surveys lie within four 1° x 2° quadrangles; Okanogan, Sandpoint, Ritzville and Spokane (see index map, Figure 6). Most of the survey blocks (1, 2, 4, 5, 7 and 8) have been reviewed collectively with regard to the regional geological implications. This review is largely contained in this chapter, Section 6. The two remaining surveys (areas 3 and 6) are reviewed separately in chapter 12. This format was adopted because several important studies in northeast Washington have preceded this study. And, for the sake of completeness of this study it was necessary to incorporate much of this previous documentation. Thus, five previous study programs constitute an extensive data base for this study and are frequently quoted. Briefly these programs are:

1. Spokane - 1978, Bendix/Doe, Subcontract No. 77-079-S. This survey was flown and compiled by LKB Resources, Inc. (LKB) and interpreted by International Exploration, Inc. (INTEX).

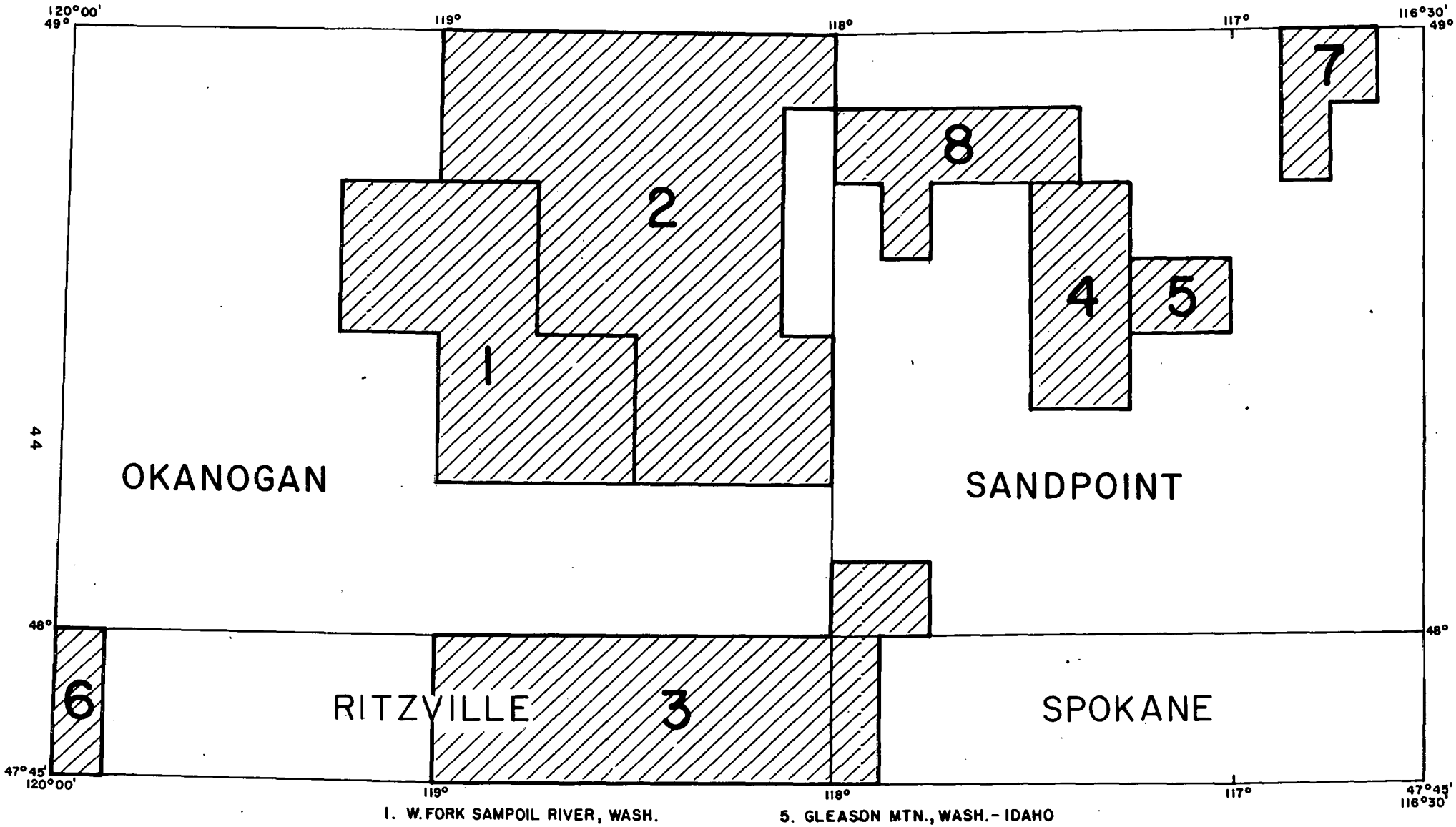
2. Okanogan, Sandpoint - 1979, Bendix/Doe, Subcontract No. 77-079-S. This survey was flown and compiled by LKB and interpreted by INTEX.

3. Ritzville - 1979, Bendix/Doe, Subcontract No. 78-184. Survey was flown, compiled and interpreted by Texas Instruments, Inc. (TI).

4. Midnite-Sherwood Mines - 1981, BFCE-GJ-RFQ-339. This was a detailed study of the aeromagnetic data covering Area 3 of this report. The magnetic data was acquired by Carson Helicopters, Inc. (Carson), and interpreted by INTEX.

5. Spokane Mountain - 1981, Bendix/Doe Ref. No. GJBX-200 (81) (Open File). This study involved an extensive field and laboratory geological investigation by Bendix Field Engineering Corp. (BFEC).

Although the regional geological summaries are contained in Sections 6 (this section) and 12, a comment on the specific geologic features and the radioactive mineral occurrences precedes each discussion of the geophysical data for an area.



1. W. FORK SAMPOIL RIVER, WASH.
2. MT. LEONA – NANCY CREEK, WASH.
3. MIDNITE – SHERWOOD MINES, WASH.
4. LOST CREEK, WASH.
5. GLEASON MTN., WASH.– IDAHO
6. CHELAN, WASH.
7. SADDLE MTN., IDAHO
8. SPIRIT PLUTON, WASH.

6.1.1 FIGURE 6 NORTHEAST WASHINGTON LOCATION DIAGRAM

6.2 GENERAL GEOLOGY OF NORTHEAST WASHINGTON

The Okanogan and Sandpoint 1:250,000 scale NTMS quadrangles encompass portions of several major geologic units of regional extent in eastern Washington and northern Idaho. The principal geologic features of the area are illustrated in Figure 7.

The major part of the area lies within the Okanogan Highlands physiographic province, a broad upland region extending over most of northeastern Washington State. The highlands are underlain by the Loon Lake and Colville batholiths, two large Mesozoic and early Cenozoic plutons composed of granodiorite, quartz monzonite and granite, which are generally regarded sufficiently similar to the Idaho batholith to be connected with it genetically and to bridge it to the Nelso batholith in British Columbia. As described by Castor and others (1978), these plutons intrude two distinct depositional provinces in the area, an eastern province of Precambrian metasediments of the Belt and Windermere Supergroups unconformably overlain by miogeosynclinal Paleozoic rocks, and a western province of eugeosynclinal upper Paleozoic and Mesozoic rocks. The two provinces meet in the region between 117° and 118° W longitude, east of the Columbia River.

The following excerpts from the recent report by Castor, Berry and Robins (1978) on the granitic rocks of this area provide a very concise summary of the local geology.

"K-Ar ages of plutonic rocks in the eastern province indicate four distinct periods of intrusion at about 200+ m.y., 170 m.y., 100 m.y., and 50 m.y. ago. Most plutons were emplaced during the latter two intrusive periods (Miller and Engels, 1975)." Radiometric ages of plutonic rocks in the western province suggest a complex history of plutonism and metamorphism beginning in late Triassic time and extending into Eocene time (Fox and others, 1977)."

"Tertiary volcanic rocks occur in both the eastern and western provinces. Early to middle Tertiary, felsic to intermediate volcanic rocks are mostly restricted to lowland areas such as the Okanogan, Sanpoil River, and lower Spikane River valleys. Some of these extrusives

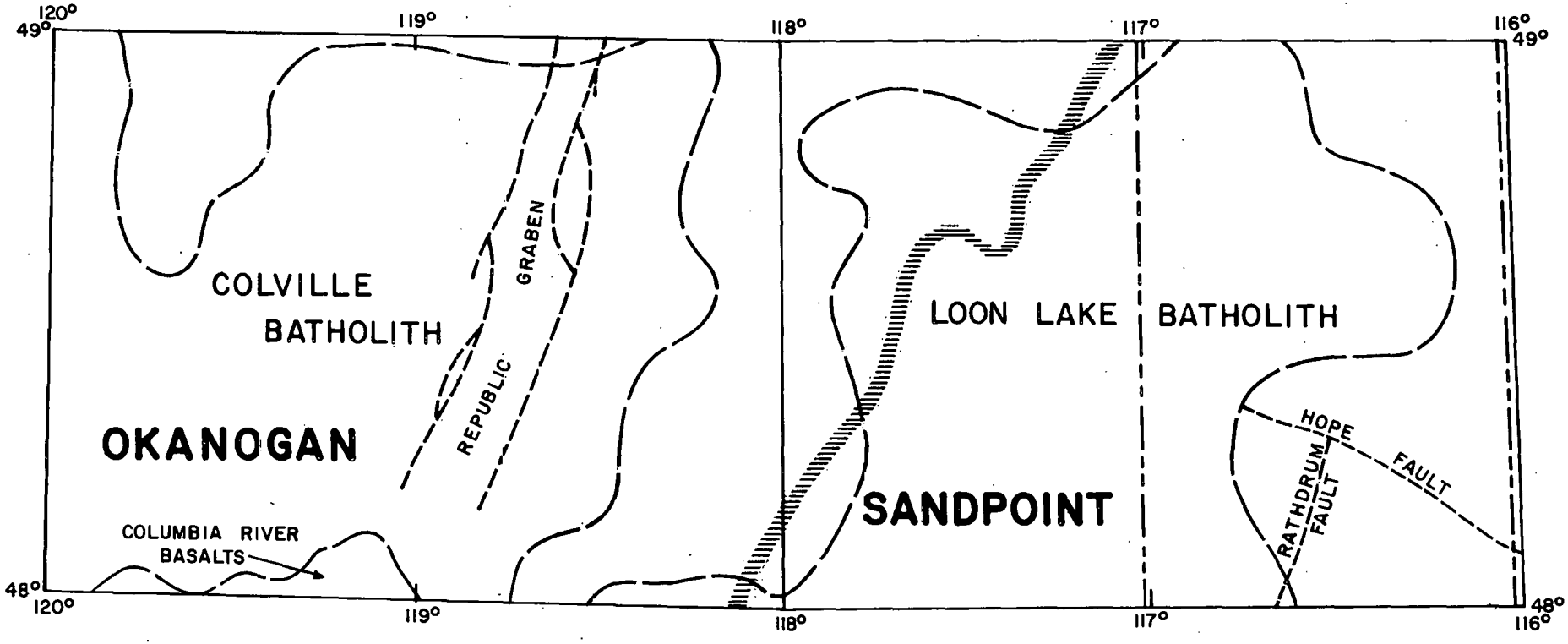
have hypabyssal to plutonic equivalents, such as the Oligocene Scatter Creek Formation in the Republic-Oroville area, which has been included in this study. Exposures of pre-Miocene bedrock are terminated on the south by overlying flows of the late Tertiary Columbia River Basalt Group."

"Exposures of Tertiary sedimentary rocks are generally restricted to the major river valleys in the project area. Unconsolidated galcial deposits mask bedrock geology in much of the area."

"The eastern and western depositional provinces are distinguished by different structural patterns. The eastern province is equivalent to the Kootenay arc structural subprovince of Yates and others (1966), a belt of northeast-trending folds and faults in the United States, which gradually takes on a northwest trend in Canada. Deformation ranges from thrusting and tight folding in the western part of the Kootenay arc to homoclinal warping in the eastern part.

"Structure in the western province is characterized by north to northwest trending folds, although some folds trend northeast near the eastern boundary of the province. The western province contains the Okanogan gneiss dome and similar structures which form the southernmost part of the Shuswap terrane, a north trending belt of high-grade metamorphic rocks and gneiss domes in Canada."

"High-angle normal faults of late Cretaceous and (or) early Tertiary age, most of which trend north-northeast, cut both provinces. This faulting produced down-dropped linear structures, such as the Republic graben."



EXPLANATION

GENERALIZED BOUNDARIES OF MAJOR PLUTONS

FAULT

APPROXIMATE WESTERN LIMIT OF EXPOSURES OF PRECAMBRIAN METASEDIMENTS OF THE BELT BASIN

N

APPROXIMATE SCALE
1:1,270,000

6.2.1 FIGURE-7 MAJOR GEOLOGIC FEATURES OF THE OKANOGAN AND SANDPOINT QUADRANGLES

6.3 DESCRIPTION OF MAP UNITS

6.3.1 Okanogan Quadrangle

SEDIMENTARY ROCKS

Q	RECENT DEPOSITS UNDIVIDED (QUATERNARY)
Qal	ALLUVIAL DEPOSITS (QUATERNARY)
Qt	GLACIAL TILL (QUATERNARY)
Qg	GLACIAL DEPOSITS UNDIVIDED (QUATERNARY)
Tob	OBRIAN CREEK FORMATION (EOCENE) Mainly sedimentary tuff.
Tsa	SANDSTONE, ARKOSE, SILTSTONE, CONGLOMERATE (MAINLY EOCENE)
TrPb	BLACK SHALE (TRIASSIC TO PERMIAN)
Pbm	BULLFROG MOUNTAIN FORMATION (PERMIAN) Conglomerate.
Ps	SPECTACLE FORMATION (PERMIAN) Conglomerate and limestone; includes slate, phyllite and marble.
Pzls	LIMESTONE (PENNSYLVANIAN TO MISSISSIPPIAN)
Pza	ARGILLITE (MISSISSIPPIAN) Includes Mission argillite
Ol	LIMESTONE AND SLATE (ORDOVICIAN)
Oc	CHERT (ORDOVICIAN TO CAMBRIAN)
€od	OLD DOMINION LIMESTONE OF WEAVER (CAMBRIAN)
p€e	EDNA DOLOMITE (PRECAMBRIAN) Includes some slate and quartzite.

INTRUSIVE IGNEOUS ROCKS

Ti	INTRUSIVES UNDIVIDED (TERTIARY) Mainly diorite and granodiorite.
Tmg	MALIGNITE AND MALIGNITE BRECCIA (TERTIARY)

Tg	GEROME ANDESITE (TERTIARY) Includes flow rocks and sediments.
To	OKANOGAN INTRUSIVES (TERTIARY) Includes gneiss, granodiorite, gabbro, and syenite.
Tqm	QUARTZ MONZONITE (TERTIARY)
Tp	PORPHYRITIC INTRUSIVES (TERTIARY)
Td	DIORITE AND HORNBLENDE DACITE (TERTIARY) Includes some diabase.
Tsc	SCATTER CREEK RHYODACITE (TERTIARY)
TKqm	QUARTZ MONZONITE (TERTIARY TO CRETACEOUS)
TJbm	BRECCIATED MONZONITE (TERTIARY TO JURASSIC)
Kgd	GRANODIORITE (CRETACEOUS)
Kg	GRANODIORITE AND QUARTZ MONZONITE (CRETACEOUS)
Kd	DIORITE (CRETACEOUS)
Kcg	CONCONULLY PLUTON (CRETACEOUS) Granodiorite
Kq	QUARTZ MONZONITE (CRETACEOUS)
Kc	CATHEDRAL PLUTON (CRETACEOUS) Quartz monzonite.
Kob	OLD BALDY PLUTON (CRETACEOUS) Includes minor gneiss.
Kpgd	PORPHYRITIC BIOTITE GRANODIORITE (CRETACEOUS)
Km	ALKALI INTRUSIVES (CRETACEOUS) Monzonite, syenite and shonkinite.
KJgd	GRANODIORITE (CRETACEOUS TO JURASSIC)
KJd	FELSITE DIKES AND PIPES (CRETACEOUS TO JURASSIC)
KJa	AENEAS CREEK PLUTON (CRETACEOUS TO JURASSIC) Granodiorite and quartz monzonite.
KJm	MALIGNITE (CRETACEOUS TO JURASSIC)

KJe EVANS LAKE PLUTON (CRETACEOUS TO JURASSIC)
Quartz monzonite and granodiorite.

Jt TOATS COULEE PLUTON (JURASSIC)
Granodiorite and quartz monzonite.

Jbg BLUE GOAT PLUTON (JURASSIC)
Granodiorite.

Jsg SIMILKAMEEN PLUTON (JURASSIC)
Granodiorite.

JTrwm WHISKEY MOUNTAIN PLUTON (JURASSIC TO TRIASSIC)
Quartz monzonite and granodiorite

JTrs SILVER NAIL LAKE PLUTON (JURASSIC TO TRIASSIC)
Quartz diorite and mafic metagabbro.

JTro OSOYOOS PLUTON (JURASSIC TO TRIASSIC)
Quartz diorite and mafic diorite.

Trl LOOMIS PLUTON (TRIASSIC)
Granodiorite and quartz diorite.

Mzi UNDIVIDED GRANITIC ROCKS (MESOZOIC)

Mzt TILLMAN MOUNTAIN PLUTON (MESOZOIC)
Mainly quartz diorite (tonalite).

Mzb BATTLE SPRING PLUTON (MESOZOIC)
Quartz monzonite and granodiorite.

Mzh HYBRID GRANITOID ROCKS (MESOZOIC)
Mainly gneiss and granodiorite.

Mzd DIORITE (MESOZOIC)
Includes quartz diorite and gabbro.

Mzhm HORSESHOE MOUNTAIN PLUTON (MESOZOIC)
Quartz monzonite.

Mzl LONE FRANK PLUTON (MESOZOIC)
Quartz diorite.

Mzw WAUCONDA PLUTON (MESOZOIC)
Gneissic granodiorite.

Mzg GRANITE AND GRANODIORITE (MESOZOIC)
Includes Cascade granodiorite.

Mzc COLVILLE BATHOLITH (MESOZOIC)
Includes granodiorite, gneiss and mylonite.

EXTRUSIVE IGNEOUS ROCKS

Tvm MAFIC VOLCANICS (TERTIARY)

Tc CARTER MOUNTAIN DACITE FLOWS (TERTIARY)

Ta ANDESITE FLOWS (TERTIARY)
Includes andesite intrusives.

Tss SCATTER CREEK FORMATION, AND SANPOIL VOLCANICS, UNDIVIDED (TERTIARY)

Tb BASALT (TERTIARY)

Ts SANPOIL VOLCANICS (TERTIARY)
Quartz flows, rhyodacite and dacite; includes minor sedimentary beds.

Tw VOLCANIC WACKE AND CONGLOMERATE (TERTIARY)

Tad ANDESITE AND DACITE (TERTIARY)

Tk KLONDIKE MOUNTAIN FORMATION (TERTIARY)
Flows, breccia and conglomerate.

KJel ELLEMEHAM FORMATION (CRETACEOUS TO JURASSIC)
Lava, tuff, silt, and conglomerate.

Mzr ROSSLAND VOLCANIC GROUP (MESOZOIC)

Mzj JUMBO VOLCANICS (MESOZOIC)
May include Tertiary rocks.

METAMORPHIC ROCKS

Kotg TONASKET GNEISS (CRETACEOUS)

Ko OKANOGAN GNEISS (CRETACEOUS)

Kgt TIFFANY MOUNTAIN GNEISS (CRETACEOUS)

JTrgn GRANITOID GNEISS (CRETACEOUS)

Mzm METAMORPHICS UNDIVIDED (MESOZOIC)
Serpentinite, greenstone and amphibolite; includes some monzonite.

Mzs	SALMON MEADOWS GRANODIORITIC GNEISS (MESOZOIC)
Trga	METAGABBRO (TRIASSIC)
Trk, TrPk	KOBAU FORMATION (TRIASSIC) Greenschist, greenstone, marble and quartzite; includes TrPk, phyllite unit.
Trc	CAVE MOUNTAIN FORMATION (TRIASSIC) Slate, basalt, and metasediments.
Trkc	CONCONULLY METAMORPHIC COMPLEX (TRIASSIC) Phyllite and metasediments.
Trs	SERPENTINE (TRIASSIC)
TrPpm	PALMER MOUNTAIN GREENSTONE (TRIASSIC TO PERMIAN)
TrPs	SCHIST (TRIASSIC TO PERMIAN)
TrPp	PHYLLITE (TRIASSIC TO PERMIAN)
TrPgr	GREENSTONE (TRIASSIC TO PERMIAN)
TrPls	METALIMESTONE AND METADOLOMITE (TRIASSIC TO PERMIAN)
TrPsv	METASEDIMENTARY AND METAVOLCANIC ROCKS (TRIASSIC TO PERMIAN)
TrPq	GREENSTONE AND GRAYWACKE, UNDIVIDED (TRIASSIC TO PERMIAN)
TrPpq	PHYLLITIC QUARTZITE (TRIASSIC TO PERMIAN)
Pr	GREENSTONE, GRAYWACKE, ARGILLITE AND PHYLLITE (PERMIAN)
Pa, Pzan	ANARCHIST GROUP (PERMIAN) Metasiltstone, quartzite, slate, schist, and phyllite; includes older Paleozoic metamorphics, Pzan.
pPtu	METAMORPHIC ROCKS, UNDIVIDED (PENNSYLVANIAN) Include gneiss, schist and quartzite.
pPmq	QUARTZITE (PENNSYLVANIAN TO MISSISSIPPIAN)
pPmf	QUARTZ-FELDSPAR GNEISS (PENNSYLVANIAN TO MISSISSIPPIAN)
Pzc	COLVADA GROUP (PALEOZOIC) Graywacke, quartzite, slate and limestone.

Pzms METAMORPHIC ROCKS, UNDIVIDED (PALEOZOIC)
Mainly schist, phyllite, marble and graywacke.

Pzb BUCKHORN MOUNTAIN METAMORPHICS (PALEOZOIC)
Mainly hornfels, quartzite and marble.

Pzm MARBLE WITH ASSOCIATED GNEISS, SCHIST AND QUARTZITE (PALEOZOIC)

Pzsm SILICEOUS MARBLE (PALEOZOIC)

Pzs SCHIST AND QUARTZITE (PALEOZOIC)
Includes minor slate.

Pzcq COLVILLE QUARTZITE (PALEOZOIC)

Pzw GRAYWACKE, QUARTZITE AND INTERBEDDED BLACK SHALE (PALEOZOIC)

Pzp€m METAMORPHIC COMPLEX (CAMBRIAN)
Mainly phyllite, schist, marble and quartzite.

Pzg GREENSTONE (CAMBRIAN)

€a ADDY QUARTZITE (CAMBRIAN)

P€h HUCKLEBERRY FORMATION (PRECAMBRIAN)
Greenstone and conglomerate.

p€b BUFFALO HUMP FORMATION (PRECAMBRIAN)
Argillite, slate and quartzite.

p€t TOGO FORMATION (PRECAMBRIAN)
Quartzite, argillite and minor dolomite.

p€m McHALE SLATE (PRECAMBRIAN)

p€o ORIENT GNEISS (PRECAMBRIAN)

6.3.2 Sandpoint Quadrangle

SEDIMENTARY ROCKS

Qal STREAM ALLUVIUM (HOLOCENE)

Qt TALUS (HOLOCENE)

Qls LANDSLIDE DEBRIS (HOLOCENE)

Qg GLACIAL DEPOSITS (PLEISTOCENE)

Qtg TERRACE DEPOSITS (PLEISTOCENE)

Qag GLACIAL, FLUVIAL, ALLUVIAL, AND TERRACE DEPOSITS (PLEISTOCENE)

Tl LATAH FORMATION (MIOCENE)
Clay, silty clay, and sandy clay.

Tg CONGLOMERATE IN THE CAMAS AND CHEWELAH AREAS (OLIGOCENE)

Tcg TIGER FORMATION AND GRAVELS OF SIMILAR AGE (OLIGOCENE)
Gravels, conglomerate and carbonaceous shale.

To O'BRIEN CREEK FORMATION (EOCENE)
Water-laid tuffs with coaly seams and conglomerate.

Tc CONGLOMERATE (EOCENE)

Ksm SOPHIE MOUNTAIN FORMATION (CRETACEOUS)
Conglomerate with minor sandstone and siltstone.

Ks SANDPOINT CONGLOMERATE (CRETACEOUS)

Jl LIMESTONE (JURASSIC)
In part reworked to conglomerate.

Pmr MOUNT ROBERTS FORMATION (PENNSYLVANIAN)
Quartzite and siltite with minor tuff, chert and chert nodules.

Cx ARGILLITE, GRAYWACKE, CHERT, GREENSTONE, AND LIMESTONE (PENNSYLVANIAN)

Pzu CARBONATE ROCKS, UNDIFFERENTIATED (PALEOZOIC)

Cl LAKEVIEW LIMESTONE (CAMBRIAN)

Cm METALINE FORMATION (CAMBRIAN)
Limestone and dolomite. Includes units Cmu, Cmm, and Cml.

€mu	UPPER UNIT OF METALINE FORMATION (CAMBRIAN) Fine-grained, light gray to white limestone.
€mm	MIDDLE UNIT OF METALINE FORMATION (CAMBRIAN) Coarse-grained white to gray dolomite.
€ml	LOWER UNIT OF METALINE FORMATION (CAMBRIAN) Coarse-grained white limestone.
€r	RENNIE SHALE (CAMBRIAN)
€gc	GOLD CREEK QUARTZITE (CAMBRIAN)
€u	UNDIFFERENTIATED CAMBRIAN SEDIMENTS
	IGNEOUS ROCKS
Tb	BASALT OF THE COLUMBIA RIVER GROUP (MIOCENE AND PLIOCENE)
Ta	ANDESITE (OLIGOCENE)
Tmv	BIOTITE-BEARING BASALT OR ANDESITE FLOWS AND TUFFS (EOCENE)
Tsh	SHONKINITE DIKES AND SILLS (EOCENE)
Tot	OLIVINE TRACHYBASALT (EOCENE)
Tsr	SANPOIL VOLCANICS (EOCENE) Hornblende-biotite rhyodacite to andesite with associated tuffs and volcanic sediments.
Trd	RHYODACITE DIKES (EOCENE)
Tsg	SHEPPARD GRANITE (EOCENE) Leucocratic microcline-albite granite.
Tcp	CORYELL PLUTONIC ROCKS (EOCENE) Dikes and dike swarms of syenite and/or monzonite.
Tdg	GRANODIORITE AND DACITE PORPHYRY DIKES (EOCENE)
Tq	BIOTITE QUARTZ MONZONITE (EOCENE)
Tsp	UNDIFFERENTIATED PLUTONIC ROCKS OF THE SELKIRK CREST (EOCENE) Mostly weakly foliated to massive muscovite-biotite quartz monzonite.
Tm	MAFIC PORPHYRY DIKES (EOCENE) Possibly equivalent to the Silverpoint quartz monzonite.

Ti DIKES (EOCENE)
Biotite-augite diorite, lamprophyre, and felsite porphyry.

Tsq SELKIRK CREST QUARTZ MONZONITE (EOCENE)
Gneissic muscovite-biotite quartz monzonite, locally cataclastic.

Ts SILVER POINT QUARTZ MONZONITE (EOCENE)
Hornblende-biotite quartz monzonite.

Tf FINE-GRAINED HORNBLENDE-BIOTITE QUARTZ MONZONITE (EOCENE)

TKpa PHILLIPS LAKE GRANODIORITE (PALEOCENE)
Muscovite-biotite quartz monzonite and granodiorite with associated alaskites and metamorphic rocks.

TKt MUSCOVITE-BIOTITE QUARTZ MONZONITE (PALEOCENE)

TKg BIOTITE GRANODIORITE (PALEOCENE)

TKl ALASKITE, PEGMATITE, AND QUARTZ MONZONITE (PALEOCENE)
With associated metamorphic rocks.

Kb BIOTITE QUARTZ MONZONITE (CRETACEOUS)
May be a variant of the Fan Lake granodiorite.

Kbg BOULDER MOUNTAIN GRANODIORITE (CRETACEOUS)
Biotite granodiorite.

Kgq GRANITE FALLS QUARTZ MONZONITE (CRETACEOUS)
Biotite quartz monzonite.

Kd DIABASE AND DIORITE DIKES AND SILLS (CRETACEOUS)

Kbq BLICKENSDERFER QUARTZ MONZONITE (CRETACEOUS)
Muscovite-biotite quartz monzonite.

Khm HUNGRY MOUNTAIN PLUTON (CRETACEOUS)
Muscovite-biotite quartz monzonite, generally porphyritic, weakly foliated in many places.

Kna NORTH BALDY ALASKITE (CRETACEOUS)
Leucocratic biotite-muscovite granite.

Kgd GRANODIORITE (CRETACEOUS)

Kc CONTINENTAL MOUNTAIN PLUTON (CRETACEOUS)
Biotite quartz diorite.

Kkh UNDIVIDED HORNBLENDE-BEARING PLUTONIC ROCKS OF THE KANIKSU RANGE (CRETACEOUS)

Kpq PORPHYRITIC MUSCOVITE-BIOTITE QUARTZ MONZONITE AND ASSOCIATED ALASKITES (CRETACEOUS)

Km MUSCOVITE QUARTZ MONZONITE (CRETACEOUS)

Kf FAN LAKE GRANODIORITE (CRETACEOUS)
Hornblende-biotite granodiorite.

Kkt UNDIVIDED TWO-MICA PLUTONIC ROCKS OF THE KANIKSU RANGE (CRETACEOUS)

Ksf STARVATION FLAT QUARTZ MONZONITE (CRETACEOUS)
Hornblende-biotite quartz monzonite.

Kq MUSCOVITE-BIOTITE QUARTZ MONZONITE (CRETACEOUS)

Kg GALENA POINT GRANODIORITE (CRETACEOUS)
Biotite granodiorite carries minor hornblende locally.

Kl LITTLE ROUNDTOP PLUTON (CRETACEOUS)
Biotite quartz monzonite.

Ksp SPIRIT PLUTON (CRETACEOUS)
Hornblende-biotite granodiorite.

Kqm METAMORPHOSED MUSCOVITE-BIOTITE QUARTZ MONZONITE (CRETACEOUS).

Kga GRANITE PASS ALASKITE (CRETACEOUS)
Leucocratic muscovite granite.

Kgp GLEASON MOUNTAIN QUARTZ MONZONITE (CRETACEOUS)
Fine-grained muscovite-biotite quartz monzonite.

Ktm TWENTYMILE CREEK QUARTZ MONZONITE (CRETACEOUS)
Fine-grained muscovite-biotite quartz monzonite.

Ktq TANGO CREEK PLUTON (CRETACEOUS)
Porphyritic biotite quartz monzonite.

Kws WALL MOUNTAIN SYENITE (CRETACEOUS)

hb HORNBLENDE-BIOTITE QUARTZ DIORITE (CRETACEOUS)

Jr ROSSLAND GROUP (JURASSIC)
Mafic lavas, flow breccias, and tuffs with associated marine sedimentary rocks.

Jd HORNBLENDE QUARTZ DIORITE (JURASSIC)

Jmi MAFIC INTRUSIVE ROCKS (JURASSIC)

JTrf FLOWERY TRAIL GRANODIORITE (JURASSIC AND TRIASSIC)
Hornblende-biotite granodiorite.

JTrp LANE MOUNTAIN PLUTON (JURASSIC AND TRIASSIC)
Hornblende-biotite granodiorite.

METAMORPHIC ROCKS

Tca MYLONITE AND CATACLASTIC ROCK (EOCENE)
Inside the Newport fault zone.

Tbr TECTONIC BRECCIA (EOCENE)
Associated with the Newport fault zone.

Cp PEND d'OREILLE SEQUENCE (PENNSYLVANIAN)
Argillite, phyllite, greenstone, and limestone.

Cf FLAGSTAFF MOUNTAIN SEQUENCE (PENNSYLVANIAN)
Argillite, phyllite, greenstone, and limestone.

Cg GRASS MOUNTAIN SEQUENCE (MISSISSIPPIAN)
Argillite and limestone.

Da ARGILLITE (DEVONIAN)
With quartzite and limestone.

DS BLACK ARGILLITE AND SLATE (DEVONIAN AND SILURIAN)
With limestone, conglomerate, and sandstone.

Olu LEDBETTER SLATE (ORDOVICIAN)
Slate, argillite, quartzite, and argillaceous limestone.

Cma MAITLEN PHYLLITE (CAMBRIAN)
Includes units Cmp and Cmr.

Cmp PHYLLITE WITH THIN LIMESTONE BEDS (CAMBRIAN)

Cmr REEVES LIMESTONE MEMBER (CAMBRIAN)

Cq QUARTZITE (CAMBRIAN)
Includes the Gypsy and Addy quartzites.

pCh HUCKLEBERRY FORMATION (PRECAMBRIAN)
Conglomerate and greenstone. Includes units pChg and pChc.

pChg GREENSTONE MEMBER (PRECAMBRIAN)

p€hc CONGLOMERATE MEMBER (PRECAMBRIAN)

p€wi WINDERMERE GROUP (PRECAMBRIAN)
Includes units p€mo, p€lv and p€sc.

p€mo MONK FORMATION (PRECAMBRIAN)
Phyllite, quartzitic limestone, and conglomerate.

p€lv LEOLA VOLCANICS (PRECAMBRIAN)
Greenstone with greenschist.

p€sc SHEDROFF CONGLOMERATE (PRECAMBRIAN)
Volcanic conglomerate with phyllite, quartzite, and greenstone.

p€g GREENSTONE (PRECAMBRIAN)

p€mg PURCELL-MARSHALL-MOYIE SILLS AND DIKES (PRECAMBRIAN)
Metadiorite, diabase, and quartz diorite.

p€dt DEER TRAIL GROUP, UNDIFFERENTIATED (PRECAMBRIAN)

p€bu BELT SUPERGROUP, UNDIFFERENTIATED (PRECAMBRIAN)
Includes units p€l, p€s, p€w, p€rv, p€sr, p€r, p€b, and p€p.

p€l LIBBY FORMATION (PRECAMBRIAN)
Argillite, siltite, dolomite, and calcareous argillite.

p€s STRIPED PEAK FORMATION (PRECAMBRIAN)
Argillite, siltite, quartzite, and impure dolomite.

p€w WALLACE FORMATION (PRECAMBRIAN)
Argillite, quartzite, siltite, and impure carbonate rocks.

p€rv RAVALLI GROUP (PRECAMBRIAN)
Includes units p€sr, p€r, and p€b.

p€sr ST. REGIS FORMATION (PRECAMBRIAN)
Argillite, siltite, and quartzite.

p€r REVETT FORMATION (PRECAMBRIAN)
Quartzite and siltite.

p€b BURKE FORMATION (PRECAMBRIAN)
Siltite, quartzite, and argillite.

p€p PRICHARD FORMATION (PRECAMBRIAN)
Argillite, siltite, and quartzite.

p€br BLUE RIDGE SEQUENCE (PRECAMBRIAN)
Schist, quartzite, and limestone.

p€ih LONE HILL SEQUENCE (PRECAMBRIAN)
Schist, limestone, and quartzite.

p€bc BYERS CREEK SEQUENCE (PRECAMBRIAN)
Schist, quartzite, limestone, and hornblende schist.

p€n NEWMAN LAKE GNEISS (PRECAMBRIAN)
Biotite granite gneiss.

p€h HAUSER LAKE GNEISS (PRECAMBRIAN)
Mica schist, quartzite, and alaskite.

p€m METAMORPHIC ROCKS OF UNCERTAIN AGE
Includes schist, quartzite, amphibolite, paragneiss, and migmatite.

6.4 RADIOACTIVE MINERALS AND OCCURRENCES

Over the past twenty-five years, a number of occurrences of radioactive minerals have been discovered in the eastern Washington-northern Idaho region, of which several have proved to be of sufficient grade and abundance to permit economic exploitation. The following excerpt from the paper "Uranium in Washington" (Weissenborn and Moen, 1974) provides an excellent synopsis of these developments.

"Until 1954, despite persistent search, no uranium occurrences of significance has been found in Washington. In the summer of 1954, uranium minerals were discovered by the LeBret brothers on the Spokane Indian Reservation in Stevens County. The discovery was made while prospecting for tungsten at night, with an ultraviolet lamp. This find became the Midnite Mine and touched off a uranium boom in the state. Shortly thereafter uranium was discovered on the Dahl farm on the west slope of Mount Spokane, some 40 miles east of the Midnite Mine and about 30 miles northeast of Spokane. This became the Daybreak Mine and marked the discovery of a second uranium area in the State. Other discoveries were made, but none so far have proved to be of the importance of the original two. As a result of these discoveries, a mill was built in 1957 at Ford in Stevens County to treat the ores, and Washington became an important producer of uranium. Total uranium produced from the state to February 28, 1965, was 4.7 million pounds of U_3O_8 from 1.2 million tons of ore."

Most of the discoveries in Washington made to date are north of a line connecting Spokane and Seattle. The area is mountainous, and much of it is underlain by granitic intrusive rocks. The proximity of the known uranium deposits to the granitic rocks indicates that the uranium mineralization is probably related to the intrusions.

The deposits are not confined to rocks of any one age. They are found in rocks as early as Precambrian and as late as Tertiary. Most of the uranium occurrences, however, are related to the Mesozoic intrusive rocks. The host rocks include igneous, metamorphic, and sedimentary types. The acidic intrusive rocks such as granite and quartz monzonite are favorable source rocks, whereas the basic igneous rocks such as basalt and peridotite have yielded no significant occurrences.

The deposits generally fall into one of the following geologic environments: (1) sheared and faulted zones within granitic intrusives, (2) in and near the contact of granitic rocks with sedimentary and metamorphic rocks, (3) in Tertiary sedimentary rocks, or (4) in quartz veins and pegmatitic dikes. For example, the Midnite Mine deposit occurs in sheared metamorphic rocks that are surrounded by granitic intrusive rocks, and is situated where two major fracture zones intersect (Babcock et. al. 1981).

Several uranium deposits with environments of the first three types are of commercial or near-commercial value. The uranium mineralization of the quartz veins and pegmatitic dikes is usually not sufficient to justify mining deposits of this nature.

The principal uranium and thorium mineral occurrences in or immediately adjacent to the area of the Okanogan and Sandpoint quadrangles are shown in Figure 8 and discussed briefly below. As noted in a recent study by Castor, Berry, and Robins (1978), granitic rocks with anomalously high uranium and (or) thorium contents in this region are concentrated in two northeast trending belts extending between the Midnite Mine and Hall Mountain areas, and along the Republic graben, respectively. It is of interest to note that the majority of the known occurrences are also located in or near these zones.

Midnite Mine Area, Stevens County, Washington

The Midnite Mine has exposed a number of ore bodies along the western contact of a tongue of schist, phyllite, and quartzite of the Precambrian Togo formation, which projects southward into prophyritic quartz monzonite of the Cretaceous Loon Lake batholith. Five of these bodies have been mined. Individual ore bodies are as much as 700 feet long, 200 feet wide, and more than 150 feet deep.

Near the surface, the uranium ore is thoroughly ozidized and consists of a mixture of secondary uranium minerals intimately associated with iron oxide films and coatings. Meta-autunite — $Ca\ (UO_2)_2(PO_4)_2 \cdot 8H_2O$ — is by far the most abundant mineral, occurring as thin films on fractures or as discrete crystals on iron oxide. Uranophane — $Ca(UO_2)_2(SiO_3)\ (OH)_2 \cdot 5H_2O$ — and phosphuranylite — $Ca(UO_2)_4(PO_4)_2(OH)_4 \cdot 7H_2O$ — are common, and a few other

oxidized uranium minerals have been identified (Becraft and Weis, 1963).

Sooty uraninite – UO_2 – and coffinite – $U(SiO_4)_{1-x}(OH)_{4x}$ – together with pyrite and marcasite have been identified in a few samples of unoxidized ore. In 1965, specimens of sooty uranimite were reported to be relatively plentiful in the Midnite open pit, and veins of dense, shiny pitchblende were quite abundant in some faces of the pit. Almost all the uranium minerals are in the metamorphosed sedimentary rock; only locally are secondary minerals abundant enough in the underlying quartz monzonite to constitute ore. There is evidence to suggest that the uranium is associated with small, steep faults which cut the Togo Formation near its contact (Robbins, 1978). Some of these fractures may be older than the quartz monzonite. Redistribution of uranium occurred as a result of oxidation of the primary uranium minerals by groundwater.

Production from the Midnite Mine began in 1955 and ceased in 1962. During this time over 1,000,000 tons of ore were produced. The mine began producing again in 1969, and since then has produced up to 100,000 tons of ore annually.

In addition to the Midnite Mine itself, several other discoveries have been made in the same general area. At the Lowly lease on the Spokane River about seven miles south of the Midnite Mine, uranium minerals were found in an intensly shattered zone at the contact of impure quartzite and granodiorite. About 285 tons of ore were shipped in 1956 from the mine (Becraft and Weis, 1963), but there has been no production since.

At the Big Smoke lease, a mile north of the Lowley lease, uranium minerals occur along a faulted contact between granodiorite and pyroclastic and sedimentary rocks of the Gerome andesite. Only minor amounts of uranium have been discovered here, however.

The Peters lease, also known as the Northwest Uranium Mine, is about 4½ miles southeast of the Midnite Mine. At this locality, uranium ore in an entirely different geological setting was discovered in the basal member of the Gerome andesite of Oligocene age. In the mine area, the Sanpoil (Gerome) andesite consists of interbedded tuffaceous sandstone, arkose, and carbonaceous shale overlying a poorly sorted conglomerate about 100 feet thick. This formation rests on quartz monzonite

of the Loon Lake batholith. The ore zone is near the base of the conglomerate, and contains much carbonaceous material in thin arkosic lenses and in irregular, sporadically distributed masses. The ore zone lies from a few feet to as much as 80 feet below the surface. Total production to the time the mine was closed in 1962 was 87,300 tons of ore containing 305,700 pounds of uranium.

Mount Spokane Area, Spokane County, Washington

The first discovery in the Mount Spokane area was reported in 1955, which became the Daybreak Mine. Since then at least 28 other occurrences have been found in a belt one to one and one-half miles wide on the west and south slopes of Mount Spokane, extending from the south fork of Deadman Creek northwesterly for about 14 miles to the boundary of Spokane and Pend Oreille Counties. The deposits are situated in a pegmatitic alaskite zone bordering the intrusive contact of the Loon Lake batholith with highly metamorphosed Precambrian gneisses and schists to the east. In all the deposits, which are closely similar, coarsely crystalline autunite — $Ca(UO_2)_2(PO_4)_2 \cdot 10\text{-}12H_2O$ — is the only uranium mineral except for very finely dispersed uraninite found in some of the autunite crystals. In all the deposits, the autunite occurs as fracture fillings and in voids in the host rocks. Also in all cases, the country rock has been bleached and altered, but hydrothermal alteration is not intense.

Most of the uranium mined from the Mount Spokane area has come from the Daybreak Mine, with eight different properties contributing to the total. The total amount of ore produced up to 1964 was approximately 18,600 tons. The only operating mine in 1965 and 1966 was the Daybreak Mine, which produced 1,100 tons of ore.

Orient, Stevens County, Washington

The uranium mineralization at this localized occurrence situated on the margin of the Colville batholith, consists of autunite in pegmatitic gneiss. No production has been reported.

Sherman Creek Pass - Nancy Creek - St. Peter Creek Area, Ferry County, Washington

This series of occurrences is comprised of numerous radioactivity anomalies and uraninite mineralization in pegmatite lenses in gneiss, in the area between Kettle Falls and Republic. A number of claims have been staked in the area, but there has been no production.

Aeneas, Okanogan County, Washington

This reported occurrence consists of slight radioactivity along pegmatite veins in gneiss. No further information on mineralization is available.

Sanpoil, Okanogan County, Washington

This local uranium occurrence is situated along the western margin of the Republic graben, on the Sanpoil River. The mineralization is in pegmatite, with smarskite and radioactive fluorite being in evidence.

Lost Creek Area, Pend Oreill County, Washington

The mineralization at this occurrence, located west of Blueslide, is somewhat similar to the deposits in the Mount Spokane area, consisting of autunite veins occupying open fractures in a light-colored granitic rock. Production of minor amounts of uranium has come from two properties, the Lost Creek and Quartz Ridge claims.

Ruby, Pend Oreille County, Washington

This occurrence, located near Ruby, consists of scattered autunite and uraninite grains in pegmatite dikes. No production is reported.

Lamb Creek Area, Pend Oreill County, Washington

One small shipment of uranium ore was made from the H.P.S. group of claims in this area, located west of Priest Lake near the Idaho – Washington border. Information on the mineralization is scanty, but is probably similar to the Ruby occurrence.

Railway Dike, Stevens County, Washington

The mineralization in this area occurs in a large pegmatite which locally shows intense radioactivity. One specimen from the occurrence reportedly contained uranium-bearing columbite. A few tons of beryl have been produced from this deposit, but no uranium production is reported.

South Skookum Lake, Pend Oreille County, Washington

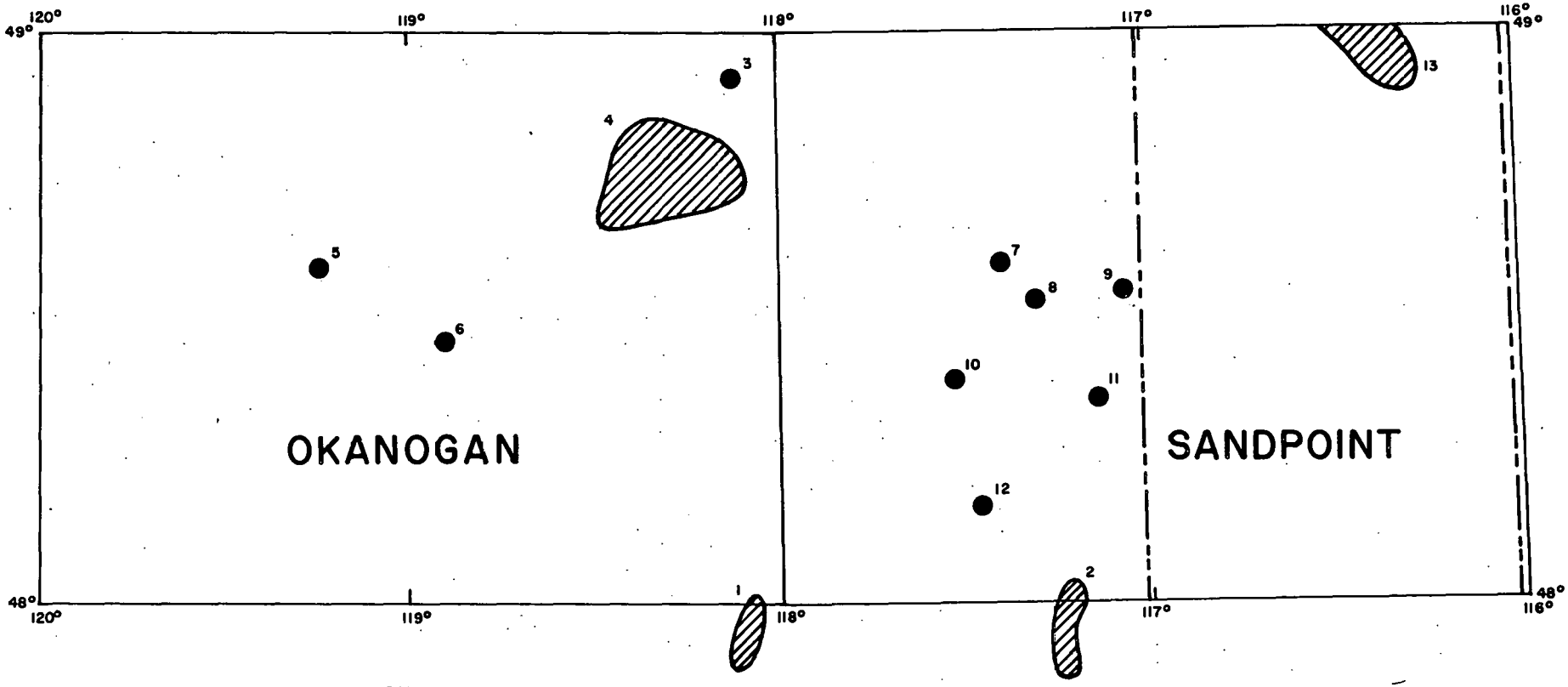
The uranium mineralization at this occurrence, located one-half mile east of South Skookum Lake, consists of autunite in shear zones in altered granite. The area has been prospected by commercial interests, but no production has been reported.

Starlight Uranium, Pend Oreille County, Washington

The reported mineralization at this occurrence, located near Calispell Creek, consists of autunite in weathered granite. No production is known.

Hall Mountain Area, Boundary County, Idaho

Several thorium lode deposits occur along the western flank of Hall Mountain in this area, consisting of thorite-bearing fissure veins. Although first discovered in 1955, no commercial quantities of thorium ore are known to have been shipped from the locality. The area is part of a fault block, tilted gently eastward, composed of metasediments of the lower Belt Supergroup, Precambrian diorite sills, and Cretaceous quartz monzonite of the Nelson batholith. The fault block is cut by both northwest - and east trending faults and joints which provided channelways for the thorium-bearing mineralizing solutions.



EXPLANATION

- KNOWN OCCURRENCES
- AREAS OF NUMEROUS OCCURRENCES

AREA NAMES:

1. MIDNITE
2. MOUNT SPOKANE
3. ORIENT
4. SHERMAN CREEK PASS
   NANCY CREEK
   ST. PETER CREEK
5. AENEAS
6. SANPOIL
7. LOST CREEK
8. RUBY
9. LAMB CREEK
10. RAILWAY DIKE
11. SOUTH SKOOKUM LAKE
12. STARLIGHT URANIUM
13. HALL MOUNTAIN

APPROXIMATE SCALE
1:1,270,000

6.4.1 FIGURE-8 KNOWN URANIUM AND THORIUM OCCURRENCES IN THE OKANOGAN AND SANDPOINT QUADRANGLES

7.0 DATA INTERPRETATION

7.1 GENERAL STATEMENT

The interpretation of the airborne gamma-ray spectrometer survey comprises an integrated analysis of the radiometric data with basic data from several disciplines. For the past few years the standard final interpretation of the radiometric data incorporated the geologic map of the area and the aeromagnetic profiles as imperative [1] ancillary data sets. This report incorporates a discussion of another statistical evaluation "tool" – the multivariate analysis.

7.2 MULTIVARIATE MAP

The multivariate map is the result of a data processing technique of the radiometric data intended to facilitate the detection of anomalous areas of uranium mineralization more accurately, more rapidly and with less dependence on geologic maps.

Since the fundamental problem is that of detecting and delineating only three radioactive elements in the earth's crust, irrespective of age relationships of the rocks or the lithology, a geochemical map that describes the various surface units in terms of their relative proportions of K, U, Th, is, in theory, an ideal end product for a survey. One means to this end is a Multivariate Map which is a graphic presentation of the deviation from a mean for all three elements illustrated on one map. That is, a mean is established for each.

[1] Since the radiometric data recorded at the airplane arises from the first few inches of the earth's surface it is useful to understand the conditions of the ground surface at the time of exploration particularly in the United States where ground cover and moisture conditions are highly variable. It is also useful to incorporate such pertinent quantities as the height of the aircraft above the ground, the ruggedness of the terrain conditions, the barometric pressure, temperature and atmosphere radon measurements and these have all been incorporated into studies over the past few years.

element for the entire area (or sheet) without regard for the geologic units.

Thus, from Table 1, 45 different combinations are available for consideration or for evaluation; i.e., five levels of uranium and three levels each of thorium and potassium. The Multivariate Map is represented with a two-digit code. The first digit can be 1 thru 9 and represents the 9 possibilities of potassium and thorium as shown in Table 2.

7.2.1 TABLE #1

K		Th		U	
From	To	From	To	From	To
<-1σ	-1σ	-1σ	-1σ	<-3σ	-3σ
-1σ	+1σ	-1σ	+1σ	-3σ	-1σ
+1σ	>+1σ	+1σ	>1σ	-1σ	+1σ
				+1σ	+3σ
				+3σ	+3σ

7.2.2 TABLE #2

First Digit Code	K Level	Th Level
1	<-1σ	<-1σ
2	<-1σ	-1σ to +1σ
3	<-1σ	>+1σ
4	-1σ to +1σ	<-1σ
5	-1σ to +1σ	-1σ to +1σ
6	-1σ to +1σ	>+1σ
7	>+1σ	<-1σ
8	>+1σ	-1σ to +1σ
9	>+1σ	>+1σ

The second digit represents the five levels of uranium and it can be either 1, 3, 5, 7, or 9 as illustrated in Table #3.

These 45 levels have to be evaluated in the light of the magnetic survey which was also available. The magnetic data, was for purposes of this survey, divided into only two categories; "highly responsive or strong" and "smooth or weak". Basalt flows produce a strong magnetic signature that results from highly variable magnetite content. The weak magnetic signature is typically observed over the sedimentary units and silicic igneous rocks.

7.2.3 TABLE #3

Second Digit Code	U Level
1	$<-3\sigma$
3	-3σ to -1σ
5	-1σ to $+1\sigma$
7	$+1\sigma$ to $+3\sigma$
9	$>+3\sigma$

7.3 GEOCHEMICAL MAP

A cursory examination of the multivariate map establishes very quickly that, in itself, it is not a product easily used in differentiating uranium, thorium and potassium levels. Perhaps other graphic presentations may be more useful. However, detailed examination along with various highlighting techniques as well as the magnetic contours, the radiometric contours of potassium, thorium, and uranium and finally the contour maps of the ratios, has led to a classification defined by the geochemical maps. This detailed examination involved considerable color coding of intensities as indicated in Table 5 and some subjectivity in the choice of boundaries on the map. Nevertheless, by working with various types of color coded presentations we derived 48 units (see Table 4) each of which are generally distinguishable on several of the data presentations. In the final analysis uranium, both

7.3.1

TABLE 4

NORTHEAST WASHINGTON MASTER LEGEND

Unit Codes		Response				Areas of Occurrence							
Geo Chemical	Multi-Variate	U	Th	K	Mag.	1	2	3	4	5	6	7	8
10	99	H+	H	H	S	Y	Y		Y	Y		Y	
11	99	H+	H	H	W	Y		Y	Y	Y		Y	
20	89	H+	A	H	S								
21	89	H+	A	H	W		Y		Y				
30	79	H+	L	H	S								
31	79	H+	L	H	W			Y					
40	69	H+	H	A	S				Y				
41	69	H+	H	A	W								
50	59	H+	A	A	S		Y		Y	Y		Y	
51	59	H+	A	A	W	Y	Y					Y	
90	19	H+	L	L	S								
91	19	H+	L	L	W				Y				
100	97	H	H	H	S		Y	Y	Y	Y	Y	Y	Y
101	97	H	H	H	W		Y	Y	Y	Y	Y		Y
110	87	H	A	H	S		Y		Y		Y		
111	87	H	A	H	W	Y	Y				Y		
120	77	H	L	H	S				Y			Y	
121	77												
130	67	H	H	A	S				Y	Y	Y	Y	Y
131	67	H	H	A	W			Y	Y		Y		
140	57	H	A	A	S		Y	Y	Y			Y	Y
141	57	H	A	A	W	Y	Y	Y	Y		Y	Y	Y
150	47	H	L	A	S							Y	
151	47	H	L	A	W		Y		Y			Y	
190	95	A	H	H	S	Y	Y		Y	Y		Y	
191	95	A	H	H	W	Y	Y	Y	Y		Y		Y
200	85	A	A	H	S		Y	Y		Y			
201	85	A	A	H	W	Y	Y	Y	Y		Y		Y

TABLE 4

NORTHEAST WASHINGTON MASTER LEGEND

Unit Codes		Response				Areas of Occurrence							
Geo Chemical	Multi Variate	U	Th	K	Mag.	1	2	3	4	5	6	7	8
210	75	A	L	H	S		Y						
211	75	A	L	H	W								
220	65	A	H	A	S	Y	Y	Y	Y		Y	Y	Y
221	65	A	H	A	W	Y	Y	Y	Y		Y		Y
230	55	A	A	A	S	Y	Y	Y	Y	Y	Y	Y	Y
231	55	A	A	A	W	Y	Y	Y	Y	Y	Y	Y	Y
240	45	A	L	A	S			Y					
241	45	A	L	A	W	Y	Y						Y
260	25	A	A	L	S	Y		Y					
261	25	A	A	L	W	Y					Y		
270	15	A	L	L	S	Y		Y					
271	15	A	L	L	W	Y	Y		Y		Y		Y
320	53	L	A	A	S	Y	Y	Y			Y	Y	
321	53	L	A	A	W		Y	Y	Y		Y		Y
330	43	L	L	A	S		Y						
331	43	L	L	A	W		Y		Y				
350	23	L	A	L	S	Y		Y					
351	23	L	A	L	W	Y					Y		
360	13	L	L	L	S	Y	Y	Y	Y	Y	Y	Y	
361	13	L	L	L	W	Y	Y	Y	Y	Y	Y	Y	Y

H = HIGH
A = AVERAGE
L = LOW
S = STRONG
W = WEAK
Y = YES (unit occurs in indicated area)

in the contour maps and in the multivariate maps, was the most diagnostic.

While the geologic map was available during this study, the impact of the known geology on the preparation of the geochemical map was, to the extent possible, kept to a minimum. Nevertheless, the geochemical maps display some obvious correlation with existing geologic maps and some, perhaps significant, differences.

7.3.2 TABLE 5

CONTOUR LEVELS USED FOR GEOCHEMICAL MAPS

Area	Response	K	U	Th
1	Hi+	-	5.5	-
	Hi	2.6	4.0	8.0
	Lo	1.4	2.0	4.0
2	Hi+	-	6.5	-
	Hi	2.2	4.0	12.0
	Lo	0.8	1.5	5.0
3	Hi+	-	8.0	-
	Hi	2.4	4.5	12.0
	Lo	0.8	1.5	5.0
4	Hi+	-	7.0	-
	Hi	2.8	5.0	10.0
	Lo	1.2	2.5	5.0
5	Hi+	-	8.5	-
	Hi	2.8	6.0	14.0
	Lo	1.2	3.0	7.0
6	Hi+	-	5.0	-
	Hi	1.6	2.5	6.0
	Lo	0.8	1.0	2.0
7	Hi+	-	5.5	-
	Hi	2.0	4.0	10.0
	Lo	1.2	2.0	6.0
8	Hi+	-	7.5	-
	Hi	2.2	4.0	11.0
	Lo	0.8	2.0	4.0

8.0 WEST FORK, SAMPOIL RIVER - AREA 1

8.1 GENERAL STATEMENT

Area 1 is located in the center of the Okanogan quadrangle (Scale 1:250,000). Four 15' quardangles (Scale 1:62,500) also covers the area – Aeneas Valley, Aeneas, Bald Knob and Seventeen Mile Mountain. The radiometric data is plotted on sheets numbered 1 through 6.

8.2 GEOLOGY OF AREA 1

The bedrock geology on sheets 1, 2, and 3, is largely a granodiorite with gneiss and extensive mylonite zones. These rocks are part of a major Mesozoic batholith. In the stream valleys of this area glacial drift and glaciofluvial sand, gravel, and till occur in significant thicknesses. In the southeast part of sheet 3 is a major fault that forms the western flank of the Republic graben. Along this fault are small limited outcrops of Tertiary intrusive bodies and upper Paleozoic to Triassic metamorphic rocks. These units occur discontinuously along the entire length of the fault zone. East of the fault zone on sheet 3 and occupying a large part of sheet 4 exist Eocene to Oligocene andesitic volcanic units that constitute the most recent fill material in the graben. The eastern boundary fault of the Republic graben traverses the southeastern part of the survey and beyond it to the east the underlying bedrock is again the Mesozoic granodiorite. A few areas of Tertiary volcanics, apparently younger than Oligocene, also occur on sheets 3, 4, 5, and 6. These limited zones are probably fault controlled.

8.3 URANIUM PROSPECTS

Two known deposits Aeneas and Sampoil are pegmatites associated with Mesozoic intrusives. In the Sampoil prospect the minerals are samarskite and a radioactive mineral contained in fluorite. Other occurrences of uranium are found in shales along the boundary faults of the Republic graben. These associations suggest a hydrothermal origin. Refer to Figure 8 for locations.

9.0 GEOPHYSICAL DATA INTERPRETATION WEST FORK, SAMPOIL RIVER - AREA 1

9.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

- 9.2.1 Preferred eU Anomaly Associations
- 9.2.2 Significant eU Anomalies by Geological Unit
- 9.2.3 Significant eU Anomalies by Geochemical Unit
- 9.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (9.2.2 and 9.2.3 respectively) have been annotated as follows:

- * Preferred Anomalies
- X1 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 9.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e. X1) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

9.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS.

In the West Fork Sampoil River area there are a total of 89 geological and 97 geochemical statistically significant eU anomalies. Of these anomalies, 37 geological and 39 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 7 and 8) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 6 demonstrates that most of the preferred geological anomalies correlate to glacial deposits, andesite flows or granodiorite and quartz monzonite.

The correlation of the preferred geological anomalies to the andesitic extrusive rocks possibly results from secondary uranium enrichment along shallow, near-surface fractures. The silicic intrusive rocks are possibly the source rocks for the uranium in the andesites and the glacial deposits.

Tables 6 and 9 show that geochemical units 230 and 320 correlate to the Sampoil volcanic rocks; while units 190, 260, and 261 correlate to andesite flows, phyllite, and quartz monzonite, respectively. Furthermore geochemical units 230 and 231 both correlate to the glacial deposits, and the granodiorites.

9.2.1 PREFERRED eU ANOMALY ASSOCIATIONS WEST FORK, SAMPOIL RIVER - AREA 1

TABLE 6

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Q	5	Recent deposits
Qg	11	Glacial deposits
Ts,Ta	10	Sampoil volcanics and andesite flows
Tsa	1	Sandstone, arkose and conglomerate
TrPpq	2	Phyllitic quartzite
TrPp	1	Phyllite
TrPg	1	Greenstone and greywacke
Kgd	8	Granodiorite
Kq	5	Quartz monzonite
Mzc	9	Colville granodiorite

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Code	U	Th	K
11	1	99	H	H	H
141	1	57	H	A	A
190	2	95	A	H	H
230	19	55	A	A	A
231	12	55	A	A	A
241	1	45	A	L	A
260	5	25	A	A	L
261	3	25	A	A	L
270	1	15	A	L	L
271	2	15	A	L	L
320	3	53	L	A	A

Total preferred geological anomalies = 37

Total preferred geochemical anomalies = 39

9.2.2

TABLE 7

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOLOGIC UNIT WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 X1	1	7	47728-720	Mzc	-	3	-	1	-	-	1	-	-	1	-	-	1	-	-
2*	1	12	38559-584	Mzc,Qg	4	1	1	1	-	-	1	1	-	2	-	1	3	1	1
3	1	13	38189-169	Mzc	2	3	-	3	-	-	1	-	-	2	-	-	-	3	1
4*	1	13	38159-083	Mzc	10	5	1	5	-	-	7	-	-	4	-	1	3	4	1
5	1	13	38068-038	Mzc	6	1	-	2	1	1	3	-	-	-	1	-	2	2	-
6*	2	14	37668-684	Mzc	2	1	1	2	1	-	-	-	-	1	1	-	1	3	-
7*	2	14	37729-749	Qg	3	2	1	-	-	-	-	-	-	1	1	-	5	-	-
8	2	15	37328-313	Mzc	3	1	-	3	-	-	1	-	-	-	-	-	3	-	-
9	2	15	37131-116	Mzc	3	1	-	-	-	-	-	-	-	1	-	-	1	1	-
10*	2	16	36806-882	Mzc	4	7	5	3	-	-	6	-	-	5	7	1	6	6	3
11*	2	16	36892-922	Mzc	3	3	1	2	1	-	1	-	-	2	-	-	-	3	1
12	2	17	36367-346	Mzc,Qg	4	1	-	-	-	-	-	-	-	4	-	-	4	1	-
13	2	17	36326-301	Qg	4	2	-	-	-	-	1	-	-	3	-	1	4	1	-
14	2	17	36220-195	Mzc	5	1	-	1	-	-	3	-	-	1	-	-	2	1	-
15*	2	19	46431-391	Mzc	4	3	2	1	-	-	-	-	-	3	3	-	4	3	2
16	2	22	34494-515	Qg	5	-	-	-	-	-	-	-	-	2	-	-	5	-	-
17	2	22	34555-570	Qg	4	-	-	-	-	-	-	-	-	1	-	-	3	-	-
18	2	22	34621-661	Mzc	7	2	-	-	-	-	7	3	-	3	2	2	2	-	-
19	2	22	34671-692	Mzc	3	2	-	-	-	-	3	-	-	3	1	1	3	-	-
20	2	23	35377-356	Mzc	5	-	-	-	-	-	-	-	-	1	2	-	2	3	-
21*	2	23	35189-154	Mzc	4	3	1	-	-	-	4	2	-	3	4	-	3	1	-
22	2	24	35802-817	Qg	3	1	-	-	-	-	-	-	-	3	-	-	3	-	-
23	2	24	35847-863	Qg	3	1	-	-	-	-	1	-	-	2	-	-	2	-	-
24	2	32	55913-934	Mzc	4	1	-	-	-	-	-	1	-	2	1	-	3	-	-
25	2	33	56831-810	Mzc	3	2	-	-	-	-	1	-	-	3	2	-	5	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.2 Continued

TABLE 7

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
26*	3	35	58109-099	Kgd	2	-	1	1	-	-	2	1	-	2	-	-	2	-	-
27	2	36	37131-111	Mzc,Qg	4	1	-	-	-	-	1	-	-	2	1	1	3	1	-
28*	2	36	37101-056	Qg	3	4	3	-	-	-	-	-	-	2	4	3	2	5	3
29*	2	37	36512-416	Mzc,Qg	12	5	3	-	-	-	2	-	-	8	3	2	10	5	3
30*	3	37	36406-310	Qg,Kgd	4	6	10	4	-	-	2	-	-	2	8	4	5	5	9
31	3	37	36299-264	Kgd	8	-	-	1	-	-	1	-	-	6	-	-	5	1	-
32 X1	2	38	36954-964	Mzc	1	2	-	-	-	-	1	1	-	1	1	-	1	-	-
33	2	38	36985-37000	Qg	2	2	-	-	-	-	-	-	-	3	-	1	2	2	-
34	2	38	37010-035	Qg	6	-	-	-	-	-	-	-	-	2	2	1	4	1	-
35*	3	38	37065-177	Qg,Kgd	9	8	6	5	-	-	3	-	-	6	2	7	11	4	8
36	3	38	37187-202	Kgd	3	1	-	1	-	-	-	-	-	3	-	-	4	1	1
37	3	38	37212-227	Kgd	3	1	-	-	-	-	-	-	-	2	-	-	2	-	-
38*	2	39	37745-724	Qg	3	1	1	-	-	-	-	-	-	3	-	1	-	2	-
39	2&3	39	37694-674	Qg	3	2	-	-	-	-	-	-	-	2	2	-	3	2	-
40*	3	39	37664-618	Qg	6	3	1	1	2	-	-	-	-	6	1	-	6	2	2
41*	3	39	37608-563	Kq,Kgd	3	2	5	2	1	-	2	-	-	-	4	4	2	2	6
42	3	39	37547-532	Kgd	3	-	-	-	-	-	-	-	-	1	1	-	3	-	-
43	3	39	37522-497	Kgd	6	-	-	1	-	-	-	-	-	3	-	1	4	-	-
44	2	40	38175-201	Mzc,Qg	5	1	-	-	-	-	5	-	-	3	1	-	1	-	-
45 X1	2	40	38216-251	Qg	5	3	-	-	-	-	-	1	-	5	1	-	5	1	-
46*	3	40	38393-413	Kgd	1	1	3	1	-	-	1	-	-	1	1	3	-	1	4
47	2	41	38963-943	Qg	3	2	-	-	-	-	-	-	-	1	3	1	3	1	1
48	3	41	38922-877	Qg,Kq	5	5	-	-	-	-	-	-	-	5	2	3	5	5	-
49*	3	41	38847-811	Qg	1	4	3	1	-	-	2	-	-	3	1	3	3	1	3
50*	3	41	38801-740	Kq,Kgd	4	5	4	3	-	-	1	-	-	4	4	3	2	6	5

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.2 Continued

TABLE 7

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
51*	3	42	40593-669	Qg,Kq	8	5	3	1	-	-	4	3	-	9	3	3	9	1	3
52*	3	42	40689-841	Kq,Kgd	11	6	14	9	3	1	8	4	2	10	5	7	12	11	5
53*	3	43	47174-052	Kq	13	8	4	6	1	-	6	4	4	13	3	2	12	2	-
54	3	43	46971-956	Kgd	3	1	-	-	-	-	1	-	-	-	4	-	3	-	-
55	3	44	47441-501	Kq	7	6	-	-	-	-	7	4	1	5	4	-	3	-	-
56	3	46	49436-452	Kgd	2	2	-	-	-	-	-	-	-	-	3	1	1	1	2
57 X1		47	35376-386	TrPp	1	2	-	-	-	-	1	-	-	1	-	1	-	1	-
58*	4	54	36484-540	TrPpq,Ts	2	6	4	2	-	-	2	-	-	4	5	3	4	6	3
59	4	54	36601-616	Ts	3	1	-	-	-	-	-	-	-	3	1	-	3	1	-
60	4	54	36646-656	Ts	-	1	2	-	-	-	-	-	1	-	1	2	-	2	1
61*	4	55	37104-038	Q,TrPpq,TrPp,	1	5	8	4	-	-	4	1	-	3	7	2	3	4	7
62*	4	56	37585-615	Q Ts	-	6	1	1	-	-	-	-	-	3	4	-	2	3	2
63	4	57	35011-34996	Kq	3	1	-	1	2	-	-	-	-	-	-	-	1	2	1
64*	4	57	34971-955	Q	3	-	1	-	2	-	1	-	-	1	1	-	1	-	1
65*	4	58	35448-468	Q	-	4	1	-	-	-	-	-	-	1	3	1	-	2	3
66	4	58	35488-503	Ts	2	1	1	-	-	-	-	-	-	-	2	2	1	2	1
67 X1	4	58	35513-539	Ts	5	1	-	-	-	-	-	-	-	3	1	1	1	3	-
68*	4	59	36378-332	TrPg,Q,Tsa	5	2	3	2	1	-	-	-	-	1	2	2	5	2	3
69	4	59	36266-246	Ts	2	3	-	-	-	-	-	-	-	-	3	1	2	1	-
70	5	60	37016-036	Ts	2	3	-	4	-	-	4	-	-	1	-	-	3	-	-
71	4	61	37300-285	Ts,Tp	4	-	-	1	-	-	1	-	-	1	2	1	-	3	-
72	5	61	37169-153	Ts,Ta	1	3	-	1	-	-	-	1	-	1	2	1	-	1	2
73 X1	5	61	37143-140	Ta	1	2	-	-	-	-	-	-	-	-	1	-	-	-	1
74	4	63	38805-790	Ts,Tp	3	1	-	1	-	-	1	-	-	1	1	-	2	-	-
75	5	63	38689-659	Ts,Ta	5	2	-	2	2	-	1	3	-	-	3	-	-	2	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.2 Continued

TABLE 7

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
76	5	64	39500-525	Ts,Ta	4	2	-	4	1	-	3	2	-	1	-	-	2	-	-
77*	5	65	39256-286	Ts,Ta	3	2	2	3	2	1	4	2	-	3	-	-	3	1	-
78*	5	67	48806-770	Ta	5	2	1	-	1	-	1	-	-	3	1	1	3	2	1
79	2	203	39639-644	Mzc	-	2	-	-	-	-	-	-	-	1	1	-	2	-	-
80*	2	205	48377-397	Mzc	2	2	1	-	-	-	-	-	-	2	1	2	3	1	1
81	2	205	48519-524	Mzc	-	2	-	-	-	-	1	-	-	-	1	1	1	1	-
82	2	206	48985-970	Qg	4	-	-	-	-	-	-	-	-	2	2	-	4	-	-
83	3	208	47545-529	Kq	1	1	-	3	-	-	1	2	-	2	-	-	1	-	-
84*	3	208	47514-489	Kgd	2	2	2	1	-	1	5	-	1	4	1	-	4	1	-
85*	4&5	211	38536-546	Ts	2	-	1	-	-	-	-	-	-	1	-	1	1	1	1
86	4	211	38641-657	Tp	5	-	-	1	-	-	-	-	-	2	1	-	1	3	-
87	4	211	38768-783	Ts	2	2	-	-	-	-	-	-	-	2	-	2	2	2	-
88*	6	212	38363-353	Ta	-	-	3	1	-	-	1	-	-	-	2	1	-	2	1
89*X1	5	212	38070-052	Ts	4	-	1	1	2	-	1	2	-	1	-	-	1	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.3

TABLE 8

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 X1	1	7	47728-720	230	-	3	-	2	-	-	1	-	-	1	-	-	1	1	-
2	1	10	46721-752	350	5	2	-	2	-	-	1	-	-	2	-	-	4	-	-
3	1	11	39493-478	350	2	2	-	-	-	-	-	-	-	2	1	-	-	3	-
4	1	13	38053-038	231,22[illegible]	4	-	-	1	-	-	1	-	-	1	1	-	1	-	-
5	2	14	37628-653	350,23[illegible]	5	1	-	2	1	-	2	-	-	1	-	-	3	-	1
6	2	14	37759-785	231	5	1	-	3	-	-	1	-	-	2	-	-	3	1	-
7	2	15	37237-217	231	5	-	-	1	-	-	2	-	-	1	-	-	2	-	-
8	2	16	36755-760	350	-	2	-	-	1	-	-	2	-	1	-	-	1	-	-
9	2	17	36412-407	350	-	2	-	-	1	-	1	-	-	1	-	-	1	1	-
10	2	17	36266-255	144,221	1	2	-	-	-	-	-	-	-	-	1	1	-	2	-
11	2	17	36220-205	231	3	1	-	3	-	-	1	-	-	1	-	-	1	1	-
12	2	19	46401-371	261	6	1	-	-	-	-	1	-	-	4	-	-	4	-	-
13	2	21	34017-33987	231	3	4	-	3	-	-	4	-	-	1	1	-	1	2	-
14*	2	22	34550-580	231	3	3	1	-	-	-	2	-	-	4	-	-	3	2	-
15	2	22	34641-661	231,201	5	-	-	-	-	-	-	1	-	3	1	-	4	-	-
16	2	22	34671-687	231	4	1	-	-	-	-	2	-	-	2	1	1	3	-	-
17*	3	22	34788-808	231,230	4	1	1	-	-	-	1	-	-	1	1	1	-	1	1
18	2	23	35377-356	231	5	-	-	-	-	-	-	-	-	2	1	-	3	2	-
19	2	23	35245-230	231	2	2	-	-	-	-	1	-	-	3	-	-	-	1	1
20	2	23	35205-164	201,231	5	4	-	-	-	-	4	2	-	3	2	-	1	2	-
21	2	24	35741-761	231	4	2	-	-	-	-	-	-	-	3	1	-	3	2	-
22*	2	24	35827-863	241,231 201	4	3	1	1	-	-	4	-	-	3	3	-	3	3	-
23	2	24	35893-908	201	4	-	-	-	-	-	-	3	-	2	-	-	1	-	-
24	2	29	47226-211	351	3	1	-	1	-	-	2	-	-	2	-	1	2	-	-
25	2	33	56825-810	201	4	-	-	-	-	-	-	-	-	3	-	-	2	2	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.3 Continued

TABLE 8

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
26	2	33	56765-745	201,231	4	1	-	-	-	-	-	-	-	3	1	1	3	2	-
27*	2,3	36	37086-58998	141,231	4	4	1	-	-	-	-	-	-	1	4	3	1	6	1
28	2	37	36532-517	230	1	3	-	-	-	-	-	-	-	3	-	-	1	2	1
29	3	37	36304-264	231	6	3	-	-	-	-	2	-	-	5	3	-	5	2	-
30	3	37	36254-239	230	4	-	-	-	-	-	-	-	-	-	3	1	1	2	-
31	3	38	37126-141	51	4	-	-	-	-	-	1	-	-	1	-	-	-	-	-
32	3	38	37161-177	231	4	-	-	-	-	-	-	-	-	11	-	-	3	1	-
33	3	38	37187-242	230,231	7	5	-	-	-	-	3	-	-	8	2	-	5	4	-
34	3	38	37268-288	230	4	1	-	-	-	-	2	-	-	1	3	-	2	-	-
35	2	39	37810-790	230	4	1	-	-	-	-	-	-	-	1	3	-	2	3	-
36	2	39	37734-729	141	-	2	-	-	-	-	-	-	-	1	1	-	-	2	-
37*	3	39	37618-603	260	1	2	1	-	-	-	-	-	-	1	1	1	3	-	1
38	3	39	37537-477	231,230	9	4	-	5	1	-	-	-	-	5	2	-	5	4	3
39*	2	40	38175-211	230	4	3	1	5	-	-	1	-	-	7	-	-	5	-	-
40	3	40	36821-800	230	4	-	-	1	-	-	-	-	-	3	-	-	1	3	-
41	3	41	38867-862	260	-	2	-	1	-	-	1	-	-	1	1	-	1	-	-
42*	3	41	38852-836	260	-	2	2	1	1	2	3	1	-	2	-	-	2	-	-
43*	3	41	38771-700	230,231	8	6	1	1	-	-	-	-	-	4	8	1	5	6	4
44	3	41	38649-634	230,260	3	1	-	-	-	-	-	-	-	-	3	1	3	-	1
45*	2	42	40568-578	230	2	-	1	1	1	-	1	-	-	-	1	-	-	1	-
46*	3	42	40649-659	11	-	2	1	1	-	-	-	-	-	2	-	1	-	2	1
47	3	42	40725-745	11	2	3	-	-	1	-	2	-	-	2	1	1	2	1	-
48*	3	42	40821-861	230,231	5	3	1	1	-	-	4	1	-	6	1	1	1	3	-
49	3	42	40927-945	230	2	2	-	-	-	-	-	-	-	1	3	-	-	3	-
50*	3	43	46986-956	230	2	4	1	3	1	-	-	-	-	4	1	-	2	1	4

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.3 Continued

TABLE 8

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
51*	3	44	47506-552	271,231	6	3	1	2	2	-	2	2	-	4	1	1	4	1	-
52*	3	44	47658-678	230	2	2	1	-	-	-	-	-	-	-	2	1	2	2	1
53*	2	45	48218-182	230	5	2	1	2	-	-	-	-	-	5	2	-	4	1	-
54*	3	45	48172-101	231	11	2	2	3	-	3	2	-	-	5	2	1	5	3	1
55	3	45	48051-056	231	-	2	-	1	-	-	-	-	-	2	-	-	1	1	-
56*	3	46	49431-452	270,260 230	1	2	2	-	1	-	-	-	-	1	1	2	1	1	3
57*	3	47	49679-669	230,260	1	1	1	1	-	-	-	-	-	-	1	1	1	1	1
58*	4	50	51406-421	231,271	2	1	1	-	2	1	2	-	-	1	-	-	2	-	-
59*	4	51	34894-889	231	-	1	1	-	-	-	-	-	-	-	1	1	1	1	-
60*	4	53	36012-C01	261	1	-	2	-	-	-	-	-	-	1	-	2	-	1	2
61	4	53	35905-895	260	12	2	-	-	-	-	1	-	-	1	1	1	1	-	-
62	4	54	36424-439	261	3	1	-	-	-	-	-	-	-	1	2	1	3	-	-
63	4	54	36601-611	230	3	1	-	-	-	-	-	-	-	1	-	-	3	1	-
64*	4	55	37139-119	261,360	-	3	1	-	1	-	1	-	-	-	1	3	1	1	3
65	4	56	37585-615	51	6	1	-	1	-	-	-	-	-	2	-	-	1	-	-
66*	4	58	35402-407	261	1	-	1	1	-	-	1	-	-	1	-	-	-	1	-
67 X1	4	58	35448-473	51	5	1	-	-	-	-	-	-	-	3	-	1	3	1	-
68	4	59	36383-362	261	2	3	-	1	1	1	1	-	-	1	-	-	2	2	-
69*	4	59	36261-216	230	4	5	1	-	-	-	4	-	-	5	3	1	6	1	-
70*	4	60	36839-889	230	6	3	3	2	-	-	6	-	-	4	3	-	5	1	1
71	5	60	37021-036	190	2	1	-	-	-	-	-	-	-	2	2	-	1	3	-
72	4	61	37396-391	230	-	2	-	-	-	-	1	-	-	2	-	-	1	-	-
73*	4	61	37376-330	230	6	2	2	-	-	-	-	-	-	3	4	-	3	5	2
74*	4	61	37285-270	230	1	-	3	3	-	-	2	-	-	2	-	-	-	3	-
75*	5	62	38121-	230	-	-	1	1	-	-	-	1	-	1	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

9.2.3 Continued

TABLE 8

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
WEST FORK, SAMPOIL RIVER - AREA 1

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
76*	4	63	38896	230	-	-	1	-	-	-	-	-	-	-	-	1	-	1	-
77	5	63	38689-659	190	5	2	-	1	1	-	-	1	-	5	-	-	2	1	1
78	5	64	39500-515	190	3	1	-	2	-	-	2	-	-	1	-	-	2	-	-
79	5	65	39251-266	190	2	2	-	-	-	-	-	-	-	1	1	1	1	2	-
80*	5	65	39276-286	190	1	1	1	2	-	1	1	1	-	-	-	-	2	-	-
81*	4	78	44007	320	-	-	1	1	-	-	-	-	-	1	-	-	-	1	-
82	2	203	39700-720	231	5	-	-	-	-	-	-	-	-	4	-	-	3	-	-
83	1	204	40141-126	221,230	3	1	-	3	-	-	1	-	-	1	-	-	1	-	-
84	2	205	48418-433	231,201	2	2	-	-	-	-	-	-	-	3	1	-	2	1	-
85	2	205	48519-529	201,231	1	2	-	-	-	-	1	-	-	-	2	-	1	1	-
86	2	206	48869-844	201,231	5	1	-	2	-	-	3	1	-	1	-	-	1	-	-
87*	3	208	47545-540	231	-	1	1	1	1	-	-	1	1	1	-	-	1	-	-
88*	3	208	47408-398	231,230	1	1	1	2	-	-	-	-	-	-	1	1	1	1	-
89*	3	208	47302-297	230	-	1	1	-	-	-	1	-	-	-	2	-	2	-	-
90	4	209	37002-971	221	4	3	-	2	-	-	-	-	-	5	-	-	5	2	-
91*	4&6	211	38536-546	230	2	-	1	-	-	-	-	-	-	-	-	1	-	1	1
92*	4	211	38576-601	320	3	2	1	-	-	-	-	-	-	4	1	1	3	-	2
93*	4	211	38611-636	320	-	5	1	-	-	-	2	-	-	5	1	-	3	2	-
94*	4	211	38763-788	230	3	1	1	-	-	-	1	-	-	1	-	3	4	1	-
95*	6	212	38353-353	190	-	2	1	1	-	-	1	-	-	2	-	1	2	-	1
96	5	212	38283-272	190,230	2	2	-	2	-	-	-	-	-	3	-	-	-	2	1
97	5	212	38242-217	190	4	2	-	-	-	-	-	-	-	4	-	1	4	2	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 9

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
W. FORK SAMPOIL RIVER

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	11	51	111	141	190	191	201	220	221	230	231	241	260	261	270
Q	570	259	0	63	321	0	0	0	0	464	0	0	0	0	0
QG	70	136	0	1194	0	167	1088	9	423	713	2097	191	161	89	34
QT	0	0	0	0	0	0	0	0	0	0	78	0	0	0	0
TRPB	0	0	0	0	0	30	0	0	0	6	129	0	0	122	0
PZSM	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0
TRPGR	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRPPQ	167	7	0	0	0	0	0	0	0	15	8	0	0	0	169
TRPP	0	46	0	0	0	0	0	0	75	376	0	0	599	124	61
TRPG	0	13	0	30	0	0	0	0	241	27	6	0	119	335	0
TO	0	0	0	0	0	0	39	0	0	0	29	0	0	0	0
TP	0	0	0	0	0	0	0	0	0	129	0	0	0	0	0
TSC	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0
TA	1	0	0	0	1149	0	0	0	0	593	0	0	0	0	0
TS	185	31	0	0	783	1	0	0	0	3177	104	0	213	0	1
TSA	0	21	0	2	0	0	0	0	0	125	0	0	0	35	0
KQ	470	113	0	47	0	139	0	0	368	726	1630	0	186	777	295
KGD	89	143	43	0	0	70	303	0	0	3188	2196	0	133	0	69
MZC	0	0	0	392	0	8	370	420	347	1805	2710	8	322	80	0

GEOLOGIC UNIT	GEOCHEMICAL CODE					
	271	320	350	351	360	361
Q	0	0	0	0	16	0
QG	1	0	55	244	0	285
QT	0	0	0	0	0	0
TRPB	0	48	0	0	0	0
PZSM	0	0	0	0	0	0
TRPGR	22	0	0	0	0	0
TRPPQ	138	0	0	0	0	0
TRPP	5	6	0	0	0	0
TRPG	0	1	0	0	0	0
TO	0	0	0	0	0	0
TP	0	65	0	0	0	0
TSC	0	0	0	0	0	0
TA	0	0	0	0	0	0
TS	0	797	0	0	0	0
TSA	0	0	0	0	59	0
KQ	746	114	0	0	96	0
KGD	38	0	0	0	0	0
MZC	0	0	1506	577	0	0

9.3 DISCUSSIONS OF GEOCHEMICAL UNITS, GEOLOGY CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

9.3.1 SHEETS 1 AND 2

The basement rocks on sheets 1 and 2 are dominated by Mesozoic and Cretaceous granodiorite. Also present is a northwest trending zone of glacial deposits which are bounded on both sides by magnetic linears, and thus the glacial deposits are structurally controlled. Geochemical units 141, 201, 241, and 231, follow this northwesternly trend, as do all of the preferred geologic and geochemical anomalies; i.e. geologic anomalies 14, 22, 27, 39, 45, and 53, and geochemical anomalies 2, 4, 6, 7, 10, 11, 15, 21, 28, 29, 38, and 80 trend northwest-southeast parallel to the glacial deposits. Furthermore all of the geochemical anomalies, except for anomaly 21, are located within or border on GCU 141. A number of these anomalies (e.g. geochemical anomalies 2, 4, 6, 10, 11, 15, 21, 29, and 80) lie in the granodiorites very near the contact with the glacial deposits.

9.3.2 SHEET 3

The major northwest trending magnetic linears on sheet 2 continue into sheet 3, the northernmost fracture follows the boundary between GCU 230 and GCU 231, 271, and 270. Along or just to the north of this fracture occurs geologic anomalies 17, 88, 43, 48, 50, 52, 56, and 57. These anomalies are within GCU 230 and granodiorite. Furthermore geologic anomaly 17 occurs along a northeast trending fault on the geologic map. To the north of the northernmost fracture and within granodiorite are geologic anomalies 44 and 89.

In the southern portions of sheet 3 is another northwesterly trending magnetic linear in the quartz monzonites. The glacial deposits lie to the north of this apparent fracture. To the north of this southernmost fracture and near the easternmost portions of the glacial deposits is a zone of high radiometric response, mostly with the granodiorites and the quartz monzonites; i.e. within GCU 11, 51, and 111. Here exist geologic anomalies 37, 42, 46, 51, 54, and 87, and geochemical anomalies 26, 30, 35, 40, 41, 46, 49, 50, 51, 52, and 53.

9.3.3 SHEET 4

The two northwest trending magnetic linears developed on sheets 1, 2, and 3, continue into sheet 4 and then terminate along the northeasternly trending andesites of the Republic graben. As before an anomalous zone of high radiometric response exists between the two northwesterly trending magnetic linears; i.e. geologic anomalies 58, 59, 60, 64, and 66. These anomalies trend northwest across the map. Immediatly east of this area and within the Permian to Triassic metamorphic rocks to the west of the Republic graben, are geochemical anomalies 58, 61, 62, 64, 65, and 68. These anomalies trend parallel to and partially overlie the border fault. One prospect exists in this area.

To the east and southeast of this area are the Sampoil andesitic rocks. Within the graben are two parallel magnetic linears that bound a north-northeast trending alluvial deposit. Geologic anomalies 69, 70, 73, 74, and 94 within GCU 230 overlie these magnetic linears. To the south of this area and within the andesites are geologic anomalies 76, 93, and 91, and geochemical anomaly 85. Geologic anomalies 81 and 92 lie above a northwest and a northeast trending magnetic linear, respectively.

9.3.4 SHEETS 5 AND 6

This small area contains one northeast trending magnetic linear within GCU 190 and the andesites. Near this linear exist geologic anomalies 75 and 80 and geochemical anomalies 77 and 78. Geochemical anomaly 88 and 89 and geologic anomaly 95 are also within the andesite flows.

9.4 SUMMARY AND CONCLUSIONS

In the West Fork, Sampoil River area many of the preferred anomalies follow a northwesternly trend and the areas of high radiometric response either tend to lie along or in between closely spaced magnetic linears. This suggests a structural control to the uranium mineralization.

10.0 MOUNT LEONA/NANCY CREEK - AREA 2

10.1 GENERAL STATEMENT

The Mount Leona/Nancy Creek area is located in the Okanogan 2^{o} x 1^{o} quadrangle, and in the Bodie Mountain, Curlew, Togo, Republic, Sherman Peak, Twin Lakes, and Inchelium 15' x 15' quadrangles and in the Laurier, Churchill Mountain, Orien, Boyds, and Bangs Mountain 7½' x 7½' quadrangles. Franklin D. Roosevelt Lake bounds the eastern portion of the study area and the town of Republic, Washington is on the western side of the Mount Leona/Nancy Creek area. This region is also in the Okanogan and Colville National Forests.

10.2 GEOLOGY OF AREA 2

The oldest lithologic units present in this area are the Precambrian Orient gneiss and Paleozoic metasedimentary units, that were folded during the Jurassic. These rocks crop out in the eastern portions of the study area and trend more north-south than rocks of similar age in the Deer Trail anticline to the southeast of the Mount Leona/Nancy Creek area. All of these rocks represent a portion of the more northeasternly trending Kootenay Arc that dominates the PreMesozoic units in northeast Washington. Following the Jurassic tectonism large portions of the study area were intruded by the Colville batholithic complex which is mainly of Cretaceous age. Following this major episode of intrusion lower Tertiary extensile movements resulted in the formation of the Republic graben which forms the northwestern portions of the study area. This major north by northeast trending structure was then filled by the silicic flows of the Sampoil Volcanics and Klondike Mountain formation.

10.3 URANIUM PROSPECTS

About 17 prospects exist in or near the study area although no production has been reported from these prospects. These occurrences occur in pegmatitic gneiss or as pegmatitic lenses within gneiss. Autunite and and uraninite have been reported from these prospects.

11.0 GEOPHYSICAL DATA INTERPRETATION MOUNT LEONA/NANCY CREEK - AREA 2

11.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

- 11.2.1 Preferred eU Anomaly Associations
- 11.2.2 Significant eU Anomalies by Geological Unit
- 11.2.3 Significant eU Anomalies by Geochemical Unit
- 11.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (11.2.2 and 11.2.3 respectively) have been annotated as follows:

- * Preferred Anomalies
- X1 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 11.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e. X1) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

11.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS

In the Mount Leona/Nancy Creek area there are a total of 543 geological and 628 geochemical statistically significant eU anomalies. Of these anomalies, 162 geological and 165 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 11 and 12) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 10 shows that the most of the preferred eU geological anomalies either correlate with glacial deposits, graywacke, argillite, phyllite, volcanic flows or to silicic plutonic rocks. In this area the preferred anomalies correlated to different rock types according to the following percentages; schists = 3%, siliceous sedimentary rocks = 6%, argillaceous sedimentary rocks = 42%, carbonates = 2%, gneiss = 6%, silicic igneous rocks = 23%, and volcanic flows = 16%. Geologic and geochemical considerations combined with the strong correlation between the preferred anomalies and the silicic igneous and argillaceous rocks, suggests that the igneous rocks were the source rocks for the uranium and that organic material within the argillites created a reducing environment for the precipitation of the uranium. In addition, many of these preferred anomalies tend to correlate with magnetic lineations on the total field map and to GCU 141.

The strong correlation to glacial, fluvial units could depend on several factors, such as the relative solubilities of U, Th, and K. Uranium, being more soluble may concentrate in organic material within the glacial deposits thus producing high eU/Th or eU/K ratios. Alternatively alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits.

An examination of Tables 10 and 13 show that geochemical units 141, 201, 230, 231, and 321 correlate to the glacial deposits; units 231 and 321 correlate to the Colvada group; units 141, 231, 321, and 361 correlate to Mississippian argillite; units 231 and 331 correlate to Paleozoic marble; unit 331 correlates to greenstone; units 230, 231, 320, 321, and 331 correlate to the Cambrian metamorphic complex; unit 231 correlates to quartz monzonites, Sampoil volcanics, and the Klondike Mountain formation; units 141, 230, 231, 241, 320, 321, and 331 correlate to the Mesozoic granitic rocks; and units 231 and 331 correlate to the Rossland Volcanic Group.

11.2.1 PREFERRED eU ANOMALY ASSOCIATIONS MOUNT LEONA/NANCY CREEK - AREA 2

TABLE 10

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Q	5	Recent deposits, undivided
Qg	56	Glacial deposits, undivided
Pzs	2	Schist and quartzite
Pzc	24	Graywacke, quartzite, slate
Pza	35	Argillite
Pzms	2	Schists, phyllite, marble
Pzm	3	Marble, gneiss, schist, quartzite
Pzg	2	Greenstone
Pzpεm	26	Phyllite, schist, marble
* pPmf	2	Quartz - feldspar gneiss
pPmq	1	Quartzite
* Trs	1	Serpentine
TrPg	2	Greenstone and graywacke
pεo	8	Gneiss
Tqm	7	Quartz monzonite
Tso	2	Rhyodacite
Tss	5	Scatter Creek formation and Sampoil volcanic flows
Ts	13	Sampoil volcanic flows
Tk	7	Klondike Mountain flows
Tsa	8	Sandstone, arkose, siltstone, conglomerate
Kq	3	Quartz monzonite
Mzg	37	Granite and granodiorite
* Km	1	Alkali intrusion
Mzr	9	Rossland volcanic group
* Mzs	1	Granodioritic gneiss

Total preferred geological units = 162

* Sparsely sampled geological unit

11.2.1 PREFERRED eU ANOMALY ASSOCIATIONS MOUNT LEONA/NANCY CREEK - AREA 2

TABLE 10

	Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Code	U	Th	K
*	10	1	99	H	H	H
*	51	1	59	H	A	A
	100	1	97	H	H	H
	110	1	87	H	A	H
	111	2	87	H	A	H
*	140	2	57	H	A	A
	141	15	57	H	A	A
	190	1	95	A	H	H
	191	3	95	A	H	H
	200	1	85	A	A	H
	201	8	85	A	A	H
*	220	1	65	A	H	A
*	221	1	65	A	H	A
	230	20	55	A	A	A
	231	98	55	A	A	A
	241	10	45	A	L	A
	271	3	15	A	L	L
	320	7	53	L	A	A
	321	10	53	L	A	A
	330	4	43	L	L	A
	331	25	43	L	L	A
	361	7	13	L	L	L

Total preferred geochemical units = 165

* Sparsely sampled geochemical or geological unit

11.2.2

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1*	2	1	53111-106	Pzms	-	1	1	-	-	-	-	-	-	-	1	1	-	1	1
2 X3	3	1	52788-778	Qg	1	2	-	-	-	-	2	-	-	-	-	-	-	-	-
3	3	1	52712-697	Qg	4	-	-	2	1	-	3	1	-	-	-	-	-	-	-
4*X4	3	1	52682-646	Qg,Pzpεm	3	4	1	2	-	-	2	1	-	-	2	2	2	2	-
5*	3	1	52469-439	Pzpεm	4	-	3	4	-	-	4	1	-	1	-	-	3	-	-
6*X1	3	1	52429-403	Pzpεm	3	1	2	2	-	-	5	-	-	2	-	-	1	-	-
7 X7	4	1	52338-297	Pzpεm,Qg	1	3	5	3	2	-	4	2	3	1	-	-	-	-	-
8*X4	4	1	52287-226	Qg,Mzs	3	9	1	8	-	-	5	5	1	2	-	1	1	-	-
9 X1	4	1	52055-039	Mzr	3	1	-	-	-	-	1	2	1	-	-	-	-	-	-
10	4	1	52009-51984	Mzr	4	2	-	4	2	-	4	2	-	-	-	-	2	-	-
11*	4	1	51974-923	Mzr	5	5	1	1	10	-	4	7	-	-	-	-	1	-	-
12	2	2	53621-631	Tsc	-	2	1	-	2	1	-	3	-	-	-	-	-	-	-
13	3	2	54136-146	Pzpεm	1	2	-	-	-	-	3	-	-	2	1	-	-	-	-
14 X9	4	2	54445-490	Qg	1	4	5	8	-	-	4	3	2	-	-	-	-	-	-
15	4	2	54500-510	Qg	2	1	-	1	-	-	1	1	-	1	-	-	-	-	-
16 X2	4	2	54763-809	Mzr	7	3	-	5	5	-	5	5	-	-	-	-	-	-	-
17	4	2	54824-834	Mzr	-	3	-	2	1	-	3	-	-	-	-	-	2	-	-
18*X7	4	3	55635-580	Pzpεm,Qg,pεo	3	4	5	7	2	1	7	-	3	1	-	-	3	-	-
19	4	3	55256-231	Mzr	3	3	-	3	3	-	4	2	-	-	-	-	1	-	-
20 X3	1	4	56862-872	Q	-	2	1	3	-	-	1	1	-	-	-	-	-	-	-
21 X7	4	4	57752-792	Pzpεm,Qg,pεo	1	4	4	3	1	2	3	4	2	-	-	-	-	-	-
22 X4	4	5	55656-671	Pzpεm,Qg	1	2	1	1	-	2	-	2	2	-	-	-	-	-	-
23 X2	4	5	55969-995	Mzr	5	1	-	2	4	-	6	-	-	-	-	-	-	-	-
24 X1	4	5	56035-074	Mzr	6	3	-	4	5	-	4	2	-	-	-	-	2	-	-
25	3	6	53711-701	Pzpεm	2	1	-	1	-	-	1	-	-	-	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
26 X3	4	6	53494-458	Pzpεm,Qg	5	2	1	2	2	4	-	5	3	-	-	-	-	-	-
27*X2	3	7	51866-891	Pzpεm	3	1	2	3	-	-	2	1	-	1	-	-	1	-	-
28 X8	4	7	52088-108	Pzpεm,Qg	3	-	2	-	-	5	-	-	5	-	-	-	-	-	-
29	4	8	49889-859	Pzpεm	3	1	3	3	1	3	2	3	2	-	-	-	-	-	-
30	1	9	49574-594	Ts	2	3	-	3	1	-	3	2	-	-	-	-	-	-	-
31 X1	2	9	41572-577	TrPg	1	-	1	1	-	1	-	-	2	-	-	-	-	-	-
32	4	9	42077-097	Pzpεm	3	1	1	2	2	1	4	-	1	-	-	-	-	-	-
33 X3	4	9	42107-123	Qg	1	2	1	1	2	-	-	3	-	-	-	-	1	-	-
34*X4	1	10	48326-281	Q,Ts	5	4	1	3	-	-	3	1	-	2	2	1	2	1	1
35*X1	4	10	40885-860	Pzpεm,Qg,pεo	2	3	1	4	1	-	4	1	1	1	-	-	2	-	-
36	4	10	40562-546	Mzr	2	2	-	2	-	-	4	-	-	1	-	-	2	-	-
37	1	11	47326-336	Td	1	2	-	-	-	-	2	-	-	3	-	-	2	-	-
38 X6	1	11	47417-443	Tk,Q	1	1	4	1	1	1	5	1	-	-	-	-	-	-	-
39*	2	11	39503-508	Trs	-	1	1	-	1	1	1	1	-	-	-	-	1	-	-
40 X1	4	11	40069-084	Pzpεm,Qg	3	-	1	2	1	-	2	-	-	-	-	-	-	-	-
41*X3	1	12	47083-058	pPmf,Q,Ts	3	1	2	-	2	3	1	3	-	-	1	-	2	-	-
42	2	12	39107-092	Qg,Ts,Trs	4	-	-	-	-	-	1	-	-	3	-	-	3	-	-
43 X1	4	17	49856-861	Pzpεm	-	-	2	-	-	2	-	-	2	-	-	-	-	-	-
44	4	18	47734-713	Pzpεm	1	-	4	-	-	5	-	-	5	-	-	-	-	-	-
45 X1	4	19	46587-597	Pzpεm	-	1	2	-	-	3	-	1	2	-	-	-	-	-	-
46	4	20	44557-537	Pzpεm	2	-	3	-	1	4	-	-	4	-	-	-	-	-	-
47	4	23	37477-483	Pzpεm	-	2	-	-	-	2	-	2	-	-	-	-	-	-	-
48 X2	4	23	37619-634	Tg	2	-	2	1	-	3	-	-	-	-	-	-	-	-	-
49 X3	2	25	48341-351	pPmq,Q	2	1	-	-	-	-	1	-	-	-	-	-	-	-	-
50	4	25	49241-246	pzpεm	-	2	-	-	-	2	-	2	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
51	2	26	48116-091	Pzm	5	1	-	3	2	-	4	2	-	-	-	-	-	-	-
52	4	26	47312-302	Qg,Pzpem	2	1	-	-	1	2	2	-	1	-	-	-	-	-	-
53	4	26	47221-211	Mzr	2	1	-	3	-	-	3	-	-	-	-	-	-	-	-
54	2	27	40110-140	Pzm	4	3	-	7	-	-	5	-	-	-	-	-	1	-	-
55	2	27	40408-418	Tqm	2	1	-	-	2	-	2	-	-	-	-	-	1	-	-
56 X2	4	27	40929-934	Qg	1	-	1	1	1	-	1	1	-	-	-	-	-	-	-
57 X6	4	28	37757-732	Qg	3	2	1	2	2	2	-	5	1	-	-	-	-	-	-
58	2	29	55934-949	Pzm	4	-	-	3	-	-	4	-	-	-	-	-	-	-	-
59 *X10	4	29	56607-687	Pzpem,Qg	6	3	8	6	3	2	6	8	2	1	-	-	1	-	-
60 X1	4	29	56713-728	Pza,Mzr	3	-	1	-	3	1	1	3	-	-	-	-	-	-	-
61 X2	4	29	56789-799	Mzr	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
62 *X1	4	29	56809-819	Mzr	-	1	2	2	-	-	3	-	-	-	-	-	2	-	-
63	4	29	56930-940	Mzg	1	2	-	-	-	3	1	-	2	-	-	-	-	-	-
64	2	30	55744-724	Pzm	5	-	-	2	2	1	1	4	-	-	-	-	-	-	-
65	2	30	55603-583	Ts	3	2	-	3	2	-	2	1	-	-	-	-	3	-	-
66	3	30	55507-487	Qg,Tqm	3	2	-	2	-	-	3	-	-	2	-	-	3	-	-
67 *X1	4	30	54845-769	Pzpem,Qg	4	9	3	6	2	1	5	6	1	4	-	-	5	-	-
68 *X3	4	30	54759-693	peo,Pza,Mzr	8	4	2	6	6	1	7	5	-	-	-	-	2	-	-
69 X2	4	30	54637-612	Mzr	4	2	-	4	-	-	4	1	-	-	-	-	-	1	-
70	4	30	54481-475	Mzg	-	2	-	-	-	2	-	1	1	-	-	-	-	-	-
71 X1	2	31	52875-895	Pzm,Q	4	1	-	1	3	1	2	3	-	-	-	-	-	-	-
72	2	31	52951-971	Qg	5	-	-	3	1	-	3	2	-	-	-	-	-	-	-
73 *	2	31	52981-027	Qg	5	3	2	5	1	-	4	6	-	2	-	-	1	-	-
74 *	4	31	53598-699	Pzpem,Qg, peo,Pza	9	5	7	4	4	3	8	3	1	4	2	-	7	2	1
75	4	31	53720-725	Mzr	-	2	-	-	1	1	-	2	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
76	4	31	53826-836	Mzr	1	2	-	1	-	-	2	1	-	1	-	-	2	-	-
77	4	31	53972-982	Mzg,Mzj	2	1	-	1	1	1	1	1	-	-	-	-	1	-	-
78	2	32	52666-651	Pzm	2	2	-	1	-	3	3	1	-	-	-	-	-	-	-
79	2	32	52580-560	Qg	2	3	-	2	1	-	4	-	-	1	-	-	1	-	-
80 *X3	4	32	51792-746	Qg,pЄo,Pza	6	3	1	1	4	1	2	4	-	1	1	-	2	1	-
81	4	32	51711-691	Mzr	5	-	-	2	1	-	5	-	-	-	-	-	-	-	-
82 X4	4	32	51650-615	Mzr,Pza	4	4	-	4	2	-	4	3	-	-	-	-	-	-	-
83 X3	4	32	51585-569	Mzg	3	1	-	1	-	1	1	2	-	-	-	-	-	-	-
84	2	33	45387-397	Pzm	1	2	-	3	-	-	2	-	-	-	-	-	2	-	-
85 *X4	2	33	45417-534	Kq,Tsa,Qg,Tk	11	8	5	14	-	1	5	-	2	7	2	-	14	3	1
86 *	2	33	45579-635	Ts,Tqm	6	5	1	1	-	-	5	1	-	6	1	1	5	1	-
87 *	4	33	46135-272	Mzr,PzpЄm,Qg pЄo,Pza	9	8	11	5	14	4	16	7	2 -	4	4	-	10	4	2
88 *X1	4	33	46302-327	Mzr	3	-	3	3	1	-	3	-	-	1	-	-	1	-	1
89 X1	4	33	46563-	Mzj	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
90 *	2	34	45162-117	Kq,Tsa,Tk	4	4	2	4	1	-	2	-	-	3	3	-	5	4	1
91 *	2	34	45051-011	Tsa,Qg,Tss	5	2	2	3	1	-	6	-	-	4	1	-	4	-	-
92 X1	2	34	44990-925	Ts,Tqm	9	5	-	2	-	-	6	-	-	2	5	1	4	2	-
93 *	4	34	44384-252	PzpЄm,Qg,pЄo Pza,Mzr	5	18	4	12	3	2	12	6	-	4	1	-	11	5	1
94 *X1	4	34	44242-197	Mzr	3	4	3	6	1	-	7	1	-	3	-	-	2	1	2
95	4	34	44060-040	Mzj	4	1	-	1	2	-	2	2	-	-	-	-	-	-	-
96	2	35	42505-515	Pzm	1	2	-	3	-	-	2	-	-	-	-	-	1	-	-
97 X2	2	35	42546-576	Kq,Tsa,Tk	4	3	-	1	-	-	-	-	-	3	1	1	2	2	-
98 *	2	35	42586-601	Tk	2	1	1	2	-	-	-	1	-	2	-	-	4	-	-
99 *X5	2	35	42642-697	Tk,Tsa,Qg,Tss	2	2	8	7	1	-	4	2	1	5	1	1	3	2	2
100 *	4	35	43254-329	PzpЄm,Qg,pЄo	5	4	7	8	1	-	4	4	1	5	3	1	4	5	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
101	4	35	43340-345	Pza	-	2	-	-	1	1	-	-	2	-	-	-	-	-	-
102*X2	4	35	43355-446	Mzr	10	7	2	11	1	-	9	2	-	-	-	-	6	3	-
103	4	35	43476-486	Pza	2	1	-	2	1	-	-	3	-	-	-	-	-	-	-
104	4	35	43567-582	Mzj	3	1	-	1	1	-	2	1	-	1	-	-	-	-	1
105 X2	4	35	43668-678	Pza	1	1	1	-	-	-	1	-	-	1	-	-	1	-	-
106	5	36	42292-272	Pzm	4	1	-	5	-	-	5	-	-	-	-	-	1	-	-
107	5	36	42231-221	Kq,Tsa	-	3	-	-	-	-	-	-	-	-	3	-	-	1	2
108*	5	36	42196-171	Tk	3	1	2	3	-	-	1	-	-	3	-	1	2	4	-
109	5	36	42160-145	Tk	3	1	-	1	-	1	2	-	-	3	-	-	2	1	-
110*	5	36	42115-044	Tsa,Qg,Tss,Ts	7	4	4	3	2	-	4	1	-	7	3	-	5	5	1
111*	5	36	42004-963	Tqm	4	3	2	-	-	-	3	-	-	6	2	-	3	2	1
112	7	36	41458-448	PzpEm	1	2	-	3	-	-	3	-	-	-	-	-	-	-	-
113*	7	36	41422-392	PzpEm,Qg	2	2	3	1	3	-	3	3	-	2	-	-	3	-	-
114	7	37	49849-854	PzpEm	-	2	-	-	-	-	1	-	-	2	-	-	2	-	-
115	7	38	48131-096	PzpEm,Qg	7	1	-	4	1	-	5	1	-	2	-	-	1	-	-
116	6	39	47857-882	Qg	2	2	-	-	-	-	-	-	-	2	1	-	2	2	-
117	7	39	48014-044	PzpEm,Qg	6	1	-	2	-	-	1	-	-	-	1	-	3	1	1
118	5	40	46551-551	Tqm	2	1	-	-	2	1	2	1	-	-	-	-	-	-	-
119	7	41	45872-882	Qg	2	1	-	1	-	-	-	-	-	1	-	-	2	1	-
120	5	43	39756-771	Tsa	4	-	-	1	-	-	-	-	-	3	-	-	2	2	-
121	5	43	39781-806	Qg,Tss,Ts	2	4	-	4	-	-	5	-	-	3	-	-	5	-	-
122	6	43	40170-180	Qg	1	2	-	2	-	-	2	-	-	-	1	-	1	-	1
123	6	43	40190-201	Qg	2	1	-	2	-	-	2	-	-	-	-	-	1	-	-
124	6&7	43	40332-347	PzpEm	1	3	-	-	-	-	-	-	-	-	3	1	1	-	3
125*	7	43	40393-418	PzpEm,Qg	2	3	1	3	-	-	1	1	-	1	-	-	4	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
126	5	44	39401-366	Tsa,Qg	4	4	-	4	-	-	3	2	-	4	-	-	3	-	-
127	6&7	44	38861-845	Qg,Pzpem	2	2	-	1	-	-	-	-	-	-	-	-	-	-	-
128*X1	7	44	38679-649	Pzpem,Qg	2	2	3	5	-	-	4	1	-	1	1	-	2	2	-
129*	5	45	37871-911	Tsa,Qg,Tss	7	1	1	2	1	-	2	1	-	6	-	-	6	1	-
130*	7	45	38482-497	Pzpem,	2	1	1	-	-	-	-	-	-	-	-	4	-	-	4
131*	5	46	35730-699	Tsa,Qg,Tss	5	1	1	2	2	-	4	-	1	2	-	-	3	-	-
132*	5	46	35659-644	Ts,Tqm	3	-	1	1	1	-	1	-	-	2	-	-	2	-	-
133	5	46	35623-618	Tqm	-	2	-	-	-	-	1	-	-	1	-	-	1	-	-
134	6	46	35543-532	Mzg	1	2	-	-	-	-	1	-	-	1	1	-	1	-	-
135*	6	46	35199-179	Pzpem,Qg	2	2	1	1	-	-	1	-	-	3	1	-	2	1	-
136*	6&7	46	35138-067	Pzpem	6	5	4	4	-	-	4	-	-	5	1	3	6	3	4
137	7	46	35027-012	Pzpem	3	1	-	-	-	-	-	-	-	3	-	-	2	-	2
138*X1		46	35997-943	Pzpem,Qg	3	7	2	1	1	-	-	-	-	5	2	-	6	2	1
139	5	47	34182-207	Tsa,Qg	3	3	-	3	-	-	4	1	-	1	-	-	1	-	-
140*	5	47	34262-303	Tqm	4	3	2	2	5	1	6	-	-	-	-	-	3	-	-
141*	5	47	34313-328	Tqm	2	1	1	2	-	-	2	-	-	1	-	-	2	1	-
142 X13	6	47	34667-733	Pzpem,Qg	1	-	13	1	-	-	4	-	-	-	1	-	1	-	-
143*X8	6&7	47	34743-878	Pzpem,Qg	7	9	12	5	-	-	4	-	-	5	3	5	2	5	7
144*	5	48	33879-838	Tsa,Qg	2	4	3	5	1	-	6	2	-	3	2	-	4	-	-
145	5	48	33828-798	Qg,Ts,Tqm	6	1	-	2	-	-	6	-	-	1	-	-	-	-	-
146	5	48	33788-778	Tqm	2	1	-	2	-	-	1	2	-	1	-	-	-	-	-
147*	5	48	33767-747	Tqm,Pzs	4	-	1	2	-	-	3	-	-	1	-	-	2	-	-
148*	5	48	33737-717	Pzs	4	-	1	1	-	-	-	-	-	1	-	-	3	-	1
149*	7	48	33206-191	Pzpem	2	1	1	-	-	-	-	-	-	3	-	-	1	-	2
150*	7	48	33181-161	Pzpem,Qg	3	1	1	-	-	-	1	-	-	1	1	-	2	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
151*X1	7	48	33136-120	Qg	-	2	2	2	-	-	2	1	-	-	2	-	2	-	-
152 X3	5	50	60230-215	Pzs	-	2	2	2	-	-	2	2	-	-	-	-	-	-	-
153	6	51	59066-076	PzpEm	1	2	-	-	-	-	-	-	-	1	1	1	2	1	-
154	6	52	58396-391	PzpEm	-	2	-	-	-	-	-	-	-	1	-	1	2	-	-
155	7	52	57906-896	Pza	2	1	-	2	-	-	2	-	-	1	-	-	2	-	-
156 X1	7	52	57862-	Qg	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-
157 X1	6	53	54493-498	Mzg	-	2	-	2	-	-	-	-	-	-	-	-	-	1	-
158 X2	6	54	53556-541	PzpEm	4	-	-	-	-	-	1	-	-	1	-	-	1	-	-
159*	6	54	53531-526	PzpEm	-	1	1	-	-	-	-	-	-	1	1	-	1	1	-
160	6	55	52554-569	Mzg	2	2	-	1	-	2	2	1	1	1	-	-	-	-	-
161 X3	7	55	52872-838	Pza,Qg	1	3	-	1	-	-	-	-	-	-	-	1	-	-	1
162 X1	7	55	52908-921	Qg	3	1	-	3	-	-	2	-	-	1	-	-	1	-	-
163*	6	56	51837-822	PzpEm,Qg,Mzg	2	1	1	-	-	-	-	-	-	1	2	1	4	-	-
164	7	56	51387-367	Qg	4	1	-	2	-	-	-	-	-	-	-	-	2	-	-
165	7	56	51256-235	Qg	3	2	-	-	-	-	4	-	-	-	-	-	1	-	-
166	6	57	50172-192	PzpEm,Qg	4	1	-	-	-	-	1	-	-	3	1	-	-	1	-
167 X7	6&7	57	50561-592	Mzg,Qg	2	4	1	2	-	-	-	-	-	-	-	-	-	-	-
168 X3	6	58	49411-401	Mzg	2	1	-	1	1	-	1	1	-	-	-	-	-	-	-
169 X3	7	58	49280-264	Mzg,Qg	1	2	1	1	-	-	-	-	-	-	-	-	-	-	-
170 X1	7	58	49123-103	Qg	2	3	-	1	1	-	2	1	-	3	-	-	1	1	-
171 X4	6	59	48548-574	PzpEm,Qg	6	-	-	-	-	-	2	-	-	-	-	-	1	-	-
172	6	59	48705-710	Mzg	-	2	-	-	-	-	2	-	-	1	-	-	2	-	-
173 X5	7	59	48928-953	Pza	3	3	-	-	-	-	1	-	-	-	-	1	-	1	-
174	7	59	49014-029	Qg	3	1	-	2	-	-	2	-	-	1	-	-	1	-	-
175	5	60	48050-040	Ts	2	1	-	3	-	-	2	-	-	-	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
176	6	60	47712-701	Mzg	2	1	-	-	-	-	-	-	-	1	-	-	1	-	-
177	6	60	47590-575	Mzg	3	1	-	1	1	-	2	-	-	-	-	-	1	-	-
178 X3	7	60	47423-413	Qg	2	-	1	3	-	-	1	-	-	-	-	-	-	-	-
179	7	60	47327-317	Pza	1	2	-	1	-	-	2	-	-	1	2	-	1	1	-
180*	5	61	42836-892	Qg,Ts	5	3	4	3	-	-	4	1	-	4	3	-	1	2	3
181	5	61	42902-922	Ts	4	1	-	-	-	-	-	-	-	1	1	-	4	-	1
182 X4	6	61	43028-053	PzpЄm,Qg	5	1	-	-	-	-	-	-	-	1	-	1	1	1	-
183	6	61	43094-104	Mzg,PzpЄm	2	1	-	-	-	-	2	-	-	2	1	-	-	1	-
184 X5	6	61	43165-195	Qg,Mzg	2	2	3	1	-	-	6	-	-	1	1	-	1	-	-
185 X4	7	61	43498-534	Pza	4	4	-	2	-	-	-	-	-	1	-	1	3	1	-
186*X1	7	61	43569-608	Pza,Qg	6	1	2	4	-	-	3	-	-	1	-	2	2	-	1
187*	5	62	42696-691	Ts	1	-	1	-	-	-	-	-	-	1	1	-	1	-	1
188	5	62	42676-671	Ts	-	2	-	-	-	-	-	-	-	1	1	-	-	2	-
189 X5	5	62	42645-625	Ts,PzpЄm	2	2	1	2	-	-	1	-	-	-	-	-	-	-	-
190 X3	5	62	42615-605	PzpЄm	1	1	1	1	-	-	1	-	-	-	-	-	-	-	-
191 X2	6	62	42539-529	PzpЄm	1	2	-	-	-	-	-	-	-	-	-	1	-	1	-
192 X3	6&7	62	42155-145	Mzg,Qg	2	1	-	3	1	1	-	1	-	-	-	-	-	-	-
193	7	62	42054-044	Pza	2	1	-	-	-	-	-	-	-	2	-	1	1	1	1
194	5	63	41036-046	Ts	1	2	-	1	-	-	1	-	-	2	-	1	2	-	1
195*	5	63	41067-132	Ts	1	10	3	3	-	-	5	-	-	6	4	1	7	3	2
196 X3	6&7	63	41653-663	Mzg,Qg	2	-	1	1	1	-	1	-	-	-	-	-	-	-	-
197*X7	7	63	41739-790	Pza	3	6	2	1	-	-	1	-	-	1	-	2	1	-	-
198 X1	7	63	11840-864	Qg	5	1	-	5	-	-	4	-	-	-	-	-	1	-	-
199*	5	64	39273-213	Ts	7	5	1	6	-	-	5	1	-	6	1	-	6	2	-
200 X2	6&7	64	38717-707	Mzg,Qg	-	1	2	3	-	-	-	-	-	-	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
201	5	65	37744-759	Ts	2	2	-	3	-	-	3	1	-	1	-	-	1	-	-
202 X9	6	65	33214-255	Mzg,Qg	1	2	6	7	2	-	4	-	-	-	-	-	-	-	-
203 X1	6	65	33466-	Tg	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-
204*X1	5	66	37303-252	Ts,PzpЄm	9	1	1	-	-	-	3	1	-	3	2	-	2	2	-
205 X4	6&7	66	36828-807	Mzg,Qg	3	2	-	2	-	-	-	-	-	1	-	-	-	1	-
206	7	66	36676-651	Pza	2	4	-	3	-	-	-	-	-	3	2	-	1	2	2
207	7	66	36615-605	Pza	2	1	-	1	1	-	1	-	-	-	-	-	1	-	-
208	7	67	60356-365	Tg	1	1	1	3	-	-	-	-	-	-	-	-	-	-	-
209	6	69	58151-166	Mzg	3	1	-	-	-	-	-	-	-	2	1	-	2	1	-
210 X2	9	71	56130-140	Mzg	-	2	1	-	-	-	1	-	-	-	-	1	-	1	-
211 X1	9	71	56221-241	Mzg	3	2	-	1	-	-	2	-	-	1	-	-	2	-	-
212	9	73	54455-470	Mzg	3	1	-	-	-	-	-	-	-	2	-	1	2	-	-
213 X3	9	73	54546-556	Mzg	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
214 X4	9	75	49584-605	Mzg	4	-	1	1	-	-	-	-	-	-	-	-	1	-	-
215 X4	9	75	49625-650	Mzg	4	2	-	-	-	-	1	-	-	2	-	-	2	-	-
216	9	75	49706-716	Mzg	2	1	-	1	-	2	1	2	-	-	-	-	-	-	-
217 X2	9	76	48820-810	Mzg	2	1	-	2	1	-	1	1	-	-	-	-	-	-	-
218	9	77	48025-050	Mzg	5	1	-	2	1	-	1	-	-	1	-	-	1	-	-
219 X2	8	78	47513-503	Pr,Mzg	2	1	-	-	1	-	-	1	-	-	-	-	-	-	-
220 X3	9	78	47245-230	Mzg	4	-	-	-	-	-	-	-	-	1	-	-	-	1	-
221*	9	78	47220-205	Mzg	2	1	1	1	-	-	-	-	-	1	2	-	1	1	1
222	10	78	46836-825	Pza	1	2	-	1	-	-	1	-	-	1	1	-	2	-	-
223	9	79	46123-158	Mzg	6	2	-	2	2	1	4	-	-	1	-	-	3	1	-
224*X4	10	79	46421-507	Pza,Qg	7	9	2	4	2	1	6	3	1	4	5	-	8	-	-
225 X3	8	80	45676-661	Tsc,Mzg	2	2	-	2	-	-	3	-	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
226	10	80	44979-969	Pza	2	1	-	3	-	-	1	1	-	-	-	-	1	-	-
227 X1	8	81	44181-191	Tsc,Mzg	2	1	-	1	1	1	-	1	1	-	-	-	-	-	-
228	9	81	44560-570	Mzg	2	1	-	-	-	-	1	-	-	-	-	-	1	-	-
229	9	82	43688-673	Mzg	4	-	-	3	1	-	-	-	-	-	-	-	2	-	-
230 X2	9	82	43607-597	Mzg	1	2	-	-	-	-	-	-	-	-	-	-	1	-	-
231 X1	8	83	39768-783	Tsc,Mzg	2	1	1	-	-	4	-	-	4	-	-	-	-	-	-
232	9	83	40121-137	Mzg	3	1	-	1	3	-	3	-	-	-	-	-	1	-	-
233	9	83	40192-207	Mzg	4	-	-	-	-	-	1	-	-	-	-	-	1	-	-
234	10	83	40415-435	Pza	5	-	-	3	-	-	3	1	-	-	-	-	-	-	-
235	10	83	40445-470	Pza,Qg	4	2	-	4	-	-	3	-	-	1	1	-	1	1	-
236	8	84	39663-	Tsc	-	-	1	-	-	1	-	1	-	-	-	-	-	-	-
237*X1	8&10	85&86	38874-773	Pza,Tsc	2	2	1	2	1	-	2	2	-	1	-	-	2	-	-
238	9	86	37298-288	Mzg	2	1	-	-	-	-	-	-	-	2	-	-	-	2	-
239	10	86	37207-187	Pza	5	-	-	-	-	-	-	-	-	2	-	-	4	1	-
240*	10	86	37050-030	Qg	1	3	1	5	-	-	4	-	-	1	-	-	2	-	-
241*X6	9	87	36719-755	Mzg	4	3	1	1	-	-	4	-	-	-	2	-	1	1	-
242*	10	87	36921-947	Pza	2	2	2	2	-	-	2	-	-	3	-	2	2	1	1
243*	10	87	36972-982	Qg	2	-	1	-	1	-	2	-	-	2	-	-	2	-	-
244	10	88	35480-459	Pza	4	1	-	-	-	-	3	-	-	3	-	-	3	-	-
245 X1	10	88	35409-404	Qg	1	-	1	-	-	-	-	-	-	-	1	-	-	1	-
246 X2	9&10	89	35118-123	Mzg,Pza	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
247*	10	89	35264-315	Pza	6	4	1	-	-	-	2	1	-	4	4	1	3	3	2
248 X3	9	90	34008-988	Mzg	2	1	2	4	-	-	3	1	-	1	-	-	-	-	-
249*	10	90	33800-785	Pza	-	3	1	-	-	-	2	1	-	2	1	1	1	1	-
250*X1	10	90	39730-721	Qg	-	2	1	-	-	-	-	-	-	1	1	-	-	2	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
251	10	91	40821-866	Pza	7	3	-	-	-	-	5	1	-	5	3	2	4	-	-
252*	10	92	34542-487	Pza,Qg	7	4	1	4	-	-	7	1	-	5	2	1	7	-	-
253 X1	10	92	34471-448	Pza,Qg	4	2	-	2	-	-	3	-	-	1	-	-	2	-	-
254 X1	9	93	59097-086	Mzg	2	-	-	-	-	-	1	-	-	2	-	-	1	-	-
255 X1	9	94	51689-	Mzg	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
256 X2	9	94	51937-957	Mzg,Pza	4	1	-	1	-	-	2	-	-	2	-	-	1	-	-
257	10	94	52134-159	Pza	4	2	-	1	-	-	5	-	-	4	1	-	1	-	-
258	9	95	44850-835	Pza	3	1	-	-	-	-	-	-	-	1	2	-	2	1	-
259 X2	9	95	44809-804	Pza	-	1	1	-	1	-	1	-	-	-	-	-	-	-	-
260	8	96	38721-731	Pr,Tsc	2	1	-	-	-	-	-	-	-	1	-	-	2	-	-
261	8	96	38751-761	Pr,Mzg	2	1	-	-	1	1	2	-	-	-	-	-	1	-	-
262	9	96	38888-898	Mzg	1	2	-	-	-	-	-	-	-	1	2	-	2	1	-
263*	10	96	39479-494	Pza	1	1	2	-	-	-	2	-	-	-	2	2	3	-	1
264	8	97	43257-247	Pr,Mzg	1	1	1	-	-	3	-	1	2	-	-	-	-	-	-
265	8	97	43171-151	Mzg	3	2	-	1	-	-	2	-	-	1	1	1	-	2	-
266	9	97	43141-131	Mzg	1	2	-	-	-	-	2	-	-	1	1	-	1	-	-
267	9	97	42802-787	Mzg	4	-	-	-	-	-	2	-	-	2	-	-	2	-	-
268 X2	9	97	42777-772	Mzg	-	2	-	1	1	-	1	1	-	-	-	-	-	-	-
269*	10	97	42534-514	Pza,	1	2	2	-	-	-	1	1	-	1	1	3	3	1	-
270	10	97	42504-494	Pza,Qg	2	1	-	-	-	-	-	-	-	3	-	-	2	1	-
271	8	98	49670-685	Mzg	3	1	-	-	-	4	-	1	3	-	-	-	-	-	-
272	8	98	49756-766	Mzg	1	2	-	1	-	-	2	1	-	1	-	-	1	-	-
273*	9	98	49801-806	Mzg	1	-	1	-	-	-	1	-	-	1	-	-	1	-	-
274 X3	9	98	50130-150	Mzg	5	-	-	4	1	-	2	2	1	-	-	-	-	-	-
275*X3	10	98	50367-388	Pza	1	1	3	2	-	-	3	1	-	1	-	1	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
276	8	99	40766-776	Mzg	-	3	-	-	-	3	-	1	2	-	-	-	-	-	-
277	8	99	40786-796	Mzg	2	1	-	3	-	-	-	2	1	-	-	-	-	-	-
278*X1	8&9	99	40806-882	Mzg	10	3	3	6	-	-	9	3	1	2	1	2	2	2	-
279*	9	99	40892-917	Mzg	2	2	2	2	-	-	2	2	-	-	3	-	1	2	-
280*X2	9	99	41180-195	Mzg	2	1	1	-	-	-	2	-	-	2	-	-	1	-	-
281 X3	9	99	41216-236	Mzg	1	4	-	-	-	-	-	-	-	2	-	-	1	1	-
282*X5	9	99	41256-312	Mzg,Pza	7	1	4	6	2	1	3	5	3	1	-	-	2	-	-
283 X7	10	99	41509-554	Pza,Qg	3	-	7	3	1	-	-	-	-	2	-	1	1	2	-
284	8	100	35284-274	Mzg	2	1	-	1	-	-	-	-	-	1	-	-	1	-	-
285*	9	100	35249-223	Mzg	2	3	1	1	1	-	2	-	-	3	1	-	4	1	-
286	9	100	34900-890	Mzg	2	1	-	-	-	-	-	-	-	2	-	-	1	-	-
287*X4	9	100	34859-814	Mzg,Pza	5	3	2	1	1	-	3	3	-	3	-	-	3	-	-
288*X1	10	100	34596-537	Pza,Qg	5	3	5	-	-	-	6	1	-	4	1	5	5	4	-
289	10	101	32410-395	Pza	1	3	-	-	-	-	3	-	-	3	-	1	2	-	-
290 X3	8	102	54207-187	Mzg	2	1	2	1	3	1	-	3	1	-	-	-	-	-	-
291 X1	9	102	53894-884	Mzg	2	1	-	1	-	-	1	1	-	-	-	-	-	-	-
292	10	102	53499-474	Pza	6	-	-	-	-	-	2	-	-	2	1	2	2	-	-
293*	9	103	57933-019	Mzg	12	5	1	3	-	-	11	2	-	7	-	-	3	-	-
294 X2	10	103	58282-297	Pza,Qg	2	2	-	-	-	-	3	-	-	-	-	2	1	-	-
295	9	104	57318-313	Mzg	-	2	-	1	-	1	1	1	-	-	-	-	-	-	-
296	9	104	57014-999	Mzg	3	1	-	-	-	-	1	-	-	2	-	-	3	-	-
297	10	104	56701-681	Pza,Qg	4	1	-	-	-	-	1	-	-	2	2	1	3	1	-
298*X3	12	105	56207-227	Mzg	3	1	1	1	-	-	1	-	-	1	-	-	2	-	-
299 X7	13	105	56551-581	Qg	2	1	4	-	-	-	-	-	-	-	-	-	-	-	-
300	12	107	50907-917	Mzg	2	1	-	2	-	-	2	-	-	1	-	-	-	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
301 X5	13	107	51190-210	Pza,Qg	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
302	12	108	50034-024	Mzg	2	1	-	-	-	-	-	-	-	2	-	-	1	1	-
303 X3	12	108	50009-994	Mzg	1	3	-	3	-	-	1	2	-	-	-	-	1	-	-
304*	12	108	49968-958	Mzg	1	1	1	1	-	-	2	-	-	3	-	-	1	-	-
305 X3	12	110	48055-040	Mzg	2	2	-	2	-	-	2	1	-	-	-	-	-	-	-
306*	12	110	47914-	Pza	-	-	1	1	-	-	1	-	-	1	-	-	1	-	-
307*X3	12	111	47237-257	Mzg	2	2	1	1	-	-	2	-	-	2	-	-	-	-	-
308	12	111	47439-459	Pza	5	-	-	1	-	-	4	1	-	2	-	-	-	-	-
309 X1	12	115	41086-	Mzg	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
310 X8	12	115	41252-288	Mzg	1	1	6	3	1	-	1	1	2	-	-	-	-	-	-
311	13	115	41530-556	Pza	5	1	-	3	-	-	-	-	-	2	-	-	6	-	-
312	12	117	39796-816	Mzg	3	2	-	4	1	-	3	1	-	-	-	-	1	-	-
313	13	117	40008-023	Pza	2	2	-	2	-	-	3	1	-	3	-	-	1	-	-
314*	13	118	38603-512	Pza,Qg	7	8	4	3	-	-	9	5	1	5	6	4	6	1	-
315	13	119	57654-685	Pza	5	2	-	-	-	-	2	5	-	1	4	2	-	-	-
316	12	120	35393-373	Mzg	5	-	-	-	-	-	-	-	-	4	1	-	3	2	-
317	13	120	58205-180	Pza,Qg	5	1	-	-	-	-	1	5	-	2	3	-	-	-	-
318 X1	12	121	41471-476	Mzg	-	2	-	-	-	-	1	-	-	1	-	-	-	1	-
319	12	121	41704-709	Mzg	-	2	-	-	-	-	-	-	-	1	1	-	1	1	-
320 X2	12	121	41734-744	Pzc	2	-	1	2	-	-	1	-	-	1	-	-	1	-	-
321	12	121	41779-795	Pzc	4	-	-	1	-	-	-	-	-	1	-	-	1	1	-
322 X3	12	121	41845-355	Pza,Pzc	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-
323 X8	13	121	41941-987	Pza	2	4	4	2	-	-	6	4	-	-	1	-	1	-	-
324	13	121	42002-022	Qg	5	-	-	1	-	-	2	-	-	2	1	-	2	-	-
325	12	122	46110-090	Mzg	4	1	-	-	-	-	1	-	-	1	2	-	4	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
326 X3	12	122	46055-024	Pzc	5	2	-	1	1	-	-	1	1	-	-	1	2	1	-
327*	13	122	45852-842	Pza	1	1	1	-	-	-	3	-	-	1	-	2	2	-	-
328	13	122	45817-792	Pza	3	3	-	2	-	-	3	2	-	1	2	-	1	-	-
329 X1	11&12	123	52244-259	TKqm	2	2	-	3	-	-	2	-	-	1	-	-	-	1	-
330	13	123	52779-794	Pza	3	1	-	1	-	-	4	-	-	1	-	-	-	-	-
331	13	124	33737-701	Pza	7	1	-	-	-	-	6	-	-	1	1	-	1	-	-
332*	13	125	39815-886	Pza,Qg	8	4	3	6	-	-	10	4	-	3	3	2	3	2	-
333*X1	13	126	33440-351	Pza,Qg	9	9	1	1	-	-	15	2	-	7	3	-	3	1	-
334	13	127	40460-470	Pza	2	1	-	-	-	-	-	3	-	3	-	-	-	-	-
335	13	128	44300-275	Pza	5	1	-	1	-	-	2	4	-	2	1	-	-	-	-
336	12	129	50900-916	Pzc	3	1	-	-	-	-	-	-	-	2	1	-	1	1	-
337 X3	13	129	51118-133	Pzc	-	3	1	1	-	-	1	-	-	1	-	-	-	-	1
338*X3	13	129	51168-219	Pza,Qg	8	2	1	2	-	-	5	1	-	1	1	-	2	-	1
339*	13	130	33256-185	Pza,Qg	7	7	1	4	-	-	4	3	-	8	2	1	6	1	-
340 X5	12&13	131	39845-865	Pzc	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-
341	13	134	34336-321	Pzc,Pza	2	2	-	-	-	-	2	-	-	3	1	-	2	-	-
342	13	134	34310-290	Pza,Qg	2	3	-	1	-	-	1	-	-	1	2	1	2	2	-
343	13	134	34280-260	Qg	4	1	-	1	-	-	3	-	-	3	-	-	-	1	-
344*X1	13	135	35464-494	Pza,Pzc,Qg	4	2	1	-	-	-	1	1	-	1	2	1	2	1	1
345	12	136	35766-746	Pzc	4	1	-	1	-	-	1	1	3	2	-	-	-	-	-
346*	13	136	35675-655	Pza	-	2	3	1	-	-	4	-	-	1	2	2	3	1	-
347	12	137	36723-753	Pzc	5	2	-	-	-	-	1	3	3	3	2	1	-	-	-
348	14	139	37915-925	Pzc	2	1	-	1	-	-	-	-	-	1	1	-	3	-	-
349	14	140	46782-797	Mzg	3	1	-	-	-	-	-	-	-	1	1	-	2	-	1
350 X1	14	141	47404-394	Pzc	2	1	-	1	-	-	1	-	2	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
351*	15	144	49303-318	Pzc,Pza	2	1	1	2	-	-	1	1	-	1	1	-	1	-	-
352	14	145	43340-334	Pzc	-	2	-	1	-	-	-	1	1	1	-	-	-	-	-
353 X4	14	146	43629-650	Pzc	2	1	2	-	-	-	3	-	-	1	-	-	-	-	-
354	14	146	43675-705	Pzc	5	2	-	4	-	-	-	5	2	1	-	-	-	-	-
355	14	146	43715-741	Pzc,Qg	3	3	-	1	1	-	1	2	-	3	-	-	4	-	-
356	15	146	43887-897	Pzc	2	1	-	-	-	-	2	-	1	1	1	-	-	-	-
357*	14	147	44255-245	Pzc	1	1	1	-	-	-	-	-	-	1	1	1	1	1	1
358*	14	147	44189-184	Pzc,Qg	1	-	1	-	-	-	1	1	-	-	1	1	1	-	-
359 X1	14	147	44119-109	Q,Pzc	2	1	-	-	-	-	-	-	-	1	-	1	2	-	-
360	15	147	43997-977	Pzc	2	3	-	1	-	-	1	-	3	2	-	1	1	-	-
361 X10	14	148	44465-511	Pzc,Qg	-	3	7	2	-	-	5	3	-	-	-	-	-	-	-
362 X4	15	148	44703-723	Pzc,Pza	1	-	4	1	-	-	2	-	2	-	-	-	-	-	-
363*X2	15	149	45052-037	Pzc	1	-	3	2	1	-	1	-	3	-	1	-	-	-	-
364 X12	14	150	45482-538	Pzc,Qg	2	4	6	1	-	-	5	1	-	-	-	-	-	-	-
365 X4	15	150	45710-723	Pzc	1	-	3	2	1	-	1	-	3	-	-	-	-	-	-
366	14	151	44921-911	Mzg	2	1	-	-	-	-	-	-	-	1	1	1	1	-	1
367	14	151	44845-830	Pzc	4	-	-	-	-	-	1	-	-	2	1	1	1	-	-
368	14	151	44810-784	Pzc,Qg	3	3	-	-	-	-	1	-	-	6	-	-	3	2	-
369	14	151	44683-673	Pzc	-	3	-	2	-	-	2	-	-	1	-	-	1	1	-
370	15	151	44663-643	Pzc	4	1	-	5	-	-	2	-	-	-	-	-	-	-	-
371*X1	15	151	44612-592	Pzc	2	1	2	2	-	1	2	1	-	-	2	-	2	-	1
372 X2	14	152	51905-925	Qg	4	1	-	-	-	-	-	-	-	-	3	-	2	1	-
373	14	152	51966-991	Pzc	6	-	-	2	-	-	2	-	-	1	-	-	2	-	-
374 X1	14	153	49095-	Mzg	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
375*X5	14	154	49263-319	Pzc	5	5	2	-	-	-	-	-	-	1	3	3	1	3	3

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
376*	14	155	49830-820	Mzg	-	1	2	-	-	-	-	-	-	-	1	2	-	-	3
377 X4	14	156	49932-958	Mzg	-	2	4	-	-	-	-	-	-	-	1	1	-	1	1
378	14	156	49983-008	Mzg,Pzc	2	4	-	1	2	-	2	-	-	-	2	1	1	1	2
379 X5	14	156	50059-084	Pzc,Qg	1	1	4	-	-	-	-	-	-	-	1	-	-	-	1
380*X3	14	156	50130-155	Pzc,Qg	4	1	1	-	-	-	-	-	-	1	-	-	3	-	-
381 X4	14	157	50581-556	Mzg	1	-	5	-	-	-	-	-	-	-	2	-	-	-	2
382 X1	14	157	50445-435	Qg	1	2	-	-	-	-	-	-	-	-	1	1	-	1	1
383*	14	157	50415-399	Pzc	2	1	1	-	-	-	-	-	-	2	1	1	1	2	-
384	14	157	50379-359	Pzc,Qg	3	2	-	1	-	-	-	-	-	1	2	-	2	1	1
385*	14	158	50661-666	Mzg	1	-	1	-	-	-	-	-	-	1	1	-	-	2	-
386*X3	14	158	50813-838	Qg,Pzc	2	3	1	-	-	-	-	1	-	1	2	-	3	-	-
387*X1	14	159	51247-242	Mzg	1	-	1	-	-	-	-	-	-	1	-	-	1	-	-
388 X2	14	159	51111-100	Qg,Pzc	1	-	2	-	-	-	1	-	-	-	-	-	-	-	-
389	14	159	51050-030	Pzc,Qg	2	3	-	1	-	-	-	-	-	1	2	-	2	2	-
390	14	160	51345-355	Mzg	2	1	-	-	-	-	-	-	-	2	-	-	1	2	-
391*X1	14	160	51466-482	Qg,Pzc	1	2	1	-	-	-	-	-	-	1	1	1	1	-	1
392 X1	14	160	51542-557	Pzc,Qg	1	3	-	2	-	-	1	-	-	1	-	1	1	1	1
393*X2	14	161	51883-868	Mzg	2	-	2	-	-	-	-	-	-	-	1	-	1	1	-
394	14	161	51853-828	Mzg,Pzc	6	-	-	1	4	1	2	3	-	-	-	-	1	-	-
395 X3	14	161	51762-747	Qg,Pzc	3	1	-	1	-	-	-	-	-	-	-	1	1	-	-
396	14	161	51696-686	Pzc	2	1	-	1	-	1	-	1	-	1	-	-	1	1	-
397 X7	14	162	51980-025	Mzg	1	2	7	2	-	-	-	-	-	-	1	-	-	1	2
398	14	162	52035-051	Mzg,Pzc	4	-	-	1	2	1	1	-	-	-	-	-	-	1	-
399*X1	14	163	52514-484	Mzg	4	-	3	-	-	-	1	-	-	1	2	3	-	1	5
400	14	163	52337-327	Pzc	1	2	-	1	1	-	1	-	-	1	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
401*	14	164	52557-588	Mzg	-	2	5	-	-	-	-	1	-	1	2	4	1	2	3
402*X5	14	164	52709-749	Qg,Pzc	2	6	1	-	-	-	-	-	-	4	-	-	3	1	-
403*X1	14	165	53082-047	Mzg	3	3	2	-	-	-	1	-	-	4	1	1	4	1	1
404 X5	14	165	52926-905	Qg,Pzc	1	1	3	1	-	-	1	-	-	-	-	-	-	-	-
405	14	166	53200-226	Mzg,Pzc	3	3	-	-	-	-	-	-	-	2	2	1	1	2	2
406*X1	14	167	44157-147	Mzg	1	-	2	-	-	-	-	-	-	-	-	2	-	-	2
407*X2	14	167	44122-102	Mzg	2	1	2	-	-	-	-	-	-	-	2	1	-	-	3
408 X3	14	167	44087-071	Qg,Pzc	-	2	2	-	-	-	-	-	-	-	-	1	-	1	-
409	14	168	43568-578	Mzg	1	2	-	-	-	-	2	-	-	3	-	-	2	-	-
410 X1	14	168	43684-705	Qg,Pzc	4	1	-	2	-	-	-	-	-	2	-	-	2	1	-
411*X1	15	168	43836-849	Pzc	1	1	2	3	-	-	-	-	-	1	-	1	-	2	1
412*	14	169	43498-	Mzg	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
413	14	169	43458-437	Mzg	3	2	-	-	-	-	-	-	-	1	3	1	1	2	2
414*X3	14	169	43316-286	Qg,Pzc	3	3	1	-	-	-	-	-	-	2	1	1	1	1	2
415 X2	14	170	42911-916	Mzg,Pzc	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
416	14	170	43052-068	Qg,Pzc	3	1	-	-	-	-	-	-	-	1	2	1	1	-	3
417 X2	14	171	42833-828	Mzg	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
418*	14	171	42732-727	Pzc	1	-	1	-	-	-	-	-	-	-	-	1	-	1	1
419	14	171	42666-656	Qg	2	1	-	-	-	-	-	-	-	1	1	-	1	2	-
420*X1	14	171	42641-625	Qg,Pzc	1	2	1	-	-	-	-	-	-	2	-	1	-	3	-
421*	14	171	42595-580	Pzc	1	2	1	1	3	-	2	2	-	-	-	-	1	-	-
422	14	172	42111-142	Qg	4	3	-	-	-	-	-	-	-	3	2	-	2	5	-
423	14	172	42192-197	Pzc	-	2	-	1	-	1	1	1	-	-	-	-	-	-	-
424	14	173	41816-	Mzg	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
425	14	173	41585-664	Pzc	4	1	-	-	-	-	-	-	-	-	1	3	-	2	2

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
426	14	173	41649-634	Pzc	4	-	-	1	-	-	-	-	-	2	-	1	3	-	-
427 X3	16	174	41300-315	Pzc	2	-	2	-	-	-	-	-	-	-	1	-	1	-	-
428 X2	16	174	41406-411	Pzc,Qg	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
429*X2	16	174	41421-442	Qg	3	1	1	-	-	-	-	-	-	-	2	-	3	-	-
430	16	175	40986-970	Pzc	1	3	-	-	-	-	1	2	-	2	-	1	1	-	-
431*X1	16	176	40543-558	Mzg	2	1	1	1	-	-	-	-	-	1	-	-	3	-	-
432	16	176	40579-594	Mzg	2	2	-	-	-	-	-	-	-	2	1	-	2	1	1
433 X2	16	176	40604-614	Mzg	2	-	1	-	-	-	-	-	-	-	-	1	-	-	1
434*	16	176	40654-700	Pzc	6	2	2	3	-	-	1	-	-	4	2	1	7	1	2
435*X1	16	177	40334-314	Mzg	1	3	1	1	-	-	1	-	-	1	1	1	1	2	-
436*	16	177	40243-233	Qg,Pzc	1	1	1	-	-	-	-	-	-	1	-	2	1	1	1
437*	16	177	40167-142	Qg	4	1	1	-	-	-	-	-	-	1	1	4	1	1	4
438*X2	16	178	39832-923	Mzg,Qg	6	10	3	3	-	-	3	-	-	5	6	3	6	7	3
439	16	178	39969-979	Qg	2	1	-	-	-	-	-	-	-	1	-	2	-	1	2
440 X1	16	178	40060-089	Qg	5	2	-	2	-	-	-	-	-	1	1	-	4	-	1
441	16	179	39450-425	Qg	3	3	-	-	-	-	-	-	-	1	2	1	1	1	3
442	16	180	39207-222	Qg	4	-	-	-	-	-	-	-	-	3	1	-	3	-	-
443	16	180	39253-268	Qg	4	1	-	-	-	-	1	1	-	1	2	1	1	1	1
444 X1	16	180	39354-388	Qg	2	6	-	-	-	-	-	-	-	-	4	3	-	2	5
445	16	181	38948-933	Mzg	2	2	-	-	-	-	2	1	-	1	-	-	1	-	-
446	16	182	53789-804	Mzg	2	2	-	-	-	-	-	-	-	-	2	2	-	3	1
447	16	182	53824-839	Mzg	3	1	-	-	-	-	-	-	-	-	2	2	1	-	3
448	16	182	53854-875	Pzc	5	-	-	-	-	-	1	-	-	2	2	-	1	-	-
449	16	184	53120-161	Mzg,Pzc	5	4	-	4	-	-	-	-	-	2	3	-	-	8	-
450	16	184	53267-282	Pzc	4	-	-	1	-	-	-	-	-	2	-	-	3	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
451	16	184	53292-307	Pzc	2	2	-	-	1	1	1	1	-	1	-	-	2	-	-
452*	16	185	53031-995	Mzg	2	5	1	-	-	-	-	-	-	3	3	2	3	4	1
453	16	185	52859-843	Pzc	3	1	-	-	-	-	-	-	-	2	-	-	2	1	-
454*X1	16	185	52813-790	Pzc	3	2	1	3	2	1	2	1	-	-	-	-	1	-	-
455	16	186	52522-567	Mzg,Pzc	8	2	-	-	-	-	2	1	-	4	3	1	3	3	-
456	16	186	52588-603	Pzc	4	-	-	1	-	-	-	-	-	2	-	-	3	-	-
457	16	186	52653-668	Pzc	4	-	-	2	-	-	1	-	-	-	-	-	-	-	-
458	16	186	52689-704	Pzc	4	-	-	2	1	-	-	-	-	-	-	-	3	-	-
459	16	187	42932-962	Mzg,Pzc	5	2	-	-	-	-	1	-	-	3	1	2	5	-	-
460	16	187	43074-089	Pzc	4	-	-	3	1	-	-	-	-	-	-	-	1	-	-
461*	16	188	52437-412	Mzg	1	4	1	-	-	-	1	-	-	1	2	3	3	2	1
462	16	188	52392-362	Mzg,Pzc	4	3	-	-	-	-	-	-	-	4	1	1	3	2	1
463 X1	16	188	52296-291	Pzc	1	-	1	2	-	-	-	1	-	-	-	-	1	-	-
464	16	188	52265-240	Pzc	5	1	-	-	3	2	-	1	2	-	-	-	-	-	-
465 X1	16	189	51927-947	Mzg	2	3	-	-	-	-	1	1	-	1	1	1	1	-	-
466	16	189	51962-003	Mzg,Pzc	4	5	-	-	-	-	2	-	-	3	3	1	5	2	-
467	16	189	52033-048	Pzc	3	1	-	3	1	-	2	-	-	-	-	-	1	-	-
468	16	189	52063-119	Pzc	7	5	-	2	7	2	7	2	-	1	-	-	2	-	-
469	16	190	51852-766	Mzg,Pzc	9	9	-	-	-	-	5	1	-	5	5	4	7	2	-
470	16	190	51756-746	Pzc	2	1	-	-	-	-	-	-	-	-	-	-	2	-	-
471	16	190	51736-630	Pzc	15	7	-	7	7	2	7	4	1	2	-	3	6	-	-
472*X2	16	191	44885-987	Mzg,Pzc	2	8	11	-	-	-	6	1	2	4	4	11	8	5	5
473	16	191	45037-047	Pzc	-	3	-	-	-	-	-	-	-	3	-	-	1	1	1
474*	16	192	41828-727	Mzg,Pzc	9	7	5	1	-	-	5	5	-	6	9	5	11	3	-
475*	16	192	41717-707	Pzc	1	1	1	-	-	-	2	1	-	2	-	1	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
476	16	192	41696-686	Pzc	1	2	-	1	1	-	1	1	-	1	-	-	1	-	-
477*	16	193	41392-442	Mzg,Pzc	2	7	2	-	-	-	4	1	-	3	6	1	8	1	-
478	16	193	41498-513	Pzc	3	1	-	2	2	-	2	1	-	-	-	-	1	-	-
479*	16	194	41323-272	Mzg	4	6	1	-	-	-	3	-	-	5	4	2	8	1	-
480	16	194	41257-232	Mzg,Pzc	5	1	-	-	-	-	-	-	-	3	2	-	1	2	1
481*	16	195	40889-920	Mzg	2	3	2	-	-	-	3	-	-	3	1	2	4	1	-
482	16	196	40818-783	Mzg	5	3	-	-	-	-	1	1	-	3	2	1	2	2	2
483*		198	51478-468	PzpEm	1	1	1	1	-	2	-	1	1	-	-	-	1	-	-
484*X2	1	202	48899-939	pPmf,Q	4	4	1	-	-	-	1	-	-	4	-	2	5	1	-
485*	2	203	37302-216	Pzm,pPmq,Q,Pzg	4	2	12	8	-	-	9	1	-	4	5	4	5	3	5
486*	2	203	37054-034	Pzms,Tsc	-	1	4	1	3	1	1	4	-	1	-	-	3	-	-
487*	5	204	35983-998	TrPg	1	1	2	3	-	1	-	-	-	2	-	-	-	2	-
488*	2&5	204	36069-145	Kq,Pzm	3	6	7	7	1	-	6	2	-	5	5	2	6	5	3
489 X1	2	204	36321-332	Tsc	2	1	-	-	-	-	-	-	-	1	-	1	-	1	1
490 X8	2	204	36392-428	Pzms	1	1	6	2	1	-	-	-	-	-	-	-	-	-	-
491*X1	5	205	40688-658	Tk	2	4	1	-	-	-	3	-	-	1	4	-	5	1	-
492	5	205	40617-582	Tk	5	3	-	-	-	-	1	-	-	6	1	1	7	1	-
493	5	205	40572-547	Tk	2	4	-	1	-	-	-	-	-	1	3	1	2	3	1
494*X6	2	205	40466-380	Tk,Qg,Ts,Pzm	6	6	6	4	2	-	2	2	3	4	5	3	-	5	7
495	2	205	40360-349	Pzg	-	3	-	1	-	-	-	-	-	2	1	-	1	1	1
496*X1	2	205	40324-289	Pzg	5	2	1	1	-	-	-	-	-	3	2	2	1	4	2
497	5	206	39480-495	Ts,Qg	3	1	-	-	-	-	-	-	-	1	2	-	-	2	-
498	5	206	39606-611	Qg	-	2	-	2	-	-	1	1	-	-	-	-	-	-	-
499	5	206	39621-646	Qg,Tss	4	2	-	2	3	-	4	2	-	1	-	-	1	-	-
500	5	206	39662-687	Tss	6	-	-	2	-	-	1	-	-	5	-	-	5	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
501*	2	206	39773-783	Qg	1	1	1	1	-	-	3	-	-	2	-	-	2	-	-
502*	2	206	39864-914	Ts	7	3	1	2	-	-	1	1	-	2	4	3	2	4	3
503*	2	206	40021-C31	TrPg	1	1	1	1	1	-	-	-	-	1	-	-	1	1	1
504	2	206	40041-C46	TrPg	-	2	-	1	-	-	-	-	-	-	1	-	-	-	2
505	5	207	44685-726	Ts	9	-	-	1	2	6	4	4	-	-	-	-	-	-	-
506*	5	207	44751-781	Ts,Tqm	5	1	1	-	3	4	2	5	-	-	-	-	2	-	-
507	2	207	44988-999	Ts	2	1	-	1	-	-	1	-	-	1	-	-	2	-	-
508	2	207	45064-074	TrPg	2	1	-	-	-	-	-	-	1	-	2	1	1	-	-
509	2	207	45095-105	Km,TrPg	2	1	-	-	-	-	-	-	-	1	1	1	2	1	-
510 X2	8	208	46166-156	Mzg	2	-	1	1	1	-	1	1	-	1	-	-	1	-	-
511*X1	8	208	46146-131	Mzg	2	1	1	-	-	-	3	-	-	1	-	-	-	-	-
512 X2	5	208	45752-737	PzpEm	1	2	1	1	-	-	2	1	-	-	1	-	-	-	-
513*	2	208	45287-282	Km	-	1	1	1	-	-	-	-	-	2	-	-	-	1	1
514*X1	12&14	209	45214-229	Mzg	1	2	1	-	-	-	3	-	-	2	-	-	1	-	-
515 X3	3	209	46321-332	PzpEm	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
516 X2	3	209	46478-483	Qg	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
517*		210	44602-531	Mzg,Pzc	1	11	3	-	-	-	7	6	-	7	4	4	6	2	-
518 X10		210	44491-440	Mzg,Qg	-	3	8	1	-	-	2	3	-	-	-	1	-	-	1
519 X2	12	210	51398-393	Mzg	-	2	-	-	-	-	2	-	-	-	-	-	-	-	-
520 X1	9&12	210	51317-307	Mzg	2	1	-	-	-	-	-	-	-	-	-	-	2	-	-
521 X3	9	210	51094-079	Mzg	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-
522 X2	3	210	50508-503	PzpEm	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
523 X6	12	212	50501-475	Mzg	4	2	-	2	-	-	1	3	2	-	-	-	-	-	-
524	9	213	39516-506	Mzg	2	1	-	1	-	-	-	-	-	-	-	-	1	-	-
525*	15	214	36825-835	Q,Pzc	1	1	1	-	2	-	1	1	-	2	-	-	3	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.2 Continued

TABLE 11

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
526	13&15	215	42961-946	Qg	1	3	-	3	-	-	2	-	-	1	-	-	1	-	-
527	13	215	42886-865	Qg	5	-	-	1	-	-	1	-	-	2	-	-	4	-	-
528	13	215	42840-815	Pza	6	-	-	-	-	-	1	5	-	3	-	-	-	-	-
529	13	215	42784-739	Pza	5	5	-	1	-	-	8	-	-	4	3	1	2	-	-
530*X3	10	215	42375-345	Pza	4	2	1	-	-	-	1	-	-	3	-	-	4	-	-
531	7	215	42218-198	Pza	3	2	-	1	-	-	1	-	-	1	2	-	-	3	-
532	7	215	42001-945	Qg,pEo	3	9	-	5	3	-	5	2	-	2	-	-	7	-	-
533	4	215	41859-849	Qg	1	2	-	2	-	1	1	2	-	-	-	-	-	-	-
534	4	215	41768-733	pEc	7	1	-	-	-	-	-	-	-	5	2	-	4	3	-
535	13	216	45998-013	Qg	3	1	-	-	-	-	4	-	-	2	1	-	1	-	-
536	13	216	46023-049	Qg,Pza	3	3	-	-	-	-	-	-	-	2	4	-	4	2	-
537*	13	216	46059-	Pza	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
538*X7	10	216	46195-362	Pza	7	8	19	9	-	-	14	2	2	7	9	6	10	7	4
539*X1	7	216	46453-468	Pza,Qg	2	1	1	3	-	-	3	1	-	1	-	-	-	-	-
540	7	216	46494-509	Qg	3	1	-	3	-	-	3	-	-	2	-	-	1	-	-
541	4	216	41173-183	Mzr	2	1	-	-	-	-	3	-	-	-	-	-	1	-	-
542 X1	4	216	41244-284	Mzr,Tg	4	2	3	3	-	1	2	1	-	2	2	1	2	3	1
543	4	219	42907-857	Mzr	5	6	-	2	7	1	4	5	1	-	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1*X3	3	1	52798-773	231	3	2	1	2	-	-	5	-	-	1	1	-	1	-	-
2	3	1	52727-697	231,201	6	1	-	3	1	-	2	2	-	2	-	-	2	-	-
3 X4	3	1	52682-656	201,231	1	4	1	-	1	-	1	1	-	-	1	1	2	-	-
4	3	1	52616-601	360	3	1	-	1	1	-	3	1	-	1	-	-	1	-	-
5*	3	1	52469-439	230	4	-	3	4	-	-	3	-	-	2	-	-	2	1	-
6*X1	3	1	52429-403	230	3	1	2	2	-	-	4	-	-	1	1	-	1	1	-
7 X5	4	1	52328-307	10,110	-	3	2	2	-	-	1	1	1	-	-	-	-	-	-
8*X4	4	1	52252-211	110,231,330	4	2	3	1	-	-	3	3	-	-	1	3	2	-	-
9	4	1	52191-131	330,331	2	1	-	-	-	-	2	-	-	2	1	-	-	-	-
10	4	1	52171-151	331	3	-	-	1	-	-	3	-	-	2	-	-	-	-	-
11 X1	4	1	52060-055	320,231	-	2	-	-	-	-	-	1	1	1	-	-	-	-	-
12	4	1	51943-933	191,231	2	1	-	-	1	1	-	2	-	-	-	-	1	-	-
13	2	2	53621-631	231	2	1	-	3	-	-	2	1	-	-	-	-	-	-	-
14	2	2	53681-696	331	4	-	-	2	-	-	1	-	-	-	-	-	1	-	-
15*	3	2	54025-030	331	-	1	1	-	-	-	-	-	-	1	1	-	1	1	-
16 X5	4	2	54445-465	10,110	-	3	2	-	-	-	3	-	1	-	-	-	-	-	-
17	4	2	54505-515	231	2	1	-	-	1	-	1	1	-	1	-	-	1	-	-
18	4	2	54525-531	330	1	-	1	-	-	1	-	2	-	-	-	-	-	-	-
19	4	2	54581-591	331	2	1	-	-	-	-	-	1	-	-	2	-	2	-	-
20	2	3	56485-475	331	2	1	-	-	-	-	1	-	-	2	-	-	1	-	-
21 X1	3	3	56085-080	331	-	2	-	1	1	-	2	-	-	-	-	-	-	-	-
22 X5	4	3	55635-615	10,110	1	2	2	2	-	1	-	3	-	-	-	-	-	-	-
23 X3	1	4	56857-867	230,111	1	1	1	3	-	-	-	1	1	-	-	-	-	-	-
24 X2	2	4	57069-079	331	-	2	1	2	-	-	2	-	-	-	-	-	1	-	-
25*	3	4	57357-367	331	-	2	1	-	-	-	1	-	-	3	-	-	3	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
26*	3	4	57474-	321	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-
27	3&4	4	57711-721	320	2	1	-	-	-	-	3	-	-	2	-	-	-	-	-
28 X4	4	4	57757-772	10,110	1	1	2	1	-	1	-	1	1	-	-	-	-	-	-
29*X1	4	4	57782-807	230	2	2	2	4	-	-	1	3	-	1	-	-	2	-	-
30	3	5	55525-540	320	1	3	-	-	-	-	1	-	-	-	-	-	2	1	-
31 X2	4	5	55661-666	10	1	-	1	-	-	1	1	1	-	-	-	-	-	-	-
32 X1	4	5	56060-074	231	3	1	-	-	2	2	-	3	1	-	-	-	-	-	-
33*	3	6	53777-772	320	-	1	1	-	-	-	-	-	-	-	-	2	-	-	2
34 X2	3	7	51866-876	231	1	2	-	1	-	-	-	-	-	1	-	-	1	-	-
35 X1	3	8	50157-152	320	-	2	-	-	-	-	-	-	-	-	-	1	-	-	1
36*	1	9	49655-675	231	2	2	1	2	-	-	4	-	-	1	1	-	1	-	-
37 X2	2	9	41572-587	210,231	3	-	1	2	1	-	3	1	-	-	-	-	-	-	-
38*X4	2	10	48326-276	231,331	2	5	4	5	1	-	6	2	1	2	1	2	2	-	1
39	3	10	48220-205	331,330	3	1	-	2	-	-	-	-	-	1	1	-	2	1	1
40*	4	10	40865-850	230,231	1	2	1	3	-	-	1	1	1	2	-	-	1	-	-
41*	4	10	40673-668	331	1	-	1	-	1	-	2	-	-	1	-	-	1	-	-
42 X6	1	11	47417-443	231,101	-	-	6	1	-	-	-	2	-	-	-	-	-	-	-
43	3	11	39710-720	331	2	1	-	1	1	-	-	-	-	-	-	-	3	-	-
44 X1	4	11	40084-	231	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-
45 X1	4	11	40433-436	331	1	-	1	-	1	1	-	1	1	-	-	-	-	-	-
46 X3	1	12	47078-063	101,231	1	-	3	1	-	-	3	1	-	-	-	-	-	-	-
47*	2	12	47027-002	331	2	2	2	-	-	-	-	-	-	1	3	2	-	3	3
48	2	12	39107-097	231	2	1	-	-	-	-	2	-	-	1	1	-	1	-	-
49	3	12	39021-011	331	1	2	-	1	-	-	2	-	-	1	-	-	1	-	-
50 X1	3	12	38387-377	331	1	1	1	-	2	-	-	-	1	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
51 X2	2	14	58842-837	331	1	-	1	1	-	-	-	1	1	-	-	-	-	-	-
52 X1	2	14	58822-	331	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
53	4	15	57342-352	230	1	2	-	-	-	-	-	-	-	2	1	-	3	-	-
54*X2	2	16	56092-077	331	-	1	3	-	-	-	-	-	-	-	-	2	-	1	1
55*	2	17	49007-032	331	3	2	1	-	-	-	-	-	-	-	3	3	1	4	1
56 X1	4	17	49881-	200	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-
57 X1	2	18	48689-679	331	2	1	-	1	-	-	-	-	-	-	1	-	1	1	-
58	4	20	44476-466	230,231	2	1	-	2	1	-	2	-	-	-	-	-	-	-	-
59 X1	1&2	22	39005-016	231	2	1	-	3	-	-	3	-	-	-	-	-	-	-	-
60	2	22	39076-096	331	5	1	-	-	-	-	-	-	-	3	-	-	3	-	-
61 X1	4	23	37629-	231	-	-	1	-	-	1	-	1	-	-	-	-	-	-	-
62	3	24	35557-547	320	-	3	-	1	1	1	1	-	2	-	-	-	-	-	-
63	4	24	35410-400	320	2	1	-	3	-	-	1	1	1	-	-	-	-	-	-
64 X3	1&2	25	48341-351	231	1	2	-	1	-	-	1	1	-	-	-	-	-	-	-
65*	3	25	49246-261	220,320	2	2	1	4	-	1	3	2	-	1	-	-	1	-	-
66	2	26	48101-091	230	1	2	-	-	-	-	3	-	-	2	-	-	-	-	-
67	2	27	40115-140	231,230	3	3	-	-	-	-	3	-	-	5	-	-	3	-	-
68	2	27	40408-418	191	2	1	-	2	-	-	-	-	-	1	-	-	2	-	-
69 X4	4	27	40929-954	231	4	1	1	3	-	1	3	1	1	-	-	-	-	-	-
70*X1	4	27	41654-667	331	1	2	1	1	1	-	1	-	-	2	-	-	1	1	-
71 X1	2	29	55879-909	231,201	5	3	-	1	-	2	2	3	-	2	-	-	1	1	-
72 X7	4	29	56612-657	230,200	4	3	3	2	2	-	4	1	-	2	-	-	-	2	-
73*X3	4	29	56667-692	100,10,231	2	1	3	2	1	1	3	1	2	1	-	-	1	-	-
74*X1	4	29	56809-829	230	2	1	2	4	-	-	5	-	-	1	-	-	1	-	-
75	4	29	56935-940	190	-	2	-	-	2	-	2	-	-	-	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
76	2	30	55603-583	231	5	-	-	3	2	-	2	2	1	-	-	-	-	-	-
77	4	30	54845-834	230	2	1	-	-	-	-	-	-	-	2	-	-	2	1	-
78 X1	4	30	54779-769	10	2	1	-	-	-	-	3	-	-	-	-	-	1	-	-
79 X2	4	30	54738-733	101	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
80*	4	30	54718-713	230	1	-	1	-	2	-	1	1	-	-	-	-	1	-	-
81 X2	4	30	54521-516	330	-	2	-	1	-	-	1	-	-	-	-	-	-	-	-
82	2	31	52890-916	191,201,231	3	3	-	2	2	-	1	3	-	1	-	-	1	1	-
83	2	31	52951-961	231,201	2	1	-	2	-	-	-	2	-	1	-	-	1	-	-
84	2	31	52991-001	111	3	1	-	1	-	-	2	-	-	-	-	-	1	-	-
85	2	31	53017-032	231	3	1	-	3	-	-	1	3	-	-	-	-	-	-	-
86	2	31	53082-098	231	4	-	-	1	2	-	1	2	-	-	-	-	-	-	-
87*	4	31	53598-629	230,140	2	3	2	-	-	-	-	-	-	4	3	-	2	4	-
88	4	31	54063-072	321	2	1	-	-	-	-	1	-	-	-	1	2	2	-	-
89	2	32	52510-484	231	4	2	-	1	5	-	3	3	-	-	-	-	-	-	-
90	3	32	52146-136	230	1	2	-	1	1	1	-	2	-	-	-	-	-	-	-
91 X2	2	33	45417-422	231,51	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
92	2	33	45448-463	141	3	1	-	2	-	-	3	-	-	1	-	-	1	-	-
93	2	33	45549-569	231	4	1	-	3	1	1	1	4	-	-	-	-	-	-	-
94 X1	3	33	45877-888	231,230	1	2	-	-	1	-	2	-	-	1	-	-	1	-	-
95*	4	33	46135-150	230,140	1	2	1	1	-	-	-	-	-	-	1	2	-	-	3
96	4	33	46161-201	100,110	8	1	-	2	-	-	2	-	-	5	1	-	3	2	-
97	4	33	46252-262	231	1	1	1	-	1	2	1	2	-	-	-	-	-	-	-
98*X1	4	33	46307-322	231	1	2	1	-	3	-	1	2	-	1	-	-	1	-	-
99 X2	4	33	46560-563	330	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-
100	2	34	45142-132	141	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
101	2	34	44920-909	231	2	1	-	-	1	-	2	1	-	-	-	-	-	-	-
102	4	34	44318-267	200,231	6	5	-	6	2	1	5	2	-	3	-	-	3	1	-
103*X1	4	34	44232-202	231	3	1	3	4	1	1	3	3	-	2	-	-	-	2	-
104	4	34	44060-040	230,190	5	-	-	1	1	-	3	-	-	1	-	-	1	-	-
105	4	34	43994-934	330	1	2	-	-	3	-	2	1	-	-	-	-	-	-	-
106	4	34	43964-940	330	3	3	-	2	2	-	5	-	-	1	-	-	1	-	-
107	2	35	42505-515	231	1	2	-	2	-	-	2	-	-	-	-	-	1	-	-
108*	2	35	42546-	231	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1
109	2	35	42601-617	231	3	1	-	-	-	-	-	-	-	-	2	-	1	-	-
110 X2	2	35	42642-652	231,21	1	-	2	-	-	-	-	-	-	1	-	-	-	1	-
111	2	35	42788-799	231	2	1	-	-	1	-	-	2	1	1	-	-	-	-	-
112 X1	3	35	43082-	230	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
113	4	35	43254-279	230	5	1	-	1	2	-	1	-	-	2	-	-	1	3	-
114	4	35	43299-329	50,110,100	5	2	-	1	-	-	4	-	-	1	2	1	1	2	-
115	4	35	43340-345	200	-	2	-	1	-	-	1	1	-	2	-	-	1	-	-
116	4	35	43360-375	231	4	-	-	3	1	-	1	1	-	-	-	-	-	-	-
117 X2	4	35	43425-446	231	3	-	2	1	3	1	1	3	-	-	-	-	-	-	-
118*	4	35	43567-582	230	3	-	1	1	-	1	2	1	-	1	-	-	-	1	-
119*X2	4	35	43663-678	330	1	-	3	2	-	-	1	1	-	2	-	-	1	1	-
120	5	36	42282-272	231	2	1	-	-	-	-	1	-	-	1	-	-	1	-	-
121*	5	36	42221-211	231	1	1	1	-	-	-	-	-	-	1	1	-	1	2	-
122*	5	36	42191-140	141,231	6	4	1	4	-	1	2	1	-	5	-	-	5	-	-
123*	5	36	42105-	201	-	-	1	1	-	-	-	-	-	-	1	-	-	1	-
124*	5	36	42054-044	230	1	1	1	-	-	-	2	-	-	2	1	-	1	-	-
125*	5	36	41999-989	191	-	1	2	-	-	-	1	-	-	-	1	2	-	2	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
126	7	36	41458-453	230	-	2	-	-	2	-	1	-	-	-	-	-	2	-	-
127	7	36	41412-397	140,190,110	2	2	-	1	-	-	2	-	-	-	1	-	1	1	-
128	5	38	48814-799	231,201	3	1	-	-	1	1	1	1	-	-	1	-	2	-	-
129	6	38	48490-480	231,321	2	1	-	-	-	-	-	2	-	1	-	1	1	-	-
130	6	38	48258-243	230	3	1	-	-	-	-	-	-	-	2	-	2	-	2	2
131	7	38	48106-096	190	1	2	-	-	-	-	1	-	-	1	1	1	3	-	-
132*	7	39	47827-887	230	7	4	2	-	-	-	-	-	-	6	4	1	3	5	4
133	7	39	48014-044	231	4	3	-	1	2	-	1	-	-	1	1	-	2	-	2
134*	7	41	45856-902	231	9	-	1	3	2	-	1	1	-	2	1	-	3	2	1
135	6	42	44318-308	230,190	2	1	-	2	-	-	1	-	-	1	-	-	1	-	-
136*	6	43	40271-302	230,231	5	1	1	-	-	-	-	-	-	2	2	2	-	3	4
137	6&7	43	40332-342	231,241	2	1	-	-	-	-	-	-	-	1	1	1	-	1	2
138	5	44	39417-407	230	1	2	-	-	-	-	-	-	-	2	1	-	3	-	-
139	6	44	39073-058	321,231	3	1	-	1	-	-	2	-	-	2	-	-	-	-	-
140 X2	6	44	38886-845	231,230	4	5	-	2	-	-	2	1	-	3	-	-	2	-	-
141	5	45	37845-855	230	1	2	-	1	-	-	2	-	-	1	-	-	1	-	-
142*	7	45	38482-497	241	2	1	1	-	-	-	-	-	-	3	1	-	-	2	2
143	5	46	35821-780	231	7	2	-	1	-	-	4	-	-	6	-	-	1	-	-
144	5	46	35770-755	231,230	3	1	-	1	-	-	3	-	-	1	-	-	1	-	-
145	5	46	35694-689	231	-	2	-	1	-	-	-	-	-	1	-	-	2	-	-
146	6	46	35168-153	230	2	2	-	-	-	-	-	-	-	2	2	-	3	1	-
147*	6	46	35138-133	230	1	-	1	-	-	-	-	-	-	1	1	-	1	-	1
148	7	46	35072-067	241	-	2	-	-	-	-	-	-	-	1	1	-	-	1	1
149	7	46	34997-981	231	4	-	-	1	-	-	-	-	-	-	1	-	-	1	-
150	5	47	34116-126	231	2	1	-	-	-	-	2	-	-	2	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geocham. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
151	5	47	34136-156	231,230	4	1	-	-	-	-	5	-	-	5	-	-	-	-	-
152	5	47	34166-176	230	1	2	-	1	-	-	2	-	-	1	1	-	1	-	-
153*	6	47	34379-449	321	8	6	1	1	-	-	5	-	-	9	3	2	8	1	-
154 X7	6	47	34682-712	141,140	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-
155 X2	6	47	34722-728	140	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
156 X4	7	47	34763-778	141	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-
157 X2	7	47	34808-824	141,231	4	-	-	-	-	-	-	-	-	1	-	-	1	-	-
158	5	48	33944-934	231	2	1	-	-	-	-	-	1	-	-	-	-	1	-	-
159*	5	48	33924-818	231,230,141. 111,201	10	9	3	4	1	-	5	3	-	9	4	1	8	4	-
160	5	48	33757-747	191,231	1	2	-	-	1	-	1	1	-	2	-	-	1	-	-
161	6	48	33682-656	321	3	3	-	1	-	-	1	-	-	3	2	-	4	1	-
162*X3	6	48	33611-560	321	1	7	3	1	-	-	5	1	-	5	3	-	4	-	-
163	6	48	33454-439	230	2	2	-	1	-	-	-	-	-	1	-	-	1	1	-
164*	6	48	33338-333	230	-	1	1	-	-	-	1	-	-	-	2	-	1	1	-
165	6	48	33323-307	230	3	1	-	-	-	-	-	-	-	3	-	1	3	1	-
166	7	48	33206-196	231	2	1	-	-	-	-	-	-	-	2	-	-	1	1	1
167*X1	7	48	33151-120	231,201,141	2	2	3	4	1	-	5	-	-	1	1	1	2	-	1
168	6	49	61025-040	230	4	-	-	1	-	-	1	-	-	-	-	-	1	-	-
169	6	49	61091-106	230	4	-	-	-	-	-	3	1	-	-	-	-	-	-	-
170 X3	5	50	60230-215	231	2	1	1	1	-	-	2	2	-	-	-	-	-	-	-
171	6	50	60018-008	230	2	1	-	-	-	-	2	-	-	2	1	-	-	-	-
172	6	52	58401-391	230,231	2	1	-	-	-	-	-	-	-	1	1	1	1	1	-
173*	7	52	57906-896	231	2	-	1	-	-	-	1	-	-	-	1	-	2	-	-
174 X1	7	52	57862-	201	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
175 X1	6	53	54493-498	231,230	-	2	-	1	-	-	-	-	-	-	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
176 X2	7	53	54539-544	231	1	-	1	2	-	-	-	1	-	-	-	-	-	-	-
177	7	53	54599-620	231	3	2	-	2	-	-	2	-	-	-	1	-	1	-	1
178*	6	54	53531-516	230	2	1	1	-	-	-	-	-	-	-	1	3	1	3	-
179 X3	7	55	52872-888	231	1	1	2	1	-	-	-	-	-	-	-	1	-	-	1
180	7	56	51271-245	231,201	3	3	-	2	1	-	2	1	-	1	1	-	1	1	-
181	6	57	50182-197	231	4	-	-	-	-	-	2	-	-	3	1	-	1	-	-
182 X6	6&7	57	50561-587	231,141	4	2	-	1	-	-	-	-	-	-	-	-	-	-	-
183 X1	7	58	49118-	231	-	1	1	-	-	1	1	-	1	1	-	-	-	-	-
184	7	59	49014-034	231	1	4	-	2	1	-	2	1	-	2	-	-	1	-	-
185 X2	6	60	47757-747	231	2	1	-	-	-	-	-	-	-	1	-	-	-	-	-
186	6	60	47590-575	231	3	1	-	1	1	-	1	-	-	1	-	-	1	-	-
187	5	61	42831-861	231,201	5	2	-	2	-	-	3	-	-	1	2	-	2	1	-
188 X2	6	61	43028-043	241	4	-	-	-	1	-	1	-	-	-	1	-	1	-	-
189 X2	6	61	43261-266	231	1	-	1	-	-	-	2	-	-	-	-	-	-	-	-
190*	7	61	43529-534	231	-	1	1	1	-	-	-	-	-	2	-	-	1	1	-
191*	7	61	43564-584	231,141	3	1	1	-	-	-	-	-	-	3	-	1	3	-	1
192 X1	7	61	43594-608	231	-	3	1	3	1	-	3	-	-	-	-	-	1	-	-
193 X5	5	62	42645-625	231	3	1	1	2	-	-	1	-	-	-	-	-	-	-	-
194 X2	6	62	42539-529	241	1	2	-	-	-	-	-	-	-	-	1	-	1	-	-
195 X2	6	62	42393-382	231	2	1	-	1	-	-	2	1	-	1	-	-	-	-	-
196 X3	6	62	42221-211	231	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-
197	6	62	41983-968	231	3	1	-	-	-	-	1	-	-	3	-	1	1	1	-
198	5	63	41036-046	231	1	2	-	1	-	-	1	1	-	-	1	-	1	-	-
199	5	63	41067-077	231,141	1	2	-	-	-	-	1	-	-	2	-	-	1	-	-
200	6	63	41431-436	231	-	2	-	-	-	-	-	-	-	-	2	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
201	7	63	41340-850	231	1	2	-	2	-	-	3	-	-	-	-	-	-	-	-
202 X8	6	65	38219-255	231,141	2	5	1	6	-	1	1	-	-	-	-	-	-	-	-
203	7	65	38325-336	241,231	1	2	-	-	-	-	-	-	-	-	1	2	1	2	-
204*	7	65	38346-351	231	1	-	1	-	-	-	-	-	-	-	-	2	-	2	-
205	7	65	38371-386	231	4	-	-	2	-	-	-	-	-	2	-	-	2	-	-
206	7	65	38406-427	231	4	1	-	2	-	-	2	-	-	1	-	-	2	-	-
207 X1	6	66	37298-288	231,201	1	2	-	2	-	-	3	-	-	-	-	-	-	-	-
208	6	66	37278-262	231	4	-	-	-	-	-	1	-	-	3	-	-	1	-	-
209 X4	6&7	66	36828-807	231	4	1	-	2	-	-	-	-	-	1	-	-	-	1	-
210	7	66	36696-686	231	2	1	-	2	1	-	1	-	-	-	-	-	2	-	-
211*	7	66	36676-646	231	2	3	2	-	-	-	-	-	-	3	1	1	2	3	2
212	7	66	36615-600	231	2	2	-	1	1	-	3	-	-	1	-	-	1	-	-
213 X1	6	69	58156-171	231	3	1	-	-	-	-	1	-	-	2	1	-	1	1	-
214	6	69	58257-267	231	2	1	-	-	-	2	1	1	-	-	-	-	1	-	-
215 X2	9	71	56130-140	231	-	3	-	-	-	-	1	-	-	-	-	1	1	-	-
216 X1	9	71	56231-241	231	1	2	-	1	-	-	2	-	-	-	-	-	1	-	-
217	9	73	54455-465	231	2	1	-	-	-	-	-	-	-	2	-	1	2	-	-
218 X1	9	73	54556-	231	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
219 X3	9	75	49594-605	231	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-
220 X3	9	75	49625-635	231	1	2	-	-	-	-	1	-	-	-	-	-	-	-	-
221	9	75	49857-867	331	2	1	-	1	2	-	1	-	1	-	-	-	1	-	-
222 X2	8	76	49204-199	361,231	-	2	-	1	-	-	-	1	-	-	-	-	-	-	-
223	9	76	49063-053	331	2	1	-	-	-	-	-	-	-	2	-	-	2	-	-
224	9	77	47812-828	331	2	2	-	1	-	-	1	2	-	2	-	-	-	-	-
225 X2	9	77	47838-848	331	1	-	2	-	-	-	-	-	-	1	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
226*	9	77	48384-389	231	-	1	1	-	-	-	-	-	-	1	1	-	2	-	-
227*	10	77	48409-	231	-	-	1	1	-	-	-	1	-	1	-	-	-	-	-
228*	9	78	47220-210	231	1	1	1	-	-	-	-	-	-	1	2	-	-	2	-
229	9	79	46133-148	231	3	1	-	-	1	1	1	-	-	1	-	-	2	-	-
230	10	79	46421-441	231	2	3	-	1	-	-	-	-	-	-	2	1	2	1	-
231 X3	8	80	45671-661	231	2	1	-	1	1	-	3	-	-	-	-	-	-	-	-
232	10	80	45019-004	231	4	-	-	-	-	-	1	-	-	1	-	-	1	-	-
233	10	80	44994-989	231	-	2	-	-	-	-	-	-	-	1	-	1	1	1	-
234	10	80	44958-948	231	2	1	-	1	-	-	2	1	-	-	-	-	-	-	-
235	10	81	44853-864	231	1	2	-	-	-	-	1	-	-	2	-	-	2	-	-
236 X2	9	82	43607-597	231	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-
237	10	82	43385-375	231	2	1	-	2	-	-	2	-	-	1	-	-	1	-	-
238	10	83	40415-435	231	4	1	-	2	-	-	3	1	-	1	-	-	-	-	-
239*	10	83	40445-475	231	5	1	1	4	-	-	2	-	-	1	1	-	2	1	-
240 X1	10	85	38866-874	231	2	-	1	3	-	-	2	1	-	-	-	-	-	-	-
241	10	86	37207-182	231	5	1	-	-	-	-	-	-	-	4	1	-	3	3	-
242	10	86	37096-076	231	5	-	-	-	-	-	2	-	-	3	1	-	1	-	-
243 X5	9	87	36724-745	231,141	4	1	-	-	-	-	1	-	-	-	-	-	-	-	-
244*	10	87	36921-937	231,141	2	1	1	1	-	-	2	-	-	3	-	-	3	-	-
245 X1	9	88	36061-	331	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-
246	10	88	35500-490	231	1	2	-	-	-	-	2	1	-	2	1	-	-	-	-
247 X2	9&10	89	35118-123	231	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
248 X4	9	90	34003-977	231	2	2	2	4	1	-	4	-	-	1	-	-	-	1	-
249	10	90	33851-826	241	3	3	-	1	1	1	1	-	2	1	1	-	2	-	-
250*	10	91	40816-826	241	1	1	1	1	1	-	1	1	-	2	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
251	10	92	34598-588	241	1	2	-	1	-	-	2	-	-	1	-	-	1	-	-
252	10	92	34567-557	241	2	1	-	-	1	-	-	1	1	-	-	-	-	-	-
253*	10	92	34502-487	231	2	1	1	-	2	-	1	1	-	1	-	-	2	-	-
254 X1	8	94	51583-598	331	2	2	-	-	-	-	1	-	-	1	1	1	2	-	-
255*	9	94	51608-618	331	1	1	1	-	-	-	-	-	-	-	2	-	-	1	1
256 X2	9	94	51628-633	331	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-
257 X1	9	94	51689-	321	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
258*	9	94	51972-	231	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
259	10	94	52114-124	231	1	2	-	-	-	-	-	-	-	-	1	1	1	1	1
260	10	94	52134-139	231	-	2	-	1	-	-	-	-	-	1	-	-	2	-	-
261 X3	8	95	58929-914	331	3	-	1	2	-	-	1	3	-	1	-	-	-	-	-
262*	9	95	44855-840	231	2	1	1	-	-	-	-	-	-	2	2	-	1	2	-
263 X2	9	95	44809-804	231	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-
264	10	96	39469-494	231,141	6	-	-	-	-	-	-	-	-	1	4	1	4	-	-
265*	8	97	43196-181	331	1	-	3	1	-	-	1	-	-	3	-	1	1	3	-
266	8	97	43166-151	231	3	1	-	1	-	-	2	-	-	1	1	1	-	2	-
267	9	97	43141-131	231	1	2	-	-	-	-	1	-	-	1	1	-	1	-	-
268	9	97	42802-787	231	4	-	-	-	-	-	1	-	-	2	-	-	1	-	-
269 X2	9	97	42756-751	231	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
270	10	97	42529-514	141	4	-	-	-	-	-	1	-	-	3	1	-	1	-	-
271	10	97	42504-494	231	-	3	-	-	-	-	-	-	-	2	1	-	2	1	-
272*	8	98	49730-745	331	2	1	1	-	-	-	4	-	-	2	1	-	2	-	-
273 X2	10	98	50372-382	141	2	-	1	-	-	-	1	-	-	-	1	-	-	-	-
274 X2	9	99	41180-190	231	1	1	1	-	-	-	2	-	-	1	-	-	-	-	-
275 X3	9	99	41221-236	231	-	4	-	-	-	-	-	-	-	1	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
276 X1	9	99	41297-	111	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
277 X2	10	99	41433-479	361	9	1	-	2	-	-	-	-	-	4	-	-	5	-	-
278 X7	10	99	41509-544	361,141	-	2	6	1	-	-	1	-	-	-	-	1	1	-	-
279*	9	100	35249-243	231	-	1	1	-	2	-	2	-	-	1	-	-	-	-	-
280 X3	9	100	34859-819	231,111	6	3	-	1	-	-	2	1	-	3	-	-	1	-	-
281*	10	100	34606-566	361,141	4	4	1	2	-	-	1	1	-	4	3	-	4	-	-
282 X1	9	101	32921-	321	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-
283 X3	8	102	54207-187	231,101	4	-	1	-	-	3	-	3	-	-	-	-	-	-	-
284 X1	9	102	53894-884	231,	2	1	-	-	-	-	2	-	-	-	-	-	-	-	-
285	10	102	53499-469	231	5	2	-	-	-	-	2	-	-	3	1	2	2	1	-
286*	9	103	57933-969	231	7	-	1	3	-	-	6	-	-	2	1	-	-	-	-
287	9	103	57979-999	231	4	1	-	-	-	-	3	-	-	3	-	-	-	-	-
288 X2	10	103	58282-297	231	-	3	1	-	-	-	3	-	-	-	-	2	2	-	-
289	9	104	57014-999	231	4	-	-	-	-	-	1	-	-	2	-	-	-	-	-
290*	10	104	56701-681	231	3	1	1	-	-	-	2	-	-	2	-	3	3	1	-
291 X3	12	105	56207-222	231	3	-	1	1	-	-	-	-	-	1	-	-	1	-	-
292 X4	13	105	56531-546	361	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-
293 X7	13	105	56556-586	141,231	2	4	1	1	-	-	-	-	-	-	-	-	-	-	-
294 X5	13	107	51180-210	361,231	2	3	2	-	-	-	-	-	-	1	-	-	-	2	-
295 X3	12	108	50009-994	231,201	2	2	-	2	-	-	1	1	-	1	-	-	-	-	-
296	12	108	49968-953	231	2	1	-	-	-	-	1	-	-	3	-	-	-	-	-
297	13	109	49441-451	231	2	1	-	2	-	-	1	-	-	-	-	-	-	-	-
298 X2	12	110	47989-979	231	2	1	-	-	-	-	2	-	-	-	-	-	-	-	-
299*	13	110	47914-	231	-	-	1	1	-	-	1	-	-	-	1	-	-	1	-
300	11	111	46939-949	320	2	1	-	-	2	-	1	1	1	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
301 X3	12	111	47242-252	231	1	1	1	-	-	-	1	-	-	-	-	-	-	-	-
302	12	111	47439-459	231	3	2	-	1	-	-	2	1	-	1	1	-	1	-	-
303	11	112	46825-805	320	2	3	-	2	1	1	1	3	-	-	-	-	1	-	-
304	11	113	45313-323	320	2	1	-	2	-	-	2	-	-	-	-	-	-	-	-
305*	12	113	45434-444	320	1	1	1	-	-	-	2	-	-	-	2	-	1	1	-
306 X2	11	114	45246-241	320,191	1	-	1	-	-	1	1	-	1	-	-	-	-	-	-
307	13	114	44568-558	231	2	1	-	-	-	-	1	-	-	1	-	-	2	-	-
308 X7	12	115	41257-288	231	-	3	4	3	1	-	1	1	2	-	-	-	-	-	-
309	13	115	41485-500	231	3	1	-	-	-	-	-	-	-	1	1	-	2	1	-
310	13	115	41510-556	231	5	5	-	1	-	-	1	-	-	5	-	1	5	4	-
311*	13	116	40300-285	231	2	1	1	1	-	-	-	-	-	3	-	-	2	-	1
312	13	116	40164-144	231	5	-	-	1	-	-	-	-	-	1	-	-	1	-	-
313	11	117	39356-371	191,320	2	2	-	1	2	-	2	1	1	-	-	-	-	-	-
314	12	117	39796-816	231	4	1	-	3	1	-	2	1	-	1	-	-	1	-	-
315*	13	117	39988-023	231	5	2	1	1	-	-	6	-	-	6	2	-	3	-	-
316	13	117	40064-079	231	4	-	-	-	1	-	3	-	-	2	-	-	-	-	1
317*	11	118	39255-245	320	1	1	1	2	-	-	-	2	1	1	-	-	-	-	-
318	12	118	39078-058	320,331	1	2	-	2	-	-	1	1	-	-	1	-	2	-	-
319	12	118	38704-699	231	-	2	-	1	-	-	-	-	-	1	-	-	-	2	-
320	13	118	38603-593	231,141	2	1	-	-	-	-	1	-	-	1	-	1	-	-	-
321*	13	118	38512-492	231	3	1	1	2	-	-	2	1	1	2	-	-	-	1	-
322 X1	12	121	41471-476	231	-	2	-	-	-	-	1	-	-	1	-	-	1	-	-
323 X3	12	121	41511-521	331	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-
324 X2	12	121	41734-744	151,231	1	1	1	1	-	-	-	-	-	-	1	-	-	1	-
325	12	121	41779-800	231	4	1	-	1	-	-	-	-	-	2	1	-	2	2	1

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
326 X3	12&13	121	41845-855	231	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-
327*	13	121	41926-931	231	1	-	1	-	-	-	-	-	-	-	-	2	2	-	-
328 X4	13	121	41941-956	231,141	2	1	1	-	-	-	3	-	-	-	-	-	-	-	-
329	13	121	42002-022	231	1	4	-	-	1	-	1	1	-	3	1	-	2	-	-
330	12	122	46034-019	231	4	-	-	2	-	-	-	-	-	2	-	-	2	2	-
331 X3	12&13	122	45938-928	231	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
332*	13	122	45858-847	231,141	2	-	1	-	-	-	1	-	-	2	-	1	2	-	-
333	13	122	45797-792	231	-	2	-	1	-	-	-	-	-	2	-	-	1	-	-
334	12	123	52420-425	231	-	2	-	-	-	-	-	-	-	1	-	1	-	1	-
335	12	124	34045-035	231	1	2	-	-	-	-	-	-	-	1	1	1	3	-	-
336	13	124	33752-727	231	4	2	-	-	-	-	4	-	-	4	1	-	-	-	-
337	13	124	33691-681	231,201	1	2	-	-	1	-	1	1	-	2	-	-	1	-	-
338	12	125	39562-583	231	5	-	-	-	-	-	1	-	-	2	2	-	3	-	-
339	13	125	39815-825	231	2	1	-	-	-	-	2	-	-	-	2	1	-	1	-
340	12	126	33456-440	231	3	1	-	-	-	-	3	-	-	3	1	-	-	-	-
341	13	126	33351-	271	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
342	12	127	40440-460	231	5	-	-	-	-	-	1	1	-	4	1	-	1	1	-
343	13	127	40485-501	231	3	1	-	2	-	-	4	-	-	1	1	-	-	-	-
344 X2	12	128	44836-831	331	-	1	1	2	-	-	-	-	-	-	-	-	-	-	-
345 X1	12	128	44553-543	231	2	1	-	-	-	-	-	-	-	2	-	-	-	2	-
346	13	128	44265-235	201,231	6	1	-	2	-	-	2	4	-	-	1	-	1	-	-
347	12	129	50900-916	231	3	1	-	-	-	-	-	-	-	2	1	1	2	1	1
348*	12	129	50986-991	231	1	-	1	1	-	-	1	-	-	1	-	-	-	-	3
349*X3	12&13	129	51108-148	321	2	3	4	1	1	-	1	-	-	1	1	3	-	3	3
350*X1	13	129	51163-179	231	2	1	1	-	-	-	-	-	-	3	-	-	1	-	2

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
351	12	130	33493-488	231	-	2	-	-	-	-	-	-	-	2	-	-	2	-	-
352 X6	12&13	131	39840-865	361,321	1	-	5	-	-	-	-	-	-	-	-	-	-	-	-
353 X2	13	131	39875-885	321	1	-	2	-	-	-	-	-	-	1	-	-	1	-	-
354*	12&13	134	34396-376	321,231	2	2	1	-	1	-	2	1	-	4	-	-	1	-	-
355*	13	134	34336-300	321,241,231	3	1	4	1	-	-	2	-	-	1	1	5	1	4	2
356*	13	134	34280-255	231,271	2	3	1	1	1	-	2	1	-	2	2	-	-	1	1
357	12	135	35014-029	331	3	1	-	-	1	3	-	1	3	-	-	-	-	-	-
358	12	135	35368-383	321	4	1	-	-	-	-	1	-	-	3	2	-	-	1	3
359 X1	12	135	35408-414	321,231	-	1	1	-	-	-	1	-	-	-	1	-	-	-	-
360	13	135	35449-464	231	3	1	-	-	-	-	1	-	-	2	1	1	1	1	-
361	13	135	35520-530	231	2	1	-	2	-	-	1	-	-	1	-	-	2	-	-
362 X1	12	136	36191-	331	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
363	12	136	35878-862	231	3	1	-	1	-	-	-	-	-	1	-	-	3	-	-
364*	12	136	35766-756	321	-	-	3	1	1	-	-	2	1	2	-	1	2	-	-
365	13	136	35665-655	141	2	1	-	-	-	-	1	-	-	2	-	-	-	-	-
366 X2	12	137	36450-455	331	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-
367	12	137	36642-652	231	2	1	-	-	-	-	-	-	-	3	-	-	1	2	-
368	12&13	137	36748-758	231	2	1	-	-	-	-	1	-	-	2	-	1	-	-	-
369	13	137	36767-778	231	1	2	-	-	-	-	-	-	-	2	1	-	1	2	-
370	12	138	37190-170	231	4	1	-	-	-	-	2	-	-	3	-	-	-	2	-
371	14	139	37915-925	231	2	1	-	-	-	-	-	-	-	2	-	1	-	3	-
372	15	139	38097-107	231	2	1	-	2	-	1	3	-	-	-	-	-	-	-	-
373*	14	140	46777-797	241	4	-	1	2	2	1	1	1	-	1	-	-	-	-	1
374 X2	14	141	47404-389	231	3	1	-	-	-	-	1	1	-	1	-	-	-	-	-
375	15	141	47288-257	231	5	2	-	2	2	-	2	-	-	3	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
376*	15	144	49303-313	231	-	2	1	-	-	-	1	-	-	2	-	1	2	1	-
377*	14	145	43340-334	231	-	1	1	1	-	-	1	1	-	1	1	-	1	-	-
378*	15	145	43142-137	231	1	-	1	1	1	-	2	-	-	1	-	-	1	-	-
379 X3	14	146	43629-639	231,141	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-
380	14	146	43675-705	231	4	3	-	-	-	-	5	2	-	2	1	-	1	-	-
381	14	146	43730-741	231	2	1	-	-	2	-	1	-	-	-	-	-	2	-	-
382 X2	14	146	43776-781	231	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
383 X1	14	147	44110-109	231	1	1	1	-	-	-	-	-	-	1	-	1	-	2	-
384*	15	147	43997-992	231	-	1	1	-	-	-	-	-	2	2	-	-	-	-	-
385 X8	14	148	44450-490	331,231,141	4	1	4	-	-	-	-	-	-	1	-	-	-	1	-
386 X1	14	148	44500-	141	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
387 X6	15	148	44698-731	321,231,111,231	2	-	6	1	-	-	2	-	-	1	-	-	1	1	-
388 X5	15	149	45052-024	231,111	1	3	3	1	1	-	1	1	-	-	1	-	1	-	-
389 X5	14	150	45513-533	141	1	-	4	1	-	-	-	-	-	-	-	-	-	-	-
390 X4	15	150	45710-723	231,111	-	1	3	2	-	-	1	2	-	-	-	-	-	-	-
391	14	151	44906-885	241	5	-	-	1	-	-	-	-	-	4	-	-	4	-	-
392	14	151	44860-830	241,231	6	1	-	-	-	-	1	-	-	3	2	-	3	-	-
393	14	151	44739-703	231	6	2	-	-	-	-	-	-	-	4	-	1	6	2	-
394	14&15	151	44663-643	231	4	1	-	2	-	-	-	-	-	1	-	-	4	-	-
395*X1	15	151	44597-592	231	-	-	2	-	-	-	1	-	-	-	-	1	-	1	-
396	14	152	51779-794	241	3	1	-	1	1	-	1	-	-	2	-	-	2	-	-
397*X2	14	152	51890-925	231	3	4	1	-	-	-	-	-	-	1	3	2	5	1	-
398	14	152	51966-981	231	4	-	-	-	-	-	-	-	-	4	-	-	2	2	-
399 X1	14	153	49095-	241	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-
400 X2	14	154	49263-278	231	2	1	1	-	-	-	-	-	-	-	-	2	-	1	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
401	14	154	49314-319	231	-	2	-	-	-	-	-	-	-	1	1	-	-	2	-
402	14	154	49385-395	231	2	1	-	1	-	-	-	-	-	2	-	-	1	1	1
403 X2	14	154	49466-476	231	2	-	1	-	-	-	-	-	-	-	-	1	-	-	1
404*	15	155	49820-815	361	1	-	1	-	-	-	-	-	-	-	-	1	-	-	1
405	14	155	49684-673	231	2	1	-	-	-	-	-	-	-	-	2	1	1	1	1
406	14	155	49603-588	231	3	1	-	-	-	-	-	-	-	2	-	-	3	1	-
407*	14	156	49983-003	231	2	2	2	2	-	-	-	-	-	-	2	1	2	1	3
408*	14	156	50018-034	231	2	1	1	-	-	-	-	-	-	3	1	-	2	1	1
409*X2	14	156	50044-069	241,141	3	2	1	-	-	-	-	-	-	3	1	-	1	2	1
410	14	156	50094-109	231	2	2	-	-	-	-	-	-	-	2	2	-	1	3	-
411	15	156	50180-195	231	4	-	-	-	-	-	-	-	-	3	-	-	2	2	-
412 X4	14	157	50581-556	141,231	3	1	2	-	-	-	-	-	-	-	2	-	-	1	1
413*	14	157	50399-394	231	1	-	1	-	-	-	-	-	-	1	-	1	-	1	1
414	14	157	50379-364	231,141	4	-	-	-	-	-	-	-	-	2	1	-	2	2	-
415	14	158	50732-742	231	2	1	-	-	2	-	-	-	-	-	-	-	3	-	-
416 X1	14	159	51247-242	231	1	-	1	-	-	-	-	-	-	-	-	1	-	-	1
417	14	159	51181-171	231	2	1	-	3	-	-	-	-	-	-	-	-	3	-	-
418	14	159	51156-146	231	2	1	-	-	-	-	-	-	-	2	-	1	2	-	1
419	14	160	51406-411	231	-	2	-	-	1	1	2	-	-	-	-	-	1	-	-
420 X1	14	161	51883-	141	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
421	14	161	51853-828	231	2	4	-	4	2	-	3	-	-	-	-	-	2	-	-
422 X7	14	162	51980-010	231,141	-	3	4	1	-	-	-	-	-	-	-	-	-	-	-
423	14	162	52035-051	231	3	1	-	2	2	-	1	-	-	-	-	-	2	-	-
424	14	162	52197-212	231	4	-	-	1	-	-	-	-	-	1	1	-	1	-	2
425	14	163	52362-352	231	2	1	-	1	-	-	-	-	-	2	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Gecchem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
426	14	163	52337-327	231	1	2	-	2	-	-	-	-	-	1	-	-	1	2	-
427*	14	164	52557-562	231	-	-	2	-	-	-	-	-	-	-	-	2	-	-	2
428	14	164	52689-699	331	1	2	-	-	-	-	-	-	-	1	1	1	-	-	2
429 X1	14	164	52709-	231	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
430 X1	14	165	53057-047	141,231	2	1	-	-	-	-	-	-	-	1	-	-	1	-	-
431*	14	165	52966-941	331,361	1	4	1	1	-	-	-	-	-	3	1	2	-	1	3
432 X5	14	165	52926-905	231,141	4	1	-	-	-	-	1	-	-	-	-	-	-	-	-
433	14	165	52885-865	231,221	5	-	-	1	1	-	-	-	-	2	-	-	1	1	-
434	14	166	53200-231	231	3	4	-	-	-	-	-	-	-	2	3	2	2	2	3
435*	14	166	53362-377	231,221	3	-	1	2	-	1	-	1	-	-	-	-	2	-	1
436*X1	14	167	44157-147	231	1	-	2	-	-	-	-	-	-	-	-	2	-	-	2
437 X2	14	167	44122-102	271,141	3	2	-	-	-	-	-	-	-	-	1	-	2	-	-
438 X3	14	167	44087-076	141	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
439*	14	167	44041-036	331	-	1	1	1	-	-	-	-	-	1	-	-	-	1	1
440	14	168	43695-705	231	2	1	-	-	-	-	-	-	-	-	2	-	2	1	-
441	14	168	43725-745	361	5	-	-	-	-	-	-	-	-	2	1	1	1	-	-
442*X1	14	168	43836-849	231	-	2	2	1	-	-	-	-	-	2	-	1	-	-	3
443*	14	169	43498-	231	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
444	14	169	43458-437	241,231	2	3	-	-	-	-	-	-	-	2	3	-	2	1	2
445	14	169	43362-326	231,361,271	6	2	-	-	-	-	-	-	-	6	-	1	6	1	-
446 X3	14	169	43316-301	271,141	-	2	2	-	-	-	-	-	-	-	-	1	-	-	1
447	14	169	43291-281	231	2	1	-	-	-	-	-	-	-	-	1	2	1	1	2
448	14	169	43260-250	231	2	1	-	3	-	-	-	-	-	-	-	-	1	-	-
449 X2	14	170	42911-921	231,361	1	1	1	-	-	-	-	-	-	-	1	-	-	-	1
450*	14	170	43047-052	231,271	1	-	1	-	1	-	1	-	-	1	-	-	-	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
451	14	170	43108-133	231	4	2	-	4	1	-	-	-	-	-	-	-	3	-	-
452 X2	14	171	42833-823	231,361	-	2	1	-	-	-	-	-	-	1	-	-	1	-	-
453*	14	171	42732-727	231	1	-	1	-	-	-	-	-	-	1	-	1	-	-	2
454*	14	171	42666-636	231,141	5	-	2	1	-	-	-	-	-	3	1	-	2	3	-
455*	14	171	42600-580	231	1	3	1	3	-	-	2	-	-	2	-	-	4	-	-
456 X1	14	172	41960-975	361,241	3	1	-	-	-	-	-	-	-	2	1	-	-	2	1
457*	14	172	42010-025	361,231	2	1	1	-	-	-	-	-	-	1	2	1	2	-	2
458	14	172	42101-111	241,231	2	1	-	-	-	-	-	-	-	2	1	-	1	2	-
459	14	172	42192-197	231	-	2	-	-	1	-	1	-	-	1	-	-	2	-	-
460 X1	14	173	41816-	231	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
461*	14	173	41695-664	361,231	1	2	4	-	-	-	-	-	-	-	2	4	-	2	4
462	14	173	41649-634	231	2	2	-	1	-	-	-	-	-	1	1	1	1	2	1
463	16	174	41229-239	361	-	3	-	-	2	1	-	-	-	-	-	-	1	-	-
464 X3	16	174	42295-310	241,141	3	1	-	-	-	-	-	-	-	-	1	-	-	-	1
465	16	174	41437-472	231	6	2	-	3	-	-	-	-	-	2	2	-	7	-	1
466	16	175	40905-890	241,131	2	2	-	-	-	-	-	-	-	3	-	1	2	-	-
467 X1	16	176	40543-558	231,241	2	1	1	2	-	-	-	-	-	-	-	-	1	-	-
468	16	176	40579-589	231	2	1	-	-	-	-	-	-	-	1	1	-	2	1	-
469	16	176	40654-664	231	2	1	-	-	-	-	-	-	-	-	3	-	-	2	1
470*	16	177	40238-233	141,231	1	-	1	-	-	-	-	-	-	1	-	1	-	1	1
471	16	177	40207-192	241	1	3	-	1	-	-	-	-	-	1	2	-	2	2	-
472	16	177	40167-162	241,141	-	2	-	-	-	-	-	-	-	-	1	1	1	-	1
473	16	177	40147-142	241	-	2	-	1	-	-	-	-	-	-	1	-	-	1	1
474*X1	16	178	39827-878	241,231	8	2	1	-	-	-	1	-	-	4	4	1	5	3	1
475	16	178	39903-923	231	2	3	-	-	-	-	-	-	-	3	-	1	1	2	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
476	16	178	40009-014	241	-	2	-	-	-	-	-	-	-	-	1	1	1	-	1
477*X1	16	178	40065-089	231	4	1	1	2	-	-	-	-	-	2	-	-	4	-	-
478*	16	179	39450-425	231	2	1	3	-	-	-	-	-	-	1	-	3	1	1	3
479	16	180	39197-227	231	4	3	-	1	1	-	3	-	-	4	-	1	3	1	-
480	16	180	39288-298	231	2	1	-	-	-	-	-	-	-	1	1	1	2	-	1
481*X1	16	180	39349-388	231	1	3	5	-	-	-	-	-	-	2	1	5	1	1	6
482	16	181	38943-933	231	1	2	-	-	-	-	1	1	-	2	-	-	1	-	-
483*	16	181	38923-	231	-	-	1	-	-	-	-	-	-	1	-	-	1	-	-
484	16	181	38822-807	231	3	1	-	-	-	-	-	-	-	2	1	-	3	1	-
485	16	182	53824-839	241,231	3	1	-	-	-	-	-	-	-	1	2	1	2	2	-
486	16	182	53854-875	231	5	-	-	-	-	-	-	-	-	1	3	1	4	-	-
487	16	182	53935-976	231	8	1	-	-	-	-	-	-	-	4	1	-	4	5	-
488	16	183	53582-572	241	2	1	-	-	-	-	-	-	-	2	-	-	-	3	-
489	16	183	53521-511	231	2	1	-	-	-	-	-	-	-	1	2	-	3	-	-
490	16	183	53491-481	231	2	1	-	-	-	-	-	-	-	1	-	1	1	-	2
491	16	183	53440-406	231	8	-	-	2	-	-	-	-	-	3	3	-	4	1	1
492	16	184	53120-120	231	4	2	-	1	-	-	-	-	-	2	3	-	-	6	-
493 X1	16	184	53257-292	271,231	6	2	-	-	-	-	-	-	-	3	3	-	1	5	1
494	16	184	53317-348	231	6	1	-	3	-	-	-	-	-	1	-	-	6	-	-
495	16	185	53025-010	231	2	2	-	-	-	-	-	-	-	1	2	1	2	2	-
496	16	185	52940-924	231	4	-	-	1	-	-	-	-	-	1	1	-	2	2	-
497 X1	16	185	52914-884	241,231	7	-	-	-	-	-	-	-	-	2	2	-	4	1	-
498 *	16	185	52808-790	231	2	2	1	-	3	-	1	-	-	-	-	-	3	-	-
499	16	186	52537-552	231	3	1	-	-	-	-	-	-	-	1	1	1	3	-	-
500	16	186	52648-674	231	6	-	-	-	1	-	-	-	-	2	-	-	4	-	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
501	16	186	52689-704	231	4	-	-	2	-	-	-	-	-	1	-	-	1	3	-
502	16	187	42937-947	231	2	1	-	-	-	-	-	-	-	-	-	3	3	-	-
503	16	187	43053-089	231	7	1	-	4	-	-	-	-	-	1	-	-	5	3	-
504	16	188	52437-407	231,241	3	4	-	-	-	-	-	-	-	1	1	4	3	2	-
505	16	188	52397-382	231,241	3	1	-	-	-	-	-	-	-	1	1	1	3	-	-
506	16	188	52372-356	231	3	1	-	-	-	-	-	-	-	2	1	-	2	1	1
507 X1	16	188	52311-291	231	3	1	1	2	-	-	1	-	-	2	-	-	1	1	1
508 X1	16	189	51927-952	231,241	3	3	-	1	2	-	1	2	2	-	-	1	1	-	-
509	16	189	51962-972	231	2	1	-	-	-	-	-	-	-	-	2	1	3	-	-
510	16	189	51993-038	231	9	1	-	2	-	-	-	-	-	2	-	1	6	3	1
511	16	189	52058-068	231	1	2	-	3	-	-	1	-	-	-	-	-	2	-	-
512	16	189	52104-119	231	1	3	-	1	1	-	-	-	-	1	-	-	3	1	-
513*	16	190	51852-822	241	2	4	1	1	1	-	4	2	-	2	3	-	1	-	-
514	16	190	51761-746	231	2	2	-	-	-	-	-	-	-	3	-	-	1	2	-
515	16	190	51736-731	231	-	2	-	1	-	1	1	-	-	-	-	-	1	-	-
516	16	190	51711-680	231	6	1	-	2	1	-	-	-	-	2	-	-	3	3	-
517	16	190	51650-626	231	4	2	-	2	1	-	2	-	-	2	1	1	3	1	-
518*	16	191	44906-921	141	1	1	2	-	-	-	2	1	-	3	-	1	1	-	-
519	16	191	44961-976	141	2	2	-	-	-	-	1	-	-	1	1	-	2	-	-
520	16	191	44987-012	141,231	6	-	-	5	-	-	-	-	-	1	-	-	4	1	1
521	16	192	41828-808	241	5	-	-	-	-	1	4	-	-	3	1	-	-	-	-
522	16	192	41686-676	231	2	1	-	-	2	-	2	-	-	-	-	-	-	1	-
523	16	193	41432-458	241,231	4	2	-	1	-	-	2	-	-	3	2	-	1	2	1
524	16	193	41498-518	231	2	3	-	2	1	-	1	-	-	1	-	-	2	2	-
525 X1	16	194	41528-547	231	4	1	-	1	2	1	3	-	-	-	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
526	16	194	41257-232	241,231	3	3	-	1	-	-	-	-	-	2	-	-	2	2	-
527	16	194	41212-197	231	3	1	-	-	-	-	-	-	-	2	-	-	2	2	-
528 X1	16	194	41151-138	231	3	1	-	-	-	1	-	-	-	1	-	-	3	-	-
529	16	195	40899-920	231	4	1	-	-	-	-	1	-	-	3	1	1	2	-	-
530	16	195	40935-975	241,231	8	1	-	-	-	-	-	-	-	5	2	1	3	5	1
531	16	196	40767-757	241	2	1	-	1	-	-	-	-	-	2	-	-	1	1	1
532 X2	16	198	51453-443	320,200	2	1	-	1	1	-	-	2	-	-	-	-	1	-	-
533	1	202	48883-888	321	-	2	-	-	-	-	2	-	-	2	-	-	2	-	-
534*X2	1	202	48899-939	231,201	3	4	2	1	-	-	6	-	-	1	1	1	1	1	-
535*	1	202	48949-974	321	2	3	1	2	-	-	3	-	-	2	1	1	1	1	-
536	1	202	49005-025	231	4	1	-	4	-	-	5	-	-	-	-	-	-	-	-
537*	2	203	37302-216	231,201,331	3	5	10	8	-	-	9	2	-	4	7	4	5	2	5
538*	2	203	37201-181	331	3	1	1	1	-	-	2	-	-	2	2	-	3	-	-
539	2	203	37170-160	331	2	1	-	-	-	-	-	-	-	-	2	1	1	-	2
540*	2	203	37095-069	331	3	1	2	-	-	-	2	-	-	3	-	2	1	-	2
541	2	203	37054-034	231	3	2	-	2	1	-	4	-	-	1	-	-	-	-	-
542	5	204	36008-023	231,321	1	3	-	-	-	-	1	-	-	3	1	-	3	-	-
543*	2	204	36099-145	51,231	-	3	7	7	1	-	5	1	-	3	2	2	4	2	2
544 X3	2	204	36321-357	331,330	2	4	2	2	-	-	-	-	-	2	1	-	3	2	-
545 X8	2	204	36387-428	331	2	-	7	3	1	-	2	-	-	-	-	-	-	-	-
546 X1	2	204	36436-	331	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
547*X1	5	205	40683-658	200	1	4	1	-	-	-	-	-	-	-	2	3	-	4	1
548*	5	205	40638-628	241	2	-	1	-	-	-	1	-	-	1	1	-	1	-	-
549*	5	205	40617-582	231	1	5	2	-	-	-	3	-	-	6	1	1	4	1	-
550*	5	205	40572-542	231	1	3	3	2	-	-	1	-	-	1	3	1	4	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
551	5	205	40526-506	231	4	1	-	1	-	-	1	-	-	2	-	-	3	-	-
552	5	205	40496-491	231	-	2	-	-	-	-	-	-	-	2	-	-	1	1	-
553*	2	205	40481-465	231	3	-	1	-	-	-	-	-	-	2	1	-	2	2	-
554*X6	2	205	40456-405	141,111,201,231	1	4	6	3	3	-	3	1	-	2	2	1	-	3	1
555*	2	205	40390-370	231,331	4	-	1	3	-	-	-	-	-	1	1	1	2	2	1
556*	2	205	40360-334	331	3	1	2	1	-	-	-	-	-	2	1	-	-	1	2
557*	2	205	40324-289	331	3	2	3	1	-	-	-	-	-	3	2	2	-	1	6
558	2	205	40208-193	331	2	2	-	1	-	-	1	-	-	2	1	-	1	2	-
559	5	206	39480-500	231	3	2	-	-	-	-	2	1	-	2	-	1	2	1	-
560	5	206	39535-555	231,20[illegible]	4	1	-	4	-	-	4	-	-	1	-	-	1	-	-
561*	5	206	39662-687	201,23[illegible]	-	5	1	2	1	-	1	2	-	3	-	-	2	2	-
562	5	206	39697-712	201	2	2	-	1	-	-	-	-	-	1	2	-	2	2	-
563	2	206	39742-758	231	1	3	-	3	1	-	1	3	-	-	-	-	-	-	-
564*	2	206	39778-803	141,201,231	5	-	1	2	-	-	-	2	-	1	1	1	2	-	1
565*	2	206	39854-899	230,231	4	4	2	1	-	-	4	1	-	4	1	2	4	2	-
566*	2	206	39965-40015	241,331	4	3	4	1	-	-	3	-	-	4	4	1	2	4	1
567*	8	207	44478-483	321	1	-	1	-	-	-	-	2	-	-	1	-	-	-	-
568*	8	207	44493-513	321	4	-	1	2	-	-	1	4	-	1	-	-	-	-	-
569*	5	207	44771-776	191	-	1	1	-	2	-	1	-	-	-	-	-	2	-	-
570 X1	11	208	46348-343	331	-	1	1	1	1	-	2	-	-	-	-	-	-	1	-
571 X1	8	208	46146-141	231	1	-	1	-	-	-	2	-	-	1	-	-	-	-	-
572*X5	8	208	46116-050	331,320	5	3	4	-	-	-	3	-	-	1	1	4	-	2	4
573*X1	8	208	46035-010	320	2	2	2	-	-	-	2	-	-	4	1	-	2	-	1
574 X1	8	208	45999-994	320	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-
575 X3	8	208	45944-929	320	2	-	2	-	-	-	1	-	-	-	1	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.3 Continued

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. Nc.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
576 X2	5	208	45747-737	231	2	-	1	2	-	-	3	-	-	-	1	-	-	-	-
577	5	208	45575-560	231	2	2	-	1	1	-	1	3	-	2	-	-	-	-	-
578	2	208	45362-347	331,330	3	1	-	-	-	-	1	-	-	1	1	-	2	1	-
579*	2	208	45292-276	330,230	2	1	1	-	-	-	1	-	-	2	1	1	1	1	1
580*X1	2	208	45246-236	231	2	-	1	-	-	-	1	-	-	-	1	-	-	1	-
581*X1	3	209	45214-229	230	1	2	1	-	-	-	2	-	-	1	2	-	1	1	-
582	3	209	46281-291	331	1	2	-	-	-	-	-	-	-	-	3	-	1	2	-
583 X3	3	209	46321-332	331	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-
584 X1	3	209	46352-362	331	1	1	1	1	-	-	-	-	-	-	-	-	2	-	-
585 X2	3	209	46478-483	231	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-
586*	16	210	44556-531	231	-	5	1	-	-	-	2	-	-	-	5	1	4	2	-
587 X10	16	210	44491-440	231	-	4	7	-	1	-	2	3	-	-	-	1	-	-	1
588	12	210	51605-595	241,331	1	1	1	-	-	-	-	-	-	2	1	-	1	-	2
589 X2	12	210	51398-393	230	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-
590 X1	6	210	50862-847	231,230	2	2	-	-	-	-	2	-	-	1	1	1	2	-	-
591	6	210	50725-700	321	4	2	-	-	-	-	-	-	-	2	1	-	2	-	-
592*	3	210	50538-	321	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
593 X3	3	210	50523-503	321	3	1	1	1	-	-	-	-	-	-	1	-	1	-	1
594*	3	210	50462-417	331,361	2	5	3	3	3	-	4	1	-	2	2	-	4	3	1
595 X2	14	213	39905-900	231	1	-	1	1	-	-	-	2	-	-	-	-	-	-	-
596 X3	12	213	39688-678	231	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
597 X2	3	213	38808-798	320	1	-	2	-	-	-	-	-	-	-	-	1	-	-	1
598 X4	3	213	38788-757	320	4	-	3	3	2	-	3	2	-	-	-	-	-	-	-
599*	3	213	38707-702	320	-	1	1	2	-	-	-	1	-	-	-	-	1	-	-
600*X1	15	214	36810-820	231	1	1	1	1	-	-	-	-	-	2	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 12

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MOUNT LEONA/NANCY CREEK - AREA 2

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
601*	15	214	36830-835	231	-	-	2	2	-	-	1	-	-	2	-	-	1	1	-
602*	13&15	215	42961-946	231	-	3	1	-	3	-	2	1	-	-	1	-	1	-	-
603	13	215	42906-896	231	2	1	-	3	-	-	1	1	-	-	-	-	-	-	-
604	13	215	42886-875	231	-	3	-	1	-	-	-	-	-	2	-	-	3	-	-
605	13	215	42820-805	231	4	-	-	-	-	-	3	1	-	3	-	-	-	-	-
606*	13	215	42774-739	231	2	3	3	-	-	-	8	-	-	3	1	3	3	-	-
607*	13	215	42729-698	231	4	2	1	4	-	-	-	-	-	4	-	-	2	1	-
608*X3	10	215	42375-345	231	3	1	3	-	-	-	-	-	-	3	1	-	2	2	-
609*	7	215	42218-188	231	3	3	1	-	-	-	-	-	-	2	3	-	2	4	-
610	7	215	42056-041	231	1	3	-	2	-	-	2	-	-	2	-	-	2	-	-
611*	7	215	41986-950	231,190	1	6	1	1	2	1	3	1	-	2	2	-	2	1	1
612*	4	215	41768-723	230,231	2	5	3	4	-	-	5	-	-	6	1	-	5	2	-
613	4	215	41637-622	230,231	2	2	-	-	1	-	1	1	-	2	1	-	2	-	-
614*	13	216	45983-059	231	6	5	5	2	1	-	6	2	-	5	4	3	4	4	1
615	13	216	46069-094	231,241,321	5	1	-	1	-	-	-	-	-	2	1	-	-	1	1
616*	13	216	46104-120	361	1	2	1	-	-	-	-	-	-	-	2	1	-	3	-
617	10	216	46130-140	361	2	1	-	-	-	-	-	-	-	-	2	-	1	1	1
618	10	216	46150-175	361	2	4	-	3	1	-	-	-	-	1	1	-	5	-	-
619 X7	10	216	45190-221	231,141	3	4	-	-	-	-	1	2	-	-	-	-	-	-	-
620*	10	216	46231-251	141	4	-	1	-	-	-	1	-	-	4	-	1	1	-	1
621*X1	10	216	45266-362	231,141	1	10	9	3	-	-	6	-	-	9	3	3	8	2	4
622*	10	216	45398-	231	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-
623*X1	10	216	45453-484	231	2	4	1	4	1	-	2	4	-	2	-	-	-	-	-
624*		216	45499-153	231,271.331	3	7	1	2	2	7	2	2	7	1	-	-	-	-	-
625*X1		216	41259-284	191,330	1	3	2	2	-	-	1	-	-	1	-	2	2	2	1
626*X2		216	41380-405	331	1	2	3	1	-	-	1	-	-	1	-	2	1	1	1
627		219	43175-165	330	1	2	-	3	-	-	-	-	-	-	-	-	3	-	-
628		219	42993-983	321	1	2	-	-	1	1	2	1	-	1	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

11.2.4

TABLE 13

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
MT. LEONA-NANCY CREEK

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	10	21	50	51	100	101	110	111	140	141	151	190	191	200	201
WATER	0	0	0	0	0	0	0	18	0	35	0	0	0	0	70
Q	0	0	0	0	0	56	0	78	0	95	0	0	1	0	217
QG	85	16	16	10	151	0	412	320	51	1664	0	278	131	283	1151
PZS	0	0	0	0	0	10	0	0	0	0	0	0	15	0	33
PZC	0	0	0	0	0	0	0	74	0	994	30	0	16	0	0
PZA	0	0	0	0	0	13	45	136	0	1382	0	0	1	15	152
PZLS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZM	0	0	0	0	0	0	0	0	0	0	0	0	24	0	3
PZG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZPCM	90	0	8	0	260	0	31	0	204	165	0	196	18	40	56
PPMF	0	0	0	0	0	5	0	0	0	0	0	0	0	0	36
PPMQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
PR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCO	0	0	0	0	47	0	105	0	0	0	0	14	0	212	0
TG	0	0	0	0	0	0	0	0	0	0	0	0	47	0	12
TQM	0	0	0	0	0	72	0	99	0	2	0	52	1007	4	336
TD	0	0	0	0	0	0	0	0	0	0	0	61	0	21	0
TSC	0	0	0	0	0	0	0	0	0	0	0	13	0	0	34
TKQM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TSS	0	9	0	0	0	0	0	131	0	42	0	0	0	17	188
TS	0	0	0	0	0	10	0	14	0	146	0	28	71	111	525
TK	0	9	0	0	0	8	0	4	0	180	0	67	0	67	14
TOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TSA	0	11	0	2	0	0	0	25	0	144	0	0	0	80	43
KQ	0	0	0	78	0	0	0	0	0	15	0	0	0	0	0
MZG	0	0	0	0	0	6	0	41	0	790	9	465	139	0	265
KM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MZR	0	0	0	0	0	45	0	0	0	0	0	0	211	0	39
MZJ	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0
MZM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

11.2.4 Continued

TABLE 13

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
MT. LEONA-NANCY CREEK

GEOLOGIC UNIT	GEOCHEMICAL CODE												
	210	220	221	230	231	241	271	320	321	330	331	360	361
WATER	0	0	0	0	343	0	254	0	0	0	0	0	0
Q	0	0	0	46	1031	0	0	0	84	0	18	0	0
QG	0	124	1	4156	14689	670	146	901	1135	95	792	0	240
PZS	0	0	0	0	411	0	0	0	38	91	250	0	0
PZC	0	0	23	0	13646	992	211	0	1933	0	487	0	545
PZA	0	0	0	135	12506	607	16	0	1071	26	530	0	2165
PZLS	0	0	0	0	8	0	0	0	0	0	0	0	0
PZMS	0	0	0	0	138	0	0	0	19	13	433	0	0
PZM	0	0	14	261	847	0	0	0	0	135	1159	0	525
PZG	0	0	0	0	201	0	0	0	0	0	1101	0	0
PZPCM	0	186	15	3248	4883	461	0	2298	1266	45	2109	77	397
PPMF	0	0	0	0	94	0	0	0	40	0	0	0	0
PPMQ	0	0	0	0	574	0	0	0	33	0	0	0	0
PR	0	0	0	0	142	0	0	0	67	0	0	0	90
TRS	0	0	0	1	103	0	0	0	0	86	0	0	0
TRPG	19	0	0	123	207	566	0	0	0	0	76	0	0
PCO	0	1	0	264	579	0	0	0	0	33	1	0	0
TG	0	0	0	24	162	0	0	0	0	266	233	0	256
TQM	0	0	64	394	2425	0	0	11	27	0	26	0	31
TD	0	0	0	0	99	0	0	0	0	0	0	0	0
TSC	0	0	0	248	645	140	0	0	41	32	529	0	3
TKQM	0	0	0	0	161	0	0	159	15	115	69	0	0
TSS	0	0	0	161	339	0	0	0	0	0	0	0	0
TS	0	0	84	691	4542	297	0	31	403	118	244	0	0
TK	0	0	0	370	2113	69	0	0	52	0	0	0	0
TOB	0	0	0	0	3	0	0	0	0	0	0	0	0
TSA	0	0	0	167	374	0	0	0	0	175	38	0	0
KQ	0	0	12	0	410	0	0	0	0	0	0	0	0
MZG	0	0	130	2902	23327	1342	267	1670	1877	522	4986	173	280
KM	62	0	0	8	2	65	0	0	0	74	0	0	0
MZR	0	0	17	407	2884	5	0	161	778	107	2926	20	126
MZJ	0	0	0	215	6	0	0	0	24	246	0	9	0
MZM	0	0	0	66	8	0	0	0	0	108	29	0	0
MZS	0	0	0	0	8	0	0	0	0	129	28	0	0

11.3 DISCUSSIONS OF GEOCHEMICAL UNITS, GEOLOGY CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

11.3.1 SHEET 1

There are a number of geochemical and geological anomalies near the contact between the Klondike Mountain and the Sampoil volcanic rocks and the Paleozoic units, i.e. geologic anomalies 34, 41, 484 and geochemical anomalies 36, 38, 534 and 535. These anomalies lie along a mapped fault and a strong magnetic gradient, both of which trend north-south parallel to the trend of the preferred anomalies. Several weaker northwest-southeast magnetic linears also intersects this group of anomalies. GCU 101, 201, and 321 seem to follow this north-south trend.

11.3.2 SHEETS 2 AND 5

In the northwestern portions of sheet 2 geological anomaly 486 and geochemical anomaly 540 lie along a northeasternly trending extension of the fault discussed on sheet 1. A strong magnetic gradient follows the fault into sheet 2.

To the south and along a weak northwest-southeast trending magnetic linear are geochemical anomalies 47, 54, 55, 538, and 537 and geological anomaly 485. Anomalies 54, 55, and 548 lie above this linear which appears to form the southwestern boundary of the Paleozoic marbles. The linear runs parallel to and just to the north of the contact between GCU 231 and 331.

Further to the southeast a number of anomalies (i.e. geologic anomalies 73, 85, 86, 90, 91, 98, 99, 108, 110, 111, 494, 488 and 501 and geochemical anomalies 108, 121, 122, 123, 124, 125, 543, 553, 554, and 564) trend east-west across the bottom of sheet 2 and the top of sheet 5. Geochemical units 21, 111 and 141 follow this east-west trend and correlate to these anomalies. These anomalies and geological anomalies 39, 496, 502, 503, and 513 and geochemical anomalies 555, 556, 557, 565, 566, and 579 to the north are either in the central portions of the Republic Graben or near mapped boundary faults of the graben.

11.3.3 SHEET 3

Along the top of sheet 3 and mainly to the east of the

graben exist geological anomalies 4, 5, 6, and 27 and geochemical anomalies 1, 5, 6, 15, 25, 26, 33, and 580. These anomalies are in GCU 230, 231, and 331, and the Cambrian metamorphic complex, which is primarily phyllite. In the western portion of the sheet these preferred anomalies correlate to north-south trending magnetic linears whereas in the eastern portion of the sheet the magnetic linears trend east-west.

Preferred geochemical anomalies 65, 581, 592, 594, and 599 are scattered throughout the remaining portions of sheet 3.

11.3.4 SHEET 4

In the western portions of sheet 4 are two north-south trending magnetic linears that follow the western and eastern contacts of the Orient gneiss. Geological anomalies 8, 18, and 35 and geochemical anomalies 8, 29, 40, and 612 either lie above or between the two magnetic linears that bound the Orient gneiss. Furthermore GCU 10, 100, 110, and 200 follow this north-south trend.

Towards the south the two north-south magnetic linears intersect two northwest-southeast and several east-west trending magnetic linears. This region is mainly in the metamorphic complex, the Orient gneiss, and the Rossland Volcanic Group and contains geological anomalies 59, 62, 67, 68, 74, 80, 87, 88, 93, 94, 100, and 102 and geochemical anomalies 73, 74, 80, 87, 95, 98, and 103. This region is highly radiogenic and contains one prospect within the Rossland Volcanic Group. To the northeast and east geological anomaly 11 and geochemical anomalies 41, 70, and 626 are also in the Rossland Group. Geochemical anomalies 118 and 119 are in argillite and volcanic rocks.

In the central portion of the sheet geological anomaly 542 and geochemical anomaly 625 lie above a strong east-west trending magnetic linear that follows the southern border of the Cerome andesites.

11.3.5 SHEET 5

Sheet 5 is almost entirely within the Republic Graben, which is filled with Sampoil volcanics and the Klondike Mountain flows. Near the central portions of the sheet are several strong magnetic linears that trend north-south parallel to mapped surface faults. There are also several northeast-southwest trending linears that follow the general trend of the graben and several weaker northwest-southeast trending magnetic linears. In this region and trending east-west accross the sheet are geological anomalies 129, 131, 132, 140, 141, 144, 147, 148, 487, 491 and, 506 and geochemical anomalies 159, 561, and 569. GCU 141, 111, 201, 191, and 101 follow the above mentioned trends. Just east of this band a line of north-south trending anomalies (i.e. geochemical anomalies 547, 548, 549, and 550) follow the trend of the mapped faults that bound the Klondike Mountain formation.

To the south and along two northwest-southeast trending linears are geological anomalies 180, 187, 195, 199, and 204. GCU 141 and 201 follow this trend.

The total magnetic field maps suggests that the Republic Graben is highly fractured, and even though most of the anomalies on sheet 5 appear to trend east-west these preferred anomalies may correlate to intersecting fracture sets. Perhaps the even spacing between the preferred geological anomalies on sheets 2 and 5 is related to a hydrothermal circulatory system.

11.3.6 SHEETS 6 AND 7

In the central and western portions of sheet 6 geological anomalies 159 and 163 and geochemical anomalies 162 and 178 lie along a northeast-southwest trending magnetic linear within the Cambrian metamorphic complex and the Mesozoic plutonic rocks. In this same area geochemical anomaly 153 traverses two northwest-southeast trending linears. GCU 141, 230, and 321 follow the general northeast-southwest trend.

In the northeastern portions of sheet 6 and in a small portion of sheet 7 exists another east-west trending band of preferred anomalies that are near the intersection of an east-west and a north by northwesternly trending mag-

netic linear (i.e. geological anomalies 130, 135, and 136 and geochemical anomalies 136, 142, 147, and 164). These strong linears follow the trends of GCU 230 and 231 and 140 and 141 within the Cambrian metamorphic complex.

11.3.7 SHEET 7

On sheet 7 a north-northwest trending zone of anomalies follows the outcrop of the glacial deposits. This trend continues into sheet 4 along the western contact of the Orient gneiss and the glacial deposits. This zone of preferred anomalies (i.e. geological anomalies 113, 125, 128, 143, 149, 150, 151, 186, 197, and 539, and geochemical anomalies 134, 167, 173, 190, 191, 204, 211, 609, and 611) appears from the geologic map to be in the core zone and on the western limb of a synform that closes to the south. A strong northwest-southeast trending magnetic linear follows these anomalies as well as GCU 140, 141, and 201.

11.3.8 SHEETS 8 AND 9

On sheet 8 a strong magnetic linear follows the western wall of the Republic Graben. Geological anomaly 237 and geochemical anomalies 567 and 568 appear to be associated with this north-northeast trend. In the southwestern portion of sheet 9 is a cluster of anomalies that follows GCU 141 (i.e. geological anomalies 273, 278, 279, 285, and 511 and geochemical anomalies 255, 265, 272, and 279). The cluster is bounded on the southwest and east by strong magnetic linears that trend northwest-southeast and north-south respectively. To the north of this cluster and within sheet 8 geochemical anomalies 572 and 573 lie along a strong north-south trending magnetic linear.

11.3.9 SHEETS 9 AND 10

In the northern portions of sheet 9 three anomalies (i.e. geological anomaly 221 and geochemical anomalies 226 and 228) trend east-west across the silicic plutonic rocks. These preferred anomalies follow an east-west trending magnetic linear.

In the eastern portions of sheet 9 the contact between the Mesozoic granites and the argillite is religiously followed by a strong magnetic linear, which includes a mapped offset of these two units. Geological anomaly 530 and geochemical anomaly 608 on sheet 10 lie above this northeast-southwest trending fracture. In the southern portions of sheet 9 and near the above mentioned contact is another cluster of anomalies which may in part, be structurally controlled (i.e. geological anomalies 280, 282, 287, and 293 and geochemical anomalies 258, 262 and 286).

11.3.10 SHEET 10

The north-south trending band of anomalies developed on sheets 4 and 7 continues into sheet 10 (i.e. geologic anomalies 224, 240, 242, 243, 247, 249, 250, 252, 263, 269, 275, 288, and 538 and geochemical anomalies 227, 239, 244, 250, 253, 281, 290, and 620, 621, and 622), where it follows the contact between the glacial deposits and the argillite. Here the band of preferred anomalies does not correlate to magnetic linears, but does correlate to GCU 141, and 201.

11.3.11 SHEETS 11 AND 12

These two sheets are dominated by Mesozoic granitic rocks and the Colvada group and a few scattered preferred anomalies (e.g. geologic anomalies 298, 304, 306, and 307, and geochemical anomalies 305, 317, 348, and 588). Geochemical anomalies 305 and 317 do, however, lie above strong magnetic gradients.

11.3.12 SHEETS 12 AND 13

The north-south trending band of anomalies encountered along the glacial deposits and the phyllites on sheet 10 continues into sheet 13 (i.e. geological anomalies 537, 314, 327, 332, 333, 338, 339, 344, and 346, and geochemical anomalies 315, 321, 327, 332, 340, 349, 350, 354, 355, 356, 364, 602, 606, 607, 614, and 616). As before these anomalies tend to follow GCU 141 and no strong magnetic lineations are present.

11.3.13 SHEET 14 AND 15

These two sheets are dominated by the Colvada Group and four equally spaced northwest-southeast trending magnetic linears. One of these magnetic linears follows a mapped surface fracture on the geologic map. The preferred anomalies on sheet 14 are very numerous and almost uniformly distributed accross the sheet. Within this very broad and highly radiogenic region are geologic anomalies 357, 358, 375, 376, 380, 383, 385, 386, 387, 391, 393, 399, 401, 402, 403, 406, 407, 411, 412, 414, 418, 420, and 421 and geochemical anomalies 377, 397, 404, 407, 408, 409, 413, 427, 431, 435, 436, 439, 442, 443, 450, 453, 454, 455, 457, and 461. There appears to be no strong pattern to these anomalies, although there is a hint of two weak northeast-southwest trends.

The north-south band of anomalies developed on sheets 4 to 13 seems to continue into sheet 15 along the Franklin D. Roosevelt Lake (i.e. geologic anomalies 351, 363, 371, and 525 and geochemical anomalies 602, 376, 378, 384, 395, 600, and 601). GCU 111, and 141 follow this north-south trending group of anomalies. These anomalies may be related to the more diffuse zone of anomalies on sheet 14.

11.3.14 SHEET 16

The diffuse pattern of anomalies encountered on sheet 14 is repeated on sheet 16, and as before there appears to be no pattern or structural control to this highly radiogenic area. GCU 141 and 271 correlates to many of these anomalies.

11.4 SUMMARY AND CONCLUSIONS

The total magnetic field map suggests that this region is highly fractured into small blocks along N-S, NE-SW, NW-SE and E-W trends. This is particularly true of the northern portions of the study area (sheets 1 through 6) and the areas within or adjacent to the Republic Graben (e.g. sheets 8 and 11 and the western portions of sheets 9 and 12). The large number of apparent fracture sets, means that the preferred anomalies often correlate to magnetic lineations.

On the other hand, the southern portions of the study area (sheets 14 and 16) contain fewer magnetic lineations, but are more highly radiogenic. Here the preferred anomalies are almost uniformly distributed across the Colvada Group and the Mesozoic granitic rocks.

Along the eastern portions of the study area is an almost continuous zone of high radiometric response that follows the N-S trend of the Orient gneiss and the western flank of Franklin D. Roosevelt Lake. On sheets 4 and 7 this highly radiogenic band appears to be structurally controlled, although to the south (i.e. on sheets 10, 13, and 15) there is no obvious structural control to the anomalies. GCU 141 often correlates to this N-S trending band of anomalies as well as to anomalies in other areas. Perhaps future exploration of this region will concentrate in this obvious N-S trending zone that is associated with the Mississippian argillites.

12.0 MIDNITE SHERWOOD MINES - AREA 3

12.1 GENERAL STATEMENT

The Midnite Mine lies within the Ritzville quadrangle located in northeastern portions of the state of Washington, although small portions of the Sandpoint and Spokane quadrangles are included in the study area. The survey area can also be delineated on four 15' quadrangles and four 7½' quadrangles located within the larger quadrangles. The area lies to the east of Grand Coulee Dam and includes Franklin D. Roosevelt Lake and a portion of the Spokane Indian Reservation. The data is presented on eleven sheets numbered 5 through 15 (see Figure 10).

The area has been discussed in previous reports submitted to DOE under Subcontract Nos:

GJBX-121(78)	Spokane NL 11-2 Quadrangle
77-079-S (Contract EY-76-C-13-1664)	Okanogan NM 11-10, Sandpoint NM 11-11 Quadrangles
GJBX-126(79)	Ritzville Quadrangle
BFEC-GJ-RFQ-0339	Midnite-Sherwood Mines
GJBX-200(81) (Open File)	Studies on the Spokane Mountain Uranium Deposits

12.2 GEOLOGY OF AREA 3

Four main events characterize the general geology of the Midnite Mine region. The oldest lithologic units in this area are the Precambrian Togo formation and Cambrian meta-sedimentary units. These units were folded during the Jurassic forming the NE trending Deer Trail anticline (Becraft and Weis, 1963) which dominates the northern portions of sheet 9. These structures represent a portion of the folded and faulted Kootenay Arc (Babcock et al. 1981).

During the Cretaceous the entire area was multiply intruded by silicic igneous rocks of the Loon Lake batholitic complex. Following this major period of plutonism the area was subject to Eocene extensile movements that resulted in the intrusion and extrusion of the Sanpoil andesitic rocks. These Sanpoil volcanics fill fractures that trend approximately NNW across the Ritzville quadrangle (Intex, 1981). Lastly extrusive basalt flows of the Columbia River group flooded the southern portions of the study area.

12.2.1 GENERAL STRUCTURE

From a detailed study of the Ritzville quadrangle, Babcock et. al., (1981) and Intex (1981) have identified three major sets of structures in the Midnite Mine region; a northeast, a northwest, and a north-northwest trending set of structures may result from reverse faulting and may be related to the formation of the Kootenay Arc and the Deer Trail anticline. The north-northwest trending fracture set appears to be related to the period of extensile deformation, to the formation of the Enterprise-Spokane Valley graben, and to the Eocene Sanpoil volcanics. On the other hand, the northwest trending fractures often offset the northeast trending fractures in a right lateral sense, and thus the northwest trending fractures are probably related to the Lewis and Clark lineament (Robbins, 1978), which may have been active beginning in the Precambrian (Babcock et. al., 1981).

12.3 GEOLOGIC MAP AND DESCRIPTION OF MAP UNITS

The map used to digitize most of the geology is the "Geology of the Ritzville, Washington Quadrangles" by Wilde Inc. (1978), and this map was also employed in analyzing the geochemical units. Only a small part of the survey lies within the Spokane quadrangle (see Figure 9) but several rock units apparently differ enough to have been digitized separately (12.3.2).

12.3.1 DESCRIPTION OF MAP UNITS - RITZVILLE

SEDIMENTARY ROCKS

Qa	Alluvium
Q	Undifferentiated deposits.
Ql	Lacustrine deposits.
Qgl	Glaciolacustrine, and fluvial and lacustrine sand.
Qg	Glacial deposits.
Qe	Periglacial eolian deposits and isolated outcrops of the Columbia River Group.
Tnm	Non-marine rocks, mainly Miocene and Pliocene tuff and andesitic sandstone.

CENOZOIC VOLCANIC ROCKS

Tc	Columbia River Group, mainly Miocene basalt flows.
Tgf	Sanpoil (Gerome) andesite, mainly Eocene volcanics.

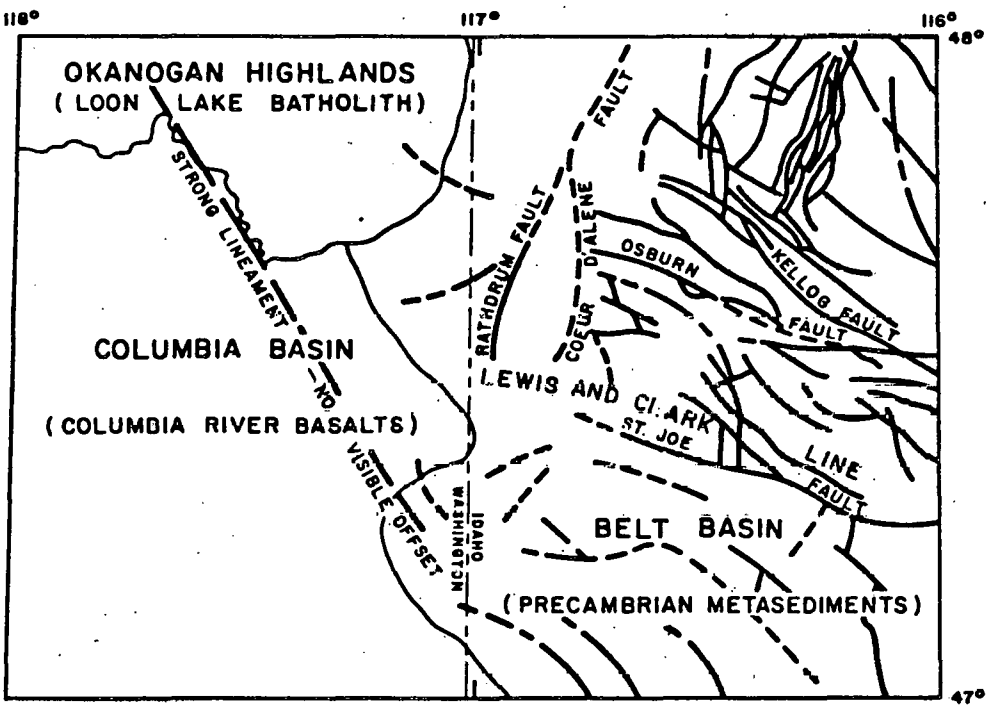
MESOZOIC VOLCANIC AND METAMORPHIC ROCK

Kg	Granodiorite, mainly Cretaceous.
Kq	Quartz monzonite, mainly Cretaceous.
Mzg	Undivided silicic rocks, mainly Cretaceous.
pTm	Undivided Pre-Tertiary metamorphic rocks.

PALEOZOIC SEDIMENTARY AND METAMORPHIC ROCKS

Cod	Old Dominion limestone.
Pzmp	Marble and phyllite.

Pzc	Covada Group, quartzite, slate and limestone.
Pzhf	Hornfels.
Ꞓa	Precambrian sedimentary and metamorphic rocks Addy quartzite.
pꞒe	Edna dolomite.
pꞒm	McHale Slate.
pꞒt	Togo formation, quartzite, argillite and marble.



Major physiographic provinces & geologic features of the Spokane Quadrangle

APPROXIMATE SCALE
1:1,240,000

Figure 9

12.3.2 DESCRIPTION OF MAP UNITS - SPOKANE

SEDIMENTARY AND METASEDIMENTARY ROCKS

Qal — ALLUVIUM (HOLOCENE)
Silt, sand, and gravel along stream valleys; silt and peat in filled ponds and lakes.

Qgy — YOUNGER GLACIAL DEPOSITS (PLEISTOCENE)
Morainal till around the southwest end of Pend Oreille Lake. Remainder is glaciofluvial deposits of sand and gravel within valleys of Spokane and Little Spokane Rivers and Chamokane Creek. Some older glacial deposits such as sand and silt exposed under younger deposits in banks of Spokane River near western margin of map included where their outcrop is small. Middle or late Pinedale in age.

Qgo — OLDER GLACIAL DEPOSITS (PLEISTOCENE)
Glaciofluvial and glaciolacustrine deposits of silt, sand, and gravel, usually stratified and well sorted; includes some kame deposits and morainal material along margins of Spokane Valley.

Qgf — GLACIAL FLOOD DEPOSITS (PLEISTOCENE)
Gravel, very poorly sorted. In channeled scablands, material mostly basalt gravel and rubble from boulders 5 feet or more in diameter to sand size.

INTRUSIVE AND EXTRUSIVE IGNEOUS ROCKS

Tcl — COLUMBIA RIVER GROUP AND LATAH FORMATION (MIOCENE AND PLIOCENE)
Flows of dense, dark, tholeiitic basalt, usually from 50 to 150 feet thick, and all essentially flat lying. Chemical and modal analyses indicate that the capping flows are of the Olivine-bearing late Yakima type, whereas the underlying flows are of the olivine-poor Yakima type. Included with the basalt interlayered lacustrine beds of the Latah Formation. These are

poorly indurated siltstone, claystone, sandstone, and minor conglomerate that are tan to gray in color, thin bedded, and in part laminated. Exposed thickness of Columbia River Group ranges from the wedge-out of top flows where they impinge against the mountains and ridges, to as much as 1,000 feet in some exhumed valleys. Twice as much or more may be buried at places along west margin of map.

TMzg GRANITIC ROCKS (MESOIC AND TERTIARY)

Plutons to batholithic complexes predominantly of quartz monzonite to granodiorite composition, but including differentiates ranging from diorite to alaskite. Most of rocks are medium- to coarse-grained and in large part porphyritic. Radiometric ages of rocks in the quadrangle and other intrusive rocks in adjacent areas indicate time span of emplacement from middle Mesozoic to early Tertiary.

12.4 URANIUM OCCURRENCES OF THE MIDNITE MINE REGION

Babcock et. al. (1981) have concluded that the uranium mineralization in the Midnite Mine area can be directly attributed to the intersection of the northwest and northeast trending fractures; i.e. the intersecting fracture sets acted as conduits for the circulation of uranium rich hydrothermal fluids. Thus a structural control may influence the location of uranium mineralization in the Midnite Mine area.

During our study of the geochemical unit maps many of the high or low KUT areas tended to correlate with structural features. This was particularly true of high KUT geochemical unit 101, indicating that the uranium mineralization may inpart be structurally controlled. During our analysis of the study area high KUT geochemical units could only be correlated to subsurface fractures within the Loon Lake batholithic complec.

Furthermore, the individual geologic and geochemical eU anomalies also tended to correlate to subsurface fractures which adds support to the above conclusion.

12.4.1 URANIUM OCCURRENCES AND ORIGIN

Seven uranium - bearing mines and prospects are present within the study area; the Midnite, Sherwood, Spokane Mountain, Spokane Molybdenum, Germanin Consolidated, Germania, and Big Smoke Mines. These deposits lie within or near the southern extension of the Deer Trail anticline, and parallel the general trend of the Kootenay Arc, a north-northeast to northeast trending feature (Babcock et. al., 1981). The north-northeast to northeast trending structures are offset by northwest trending wrench faults associated with the Lewis and Clark lineament, and most of these uranium occurrences are located in those areas where the two structural trends intersect. Babcock et. al. (1981) believes that the intersecting fracture sets controlled the circulation of hydrothermal uranium bearing solutions, and that the uranium precipation occurred where reducing environments were present. For example the Midnite Mine, the largest deposit of its type in North America, is located near the intersection of the two fracture sets and the carbonaceous argillites of the Togo formations.

12.4.2 MIDNITE MINE AREA, STEVENS COUNTY, WASHINGTON

The Midnite Mine has exposed a number of ore bodies along the western contact of a tongue of schist, phyllite, and quartzite of the Precambrian Togo formation, which projects southward into porphyritic quartz monzonite of the Cretaceous Loon Lake batholith. Five of these bodies have been mined. Individual ore bodies are as much as 700 feet long, 200 feet wide and more than 150 feet deep.

Near the surface, the uranium ore is thoroughly oxidized and consists of a mixture of secondary uranium minerals intimately associated with iron oxide films and coatings. Meta-autunite - $Ca\ (UO_2)_2\ (PO_4)_2\ .\ 8H$ - is by far the most abundant mineral, occurring as thin films on fractures or as discrete crystals on iron oxide. Uranophane - $Ca\ (UO_2)_2\ (PO_4)_2\ (OH)_4\ .\ 7H_2O$ - are common, and a few other oxidized uranium minerals have been identified (Becraft and Weis, 1963).

Sooty uraninite - UO_2 - and coffinite - $U(SiO_4)\ 1\text{-}x\ (OH)\ 4x$ - together with pyrite and marcasite have been identified in a few samples of unoxidized ore. In 1965, specimens of sooty uraninite were reported to be relatively plentiful in the Midnite open pit, and veins of dense, shiny pitchblende were quite abundant in some faces of the pit. Almost all the uranium minerals are in the metamorphosed sedimentary rock; only locally are secondary minerals abundant enough in the underlying quartz monzonite to constitute ore. There is some evidence to suggest that the uranium is associated with north-northeast trending steeply dipping faults which cut the Togo formation near its contact. Some of these fractures may be older than the quartz monzonite.

Production from the Midnite Mine began in 1955 and ceased in 1962. During this time over 1,000,000 tons of ore were produced. The mine began producing again in 1969, and since then has produced up to 1000,000 tons of ore annually.

In addition to the Midnite Mine itself, several other discoveries have been made in the same general area. At the Lowley lease on the Spokane River about seven miles south of the Midnite Mine, uranium minerals were

found in an intensely shattered zone at the contact of impure quartzite and granodiorite. About 285 tons of ore were shipped in 1956 from the mine (Becraft and Weis, 1963)., but there has been no production since.

At the Big Smoke lease, a mile north of the Lowley lease, uranium minerals occur along a faulted contact between granodiorite and pyroclastic and sedimentary rocks of the Sanpoil andesite. Only minor amounts of uranium have been discovered here, however.

The Sherwood Uranium Mine is about 4½ miles southeast of the Midnite Mine. Here uranium ore is in an entirely different geological setting was discovered in the basal member of the andesite of Oligocene age. In the mine area, the Sanpoil andesite consists of interbedded tuffaceous sandstone, arkose, and carbonaceous shale overlying a poorly sorted conglomerate, and contains much carbonaceous material in thin arkosic lenses and in irregular, sporadically distributed masses. The ore zone lies from a few feet to as much as 80 feet below the surface. Total production to the time the mine was closed in 1962 was 87,300 tons of ore containing 305,700 pounds of uranium

12.4.3 SPOKANE MOLYBDENUM MINE, LINCOLN COUNTY, WASHINGTON

The Spokane Mountain Mine was discovered in 1975 (Robbins, 1978), and is located about one and one half miles northeast of the Midnite Mine. The local geology and the mode of uranium mineralization is very similar to the Midnite Mine deposits; both deposits lie along trend of the Deer Trail anticline and its contact with the Loon Lake batholith uranium minerals include pitchblend, autunite, phosphuranylite, uranophane and possibly uranopilite (Robbins, 1978).

13.0 GEOPHYSICAL DATA INTERPRETATION MIDNITE SHERWOOD MINES - AREA 3

13.1 GENERAL STATEMENT

The geological, geophysical and geochemical implication of this report are, to the extent possible, condensed into four tables as follows:

13.3.1 Preferred eU Anomaly Association
13.3.2 Significant eU Anomalies by Geological Unit
13.3.3 Significant eU Anomalies by Geochemical Unit
13.3.4 Summary of Geologic Units/Geochemical Unit

The study area is primarily confined to the northeast portion of the Ritzville quadrangle in northeastern Washington, although very small portions of the Sandpoint and Spokane quadrangles are included in the interpretation (Figure 10). This region is most noted for the Midnite Uranium Mine (Barrington and Kerr, 1961; Nash, 1977), the largest known deposit of its type located in North America (Sheldon, 1959).

The Ritzville, Spokane, and Sandpoint quadrangles contain sheets 6 thru 9 and 11 thru 14, sheets 10 and 15, and sheet 5, respectively. These sheets are discussed from west to east in sections 13.4.1 thru 13.4.8.

13.2 INTERPRETIVE TECHNIQUES

In most airborne uranium surveys specific uranium anomalies are usually correlated to geologic maps. However, the Midnite Mine region has been subject to extensive surface and subsurface investigation (eg. Babcock et. al. 1981, Intex 1981), and the uranium mineralization has been demonstrated to exhibit structural control (Robbins 1978, Babcock 1981). Thus, the extensive information available on the Midnite Mine region permits an analysis of the data in a manner that is different and more general than most uranium survey reports.

In this analysis the data were searched to identify significant uranium anomalies that correlated with specific

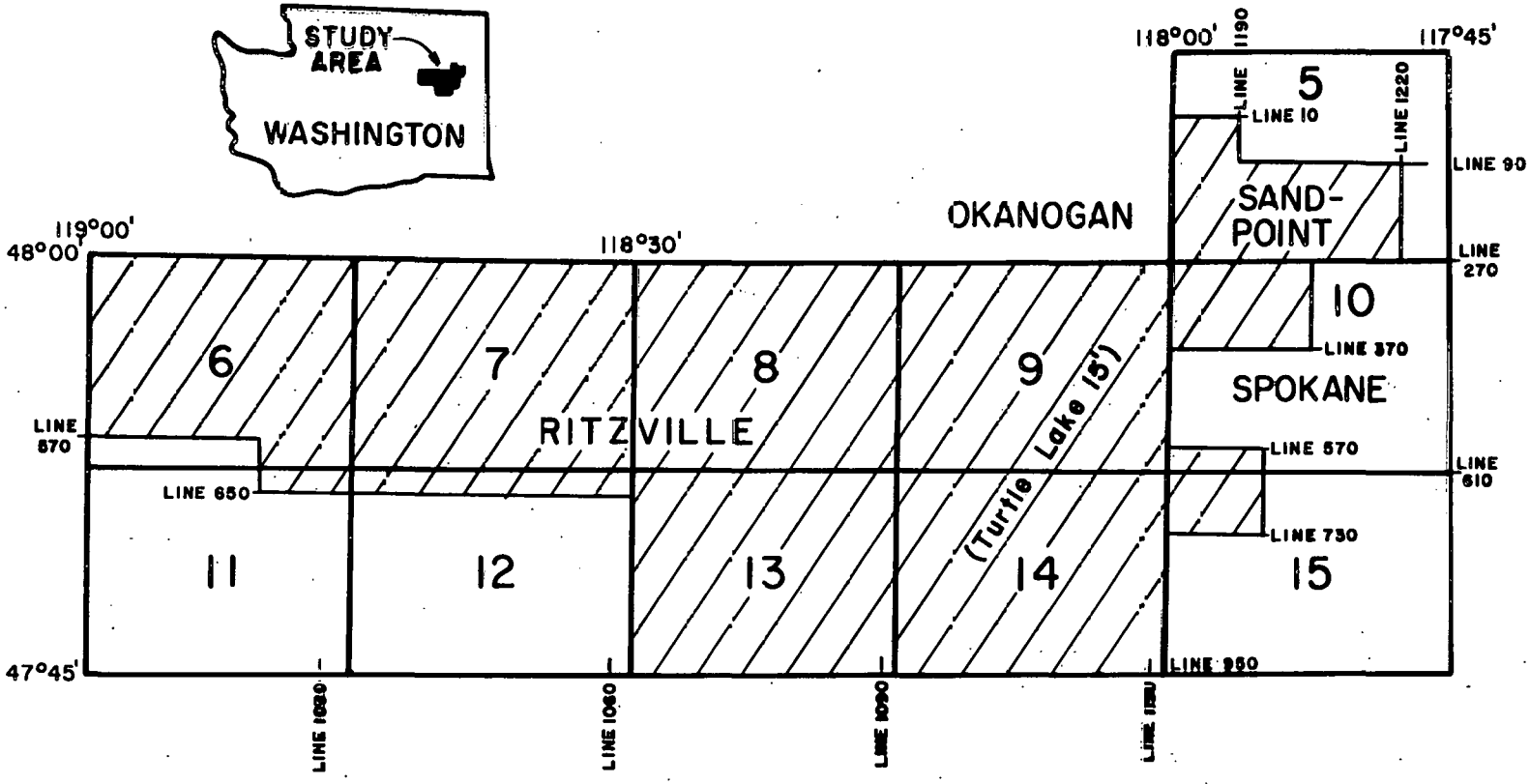


FIGURE 10

Figure 10 Index map of the Midnite-Sherwood Mine area illustrating sheet Nos. The study area is cross hatched in the Figure. The Midnite-Sherwood Mines are located in Sheet 9 which is a subdivision of the larger Ritzville quadrangle (Sheets 6 thru 9 and 11 thru 14). Sheet 5 is in the Sandpoint quadrangle and Sheets 10 and 15 are in the Spokane Quadrangle.

geochemical units on the geochemical unit maps. The geochemical unit maps were then correlated to magnetic gradients and linears that had been subject to computer interpretation as to the depth and lateral extent of the magnetic anomalies (see Intex, 1981). This computer interpretation technique (Microanalysis) has been demonstrated to predict the depth and the location of subsurface fractures. Thus, in this report the geochemical units were correlated directly to shallow crustal structures as well as to geologic maps.

13.3 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS

In the Midnite Sherwood Mine areas there are a total of 214 geological and 268 geochemical statistically significant eU anomalies. Of these anomalies, 76 geological and 72 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 15 and 16) appear to have the greatest potential as indications of true uranium enrichment. This solution has taken into account statistical adequacy of the sampling and thus excludes anomalies that correlate with sparsly sampled geologic units.

Table 14 shows that the preferred eU geological anomalies correlate with alluvial materials, the Columbia River basalt flows or silicic plutonic rocks. There also appears to be a general correlation between the preferred anomalies and magnetic lineations on the total field map; particularly those preferred anomalies in the Deer Trail Group and the silicic igneous rocks.

The correlation to glacial deposits may depend on the relative soluabilities of U, Th, and K, i.e. the more soluable uranium may concentrate in organic material within the glacial deposits causing high eU/Th or eU/K ratios. Alternatively the alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits.

An examination of the preferred anomalies within the Columbia River basalt flows suggests that while they are not strong uranium anomalies, they do produce strong eU/eTh or eU/K responses. These high eU/eTh and eU/K ratios possibly result from the secondary enrichment of uranium.

Geochemical units 101, 191 and 201 strongly correlate to the silicic intrusive rocks. (Tables 15 and 16); these high K units being the source rocks for the Midnite Mine deposit (Babcock et. al., 1981). However, GCU 221 with average K also correlates to the quarts monzonites.

Geochemical units 230 and 231 correlates to alluvial material, Columbia River basalt flows and granitic rocks. These units cropout over large sections of the study area. GCU 231 also correlates to the Deer Trail Group which probably reflects contrasting magnetic susceptabilities. Geochemical unit 270 is average in U and low in Th and K and correlates to the basalt flows. This suggests that the Columbia River Group is enriched in uranium relative to Th and K. GCU 311 is mainly over water.

13.3.1 Preferred eU Anomaly Associations
Midnite Mine - Area 3

TABLE 14

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Qag	10	Alluvium
QGO,QG	12	Glacial deposits
Q	2	Undifferentiated deposits
QE	4	Periglacial eolian deposits
TB,TC,TCL	27	Columbia River Basalts
TG,TGF	3	Sandpoil (Gerome) volcanics
KPO,KQ	13	Quartz Monzonite
KG	5	Granodiorite
TMZG,MZG	22	Granitic rocks
PCDT,PZG, PCT,PZC	7	Deer Trail and Golvada Group

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Code	U	Th	K
11	4	99	H	H	H
100	1	99	H	H	H
101	11	99	H	H	H
131	5	69	H	H	A
140	2	59	H	A	A
141	2	59	H	A	A
191	4	95	A	H	H
200	2	85	A	A	H
201	8	85	A	A	H
211	1	75	A	L	H
220	1	65	A	H	A
221	8	65	A	H	A
230	49	55	A	A	A
231	31	55	A	A	A
240	1	45	A	L	A
260	1	25	A	A	L
270	7	15	A	L	L
271	2	15	A	L	L
360	4	13	L	L	L
361	7	13	L	L	L

13.3.2

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOLOGIC UNIT MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	5	5	58688-698	pEdt	2	-	1	1	-	2	2	1	-	-	-	-	-	-	-
2	5	13	61333-348	Tb	4	-	-	-	2	2	-	-	4	-	-	-	-	-	-
3*	5	15	59945-950	Tg,Qag	-	1	1	1	1	-	1	1	-	-	-	1	1	-	1
4	5	16	59776-765	Tg,Qag	2	1	-	2	-	-	2	-	-	1	-	-	-	-	-
5	5	16	59755-745	Tg	2	1	-	2	-	-	2	-	-	1	-	-	-	-	-
6*	5	17	58704-715	pEdt	1	1	1	1	-	-	1	-	-	-	1	1	1	1	-
7	5	17	58795-800	Qag	-	2	-	1	1	-	1	1	-	1	-	-	1	-	-
8*	5	17	58826-851	Kpq,Tb,Qag	2	-	4	1	4	-	2	-	3	2	1	1	4	1	1
9	5	17	58957-972	Tb,Qag	2	2	-	-	3	1	2	-	-	1	-	-	2	1	-
10*	5	18	58619-604	Kpq	2	1	1	2	-	-	2	1	-	2	2	-	3	1	-
11*	5	18	58503-483	Tb,Qag	1	2	2	1	1	2	-	4	-	1	-	1	1	2	-
12	5	19	58044-064	Kpq,Qag	4	1	-	1	1	2	2	-	-	1	-	-	3	1	-
13	5	20	57790-775	Kpq	3	1	-	-	-	-	1	-	-	2	1	-	2	1	-
14*	5	20	57750-745	Qag	-	1	1	1	1	-	1	-	1	1	1	-	-	1	-
15	5	20	57608-598	Qag	1	1	-	1	2	-	2	1	-	1	-	-	-	-	-
16	5	21	57017-032	Kpa	4	-	-	4	-	-	2	1	-	1	-	-	1	-	-
17*	5	21	57194-239	Qag,Tb	2	3	5	1	5	4	6	3	-	2	2	-	5	1	3
18	5	22	56862-341	Kpq	3	2	-	2	-	-	2	-	-	1	1	1	1	2	-
19*	5	22	56816-311	Qag	-	1	1	-	1	1	-	2	-	-	-	-	1	-	-
20 X1	5	23	56179-194	Kpq	4	-	-	3	1	-	3	1	-	-	-	-	-	-	-
21*	5	23	56305-330	Qag,Kpq	4	1	1	5	-	1	1	-	1	3	-	-	3	2	-
22*	5	24	56072-056	Kpq,Qag	3	-	1	1	1	1	2	1	1	2	1	-	3	1	-
23	5	24	56011-996	Tb	2	2	-	4	-	-	2	1	1	1	-	-	1	-	-
24	5	25	55335-355	Kpa	5	-	-	3	-	-	2	-	-	2	1	-	3	-	-
25	5	26	54709-694	Kpa	3	1	-	1	-	-	2	-	-	2	1	-	1	2	-
26*X2		27	46966-987	Mzg	1	2	2	2	1	-	3	2	-	2	-	-	2	-	-
27 X2		27	47052-068	Mzg	2	-	2	1	-	-	2	-	-	-	-	-	-	-	-
28 X4		27	47078-098	Mzg,Pzg	3	1	1	-	3	1	1	2	2	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
29*		27	47614-634	Mzg	1	3	1	-	-	-	-	-	-	-	-	5	-	-	5
30*		27	47649-669	Mzg	4	-	1	-	-	-	-	-	-	-	2	3	2	-	2
31	10	27	48438-493	TMzg	9	3	-	2	1	-	2	1	-	8	2	-	5	3	-
32*	9&10	28	49295-240	Kq,TMzg	9	1	2	1	-	-	2	-	-	5	6	1	4	5	1
33*	10	28	49144-128	Qgo	-	2	2	-	-	-	2	1	-	1	3	-	1	1	1
34*	6	29	46076-056	Mzg	3	1	1	1	-	-	3	1	-	3	-	-	2	-	-
35*	7	29	45970-950	Pzg	3	1	1	-	1	-	1	-	-	3	1	-	2	1	1
36	7	29	45864-844	Mzg,Tc	2	3	-	2	-	-	3	1	-	3	-	-	1	-	-
37*	7	29	44730-664	Kq,TMzg	8	3	3	3	-	1	8	1	-	4	8	-	5	6	-
38	7	29	44639-618	TMzg	4	1	-	2	-	-	2	-	-	4	-	-	3	-	-
39	8	29	44553-532	TMzg,Qgo	5	-	-	-	-	-	2	-	-	2	2	-	2	-	-
40	10	30	50328-343	TMzg	4	-	-	2	2	-	2	-	-	-	-	-	-	-	-
41	6	31	35818-828	Tc	1	2	-	1	-	-	-	-	-	2	-	-	2	-	-
42	6	31	36106-131	Mzg	5	1	-	2	-	-	3	-	-	1	2	-	2	-	-
43*	6	31	36142-172	Mzg	2	4	1	-	-	-	3	-	-	5	1	-	1	-	1
44	7	31	36293-303	Mzg	2	1	-	-	-	-	1	-	-	1	-	-	2	-	-
45*	7	31	36404-435	Mzg,Tc	3	2	2	-	2	-	1	1	1	4	-	1	3	1	-
46	7	31	36541-556	Tc	4	-	-	-	-	-	3	-	-	1	-	-	1	-	-
47	7	31	36566-586	Tc	2	3	-	3	1	-	-	5	-	1	-	-	-	-	-
48	8	31	36865-905	Mzg	4	4	-	1	-	-	2	-	-	4	2	-	6	-	-
49	9	31	37299-315	Tgf,Eod	3	1	-	-	-	-	1	-	-	2	1	-	1	1	-
50	10	31	37638-688	TMzg,Qgo	5	2	-	3	2	-	2	1	-	4	-	-	2	3	-
51	10	31	37679-719	Qgo,TMzg	4	5	-	4	2	1	6	-	-	1	1	-	7	-	-
52*	10	31	37754-800	Qgo,TMzg	6	1	3	2	-	-	1	1	1	3	5	1	2	3	2
53	9	32	38802-797	Tgf,Eod	-	2	-	-	-	-	-	-	-	1	1	-	-	1	-
54*	10	32	38519-468	Qgo	3	5	2	6	1	-	2	-	-	5	2	-	3	6	-
55*	10	32	38397-362	Qgo,TMzg	5	2	1	1	-	-	2	-	-	2	3	2	1	6	-
56*X6	6	33	35667-622	Q,Mzg	3	2	5	1	-	-	2	-	-	2	2	-	2	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57	6	33	35612-592	Mzg	3	2	-	-	1	-	1	-	-	2	1	-	-	2	-
58	6	33	35445-435	Mzg	2	1	-	2	-	-	2	-	-	1	-	-	1	-	-
59	6	33	35369-324	Mzg	2	8	-	2	1	-	7	-	-	3	-	-	4	-	-
60*	7	33	25238-197	Mzg,Qg	6	2	1	2	-	-	2	1	-	6	-	-	5	-	-
61*X1	7	33	35137-111	Q,Tc	1	1	4	5	-	-	2	4	-	5	-	-	-	-	-
62*	7	33	35101-061	Tc	6	2	1	3	2	1	8	-	-	2	-	-	-	-	-
63	7	33	35015-000	Tc	1	3	-	1	3	-	2	2	-	-	-	-	-	-	-
64 X2	7	33	34949-939	Mzg	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-
65	8	33	34661-651	Mzg	1	2	-	-	-	-	-	-	-	2	1	-	-	2	1
66	8	33	34560-540	Pzc	5	-	-	-	-	-	-	-	-	3	1	-	3	1	-
67*	10	33	33989-943	Qgo	5	3	2	7	-	-	1	-	-	2	2	1	5	2	2
68*	10	33	33862-847	Qgo,TMzg	1	1	2	1	1	-	1	1	-	2	1	-	2	1	-
69	9	34	39467-492	Tgf,Ca	4	2	-	-	-	-	3	-	-	3	1	-	1	1	1
70	10	34	45257-242	Qgo	3	1	-	1	1	-	1	1	-	3	-	-	1	1	-
71	7	35	59790-810	Mzg	4	1	-	4	-	-	4	1	-	1	-	-	-	-	-
72	7	35	60022-027	Tc	1	-	1	-	2	-	2	-	-	-	-	-	-	-	-
73	6	37	58969-954	Mzg	2	2	-	2	-	-	-	-	-	2	-	-	3	-	-
74	7	37	58544-534	Tc	2	1	-	-	3	-	-	3	-	-	-	-	-	-	-
75	7	39	64971-986	Mzg	3	1	-	3	-	-	3	-	-	-	-	-	-	-	-
76*	7	41	63853-803	Mzg	6	4	1	7	1	-	9	-	-	2	-	-	2	-	-
77*	7	41	63783-767	Mzg	4	1	1	2	-	-	2	-	-	1	-	-	-	-	-
78 X2	7	41	63444-439	Tc	-	2	-	-	2	-	-	1	1	-	-	-	-	-	-
79*	8	41	63014-984	Mzg	2	3	2	4	2	-	2	-	-	-	1	-	4	1	1
80*	9	41	62691-680	Kq,pЄt	-	-	3	-	1	1	1	1	1	-	-	3	-	-	3
81*	9	42	62140-115	Kq,pЄt	2	-	4	2	2	1	1	2	1	1	1	4	1	-	5
82*	6	43	56793-823	Mzg,Tc	1	5	1	2	5	-	4	1	-	-	-	-	4	-	-
83*	7	43	56904-930	Mzg	3	1	2	1	2	2	4	2	-	2	-	-	1	-	1
84	8	43	57683-713	Kg	4	3	-	3	2	1	2	3	2	1	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
85*	9	43	57996-027	Kq,pEt	1	1	5	1	1	3	1	3	1	1	-	6	1	-	6
86 X5	9	44	58782-762	Kq,pEt	1	-	4	3	-	2	1	1	3	1	-	2	1	-	2
87*	7	45	55842-832	Mzg	-	2	1	-	2	-	1	1	-	1	-	-	2	-	-
88*	6	47	36071-091	Tc	3	1	1	2	-	-	4	-	-	3	-	-	2	-	-
89*	6	47	36101-147	Tc	4	4	2	7	3	-	8	2	-	2	-	-	-	-	-
90*	6	47	36298-324	Tc	3	2	1	2	-	-	5	1	-	3	-	1	1	-	-
91*	6	47	36445-460	Mzg	2	1	1	1	3	-	3	-	-	-	-	-	3	-	-
92	7	47	36496-511	Mzg	2	2	-	-	-	-	-	-	-	1	2	-	1	2	-
93*	7	47	36582-602	Tc	1	2	2	3	-	-	3	2	-	4	-	-	-	-	-
94*	7	47	36860-865	Mzg	1	-	1	-	-	-	1	-	-	-	-	1	-	1	-
95	8	47	37032-072	Mzg	4	5	-	5	1	-	5	-	-	1	-	-	4	-	-
96	8	47	37173-194	Tc	4	1	-	2	-	-	2	-	-	1	1	-	1	1	-
97*	8	47	37239-249	Tc	1	1	1	-	-	-	-	-	-	1	2	-	2	1	-
98	9	47	37492-507	Kq	3	1	-	1	-	-	1	-	-	2	-	-	2	2	-
99	9	48	38374-354	Qg,Ka	3	2	-	3	-	1	3	-	-	2	-	-	4	1	-
100*X2	6	49	35752-737	Tc	1	2	1	1	-	-	1	-	-	-	1	-	-	1	-
101	6	49	35697-682	Qe	4	-	-	-	-	-	-	-	-	2	2	-	3	1	-
102	6	49	35646-631	Tc	2	2	-	1	-	-	1	1	-	2	-	-	2	-	-
103*	7	49	35383-358	Tc	-	2	4	3	-	-	3	1	-	2	4	-	1	1	1
104	7	49	35297-282	Tc	3	1	-	1	-	-	2	2	-	3	-	-	-	-	-
105	7	49	35272-201	Tc	6	9	-	7	-	-	13	2	-	6	1	-	1	-	-
106*	7	49	35191-171	Tc	3	1	1	3	-	-	4	-	-	1	1	-	1	-	-
107 X3	7	49	35070-059	Qg,Mzg	1	-	2	1	-	-	1	2	-	-	-	-	-	-	-
108	6	51	58829-865	Tc	6	2	-	6	-	-	6	-	-	-	1	-	1	1	-
109	6	51	59097-108	Tc	2	1	-	2	1	-	-	2	1	-	-	-	-	-	-
110	7	51	59320-345	Tc	6	-	-	5	-	-	4	2	-	-	-	-	-	-	-
111	7	51	59360-381	Tc	4	1	-	3	1	-	2	2	-	1	-	-	-	-	-
112	7	51	59482-507	Tc	5	1	-	3	1	-	1	5	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
113	7	51	59522-542	Tc	4	1	-	4	-	-	3	2	-	1	-	-	-	-	-
114	8	51	60078-093	Tc	4	-	-	4	-	-	4	-	-	-	-	-	-	-	-
115	9	52	61494-489	Ca	-	2	-	2	-	-	-	-	-	1	-	-	1	-	-
116*	9	52	61287-	Tgf	-	-	1	-	-	1	1	-	-	-	-	-	1	-	-
117	6	53	58466-456	Qe	2	1	-	-	-	-	-	-	-	2	1	-	2	1	-
118	6	53	58289-274	Tc	3	1	-	3	1	-	-	4	-	-	-	-	-	-	-
119	7	53	57991-960	Tc	3	4	-	6	1	-	2	5	-	2	-	-	-	-	-
120 X1	8	53	57783-	Qe	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-
121	8	53	57677-662	Mzg	3	1	-	3	1	-	2	-	-	-	-	-	2	-	-
122	6	55	49234-254	Qe	2	3	-	-	-	-	1	-	-	2	3	-	2	2	-
123*X8	6	55	49411-461	Tc	4	2	5	6	2	-	2	4	4	-	-	1	-	-	1
124*	6	55	49477-497	Tc	3	1	1	4	1	-	1	3	1	1	-	-	-	-	-
125	7	55	49547-558	Tc	1	2	-	-	-	-	-	-	-	-	1	2	2	-	1
126	7	55	49977-987	Tc	1	2	-	1	-	-	2	-	-	3	-	-	1	-	-
127	6	57	47310-295	Qe	2	1	-	-	-	-	-	-	-	2	1	-	2	1	-
128	6	57	47274-229	Qe	8	2	-	-	-	-	2	-	-	6	2	-	5	-	-
129	6	57	47128-112	Qe	3	1	-	-	-	-	-	-	-	-	2	2	1	1	2
130*X1	6	57	47067-021	Tc	3	2	5	1	2	4	1	2	4	3	1	-	2	1	-
131*X3	7	57	46951-930	Tc	2	2	1	2	2	-	3	-	-	-	1	-	1	-	1
132 X2	7	57	46758-748	Tc	2	1	-	-	-	-	-	-	-	1	-	-	-	1	-
133 X1	7	57	46662-	Tc	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-
134	7	57	46627-617	Tc	2	1	-	1	-	-	2	-	-	1	-	-	-	-	-
135	8	57	46288-273	Tc	3	1	-	1	-	-	3	-	-	1	1	-	1	-	-
136*X1	10	57	45580-571	Tcl,TMzg	-	2	1	2	1	-	2	-	-	-	1	-	1	1	-
137*	9	57	63095-	Qe	-	-	1	-	1	-	-	1	-	2	-	-	2	-	-
138	9	58	63105-113	Qe	2	1	-	-	2	1	3	-	-	-	-	-	-	-	-
139 X3	8	59	35340-330	Mzg	2	1	-	-	-	-	1	-	-	-	-	-	-	-	-
140	8	59	35320-	Mzg	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
141	8	59	35107-092	Te	4	-	-	3	1	-	3	1	-	-	-	-	-	-	-
142	9	59	34895-880	Qe	4	-	-	-	2	2	1	2	1	-	-	-	-	-	-
143	9	59	34804-789	Kq,Qg	4	-	-	-	1	3	1	1	2	-	-	-	-	-	-
144*	9	59	34723-703	Qg,Kq	2	2	1	1	-	1	2	-	-	2	2	1	1	2	2
145*	9	60	38929-889	Qe	2	3	4	-	2	7	2	1	5	-	-	-	1	1	-
146	9	60	38823-803	Kq,Qg	4	1	-	1	4	-	5	-	-	1	-	-	4	1	-
147*X4	9	60	38742-717	Qg,Kq	1	-	5	2	1	3	2	-	4	1	-	4	1	-	4
148*	8	61	37138-149	Tc	1	1	1	1	-	-	2	1	-	1	1	-	1	-	-
149*	9	61	37326-361	Qe	2	4	2	2	2	4	2	2	2	1	-	-	2	1	-
150 X2	9	61	37401-422	Kq	4	1	-	-	-	5	-	3	2	-	-	-	1	-	-
151 X4	9	61	37432-452	Kq,Qgo	4	1	-	-	1	-	2	2	-	1	-	-	-	1	-
152*X1	9	61	37502-548	Qe,Kq	-	-	10	2	-	5	2	-	5	-	-	9	-	-	9
153	10	61	37760-775	TMzg	4	-	-	-	-	-	-	-	-	2	-	-	3	-	-
154	14	62	39248-268	Kq	5	-	-	-	1	4	-	4	1	-	-	-	-	-	-
155*	14	62	39339-354	Qg	1	-	3	2	1	1	3	1	-	1	1	2	1	-	3
156	13	63	45106-096	Tc	2	1	-	3	-	-	2	1	-	-	-	-	-	-	-
157	14	65	48925-945	Kg	3	2	-	2	-	-	1	-	-	1	1	1	2	2	-
158	13	67	34753-738	Tc	3	1	-	2	1	-	1	3	-	-	-	-	-	-	-
159	14	69	36949-959	Qe	2	1	-	1	2	-	2	-	-	-	-	-	1	-	-
160	15	70	39278-293	Qgy,TMzg	2	2	-	1	2	-	2	1	1	-	-	-	1	-	-
161	14	73	44853-863	Kg	1	2	-	1	1	-	1	-	-	1	-	-	2	-	-
162	14	75	46912-901	Pzmp	1	2	-	2	-	-	2	-	-	1	-	-	1	-	-
163*	14	75	46856-846	Kg	1	1	1	1	1	-	1	1	-	1	1	-	2	-	-
164*	14	76	46977-	Pzmp	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-
165	14	76	46987-47002	Kg	3	1	-	-	-	-	-	-	-	-	1	-	1	-	-
166	13	79	44334-324	Tc	2	1	-	-	-	-	-	-	-	2	1	-	2	1	-
167	14	79	44076-061	Tc	2	2	-	1	-	-	1	-	-	3	-	-	2	-	-
168 X1	13	81	45131-141	Tc	2	1	-	-	-	-	-	-	-	-	1	1	-	1	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
169	13	81	45232-242	Tc	2	1	-	1	-	-	3	-	-	1	-	-	-	-	-
170 X2	14	81	45717-733	Pzmp	2	2	-	3	-	-	2	-	-	1	-	-	-	-	-
171	14	82	48430-440	Qe	1	2	-	2	-	-	1	-	-	1	-	-	1	-	-
172	14	82	48505-526	Tc	2	3	-	1	4	-	3	2	-	-	-	-	-	-	-
173	14	82	48703-708	Pzmp	-	2	-	-	-	-	-	-	-	-	2	-	-	1	1
174	14	83	54899-889	Tc	2	1	-	1	2	-	3	-	-	-	-	-	-	-	-
175	14	84	49145-130	Qe	3	1	-	3	1	-	2	-	2	-	-	-	-	-	-
176*	14	84	49070-034	Tc,Tgf	4	3	1	-	7	1	6	1	-	1	-	-	2	-	-
177	13	87	57377-367	pEwl	-	3	-	-	-	-	-	-	-	1	1	-	3	-	-
178 X2	14	92	50918-913	Pzmp	-	2	-	2	-	-	-	2	-	-	-	-	-	-	-
179	14	95	35653-633	Qe	4	1	-	-	-	-	-	-	-	4	1	-	4	-	1
180*	14	95	35370-350	Qe	4	-	1	1	-	-	-	-	-	2	-	1	1	2	-
181	14	95	35325-310	Tc	3	1	-	1	-	-	-	-	-	1	1	-	2	1	1
182*	14	95	35294-284	Tc	1	1	1	-	-	-	1	-	-	-	2	1	1	1	1
183*	14	95	35274-264	Kg	1	1	1	-	-	-	-	-	-	1	-	2	1	-	2
184	14	95	35254-193	Qe,Kg	6	7	-	-	-	-	3	-	-	8	4	1	6	3	3
185*	14	95	35183-122	Kg,Tc	5	7	1	5	-	-	1	-	-	6	2	1	-	7	3
186		95	35072-042	Pzmp,Tc,Qe	6	1	-	3	-	-	-	-	-	4	-	-	5	-	-
187		95	35031-007	Qe,Qp	4	2	-	-	-	-	1	-	-	2	3	-	1	3	-
188	6	101	47607-627	Qe,Tc	5	-	-	3	-	-	-	-	-	-	-	-	1	-	-
189	6	101	47718-748	Tc	3	4	-	3	2	-	2	3	-	1	-	-	2	-	-
190	6	101	47799-829	Mzg	3	4	-	1	-	-	4	-	-	4	-	-	4	-	-
191	6	102	48569-554	Qe	4	-	-	-	-	-	1	-	-	2	-	-	2	-	-
192	7	105	35891-876	Tc	2	2	-	1	1	-	1	3	-	2	-	-	-	-	-
193	7	105	35866-856	Tc	2	1	-	3	-	-	2	1	-	-	-	-	-	-	-
194*X1	13	107	36303-308	Tc	-	-	2	1	-	-	1	-	-	-	-	1	-	-	1
195	8&13	107	36379-409	Mzg	4	3	-	1	1	2	1	5	-	1	-	-	1	-	-
196 X1	8	107	36424-429	Mzg	1	-	1	2	-	-	1	1	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.2 Continued

TABLE 15

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.I. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
197 X1	8	107	36717-746	Mzg	6	1	-	-	-	-	-	-	-	1	1	4	2	3	1
198*	13	108	37383-378	Tc	-	1	1	-	-	-	2	-	-	2	-	-	1	-	-
199*	8	108	37206-201	Tc	-	1	1	-	-	-	1	-	-	1	-	1	2	-	-
200*	8	109	38275-305	Kg	2	4	1	5	-	-	5	-	-	5	1	-	5	1	-
201	8	109	38330-335	Kg	-	2	-	2	-	-	1	-	-	2	-	-	2	-	-
202	14	112	46443-438	Qe	-	2	-	-	-	-	2	-	-	2	-	-	-	-	-
203	14	112	46417-402	Tc	2	2	-	3	1	-	3	-	-	-	-	-	-	-	-
204	14	113	47225-240	Tc	3	1	-	3	1	-	1	3	-	-	-	-	-	-	-
205*	14	113	47300-305	Qg	1	-	1	1	-	-	-	-	-	1	-	1	1	-	1
206	14	115	52094-104	Kg	1	2	-	1	-	-	2	-	-	3	-	-	1	1	-
207	14	115	52114-130	Kg	3	1	-	-	-	-	-	-	-	1	1	-	3	-	-
208*	14	115	52190-205	Kg	2	-	2	-	-	-	-	-	-	2	1	1	2	1	1
209	15	116	50243-263	Qgy,Qal	4	1	-	-	-	-	-	-	-	2	1	1	3	1	1
210	15	116	40304-314	Tcl	1	2	-	1	-	-	-	-	-	2	-	-	3	-	-
211*	5	118	59956-	Qag	-	-	1	1	-	-	1	-	-	-	1	-	-	1	-
212	5	118	59931-915	pEdt	4	-	-	2	-	-	2	-	-	1	-	-	-	1	-
213	5	119	60358-368	Qag	2	1	-	-	-	-	2	-	-	1	1	-	2	-	-
214*	5	120	60838-822	Qag	2	-	3	-	3	2	4	-	-	2	1	-	1	2	2

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	5	15	60010-026	231	3	1	-	2	-	-	-	-	-	2	-	-	3	1	-
2	5	16	59765-735	231	5	2	-	2	-	-	-	-	-	4	-	-	2	-	-
3	5	16	59710-695	231	4	-	-	2	1	-	-	-	-	1	-	-	3	-	-
4	5	17	58709-725	231	3	1	-	1	-	-	-	-	-	-	1	-	3	-	-
5	5	17	58790-806	231	4	-	-	3	-	-	1	-	-	-	-	-	2	-	-
6	5	17	58826-841	231,131	3	1	-	1	-	-	-	-	-	3	-	-	1	2	-
7	5	17	58957-972	230	3	1	-	3	1	-	-	-	-	-	-	-	2	1	-
8	5	18	58614-579	141,231	6	2	-	4	-	-	2	-	-	4	-	-	6	-	-
9*	5	19	57917-	231	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
10*	5	19	58034-044	231	2	-	1	2	-	-	-	-	-	1	1	-	2	1	-
11*	5	22	56862-856	231,101	-	1	1	-	-	-	-	-	-	-	1	1	-	1	1
12	5	23	56199-209	231	1	2	-	3	-	-	2	-	-	1	-	-	2	-	-
13	5	23	56234-250	231	4	-	-	-	-	-	-	-	-	1	-	-	1	-	-
14	5	23	56280-290	231	2	1	-	3	-	-	2	-	-	1	-	-	1	-	-
15	5	24	56051-031	231	2	3	-	3	-	-	-	-	-	3	-	-	4	-	-
16	5	24	55996-976	231,230	4	1	-	1	-	-	-	-	-	4	-	-	2	1	-
17*X2		27	46944-987	201,191	1	2	2	-	-	-	1	2	-	1	1	1	2	1	-
18		27	47234-245	230	1	2	-	-	1	1	1	2	-	-	1	-	-	-	-
19*X1		27	47255-275	230	-	4	1	-	-	-	4	1	-	1	3	-	1	-	-
20*		27	47603-634	211,231	2	3	2	-	-	-	-	-	-	2	-	5	1	3	2
21		27	47649-669	231	4	1	-	-	-	-	1	-	-	-	1	4	-	1	1
22	9	27	48362-377	231	1	3	-	3	-	-	-	-	-	1	-	-	3	-	-
23	10	27	48529-549	231	4	1	-	2	-	-	-	-	-	1	-	-	3	1	-
24*	10	27	48599-605	230	-	1	1	-	-	-	-	-	-	1	-	1	-	-	2
25	9	28	49528-523	360	-	2	-	-	1	1	2	-	-	-	-	-	1	-	-
26 X1	9	28	49331-	231	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-
27*	9&10	28	49295-255	101,141	3	5	1	1	1	-	2	-	-	6	2	1	4	5	-
28*	10	28	49209-184	231	5	-	1	4	-	-	1	-	-	3	-	-	4	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
29*	10	28	49144-123	231,230	-	3	2	-	-	-	1	-	-	2	3	-	2	1	2
30*	6	29	46076-056	201	3	1	1	1	-	-	2	-	-	4	1	-	4	-	-
31	7	29	45864-844	230	2	3	-	1	-	-	3	2	-	2	1	-	1	-	-
32	8	29	45268-252	230	3	1	-	2	-	-	-	-	-	2	-	-	1	2	-
33	8&9	29	38638-649	230	2	1	-	-	-	-	-	-	-	1	2	-	3	-	-
34*	9	29	44871-861	230	2	-	1	1	2	-	1	2	-	1	-	-	-	-	-
35*	9	29	44730-704	101	3	2	1	-	-	-	-	-	-	2	3	-	2	4	-
36*	10	29	44684-679	131	-	1	1	-	-	-	-	1	-	-	2	-	2	-	-
37	10	29	44659-644	221	4	-	-	-	-	-	-	-	-	2	2	-	3	1	-
38*	10	29	44623-598	131,231	4	1	1	1	-	-	-	-	-	2	2	-	4	1	1
39	10	29	44568-532	231,230	6	2	-	-	-	-	-	-	-	5	2	-	4	4	-
40	9	30	50106-126	230	1	4	-	1	3	-	4	1	-	1	-	-	1	-	-
41	9	30	50232-242	231	2	1	-	1	-	-	-	-	-	-	-	-	1	-	-
42*	6	31	35818-864	230	3	5	2	2	-	-	5	-	-	3	1	4	3	1	2
43	6	31	35874-889	230	3	1	-	-	-	-	2	2	-	2	1	-	-	-	-
44	6	31	35980-36000	230	4	1	-	3	-	-	3	2	-	1	-	-	-	-	-
45*	6	31	36106-131	231,201	5	-	1	1	1	-	-	2	-	1	-	2	1	1	-
46	7	31	36339-359	201,271	3	2	-	3	-	-	2	1	-	1	1	-	1	-	1
47*	7	31	36389-410	230	1	3	1	1	-	-	1	2	-	3	-	1	2	-	-
48*	7	31	36430-435	230	-	1	1	1	-	-	1	-	1	1	-	1	-	-	-
49	7	31	36566-586	230	3	2	-	3	-	-	-	4	1	2	-	-	-	-	-
50	8	31	36870-900	231	3	4	-	2	-	-	3	2	-	3	2	-	3	-	-
51	8	31	37021-026	230	1	-	1	-	1	1	1	1	-	-	-	-	1	-	-
52	9	31	37163-188	230	3	3	-	-	-	-	-	-	-	-	2	4	3	2	1
53	9	31	37218-244	230	3	3	-	-	-	-	1	-	-	1	2	2	2	2	-
54	9	31	37309-335	230,260,270	4	2	-	2	1	-	1	1	-	2	1	-	4	-	1
55*	9	31	37411-446	231,230	4	2	2	4	-	-	3	-	-	5	1	-	3	2	-
56*	9	31	37547-557	141,231	1	1	1	1	-	-	1	-	-	2	-	-	2	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Ficucials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57	9&10	31	37608-613	231,230	-	2	-	2	-	-	1	-	-	-	-	-	1	-	-
58*	10	31	37694-719	230	-	1	5	2	1	1	3	-	-	2	2	-	1	5	-
59	10	31	37729-739	231	2	1	-	1	-	-	1	-	-	-	1	-	-	1	-
60	9	32	38928-903	230	4	2	-	2	-	-	4	-	-	5	-	-	1	-	-
61	9	32	38893-883	230	-	3	-	-	-	-	-	-	-	1	2	-	2	1	-
62*	9	32	38802-782	230,260	1	3	1	3	1	-	1	-	-	2	2	-	1	3	1
63	9	32	38696-686	230	2	1	-	1	1	-	3	-	-	1	-	-	-	-	-
64	10	32	38473-453	230	3	2	-	3	-	-	-	-	-	2	-	-	3	2	-
65	10	32	38443-418	230	5	1	-	2	-	-	-	-	-	4	-	-	3	-	1
66*X3	6	33	35657-642	140	1	2	1	-	-	-	1	1	-	-	1	-	-	-	-
67*X1	6	33	35627-602	140,230	3	2	1	-	-	-	3	1	-	1	4	-	4	-	-
68	6	33	35415-394	231,101	4	1	-	-	-	-	-	-	-	2	2	1	3	-	-
69*	7	33	35202-192	201,271	2	-	1	1	-	-	1	-	-	-	1	-	1	-	-
70*	7	33	35111-	230	-	-	1	1	-	-	-	1	-	1	-	-	-	-	-
71	7	33	35101-091	230	2	1	-	-	-	-	3	-	-	2	1	-	-	-	-
72 X1	7	33	35081-066	230	2	2	-	3	1	-	3	1	-	1	-	-	-	-	-
73 X2	7	33	34949-939	231	1	-	2	2	-	-	2	-	-	-	-	-	-	-	-
74	8	33	34561-651	231	1	2	-	-	-	-	-	-	-	2	1	-	1	2	-
75*	8	33	34540-479	231,230	6	4	3	2	-	-	1	-	-	5	7	1	5	6	2
76*	8&9	33	34439-363	231,230	6	7	3	7	-	-	7	-	-	2	5	4	7	4	-
77*	9	33	34166-146	230,221	2	-	3	1	2	-	4	-	-	4	1	-	4	-	-
78*	9&10	33	34014-979	231,230	1	3	4	3	-	1	1	-	-	2	1	3	4	1	3
79*	10	33	33953-923	230	3	3	1	2	-	-	-	-	-	4	1	-	2	2	2
80	10	33	33893-868	230	4	2	-	1	-	-	-	-	-	4	-	-	3	3	-
81	10	33	33842-817	230	2	4	-	-	-	-	-	-	-	1	4	1	1	2	3
82	10	33	33787-777	230	2	1	-	-	-	-	-	-	-	-	1	2	-	-	3
83	8	33	39270-280	230	1	2	-	2	-	-	-	-	-	1	-	-	2	-	-
84*	9	33	39376-416	230	3	5	1	1	-	-	4	1	-	5	4	-	3	1	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
85	9	34	39467-492	230,260	4	2	-	-	-	-	1	-	2	4	1	-	1	1	-
86	9	34	45510-505	231	-	2	-	1	-	-	-	-	-	1	-	-	1	1	-
87*	9&10	34	45393-383	231,230	2	-	1	1	-	-	-	-	-	1	1	-	-	1	1
88*	10	34	45373-368	230	1	-	1	-	-	-	-	-	-	-	1	-	-	1	1
89*	10	34	45257-237	230	2	2	1	-	2	-	2	-	-	2	2	-	2	1	1
90	7	35	59795-810	191,201	3	1	-	1	1	-	1	1	-	-	1	-	-	-	-
91	6	37	59065-045	230	2	3	-	2	1	-	2	3	-	-	1	-	1	-	-
92	6	37	58999-984	230	3	1	-	2	1	-	-	2	2	1	-	-	-	-	-
93*	6	37	58969-949	230,361	1	2	2	2	3	-	1	4	-	2	-	-	1	-	-
94*X1	9	38	63238-233	231	-	-	2	1	-	1	1	1	-	-	-	1	-	-	1
95	6	39	64561-582	230	5	-	-	3	-	-	3	2	-	1	-	-	-	-	-
96 X2	6	39	64632-647	230	2	2	-	1	-	-	1	2	1	2	-	-	-	-	-
97	9	39	65942-957	230	4	-	-	4	-	-	1	3	-	-	-	-	-	-	-
98	9	39	66124-134	101,231	1	2	-	-	-	-	-	-	-	1	1	1	1	1	1
99*	9	40	62801-811	231	-	2	1	1	1	-	1	-	-	1	-	1	2	-	1
100 X3	7	41	63510-499	201	2	1	-	1	-	-	-	1	-	-	-	-	-	-	-
101*	9	41	62680-675	231	-	-	2	-	-	1	-	1	-	-	-	2	-	-	2
102	9	42	62195-190	101,191	-	2	-	2	-	-	1	-	-	-	-	-	-	1	-
103*	9	42	62130-125	11	-	1	1	-	1	1	2	-	-	2	-	-	-	1	1
104*	9	42	62115-110	231	-	-	2	-	-	-	-	-	-	-	-	2	-	-	2
105*	6	43	56818-823	230	-	1	1	-	2	-	1	1	-	1	-	-	1	-	-
106*	7	43	56919-930	101,361	1	-	2	-	1	1	-	2	-	-	-	-	1	-	-
107	8	43	57723-738	231,361	4	-	-	2	1	1	3	1	-	-	-	-	-	-	-
108*	9	43	58006-027	11,231	2	2	1	3	-	-	1	-	-	3	1	1	2	2	1
109	9	44	58853-843	101,221	2	1	-	-	1	1	-	1	1	-	-	-	1	-	-
110*X1	9	44	58802-797	191,221	3	-	1	-	-	-	1	-	-	-	1	-	2	-	-
111*	9	44	58767-752	11,131	3	-	1	-	-	1	1	-	1	1	1	1	-	-	2
112*	7	45	55832-827	361	-	-	1	1	-	1	-	-	1	-	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
113*	9	45	54861-856	221	1	-	1	-	1	1	1	1	-	-	-	-	1	-	-
114*	9	45	54796-	131	-	-	1	1	-	-	1	-	-	1	-	-	1	-	-
115*	9	45	54786-	221	-	-	1	1	-	-	-	-	-	1	-	-	-	-	1
116*	9	46	59377-393	101,221	1	2	1	2	1	1	2	1	-	1	-	-	2	-	1
117	6	47	36071-086	230	3	1	-	1	-	-	3	1	-	1	1	-	1	-	-
118	7	47	36496-511	231	2	2	-	-	-	-	2	-	-	-	3	-	1	1	-
119	7	47	36592-602	201,230	1	2	-	2	-	-	1	1	-	1	1	-	1	-	-
120	8	47	37173-189	230	3	1	-	2	-	-	2	-	-	1	1	-	1	1	-
121	8	47	37244-254	271	1	2	-	-	-	-	-	-	-	1	-	-	-	1	-
122	9	47	37345-371	191,230	5	1	-	4	1	1	1	1	-	-	-	-	3	-	-
123*	9	47	37426-467	230	2	6	1	1	-	-	7	1	-	3	4	1	5	-	-
124*X1	9	47	37482-512	101,221	1	-	6	3	-	-	-	1	1	2	-	2	2	1	3
125	8	48	38602-592	231	1	2	-	2	-	-	2	-	-	-	-	1	1	1	-
126	9	48	38516-511	230	-	1	1	-	2	-	-	1	1	-	-	-	-	-	-
127*X2	9	48	38496-480	230,100,270	2	1	1	-	2	-	-	2	-	-	-	2	-	-	2
128*	9	48	38374-354	101	1	2	2	-	-	-	-	-	-	3	-	-	2	3	-
129	9	48	38293-283	101,191	2	1	-	3	-	-	-	-	-	-	-	-	3	-	-
130*X2	6	49	35752-737	230	2	1	1	1	-	-	1	-	-	-	1	-	-	-	1
131*	7	49	35383-358	201,230	-	4	2	1	-	-	1	1	-	2	2	2	1	1	3
132	7	49	35302-287	230	3	1	-	1	-	-	2	2	-	4	-	-	-	-	-
133	7	49	35272-206	230	9	5	-	7	-	-	12	2	-	8	1	-	1	-	-
134	7	49	35196-171	230	4	2	-	3	-	-	3	1	-	2	1	-	1	-	-
135 X3	7	49	35070-059	111,231	-	1	2	1	-	-	1	2	-	-	-	-	-	-	-
136	8	49	34817-786	191,231,271	5	2	-	1	-	-	1	-	-	3	2	-	4	2	-
137	9	49	34538-508	231,230	5	2	-	4	1	1	3	1	-	2	-	-	2	-	-
138 X3	9	49	34483-473	231,270	1	-	2	-	1	-	-	1	-	-	-	-	-	-	-
139	9	49	34432-422	230	2	1	-	-	-	-	2	-	-	1	1	-	1	-	-
140	9	49	34382-356	101,220	4	2	-	-	-	-	2	-	-	1	2	-	4	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
141*	9	49	34341-326	131,221	3	-	1	1	-	-	-	-	-	-	2	-	2	-	1
142*X4	9	50	38835-861	231,270	4	-	2	-	1	-	-	1	-	1	1	-	1	1	-
143*	9	50	38886-942	230,220	2	6	4	3	4	1	6	3	-	4	2	-	5	1	-
144	6	51	58829-855	230	5	1	-	3	-	-	5	-	-	-	1	-	-	-	1
145 X2	6	51	59032-047	270	2	-	2	1	-	3	1	-	3	-	-	-	-	-	-
146	7	51	59360-375	230	3	1	-	2	1	-	1	3	-	-	-	-	-	-	-
147	7	51	59527-542	230	3	1	-	-	-	-	2	2	-	2	-	-	-	-	-
148	9	51	60331-346	231,360	3	1	-	1	1	1	1	3	-	-	-	-	-	-	-
149	9	52	61368-	360	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-
150	7	53	57970-960	230	-	3	-	1	-	-	2	1	-	3	-	-	-	-	-
151 X1	8	53	57783-	191	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
152	8	53	57460-450	230	2	1	-	3	-	-	2	1	-	-	-	-	-	-	-
153 X3	8	53	57409-399	201,231	1	2	-	1	-	-	1	-	-	-	-	-	-	-	-
154	9	54	61801-816	190	3	1	-	1	-	-	2	-	-	-	-	-	1	-	-
155*X3	6	55	49411-426	270,201	-	-	4	-	1	1	-	-	2	-	-	1	-	1	-
156*	6	55	49482-492	230	1	1	1	3	-	-	-	2	1	1	-	-	-	-	-
157*	7	55	49542-563	360	2	1	2	1	-	-	4	1	-	2	2	-	2	1	-
158	8	55	50488-493	201,231	2	1	-	-	-	-	1	1	-	3	-	-	2	-	-
159	9	55	50963-968	221	-	2	-	2	-	-	1	-	-	-	-	-	2	-	-
160*	8	56	62897-892	231	1	-	1	1	1	-	1	-	-	-	-	-	1	1	-
161	9	56	62508-492	230	4	-	-	2	-	-	1	-	-	1	-	-	2	-	-
162	6	57	47375-365	240	2	1	-	1	-	-	-	-	-	1	-	-	2	-	-
163*X1	6	57	47067-052	270,101	2	1	1	-	1	-	2	-	1	2	-	-	1	-	-
164	6	57	47037-021	101,230	3	1	-	-	-	1	2	-	1	2	-	-	-	1	-
165*X3	7	57	46951-930	230	3	1	1	3	1	-	3	-	-	-	-	1	1	-	1
166 X2	7	57	46763-753	270,230	2	1	-	-	-	-	-	-	-	1	-	-	-	1	-
167	8	57	46233-217	230	4	-	-	1	-	-	2	-	-	3	-	-	1	-	-
168	8	57	46187-177	230,231	2	1	-	2	-	-	2	-	-	2	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
169*X1	9	57	45980-960	230,231,	3	-	2	2	1	-	2	2	-	1	1	-	2	-	-
170	9	57	45793-762	230	4	3	-	3	2	1	7	-	-	3	-	-	2	-	-
171	10	57	45621-611	230	1	2	-	1	-	-	-	-	-	2	1	-	2	1	-
172*X1	10	57	45580-571	230	-	1	2	1	2	-	2	-	-	-	1	-	1	1	-
173*X1	9	58	63191-206	101,231,361	2	-	2	-	1	1	2	-	1	-	-	1	-	1	-
174*	9	58	63454-459	230	-	1	1	-	-	2	-	2	-	-	-	-	1	-	-
175	9	58	63499-510	230	2	1	-	1	1	1	1	2	-	-	-	-	-	-	-
176*X3	8	59	35350-330	361,201	2	1	2	-	-	-	2	-	-	1	-	-	1	-	-
177 X1	8	59	35320-	201	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-
178	8	59	35107-092	230	4	-	-	3	1	-	2	2	-	-	-	-	-	-	-
179	9	59	34804-794	101	2	1	-	1	1	1	-	2	-	-	-	-	-	-	-
180	9	59	34784-779	231	-	1	1	-	1	-	-	1	-	-	-	1	1	-	1
181 X2	9	59	34748-733	271,231	2	1	1	-	-	-	2	-	-	1	-	1	1	-	-
182*	9	59	34703-	221	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1
183*	10	59	34485-	230	-	-	1	1	-	-	-	-	-	1	-	-	-	1	-
184	9	60	38949-939	230	1	2	-	-	-	3	2	1	-	-	-	-	-	-	-
185*X1	9	60	38823-793	101,231	2	4	1	3	1	-	3	1	-	-	1	-	4	-	1
186*X1	9	60	38732-722	11	1	1	1	1	-	2	-	1	2	2	-	-	1	-	-
187	9	60	38641-631	101,221	1	2	-	-	1	-	-	1	-	1	-	-	1	1	-
188	9	60	38555-535	230	3	1	1	1	3	1	3	2	1	-	-	-	-	-	-
189	10	60	38509-494	230	4	-	-	2	-	-	2	-	-	1	-	-	1	-	-
190*	8	61	37138-149	230	2	-	1	1	-	-	2	1	-	1	-	1	1	-	-
191	9	61	37320-336	230	2	2	-	2	2	-	-	-	-	1	-	-	2	1	-
192*X8	9	61	37401-472	101,231	7	5	3	3	1	4	5	3	1	3	-	-	3	1	-
193*X1	9	61	37508-528	11	3	-	2	2	2	-	2	2	1	2	1	-	4	-	-
194	9	61	37563-578	191	4	-	-	-	-	-	-	-	-	2	1	-	3	1	-
195	9	61	37588-599	191,231	1	2	-	-	1	-	1	-	-	2	-	-	2	1	-
196	9	61	37679-690	230	1	2	-	-	1	1	2	1	-	1	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
197 *	10	61	37750-786	231,230	4	-	4	7	-	-	3	-	-	4	1	-	3	3	-
198	10	61	37841-856	230	4	-	-	-	-	-	-	-	-	1	2	-	2	-	-
199	14	62	39248-268	101	5	-	-	1	2	2	2	3	-	-	-	-	-	-	-
200	15	62	39642-647	230	-	2	-	1	1	-	1	1	-	-	-	-	-	-	-
201	14	65	48935-945	191,231	1	2	-	1	-	-	-	-	-	2	1	-	2	1	-
202 *	15	65	49046-066	230	1	3	1	1	3	-	3	2	-	2	-	-	2	-	-
203	14	66	50488-503	230	3	1	-	1	1	-	2	1	-	1	1	-	1	-	-
204	13	67	34667-657	360,230	2	1	-	-	-	-	-	-	-	1	-	1	2	-	-
205	14	67	34116-091	231,230	3	3	-	3	-	-	-	-	-	4	-	-	5	-	-
206 *	15	67	33904-884	360	4	-	1	2	2	1	1	2	2	1	-	-	-	-	-
207 *	14	68	38276-261	230	3	-	1	1	1	-	1	2	-	1	1	-	-	1	-
208	15	68	38023-008	230	4	-	-	3	1	-	3	-	-	-	-	-	-	-	-
209	15	70	39177-192	230	3	1	-	1	-	-	4	-	-	2	-	-	-	-	-
210	15	70	39207-222	230	3	1	-	2	1	-	2	2	-	1	-	-	1	-	-
211 *	14	72	45494-489	231,201	-	1	1	1	-	-	-	-	-	-	1	1	1	-	1
212	15	72	45170-160	230	1	2	-	1	1	-	1	2	-	1	-	-	-	-	-
213 X1	14	73	44853-863	191	2	1	-	-	-	-	-	-	-	-	1	-	1	1	-
214	14	76	46825-840	231	4	-	-	-	-	-	1	-	-	1	-	-	-	-	-
215 X2	14	78	46054-044	361	2	1	-	1	-	-	1	-	-	-	-	-	-	-	-
216	14	78	45989-974	231	4	-	-	-	-	-	1	-	-	2	-	-	-	-	-
217	14	78	45938-918	231	5	-	-	1	-	-	4	-	-	2	-	-	-	-	-
218	13	79	44334-324	230	2	1	-	-	-	-	-	-	-	2	1	-	2	1	-
219 *	14	79	44097-091	270	1	-	1	-	-	-	1	-	-	-	-	1	2	-	-
220	14	79	43955-940	200,231	1	3	-	1	-	-	2	-	-	2	2	-	1	2	-
221	14	79	43884-869	361,231	1	3	-	-	-	-	-	-	-	-	2	1	2	1	1
222 X1	14	79	43773-758	231	3	1	-	2	-	-	1	-	-	-	1	-	2	-	-
223 X3	14	80	47588-578	231	2	1	-	2	-	-	2	-	-	-	-	-	-	-	-
224	13	81	45025-030	270	-	2	-	1	-	-	-	-	-	1	1	-	1	-	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochen. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
225*X1	13	81	45131-141	270,230	2	-	1	-	-	-	-	-	-	-	-	2	-	2	-
226	13	81	45227-242	230	3	1	-	1	-	-	3	-	-	2	-	-	1	-	-
227*X1	14	81	45490-525	191,231,200	2	4	2	1	-	-	5	-	-	2	4	4	4	-	1
228 X2	14	81	45707-738	231	6	1	-	2	-	-	-	-	-	1	1	1	2	1	-
229*	14	84	49034-029	200	-	1	1	1	-	-	1	-	-	1	1	-	-	1	1
230	14	84	48963-948	230	2	2	-	3	-	-	2	2	-	-	-	-	-	-	-
231	14	84	48903-893	230	2	1	-	1	-	-	2	-	-	2	-	-	-	-	-
232 X1	14	84	48872-867	230	-	1	1	-	2	-	-	1	1	-	-	-	-	-	-
233	14	86	49777-792	230	3	1	-	2	-	-	1	2	-	2	-	-	-	-	-
234*	12&13	95	35861-856	240	-	1	1	-	-	-	-	-	-	2	-	-	-	1	1
235*	13	95	35729-724	230,270	1	-	1	-	-	-	-	-	-	-	1	1	-	-	2
236	14	95	35325-310	230	3	1	-	1	-	-	-	-	-	1	-	1	2	1	1
237*	14	95	35264-224	230	8	-	1	3	-	-	-	-	-	2	1	-	5	3	-
238*	14	95	35213-173	230	3	4	2	-	3	-	1	1	-	3	1	1	2	3	1
239*	14	95	35163-122	230	3	5	1	4	-	-	-	-	-	5	-	1	1	4	3
240 X1	6	101	47678-688	270	2	1	-	1	-	-	1	1	-	-	-	-	-	-	-
241	6	101	47723-738	230	1	2	-	3	-	-	1	2	-	1	-	-	1	-	-
242*	6	101	47799-839	230	2	3	4	3	2	-	3	3	3	4	2	-	-	-	-
243	6	102	48432-422	361,230	1	2	-	1	-	-	2	-	-	1	-	-	-	-	-
244*X1	13	107	36303-318	360	-	1	3	1	1	-	1	-	1	-	1	2	-	1	2
245	8&13	107	36394-409	191,231	4	-	-	-	1	-	-	1	2	-	1	1	1	-	-
246 X1	8	107	36424-429	201	1	-	1	2	-	-	1	1	-	-	-	-	-	-	-
247 X1	8	107	36717-746	231	6	1	-	-	-	-	-	-	-	-	1	5	3	2	-
248*	13	108	37388-373	360	2	-	2	-	2	-	1	-	2	3	-	-	-	-	-
249*	8	108	37211-196	361	2	1	1	1	-	-	1	-	-	2	-	-	1	-	-
250	13	109	37794-799	350	-	2	-	1	-	-	1	1	-	1	-	-	-	-	-
251	9	110	39797-767	230	6	1	-	1	-	-	4	-	-	3	2	-	1	-	-
252	9	111	41024-059	230	6	2	-	4	-	-	5	3	-	2	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

13.3.3 Continued

TABLE 16

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
MIDNITE SHERWOOD MINES - AREA 3

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
253	9	112	46089-079	101	2	-	1	2	1	-	1	2	-	-	-	-	1	-	-
254*	14	113	46847-209	361,231	-	-	3	3	-	-	-	-	-	1	-	2	-	1	2
255	14	113	47240-250	230	2	1	-	2	1	-	1	2	-	-	-	-	-	-	-
256	14	114	48728-718	230,200	2	1	-	1	1	-	1	1	-	1	-	-	1	-	-
257	9	114	48304-288	191	4	-	-	2	-	-	-	-	-	-	-	-	2	-	-
258	9	114	48233-218	221	2	2	-	-	2	-	1	-	-	2	-	-	1	1	1
259	14	115	52094-104	231,191	1	2	-	1	-	-	1	-	-	-	2	-	-	1	1
260*	14	115	52190-205	230,191	-	2	2	1	2	-	2	-	-	1	-	1	1	1	-
261*	9	115	52256-276	230	4	-	1	1	3	-	5	-	-	1	-	-	1	-	-
262	9	115	52544-568	101,141,231	4	2	-	-	-	-	-	-	-	2	4	-	1	5	-
263*	15	116	40243-284	231,230	3	4	2	2	-	-	4	-	-	4	2	2	5	3	-
264	15	116	40349-370	230	4	1	-	3	1	-	2	-	-	2	-	-	1	-	-
265*	15	117	40135-120	230	2	-	2	3	1	-	2	2	-	2	-	-	2	-	-
266	5	118	60017-001	231	3	1	-	1	-	-	-	-	-	3	1	-	4	-	-
267	5	118	59961-951	231	2	1	-	-	-	-	-	-	-	3	-	-	3	-	-
268*	5	120	60843-	230	-	-	1	-	1	-	1	-	-	1	-	-	-	-	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 17

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
MICNITE-SHERWOOD MINES

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	11	31	100	101	111	131	140	141	190	191	200	201	211	220	221
	0	0	0	0	0	0	0	0	0	0	77	0	0	0	0
WATER	3	8	0	1	11	0	0	0	0	0	7	40	0	0	0
QAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QGY	0	0	53	0	0	0	0	0	0	0	0	0	0	0	0
QGO	0	0	3	0	0	0	95	0	0	0	0	0	0	23	29
QP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Q	0	0	0	0	11	0	42	0	3	0	0	0	0	0	0
QG	206	0	3	378	17	193	77	64	99	258	567	561	0	18	121
QE	0	0	0	0	0	0	0	0	0	26	0	0	0	0	160
QAG	0	0	0	20	0	62	0	17	0	0	0	0	0	0	0
PZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZMP	0	0	0	15	0	0	0	0	0	7	0	1	0	0	0
PZC	0	0	0	11	0	41	0	0	0	3	0	24	0	0	0
COD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZG	0	0	0	56	0	0	0	0	0	170	0	23	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PZHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCWL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCT	83	0	0	151	3	28	0	10	0	77	0	0	0	0	257
PCE	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
PCDT	0	0	0	0	3	0	0	11	0	0	0	0	0	0	0
TCL	0	0	0	0	3	0	0	0	0	0	19	0	0	7	0
TI	0	0	0	0	0	0	0	0	0	C	0	0	0	0	0
TMZG	6	0	78	86	0	106	95	64	0	C	0	0	0	47	125
TC	0	6	0	86	22	67	1	0	0	60	118	255	C	0	82
TGF	0	0	0	0	0	0	0	0	0	C	141	1	0	0	11
TG	0	0	0	3	0	0	0	0	0	C	0	0	0	0	0
TB	0	0	0	0	0	24	0	0	0	C	0	0	0	0	0
TCG	0	0	0	0	0	C	0	0	0	C	0	0	0	0	0
KG	0	0	0	78	0	7	0	8	0	351	0	0	0	0	67
KQ	149	0	47	2014	0	203	4	78	187	1693	5	73	0	17	2626
MZG	0	0	0	516	38	C	1	0	33	1085	54	989	366	0	193
KPQ	0	0	0	207	0	35	0	363	0	0	0	0	0	0	57

13.3.4 Continued

TABLE 17

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
MIDNITE-SHERWOOD MINES

GEOLOGIC UNIT	GEOCHEMICAL CODE										
	230	231	240	260	270	271	320	321	350	360	361
	94	35	0	0	0	0	0	0	0	0	13
WATER	392	372	0	0	99	274	0	0	0	830	2843
QAL	91	48	0	0	0	0	0	0	0	0	0
QGY	309	74	0	0	0	0	0	0	0	13	0
QGO	2105	570	0	0	0	0	0	0	0	0	27
QP	0	61	0	0	0	0	0	0	0	0	0
Q	291	0	0	0	0	0	0	0	0	0	9
QG	3555	5542	0	0	12	96	0	0	0	59	428
QE	5652	692	0	37	41	0	0	0	0	98	0
QAG	2392	925	0	35	20	0	0	0	0	0	0
PZS	0	13	0	0	0	0	0	0	0	0	0
PZMP	176	584	0	0	0	0	0	0	0	0	0
PZC	70	60	0	0	0	0	0	0	0	0	0
COD	92	0	0	56	6	0	0	0	0	2	0
PZG	30	0	0	0	0	7	0	0	0	0	3
	21	0	0	0	0	0	0	0	0	0	0
CA	125	132	1	52	74	0	0	0	0	42	0
PZHF	0	68	0	0	0	0	0	0	0	0	0
PCWL	393	26	0	0	13	0	0	0	0	9	0
PCM	33	13	40	0	24	0	0	0	0	0	0
PCT	82	1518	4	0	0	0	0	0	0	0	0
PCE	9	159	90	0	0	0	0	0	0	0	0
PCDT	0	1301	0	0	0	0	0	0	0	0	0
TCL	673	212	0	0	22	0	0	0	0	48	0
TI	0	1	0	0	0	0	0	0	0	0	0
TMIG	1285	586	0	0	0	0	0	0	0	25	5
TC	11386	1739	337	293	1196	17	16	0	250	1003	193
TGF	1108	23	0	7	0	0	0	0	0	2	0
TG	0	305	0	0	0	0	0	0	0	0	0
TB	1038	443	0	138	11	0	0	0	0	0	0
TCG	25	64	0	0	0	0	0	0	0	0	0
KG	977	1809	0	0	0	0	0	0	0	0	15
KQ	797	2196	0	0	5	0	0	0	0	0	0
MZG	1766	4435	0	0	45	34	0	50	0	0	261
KPQ	93	1029	0	0	0	0	0	0	0	0	0

13.4 DISCUSSION OF GEOCHEMICAL UNITS, GEOLOGICAL CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

13.4.1 SHEETS 6 AND 11

Sheets 6 and 11 of the Ritzville quadrangle, northeast Washington, are dominated by undifferentiated Cretaceous granitic rocks to the north of Franklin D. Roosevelt Lake, and by Tertiary Columbia River basalt flows to the south of the lake. These granitic rocks are a part of the Loon Lake batholitic complex, which consist of multiply intruded igneous rock units (Babcock et. al. 1981). The western half of the granites are characterized by average KUT values (geochemical units 230 and 231) as are the basalts and the alluvium deposits to the south of the lake. However, the basalt flows also contain pockets of low to average KUT reading (GCU 270 and 360) as is to be expected of mafic igneous rocks.

In the northwest portions of sheet 6 GCU 140 is associated with geologic anomaly 56 and geochemical anomalies 42, 66 and 67. These anomalies are in alluvium and granite. Directly to the south of Franklin D. Roosevelt Lake is an EW trending zone of anomalies in GCU 230 and 231 within the basalt flows (i.e. geologic anomalies 88, 89, and 100 and geochemical anomaly 130). These preferred anomalies occur above three NE trending magnetic linears which probably represent shallow fractures within the basalt flow (see Intex, 1981).

In the northeast portion of sheet 6 exist a band of anomalies (geologic anomalies 34 and 43 and geochemical anomalies 30, 45, and 93) within the granitic rocks. In this area the Loon Lake granitic rocks are in excess of 4250' deep (consult Intex, 1981), and thus these rocks must be responsible for the low amplitude and long wave length magnetic anomalies observed in this area. However this region is cut by two sets of fractures; one fracture set trends NE-SW and the other set trends NW-SE. These fracture sets are on the order of 3000' to 4000' deep (Intex, 1981). From a study of the origin of the Midnite-Sherwood uranium mine deposits, Babcock et. al. (1981) have concluded that uranium mineralization is favored where fracture sets intersect; the intersection fractures acting as conduits for hydrothermal uranium bearing solutions. The two sets of fractures on sheet 6 trend approximately parallel to the fractures in the Midnite Mine area (sheet 9), the NW-SE trending fractures are apparently related to the Lewis and Clark lineament (see Babcock et. al. 1981, Intex, 1981). The

band of anomalies mentioned above lie along or above one of the northeast trending fractures (see Intex, 1981; linear No. 3). In the easternmost portions of sheet 6 and directly above Franklin D. Roosevelt Lake an area of high KUT (GCU 101, geologic anomalies 82 and 91 and geochemical anomaly 105) occurs at the intersection of two intersecting fracture sets (see Intex, 1981; linear No. 4); i.e. geochemical anomaly 101 trends NW-SE towards the region where the fracture sets intersect and then GCU 101 trends NE-SW along magnetic linear No. 4 (see Intex, 1981). Therefore, this region appears to be controlled by the intersecting fracture sets.

Along trend of magnetic linear No. 4 and to the south of Franklin D. Roosevelt Lake exists another intersecting set of fractures. At this fracture set intersection occurs geologic anomaly 90 within basalt flows.

The high region of KUT to the south of the lake (GCU 101) may also be related to the northwest and northeast trending fractures, although the relationships are not as clear, i.e. two extensions of these fracture sets intersect very near to the high KUT area (Intex, 1981). In this area exists geologic anomalies 123, 124, and 130 and geochemical anomalies 155, 156, and 163 within the basalt flows.

13.4.2 SHEETS 7 AND 12

The geologic, structural and radiometric patterns developed on sheets 6 and 11 are generally repeated on sheets 7 and 12. Undifferentiated granitic rocks of the Loon Lake batholithic complex cropout to the north of Franklin D. Roosevelt Lake, and the Columbia River basalt flows cropout to the south. The basalt flows and the alluvial deposits are characterized by average to low KUT and strong magnetics (GCU 230, 260, and 270), whereas the relationships to the north of the river are more complex.

Immediately to the west of Franklin D. Roosevelt Lake is a zone of high and average U, and high Th and K (GCU 101 and 191), that correlates with a weak magnetic signature. This region may also be related to the NE-NW trending fracture sets; one of the northwest trending fractures clearly displaces a northeast trending fracture in the right lateral sense (Intex, 1981). Thus the northwest trending fracture is probably related to the Lewis and Clark lineament. The region in which the right lateral displacement exists is an area of average U, but high

Th and K (GCU, 191). In this general region exist geologic anomalies 35, 60, 76, 83 and 87 and geochemical anomalies 69, 106 and 112. Of these anomalies, geologic anomalies 60, 83 and 87 and geochemical anomalies 69, 106 and 112 lie alongside of northeast trending magnetic linear (Intex, 1981).

The areas to the northeast of the lake are characterized by average radiometric values (GCU 230 and 231) and a general lack of mapped structural features (Intex, 1981). Immediately to the east of Franklin D. Roosevelt Lake exists a small area of high KUT and weak magnetics (GCU 111 and 190) that trends N-S across the geochemical map. This area is predominently basalt flows and geologic anomalies 45 and 61 and geochemical anomalies 47 either surround or overlie the high KUT region.

In the southeastern portion of sheet 12 a small area of high U, low Th, high K and weak magnetics (GCU 31) exists near the termination of a northwest trending magnetic gradient. Also, on sheets 7 and 12 five small areas of low to average U and low Th and K (GCU 270 and 360) correlate to either N-S or N-E trending fractures (Intex, 1981). The lower KUT values may be related to the intrusion of younger, relatively more mafic igneous rocks.

In the southwestern portion of sheet 7 exist two clusters of anomalies; geologic anomalies 93, 103 and 131 and geochemical anomalies 131, 157 and 165. These anomalies are in basalt and do not correlate to any mapped structures.

13.4.3 SHEET 8

On sheet 8 and to the west of Franklin D. Roosevelt Lake is exposed a broad region of undifferentiated Mesozoic Granitic rocks that are dominated by average KUT and weak magnetics (GCU 231). One small area of high KUT (GCU 101) is bounded by two NE-SW trending fractures that may result from reverse faulting (Intex, 1981).

The northeast portions of sheet 8 are primarily covered by average KUT readings (GCU 230 and 231), alluvium, quartz monzonites and basalt flows. An area of high U and Th, and average K and weak magnetics (GCU 131) lies above the Paleozoic Covada Group and a north northwest trending fracture. This geologic unit has a bimodal uranium distribution and averages about 3.4 ppm uranium.

To the east of the Covada Group another zone of GCU 131 straddles a north northwest trending fracture. Directly to the south of this area is a zone of high KUT (GCU 101) that contains geologic anomalies 79 and 200 within granitic units.

South of Franklin D. Roosevelt Lake and including a portion of sheet 9, several high KUT areas (GCU 100, 101, 190 and 191) also lie very near to, or straddle, subsurface fractures. There may exist a structural control to many of these high KUT areas. To the west of this area geologic anomaly 190 and geochemical anomaly 148 lie above magnetic linear G (see Intex, 1981).

13.4.4 SHEET 13

Sheet 13 is almost entirely covered by the Columbia River basalt flows beneath a thin alluvial cover. As a result of the dominance of these mafic extrusive rocks this area has average KUT values. As before pockets of low KUT (GCU 360) tend to parallel and overlie N-S trending fractures, indicating that more mafic igneous rocks have extruded along these structures. These more mafic igneous rocks may have a deeper source.

On sheet 13 geologic anomaly 194 and geochemical anomaly 244 lie alongside of the northwest trending photo linear, and geologic anomaly 198 and geochemical anomaly 235 and 248 lie alongside two magnetic linears. Geochemical anomalies 225 and 234 are in the basalt flows and do not correlate to any known structural features.

13.4.5 SHEET 9

Sheet 9 contains five areas of anomalously high radiometric response which trends about N50°E across the sheet, approximately parallel to the trend of the Deer Trail anticline and the Kootenay Arc (Babcock et. al. 1981). However, three of these areas are associated with uranium mines and probably correlate to mine workings and tailings.

As before the background radiometric levels are average, GCU 221, 230 and 231 cover large areas of the Sampoil volcanics, the Togo formation and the quartz monzonites. Outcrops of the Addy quartzite, the McHale slate, and the Edna dolomite are mapped by low to average KUT levels.

Across the top of sheet 9 are two areas of high KUT (GCU 101). One of these areas near the Germania Consolidated Mine contains average eU levels for GCU 101. The area to the south of the Germania Consolidated Mine contains three geochemical anomalies (anomalies 34, 55, and 77) within GCU 230. This unit follows a tongue of quartz monzonites that is surrounded on both sides by the Togo formation. Furthermore, GCU 230 is bounded on its eastern side by a set of N-S trending magnetic linears. In the northeast corner of sheet 9 GCU 101 averages 7 to 8 ppm uranium, which is above average for this unit. This anomaly is within the quartz monzonites and lies alongside of a east-northeast trending fracture within the quartz monzonites (Intex, 1981). These above average levels of eU may continue toward the west southwest along the trend of the above mentioned fracture. Geologic anomaly 32 and geochemical anomalies 35 and 56 follow this west-southwest trend

In the Midnite Mine area anomalously high levels of eU (GCU 11 averaging 15.3 ppm uranium) exist to the southeast and to the northeast of the mine. The northern portion of geochemical unit 11 terminates along a northwest trending fracture that offsets two northeast trending fractures in a right lateral sense (Intex, 1981). This region contains geologic anomalies 80, 81, 85, and 86 along with geochemical anomalies 94, 99, 101, 103, 104, 108, 110, 111, 114, and 115. These anomalies appear to continue to the southwest (GCU 101) along the contact of the Togo formation and the quartz monzonites where uranium levels reach about 8 to 9 ppm. The Togo formation and the quartz monzonites average 4.1 and 3.8 ppm uranium, respectively. This anomalie (GCU 101) then turns to the southeast upon encountering the Enterprise - Spokane Valley graben and seems to incorporate GCU 131 and 140 within its boundaries. Geologic anomaly 116 and geochemical anomalies 113, 116, 124, 128, 141, and 143 follows these geochemical unit trends. Geochemical anomaly 123 is directly west of this area.

A relatively large region of high KUT (GCU 101) exists to the south of the Midnite Mine; this area lies within the quartz monzonites and does not correlate with any known structures.

In the southern portions of sheet 9 is another anomalous zone (GCU 11) that correlates to uranium mining. In this area exists geologic anomalies 144, 147, and 152, 155, and 205 along with geochemical anomalies 169, 181, 182, 186, and 193. Also, to the east of Franklin D. Roosevelt Lake exists a region of high KUT (GCU 101) in the areas to the northwest of the Spokane Molybdenum Mine. This area contains geochemical anomalies 173, 185, and 192. Both of these areas probably correlate to uranium workings by dumps.

Further to the west of the Spokane Molybdenum Mine are three geologic anomalies (i.e. preferred anomalies 137, 145, and 149) within GCU 221. These anomalies directly overlie northeast trending magnetic linear No. 27 (see Intex, 1981) within the quartz monzonites.

To the north of this area geochemical anomalies 127 and 142 lie along side of northwest trending fracture number 26 and the north-northwest trending western wall of the Enterprise-Spokane Valley graben. Further north geochemical anomaly 62 straddles the eastern wall of the graben (Intex, 1981) which trends north-south.

Lastly, in the extreme southeast portions of sheet 9 geochemical anomalies 174 and 261, in GCU 230, do not correlate to any known structure.

13.4.6 SHEET 14

Sheet 14 is primarily characterized by low to average KUT, although two areas of GCU 191 parallel the western boundary fault of the Enterprise - Spokane Valley graben.

Geologic anomaly 176 and geochemical anomalies 227 and 229 lie alongside this boundary fault within GCU 200, 221, and 231. To the north of this area is a prospect associated with GCU 201, 230, and 231. This area, on the eastern part of the graben, contains geochemical anomalies 207, 211, and 254. To the southwest of this area geochemical anomaly 219 lies over a short magnetic linear.

Also in the northeast corner of sheet 14 two small areas of GCU 191 parallel a northeast trending fracture zone (Intex, 1981), and one of these regions lies directly above another northwest trending magnetic linear (Intex,

1981). At this intersection is geologic anomaly 208 and geochemical anomaly 260. To the south of this region geologic anomalies 163 and 164 are associated with GCU 191 and 231.

In the southwest portion of the same sheet a small region of high KUT (GCU 101) lies along the eastern wall of the Enterprise - Spokane Valley graben in the area of Mill Canyon. This eastern boundary fault extends to great depth (4000 to 4600 feet deep) beneath the valley of Mill Canyon Creek (Intex, 1981).

To the west of Mill Canyon Creek and along the bottom of sheet 14 exist a line of eU anomalies, i.e. geologic anomalies 180, 182, 183, and 185 along with geochemical anomalies 237, 238, and 239. There appears to be no explanation for this continuous band of preferred anomalies.

13.4.7 SHEETS 10 AND 15

This small area contains several pockets of high radiometric response (GCU 100 and 101), within the quartz monzonites. Three of these regions lie along a line trending northwest-southeast.

On sheet 10 geologic anomaly 136 and geochemical anomaly 172 lie along the side of thicker basalt flows, while geochemical anomaly 183 and 197 are in the quartz monzonites. On sheet 15 geochemical anomaly 265 straddles magnetic linear No. 62 (Intex, 1981) and geochemical anomalies 202, 206, and 263 are in quartz monzonite.

13.4.8 SHEETS 5 AND 10

Sheets 5 and 10 contain mostly quartz monzonites and Columbia River basalt flows. The relationships developed in the northeast portion of sheet 9 continue into sheet 10; anomalously high KUT areas (GCU 11, 101, 131, 140, and 141) seem to follow the two east northeast trending fractures (Intex, 1981). Geologic anomalies 54, 67, and geochemical anomalies 27, 28, 36, 38, 58, 78, 79, 87, and 88 follow this east northeast trend on sheet 10. Further east another zone of anomalies trends N-S over GCU 140 and 230; i.e. geologic anomalies 33, 52, 55, and 68, and geochemical anomalies 24, 29, and 89.

The relationships developed in sheet 10 may continue into the southern portions of sheet 5 along GCU 141, 101, and 131. Geologic anomalies 17, 19, 21, 22, and 214 and geochemical anomalies 10, 11, and 268 follow an east-northeast trend. However, most of this area is surrounded by basalt flows on its northern and southern sides. Further to the north geologic anomalies 3 and 6 exist along the contact of the Togo formation with the quartz monzonites. Geologic anomalies 8, 10, 11, 14, and 211 and geochemical anomaly 9 overlie quartz monzonite.

13.5 SUMMARY AND CONCLUSIONS

On sheets 5, 9 and 10, two areas of high radiometric response and numerous eU anomalies exist to the northeast and to the southwest of the Midnite Mine; i.e. the two anomalous areas and the Midnite Mine lie along a northeast-southwest trending zone. These two zones correlate to the trend of known magnetic linears and the structures within the Midnite Mine area (Babcock et. al., 1981 and Intex 1981). Thus future exploration of the region may concentrate on those areas where the KUT geochemical units follow structural trends or where subsurface work suggest that fracture sets intersect (see Babcock et. al, 1981, Intex 1981).

14.0 LOST CREEK - AREA 4

14.1 GENERAL STATEMENT

The Lost Creek area of Pend Oreille county is located in the northwest portions of the State of Washington within the western half of the Sandpoint 1:250,000 scale NTMS quadrangle. The Pend Oreille River flows through the eastern portions of the study area. The area has been evaluated in a reconnaissance survey and a report of this study is available GJBX-121 (78).

14.2 GEOLOGY OF AREA 4

The Lost Creek area is located within the Okanogan Highlands and on the northeast trending Kootenay Arc. The Midnite Mine region is located along strike of the Kootenay Arc structures to the southwest of the study area. The oldest lithologic units in the study area are Precambrian and Cambrian metasedimentary units, folded and faulted into northeast trending structures as a result of Jurrassic tectonism. These structures form the core of the Kootenay Arc. During the Cretaceous the entire region was multiply intruded by silicic igneous rocks of the Loon Lake batholithic complex (Figure 7). The Phillips Lake granodiorite and the hornblende plutonic rocks of the Kaniksu range were emplaced during this period of major batholithic extrusion. Later, perhaps during the Eocene, the area was broken by NW-SE and N-S trending fractures. These fractures are evidenced by several sets of magnetic lineations that trend across the northern and central portions of the study area. The Tiger formation, composed of gravels and conglomerates, follows this NW-SE and N-S structural trend, and thus appears to be structurally controlled by basement fractures.

14.3 URANIUM PROSPECTS

Two uranium prospects are located to the northwest of the town of Lost Creek, and just to the north of the northwest trending Lost Creek river. The valley of the Lost Creek river has over 1200' of local relief and is very prominent on the topographic sheet. It, incidently, is associated with a strong northwest trending magnetic linear. Both prospects occur within the Tiger formation which as noted above, appears to be structurally controlled along Lost Creek river. See location map, Figure 8.

15.0 GEOPHYSICAL DATA INTERPRETATION LOST CREEK - AREA 4

15.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

- 15.2.1 Preferred eU Anomaly Associations
- 15.2.2 Significant eU Anomalies by Geological Unit
- 15.2.3 Significant eU Anomalies by Geochemical Unit
- 15.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (15.2.2 and 15.2.3 respectively) have been annotated as follows:

- * Preferred Anomalies
- X2 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 15.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e. X2) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

15.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS.

In the Lost Creek area there are a total of 78 geological and 69 geochemical statistically significant eU anomalies. Of these anomalies, 30 geological and 19 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 19 and 20) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 18 shows that the most of the preferred eU geological anomalies either correlate with glacial, fluvial alluvium or plutonic rocks. In addition, many of these preferred anomalies tend to correlate with magnetic lineations on the total field map.

The strong correlation to glacial, fluvial units could depend on several factors, such as the relative soluabilities of U, Th, and K. Uranium, being more soluable, may concentrate in organic material within the glacial deposits thus producing high eU/Th or eu/k ratios. Alternatively alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits. However, the anomalies in the glacial, fluvial alluvium often occur near regions of high radiometric response within the plutonic rocks. This suggests that the eU anomalies in the alluvium are derived from the plutonic rocks thru solution. The Tiger formation contains four preferred anomalies and two uranium prospects.

Tables 19 and 20 shows that geochemical units 230, 231, and 361 tend to correlate to the plutonic rocks and the glacial fluvial alluvium. It should be noted that these GCU cover large portions of the geochemical unit maps.

15.2.1 Preferred eU Anomaly Associations
Lost Creek - Area 4

TABLE 18

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Qag	24	Glacial, fluvial alluvium
TCG	4	Tiger formation
TKPA	16	Phillips Lake
KKH	10	Hornblende bearing plutonics

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Code	U	Th	K
10	1	99	H	H	H
11	2	99	H	H	H
21	1	89	H	A	H
91	1	19	H	L	L
100	1	99	H	H	H
120	1	79	H	L	H
140	1	59	H	A	A
190	1	95	A	H	H
230	4	55	A	A	A
231	5	55	A	A	A
331	1	43	L	L	A
360	1	13	L	L	L
361	4	13	L	L	L

Total preferred geological anomalies = 30

Total preferred geochemical anomalies = 19

15.2.2

TABLE 19

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
LOST CREEK - AREA 4

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 X3	1	2	44857-837	Qag,pЄlv	2	3	-	1	-	-	-	-	-	1	-	-	1	-	-
2*X3	1	3	44620-650	Qag	5	1	1	-	-	-	3	-	-	1	-	-	-	2	-
3 X1	1	4	44403	pЄlv	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-
4*X4	1	5	44193-213	Qag	2	1	2	3	-	-	1	-	-	1	-	-	1	-	-
5	1	6	43932-911	Qag	4	1	-	-	-	-	-	-	-	2	1	-	4	-	1
6	1	7	43603-608	Qag	-	2	-	2	-	-	2	-	-	-	-	-	1	-	-
7	1	8	43440-420	Qag,Tcg	2	3	-	3	-	-	3	-	-	2	-	-	2	2	-
8	1	9	43108-118	Qag	-	3	-	1	-	-	2	-	-	-	2	-	2	1	-
9 X1	1	9	43169-179	pЄp	1	2	-	1	-	-	-	-	-	1	-	-	-	1	-
10*	1	9	43194-218	Kkh,Qag	2	1	3	-	-	-	-	-	-	1	4	-	2	1	3
11*X1	1	10	42854-829	Qag,Tcg	2	3	1	4	-	-	2	-	-	1	1	-	2	2	-
12	1	11	42169-189	Qag,Tcg	2	3	-	3	1	-	3	1	-	-	-	-	2	-	-
13*X2	1	11	42219-239	Qag	1	1	3	2	-	-	1	1	-	1	-	1	2	-	1
14	1	11	42250-260	Qag,pЄp	2	1	-	1	-	1	2	-	-	1	-	-	1	-	-
15	1	11	42310-325	Kkh,Qag	2	2	-	1	2	-	-	-	-	1	-	-	-	2	1
16*	1	12	41808-738	TKpa,Qag,Tcg	12	2	1	4	6	2	7	5	-	1	-	-	2	-	-
17*	1	12	41728-712	Tcg,Qag	2	1	1	2	1	-	1	1	-	1	-	-	3	-	-
18*X5	1	12	41687-657	Qag,pЄp,Kkh	2	1	4	1	-	-	-	-	-	2	-	-	1	1	-
19 X1	1	12	41637-608	Kkh,Qag	4	3	-	3	1	-	-	-	-	1	-	-	3	3	-
20	1	13	41313-348	TKpa,Qag	4	4	-	2	1	1	2	-	-	1	-	-	3	2	1
21	1	13	41394-404	Qag	1	2	-	1	1	-	1	1	-	1	-	-	-	1	-
22	1	14	41113-072	Qag,Tcg	3	6	-	1	1	-	2	1	-	8	-	-	5	1	1
23*X1	1	14	41057-032	Qag	1	1	4	3	1	1	1	2	1	1	-	-	2	2	-
24*X1	1	14	41022-991	Qag,Kkh	3	2	2	3	-	-	1	-	-	1	1	2	1	3	1
25*X1	1	14	40966-938	Kkh,Qag	2	2	3	3	1	-	1	-	-	2	-	-	2	2	1
26*X6	2	15	40640-695	TKpa,Qag	1	5	6	2	2	1	4	2	-	2	-	-	3	1	-
27*	2	15	40832-846	Qag,Kkh	-	1	3	2	1	-	1	-	-	1	1	-	2	1	1
28*	2	16	40423-358	TKpa,Qag,Tcg	7	6	1	5	-	-	3	-	-	3	1	-	8	2	2

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

15.2.2 Continued

TABLE 19

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
LOST CREEK - AREA 4

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
29 X1	2	16	40302-287	Qag,Kkh	3	-	1	1	2	-	1	-	-	-	-	-	1	-	-
30 *X4	2	17	39760-810	TKpa	6	2	3	1	-	2	1	-	-	-	1	1	1	-	3
31 *	2	17	39826-831	Qag	-	1	1	-	-	-	-	-	-	1	1	-	-	1	1
32	2	17	39841-856	Qag	3	1	-	1	1	-	1	1	-	-	1	-	-	1	-
33	2	17	39891-901	Qag,Kkh	2	-	1	1	1	-	2	-	-	-	-	-	1	1	-
34 *X2	2	17	39962-992	Kkh,Qag	3	1	3	2	-	-	-	-	-	-	1	-	2	-	1
35	2	18	37618-648	Qag	6	1	-	5	1	-	1	-	-	-	-	-	4	-	-
36 *	2	21	56683-713	TKpa	2	2	3	4	1	1	1	4	2	1	-	-	3	-	-
37 *	2	22	57188-168	TKpa	1	3	1	4	-	-	3	2	-	1	-	-	1	1	-
38 X3	2	22	57057-032	Qag,Kkh	2	2	2	3	1	1	1	3	1	-	-	-	-	-	-
39 *X1	2	23	57412-427	TKpa	-	-	4	3	-	-	-	3	-	2	1	-	2	-	1
40	2	23	57508-518	Qag	2	1	-	-	-	-	1	1	-	1	2	-	-	1	-
41	2	23	57549-574	Qag,Kkh	6	-	-	3	2	-	1	2	2	1	-	-	1	-	-
42 *X3	2	24	57920-894	TKpa,Qag	-	2	4	3	-	-	1	1	2	-	1	-	1	-	1
43 *X4	2	24	57809-743	TKpa,Qag,Kkh	2	8	4	5	-	-	-	1	3	1	4	2	3	3	1
44 *X2	2	25	58133-164	TKpa,Qag	-	5	2	3	-	-	3	-	-	3	-	-	1	3	-
45	2	25	58280-295	Qag,Kkh	4	-	-	1	1	1	2	1	1	-	-	-	-	-	-
46 X2	2	26	58635-620	TKpa	2	1	1	2	-	1	2	1	-	-	-	-	-	-	-
47	2	26	58554-509	TKpa,Qag	7	3	-	-	-	-	4	-	-	3	3	2	2	2	1
48 X3	2	26	58494-478	Qag,Kkh	3	1	-	3	-	-	2	2	-	-	-	-	-	-	-
49 *X1	2	27	58867-897	TKpa,Qag	3	3	1	1	-	-	2	1	-	3	2	-	5	-	-
50	2	28	46402-413	Qag,TKpa	2	1	-	-	-	3	3	-	-	-	-	-	1	-	-
51 *	2	28	46483-514	TKpa,Qag	3	3	1	1	-	-	5	2	-	1	2	1	2	1	-
52	2	28	46544-549	TKpa	-	2	-	-	-	-	1	-	-	1	-	1	-	1	-
53	2	28	46559-595	TKpa	3	5	-	-	-	-	5	1	1	2	3	1	3	-	-
54 *	2	31	43285-351	TKpa,Qag	4	8	2	-	1	1	2	2	-	6	5	1	3	6	-
55	2	31	43366-402	TKpa,Qag	2	6	-	-	-	-	1	-	-	3	1	4	4	3	1
56	2	31	43442-452	Kkh	2	1	-	2	-	-	2	-	-	1	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

15.2.2 Continued

TABLE 19

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
LOST CREEK - AREA 4

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
57*X1	2	31	43482-488	Kkh	1	-	1	-	-	-	1	-	-	1	-	-	1	-	-
58	2	32	42949-934	TKpa,Qag	4	-	-	-	-	-	-	-	-	-	3	-	2	2	-
59*	2	32	42924-898	Qag,Kkh	3	2	1	2	-	-	2	-	-	2	-	2	2	3	-
60	2	33	42585-600	TKpa	4	-	-	-	-	-	-	-	-	4	-	-	3	1	-
61	2	33	42646-661	TKpa,Qag	1	3	-	-	-	-	1	2	-	1	1	2	1	-	-
62	2	39	40917-927	Qag	2	1	-	-	-	-	1	-	-	1	1	-	-	1	-
63	2	40	40635-620	Qag	2	1	-	2	-	-	1	1	-	1	-	-	1	-	-
64	2	41	40108-143	Qag,TKpa	3	5	-	2	-	-	2	2	-	4	-	-	3	1	-
65	2	42	39881-866	TKpa	2	2	-	2	1	-	1	1	2	1	-	-	1	-	-
66	2	43	39626-636	TKpa	2	1	-	2	1	-	-	2	1	-	-	-	-	-	-
67*	2	44	39361-351	TKpa	-	2	1	2	-	-	1	1	1	1	1	-	2	-	-
68*	2	45	39013-034	TKpa	2	1	2	-	-	-	-	-	-	2	1	1	1	2	2
69	2	46	38802-777	TKpa	4	2	-	-	-	-	2	1	-	2	1	-	2	-	1
70*	2	48	38317-302	TKpa,Qag,K	2	-	2	-	-	-	-	2	-	3	1	-	3	-	-
71	3	49	37767-752	TKpa	1	3	-	1	-	-	2	1	-	3	1	-	2	1	-
72	3	51	37250-235	Tbr,Pzu	2	2	-	-	-	-	1	-	-	-	1	1	1	-	-
73 X2	3	52	36743-738	Tbr,Qag	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
74 X5	3	76	50254-274	TKpa,Qag	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
75	3	78	49849-859	TKpa,Qag	2	1	-	-	-	-	-	-	-	-	3	-	2	1	-
76 X2	3	102	58980-995	TKpa	2	1	1	-	-	-	2	-	-	-	-	-	1	-	-
77	3	102	59035-045	pEm, Qag	2	1	-	-	1	-	1	-	-	-	-	2	1	1	1
78 X2	2	102	59339-354	Qag,TKpa	3	1	-	-	-	-	1	-	-	1	-	-	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

15.2.3

TABLE 20

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
LOST CREEK - AREA 4

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 X3	1	2	44862-842	360,130	3	1	1	1	-	-	1	-	-	-	-	-	-	-	-
2*X1	1	2	44797-793	230	1	-	1	-	-	-	-	-	-	-	-	1	-	1	-
3 X3	1	3	44610-640	361,231,100	5	2	-	2	-	-	-	-	-	-	1	-	1	1	2
4 X4	1	5	44193-208	50	2	-	2	-	3	-	1	-	-	-	-	-	-	-	-
5 X2	1	6	43927-901	140,230,360	5	1	-	-	-	-	1	-	-	2	-	-	1	2	-
6	1	8	43440-430	100	2	1	-	-	-	-	-	-	-	2	-	-	1	2	-
7	1	9	43037-052	231	2	2	-	3	-	-	1	-	-	1	-	-	1	1	-
8	1	9	43108-133	100,360	6	-	-	-	-	-	1	-	-	2	1	1	2	-	1
9*X1	1	9	43169-174	120	-	1	1	-	-	-	-	-	-	1	-	-	-	1	-
10	1	11	42239-250	360	1	2	-	1	-	-	-	1	-	-	1	1	-	-	2
11 X4	1	12	41682-657	10,130	6	-	-	-	-	-	-	-	-	2	-	-	2	-	-
12	1	13	41318-323	101	-	2	-	-	1	-	-	-	-	1	-	-	1	1	-
13*X1	1	14	41032-022	360	1	1	1	1	-	-	1	-	-	1	-	-	2	-	-
14*X5	1	15	40650-675	21,140	2	2	2	-	-	-	1	-	-	1	-	-	1	-	-
15	2	15	40832-846	40	4	-	-	1	-	-	2	-	-	-	1	-	1	-	-
16	2	16	40347-337	230	2	1	-	-	-	-	-	-	-	2	1	-	1	-	2
17*	2	17	39780-785	231,190	-	1	1	-	-	-	-	-	-	-	2	-	1	1	-
18 X3	2	17	39795-805	21,140	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
19*	2	17	39815-831	230	2	1	1	-	-	-	-	-	-	2	1	-	1	-	2
20 X2	2	17	39967-982	40	2	2	-	1	-	-	-	-	-	1	-	-	1	-	-
21	2	18	37461-471	190,231	1	2	-	1	-	-	1	-	-	1	-	1	1	1	-
22	2	18	37552-557	361	-	2	-	1	-	-	-	-	-	-	-	1	1	-	1
23	2	20	56421-416	190	-	2	-	-	-	-	1	1	-	1	1	-	-	-	-
24 X3	2	22	57057-047	361,10	-	1	2	-	1	1	1	-	1	-	-	-	-	-	-
25*	2	23	57412-417	231,11	-	1	1	1	-	-	1	-	1	1	1	-	1	1	-
26*	2	23	57538-549	361	1	1	1	-	1	-	1	-	-	-	1	-	1	-	1
27	2	24	57940-925	231	3	1	-	2	-	-	1	-	-	1	-	-	1	1	1
28*X3	2	24	57915-900	11	-	2	2	-	-	-	2	-	-	-	1	-	-	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

15.2.3 Continued

TABLE 20

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
LOST CREEK - AREA 4

Anom. No.	Sheet No.	F.L. No.	Extent Ficucials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
29*X4	2	24	57778-758	91,361,100	1	1	3	1	-	1	-	1	-	-	1	-	-	1	-
30*	2	25	58133-138	231	-	-	2	1	1	-	1	-	-	1	-	-	-	2	-
31	2	27	58862-872	231	1	2	-	-	-	-	1	-	-	2	-	1	2	-	-
32	2	28	46402-413	191	1	2	-	2	1	-	-	-	-	-	-	-	2	1	-
33	2	28	46473-483	231	2	1	-	-	-	-	1	1	-	2	-	-	1	-	-
34*	2	29	46200-195	231	1	-	1	-	-	-	-	-	-	-	1	1	1	-	1
35	2	29	46044-028	190,230	4	-	-	2	-	-	1	1	-	1	-	-	-	-	-
36	2	31	43275-300	231,141	5	1	-	-	-	-	1	-	-	1	2	-	1	-	1
37	2	31	43341-351	101	-	3	-	-	1	-	2	-	-	1	1	-	1	1	-
38	2	32	43040-025	231	4	-	-	-	-	-	1	-	-	2	-	-	1	1	-
39	2	32	42979-969	231	2	1	-	-	-	-	-	-	-	2	-	-	2	-	1
40	2	32	42939-929	361	-	3	-	1	-	-	-	-	-	1	1	-	1	2	-
41	2	33	42585-631	231	5	5	-	-	-	-	-	-	-	6	3	-	5	3	1
42	2	33	42641-656	231,151	2	2	-	-	-	-	2	1	-	3	-	1	2	-	-
43	2	35	41977-997	231	4	1	-	1	-	-	2	1	-	-	-	-	1	1	-
44*	2	35	42068-078	231	1	1	1	-	1	-	-	-	-	1	1	-	1	1	-
45	2	37	41469-479	231	2	1	-	1	-	-	1	-	-	2	-	-	1	-	-
46	2	37	41504-519	231	4	-	-	-	-	-	-	-	-	3	-	1	3	-	-
47	2	38	41233-218	231,230	3	1	-	-	-	-	-	-	-	4	-	-	2	2	-
48	2	38	41112-082	231	5	2	-	-	-	-	-	-	-	2	2	2	2	2	2
49	2	39	40882-892	230	2	1	-	-	-	-	-	3	-	1	-	-	-	-	-
50	2	39	40978-988	230	2	1	-	-	-	-	-	-	-	2	-	-	1	2	-
51 X4	2	41	40082-098	230	3	-	1	1	-	-	-	-	-	-	-	-	-	-	-
52	2	41	40108-143	230,100	5	3	-	1	-	-	2	-	-	6	-	-	5	1	-
53	2	44	39321-316	230	-	2	-	-	-	-	-	-	-	-	1	1	-	2	-
54*	2	45	39013-029	230,10	-	3	1	-	-	-	-	-	-	1	1	1	2	-	2
55	2	46	38787-777	100,230	1	2	-	-	-	-	-	-	-	-	2	1	2	-	1
56	2	47	38545	230	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

15.2.3 Continued

TABLE 20

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
LOST CREEK - AREA 4

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57	2	48	38312-307	100	-	2	-	-	-	-	-	-	-	-	1	1	2	-	-
58	3	49	37777-747	230,100	7	-	-	1	-	-	2	-	-	3	2	1	2	1	-
59	3	50	37553	230	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-
60 X3	3	54	36598-613	271	3	1	-	-	-	-	-	-	-	1	-	-	-	-	-
61 X1	3	62	53723-742	331	4	1	-	-	-	-	1	-	-	2	1	-	2	1	-
62*X1	3	76	50340-379	331	4	1	4	2	-	-	2	3	1	3	3	1	3	2	1
63	3	78	49955-965	331	1	2	-	2	-	-	-	-	-	1	-	1	1	1	-
64	3	79	49752-747	361	-	2	-	1	-	-	1	-	-	2	-	-	2	-	-
65*X2	3	102	58965-995	361	-	4	3	1	2	1	2	2	3	2	-	-	-	-	-
66*	3	102	59030-076	361	3	4	3	3	1	-	1	-	-	-	2	4	3	3	3
67*	3	102	59086-096	361	1	1	1	-	-	-	-	-	-	2	1	-	2	1	-
68*X2	3	102	59339-354	230	3	-	1	-	-	-	1	-	-	1	-	-	2	-	-
69	3	104	48524-503	331	5	-	-	2	1	-	1	4	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

15.2.4

TABLE 21

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
LOST CREEK

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	10	11	21	40	50	91	100	101	110	120	130	131	140	141	151
QAG	156	45	0	126	39	20	475	225	0	0	112	0	140	123	30
PZU	0	0	0	0	0	0	0	5	0	0	0	0	0	0	11
PCM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCP	22	0	0	5	0	0	0	0	0	52	22	0	0	0	0
PCLV	0	0	0	0	0	0	0	0	0	6	9	0	0	0	0
TKPA	40	221	46	0	0	0	134	319	2	0	0	50	20	224	241
TCA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TBR	0	0	0	0	0	0	0	7	37	0	0	0	0	0	5
TCG	25	0	0	0	0	0	389	0	0	0	0	0	0	0	0
KKH	110	0	0	119	0	0	378	0	0	0	224	0	0	0	0

GEOLOGIC UNIT	GEOCHEMICAL CODE											
	190	191	201	220	221	230	231	271	321	331	360	361
QAG	293	268	4	0	237	1217	1939	22	36	1164	344	1437
PZU	0	0	40	0	0	34	70	16	0	0	25	42
PCM	0	0	0	0	0	0	7	0	0	0	0	106
PCP	0	0	0	0	0	15	0	0	0	0	62	0
PCLV	0	0	0	0	0	0	0	0	0	0	345	17
TKPA	120	465	0	0	218	1553	3364	0	12	245	0	440
TCA	0	0	0	0	0	0	0	0	0	6	0	0
TBR	0	0	0	0	0	54	40	45	0	0	0	0
TCG	0	0	0	0	0	64	193	0	0	112	0	256
KKH	569	0	8	129	0	841	5	0	0	0	39	18

15.3 DISCUSSION OF GEOCHEMICAL UNITS, GEOLOGICAL CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

15.3.1 SHEET 1

Sheet 1 and the northernmost portion of sheet 2 contains a number of magnetic linears that appear to be subsurface fractures. These linears criss-cross the area along three general trends; a northwest, a north-south, and a northeast trending set of linears. In the western portion of sheet 1, one of these linears appears along a fault on the "Geology of the Sandpoint Quadrangle" (Idaho Bureau of Mines, 1978); it trends about N45^{o}E. A high zone of KUT (GCU 101) occurs directly above this fault within the Phillips Lake granodiorite averaging 6 ppm uranium. However, the Phillips Lake granodiorite averages about 5 ppm uranium and has a normal gaussian histogram that terminates at about 6 to 7 ppm uranium. This high area of KUT (GCU 101 and 21) continues towards the southeast where 8 ppm uranium occurs about a northwest trending magnetic linear within geochemical unit 21. This northwest trending linear parallels Lost Creek to the northeast of the linear. Directly to the south of GCU 21 geochemical anomaly 17 and geologic anomaly 30 occurs in GCU 190 and 231.

Directly to the north, the northwest trending Tiger formation contains uranium levels as high as 7 to 8 ppm. This high area of KUT (GCU 10, 100 and 230) is bounded by magnetic linears on both sides and may lie within the down dropped portion of a northwest trending graben like (?) structure. The southwesternmost linear lies directly beneath northwest trending Lost Creek, and a band of high eU values parallel Lost Creek along the southwest portions of the Tiger formation. Geologic anomalies 11, 16, 26, 28, and 31 geochemical anomalies 14 and 19 lie along this trend.

The Tiger formation has a bimodal uranium histogram that is skewed toward high uranium values, averages about 4 ppm uranium, and has a modal value of about 3 ppm uranium. Any value over 6 ppm uranium appears to be anomalous.

In the south central-most portion of sheet 1 and in contact with the Tiger formation is an outcrop of glacial alluvium that contains values as high as 6 to 9 ppm uranium (GCU 10). This geologic unit averages 3 ppm

uranium and any value over 7 ppm uranium is anomalous. This area is bounded on both sides by two north-south trending magnetic linears and by a northeast trending linear along the northern portions of GCU 10. Geologic anomalies 13, 17 and 23 lie within or very near to GCU 10. Geologic anomalies 13, 17, and 23, lie within or very near to GCU 10. Thus this entire area of high eU may be structurally controlled.

Further east, GCU 120 in the Belt Super Group yields a value of 6 ppm uranium, although its histogram ranges as high as 7 ppm uranium. To the southeast of this region and along Dry Canyon GCU 40 and 130 also contains uranium levels as high as 7 to 9 ppm. These high uranium values occurs mainly in the glacial alluminum along its contact with the hornblende bearing plutonic rocks of the Kaniksu range. A histogram of the Kaniku plutonic rocks shows a normal distribution pattern terminating at 7 ppm uranium. Geologic anomalies 10, 25, 27, and 34 follow this geochemical trend. Furthermore, Dry Canyon trends northwest parallel to a magnetic linear, and thus this region of high radiometric response also appears to be structurally controlled.

To the west of Dry Canyon and along the Pend Oreille River a zone of high KUT (GCU 10) appears to be fault bounded by two north-south trending magnetic linears. The high KUT readings occur near the contact of the Kaniksu plutonic rocks and the glacial alluvium. Geologic anomalies 18 and 24 occur within this zone.

In the extreme northeast portions of sheet 1, an anomalous zone of uranium (GCU 230-120) runs north-south across the sheet. This zone contains geologic anomaly 2 and geochemical anomalies 2 and 9. To the west of this area and associated with GCU 50 exists geologic anomaly 4. Geochemical anomaly 13 lies above water.

15.3.2 SHEET 2

In the northwestern portions of sheet 2 is a north-south trending zone of high KUT (GCU 101 and 11) readings that do not correlate with strong magnetic linears. This region contains up to 10 ppm uranium and lies entirely within the Phillips Lake granodiorite. The highest uranium values straddle a weak east-west trending magnetic gradient in the northernmost portions of GCU 11.

Any uranium value greater than 8 ppm can be considered anomalous for this unit. Associated with this north-south trending zone are geologic anomalies 36, 37, 39, 42, 44, 49, and 51 and geochemical anomalies 25, 26, 28, and 30.

East of this area another broad zone of high uranium (GCU 141 and 151) occurs within the Phillips Lake granodiorite. This region contains very long wave length and low amplitude magnetics. Geochemical anomaly 29 and geologic anomaly 43 lies along the edge of this area. Large areas of the Phillips Lake granodiorite are dominated by a weak magnetic signature (GCU 141, 151, 191, 221, and 231).

Directly to the south of the two north-south trending zones is a region of high uranium that trends east-west, terminating at the eastern boundary of the study area (GCU 100, 101, 141, and 151). This band averages 6 to 7 ppm uranium, and does not correlate with any obvious magnetic linears. However, a deep fracture originating at a depth of 3000' to 5000' deep can not be discounted beneath this area. This east-west trend occurs within several lithologic units, traversing the Phillips Lake granodiorite, glacial alluvium and the Kaniksu plutonic rocks. Geologic anomalies 54, 57, and 59 and geochemical anomalies 34 and 44 follow this east-west trend.

In the southern portions of sheet 2 is another region of high uranium that is structurally controlled. Northeast trending GCU 10 and 100 are bounded on both sides by northeast trending magnetic linears, and the northwest trending GCU 100 lies above a northwest trending structure. Geochemical unit 10 lies at the intersection of these two structural trends, and the northeast trending GCU 100 terminates along another northwest trending magnetic linear. Several small creeks in this area flow along these structural trends. Here, geologic anomalies 67, 68, and 70 lie along the northwest trending magnetic linear along with geochemical anomaly 54. To the northwest of this area exists geochemical anomaly 68.

15.3.3 SHEET 3

Sheet 3 is dominated by the Phillips Lake granodiorite and glacial alluvium in the west, and by the Tiger for-

mation in the east. Most of the area contains low to average uranium values (GCU 231, 331, and 361) and weak magnetics. In the southwest portion of this sheet GCU 361 contains geochemical anomalies 65, 66, and 67, and in the southeast portion geochemical anomaly 62 is in GCU 331.

15.4 SUMMARY AND CONCLUSIONS

In the Lost Creek area of Pend Oreille County several high GCU trends are evident in the uranium data. For example, three regions on the GCU maps are aligned along northwest-southeast trends, three regions align along north-south trends and another region aligns along east-west trends. The northwest-southeast trending regions and several of the north-south trending regions are related to obvious magnetic lineations on the total field map. In most cases more than one high GCU defines these major geochemical trends. In general the geologic anomalies more clearly define the major geochemical trends than do the geochemical anomalies, although the geochemical anomalies have a tendency to lie on the boundaries or margins of these above mentioned areas of high radiometric response.

Futhermore, the anomalous eU zones tend to be marginal to and lie along those zones that exhibit high response from all three elements, so that the preferred anomalous zones tend to correlate not with the zones high in all three elements, but with the average to low GCU (e.g. GCU 230, 231, 331, and 361) that border the high GCU areas. However, it should be emphasized that it is the regions of high radiometric response that define the major geochemical trends, and not the average to low geochemical units.

16.0 GLEASON MOUNTAIN - AREA 5

16.1 GENERAL STATEMENT

The Gleason Mountain area lies within the Sandpoint 2° x 1° quadrangle and the North Baldy and Gleason Mountain 7½' x 7½' quadrangles. The study area is entirely within the Kaniksu National Forest and to the west of Priest Lake. The highest elevation in the area occurs on North Baldy Mountain which has over 2600' of local relief.

16.2 GEOLOGY OF AREA 5

The Gleason Mountain region is composed almost entirely of Cretaceous plutonic rocks of the northwest trending Kootenay Arc. The western and eastern portions of the study area are dominated by the Galena Point granodiorite and Hungry Mountain quartz monzonite, respectively. Furthermore, the North Baldy alaskite and Gleason Mountains quartz monzonite trend north-northeast through the center portions of the study area. Thus the entire region is dominated by silicic intrusive rocks.

16.3 URANIUM PROSPECTS

There are no uranium mines or prospects reported in the literature for the Gleason Mountain area, but plutonic silicic rocks are responsible for the uranium mineralization in the Midnite Mine region (Babcock et. al., 1981).

17.0 GEOPHYSICAL DATA INTERPRETATION GLEASON MOUNTAIN - AREA 5

17.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

17.2.1 Preferred eU Anomaly Associations
17.2.2 Significant eU Anomalies by Geological Unit
17.2.3 Significant eU Anomalies by Geochemical Unit
17.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (17.2.2 and 17.2.3 respectively) have been annotated as follows:

* Preferred Anomalies
X1 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 17.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e. X1) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

17.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS

In the Gleason Mountain area there are a total of 55 geological and 45 geochemical statistically significant eU anomalies. Of these anomalies, 22 geological and 15 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 23 and 24) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 22 shows that most of the preferred eU geological anomalies either correlate with glacial, fluvial alluvium or plutonic rocks. In addition, many of these preferred anomalies tend to correlate with magnetic lineations on the total field map.

The correlation to glacial, fluvial units could depend on several factors, such as the relative soluabilities of U, Th, and K. Uranium, being more soluable, may concentrate in organic material within the glacial deposits thus producing high eU/Th or eU/K ratios. Alternatively alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits. In either case the correlation must result from the secondary enrichment of the uranium. In the Gleason Mountain area the plutonic rocks appear to be the source rocks for the uranium, and in this case most of the geologic anomalies correlate to a double ring structure. The double ring structure may be the result of contact metamorphism which could produce a local circulation of hydrothermal fluids about the intruding Gleason Mountain pluton. This circulation would remove the uranium from the silicic plutonic rocks and deposit the uranium where the geochemical environment was more reducing. Table 22 25 shows that geochemical units 100, 101, and 236, tend to correlate with the Hungary Mountain Pluton, while units 230 and 260 correlate to the Galena Point granodiorite and the glacial alluvial deposits.

17.2.1 PREFERRED eU ANOMALY ASSOCIATIONS
GLEASON MOUNTAIN - AREA 5

TABLE 22

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Qag	4	Glacial, fluvial alluvium
Khm,Kgp	11	Muscovite-biotite quartz monzonite
Kkh	4	Hornblende bearing plutonics
Kg	8	Biotite granodiorite
Kna	2	Alaskite

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Codes	U	Th	K
10	1	99	H	H	H
*50	1	59	H	A	A
100	3	97	H	H	H
101	3	97	H	H	H
130	2	67	H	H	A
190	1	95	A	H	H
230	5	55	A	A	A
231	3	55	A	A	A
360	4	13	L	L	L
361	1	13	L	L	L

Total preferred geological anomalies = 22

Total preferred geochemical anomalies = 15

*Sparsely sampled geochemical unit

17.2.2

TABLE 23

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
GLEASON MOUNTAIN - AREA 5

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	1	6	42126-106	Qag	2	3	-	2	2	1	3	1	-	-	-	-	2	-	-
2*X3	1	7	42524-580	Khm,Qag	3	2	7	1	7	1	5	1	-	3	-	-	6	2	1
3	1	8	42897-877	Khm	4	1	-	1	-	-	-	-	-	2	-	-	5	-	-
4	1	8	42867-	Qag	-	-	1	-	-	1	1	-	-	-	-	-	1	-	-
5	1	8	42857-827	Qag	2	5	-	2	3	-	1	-	-	2	1	-	2	4	-
6*	1	9	43232-278	Khm,Qag	5	4	1	3	1	-	1	-	-	5	1	-	1	6	1
7	1	9	43374-389	Khm,Qag	2	2	-	-	1	-	-	-	-	1	1	-	4	-	-
8 X2	1	10	43722-712	Kg	1	1	1	1	-	-	2	-	-	-	-	-	-	-	-
9*	1	10	43516-601	Khm	-	3	1	3	-	-	1	-	-	3	-	-	2	2	-
10	1	10	43591-581	Khm	1	2	-	1	-	-	2	-	-	2	-	-	2	-	-
11 X3	1	11	43949-959	Khm	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
12*X1	1	12	44726-705	Khm	2	2	1	1	-	-	1	-	-	3	1	-	3	1	-
13 X2	1	12	44685-675	Khm	2	1	-	1	-	-	-	2	-	1	-	-	1	-	-
14 X1	1	12	44574-564	Qag,Kkh	2	1	-	2	-	-	1	1	-	1	-	-	1	-	-
15*X1	1	12	44528-520	Kkh	2	-	1	-	-	-	-	-	-	-	2	-	-	2	-
16	1	13	45113-139	Khm	2	4	-	1	-	-	1	-	-	1	2	-	4	2	-
17	1	13	45154-164	Khm	2	1	-	1	-	-	2	-	-	1	-	-	-	1	-
18	1	13	45194-199	Khm	-	2	-	-	-	-	2	-	-	1	1	-	-	-	-
19 X2	1	13	45220-265	Khm	5	5	-	3	-	-	5	2	-	5	2	-	1	1	-
20*	1	13	45311-316	Kkh	-	1	1	-	1	1	-	1	1	1	-	-	1	-	-
21*	1	14	45661-626	Khm	3	3	2	1	1	-	1	1	-	3	2	1	3	4	-
22*X4	1	14	45581-525	Khm	6	5	1	5	-	-	9	1	-	4	1	-	-	1	-
23*	1	14	45469-429	Kkh	7	-	2	-	1	-	-	2	-	5	1	1	7	1	-
24	1	15	50454-469	Khm	2	2	-	2	-	-	1	-	-	2	-	-	1	2	-
25	1	15	50570-580	Kgp	2	1	-	-	-	-	1	-	-	1	1	-	-	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

17.2.2 Continued

TABLE 23

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
GLEASON MOUNTAIN - AREA 5

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
26	1	16	50975-955	Khm	5	-	-	-	-	-	-	-	-	1	3	-	3	-	-
27	1	20	53292-308	Kg	-	2	2	1	1	2	2	2	-	-	-	-	1	-	-
28*	1	21	54163-143	Kg	-	2	3	2	2	1	1	4	-	1	-	-	1	-	-
29*	1	21	54112-082	Kg	4	2	1	4	-	1	2	4	-	2	-	-	1	-	-
30	1	21	53950-935	Khm	2	2	-	1	2	-	2	-	-	2	-	-	3	-	-
31	1	22	54512-527	Kg,Kna	4	-	-	-	-	-	-	1	-	4	-	-	2	-	-
32	1	22	54679-714	Khm	4	4	-	3	1	-	1	1	-	3	1	-	3	3	-
33	1	22	54765-785	Khm,Kgp	3	2	-	2	-	-	3	1	-	2	-	-	1	1	-
34*X5	1	23	55285-239	Kg,Kgp	2	3	5	5	1	-	2	1	-	1	1	-	2	1	-
35	1	23	55153-133	Khm	2	3	-	2	-	-	1	-	-	3	-	-	2	2	-
36	1	24	55535-555	Kg,Kgp	3	2	-	-	-	-	-	-	-	4	1	-	-	2	3
37	1	24	55662-682	Khm	4	1	-	1	-	-	-	-	-	-	3	-	1	4	-
38 X3	1	27	49360-350	Kg	2	1	-	1	-	-	-	2	-	-	-	-	-	-	-
39*	1	29	50518-503	Kkh,Kg	1	1	2	-	2	-	3	-	-	-	1	1	1	-	1
40*	1	29	50493-473	Kna,Kg	1	3	1	2	1	-	2	3	-	3	-	-	1	-	-
41*X1	1	29	50180-174	Khm,Qag	1	-	1	-	-	1	1	-	-	1	-	-	1	-	-
42 X1	1	30	51100-	Qag	-	-	1	-	-	1	1	-	-	-	-	-	-	-	-
43*	1	31	51388-	Qag	-	-	1	-	-	1	1	-	-	-	-	-	-	1	-
44	1	33	52215-204	pEp	2	1	-	3	-	-	2	-	-	1	-	-	1	-	-
45*X1	1	35	53610-615	Kg	-	1	1	1	-	-	1	-	-	-	-	1	-	-	1
46*	1	101	38309-284	Kg,Kna	2	2	2	1	-	-	2	1	-	1	3	1	2	2	-
47	1	101	38244-234	Qag	2	1	-	-	-	-	1	-	-	1	1	1	1	-	-
48*	1	101	38224-213	Kg	-	2	1	2	-	1	2	1	-	2	-	-	-	1	-
49	1	102	38675-690	Kg	3	1	-	2	1	1	3	-	-	-	-	-	1	-	-
50 X1	1	102	38731-741	Kg	2	1	-	2	-	-	-	-	-	-	-	-	1	1	-
		10																	

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

17.2.2 Continued

TABLE 23

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
GLEASON MOUNTAIN - AREA 5

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
51*X9	1	103	39564-639	Khm	8	5	3	3	-	-	2	-	-	2	2	1	3	1	2
52*X5	1	103	39705-730	Khm	2	2	2	3	-	-	3	1	-	1	-	-	1	-	-
53*X1	1	104	39282-252	Khm	3	2	2	-	-	-	-	-	-	-	4	2	-	3	3
54	1	104	39141-120	Khm	3	2	-	2	-	-	3	1	-	1	-	-	1	-	-
55 X1	1	105	53969-984	Kkh, Qag	2	2	-	2	-	-	2	-	1	1	1	-	1	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

17.2.3

TABLE 24

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT GLEASON MOUNTAIN - AREA 5

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1 X2	1	4	40293-298	100	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
2	1	4	40414-440	361	5	1	-	-	-	-	-	-	-	3	3	-	3	-	2
3	1	5	41795-805	361	2	1	-	1	-	2	2	1	-	-	-	-	-	-	-
4 X1	1	7	42524-	100	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
5 X1	1	7	42534-570	10,130,100,101	4	4	-	2	-	-	-	-	-	4	1	-	4	2	-
6	1	8	42892-877	130,100	3	1	-	-	1	-	1	-	-	1	-	-	2	-	-
7	1	9	43247-263	130,100	3	1	-	-	1	-	-	-	-	-	1	-	2	1	-
8*	1	9	43374-379	101	1	-	1	-	-	-	-	-	-	-	1	-	2	-	-
9 X1	1	10	43733-722	360,100	2	1	-	-	-	-	2	-	-	2	-	-	-	-	-
10*	1	10	43571-556	231	-	1	3	2	-	-	1	-	-	2	1	-	1	2	1
11 X2	1	12	44685-675	101	2	1	-	1	-	-	-	2	-	1	-	-	1	-	-
12	1	12	44665-645	231	4	1	-	3	-	-	1	-	-	1	-	-	2	-	-
13*	1	12	44635-604	231	4	1	2	1	1	-	2	-	2	1	3	-	2	1	-
14	1	12	44594-589	231	-	2	-	-	-	-	1	-	-	1	1	-	2	-	-
15*X1	1	12	44533-520	231,361	1	2	1	-	-	-	-	-	-	-	3	-	3	-	-
16	1	13	45194-199	101	-	2	-	-	-	-	2	-	-	1	1	-	-	-	-
17	1	13	45255-265	101	1	2	-	-	-	-	3	-	-	2	1	-	-	-	-
18	1	14	45576-555	101	3	2	-	2	1	-	4	-	-	-	1	-	-	-	-
19	1	14	45449-419	231,361	7	-	-	-	-	-	-	-	-	6	1	-	6	-	-
20 X1	1	15	50575-590	231	2	2	-	1	-	-	1	-	-	-	1	-	1	1	-
21	1	16	50970-950	101,231	5	-	-	-	-	-	-	-	-	2	2	-	4	-	-
22	1	19	53010-005	230	-	2	-	1	-	-	-	-	-	1	-	-	1	1	-
23*X4	1	23	55274-254	50	1	-	4	3	1	-	3	-	-	1	-	-	-	-	-
24	1	23	55244-239	190	-	2	-	-	1	-	1	-	-	1	-	-	-	1	-
25	1	24	55459-475	360,230	3	1	-	-	-	-	3	-	-	3	-	1	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

17.2.3 Continued

TABLE 24

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
GLEASON MOUNTAIN - AREA 5

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
26*	1	24	55646-682	230,101	3	1	4	1	2	1	2	-	-	1	2	-	1	4	3
27 X2	1	25	56047-027	230,101	3	2	-	2	-	-	1	-	-	2	-	-	-	3	-
28*X2	1	26	48799-825	100,230	3	2	1	4	-	-	1	-	-	2	-	-	1	3	-
29	1	29	50503-493	230	2	1	-	-	-	-	-	1	-	-	1	2	1	1	-
30	1	29	50583-473	100	2	1	-	-	-	-	3	-	-	1	2	-	-	-	-
31 X1	1	29	50180-174	100	-	2	-	-	-	-	-	-	-	1	-	-	1	-	-
32*	1	30	51161-171	360	1	1	1	-	-	-	-	-	-	-	3	-	-	2	-
33	1	31	51337-317	360,231	3	2	-	-	-	-	-	-	-	2	2	-	2	3	-
34	1	35	53443-463	360	4	1	-	-	-	-	-	-	-	3	1	-	4	1	-
35	1	35	53473-489	360	3	1	-	2	-	-	-	-	-	1	1	-	1	3	-
36*	1	35	53504-	360	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-
37*X1	1	35	53605-515	360	1	-	2	-	-	1	-	1	-	1	-	1	1	-	1
38*	1	101	38244-234	230	2	-	1	-	-	-	1	-	-	-	1	2	1	1	-
39	1	101	38224-213	200,100	1	2	-	-	1	-	1	-	-	2	-	-	3	-	-
40*X7	1	103	39558-529	190,230,10, 100,130	3	2	10	2	1	-	1	-	-	2	3	2	1	3	3
41*X5	1	103	39705-730	130,100	1	2	3	1	-	-	4	1	-	1	-	-	-	-	-
42*	1	104	39338-333	360	1	-	1	-	1	1	1	1	-	-	-	-	1	-	-
43*X1	1	104	39302-262	230,101	2	2	5	3	1	-	-	-	-	2	3	2	2	1	5
44	1	104	39090-075	361	3	1	-	1	-	-	1	-	-	2	1	-	-	1	-
45	1	105	53843-853	230,101	1	2	-	-	-	-	-	-	-	2	-	-	1	2	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 25

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT

GLEASON MTN.

GEOLOGIC UNIT	GEOCHEMICAL CODE											
	10	11	50	100	101	130	190	200	230	231	360	361
GAG	31	5	2	87	184	6	3	14	559	632	440	833
PCP	0	0	0	0	0	0	0	0	0	49	122	0
KG	0	0	24	162	0	0	20	231	1805	63	1502	0
KHM	403	63	0	1378	1271	243	698	0	1024	428	387	46
KKH	0	32	0	5	45	0	0	0	252	274	0	325
KGP	0	0	34	0	90	0	120	0	42	299	2	176
KNA	0	0	8	38	0	0	3	42	169	0	6	0

17.3 DISCUSSION OF GEOCHEMICAL UNITS, GEOLOGICAL CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

17.3.1 SHEET 1

There is a very interesting trend to the magnetic linears in the Gleason Mountain area. The contact between the Hungry Mountain pluton and the Galena Point granodiorite lie directly along a magnetic linear that has an arcuate shape on the total field map. The western contacts between GCU 70 and 100 follows this trend.

In the southernmost portion of the sheet and about one to two miles north of the contact between the Hungry Mountain pluton and the Galena Point granodiorite exist two additional curved magnetic linears that parallel the geologic contact. The southernmost linear ends near the central portions of the sheet, while the northernmost linear continues toward the east, paralleling and lying beneath the contact of Hungry Mountain pluton and the glacial fluvial deposits. Near the center of this "double ring structure" is the Gleason Mountain quartz monzonite, which appears to have caused this circular ring-like pattern. Possibly this double ring structure results from the contact metamorphic effects of the Gleason Mountain quartz monzonite as it intruded the Hungry Mountain pluton. Furthermore in the eastern portion of the sheet, GCU 10, 40, and 100, geologic anomalies 2, 6, 9, 52, 12, 21, 51, 53, 41, and 43, and geochemical anomalies 8, 10, 41, 40, 26, 28, 43, and 32, follow this double ring structure. Inside the ring and to the north of the Gleason Mountain quartz monzonite geologic anomalies 15, 20, 22, and 23, and geochemical anomalies 13 and 15 follow an east-west trend parallel to GCU 11 and 31. Geologic anomaly 34 and geochemical anomalies 23, 36, and 42, lie near the contact of the Hungry Mountain pluton and the Galena Point granodiorite. Geologic anomaly 45 and geochemical anomaly 37 are in the Prichard formation to the south of the double ring structure.

In the southwestern portion of sheet two anomalous regions lie along two east-west trending magnetic linears; i.e. geologic anomalies 28, 29, and 48, and geochemical anomaly 38, and geological anomalies 39, 40, and 46, respectively. These anomalies are associated with GCU 30 and 90, and lie within the Galena Point granodiorite and alaskite.

17.4 SUMMARY AND CONCLUSIONS

In the Gleason Mountain area most of the preferred anomalies appear to occur in contact metamorphic aureoles that are associated with the intrusion of the Gleason Mountain quartz monzonite or the Hungry Mountain pluton. Additional investigation may concentrate in those areas that follow the arcuate magnetic linears, and particular attention may be given to the arcuate double-ring-like structure within the Hungry Mountain Pluton.

18.0 CHELAN - AREA 6

18.1 GENERAL STATEMENT

The Chelan Falls area is in the extreme northwest corner of the Ritzville 2^{o} x 1^{o} quadrangle, and is within the Azwell and Chelan Falls 7½' x 7½' quadrangles. The Columbia River flows through the study area and the region is to the north of the Waterville Plateau and to the east of the town of Chelan, Washington, and includes portions of the Okanogan National Forrest. This region has up to 2400' of local relief.

18.2 GEOLOGY OF AREA 6

The geology of the Chelan Falls area is relatively simple. In the west and northwest are undivided Mesozoic granitic rocks and in the east the mainly Miocene Columbia River basalt flows. Glacial deposits occur along the Columbia River and in the southeastern portions of the study area. In addition, periglacial eolian deposits are located in the southern portions of the sheet.

18.3 URANIUM PROSPECTS

There are no known uranium prospects reported in the literature for this area, but granitic rocks are a source for uranium in other areas.

19.0 GEOPHYSICAL DATA INTERPRETATION
CHELAN - AREA 6

19.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

19.2.1 Preferred eU Anomaly Associations
19.2.2 Significant eU Anomalies by Geological Unit
19.2.3 Significant eU Anomalies by Geochemical Unit
19.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (19.2.2 and 19.2.3 respectively) have been annotated as follows:

* Preferred Anomalies
X1 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 19.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e. X1) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

19.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS

In the Chelan area there are a total of 43 geological and 42 geochemical statistically significant eU anomalies. Of these anomalies, 13 geological and 9 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 27 and 28) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 26 shows that the most of the preferred eU geological anomalies either correlate with glacial, fluvial alluvium or plutonic rocks.

The correlation to glacial, fluvial units could depend on several factors, such as the relative soluabilities of U, Th, and K. Uranium, being more soluable, may concentrate in organic material within the glacial deposits thus producing high eU/Th or eU/K ratios. Alternatively alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits.

The undifferentiated granites appear to be the source rock for the uranium. Tables 26 and 29 shows that geochemical units 230 and 231 correlate to the glacial deposits and the granites, with GCU 231 strongly correlating to the granitic rock.

19.2.1 PREFERRED eU ANOMALY ASSOCIATIONS
CHELAN - AREA 6

TABLE 26

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Qg	5	Glacial deposits
Mzg	13	Undivided granitic rocks

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Code	U	Th	K
131	1	67	H	H	A
*141	2	57	H	A	A
230	2	55	A	A	A
231	7	55	A	A	A
*261	1	25	A	A	L
271	1	15	A	L	L
321	1	53	L	A	A

Total preferred geological anomalies 13

Total preferred geochemical anomalies 9

*Sparcely sampled unit

Table 27

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOLOGIC UNIT CHELAN - AREA 6

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
1 X2	2	1	53968-978	Mzg,Qg	1	-	2	-	1	-	-	2	1	-	-	-	-	-	-
2 X4	2	1	53993-54008	Qg,Mzg	1	1	2	-	-	-	1	-	1	-	-	-	-	-	-
3 X2	2	3	53331-336	Mzg	-	1	1	1	-	-	1	-	-	-	-	-	-	-	-
4*	2	3	53387-397	Mzg	2	-	1	2	-	-	1	1	-	1	-	-	1	-	-
5 X4	2	4	52947-927	Mzg	3	-	2	3	1	-	-	2	2	-	1	-	-	-	-
6 X5	2	5	52630-656	Mzg	3	-	3	3	1	-	-	-	6	-	-	-	-	-	-
7	2	7	51726-741	Mzg	2	2	-	4	-	-	2	1	1	-	-	-	1	-	-
8 X1	2	7	51766-772	Mzg	-	2	-	1	-	1	1	-	1	-	-	-	-	-	-
9	2	8	51265-244	Mzg,Qg	5	-	-	4	1	-	1	3	1	-	-	-	-	-	-
10 X1	2	13	49342-	Mzg	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
11 X3	1	20	46594-579	Qg	2	2	-	-	-	-	1	-	-	-	-	-	-	-	-
12 X1	1	20	46569-	Qg	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
13*	1	22	45958-948	Mzg,Qg	2	-	1	-	1	1	1	-	-	-	-	-	-	1	-
14*	1	24	41118-108	Mzg	-	2	1	-	-	-	-	-	-	-	2	1	-	3	-
15	1	24	41098-083	Mzg	1	3	-	-	-	-	-	-	-	1	3	-	1	3	-
16	1	24	41048-043	Qg	-	2	-	-	-	-	-	-	-	2	-	-	2	-	-
17*	1	24	41033-017	Qg,Mzg	1	1	2	-	-	-	-	-	-	2	1	1	1	1	2
18	1	24	41002-40992	Mzg	1	2	-	1	-	-	-	-	-	1	-	-	2	-	1
19 X1	1	24	40952-	Mzg	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-
20 X2	1	24	40941-931	Mzg,Tc	2	1	-	-	-	-	-	-	-	-	-	1	-	-	1
21	1	25	40617-632	Mzg	2	2	-	1	-	-	3	-	-	1	1	-	2	-	-
22*X1	1	25	40652-657	Mzg	-	1	1	-	-	-	1	-	-	-	-	1	-	-	1
23*X7	1	26	40471-421	Qg,Mzg	3	2	6	-	-	-	1	-	-	1	-	2	3	1	-
24*	1	26	40405-400	Mzg	1	-	1	-	-	-	-	-	-	1	-	-	1	-	1
25 X1	1	26	40294-281	Qg	4	-	-	3	-	-	-	-	-	-	-	-	1	-	-
26*X1	1	27	40017-043	Qg,Mzg	2	2	2	-	-	-	1	-	-	4	-	-	1	3	-
27	1	27	40108-124	Mzg	3	1	-	2	1	1	1	-	-	-	-	-	2	-	-
28*X7	1	28	39864-819	Mzg,Qg	-	3	7	1	-	-	1	-	-	-	1	1	1	1	1

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

19.2.2 Continued

Table 27

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
CHELAN - AREA 6

Anom. No.		Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
29	*	1	28	39779-768	Mzg	-	1	2	-	2	-	1	-	-	1	-	-	2	-	1
30	*	1	28	39758-738	Mzg	3	1	1	-	4	1	2	-	-	-	-	-	1	1	-
31		1	28	39688-677	Qg	2	1	-	2	1	-	-	-	-	-	-	-	-	1	-
32		1	29	39453-483	Mzg	5	2	-	2	5	-	6	-	-	-	-	-	1	-	-
33		1	29	39574-584	Qg	2	1	-	1	2	-	-	-	-	-	-	-	3	-	-
34	*X11	1	30	39284-213	Mzg	5	5	5	4	2	-	3	1	1	-	1	3	-	1	2
35		1	31	38956-971	Qg	4	-	-	2	2	-	-	-	-	-	-	-	4	-	-
36	*X6	1	32	38471-426	Mzg	2	2	6	2	1	-	1	-	-	-	1	-	1	2	1
37		1	33	37978-988	Mzg	1	2	-	2	1	-	-	-	-	-	-	-	1	2	-
38		1	33	37998-018	Mzg	3	2	-	2	1	2	-	-	-	-	-	-	4	1	-
39		1	34	37691-676	Mzg	1	3	-	1	3	-	-	-	-	-	-	-	2	1	-
40	X1	1	34	37475-	Qe	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
41	X2	2	101	56898-903	Mzg	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
42	X3	2	101	57338-348	Mzg	-	1	2	1	-	-	-	-	2	-	-	-	-	-	-
43	X2	1	102	57749-744	Qg	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

19.2.3

Table 28

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT CHELAN - AREA 6

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU 1	eU 2	eU 3	eTh 1	eTh 2	eTh 3	K 1	K 2	K 3	eU/Th 1	eU/Th 2	eU/Th 3	eU/K 1	eU/K 2	eU/K 3
1	2	1	53892-897	230	-	2	-	1	-	-	1	1	-	1	-	-	1	-	-
2 X1	2	1	53993-	230	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
3*	2	1	54084-	230	-	-	1	1	-	-	-	1	-	-	-	-	1	-	-
4	2	2	53807-802	230	-	2	-	-	-	-	1	-	-	2	-	-	2	-	-
5*	2	3	53387-397	230	2	-	1	2	-	-	1	-	1	1	1	-	1	-	-
6 X1	2	6	51918-	101	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-
7	2	8	51260-234	201,231	6	-	-	3	1	1	2	1	1	1	-	-	1	-	-
8	2	12	49620-605	231,271	3	1	-	1	-	1	2	-	1	1	-	-	1	-	-
9 X2	2	12	49590-585	271	1	-	1	1	-	-	-	1	-	-	-	-	-	-	-
10 X2	2	13	49342-347	271	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-
11 X2	1	18	47287-282	261	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
12 X3	1	20	46594-579	231,261	1	1	2	-	1	-	1	-	-	-	-	-	-	-	-
13 X1	1	20	46569-	231	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
14	1	22	45958-948	141,230	1	2	-	1	1	1	2	-	-	-	-	-	2	-	-
15 X1	1	23	45569-	261	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
16*	1	24	41118-103	231	-	2	1	-	-	-	-	-	-	-	2	1	-	2	1
17	1	24	41098-083	231	-	4	-	-	-	-	-	-	-	2	2	-	1	2	1
18	1	24	41027-017	141,231	2	1	-	-	-	-	-	-	-	2	1	-	1	2	-
19*	1	24	41002-992	231	1	1	1	1	-	-	-	-	-	1	-	-	2	-	1
20 X1	1	24	40952	231	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-
21 X2	1	24	40941-931	231	-	3	-	1	-	-	-	-	-	1	-	-	-	-	1
22	1	25	40617-632	231	1	3	-	1	-	-	3	-	-	1	1	-	2	-	-
23 X1	1	25	40652-657	231	-	1	1	-	-	-	1	-	-	-	-	1	-	-	1
24 X5	1	26	40471-441	231,261,141	1	1	5	-	1	2	1	1	1	-	1	1	1	-	1
25	1	27	39992-002	231	-	2	-	-	-	-	-	-	-	-	1	-	-	2	-
26	1	27	40033-043	231	2	1	-	-	-	-	-	-	-	2	-	-	1	2	-
27	1	28	39890-880	231	2	1	-	1	-	-	1	-	-	1	-	-	2	-	-
28 *X7	1	28	39870-819	231,261,141, 231	2	2	7	3	-	1	1	-	1	1	1	1	1	-	2

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

19.2.3 Continued

Table 28

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
CHELAN - AREA 6

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
29*	1	28	39779-768	231,131	1	1	1	1	-	-	1	-	-	2	1	-	-	2	-
30*X7	1	30	39284-234	231,271,141	2	7	2	4	-	-	3	-	-	-	2	2	-	1	2
31 X2	1	30	39218-213	141,101	-	-	2	1	-	-	1	1	-	-	-	-	-	-	-
32	1	30	39203-193	221,230	2	1	-	2	-	-	-	-	-	-	-	-	2	1	-
33 X2	1	32	38466-461	141	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
34 X2	1	32	38451-446	141	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
35*	1	32	38431-426	231	1	-	1	2	-	-	-	-	-	-	-	-	-	1	1
36 X1	1	34	37475-	221	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
37	1	35	37243-253	221	2	1	-	-	-	-	-	-	-	2	-	-	-	1	-
38 X2	1	101	56898-903	231,271	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
39*	2	101	57317-	321	-	-	1	-	1	-	-	1	-	-	-	-	1	-	-
40	2	101	57338-348	231	-	1	2	1	-	-	-	-	2	-	-	-	-	-	-
41	2	102	57906-901	271	-	1	1	-	1	1	1	-	1	-	-	-	-	-	-
42	2	102	57749-744	231	1	-	1	1	-	-	2	-	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 29

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
CHELAN

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	100	108	110	111	130	131	141	191	201	220	221	230	231	261	271
QG	0	13	5	0	0	57	59	36	22	14	312	288	1216	97	113
QE	0	0	0	0	0	14	0	0	0	0	457	0	0	0	0
TC	0	0	0	0	80	80	8	0	0	72	560	44	89	0	0
MZG	10	20	34	35	76	61	145	9	265	0	142	971	3562	3	220

GEOLOGIC UNIT	GEOCHEMICAL CODE				
	320	321	351	360	361
QG	3	14	32	71	115
QE	0	0	0	0	0
TC	0	0	0	0	0
MZG	116	605	19	7	35

19.3 DISCUSSIONS OF GEOCHEMICAL UNITS, GEOLOGY CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

19.3.1 SHEET 1

This region is not as radiogenic as other areas and only one non-preferred geologic anomaly is located within the basalt flows.

There are four sets of magnetic linears on the total field map; a north-sourth, an east-west, a northwest and a northeast trending set of linears. Geologic anomaly 13 in the granites and glacial deposits lies upon one of the northwest trending linears, and geologic anomaly 17 and geochemical anomaly 19 lie along side of an east-west trending linear. To the southwest of this area is a diffuse band of anomalies in the granites that trends northwest-southeast; i.e. geologic anomalies 14, 22, 23, 26, 28, and 29, and geochemical anomalies 16 and 29. South of this band is geologic and geochemical anomalies 36, and 28 and 30, respectively. None of these anomalies correlate to any known structure.

To the east geochemical anomaly 35 is in basalt flows and geologic anomalies 24, 30, and 34 are in the area of wide spread glacial deposits.

19.3.2 SHEET 2

There are only four preferred anomalies on sheet 2 and these anomalies follow a northeast-southwest trend on the map; i.e. geologic anomalies 4 and geochemical anomalies 3, 5, and 39. These anomalies are in the granites and the alluvium and do not correlate to any subsurface structure.

19.4 SUMMARY AND CONCLUSIONS

In the Chelan Falls area there appears to be no correlation between the preferred anomalies and the magnetic lineations. This lack of structural correlation is atypical when compared to the other study areas, and thus the Chelan Falls area may not be as promising as the other areas.

20.0 SADDLE MOUNTAIN - AREA 7

20.1 GENERAL STATEMENT

The Saddle Mountain area is in the Sandpoint 2^{o} x 1^{o} quadrangle and the Grass Mountain, Shorty Peak and Caribou Creek 7½' x 7½' quadrangles. The study area is in the Kaniksu National Forest and borders on Canada to the north and Upper Priest Lake on the south. Saddle Mountain at 6,893 feet of elevation has almost 2,500 feet of local relief.

20.2 GEOLOGY OF AREA 7

The bedrock of the Saddle Mountain area is composed primarily of undifferentiated plutonic rocks of Selkirk Crest (mostly quartz monzonites) along with Precambrian argillite, quartzite, schists, amphibolite, paragneiss, and migmatite. The Precambrian units trend northeast across the study area parallel to the trend of the Kootenay Arc. Two fault sets cut the region, one set trends northwest-southeast and the other set trends north by northeast about parallel to the trend of the Kootenay Arc.

20.3 URANIUM PROSPECTS

There are no reported uranium prospects reported in the literature, but the existence of quartz monzonites and argillites in the study area is similar to the geologic units that are present in the Midnite Mine area (Babcock et. al., 1981).

21.0 GEOPHYSICAL DATA INTERPRETATION SADDLE MOUNTAIN - AREA 7

21.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

- 21.2.1 Preferred eU Anomaly Associations
- 21.2.2 Significant eU Anomalies by Geological Unit
- 21.2.3 Significant eU Anomalies by Geochemical Unit
- 21.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (21.2.2 and 21.2.3 respectively) have been annotated as follows:

- * Preferred Anomalies
- X1 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 21.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e X1) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

21.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS

In the Saddle Mountain area there are a total of 63 geological and 58 geochemical statistically significant eU anomalies. Of these anomalies, 21 geological and 12 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 31 and 32) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 30 shows that the most of the preferred eU geological anomalies either correlate with glacial deposits or undifferentiated plutonic rocks. In addition, many of these preferred anomalies tend to correlate to magnetic lineations on the total field map.

The strong correlation to glacial, fluvial units could depend on several factors, such as the relative soluabilities of U, Th, and K. Uranium, being more soluable, may concentrate in organic material within the glacial deposits thus producing high eU/Th or eU/K ratios. Alternatively alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits. The preferred eU anomalies appear to be related to the undifferentiated quartz monzonites.

A comparison of Tables 31 and 32 demonstrate that GCU 11, 100, 230, 231, and 361 correlate to the quartz monzonites, although GCU 100, 230, 231, and 361, also correlate to the glacial deposits. GCU 361 also correlates to the Prichard formation.

21.2.1 PREFERRED eU ANOMALY ASSOCIATIONS SADDLE MOUNTAIN - AREA 7

TABLE 30

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Qg	6	Glacial deposits
Tsp	15	Undifferentiated quartz monzonites
pЄp	1	Schists, amphibolite, paragneiss, migmatite

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Codes	U	Th	K
10	1	99	H	H	H
*11	2	99	H	H	H
*50	1	59	H	A	A
100	2	97	H	H	H
*150	1	47	H	L	A
190	1	95	A	H	H
230	2	55	A	A	A
231	3	55	A	A	A
360	1	13	L	L	L
361	3	13	L	L	L

Total preferred geological anomalies = 21

Total preferred geochemical anomalies = 12

*Sparcely sampled geochemical unit

21.2.2

Table 31

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOLOGIC UNIT SADDLE MOUNTAIN - AREA 7

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1*X2		2	41229-219	Qg	-	1	2	-	-	-	1	-	-	-	-	1	-	1	-
2		3	41419-434	Qg,Tsp	2	2	-	1	1	2	3	-	-	-	-	-	1	-	-
3*X4		4	41793-773	Qg	3	1	1	1	-	-	-	-	-	1	-	-	1	-	-
4 X1		4	41757-747	Qg	2	-	-	1	1	1	3	-	-	-	-	-	-	-	-
5 X3		6	45347-832	Qg	4	-	-	2	-	-	1	-	-	-	-	-	1	-	-
6 X7		8	46486-456	Qg,pEp	3	2	2	2	-	-	3	-	-	-	-	-	-	-	-
7		8	46370-360	Tsp	2	1	-	1	2	-	1	-	-	-	-	-	2	1	-
8 X3		9	46662-667	Qg,Tsp	2	2	-	-	2	-	1	-	-	-	-	-	-	-	-
9		9	46687-703	Tsp,Qg	3	1	-	-	2	1	2	-	-	-	-	-	2	-	-
10*X2		10	46920-899	Qg,Tsp	1	3	1	2	1	2	2	-	-	-	-	-	1	1	-
11 X3		11	47215-230	Tsp	1	2	1	-	3	1	4	-	-	-	-	-	-	-	-
12*		12	47440-430	Tsp	2	-	1	1	2	-	3	-	-	-	-	-	-	1	-
13*		12	47420-405	Qg	2	1	1	2	1	1	2	-	-	-	-	-	1	-	-
14*		13	47738-753	Qg	-	1	3	3	1	-	2	-	-	1	-	-	3	1	-
15		14	47933-918	Tsp,Qg	1	3	-	2	-	2	2	2	-	-	-	-	1	-	-
16*		15	48221-237	Tsp	1	2	1	-	3	-	2	1	-	-	-	-	1	1	-
17*		16	48442-406	Tsp	3	1	4	3	2	1	2	1	-	1	-	-	5	2	1
18		17	48699-714	Tsp,Qg	2	2	-	2	-	-	2	-	-	-	-	-	3	-	-
19		18	48903-373	Tsp	5	2	-	6	-	-	7	-	-	1	-	-	3	-	-
20 X4		23	50501-515	Qg	2	1	1	3	-	-	1	3	-	-	-	-	-	-	-
21 X2		25	50921-937	Qg	3	1	-	2	-	-	1	2	-	-	-	-	-	-	-
22 X4		27	51352-366	Qg,Qls	2	1	1	1	1	1	1	2	1	-	-	-	-	-	-
23 X3		28	51434-429	Qg,Qls	-	1	1	1	-	1	1	-	1	-	-	-	-	-	-
24 X1		29	51614-554	Qg,Tsp	6	3	-	1	-	-	2	-	-	3	4	-	6	-	-
25 X2		29	51725-730	Qg	-	2	-	1	-	-	-	1	1	-	-	-	-	-	-
26 X1		30	51874-848	pEm,Tsp	1	5	-	1	-	-	5	-	-	3	-	-	1	-	-
27 X3		30	51783-767	Qg,Tsp	2	2	-	-	-	-	2	-	-	1	-	-	1	-	-
28*X2		31	51952-962	pEp	-	-	3	1	1	1	-	-	3	1	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

21.2.2 Continued

Table 31

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SADDLE MOUNTAIN - AREA 7

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
29*		31	51987-998	Tsp	1	1	1	2	-	-	-	3	-	2	-	-	1	-	-
30 X5		31	52043-063	Qg,Tsp	1	3	1	2	-	-	2	3	-	-	-	-	-	-	-
31		32	40404-419	pEm	3	1	-	2	-	-	3	-	3	1	2	-	-	-	-
32		33	52305-295	pEm	1	2	-	3	-	-	1	2	-	2	-	-	-	-	-
33		33	52269-264	Tsp	-	2	-	-	-	-	2	-	-	2	-	-	2	-	-
34		34	52348-368	pEm,Tsp	4	1	-	1	1	-	2	1	-	2	-	-	2	-	-
35		34	52378-403	Tsp	6	-	-	1	-	-	4	-	-	1	-	-	2	-	-
36*X1		35	52585-555	Tsp	-	4	3	3	-	-	3	2	2	3	2	-	4	1	-
37*		36	52663-683	Tsp	1	1	3	1	-	-	2	3	-	2	2	-	2	2	-
38*X6		37	60249-340	Tsp	8	8	3	4	-	-	4	8	3	5	1	-	2	-	-
39*X2		38	60117-087	Tsp	3	2	2	1	-	-	3	2	-	4	-	-	1	1	-
40*X8		38	60077-032	Tsp	2	1	7	2	-	-	4	3	2	1	-	-	-	-	-
41*X9		39	59901-952	Tsp	4	1	6	3	1	-	3	1	4	2	-	-	1	-	-
42*X2		40	59719-698	Tsp	1	3	1	-	-	-	1	-	-	1	-	-	1	-	-
43*X6		40	59673-643	Tsp	3	-	4	-	-	-	1	2	2	1	-	-	-	-	-
44*X6		41	59510-541	Tsp	4	-	3	-	-	-	2	4	1	1	-	-	-	-	-
45 X5		42	59228-208	Tsp	1	2	2	1	-	-	1	1	1	-	-	-	-	-	-
46 X4		43	59093-108	Tsp	-	1	3	2	-	-	-	3	1	-	-	-	-	-	-
47 X4		44	58796-781	Tsp	-	1	3	-	-	-	1	1	1	-	-	-	-	-	-
48 X5		45	58639-659	Tsp	1	3	1	1	-	-	1	2	-	-	-	-	-	-	-
49 X6		46	58242-217	Tsp	1	-	5	-	-	-	2	-	-	-	-	-	-	-	-
50 X3		54	38834-844	Tsp	1	2	-	-	-	-	1	1	-	-	-	-	-	-	-
51 X5		56	38423-444	Tsp	1	2	2	-	-	-	1	-	-	-	-	-	-	-	-
52*X4		57	38167-147	Tsp	3	1	1	1	-	-	-	-	-	-	-	-	1	-	-
53 X4		58	38044-070	Tsp	4	2	-	-	-	-	1	-	-	1	-	-	1	-	-
54		59	37823-803	Tsp	5	-	-	-	-	-	-	-	-	-	3	-	2	-	1
55 X2		60	37717-727	Tsp	2	1	-	-	-	-	1	-	-	-	1	-	-	1	-
56 X3		61	37500-490	Tsp	2	1	-	1	-	-	1	1	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

21.2.2 Continued

Table 31

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SADDLE MOUNTAIN - AREA 7

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57 X3		62	37398-426	Tsp	5	2	-	-	-	-	1	-	-	1	2	-	1	1	1
58 X4		102	56993-978	Tsp	1	3	-	-	-	-	3	-	-	-	-	-	-	-	-
59 X2		102	56968-963	Tsp	-	1	1	-	-	-	-	2	-	-	-	-	-	-	-
60 X3		102	56953-923	Tsp	3	3	-	1	-	-	2	1	-	-	1	1	1	1	-
61		103	40667-682	Qg	3	1	-	-	-	-	3	1	-	1	-	-	-	-	-
62		103	40728-748	Qg,Tsp	5	-	-	3	1	-	2	-	-	-	-	-	3	-	-
63*		103	40758-779	Qg	-	3	2	2	-	-	1	-	-	2	1	1	-	1	3

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

21.2.3

Table 32

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES EVALUATED BY GEOCHEMICAL UNIT SADDLE MOUNTAIN - AREA 7

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	X2	2	41229-219	100	1	2	-	-	-	-	1	-	-	-	-	1	-	-	1
2		3	41419-434	100	4	-	-	-	1	1	1	-	-	-	-	-	2	-	-
3*		4	41853-848	361	-	1	1	1	-	-	1	-	-	1	-	-	1	-	-
4*	X4	4	41793-773	231,100	1	2	2	-	1	2	-	-	-	-	-	-	1	-	-
5	X4	8	46491-471	231,141	2	3	-	1	1	-	2	-	-	-	-	-	-	-	-
6		8	46370-360	100,220	1	2	-	-	-	-	-	-	-	-	1	-	1	2	-
7		9	46687-703	100,220	4	-	-	-	2	-	1	-	-	-	1	-	3	-	-
8	X1	11	47089-094	231,361	1	-	1	-	-	-	-	1	1	-	-	-	-	-	-
9	X3	12	47552-541	361	2	-	1	2	1	-	2	-	-	-	-	-	-	-	-
10*		12	47521-506	361	2	1	1	1	1	-	1	-	-	2	-	-	2	-	-
11	X4	13	47606-621	361	1	2	1	1	2	-	2	1	-	-	-	-	-	-	-
12	X1	14&15	47838-095	360,361	2	1	-	1	1	-	1	1	-	-	-	-	-	-	-
13*		16	48442-436	230	1	-	1	-	-	-	-	-	-	1	-	-	1	1	-
14		16	48421-406	10	2	2	-	2	1	-	1	-	-	-	-	-	2	1	-
15*	X2	16&17	48357-593	190,361	2	-	1	-	-	-	-	-	-	1	-	-	-	1	-
16*		17	48679-699	230,100	3	1	1	2	-	-	2	-	-	-	1	-	4	-	-
17		18	48908-893	230,100	3	1	-	-	-	-	-	-	-	1	-	1	1	-	-
18		18	48883-873	100	2	1	-	-	-	-	1	-	-	2	1	-	2	-	-
19		19	49131-156	230,100	6	-	-	-	-	-	3	-	-	1	1	-	1	-	-
20		28	51561-540	230	4	1	-	-	-	-	-	-	-	2	1	-	1	2	-
21		29	51614-634	230	3	2	-	-	-	-	-	-	-	3	-	-	5	-	-
22		30	51894-879	230	4	-	-	-	-	-	-	-	-	1	-	-	-	1	-
23	X3	31	51952-962	230	-	1	3	2	-	-	1	1	2	-	-	-	-	-	-
24	X5	31	52043-063	100	3	2	-	-	-	-	1	2	-	-	-	-	-	-	-
25		33	52285-275	230	2	1	-	-	-	-	2	-	-	1	-	-	-	-	-
26*	X1	35	52585-575	10	1	1	1	-	-	-	1	1	-	1	1	-	2	-	-
27		36	52668-678	10	1	2	-	-	-	-	1	-	-	1	2	-	3	-	-
28		37	60249-260	230	1	2	-	-	-	-	2	-	-	2	1	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

21.2.3 Continued

Table 32

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SADDLE MOUNTAIN - AREA 7

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
29 X4		37	60325-340	11	-	2	2	1	3	-	-	-	4	-	-	-	-	-	-
30 X7		38	60062-026	10,11	1	1	6	1	1	1	1	3	2	-	-	-	-	-	-
31 X8		39	59921-957	10,11,231	1	2	5	-	-	2	2	1	3	-	-	-	-	-	-
32*X3		40	59719-703	150	1	2	1	1	-	-	-	-	-	-	-	-	1	-	-
33 X5		40	59663-643	11,231	-	-	5	1	1	-	-	-	3	-	-	-	-	-	-
34*X5		41	59510-536	231,11	2	1	3	3	1	-	-	2	4	1	-	-	-	-	-
35 X5		42	59228-208	231,11	-	1	4	-	-	1	1	-	2	-	-	-	-	-	-
36 X4		43	59093-108	11	1	-	3	1	-	2	-	-	4	-	-	-	-	-	-
37		44	58882-872	231,141	2	1	-	-	-	-	-	-	-	2	1	-	2	-	1
38 X6		44	58801-771	231,11	1	3	3	1	2	-	1	2	2	1	-	-	-	-	-
39 X5		45	58639-659	11,231	3	-	2	-	-	1	2	-	2	-	-	-	-	-	-
40 X4		48	57769-754	231,141	3	1	-	1	-	-	2	-	-	-	-	-	-	-	-
41 X1		49	57652-657	361	1	-	1	1	-	-	-	2	-	-	-	-	-	-	-
42 X2		51	39761-765	360	1	-	1	2	-	-	1	1	-	-	-	-	-	-	-
43		52	39538-528	231	2	1	-	-	-	-	1	-	-	2	-	-	1	-	-
44 X1		52	39398-	360	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
45		54	38758-768	231	2	1	-	1	-	-	2	-	-	2	-	-	-	-	-
46 X2		55	38529-520	360	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
47*		56	38343-363	360	2	2	1	-	-	-	1	-	-	2	2	-	3	-	-
48 X6		56	38418-444	230,50	2	2	2	-	-	-	-	1	-	-	-	-	-	-	-
49*X4		57	38167-147	50	3	1	1	2	-	-	1	-	-	-	-	-	1	-	-
50 X2		60	37722-732	230,100,150	2	1	-	1	-	-	1	-	-	-	1	-	-	1	-
51 X1		62	37426-	230	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-
52		64	37131-141	360	1	2	-	-	1	-	-	-	-	2	1	-	-	2	1
53 X3		102	57103-088	360	3	-	1	3	-	-	2	-	-	-	-	-	-	-	-
54 X2		102	56983-978	11	-	2	-	1	-	-	2	-	-	-	-	-	-	-	-
55 X2		102	56968-963	11	-	1	1	1	-	-	-	-	2	-	-	-	-	-	-
56 X3		102	56943-933	11	1	1	1	-	1	1	-	1	1	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

21.2.3 Continued

Table 32

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SADDLE MOUNTAIN - AREA 7

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Gecchem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57		102	56753-743	231	2	1	-	1	-	-	-	-	-	-	-	-	1	1	1
58		103	40667-682	190	2	2	-	-	-	-	1	-	-	2	2	-	2	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 33

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT

SADDLE MTN.

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	10	11	50	51	100	120	130	140	141	150	151	190	220	230	231
QLS	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0
QG	192	0	0	0	503	0	80	0	23	0	0	398	127	709	334
PCM	55	0	0	0	0	0	0	0	0	0	0	0	0	69	52
PCP	0	0	0	0	0	0	0	0	5	0	0	0	0	46	91
TSP	567	322	116	39	324	70	0	91	49	142	8	464	111	1769	1420

GEOLOGIC UNIT	GEOCHEMICAL CODE		
	320	360	361
QLS	0	0	72
QG	25	160	686
PCM	0	0	120
PCP	0	0	338
TSP	59	742	447

21.3 DISCUSSIONS OF GEOCHEMICAL UNITS, GEOLOGY CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

21.3.1 SHEET 1 AND 2

There are two major magnetic linears that trend northeast-southwest on the total field map. One of these linears is immediately to the east of the Precambrian schists, amphibolites and paragneisses and follows northeasternly trending GCU 230. The other linear bisects the two northernly trending faults on the geologic map. Between the two magnetic linears is GCU 10 and 100 and geological anomalies 3, 4, 13, and 16, and geochemical anomalies 1, 3, 63, 10, 12, 13, 14, 16, and 17, which also trend northeast-southwest. These anomalies are in the glacial deposits and the Eocene quartz monzonites. West of this area geologic anomaly 10 is in the Prichard formation.

Following the westernmost magnetic linear to the south and into sheet 2 is another zone of high radiometric response (GCU 10 and 150). This area is also bounded by another northeast-southwest trending linear along the southern portions of GCU 10. Between these two magnetic linears are geological anomalies 26 and 32, and geochemical anomalies 28, 29, 36, 37, 38, 39, and 42.

21.3.2 SHEET 2

Directly to the east of the southernmost magnetic linear is another zone of high radiometric response (GCU 11) within the quartz monzonites. Associated with GCU 11 are geological anomalies 34 and 38, and geochemical anomalies 40, 41, 43, and 44.

To the south of this area and within the quartz monzonites and GCU 151 and 50 are geological anomaly 47, and geological anomaly 49 and geochemical anomaly 52 respectively.

21.4 SUMMARY AND CONCLUSIONS

In the Saddle Mountain region most of the preferred anomalies occur in elongated regions within the quartz monzonites that are bounded on both sides by northeasternly trending magnetic linears. This radiometric trend is parallel to the northeasternly trending Kootenay Arc.

22.0 SPIRIT PLUTON - AREA 8

22.1 GENERAL STATEMENT

The Sprit Pluton area is in the Sandpoint 2^{o} x 1^{o} quadrangle and contains portions of the China Bend, Onion Creek, Spirit, Deep Lake, Metaline, and Gillette Mountain 7½' x 7½' quadrangles. The study area lies between Franklin D. Roosevelt Lake and the Pend Oreille River, and the eastern portion is in the Colville National forrest. The area has over 2500' of local relief.

22.2 GEOLOGY OF AREA 8

This region is in the northeasternly trending Kootenay Arc and contains Tertiary, Cretaceous, Ordovician, Cambrian, and Precambrian basement units beneath glacial deposits. The Cretaceous Spirit pluton intruded the central portions of the study area cutting across the northeasternly trending lower Paleozoic and Precambrian sedimentary units. The Cambrian rocks are composed of limestone, dolomite phyllite and quartzite, the Ordovician rocks of slate and argillite, and the Precambrian rocks of schist, limestone and quartzite. The younger sedimentary Tertiary units contain conglomerate.

22.3 URANIUM PROSPECTS

There are no uranium mines or prospects reported in the literature for this area, although the presence of quartz monzonites, slate, argillite and conglomerate presents a geological environment that has favored uranium mineralization in other areas.

23.0 GEOPHYSICAL DATA INTERPRETATION SPIRIT PLUTON - AREA 8

23.1 GENERAL STATEMENT

The geological, geophysical and geochemical implications of this data set are, to the extent possible, condensed into four tables as follows:

- 23.2.1 Preferred eU Anomaly Associations
- 23.2.2 Significant eU Anomalies by Geological Unit
- 23.2.3 Significant eU Anomalies by Geochemical Unit
- 23.2.4 Summary of Geological Units per Geochemical Unit

The significance drawn from these tabulations in the context of the known geology is discussed in the subsequent section. Two of the tables, the lists of significant geological and geochemical anomalies (23.2.2 and 23.2.3 respectively) have been annotated as follows:

* Preferred Anomalies

X1 Part or all of data unreliable

The asterisk denotes a preferred anomaly. The preferred anomalies result in Table 23.2.1.

The X indicates that some samples comprising the anomaly failed the count rate significance test in one of the spectral windows of the radiometric data or were recorded at an altitude in excess of the prescribed altitude limits. The number (i.e. X1) indicates the number of samples that have failed these significance tests. Thus, for example, if the uranium windows produced six consecutive anomalous samples and in one instance the potassium channel lacked significant count rate and another sample was recorded at an excessive altitude then two of the six samples would be unreliable. This "listing" procedure may help in evaluating anomalous zones and cross-correlating geological and geochemical units.

23.2 NUMBER OF PREFERRED ANOMALIES IN GEOLOGICAL AND GEOCHEMICAL UNITS

In the Spirit Pluton area there are a total of 114 geological and 110 geochemical statistically significant eU anomalies. Of these anomalies, 45 geological and 38 geochemical anomalies have been selected as preferred anomalies on the basis of the strength and the character of their eU response as well as their relative enrichment of eU over eTh and K. Thus the preferred anomalies (Tables 35 and 36) appear to have the greatest potential as indications of true uranium enrichment. This selection has taken into account statistical adequacy of the sampling, and thus excludes anomalies that correlate with sparsely sampled geologic units.

Table 34 shows that the most of the preferred eU geological anomalies either correlate with glacial, fluvial alluvium, granodiorite, slate and limestone. In addition, many of these preferred anomalies tend to correlate with magnetic lineations on the total field map or to mapped geologic faults.

The strong correlation to glacial, fluvial units could depend on several factors, such as the relative soluabilities of U, Th, and K. Uranium, being more soluable, may concentrate in organic material within the glacial deposits thus producing high eU/Th or eU/K ratios. Alternatively alluvial material is porous, permitting the rapid escape of radon gas. If the eU anomalies are associated with radon gas emmission, then the eU anomalies may correlate to buried uranium deposits.

In the Spirit Pluton area most of the preferred anomalies occur on the border of the Spirit Pluton or in the Paleozoic or Precambrian sedimentary units that are marginal to the pluton. This suggests that the Spirit Pluton is the source rock for the uranium, and that the uranium was introduced into the sedimentary units as a result of hydrothermal circulation associated with the emplacement of the pluton.

Tables 34 and 37 demonstrate that GCU 230 and 231 are primarily associated with the glacial deposits and the Spirit Pluton. GCU 231 also correlates to Cambrian limestone and Ordovician slate, argillite and quartzite.

23.2.1 PREFERRED eU ANOMALY ASSOCIATIONS SPIRIT PLUTON - AREA 8

TABLE 34

Geologic Unit	No. of times Preferred Anomaly is Associated with a Geological Unit	Rock Type
Qag	41	Glacial, fluvial alluvium,
Tcq	1	Gravel, conglomerate
* Tsh	1	Shonkinite dikes
To	4	Tuff
Tc	4	Conglomerate
Ksp	18	Granodiorite
Cg	1	Argillite and limestone
Olu	11	Slate, argillite, quartzite
€ml	7	Limestone
€mm	1	Dolomite
€mr	5	Limestone
€q	2	Quartzite
p€bc	1	Schist, quartzite, limestone

Geochemical Unit	No. of times Preferred Anomaly is Associated with a Geochemical Unit	Multivariant Code	U	Th	K
130	3	67	H	A	H
141	4	57	H	A	A
* 201	1	85	A	A	H
* 220	2	65	A	H	A
221	2	65	A	H	A
230	12	45	A	L	A
231	32	55	A	A	A
* 241	2	55	A	A	A
271	3	15	A	L	L
321	2	53	L	A	A
361	1	13	L	L	L

Total preferred geological anomalies = 45

Total preferred geochemical anomalies = 38

* Sparsely sampled geological or geochemical unit

23.2.2

TABLE 35

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	1	1	49599-609	Qag	2	-	1	3	-	-	2	1	-	-	-	-	-	-	-
2*	1	1	49670-685	Qag	1	2	1	-	-	-	2	-	-	1	1	2	2	-	-
3 *X2	2	1	49827-852	€ml,Qag	1	4	1	-	-	-	-	-	-	-	-	2	1	-	2
4	2	1	49973-994	€mr	5	-	-	-	-	-	1	-	-	1	-	-	-	-	-
5 *X6	2	1	50004-049	€mr,Cg,Qag	3	-	7	5	-	-	1	2	1	2	1	-	2	1	-
6	1	2	49557-551	Qag	-	-	2	1	-	-	2	-	-	-	-	-	-	-	-
7 X5	1	2	49496-471	€ml,Qag,Cg	-	1	5	-	-	-	1	2	1	1	-	-	1	-	-
8 *X3	1	2	49435-410	Cg,Qag	2	2	2	1	-	-	2	-	-	1	-	1	1	-	-
9 X6	2	2	49354-324	€ml,Qag	1	1	5	-	-	-	1	-	-	-	-	-	-	-	-
10	1	3	48452-472	Qag	5	-	-	1	1	-	2	-	2	1	-	-	-	-	-
11 X5	1	3	48543-568	€ml,Cg	1	-	5	3	2	-	1	2	2	-	-	-	-	-	-
12	1	3	48603-623	Qag	3	2	-	-	-	-	-	-	-	5	-	-	5	-	-
13 X6	2	3	48684-714	€ml,Qag	-	1	6	-	-	-	1	-	-	-	-	-	-	-	-
14 *X5	2	3	48851-891	€mr,Qag,€ml	3	4	2	-	-	-	3	-	-	1	-	-	1	-	-
15 X1	1	4	48311-296	Qag,€ml	2	1	1	1	1	-	2	2	-	-	-	-	-	-	-
16 X2	1	4	48286-281	Qag	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
17 X4	2	4	48069-053	€ml,Qag	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
18 X4	2	4	47887-861	Qag,€ml	1	5	-	-	-	-	-	-	-	1	-	-	1	-	-
19 X3	1	5	50684-669	Qag	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
20 X4	2	5	50477-457	Ksp	-	3	2	-	1	-	-	-	-	-	-	-	-	1	-
21 *X3	2	5	50285-260	€mr	2	3	1	-	-	-	-	-	-	1	-	1	-	1	-
22 *X2	1	6	51169-199	Qag	2	4	1	1	-	-	6	-	-	1	3	-	-	-	-
23	1&2	6	51326-351	Cg,Qag,Ksp	2	4	-	1	1	-	1	-	-	2	1	-	1	2	-
24 X3	2	6	51604-624	Qag,€ml	3	2	-	-	-	-	-	-	-	1	-	-	-	-	2
25 *X3	2	7	52012-986	Ksp,Qag,€ml	1	1	4	2	-	-	2	-	-	3	-	-	2	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.2 Continued

TABLE 35

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
26	2	7	51976-956	Emr,Cq	4	1	-	2	-	-	3	1	-	-	1	-	1	-	-
27 X7	2	7	51820-779	Qag,Eml	-	4	5	-	1	-	1	-	-	-	-	-	-	-	1
28	1&2	8	52635-650	Qag	4	-	-	3	-	-	-	-	-	-	-	-	1	-	-
29	2	8	52741-756	Emr,Cq,Qag	4	-	-	2	-	-	2	-	-	1	-	-	-	-	-
30	2	8	52842-852	Qag,Eml -	2	1	-	-	-	-	1	-	-	2	-	-	1	1	-
31	2	8	52872-	Eml	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-
32 X4	1	9	46301-311	Qag	2	1	-	2	-	-	2	1	-	-	-	-	-	-	-
33*X1	1	9	46422-447	Olu,Qag	2	1	3	-	-	-	-	-	-	1	-	-	1	-	-
34*X2	2	9	46644-675	Qag,Emr	3	3	1	1	-	-	1	-	-	1	2	-	1	2	-
35*X2	2	9	46715-725	Qag	1	1	1	-	-	-	1	-	-	-	1	-	1	-	-
36*X1	2	9	46751-811	Qag,Ksp,Eml	7	4	2	5	-	-	5	-	-	3	-	2	4	2	1
37	2	9	46847-857	Olu	2	1	-	-	-	-	1	-	-	1	-	-	1	-	-
38*	2	10	47613-598	Qag	1	2	1	1	-	-	1	1	-	1	-	2	1	-	1
39	1	10	47588-558	Qag	4	3	-	1	-	-	5	1	-	3	-	-	1	-	-
40 X4	1	10	47547-527	Qag,Olu	2	1	2	-	-	-	1	-	-	-	-	-	-	-	-
41	1	10	47482-472	Olu	1	2	-	-	-	-	1	-	-	2	-	-	1	-	-
42*X4	1	10	47451-426	Olu,Qag,Eml	1	2	3	-	-	-	1	-	-	-	1	-	1	-	-
43*X3	2	10	47249-224	Ksp,Qag,Emr	-	1	5	-	1	-	2	-	-	1	1	1	1	1	1
44	2	10	47183-173	Qag	1	2	-	1	-	-	-	-	-	1	-	-	1	-	-
45	2	10	47133-128	Ksp,Qag	-	2	-	2	-	-	1	-	-	1	-	-	-	1	-
46 X1	2	10	47047-037	Qag	2	1	-	-	-	-	-	-	-	-	1	-	-	1	-
47	1	11	44971-991	Qag	4	1	-	2	-	-	2	-	-	-	1	-	-	-	1
48	1	11	45001-017	Qag	4	-	-	-	-	-	2	-	-	2	-	-	-	-	-
49*	1	11	45138-199	Ksp,Qag	3	6	4	-	-	-	-	-	-	3	4	6	4	4	4
50*X3	2	11	45345-360	Qag	2	1	1	-	-	-	-	-	-	1	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.2 Continued

TABLE 35

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
51*X4	2	11	45370-406	Qag,Ksp	3	1	4	2	1	-	4	-	-	2	-	-	3	-	-
52 X5	2	11	45441-451	Qag	1	2	-	2	-	-	-	-	-	1	-	-	2	-	-
53*X3	2	11	45482-512	Ksp,Qag	1	1	5	1	-	-	-	2	-	1	-	-	-	-	-
54 X11	2	11	45583-603	Ksp,Qag	2	1	2	-	-	-	-	-	-	-	1	-	1	-	-
55*	1	12	40973-044	Ksp,Qag	2	4	9	5	-	-	5	-	-	2	-	2	1	2	1
56 X6	1	12	41089-100	Qag	2	1	-	-	-	-	-	-	-	1	-	-	1	-	-
57*	2	12	41226-307	Qag,Ksp	6	4	7	6	-	-	5	1	-	2	2	-	4	1	1
58 X4	2	12	41453-479	Qag,Ksp,Cmr	2	-	4	1	-	-	-	1	-	-	-	-	-	-	-
59 X5	3	12	41651-671	Cq	1	3	1	1	-	-	1	-	-	-	-	-	-	-	-
60*X2	1	13	47818-868	Ksp,Qag	5	4	2	-	1	-	3	-	-	3	2	2	2	2	2
61*X4	1	14	48131-106	Qag,Olu	2	-	4	1	-	-	2	-	-	1	1	-	-	1	1
62*X2	1	14	48096-071	Olu	1	3	2	-	-	-	2	-	-	3	1	-	2	1	1
63*	1	15	48201-216	Qag	1	2	1	-	-	-	2	-	-	1	1	-	1	-	-
64	1	15	48327-342	Ksp	3	1	-	2	-	-	-	-	-	1	1	-	3	-	-
65	1	15	48393-413	Qag	4	1	-	1	-	-	-	-	-	1	-	-	3	-	-
66*X3	1	16	48656-641	Qag,Tc	1	-	3	1	-	-	1	-	-	-	1	-	-	-	1
67 X2	1	16	48591-581	Cx,Olu	2	1	-	-	-	-	-	-	-	1	-	-	-	-	-
68	1	16	48555-540	Ksp	3	1	-	-	1	-	1	-	-	3	-	-	2	-	-
69	1	17	48836-856	Ksp,Qag	3	2	-	2	-	-	-	-	-	4	-	-	3	-	-
70	1	18	49176-160	To	1	3	-	2	1	-	-	-	-	1	-	-	1	1	1
71	1	19	49340-351	Ksp	1	2	-	2	-	-	1	-	-	2	-	-	2	1	-
72*	1	20	49720-689	To,Tsh	5	1	1	3	1	-	2	1	1	3	1	-	4	-	-
73*	1	20	49579-659	Qag,Olu,Ksp	2	1	2	1	-	1	1	1	-	1	2	-	-	1	1
74*X1	1	21	50128-138	Qag,Ksp	2	-	1	1	-	-	1	-	-	-	-	-	1	-	-
75*X2	1	22	50276-251	To,Qac,Olu,Ksp	3	-	3	2	1	-	1	2	1	1	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.2 Continued

TABLE 35

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
76 X1	1	23	50427-	Tc	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
77*X3	1	24	50583-553	To,Tc,Qag,Olu,Ksp	1	1	5	3	3	-	5	-	-	2	1	-	-	3	-
78*X4	1	25	50702-730	To,Tc,Qag,Olu,Ksp	1	2	4	1	1	1	4	-	1	1	2	-	3	-	-
79 X3	1	26	50882-872	Tc,Qag	-	-	3	-	-	-	1	-	1	-	-	-	-	-	-
80*X3	1	27	51005-025	Tc,Qag,Olu	1	-	4	-	-	2	1	1	1	1	-	-	1	-	-
81 X3	1	28	48567-577	Qag	-	2	1	1	-	-	-	3	-	-	-	-	-	-	-
82 X2	1	29	55058-053	Qag	-	-	2	2	-	-	1	-	1	-	-	-	-	-	-
83 X2	1	30	51319-339	Qag,Olu,Ksp	3	-	2	1	-	-	3	-	-	-	-	-	-	-	-
84*X3	2	30	51668-718	pЄbc,Qag	1	5	5	2	-	-	-	-	-	4	1	2	2	4	1
85*X4	2	31	52961-906	Qag,Olu,Ksp	3	4	5	4	-	-	4	2	-	3	1	1	4	-	-
86	2	31	52895-885	Ksp,Qag	1	2	-	-	-	-	1	-	-	1	1	-	1	1	-
87*X8	2	31	52597-537	Qag,Єml	2	2	9	1	-	-	2	-	-	4	-	-	3	1	-
88 X12	2	41	42027-966	Qg,Cq,Ємr	4	5	4	5	-	-	2	-	-	-	-	-	-	-	-
89 X1	2	42	42289-299	Ємr	2	1	-	-	-	-	-	-	-	1	1	-	1	-	1
90 X7	3	42	42476-507	pЄmp,Cq,Qag	1	3	3	-	-	-	-	-	-	-	-	-	-	-	-
91 X8	3	43	46279-313	Cq,Qag,Olu	1	3	4	-	-	-	-	-	-	-	-	-	-	-	-
92 X1	3	45	47075-	Ємl	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
93*X2	3	46	47249-234	Ємr	2	1	1	-	-	-	-	-	-	2	-	-	-	1	1
94*	3	46	47178-168	Cq,Qag	1	1	1	-	-	-	-	-	-	-	2	1	-	-	3
95*	3	47	47769-784	Qag	2	1	1	-	-	-	-	-	-	1	-	3	-	-	4
96	2&3	47,48	47803-48047	Qag,Ksp	5	2	-	-	-	-	2	-	-	4	1	1	3	-	-
97*	3	48	47880-860	Ksp,Qag	2	2	1	-	-	-	-	-	-	1	1	3	1	-	4
98*X1	3	49	48358-362	Qag	-	1	1	-	-	-	1	-	-	1	-	-	-	-	-
99 X3	2	50	53712-727	Qag	2	2	-	1	2	-	1	3	-	-	-	-	-	-	-
100	1	101	52381-360	Qag	3	2	-	-	-	-	-	-	-	3	1	-	2	1	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.2 Continued

TABLE 35

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOLOGIC UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geol. Fm.	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
101	1	101	52168-133	Qag	7	1	-	4	-	-	5	2	-	1	-	-	-	-	-
102 X1	1	102	48042-037	Eml,Ksp	1	-	1	-	1	1	-	2	-	-	-	-	-	-	-
103	1	102	51571-551	Qag,Ksp	5	-	-	2	-	-	1	-	-	1	-	1	2	-	-
104 X14	1	102	51495-419	Qag,Eml	1	2	13	4	-	-	4	-	-	1	-	1	1	-	1
105	1	103	51835-845	Qag	2	1	-	-	-	-	-	-	-	1	1	1	1	1	1
106 X3	1	103	51896-905	Qag	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-
107*	1	104	50943-968	Qag,Ksp	3	2	1	1	-	-	-	-	-	4	1	-	3	3	-
108	2	106	50197-217	Qag,Emr	4	1	-	-	-	-	-	2	-	2	-	-	1	-	-
109*X4	2	107	49841-811	Qag	2	2	3	3	-	-	-	3	-	1	-	-	1	-	-
110*X2	2	107	49791-765	Ksp,Qag,Eml	2	3	1	-	-	-	-	-	-	1	-	1	1	1	1
111 X2	2	109	53235-230	Qag	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
112 X4	2	109	53219-204	Ksp	2	2	-	-	-	-	1	-	-	-	-	-	-	-	-
113	3	111	48979-974	Qag	-	2	-	-	-	-	-	-	-	-	1	1	-	1	1
114*	3	111	48944-893	Qag,Tcg,Olu	2	5	4	-	-	-	-	-	-	5	1	5	3	3	5

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.3

TABLE 36

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
1	1	1	49599-615	361	3	1	-	-	3	1	-	3	1	-	-	-	-	-	-
2*	1	1	49670-690	231	1	2	2	-	-	-	1	2	-	2	1	2	2	-	-
3 X2	1	1	49751-761	231	-	2	1	1	-	-	1	-	-	1	-	-	-	-	-
4*X2	1	1	49802-852	271	8	2	1	5	1	-	1	2	2	2	-	2	-	3	-
5 X6	2	1	50019-049	221,231	-	1	6	1	-	-	-	1	1	1	-	-	-	-	1
6 X2	1	2	49557-551	361	-	1	1	-	2	-	-	2	-	-	-	-	-	-	-
7 X5	1	2	49496-471	361,231	-	-	6	-	-	-	1	1	2	-	1	-	-	1	-
8*X3	1	2	49435-385	271, 231	4	3	4	2	-	-	3	-	-	4	-	4	4	3	-
9 X5	1	2	49349-324	271	1	-	5	2	-	-	2	-	1	-	-	-	-	-	-
10	1	3	48452-472	361	5	-	-	2	2	1	-	3	2	-	-	-	-	-	-
11*X5	1	3	48543-578	361,231	1	3	4	2	-	-	2	1	1	1	2	-	1	1	-
12	1	3	48588-613	231	6	-	-	-	-	-	-	-	-	6	-	-	4	2	-
13 X7	2	3	48684-714	271	1	2	4	-	1	-	-	-	1	-	-	-	-	-	-
14 X5	2	3	48856-886	231	1	3	3	2	-	-	4	-	-	-	-	-	-	-	-
15 X1	1	4	48311-301	231	1	1	1	3	-	-	1	2	-	-	-	-	-	-	-
16 X3	1	4	48286-276	231,361	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
17 X3	2	4	48069-058	231	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
18*X4	2	4	47887-861	231,271	2	3	1	-	-	-	-	-	-	1	-	-	1	-	-
19 X3	1	5	50684-669	231	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
20 X4	2	5	50477-457	230	-	1	4	-	1	-	-	-	-	-	-	-	1	-	-
21 X3	2	5	50270-260	231,271	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-
22*X2	1	6	51169-199	231	2	4	1	1	-	-	5	1	-	1	3	-	-	-	-
23	1	6	51285-295	230,140	1	2	-	-	-	-	1	-	-	2	-	1	3	-	-
24	1&2	6	51341-361	140,231	4	1	-	1	-	-	-	-	-	1	-	-	3	-	-
25 X2	2	6	51528-533	221	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 36

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
26 X4	2	6	51599-619	231,271	5	-	-	-	-	-	-	-	-	-	-	-	-	1	-
27*X3	2	7	52012-986	220,230,231	2	1	3	1	-	-	2	-	-	2	1	-	1	2	-
28 X8		8	51820-779	231,271	2	2	5	1	-	-	-	-	-	-	-	-	-	-	1
29	1&2	8	52635-650	231	3	1	-	4	-	-	2	-	-	-	-	-	1	-	-
30*X4	1	9	46417-447	231	1	2	4	-	-	-	-	-	-	2	1	-	3	-	-
31 X1	2	9	46650-675	231	2	4	-	2	-	-	2	-	-	1	1	-	2	1	-
32*X2	2	9	46715-725	231	1	1	1	-	-	-	1	-	-	-	1	-	1	-	-
33 X2	2	9	46751-776	221,231,141	4	2	-	4	-	-	3	-	-	1	-	-	1	-	-
34*	1	10	47613-598	231	1	2	1	1	-	-	1	1	-	1	-	2	1	-	1
35 X4	1	10	47547-527	231	1	1	3	-	-	-	2	-	-	-	-	-	-	-	-
36*X4	1	10	47451-426	141,231	1	2	3	-	-	-	1	-	-	1	-	1	1	1	-
37*X3	2	10	47244-224	141,231	-	1	4	1	1	-	2	-	-	-	1	-	-	1	-
38	2	10	47133-128	101,231	-	2	-	1	-	-	1	-	-	1	-	-	-	-	1
39	1	11	44971-991	231	3	2	-	2	-	-	1	1	-	-	1	-	-	-	1
40	1	11	45138-168	141	4	3	-	1	-	-	1	-	-	2	1	-	3	-	-
41*X3	2	11	45345-360	231	2	1	1	-	-	-	-	-	-	1	-	-	1	-	-
42 X4	2	11	45375-406	141,231	3	-	4	3	-	1	3	-	1	-	-	-	-	-	-
43 X5	2	11	45482-512	101,231	2	-	5	-	-	-	1	-	-	1	-	-	-	-	-
44 X3	2	11	45583-603	231	2	1	2	1	-	-	1	-	-	-	1	-	1	-	-
45	1	12	40847-857	231	2	1	-	1	-	-	3	-	-	1	-	-	-	-	-
46*X1	1	12	40948-958	231,230	1	1	1	-	-	-	-	-	-	-	2	-	1	1	-
47 X9	1	12	40978-41024	141	2	6	2	3	2	-	3	2	-	1	-	-	1	-	-
48	1	12	41089-100	231	2	1	-	1	-	-	-	-	-	1	-	-	2	-	-
49*X5	2	12	41231-266	141,231	2	2	4	3	1	-	3	-	1	1	-	-	-	1	-
50 X4	2	12	41453-479	231	2	-	4	1	-	-	-	1	-	-	-	-	1	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.3 Continued

TABLE 36

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
51*	1	13	47853-868	231	2	1	1	-	-	-	1	-	-	2	1	-	1	1	-
52 X4	1	14	48131-116	231	-	-	4	1	-	-	2	1	-	-	-	-	-	-	-
53*X2	1	14	48086-060	141,230	2	1	3	-	-	-	2	-	-	2	1	1	2	-	1
54	1	15	48393-413	231	3	2	-	1	-	-	-	-	-	1	-	-	3	-	-
55 X3	1	16	48656-641	231	-	1	3	1	-	-	1	-	-	-	1	-	-	-	1
56*X2	1	16	48596-565	231,230	4	2	1	-	-	-	-	-	-	1	3	1	3	1	1
57	1	17	48805-821	231,230	3	1	-	-	-	-	-	-	-	-	1	3	1	1	2
58	1	18	49176-160	231	1	3	-	1	-	-	2	-	-	1	-	-	2	-	-
59	1	18	49130-110	230	2	3	-	-	1	-	-	-	-	2	1	1	2	1	1
60	1	19	49335-351	230,130	3	1	-	1	-	-	-	-	-	-	-	-	3	-	-
61	1	20	49720-705	231	2	2	-	-	-	-	2	1	-	3	-	-	-	-	-
62*	1	20	49689-669	201,231,130	-	3	2	1	-	-	-	-	-	3	-	1	2	1	1
63 X1	1	21	50128-	230	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
64 X2	1	22	50271-261	201,230,130	1	-	2	1	-	-	-	-	1	1	-	-	1	-	-
65 X1	1	23	50419-427	231	1	1	1	1	-	-	-	2	-	1	-	-	-	-	-
66*X3	1	24	50583-553	231,230,130	1	2	4	2	2	-	2	-	1	-	1	-	3	-	-
67*X4	1	25	50702-730	231,230,130	2	1	4	1	1	-	4	-	1	1	1	-	1	-	-
68 X4	1	26	50887-867	231,230	-	2	3	2	1	-	3	1	1	1	-	-	-	-	-
69*X3	1	27	51005-025	231,230	-	1	4	-	-	2	2	1	1	2	-	-	1	1	-
70 X4	1	28	48562-583	231	2	1	2	2	1	-	-	4	1	-	-	-	-	-	-
71 X3	1	29	55058-043	231	2	-	2	3	1	-	2	1	1	-	-	-	-	-	-
72*X2	1	30	51314-339	231	2	2	2	1	-	-	3	1	-	2	-	-	1	-	-
73*X3	2	30	51668-728	231,230	5	3	5	3	1	-	1	1	-	3	-	2	4	2	1
74	3	30	52047-062	231	4	-	-	-	-	-	-	-	-	1	-	-	-	-	2
75*X4	1	31	52961-931	231	1	1	5	-	-	-	3	1	-	2	-	1	2	-	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.3 Continued

TABLE 36

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
76*	1	31	52895-885	231	-	2	1	2	-	-	-	1	-	1	-	-	1	-	-
77	1	31	52759-749	230	2	1	-	-	-	-	1	-	-	-	1	-	1	-	-
78*X8	2	31	52597-531	231,230	2	3	9	1	-	-	3	-	-	3	1	-	5	1	-
79	2	41	42073-052	230	5	-	-	4	-	-	4	1	-	-	-	-	-	-	-
80 X8	2	41	42027-987	231	1	5	3	1	2	-	1	-	-	-	-	-	1	-	-
81 X7	3	42	42476-507	361,231	1	3	3	-	-	-	-	-	-	-	-	-	-	-	-
82 X8	3	43	46279-313	361,231	1	2	5	-	-	-	-	-	-	-	-	-	-	-	-
83	2	45	46792-802	230	1	2	-	-	-	-	-	-	-	1	-	-	2	-	-
84 X2	3	45	47070-075	361,241	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
85	3	46	47178-168	231,241,	-	3	-	1	1	-	-	-	-	1	-	1	1	1	1
86*	3	47	47769-789	231,241	2	2	1	-	-	-	-	-	-	2	1	2	-	1	3
87*X1	3	48	47803-047	241,230,231	3	3	1	1	-	-	3	-	-	3	-	2	3	-	-
88*	3	48	47880-860	231	2	2	1	1	-	-	1	-	-	-	1	3	-	-	4
89*X1	3	49	48353-362	221,231	1	-	2	1	-	-	1	-	-	-	-	1	-	1	-
90 X2	2	50	53712-717	191	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-
91*	3	52	52678-	321	-	-	1	-	-	-	1	-	-	-	-	1	-	1	-
92*	2	53	52226-221	230,221	1	-	1	1	-	-	2	-	-	-	1	-	1	-	-
93	2	53	52210-200	221	1	2	-	3	-	-	3	-	-	2	-	-	1	-	-
94	1	101	52381-355	231	4	2	-	-	-	-	1	-	-	4	1	-	2	1	-
95	1	101	52335-280	231,201	5	6	1	8	4	-	3	4	4	-	-	-	-	-	-
96 X1	1	102	48042-032	231	2	1	-	-	1	2	-	3	-	-	-	-	-	-	-
97 X14	1	102	51495-419	231,361	1	3	12	3	1	-	4	2	-	-	1	1	-	-	2
98	1	103	51830-845	231	3	1	-	-	-	-	-	-	-	2	1	1	2	-	2
99 X3	1	103	51896-905	361	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-
100*	1	104	50933-953	231,220	2	2	1	1	-	-	-	-	-	2	-	1	1	2	-

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

23.2.3 Continued

TABLE 36

SIGNIFICANT EQUIVALENT URANIUM ANOMALIES
EVALUATED BY GEOCHEMICAL UNIT
SPIRIT PLUTON - AREA 8

Anom. No.	Sheet No.	F.L. No.	Extent Fiducials	Geochem. Unit	eU			eTh			K			eU/Th			eU/K		
					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
101	2	105	50725-715	230	2	1	-	-	-	-	-	-	-	1	-	-	3	-	-
102	2	106	50197-207	230,231	2	1	-	-	-	-	-	-	-	-	1	-	2	-	-
103	2	107	49937-927	230	2	1	-	1	-	-	-	-	-	1	1	-	3	-	-
104*X4	2	107	49841-801	230,231	2	2	5	3	2	-	2	3	-	1	1	-	3	-	-
105*X2	2	107	49791-760	231	3	2	2	1	-	-	1	-	-	1	2	-	2	2	-
106 X7	2	109	53235-199	230	2	5	1	2	-	-	1	-	-	-	-	-	-	-	-
107&X1	2	109	53149-128	321	1	2	2	2	-	-	4	-	-	2	1	-	2	1	-
108	2	109	53113-108	321	1	-	1	-	1	1	-	2	-	-	-	-	-	-	-
109	3	111	48979-969	231	1	2	-	-	-	-	-	-	-	-	2	1	-	2	1
110*	3	111	48944-883	231	3	3	7	-	-	-	-	-	-	4	2	7	2	5	6

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

* PREFERRED ANOMALIES

X1 PART OR ALL OF DATA UNRELIABLE

TABLE 37

NORTHEAST WASHINGTON SUMMARY OF GEOLOGIC UNITS PER GEOCHEMICAL UNIT
SPIRIT PLUTON

GEOLOGIC UNIT	GEOCHEMICAL CODE														
	100	101	130	140	141	191	201	220	221	230	231	241	271	321	361
QAG	0	126	16	54	383	148	32	58	382	1800	7923	114	216	340	198
CX	0	0	0	0	0	0	0	0	0	18	33	0	0	0	0
CML	0	0	0	0	8	0	0	0	18	32	856	70	339	56	266
CG	0	0	0	99	0	0	0	0	0	2	257	0	0	0	0
CMR	0	0	0	0	0	24	0	0	71	52	1061	0	4	247	22
CQ	0	0	0	0	0	0	0	0	50	22	160	0	0	0	229
OLV	4	0	47	40	235	0	0	7	4	281	746	0	59	0	0
PCMO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
PCIH	0	0	0	0	0	0	0	0	0	8	9	0	0	0	0
PCBC	0	0	0	0	0	0	0	0	0	7	276	0	0	0	0
TC	0	0	0	0	0	0	42	0	0	1	172	0	0	0	0
TO	0	0	0	0	0	0	13	0	0	0	517	0	0	0	0
TSR	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0
TKPA	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0
TSH	0	0	0	0	0	0	62	0	0	0	30	0	0	0	0
TCG	0	0	0	0	0	0	0	0	0	0	255	0	0	0	0
KSP	48	82	238	87	116	39	0	74	149	1042	1703	0	1	192	0

23.3 DISCUSSIONS OF GEOCHEMICAL UNITS, GEOLOGY CORRELATIONS AND ANOMALY ASSOCIATIONS BY SHEET

23.3.1 SHEET 1

On sheet 1 a strong magnetic linear separates the Cretaceous granodiorites of the Spirit pluton from Ordovician Ledbetter slate. Furthermore, in the northern portion of sheet 1 a weaker magnetic linear parallels the granodiorite outcrop boundary about one mile to the north of the Ledbetter slate - Spirit pluton contact. This northernmost linear lies just to the north of the Ledbetter slate and beneath the Metaline formation and the Grass Mountain sequence. A number of geological and geochemical anomalies either lie above or between these two magnetic linears; i.e. geological anomalies 50, 107, 42, 33, 49, 55, 60, 62, 73, 74, 75, 77, 78, 80, and 85, and geochemical anomalies 41, 100, 36, 30, 51, 46, 53, 56, 62, 66, 67, 69, 72, and 75. These anomalies appear to lie within a contact aureole that is associated with the intrusion of the Spirit pluton. Granodiorites often subject slate to a well developed contact metamorphism and extensive secondary mineralization. GCU 130, 220, and 230, follow the above mentioned trend. Only one preferred geochemical anomaly (i.e. anomaly 76) lies within the Spirit pluton.

To the west of the strong magnetic linear and in the central portion of the sheet is a band of north-south trending anomalies that partially follow a fault on the geologic map; i.e. geological anomalies 38, 61, 63, 66, and 72, and geochemical anomaly 34. These anomalies are in the alluvium, Ledbetter slate and conglomeratic tuff, and may also be related to contact metamorphic effects.

North of the magnetic linears is another band of east-west trending anomalies, in the Grass Mountain sequence and the Metaline formation. This band of anomalies is more diffuse than the southern band, although both bands may have a similar origin. In the northern band are geological anomalies 2, 8, and 22, and geochemical anomalies 2, 8, 11, and 22.

23.3.2 SHEET 2

As on sheet 1, the margins of the Spirit Pluton correlate with a strong magnetic linear on both its northern and southern sides. Along the northern boundary of the pluton geological anomalies 50, 25, 34, 43, 51, 57, 35, 36, 53, and 110, and geochemical anomalies 41, 27, 37, 49, 32, 105, and 107 either correlate to the magnetic linears or to the contact between the pluton and the Cambrian and Ordovician rocks to the north. The Cambrian Metaline formation and Rennie shale is composed primarily of limestones, dolomites, and shales, and these rock types often form extensive metamorphic skarn zones around intruding plutons. GCU 141 and 230 follow this apparent contact metamorphic trend.

To the northwest geological anomaly 3 and geochemical anomaly 4 are in limestones and are associated with three mapped faults. To the east of these two anomalies is another zone of anomalies that follows a northwesternly trending magnetic linear and a mapped thrust fault. This band of anomalies contains geological anomalies 5, 14, and 21, and geochemical anomaly 18. These anomalies are also within slate and limestone. Geological anomaly 109 and geochemical anomaly 104 are within the Spirit pluton.

Along the southern contact of the pluton is geochemical anomaly 92 and to the south of this anomaly are geological anomalies 84 and 87 and geochemical anomalies 73 and 78. These anomalies cross three mapped faults and are in Cambrian and Precambrian units.

23.3.3 SHEET 3

Both the geologic and total magnetic field map indicates that the Spirit Pluton forms a wedge shaped body that penetrates into the western portions of sheet 3; the pluton terminating along a fault and the eastern portions of GCU 221. In the areas where the pluton terminates are geological anomalies 94, 95, 97, and 98, and geochemical anomalies 86, 87, 88, 89, and 110. In this area is a northeast and a northwest trending fault which lie beneath the anomalies. To the west and near the contact with the pluton is geological anomaly 93 and within the pluton is geochemical anomaly 91. Geologic anomaly 114 is in the Tiger formation of gravel and

conglomerate; this stratigraphic unit has produced uranium prospects in other areas.

23.4 SUMMARY AND CONCLUSIONS

This region appears to have been subject to contact metamorphism associated with the intrusion of the Spirit Pluton. As most of the preferred anomalies are concentrated along the marginal region of the pluton additional investigations of this region may concentrate along what appears to be a contact aureole, particularly within the slates and shales as they may create a reducing environment for the precipitation of the uranium.

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APPENDIX A

PRODUCTION SUMMARY

APPENDIX A

PRODUCTION SUMMARY

Aircraft N870 was assigned to conduct the survey. The first production flight was on the 1st of September, 1979. The last production flight was flown on 15 October, 1979.

The entire survey required 37 production flights which averaged approximately 246 line miles per flight.

In accordance with the general specifications a short test line was flown both prior to and following each production flight. The purpose of this test line was to monitor moisture effects and/or system repeatability by measuring the percent of difference between successive test flights. The test line results are summarized in Table A-1.

Aircraft terrain clearance was maintained as close to 400 feet as safety considerations and pilot skill permitted. Airspeed was kept to a mean of approximately 90 mph so as to insure conformance to the sensitivity requirement that the ratio of the detector volume to airspeed be 20 or greater. A summary of the mean airspeed and terrain clearance for each geologic area follows:

AREAS	MEAN TERRAIN CLEARANCE FEET	MEAN AIRSPEED MPH
West Fork Sampoil River	485	97.7
Mt. Leona-Nancy Creek	486	95.7
Midnight-Sherwood Mines	450	95.0
Lost Creek	430	98.6
Gleason Mtn.	466	95.9
Chelan	476	91.4
Saddle Mtn.	507	92.3
Spirit Pluton	480	95.7

TABLE A-1

TEST LINE SUMMARY

DATE	START TEST LINE	END TEST LINE	PREVIOUS AVERAGE	DIFFERENCE % START	DIFFERENCE % END
09/01	942643	---	New		
09/01	----	908065	New		
09/05	862482	868858	908065	-4.7	-4.3
09/06	----	851253	908065	---	-6.2
09/07	957772	898476	908065	+5.5	-1.1
09/08	934162	834384	908065	+2.9	-8.1
09/09	890365	894285	908065	-1.9	-1.5
09/10	----	840991	908065	---	-7.4
09/11	953954	867542	908065	+5.1	-4.5
09/12	960449	879824	908065	+5.8	-3.1
09/15	904610	824891	908065	-0.4	-9.2
09/16	904213	---	New	---	---
09/17	852524	778332	878368	+2.9	-11.4
09/18	910450	828626	878368	+3.6	-5.7
09/19	922893	880482	878368	+5.1	+0.2
09/20	930632	874590	878368	+6.0	-0.4
09/21	----	753784	878368	---	-14.2
09/22	880583	793229	878368	+0.3	-9.7
09/23	818888	---	878368	-6.8	---
09/24	881009	814324	878368	+0.3	-7.3
09/25	911221	791546	878368	+3.7	-9.9
09/26	958235	896953	878368	+9.1	+2.1
09/27	884989	831990	878368	0.8	-5.3
09/28	774422	823004	New		
09/30	891905	830839	798713	+11.7	+4.0
10/01	896626		878368	+2.1	---
10/02	851568	785205	878368	-3.1	-10.6
10/03	884049	817841	878368	+0.7	-6.9
10/05	863236	860384	798713	+8.1	+7.2
10/06	921132	912051	878368	+4.9	+3.8
10/07	852233	899707	798713	+6.7	+12.6
10/08	814548	855310	798713	+2.0	+7.1
10/09	796593	837025	New		
10/10	985967	965054	New		
10/11	926818	----	975510	-5.0	---
10/12	1002117	1021936	975510	+2.7	+4.8
10/13	1008554	953721	975510	+3.4	-2.2
10/15	882864	839483	798713	+10/5	+5.1

APPENDIX B

TAPE FORMATS

DATA TAPES

Five types of data tapes are generated for each area surveyed:

1. Raw spectral
2. Single-record reduced
3. Statistical analysis
4. Magnetic
5. Statistical analysis summary

All data tapes are IBM-compatible, nine-track, 800-bpi (NRZI), odd parity, and EBCDIC coded.

A gummed label attached to each tape reel contains the following information:

- Survey project name, month, and year of survey
- Data tape type
- Subcontractor name
- Tape creation date
- Tape reel count
- Tape recording characteristics
- Block size in bytes
- Tape format information

Single-record reduced, statistical analysis and magnetic data are organized on the tape by flight line. Within a given flight line or tie line, data are organized sequentially by location (latitude and longitude). Within a given survey area, flight lines and tie lines are organized sequentially by location, and all flight line data precede tie line data. Processed data from any individual flight line or tie line are completely contained on one tape. The raw spectral data are organized on tape exactly as are processed data.

The content of each physical block on tape for all five types of data tapes are:

Physical Block Number	Description
1	Format description block
2	Tape identification block
3	First data block
4	Second data block
5	Third data block
.	. . .
.	. . .
.	. . .
.	. . .
EOF	Last data block

The format description block is a literal alphanumeric listing of the Fortran formats and data-item description required to read and identify the contents of the tape. The tape identification block identifies the survey area, the subcontractor, the aerial system used, etc., and summarizes the flight line data recorded on the tape.

Data blocks contain records of data. Formats for each type of data tape are specified below.

All data blocks are recorded in fixed physical block lengths with the following block sizes, record lengths, and blocking factors:

TAPE CODE	TAPE NAME	Block Size (bytes)	Record Length (bytes)	Blocking Factor
01	Raw spectral	6,600	1,100	6
02	Single record reduced	6,900	138	50
03	Statistical analysis	8,000	160	50
04	Magnetic	8,000	80	100
05	Statistical analysis summary	7,000	140	50

RAW SPECTRAL DATA TAPES

The raw spectral data tape provides properly formatted raw spectral data for data bank deposition without normalization, reduction, or correction.

The first physical block on this tape is the format description block, providing information needed to read the tape. The first 4248 characters on this block are 59 consecutive 72-character lines, literally written as shown in Table B-1. The remaining 2352 characters in the block are blank.

Table B-1

Format Description Block Contents

Line Number — Character Number
1234567890123456789012345678901234567890123456789012345678901234567890123456789012

```
1     01 0978  (DATA TAPE TYPE AND FØRMAT SPECIFICATION DATE CØDES)
2
3     RAW SPECTRAL DATA TAPE
4
5     FØRMAT FØR TAPE IDENTIFICATIØN BLØCK (SECØND BLØCK ØN TAPE)
6
7     ITEM      FØRMAT     DESCRIPTIØN
8     1         A40        QUADRANGLE NAME AS PRØJECT IDENTIFICATIØN
9     2         A20        NAME ØF SUBCØNTRACTØR
10    3         I4         APPRØXIMATE DATE ØF SURVEY (MØNTH,YEAR)
11    4         I1         AERIAL SYSTEM IDENTIFICATIØN CØDE
12    5         A20        AIRCRAFT IDENTIFICATIØN BY TYPE AND FAA NUMBER
13    6         I3         BFEC CALIBRATIØN REPØRT NUMBER
14    7         F6.3       4PI SYSTEM DATA CØLLECTIØN INTERVAL TØ THREE DECIMAL
15                         PLACES IN SECØNDS
16    8         F6.3       2PI SYSTEM DATA CØLLECTIØN INTERVAL TØ THREE DECIMAL
17                         PLACES IN SECØNDS
18    9         I3         NUMBER ØF CHANNELS (0-3 MEV) FØR 4PI SYSTEM
19    10        I3         NUMBER ØF CHANNELS (0-3 MEV) FØR 2PI SYSTEM
20    11        I3         NUMBER ØF FLIGHT LINES ØN THIS TAPE
21    12        I4         FIRST FLIGHT LINE NUMBER ØN THIS TAPE
22    13        I6         FIRST RECØRD NUMBER ØF FIRST FLIGHT LINE
23    14        I3         JULIAN DATE (DAY ØF YEAR) FIRST FLIGHT LINE WAS
24                         CØLLECTED
25    15-17     I4,I6,I3   REPEAT ØF ITEMS 12-14 FØR SECØND FLIGHT LINE ØN THIS
26                         TAPE
27     *          *                          *
28     *          *                          *
29     *          *                          *
30    306-308   I4,I6,I3   REPEAT ØF ITEMS 12-14 FØR 99TH FLIGHT LINE ØN THIS
31                         TAPE
32
33    FØRMAT FØR RAW SPECTRAL DATA RECØRD (THIRD THRU LAST BLØCK ØN TAPE)
34
35    ITEM      FØRMAT     DESCRIPTIØN
36    1         I1         AERIAL SYSTEM IDENTIFICATIØN CØDE
37    2         I4         FLIGHT LINE NUMBER
38    3         I6         RECØRD IDENTIFICATIØN NUMBER
39    4         I6         GMT TIME ØF DAY (HHMMSS)
40    5         F8.4       LATITUDE TØ FØUR DECIMAL PLACES IN DEGREES
41    6         F8.4       LØNGITUDE TØ FØUR DECIMAL PLACES IN DEGREES
42    7         F6.1       TERRAIN CLEARANCE TØ ØNE DECIMAL PLACE IN METERS
43    8         F7.1       TØTAL MAGNETIC FIELD INTENSITY TØ ØNE DECIMAL PLACE
44                         IN GAMMAS
45    9         A8         SURFACE GEØLØGIC MAP UNIT CØDE
46    10        I4         QUALITY FLAG CØDES
47    11        F4.1       ØUTSIDE AIR TEMPERATURE TØ ØNE DECIMAL PLACE IN
48                         DEGREES CELSIUS
49    12        F5.1       ØUTSIDE AIR PRESSURE TØ ØNE DECIMAL PLACE IN MMHG
50    13        F5.3       LIVE TIME CØUNTING PERIØD TØ THREE DECIMAL PLACES IN
51                         SECØNDS
52    14        I4         SUMMED RAW ØUTPUT FRØM CØSMIC CHANNELS (3-6 MEV) IN
53                         CØUNTS
```

Line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012		
54	15	I4	RAW ØUTPUT FRØM CHANNEL 1 IN CØUNTS
55	16	I4	RAW ØUTPUT FRØM CHANNEL 2 IN CØUNTS
56	*	*	*
57	*	*	*
58	*	*	*
59	270	I4	RAW ØUTPUT FRØM CHANNEL 256 IN CØUNTS

The second block on tape is the tape identification block. It provides information identifying the survey, the approximate date of the survey, the subcontractor, etc. The data written on this block are in the format as specified in the first block of this tape as shown in Table B-1. The remaining 5204 characters on this block remain blank.

The third and all subsequent blocks on the raw spectral data tape are raw spectral data records with six records per physical block. The data written in each record are in the same format as specified in the first block of this tape.

SINGLE RECORD REDUCED DATA TAPES

The single record reduced data tape provides 1-second, summed channel information that is corrected and normalized.

The first physical block on this tape is the format description block, providing information needed to read this tape. The first 6768 characters on this block consist of 94 consecutive 72-character lines, as shown in Table B-2. The remaining 132 characters on this block remain blank.

The second block on tape is the tape identification block, providing information identifying the survey, the approximate date of the survey, the subcontractor, flight lines, etc. The data written on this block are in the same format as specified in the first block of this tape. The remaining 4978 characters on this block remain blank.

The third and all subsequent blocks on the single record reduced data tape are single record reduced data records with 50 records per physical block. The data written in each record are in the same format as specified in the first block of this tape.

Table B-2

Single Record Reduced Data Format Description Block Contents

Line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
1	02 0978 (DATA TAPE TYPE AND FØRMAT SPECIFICATIØN DATE CØDES)
2	
3	SINGLE RECØRD REDUCED DATA TAPE
4	
5	FØRMAT FØR TAPE IDENTIFICATIØN BLØCK (SECØND BLØCK)
6	
7	ITEM FØRMAT DESCRIPTIØN
8	1 A40 QUADRANGLE NAME AS PRØJECT IDENTIFICATIØN
9	2 A20 NAME ØF SUBCØNTRACTØR
10	3 I4 APPRØXIMATE DATE ØF SURVEY (MØNTH,YEAR)
11	4 I1 NUMBER ØF AERIAL SYSTEMS USED TØ CØLLECT DATA FØR
12	THIS QUADRANGLE
13	5 I1 AERIAL SYSTEM IDENTIFICATIØN CØDE FØR FIRST SYSTEM
14	6 A20 AIRCRAFT IDENTIFICATIØN BY TYPE AND FAA NUMBER FØR
15	FIRST SYSTEM
16	7 F6.1 NØMINAL ALTITUDE SYSTEM SENSITIVITY RELATIVE TØ
17	TERRESTRIAL PØTASSIUM (K-40) TØ ØNE DECIMAL PLACE
18	IN CPS PER PERCENT K FOR FIRST SYSTEM
19	8 F6.1 NØMINAL ALTITUDE SYSTEM SENSITIVITY RELATIVE TØ
20	TERRESTRIAL URANIUM (BI-214) TØ ØNE DECIMAL PLACE
21	IN CPS PER PPM EQUIVALENT U
22	9 F6.1 NØMINAL ALTITUDE SYSTEM SENSITIVITY RELATIVE TØ
23	TERRESTRIAL THØRIUM (TL-208) TØ ØNE DECIMAL PLACE
24	IN CPS PER PPM EQUIVALENT TH
25	10 I6 BLANK FIELD (999999)
26	11 F6.3 4PI-SYSTEM DATA CØLLECTION INTERVAL TØ THREE DECIMAL
27	PLACES IN SECØNDS FØR FIRST SYSTEM
28	12 F6.3 2PI-SYSTEM DATA CØLLECTION INTERVAL TØ THREE DECIMAL
29	PLACES IN SECØNDS FØR FIRST SYSTEM
30	13 I3 NUMBER ØF CHANNELS (0-3 MEV) IN 4PI SYSTEM FØR FIRST
31	AERIAL SYSTEM
32	14 I3 NUMBER ØF CHANNELS (0-3 MEV) IN 2PI SYSTEM FØR FIRST
33	AERIAL SYSTEM
34	15-24 (SAME) REPEAT ØF ITEMS 5-14 FØR SECØND AERIAL SYSTEM
35	* * *
36	* * *
37	* * *
38	85-94 (SAME) REPEAT ØF ITEMS 5-14 FØR NINTH AERIAL SYSTEM
39	95 I3 NUMBER ØF FLIGHT LINES ØN THIS TAPE
40	96 I4 FIRST FLIGHT LINE NUMBER ØN THIS TAPE
41	97 I6 FIRST RECØRD NUMBER ØF FIRST FLIGHT LINE
42	98 I3 JULIAN DATE (DAY ØF YEAR) FIRST FLIGHT-LINE DATA WAS
43	CØLLECTED
44	99-101 I4,I6,I3 REPEAT ØF ITEMS 96-98 FØR SECØND FLIGHT LINE ØN THIS
45	TAPE
46	* * *
47	* * *
48	* * *
49	390-392 I4,I6,I3 REPEAT ØF ITEMS 96-98 FØR 99TH FLIGHT LINE ØN THIS
50	TAPE
51	

Line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012		
52	FØRMAT FØR SINGLE RECØRD REDUCED DATA RECØRD (THIRD THRU LAST BLØCK)		
53			
54	ITEM	FØRMAT	DESCRIPTIØN
55	1	I1	AERIAL SYSTEM IDENTIFICATIØN CØDE
56	2	I4	FLIGHT LINE NUMBER
57	3	I6	RECØRD IDENTIFICATIØN NUMBER
58	4	I6	GMT TIME ØF DAY (HHMMSS)
59	5	F8.4	LATITUDE TØ FØUR DECIMAL PLACES IN DEGREES
60	6	F8.4	LØNGITUDE TØ FØUR DECIMAL PLACES IN DEGREES
61	7	F6.1	TERRAIN CLEARANCE TØ ØNE DECIMAL PLACE IN METERS
62	8	F7.1	RESIDUAL (IGRF REMØVED) MAGNETIC FIELD INTENSITY
63			TØ ØNE DECIMAL PLACE IN GAMMAS
64	9	A8	SURFACE GEØLØGIC MAP UNIT CØDE
65	10	I4	QUALITY FLAG CØDES
66	11	F6.1	APPARENT CØNCENTRATIØN ØF TERRESTRIAL PØTASSIUM
67			(K-40) TØ ØNE DECIMAL PLACE IN PERCENT K
68	12	F4.1	UNCERTAINTY IN TERRESTRIAL PØTASSIUM TØ ØNE DECIMAL
69			PLACE IN PERCENT K
70	13	F6.1	APPARENT CØNCENTRATIØN ØF TERRESTRIAL URANIUM
71			(BI-214) TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U
72	14	F4.1	UNCERTAINTY IN TERRESTRIAL URANIUM TØ ØNE DECIMAL
73			PLACE IN PPM EQUIVALENT U
74	15	F6.1	APPARENT CØNCENTRATIØN ØF TERRESTRIAL THØRIUM
75			(TL-208) TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT TH
76	16	F4.1	UNCERTAINTY IN TERRESTRIAL THØRIUM TØ ØNE DECIMAL
77			PLACE IN PPM EQUIVALENT TH
78	17	F6.1	URANIUM-TØ-THØRIUM RATIØ TØ ØNE DECIMAL PLACE IN
79			PPM EQUIVALENT U PER PPM EQUIVALENT TH
80	18	F6.1	URANIUM-TØ-PØTASSIUM RATIØ TØ ØNE DECIMAL PLACE IN
81			PPM EQUIVALENT U PER PERCENT K
82	19	F6.1	THØRIUM-TØ-PØTASSIUM RATIØ TØ ØNE DECIMAL PLACE IN
83			PPM EQUIVALENT TH PER PERCENT K
84	20	F8.1	GRØSS GAMMA (0.4-3.0 MEV) CØUNT RATE TØ ØNE DECIMAL
85			PLACE IN CØUNTS PER SECØND
86	21	F6.1	UNCERTAINTY IN GRØSS GAMMA CØUNT RATE TØ ØNE DECIMAL
87			PLACE IN CØUNTS PER SECØND
88	22	F5.1	ATMØSPHERIC BI-214 4PI CØRRECTIØN TØ ØNE DECIMAL
89			PLACE IN PPM EQUIVALENT U
90	23	F4.1	UNCERTAINTY IN ATMØSPHERIC BI-214 4PI CØRRECTIØN
91			TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U
92	24	F4.1	ØUTSIDE AIR TEMPERTURE TØ ØNE DECIMAL PLACE IN
93			DEGREES CELSIUS
94	25	F5.1	ØUTSIDE AIR PRESSURE TØ ØNE DECIMAL PLACE IN MMHG

Statistical Analysis Data Tapes

The statistical analysis tape provides averaged-record parameters for each radioelement and radioelement ratios in relation to the appropriate geologic map unit.

The first physical block on this tape is the format description block, providing information needed to read this tape. The first 7560 Characters on this block consist of 105 consecutive 72-character lines, literally written as shown in Table B-3. The remaining 440 characters on this block remain blank.

The second block on tape is the identification block, providing information identifying the survey, the approximate date of the survey, the subcontractor, flight lines, etc. The data written on this block are in the same format as specified in the first block of this tape. The remaining 6078 characters on this block remain blank.

The third and all subsequent blocks on the statistical analysis data tape are statistical analysis data records with 50 records per physical block. The data written in each record are in the same format as specified in the first block of this tape.

Magnetic Data Tapes

The purpose of the magnetic data tape is to provide industry and other government agencies magnetic data separate from radiometric information.

The first physical block on each magnetic data tape is the format description block, providing information needed to read this tape. The first 3384 characters on this block consist of 47 consecutive 72-character lines, literally written as shown in Table B-4. The remaining 4616 characters on this block remain blank.

Table B-3

Statistical Analysis Format Description Block Contents

Line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012		
1	03 0978 (DATA TAPE TYPE AND FØRMAT SPECIFICATIØN DATE CØDES)		
2			
3	STATISTICAL ANALYSIS DATA TAPE		
4			
5	FØRMAT FØR TAPE IDENTIFICATIØN BLØCK (SECØND BLØCK)		
6			
7	ITEM	FØRMAT	DESCRIPTIØN
8	1	A40	QUADRANGLE NAME AS PRØJECT IDENTIFICATIØN
9	2	A20	NAME ØF SUBCØNTRACTØR
10	3	I4	APPRØXIMATE DATE ØF SURVEY (MØNTH,YEAR)
11	4	I1	NUMBER ØF AERIAL SYSTEMS USED TØ CØLLECT DATA FØR
12			THIS QUADRANGLE
13	5	I1	AERIAL SYSTEM IDENTIFICATIØN CØDE FØR FIRST SYSTEM
14	6	A20	AIRCRAFT IDENTIFICATIØN BY TYPE AND FAA NUMBER FØR
15			FIRST SYSTEM
16	7	F6.1	NØMINAL ALTITUDE SYSTEM SENSITIVITY RELATIVE TØ
17			TERRESTRIAL PØTASSIUM (K-40) TØ ØNE DECIMAL PLACE
18			IN CPS PER PERCENT K
19	8	F6.1	NØMINAL ALTITUDE SYSTEM SENSITIVITY RELATIVE TØ
20			TERRESTRIAL URANIUM (BI-214) TØ ØNE DECIMAL PLACE
21			IN CPS PER PPM EQUIVALENT U
22	9	F6.1	NØMINAL ALTITUDE SYSTEM SENSITIVITY RELATIVE TØ
23			TERRESTRIAL THØRIUM (TL-208) TØ ØNE DECIMAL PLACE
24			IN CPS PER PPM EQUIVALENT TH
25	10	I6	BLANK FIELD (999999)
26	11	F6.3	4PI-SYSTEM DATA CØLLECTIØN INTERVAL TØ THREE DECIMAL
27			PLACES IN SECØNDS FØR FIRST SYSTEM
28	12	F6.3	2PI-SYSTEM DATA CØLLECTIØN INTERVAL TØ THREE DECIMAL
29			PLACES IN SECØNDS FØR FIRST SYSTEM
30	13	I3	NUMBER ØF CHANNELS (0-3 MEV) IN 4PI SYSTEM FØR FIRST
31			AERIAL SYSTEM
32	14	I3	NUMBER ØF CHANNELS (0-3 MEV) IN 2PI SYSTEM FØR FIRST
33			AERIAL SYSTEM
34	15-24	(SAME)	REPEAT ØF ITEMS 5-14 FØR SECØND AERIAL SYSTEM
35	*	*	*
36	*	*	*
37	*	*	*
38	85-94	(SAME)	REPEAT ØF ITEMS 5-14 FØR NINTH AERIAL SYSTEM
39	95	I3	NUMBER ØF FLIGHT LINES ØN THIS TAPE
40	96	I4	FIRST FLIGHT LINE NUMBER ØN THIS TAPE
41	97	I6	FIRST RECØRD NUMBER ØF FIRST FLIGHT LINE
42	98	I3	JULIAN DATE (DAY ØF YEAR) FIRST FLIGHT LINE DATA WAS
43			CØLLECTED
44	99-101	I4,I6,I3	REPEAT ØF ITEMS 96-98 FØR SECØND FLIGHT LINE ØN THIS
45			TAPE
46	*	*	*
47	*	*	*
48	*	*	*
49	390-392	I4,I6,I3	REPEAT ØF ITEMS 96-98 FØR 99TH FLIGHT LINE ØN THIS
50			TAPE
51			

Line Number | Character Number
1234567890123456789012345678901234567890123456789012345678901234567890123456789012

FØRMAT FØR STATISTICAL ANALYSIS DATA RECØRD (THIRD THRU LAST BLØCK)

ITEM	FØRMAT	DESCRIPTIØN
1	I1	AERIAL SYSTEM IDENTIFICATIØN CØDE
2	I4	FLIGHT LINE NUMBER
3	I6	RECØRD IDENTIFICATIØN NUMBER
4	I6	GMT TIME ØF DAY (HHMMSS)
5	F8.4	LATITUDE TØ FØUR DECIMAL PLACES IN DEGREES
6	F8.4	LØNGITUDE TØ FØUR DECIMAL PLACES IN DEGREES
7	F6.1	TERRAIN CLEARANCE TØ ØNE DECIMAL PLACE IN METERS
8	F7.1	RESIDUAL (IGRF REMØVED) MAGNETIC FIELD INTENSITY TØ ØNE DECIMAL PLACE IN GAMMAS
9	A8	SURFACE GEØLØGIC MAP UNIT CØDE
10	I5	QUALITY FLAG CØDES
11	F6.1	AVERAGED CØNCENTRATIØN ØF TERRESTRIAL PØTASSIUM (K-40) TØ ØNE DECIMAL PLACE IN PERCENT K
12	F4.1	UNCERTAINTY IN TERRESTRIAL PØTASSIUM TØ ØNE DECIMAL PLACE IN PERCENT K
13	F5.1	PØTASSIUM STANDARD DEVIATION FRØM THE MEAN TØ ØNE DECIMAL PLACE AND ALGEBRAICALLY SIGNED
14	F6.1	AVERAGED CØNCENTRATIØN ØF TERRESTRIAL URANIUM (BI-214) TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U
15	F4.1	UNCERTAINTY IN TERRESTRIAL URANIUM TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U
16	F5.1	URANIUM STANDARD DEVIATION FRØM THE MEAN TØ ØNE DECIMAL PLACE AND ALGEBRAICALLY SIGNED
17	F6.1	AVERAGED CØNCENTRATIØN ØF TERRESTRIAL THØRIUM (TL-208) TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT TH
18	F4.1	UNCERTAINTY IN TERRESTRIAL THØRIUM TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT TH
19	F5.1	THØRIUM STANDARD DEVIATION FRØM THE MEAN TØ ØNE DECIMAL PLACE AND ALGEBRAICALLY SIGNED
20	F8.1	GRØSS GAMMA (0.4-3.0 MEV) CØUNT RATE TØ ØNE DECIMAL PLACE IN CØUNTS PER SECØND
21	F6.1	UNCERTAINTY IN GRØSS GAMMA CØUNT RATE TØ ØNE DECIMAL PLACE IN CØUNTS PER SECØND
22	F5.1	ATMØSPHERIC BI-214 4PI CØRRECTIØN TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U
23	F4.1	UNCERTAINTY IN ATMØSPHERIC BI-214 4PI CØRRECTIØN TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U
24	F6.1	AVERAGED URANIUM-TØ-THØRIUM RATIØ TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U PER PPM EQUIVALENT TH
25	F5.1	URANIUM-TØ-THØRIUM RATIØ STANDARD DEVIATIØN FRØM THE MEAN TØ ØNE DECIMAL PLACE AND ALGEBRAICALLY SIGNED
26	F6.1	AVERAGED URANIUM-TØ-PØTASSIUM RATIØ TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT U PER PERCENT K
27	F5.1	URANIUM-TØ-PØTASSIUM RATIØ STANDARD DEVIATIØN FRØM THE MEAN TØ ØNE DECIMAL PLACE AND ALGEBRAICALLY SIGNED
28	F6.1	AVERAGED THØRIUM-TØ-PØTASSIUM RATIØ TØ ØNE DECIMAL PLACE IN PPM EQUIVALENT TH PER PERCENT K
29	F5.1	THØRIUM-TØ-PØTASSIUM RATIØ STANDARD DEVIATIØN FRØM THE MEAN TØ ØNE DECIMAL PLACE AND ALGEBRAICALLY SIGNED

The second block on tape is the tape identification block, providing information identifying the survey, the approximate date of the survey, the subcontractor, flight-lines, etc. The data written on this block are in the same format as specified in the first block of this tape as shown on Table B-4. The remaining 5062 characters on this block remain blank.

The third and all subsequent block on the magnetic data tape are magnetic data records with 100 records per physical block. The data written in each record are in the same format as specified in the first block of this tape.

Statistical Analysis Summary Tape

The statistical analysis summary tape provides a condensation of the information contained in the statistical analysis data tape, divided according to the geologic map unit. .

The first physical block on the statistical analysis summary data tape is the format description block, providing information needed to read this tape. The first 4320 characters on this block are 60 consecutive 72-character lines, literally written as shown in Table B-5. The remaining 2680 characters on this block remain blank.

The second block on tape is the tape identification block, providing information identifying the survey, the approximate date of the survey, the subcontractor, etc. The data written on this block are in the same format as specified in the first block of this file. The remaining 6930 characters on this block remain blank.

The third and all subsequent blocks on the statistical analysis summary tape are statistical analysis summary records with 50 records per physical block. The data written in each record are in the same format as specified in the first block of this tape.

Table B-4

Magnetic Tape Format Description Block Contents

line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
1	04 0978 (DATA TAPE TYPE AND FØRMAT SPECIFICATIØN DATE CØDES)
2	
3	MAGNETIC DATA TAPE
4	
5	FØRMAT FØR TAPE IDENTIFICATIØN BLØCK (SECØND BLØCK)
6	
7	ITEM FØRMAT DESCRIPTIØN
8	1 A40 QUADRANGLE NAME AS PRØJECT IDENTIFICATIØN
9	2 A20 NAME ØF SUBCØNTRACTØR
10	3 I4 APPRØXIMATE DATA ØF SURVEY (MØNTH,YEAR)
11	4 I3 NUMBER ØF FLIGHT LINES ØN THIS TAPE
12	5 I4 FIRST FLIGHT LINE ØN THIS TAPE
13	6 I6 FIRST RECØRD NUMBER ØF FIRST FLIGHT LINE
14	7 I3 JULIAN DATA (DAY ØF YEAR) FIRST FLIGHT LINE DATA WAS
15	CØLLECTED
16	8 F8.4 LATITUDE ØF GRØUND BASE STATIØN TØ FØUR DECIMAL
17	PLACES IN DEGREES FØR FIRST FLIGHT LINE
18	9 F8.4 LØNGITUDE ØF GRØUND BASE STATIØN TØ FØUR DECIMAL
19	PLACES IN DEGREES FØR FIRST FLIGHT LINE
20	10-14 (SAME) REPEAT ØF ITEMS 5-9 FØR SECØND FLIGHT LINE ØN THIS
21	TAPE
22	* * *
23	* * *
24	* * *
25	495-499 (SAME) REPEAT ØF ITEMS 5-9 FØR 99TH FLIGHT LINE ØN THIS
26	TAPE
27	
28	FØRMAT FØR MAGNETIC DATA RECØRD (THIRD THRU LAST BLØCK)
29	
30	ITEM FØRMAT DESCRIPTIØN
31	1 I1 AERIAL SYSTEM IDENTIFICATIØN CØDE
32	2 I4 FLIGHT LINE NUMBER
33	3 I6 RECØRD IDENTIFICATIØN NUMBER
34	4 I6 GMT TIME ØF DAY (HHMMSS)
35	5 F8.4 LATITUDE TØ FØUR DECIMAL PLACES IN DEGREES
36	6 F8.4 LØNGITUDE TØ FØUR DECIMAL PLACES IN DEGREES
37	7 F6.1 TERRAIN CLEARANCE TØ ØNE DECIMAL PLACE IN METERS
38	8 F5.1 ØUTSIDE AIR PRESSURE TØ ØNE DECIMAL PLACE IN MMHG
39	9 A8 SURFACE GEØLOGIC MAP UNIT CØDE
40	10 F7.1 TØTAL MAGNETIC FIELD INTENSITY TØ ØNE DECIMAL PLACE
41	IN GAMMAS
42	11 F7.1 RESIDUAL (IGRF REMØVED) MAGNETIC FIELD INTENSITY
43	TØ ØNE DECIMAL PLACE IN GAMMAS
44	12 F7.1 DIURNAL MAGNETIC INTENSITY VARIATIØN TØ ØNE DECIMAL
45	PLACE IN GAMMAS
46	13 F7.1 MAGNETIC DEPTH-TØ-BASEMENT TØ ØNE DECIMAL PLACE
47	IN METERS (IF REQUIRED)

Table B-5

Statistical Analysis Summary Tape Format Description Block Contents

Line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
1	05 0978 (DATA TAPE TYPE AND FØRMAT SPECIFICATIØN DATE CØDE)
2	
3	STATISTICAL ANALYSIS SUMMARY TAPE (ØR FILE)
4	
5	FØRMAT FØR TAPE IDENTIFICATIØN BLØCK (SECØND BLØCK)
6	
7	ITEM FØRMAT DESCRIPTIØN
8	1 A40 QUADRANGLE NAME AS PRØJECT IDENTIFICATIØN
9	2 A20 NAME ØF SUBCØNTRACTØR
10	3 I4 APPRØXIMATE DATE ØF SURVEY (MØNTH,YEAR)
11	4 I6 NUMBER ØF GEØLØGIC MAP UNITS USED FØR THIS
12	QUADRANGLE
13	
14	FØRMAT FØR STATISTICAL ANALYSIS SUMMARY DATA RECØRD (THIRD THRU LAST
15	BLØCK)
16	
17	ITEM FØRMAT DESCRIPTIØN
18	1 A8 SURFACE GEØLØGIC MAP UNIT IDENTIFYING CØDE
19	2 I6 TØTAL RECØRDS FØR GEØLØGIC MAP UNIT
20	3 I6 NUMBER ØF PØTASSIUM RECØRDS CØMPUTED FØR GEØLØGIC
21	UNIT
22	4 F6.1 PØTASSIUM CØNCENTRATIØN MEAN TØ ØNE DECIMAL PLACE
23	IN PERCENT K
24	5 F6.1 PØTASSIUM CØNCENTRATIØN STANDARD DEVIATIØN TØ ØNE
25	DECIMAL PLACE IN PERCENT K
26	6 A3 PØTASSIUM CØNCENTRATIØN DISTRIBUTIØN CØDE
27	7 I6 NUMBER ØF URANIUM RECØRDS CØMPUTED FØR GEØLØGIC UNIT
28	8 F6.1 URANIUM CØNCENTRATIØN MEAN TØ ØNE DECIMAL PLACE
29	IN PPM EQUIVALENT U
30	9 F6.1 URANIUM CØNCENTRATIØN STANDARD DEVIATIØN TØ ØNE
31	DECIMAL PLACE IN PPM EQUIVALENT U
32	10 A3 URANIUM CØNCENTRATIØN DISTRIBUTIØN CØDE
33	11 I6 NUMBER ØF THØRIUM RECØRDS CØMPUTED FØR GEØLØGIC UNIT
34	12 F6.1 THØRIUM CØNCENTRATIØN MEAN TØ ØNE DECIMAL PLACE IN
35	PPM EQUIVALENT TH
36	13 F6.1 THRØIUM CØNCENTRATIØN STANDARD DEVIATIØN TØ ØNE
37	DECIMAL PLACE IN PPM EQUIVALENT TH
38	14 A3 THØRIUM CØNCENTRATIØN DISTRIBUTIØN CØDE
39	15 I6 NUMBER ØF URANIUM-TØ-THØRIUM RATIØ RECØRDS CØMPUTED
40	FØR GEØLØGIC UNIT
41	16 F6.1 URANIUM-TØ-THØRIUM RATIØ MEAN TØ ØNE DECIMAL PLACE
42	IN PPM EQUIVALENT U PER PPM EQUIVALENT TH
43	17 F6.1 URANIUM-TØ-THØRIUM RATIØ STANDARD DEVIATIØN TØ ØNE
44	DECIMAL PLACE IN PPM EQUIVALENT U PER PPM EQUIVALENT
45	TH
46	18 A3 URANIUM-TØ-THØRIUM RATIØ DISTRIBUTIØN CØDE
47	19 I6 NUMBER ØF URANIUM-TØ-PØTASSIUM RATIØ RECØRDS
48	CØMPUTED FØR GEØLØGIC UNIT
49	20 F6.1 URANIUM-TØ-PØTASSIUM RATIØ MEAN TØ ØNE DECIMAL PLACE
50	IN PPM EQUIVALENT U PER PERCENT K
51	21 F6.1 URANIUM-TØ-PØTASSIUM RATIØ STANDARD DEVIATIØN TØ ØNE
52	DECIMAL PLACE IN PPM EQUIVALENT U PER PERCENT K
53	22 A3 URANIUM-TØ-PØTASSIUM RATIØ DISTRIBUTIØN CØDE

Line Number	Character Number 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012		
54	23	I6	NUMBER ØF THRØIUM-TØ-PØTASSIUM RATIØ RECØRDS
55			CØMPUTED FØR GEØLØGIC UNIT
56	24	F6.1	THØRIUM-TØ-PØTASSIUM RATIØ MEAN TØ ØNE DECIMAL PLACE
57			IN PPM EQUIVALENT TH PER PERCENT K
58	25	F6.1	THØRIUM-TØ-PØTASSIUM RATIØ STANDARD DEVIATIØN TØ ØNE
59			DECIMAL PLACE IN PPM EQUIVALENT TH PER PERCENT K
60	26	A3	THØRIUM-TØ-PØTASSIUM RATIØ DISTRIBUTIØN CØDE

APPENDIX C

REDUCTION PARAMETERS

REDUCTION PARAMETERS

Aircraft N870

	4 π	2 π
Background Corrections		
T_c	145.1	----
K	21.1	----
U	4.9	.55
Th	4.2	0.65
Cosmic Ratios		
T_c	3.7910	----
K	.2040	----
U	.1750	.1890
Th	.2090	.2090
Stripping Ratios		
Alpha (U/Th)	0.3664	0.3710
Beta (K/U)	0.4594	
Gamma (K/Th)	0.9558	
Delta (Th/U)	0.098	

Sensitivity Factors at 400 Feet		
K	78.72	CPS/%
U	10.90	CPS/PPM
Th	5.28	CPS/PPM