Revision 1

Certain figures in this Report contain sensitive, security-related information protected from public disclosure by Federal and State law. This Report is suitable for public disclosure only after these figures are removed.

HYDROGEOLOGIC INVESTIGATION REPORT

FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

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EXECUTIVE SUMMARY

This Hydrogeologic Investigation Report (HIR) documents the results of Conestoga-Rovers & Associates' (CRA's) May 2006 Hydrogeologic Investigation Work Plan (Work Plan) pertaining to the Byron Generating Station in Byron, Illinois. CRA prepared this HIR for Exelon as part of its Fleetwide Program to determine whether groundwater at and in the vicinity of its nuclear power generating facilities has been adversely impacted by any releases of radionuclides. This report also documents the results of CRA's and the Byron Station's investigation beginning in January 2006 in relation to the current and former blowdown lines.

CRA collected and analyzed information on historical releases, the structures, components, and areas of the Station that have the potential to release tritium or other radioactive liquids to the environment and past hydrogeologic investigations at the Station. CRA used this information, combined with its understanding of groundwater flow and sample locations at the Station to identify the AFEs for the Station.

CRA collected 39 groundwater samples during the blowdown line investigation and 41 groundwater samples during the fleetwide investigation. CRA also collected two full rounds of water levels from the newly installed and existing wells. The Work Plan was completed in March and April 2006. All groundwater samples were analyzed for tritium, strontium-89/90 and gamma-emitting radionuclides.

The results of the hydrogeologic investigation are:

- Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective Lower Limits of Detection (LLDs) in any of the groundwater samples obtained and analyzed during the course of this investigation;
- Strontium-89/90 was not detected at a concentration greater than the LLD of 2 picoCuries per liter (pCi/L) in any of the groundwater samples obtained and analyzed during the course of this investigation;
- Tritium was not detected at concentrations that are greater than the United States Environmental Protection Agency (USEPA) drinking water standard of 20,000 pCi/L;
- Low levels of tritium were detected at concentrations greater than the LLD of 200 pCi/L in four out of 39 samples collected, which is considered background, but well below the applicable drinking water standard. These tritium concentrations ranged from 234 ± 128 pCi/L to 3,260 ± 367 pCi/L. These four samples were all

collected from monitoring wells near three vacuum breaker vaults: VB-2, VB-3, and VB-4. The source of the tritium concentrations in the groundwater was periodic leaks during re-seating of the blowdown line vacuum breaker valves;

- Based on the results of this investigation, tritium is not migrating off the Station property at detectable concentrations;
- Based on the results of this investigation, there is no current risk from exposure to radionuclides associated with licensed plant operations through any of the identified potential exposure pathways; and
- Based on the results of this investigation, there are no known active releases into the groundwater at the Station.

Based upon the information collected to date, CRA recommends that Exelon conduct periodic monitoring of selected sample locations.

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) has prepared this Hydrogeologic Investigation Report (HIR) for Exelon Generation Company, LLC (Exelon) as part of its Fleetwide Program to determine whether groundwater at and in the vicinity of its nuclear power generating facilities has been adversely impacted by any releases of radionuclides. This report documents the results of CRA's May 2006 Hydrogeologic Investigation Work Plan (Work Plan). This investigation pertains to Exelon's Byron Generating Station in Byron, Illinois (Station) (refer to Figure 1.1). This report also documents the results of CRA's and the Station's investigation conducted beginning in January 2006 in relation to the current and former blowdown lines.

The Station is defined as all property, structures, systems, and components owned and operated by Exelon located at 4450 North German Church Road in Byron, Illinois, Rockvale and Marion Townships, Ogle County. The approximate property boundaries are shown on Figure 1.2.

Pursuant to the Work Plan, CRA assessed groundwater quality at the Station in locations designated as Areas for Further Evaluation (AFEs). The process by which CRA identified AFEs is discussed in Section 3.0 of this report.

The objectives of the Work Plan were to:

- characterize the geologic and hydrogeologic conditions at the Station, including subsurface soil types, the presence or absence of confining layers, and the direction and rate of groundwater flow;
- characterize the groundwater/surface water interaction at the Station, including a determination of the surface water flow regime;
- evaluate groundwater quality at the Station, including the vertical and horizontal extent, quantity, concentrations, and potential sources of tritium and other radionuclides in the groundwater, if any;
- define the probable sources of any radionuclides released at the Station;
- evaluate potential human, ecological, or environmental receptors of any radionuclides that might have been released to the environment; and
- evaluate whether interim response activities are warranted.

2.0 STATION DESCRIPTION

The following section presents a general summary of the Station location and definition, overview of Station operations, surrounding land use, and an overview of both regional and Station-specific topography, surface water features, geology, hydrogeology, and groundwater flow conditions. This section also presents an overview of groundwater use in the area.

2.1 STATION LOCATION

The Station is located at 4450 North German Church Road in Byron, Illinois, Rockvale and Marion Townships, Ogle County. The Station consists of approximately 1,900 acres, of which approximately 1,200 acres are used for the generating facility. The other approximately 700 acres of property encompass a 'buffer zone' around the facility and property to the west of the facility.

The Byron Station is located approximately 2 miles east of the Rock River. The blowdown line extends from the Station to the Rock River, and discharges into the Rock River. Figure 1.2 presents a Station Property Map showing the Station structures and the approximate property boundary.

2.2 OVERVIEW OF COOLING WATER OPERATIONS

Operations at the Station began in 1985. The two nuclear reactors at the Station (Unit 1 and Unit 2) are both pressurized water reactors. The Station produces approximately 2,400 megawatts of electricity.

Non-contact cooling water from the Rock River that is used in the electricity generation process is cooled through the Station's two cooling towers. The water is then recirculated through the flume and discharged through the blowdown line back to the Rock River in accordance with an Illinois Environmental Protection Agency (Illinois EPA) National Pollution Discharge Elimination System (NPDES) permit (IL0048313) and Nuclear Regulatory Commission (NRC) Operating Licenses, NPF-37 (Unit 1) and NPF-66 (Unit 2).

Water from the Station's Radioactive Waste Treatment system is transferred to the liquid Radioactive Waste Storage Tank where it is sampled and analyzed. Once the analysis is reviewed and the water is determined to be in compliance with the NPDES permit and

the NRC Operating License discharge limitations, it is batch released through the blowdown line.

The blowdown line and make-up line were constructed adjacent to each other and follow a northwest and then westerly path from the Station for approximately 2 miles to the Rock River. At the Rock River, the make-up line is located approximately 300 feet upstream of the blowdown line. Along the length of the two lines, there are six vacuum breaker (VB) locations (VB-1 through VB-6) for each line. The breakers are located within concrete vaults. There are two vaults at each breaker location, one for each line.

There are seven ponds in the northeast section of the Station. Six of these ponds are concrete-lined process catch basins and are aligned in an east-west trending series. These are referred to as the Treated Runoff ponds. The four western ponds collect water from the Station; the water from these four ponds is pumped to the waste treatment building for processing. The two eastern ponds collect rainwater from the storm water drain system; the water from these ponds is pumped to the Construction Run-off Pond (CROP) located north of the Treated Runoff ponds. The CROP is lined at the bottom with 1 foot of clay. Water from the CROP is eventually pumped back into the Station's cooling towers.

2.3 SURROUNDING LAND USE

The land surrounding the Station in all directions is primarily farmland. Approximately 0.3 mile north of the Station property along the Rock River is a small residential subdivision named Rock Terrace. In addition, there are two small residential areas along the Rock River approximately 0.1 mile and 0.8 mile south of the Station property.

The Byron Salvage Superfund Site (Byron Salvage Site) is immediately to the north of the west portion of the Station along Razorville Road. The Byron Salvage Site is administered by United States Environmental Protection Agency (USEPA) Region 5. It was placed on the National Priorities List (NPL) in 1982 and has the USEPA identification number ILD010236230. The Byron Salvage Site consists of two separate properties: the Byron Salvage Yard property and the Dirk's Farm property (see Figure 1.2). The Dirk's Farm property is currently owned by Exelon, and is a former farm located west of the Byron Salvage Yard property across Razorville Road.

Waste disposal at the Byron Salvage Site is known to have occurred on each of the two properties. From the mid 1960s to 1972, approximately 10 acres of the Byron Salvage Site were used as an automotive salvage yard and dump where miscellaneous waste

and debris were disposed. Such wastes and debris included drums of electroplating wastes and other materials including oil sludges, cutting wheels, solvents, scrap metal, and industrial wastes. Plating waste containing cyanide was sprayed onto roads as dust control at the Byron Salvage Site.

At the direction of Illinois EPA, from 1974 through 1976 Exelon's predecessor, Commonwealth Edison Company (ComEd) removed the waste material from the Dirks Farm property. After 1976, ComEd continued monitoring the groundwater at the Dirks Farm property. Investigative and remedial actions were conducted at the Byron Salvage Yard portion of the Site beginning in 1983. Drums were present at the Byron Salvage Yard on the surface and buried underground. Hazardous wastes were found to contain lead, arsenic, cyanides, halogenated organics, zinc, nickel, and low concentrations of polychlorinated biphenyls (PCBs). Between 1986 and 1998, soil removal and cleanup activities were conducted on the Byron Salvage Site. The Byron Salvage Site remediation is in the long-term groundwater monitoring phase for volatile organic compounds (VOCs) and cyanides. ComEd resolved its alleged liability for the Byron Salvage Site in a settlement with USEPA.

2.4 STATION SETTING

The following sections present a summary of the topography, surface water features, geology, hydrogeology, and groundwater flow conditions in the region surrounding the Station. The information was primarily gathered from Sections 2.1 and 2.5 of the Byron Station Updated Final Safety Analysis Report (UFSAR), Revision 10 dated December 2004, and from the well logs contained in the Byron Salvage Yard Remedial Design Work Plan (CRA, June 2001). The main references that the UFSAR relied upon are listed in Section 10.0 of this HIR. CRA checked and verified all UFSAR references that apply to this HIR.

2.4.1 TOPOGRAPHY AND SURFACE WATER FEATURES

The Station's location is on the Oregon, Illinois 7.5-minute United States Geological Service (USGS) quadrangle topographic maps, dated 1976 (Stillman Valley) and 1983 (Oregon) (see Figure 1.1). The property boundaries fall within the following sections of the map: T24N R10E Sections 12, 13, 14, 15, 22, 23, and 24, and T24N R11E Sections 7, 18, and 19. The Byron, Illinois area is part of the Rock River Hill Country physiographic subsection. The Rock River Hill Country is characterized by gently rolling, dissected uplands covered by thin deposits of glacial drift overlain by a thin cap of loess. The

southwest-trending Rock River valley passes through the eastern portion of the subsection. Bedrock is exposed locally along the Rock River and along small tributary streams and valleys of the Rock River. The topography that is indicated on the Oregon, Illinois 7.5-minute quadrangle is consistent with this physiography.

The Station was constructed on a local topographic high. In each direction from the Station, the topography undulates, with rolling hills and valleys. Along the Rock River, erosional valleys cut by tributary streams are present. The ground surface elevation at the Station is approximately 200 feet higher than the ground surface near the Rock River.

The Rock River, the largest body of water in the area, is located approximately 2 miles to the west of the Station. The river flows southward with an average flow of 4,000 cubic feet per second (cfs) and is primarily used for recreation, including boating, fishing, and water skiing. Streams in the Byron area discharge into the Rock River; the confluence of the Rock River with the Mississippi River is approximately 115 river miles south of the Station (Willman, et al., 1967).

The Woodland Creek is located to the north of the Station and flows to the northwest toward the Rock River. Additionally, an unnamed creek is located to the west of the Station and flows west toward the Rock River. Both of these creeks are ephemeral, flowing only during times of heavy rainfall.

2.4.2 GEOLOGY

The northern portion of the mid-western United States is in the Central Lowlands Physiographic Province (Willman et al., 1975). This physiographic province has been divided into several physiographic sections. Parts of northern Illinois are located in the Wisconsin Driftless Section, the Till Plains Section, and the Great Lake Section.

Byron Station is located within the Till Plains Section. The Till Plains Section is characterized, in general, by the presence of glacial deposits overlying the bedrock surface. Local outcrops of bedrock are present. The Till Plains Section in Illinois is further subdivided into the following physiographic subsections: the Rock River Hill Country, the Green River Lowland, the Bloomington Ridged Plain, the Galesburg Plain, the Kankakee Plain, and the Springfield Plain. The Byron Station is in the Rock River Hill Country physiographic subsection (Willman et al., 1975).

The soil units in the region, adjacent to the Station, are relatively thin or locally absent. They include alluvial deposits associated with the rivers and streams in the area, glacial

deposits of till and outwash generally located in the upland areas, thin loess deposits that overlie the till, and locally, some thin residual soils developed from the weathering of the bedrock.

The Station is underlain by a veneer of overburden deposits that vary in thickness from less than 1 foot to approximately 12 feet and consist mainly of silty loam and loess, with alluvial deposits near the Rock River. The predominant soil types at the Station are the Martinsville Silt Loam, the Whalen Loam, and the Lamont Sandy Loam (Ogle County, 2006). These three soil types consist of loamy soil with varying amounts of silt and sand, with slopes ranging from 2 to 18 percent (United States Department of Agriculture, 2006).

The distribution of the rock units that form the bedrock surface within the region include a sedimentary sequence of Cambrian to Cretaceous-rocks and an igneous and metamorphic complex of Precambrian-aged rocks. The sedimentary sequence in northern Illinois near the Station includes Ordovician-aged and Cambrian-aged strata. These strata consist of 2,000 to 3,000 feet of dolomites, sandstones, and shales. The Precambrian basement in northern Illinois consists of granites and granodiorites (Bradbury and Atherton, 1965).

The Byron Station lies within the Central Stable Region tectonic province of the North American continent. This tectonic region is characterized by a sequence of southward-thickening sedimentary strata overlying the Precambrian basement and was subjected to a series of vertical crustal movements forming broad basins and arches during Paleozoic and early Mesozoic time. Local folding and faulting has modified the arches and basins (Buschbach, 1964) (Willman et al., 1975).

The bedrock under the Station is comprised of flat-lying Ordovician-aged dolomitic and sandstone layers progressing downward as follows:

- Galena Group Dolomites;
- Platteville Group Dolomites; and
- Ancell Group, consisting of:
  - Glenwood Formation (shale with sandy dolomite, semi-confining layer),
  - St. Peter Sandstone Formation, and
  - older Cambrian formations.

The generating facility was constructed on an area of a 'bedrock high', and the foundation was installed into the bedrock. Figures 2.1 and 2.2 present generalized

cross-sections of the area geology prepared from geologic information gathered from boreholes advanced prior to construction of the Station. The locations of the cross-sections are shown on Figure 1.2.

CRA has prepared hydrogeologic cross-sections depicting the geology and groundwater elevations under the Station. These figures are discussed in Section 5.0 of this Report.

2.4.3 HYDROGEOLOGY

Ordovician-age Galena-Platteville dolomites and the older Ordovician-age Glenwood Formation and St. Peter Sandstone underlie the area. The most important aquifer in the region is the Cambrian-Ordovician Aquifer, made up of all bedrock between the top of the Galena-Platteville dolomites and the top of the Eau Claire Formation. These strata are, in descending order, the Ordovician-age Galena Formation, Platteville Formation, Ancell Formation (Glenwood, St. Peter, and older Cambrian formations), Prairie du Chien Formation, and Ironton and Galesville Sandstones. At the Bryon Station, the Galena-Platteville dolomites are separated from the rest of the Cambrian-Ordovician Aquifer by the Harmony Hill Shale Member of the Glenwood Formation. Available data indicate that, on a regional basis, the entire sequence of strata above the Eau Claire Formation behaves hydraulically as one aquifer. In places, pressure heads between the water bearing units differ, and the hydraulic connection is imperfect.

The Galena and Platteville Groups dolomites are extensively fractured near the top, with solutionally enlarged openings in places but become dense at depth. Water from the Galena-Platteville dolomites in the area is generally hard. Relatively low yields, water hardness, and susceptibility of the aquifer to contamination because of thin drift, fractures, and solution channels do not favor development of the Galena-Platteville dolomites.

Below the Galena-Platteville dolomites are the thin shales, sandstones, and limestones of the Glenwood Formation. This unit grades downward into the thick sandstones of the St. Peter Sandstone. The Ordovician-age St. Peter Sandstone is permeable and has a relatively uniform lithology throughout the area. The St. Peter Sandstone is recharged from overlying glacial deposits in the central and western parts of northern Illinois, and also by vertical leakage through the Maquoketa Shale Group in northeastern Illinois and by through-flow from the outcrop area in southern Wisconsin (Buschbach, 1964).

2.4.3.1 EXISTING WELL NETWORK

Groundwater (the water table) under the Station is first encountered within the Galena-Platteville limestones and dolomites. The depth to the groundwater varies with the topography, ranging from approximately 17 feet below ground surface (feet bgs) to 115 feet bgs. Near the Rock River, the water table is in the unconsolidated deposits.

There are 77 wells at the Station. Figure 2.3 presents the locations of the wells. Of the 77 wells, the Station owns 33 wells and the remaining 44 wells are owned by the Byron Salvage Site PRP Group. A summary of the existing well information is provided in Table 2.1. These wells were used during the investigations to provide information on the geology and groundwater levels at the Station.

The monitoring wells are set at different depths to screen all three hydrogeologic units located under the Station. CRA monitors the levels and water quality of the Byron Salvage Site wells at the Station as part of the long-term monitoring program for the Byron Salvage Site.

There are two deep wells in the Protected Area (PA). The wells are designated Deep Well 1 and Deep Well 2 and are used for the Station's water supply (see Figure 2.3). Both wells were installed during the construction of the Station and draw water from depths greater than 500 feet below grade at an average flow rate of 800 gallons per minute (gpm) per well. Water is pumped from each well at different times, and the piping from the wells combines into a common manifold to supply the Station's water supply.

There are two former farmhouse water supply wells on the Station. The wells are designated GW-9 and Well 7. During an investigation of the blowdown line, which began in early 2006 (refer to Section 3.3.2.2), 16 overburden monitoring wells and 13 bedrock wells were installed along the blowdown line and also within the PA. Further details regarding the most recent monitoring wells are provided in Section 3.4 of this report.

CRA expects most of the private wells in the vicinity of the Station are completed in the St. Peter Sandstone, however, well completion information was not available for all private wells identified by CRA, in order to confirm this observation.

2.4.3.2 GROUNDWATER FLOW

Groundwater flow in the Galena-Platteville dolomites occurs along joints and bedding planes. Solutioning along these pathways continues at an imperceptible rate due to the low solubility of the dolomite, the hardness of the groundwater, and the relatively low hydraulic gradient within the aquifer.

The general regional groundwater flow direction in the Galena-Platteville dolomites and the underlying Glenwood Formation and St. Peter Sandstone is to the west toward the Rock River. Local groundwater flow conditions are typically influenced by surface topography and aquifer thickness.

Groundwater flow patterns vary under the Station property. In July 1974, the Station assessed groundwater flow using a system of wells and piezometers installed prior to Station construction. Since the facility sits upon a bedrock high, groundwater flow directly beneath the facility was radially outward in all directions. Figure 2.4 presents the groundwater flow for the Station.

On the western portion of the Station near the blowdown line, groundwater flow was historically assessed as part of the Byron Salvage Site remedial investigation. CRA measured water levels at the Byron Salvage Site monitoring wells on March 23, 2006. Groundwater contours for the entire Station (both the blowdown line area and the generating facility), are shown on Figure 2.4 which presents a combined generalized contour map of the 1974 data (for the generating facility) and the March 2006 data (for the blowdown line area). There is a northwest/southeast trending groundwater divide near Razorville Road, west of the generating facility, and perpendicular to the blowdown line. The direction of groundwater flow at points along the blowdown line varies depending upon the location. However, the general groundwater flow direction is to the west toward the Rock River.

2.5 AREA GROUNDWATER USE

RETEC completed a water well search and survey for the Station property ("Residential Well Survey", RETEC Group, Inc, September 23, 2005). CRA expanded the water well search between March and May 2006 to identify the public and private water wells located within approximately 1 mile of Station property. CRA contacted the following sources for information:

- Illinois State Water Survey (ISWS);
- Illinois State Geological Survey (ISGS);
- Illinois EPA database; and
- Ogle County GIS system.

The ISGS (in association with the Illinois EPA) and the ISWS maintain databases of water well information. The ISWS and ISGS provided lists of water wells for the Station and for the area surrounding the Station. A figure of the approximate locations of the water wells surrounding the Station (Figure A.1), along with copies of the information gathered from the ISWS and ISGS are provided in Appendix A. All of the water wells listed are for residential use; none are listed for commercial, industrial, or public water supply uses.

The St. Peter Sandstone is the primary aquifer for residential potable water in the area. The most important aquifer in the region is the Cambrian-Ordovician Aquifer, made up of all bedrock between the top of the Galena-Platteville dolomites and the top of the Eau Claire Formation.

Potable water for the residences south, east, and some north of the Station is provided by private water wells at each property. As part of the Byron Salvage Site groundwater remediation, an alternate water supply and distribution system was provided to many of the residences located north of the Station.

3.0 AREAS FOR FURTHER EVALUATION

CRA considered all Station operations in assessing groundwater quality at the Station. During this process, CRA identified areas at the Station that warranted further evaluation or "AFEs". This section discusses the process by which AFEs were selected.

CRA's identification of AFEs involved the following components:

- Station inspection on March 21 and 22, 2006;
- interviews with Station personnel;
- evaluation of Station systems;
- investigation of confirmed and unconfirmed releases of radionuclides; and
- review of previous Station investigations.

CRA analyzed the information collected from these components combined with information obtained from CRA's study of hydrogeologic conditions at the Station to identify those areas where groundwater potentially could be impacted from operations at the Station.

CRA then designed an investigation to determine whether any confirmed or potential releases or any other release of radionuclides adversely affected groundwater. This entailed evaluating whether existing Station groundwater monitoring systems were sufficient to assess the groundwater quality at the AFEs. If the systems were not sufficient to adequately investigate groundwater quality associated with any AFE, additional monitoring wells were installed by CRA.

The following sections describe the above considerations and the identification of AFEs. The results of CRA's investigation are discussed in Section 5.0.

3.1 SYSTEMS EVALUATIONS

Exelon launched an initiative to systematically assess the structures, systems and components that store, use, or convey potentially radioactively contaminated liquids. Maps depicting each of these systems were developed and provided to CRA for review. The locations of these systems are presented on Figures 3.1 through 3.3. The Station identified a total of 30 systems that contain or could potentially contain radioactively contaminated liquids. The following presents a list of these systems.

System Identification	*Description*
AB	Boric Acid Process
AS	Auxiliary Steam
BR	Boron Thermal Regeneration
CD	Condensate
CP	Condensate Polishing
CW	Circulating Water
DM	Miscellaneous Building Drain
DV	Miscellaneous Drains and Vents
FC	Fuel Pool Cooling
FP	Fire Protection
GS	Turbine Gland Seals
HD	Feedwater Drains
MS	Main Steam
OD	Equipment/Floor Oil Drain
PS	Process Sampling
PW	Primary Water
RF	Reactor Building Floor Drains
SH	Station Heat
SI	Safety Injection
ST	Sewage Treatment
SX	Essential Service Water
TE	Turbine Building Equipment Drains
TF	Turbine Building Floor Drains
TR	Treated Runoff
VF	Filtered Vents
VR	Volume Reduction
WE	Auxiliary Building Equipment Drain
WF	Auxiliary Building Floor Drain
WS	Non-Essential Service Water
WX	Radwaste Disposal

After these systems were identified, Exelon developed a list of the various structures, components and areas of the systems (e.g., piping, tanks, process equipment) that handle or could potentially handle any radioactively contaminated liquids. The structures, components, and areas may include:

- aboveground storage tanks;
- condensate vents;
- areas where confirmed or potential historical releases, spills or accidental discharges may have occurred;

- pipes;
- pools;
- sumps;
- surface water bodies (i.e., basins, pits, ponds, or lagoons);
- trenches;
- underground storage tanks; and
- vaults.

The Station then individually evaluated the various system components to determine the potential for any release of radioactively contaminated liquid to enter the environment. Each structure or identified component was evaluated against the following seven primary criteria:

- location of the component (i.e., basement or second floor of building);
- component construction material (i.e., stainless steel or steel tanks);
- construction methodologies (i.e., welded or mechanical pipe joints);
- concentration of radioactively contaminated liquid stored or conveyed;
- amount of radioactively contaminated liquid stored or conveyed;
- existing controls (i.e., containment and detection); and
- maintenance history.

System components, which were located inside a building or that otherwise had some form of secondary containment, such that a release of radioactively contaminated liquid would not be discharged directly to the environment, were eliminated from further evaluation. System components that are not located within buildings or did not have some other form of secondary containment were retained for further qualitative evaluation of the risk of a release of radioactively contaminated liquid to the environment and the potential magnitude of any release.

Exelon's risk evaluation took into consideration factors such as:

- the potential concentration of radionuclides;
- the volume of liquid stored or managed;
- the probabilities of the systems actually containing radioactively contaminated liquid; and

- the potential for a release of radioactively contaminated liquid from the system component.

These factors were then used to rank the systems and system components according to the risk for a potential release of a radioactively contaminated liquid to the environment. The evaluation process resulted in the identification of structures, components, and areas to be considered for further evaluation.

3.2 HISTORICAL RELEASES

CRA also reviewed information concerning confirmed or potential historical releases of radionuclides at the Station, including reports and documents previously prepared by Exelon and compiled for CRA's review. CRA evaluated this information in identifying the AFEs. Any historical releases identified during the course of this assessment that may have a current impact on Station conditions are further discussed in Section 3.4.

3.3 STATION INVESTIGATIONS

CRA also considered previous Station investigations in the process of selecting the AFEs for the Station. This section presents a summary of the pre-operational radiological environmental monitoring program (pre-operational REMP), past Station investigations, and the radiological environmental monitoring program (REMP).

3.3.1 PRE-OPERATIONAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A pre-operational REMP was conducted between 1981 and 1984 to establish background radioactivity levels prior to operation of the Station. While a summary report for the pre-operational REMP was not available to CRA, CRA reviewed the pre-operational REMP data. An April 1987 REMP report prepared by Teledyne Isotopes Midwest Laboratory entitled "Radioactive Waste and Environmental Monitoring Annual Report 1986" identifies that a comparison of the 1985 and 1986 data to the pre-operational REMP data indicates that there was no measurable amount of radioactivity due to the Station's operation.

3.3.2 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

The REMP at the Station was initiated in 1985. The REMP includes the collection of multi-media samples including air, surface water, groundwater, fish, sediment, vegetation, local cow milk, and residential potable water. The samples are analyzed for beta and gamma-emitting radionuclides, tritium, iodine-131, and/or strontium as established in the procedures developed for the REMP. The samples are collected at established locations, identified as stations, so that trends in the data can be monitored.

An annual report is prepared providing a description of the activities performed and the results of the analysis of the samples collected from the various media. The latest report generated was prepared by Station personnel and is entitled "Radioactive Effluent Release Report - January 2005 Through December 2005." This report concluded that the operation of the Station had no adverse radiological impact on the environment. The annual report is submitted to the NRC.

3.3.3 HISTORIC INVESTIGATIONS

This section summarizes historic investigations undertaken at the Station prior to this hydrogeologic investigation, related to actual or potential releases of radioactively contaminated liquids to the subsurface.

3.3.3.1 POWER PLANT DOCUMENTS - UFSAR REPORT

During the construction of the Station, a series of comprehensive investigations of regional and local geology, surface water, and groundwater conditions were conducted. These studies are documented in the UFSAR, Rev. 10, dated December 2004 (Byron Station UFSAR, 2004).

3.3.3.2 BLOWDOWN LINE INVESTIGATION

In July 2005, water was observed in the concrete vault for vacuum breaker 6 (VB-6). A water sample collected from the concrete vault, at that time, contained less than 2,000 picoCuries per liter (pCi/L) of tritium.

In January 2006, the Station initiated an investigation into the blowdown line. A program of inspections of the concrete vaults, along with routine observations for water within the vaults was begun. Subsequent to the initial discovery of water in the vaults, Exelon performed construction upgrades on each of the six breaker vaults. These upgrades are intended to ensure that there will be no future releases of potentially contaminated liquid to the subsurface.

3.4 IDENTIFIED AREAS FOR FURTHER EVALUATION

CRA used the information presented in the above sections along with its understanding of the hydrogeology at the Station to identify AFEs, which were a primary consideration in the development of the scope of work in the Work Plan. The establishment of AFEs is a standard planning practice in hydrogeologic investigations to focus the investigation activities at areas where there is the greatest potential for impact to groundwater.

Specifically, AFEs were identified based on these six considerations:

- systems evaluations;
- risk evaluations;
- review of confirmed and/or potential releases;
- review of documents;
- review of the hydrogeologic conditions; and
- Station inspection completed on March 22 and 23, 2006.

Prior to CRA completing its analysis and determination of AFEs, Station personnel completed an exhaustive review of all historic and current management of systems that may contain potentially radioactively contaminated liquids.

CRA reviewed the systems identified by the Station, which have the potential for the release of radioactively contaminated liquids to the environment, and groundwater flow at the Station. This evaluation allowed CRA to become familiar with Station operations and potential systems that may impact groundwater. CRA then evaluated information concerning historic releases as provided by the Station. This information, along with a review of the results from historic investigations, was used to refine CRA's understanding of areas likely to have the highest possibility of impacting groundwater. Where at risk systems or identified historical releases were located in close proximity or were located in areas which could not be evaluated separately, the systems and

historical releases were combined into a single AFE. At times, during the Station investigation, separate AFEs were combined into one or were otherwise altered based on additional information and consideration.

Finally, CRA used its understanding of known hydrogeologic conditions (prior to this investigation) to identify AFEs. Groundwater flow was an important factor in deciding whether to combine systems or historical releases into a single AFE or create separate AFEs. For example, groundwater beneath several systems that contain radioactively contaminated liquids that flows toward a common discharge point were likely combined into a single AFE. The AFEs were created based on known groundwater flow conditions prior to the work completed during this investigation.

Based upon its review of information concerning confirmed or potential historical releases, historic investigations, and the systems at the Station that have the potential for release of radioactively contaminated liquids to the environment combined with its understanding of groundwater flow at the Station, CRA identified three AFEs (see Figures 3.1 through 3.3).

AFE-Byron-1 – Former Fiberglass Blowdown Line

This AFE is the area in which, in April 1986, after the initial six months of Unit 1 operation, there were three separate ruptures of the original fiberglass blowdown line. The three ruptures were all in the same area, near River Road (Figure 3.1). Soil and water samples collected as part of the investigation of each rupture indicated the presence of minimal amounts of radioactive material. Following the ruptures, the Station replaced sections of the fiberglass blowdown line. The Station subsequently abandoned the entire line in place and installed a new carbon steel blowdown line in 1987.

AFE-Byron-2 – Vacuum Breaker Vaults

In December 2005/January 2006, water was observed in the vacuum breaker vaults. Exelon initiated an investigation into potential groundwater impact near all 12 vacuum breaker vaults (Figure 3.2), plugged the drainage holes and sealed all six blowdown line vaults.

AFE-Byron-3 - Protected Area

Based on the risk ranking, several systems within the PA scored high as systems in which tritiated water could be released to the environment if a failure or if a set of events

were to occur. These systems include: systems located within the Auxiliary Building, Radwaste Building, Containment Building, and the Turbine Building, the Condensate and Condensate Polishing systems, the Fuel Handling Building systems, the Circulating Water Pump House systems, and the CROP.

To evaluate the groundwater quality in the area of these systems, monitoring wells were installed in locations that are hydraulically downgradient of the AFE (Figure 3.3). The downgradient locations of the monitoring wells were selected based on the radial groundwater flow outward from the PA (Figure 2.4) due to the topographic high on which the PA was constructed. These monitoring well locations were situated to provide for adequate indication of historic releases and future leak detection.

4.0 FIELD METHODS

CRA and Station personnel completed two investigations at the Station:

- the blowdown line investigation; and
- the fleetwide investigation.

During the blowdown line investigation conducted from February through April 2006, CRA oversaw the installation and development of 12 temporary and 17 permanent monitoring wells at the Station. CRA and Station personnel collected multiple samples from the vacuum breaker vaults, from nearby residential wells, from the blowdown line itself, from holding ponds, and from the existing and the CRA-installed monitoring wells.

During the fleetwide investigation completed in April and May 2006, CRA conducted a second round of groundwater sampling of 41 monitoring wells, collected a full round of water level measurements from 63 monitoring wells, and surveyed five monitoring wells that had not been surveyed as part of the blowdown line investigation. The field investigations were completed in accordance with the methodologies presented in the Work Plan (CRA, 2006).

The following sections discuss the field activities conducted during these two investigations.

4.1 BLOWDOWN LINE INVESTIGATION ACTIVITIES

4.1.1 GROUNDWATER MONITORING WELL INSTALLATION

Prior to completing any ground penetration activities, CRA completed subsurface utility clearance procedures to minimize the potential of injury to workers and/or damage to subsurface utility structures. The subsurface clearance procedures consisted of completing an electronic survey within a minimum of 10-foot radius of the proposed location utilizing electromagnetic and ground penetrating radar technology. Additionally, an air knife was utilized within the PA to verify utilities were not present at the proposed location to a depth to 10 feet bgs.

From late February 2006 to early April 2006, CRA supervised the installation of 17 monitoring wells and 12 temporary wells along the blowdown line and at other

locations at the Station to evaluate the quality of the groundwater in the areas of the three AFEs. The monitoring well locations are presented on Figure 2.3.

Monitoring wells TW-13 through TW-15 were installed to evaluate the groundwater quality near River Road, downgradient of the 1986 former fiberglass blowdown line ruptures (AFE-Byron-1). These wells were originally constructed as temporary wells, but were eventually converted to permanent monitoring wells.

For AFE-Byron-2, at each of the six vacuum breaker vault locations along the blowdown line, two temporary wells were installed adjacent to the concrete vault and within the bedding material of the blowdown line and make-up line (TW-1 through TW-12). These shallow overburden wells were installed to determine whether groundwater was present in the overburden materials above the bedrock. These 12 temporary wells were dry.

Twelve monitoring wells (AR-1 through AR-10, CAR-2, and CAR-3) were installed to screen the first occurrence of groundwater (the water table) within the Galena-Platteville limestones and dolomites. One well was placed adjacent to each vacuum breaker vault (AR-1 through AR-6) in an anticipated downgradient location as determined from historic groundwater elevations measured in the Byron Salvage Site monitoring wells and levels measured in early March 2006. Monitoring well CAR-2 was installed at a location at the bottom of the valley downgradient from the vault for vacuum breaker 4, which contained water with the highest concentrations of tritium. Five monitoring wells (AR-7 through AR-10 and CAR-3) were installed within and around the PA to evaluate the groundwater quality in the areas of the high-ranking systems (AFE-Byron-3).

Two additional monitoring wells were also installed. Monitoring well CAR-1 was screened in the alluvial sediments adjacent to TW-14 to evaluate the groundwater quality approximately 20 feet below the water table. Due to detections of tritium concentrations in groundwater samples from monitoring well AR-4, monitoring well AR-11 was screened to monitor the groundwater quality at the base of the Galena-Platteville aquifer. In total, 13 bedrock monitoring wells were constructed as part of the blowdown line investigation.

The bedrock monitoring wells were all installed using a combination of augering, coring, and air rotary drilling techniques. The monitoring wells with the AR designation were drilled using air rotary techniques, and the wells with the CAR designation were first cored prior to using rotary techniques. The coring was planned to be completed at three locations to confirm the geology that was already expected based on the drilling logs from the Byron Salvage Site monitoring wells. The exception to the

nomenclature designation is monitoring well CAR-1. Because the bedrock was not encountered at the base of the hill near River Road, coring was not necessary, and CAR-1 was augered to the target depth.

Specific installation protocols for the monitoring wells (other than the shallow temporary wells TW-1 through TW-12) are described below:

- the borehole was advanced to the target depth using one of the drilling techniques listed above;
- a nominal 2-inch diameter (No. 10 slot) PVC screen, of varying length, attached to a sufficient length of 2-inch diameter schedule 40 PVC riser pipe to extend to the surface, was placed into the borehole;
- a filter sand pack consisting of silica sand was installed to a minimum height of 2 feet above the top of the screen;
- in most cases, a minimum 2-foot thick seal consisting of bentonite chips was placed on top of the sand pack;
- the remaining borehole annulus was sealed to within 1 foot of the surface using a cement-bentonite grout; and
- the remaining portion of the annulus was filled with concrete and a 6-inch diameter protective above-grade casing.

Table 2.1 presents a summary of the well information for the wells installed during the blowdown line investigation. All monitoring well locations are presented on Figure 2.3. Monitoring well stratigraphic and instrumentation logs are provided in Appendix B. The wells were surveyed for horizontal and vertical control by an Illinois-licensed professional surveyor.

4.1.2 GROUNDWATER MONITORING WELL DEVELOPMENT

After installation, CRA developed the 29 monitoring wells installed during the blowdown line investigation.

To establish good hydraulic communication with the aquifer and reduce the volume of sediment in the monitoring well, monitoring well development was performed in accordance with the procedure outlined below:

- Monitoring wells were surged using a pre-cleaned surge block for a period of at least 20 minutes.
- Water was purged from the monitoring well using a pneumatic submersible pump.
- Groundwater was collected at regular intervals with the pH, temperature, and conductivity measured using field instruments. These instruments were calibrated daily according to the manufacturer's specifications. Additional observations such as color, odor, and turbidity of the purged water were recorded in the field book.
- Development continued until the turbidity and silt content of the monitoring wells was significantly reduced and three consistent readings of pH, temperature, and conductivity were recorded, or a minimum of ten well volumes were purged.

A summary of the monitoring well development activities is provided in Table 4.1.

4.1.3 SURVEY

The new monitoring wells were surveyed to establish reference elevations relative to mean sea level. The top of each well casing was surveyed to the nearest 0.01 foot relative to the North American Vertical Datum 88 (NAVD). The survey included the ground elevation at each well to the nearest 0.10 foot relative to the NAVD, and the well location to the nearest 1.0 foot.

4.1.4 GROUNDWATER ELEVATION MEASUREMENTS

During the blowdown line investigation, CRA collected two full rounds of water level measurements from both the Station wells existing at the time and from Byron Salvage Site's monitoring wells located both on and off of the Station property. Synoptic water level measurements were collected on March 23, 2006 and April 4, 2006. Based on the measured depth to water from the reference point and the surveyed elevation of the reference point, the groundwater elevation was calculated. A summary of groundwater elevations for the two measuring events is provided in Table 4.2.

4.1.5 GROUNDWATER SAMPLE COLLECTION

CRA conducted one round of groundwater sampling during the blowdown line investigation. A total of 39 monitoring wells were sampled during the event. These wells included 19 of the 23 wells owned by the Station (TW-1 through TW-12 were dry

and the two deep wells are sampled on a quarterly basis and have never indicated tritium impacts) and 20 selected Byron Salvage Site monitoring wells located at the Station. The Byron Salvage Site wells were selected based on the proximity of the wells to the blowdown line, their location downgradient of the blowdown line, and in order to provide a vertical characterization of the groundwater quality.

CRA conducted this round of sampling March 7, 2006 to April 18, 2006. Most of the monitoring wells were sampled on more than one occasion during this time period. Monitoring wells AR-11 and GW-9 were only sampled once. In addition, a total of 22 Byron Salvage Site monitoring wells were originally selected for sampling. However, Well 7 was not sampled because the old farmhouse pump and drop tube were still in the well and were not removed until April 2006, and well DF-13 could not be sampled due to an obstruction in the well that was later removed. CRA conducted the sampling using a combination of bailers and PVC and stainless steel submersible pumps, employing both slow purging and low flow purging techniques. A summary of the purging parameters is presented in Table 4.3, and a sample summary is presented in Table 4.4.

All groundwater samples were labeled with a unique sample number, the date and time, the parameters to be analyzed, the job number, and the sampler's initials. The samples were then packed in a cooler for screening by the Station and shipment to the project laboratory, Environmental, Inc., via overnight courier under chain-of-custody protocol for tritium analysis. Split samples were also collected for the NRC and Illinois Emergency Management Agency (IEMA) for tritium analysis simultaneously with the actual sample at every sample location. The split samples were delivered to the Station personnel for delivery to the NRC and IEMA.

The water purged from the Byron Salvage Site wells during the sampling event was placed into two plastic holding tanks at the Station pending characterization and disposal in accordance with the Station's NPDES permit.

4.2 FLEETWIDE INVESTIGATION ACTIVITIES

4.2.1 GROUNDWATER ELEVATION MEASUREMENTS

On April 24, 2006, CRA collected a round of water level measurements from 63 of the 77 Station monitoring wells in accordance with the Work Plan. Based on the measured depth to water from the reference point and the surveyed elevation of the reference point, the groundwater elevation was calculated. A summary of groundwater

elevations for the April 24, 2006 event is provided in Table 4.5. Water level measurements were collected using a portable electronic depth-to-water probe accurate to ± 0.01 foot. The measurements were made from a designated location at the highest point on each well's inner riser or steel casing. The water level measurements were obtained using the following procedures:

- the proper elevation of the meter was checked by inserting the tip into water and noting if the contact was registering correctly;
- the tip was dried, and then slowly lowered into the well until contact with the water was indicated;
- the tip was slowly raised until the light and/or buzzer just began to activate. This indicated the static water level;
- the reading at the reference point was noted to the nearest hundredth of a foot.
- the reading was then re-checked; and
- the water level was then recorded, and the water level meter decontaminated prior to use at the next well location.

4.2.2 GROUNDWATER SAMPLE COLLECTION

CRA conducted a second round of groundwater sampling from April 24 through April 28, 2006. A total of 41 monitoring wells were sampled during the second event. These included the 39 wells sampled during the first event and wells DF-13 and Well 7. At these monitoring well locations, CRA conducted the sampling using pneumatic bladder pumps or peristaltic pumps and dedicated polyethylene tubing to employ low flow purging techniques as described in Puls and Barcelona (1996).

The groundwater in the monitoring wells was sampled by the following low-flow procedures:

- the wells were correctly located and identification numbers were verified;
- a water level measurement was taken;
- the well was sounded by carefully lowering the electronic depth-to-water probe to the bottom of the well (as to minimize penetration and disturbance of the well bottom sediment), and comparing the sounded depth to the installed depth to assess the presence of any excess sediment or drill cuttings;

- the pump or tubing was lowered slowly into the well and fixed into place such that the intake was located at the mid-point of the well screen, or a minimum of 2 feet above the well bottom/sediment level;
- the purging was conducted using a pumping rate between 100 to 500 milliliters per minute (mL/min). Initial purging began using the lower end of this range. The groundwater level was monitored to ensure that a drawdown of less than 0.3 foot occurred. If this criterion was met, the pumping rate was increased dependent on the behavior of the well. During purging, the pumping rate and groundwater level were measured and recorded every 10 minutes;
- the field parameters (pH, temperature, conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity) were monitored during the purging to evaluate the stabilization of the purged groundwater. Stabilization was considered to be achieved when three consecutive readings for each parameter, taken at 5-minute intervals, were within the following limits:

pH	± 0.1 pH units of the average value of the three readings,
Temperature	± 3 percent of the average value of the three readings,
Conductivity	± 0.005 milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity <1 mS/cm and ± 0.01 mS/cm of the average value of the three readings for conductivity >1 mS/cm,
ORP	± 10 millivolts (mV) of the average value of the three readings,
DO	± 10 percent of the average value of the three readings, and
Turbidity	± 10 percent of the average value of the three readings, or a final value of less than 5 nephelometric turbidity units (NTU);

- once purging was complete, the groundwater samples were collected directly from the pump/tubing into the sample containers; and
- in the event that the groundwater recharge to the monitoring well was insufficient to conduct low flow sampling procedure, the well was pumped dry and allowed to sufficiently recharge prior to sampling.

All groundwater samples were labeled with a unique sample number, the date and time, the parameters to be analyzed, the job number, and the sampler's initials. The samples were then packed in a cooler for screening by the Station and shipment to Teledyne Brown Engineering, Inc. (Teledyne Brown). A sample summary is presented in Table 4.6; field measurements for the fleetwide event are presented in Table 4.7.

CRA containerized the water purged from all of the wells during the fleetwide event. The water was placed into the two plastic holding tanks at the Station, pending characterization. The water was processed by the Station in accordance with their NPDES permit.

4.2.3 DATA QUALITY OBJECTIVES

CRA has validated the analytical data to establish the accuracy and completeness of the data reported. Teledyne Brown provided the analytical services. The Quality Assurance Programs are described in Appendix C. Analytical data for groundwater samples collected in accordance with the Work Plan are presented in Appendix D. Data validation reports are presented in Appendix E. The data validation included the following information and evaluations:

- sample preservation;
- sample holding times;
- laboratory method blanks;
- laboratory control samples;
- laboratory duplicates;
- verify laboratory qualifiers; and
- field quality control (field blanks and duplicates).

Following the completion of field activities, CRA compiled and reviewed the geologic, hydrogeologic, and analytical data.

The data were reviewed using the following techniques:

- data tables and databox figures;
- hydrogeologic cross-sections; and
- hydraulic analyses.

4.2.4 SAMPLE IDENTIFICATION

For the fleetwide sampling, systematic sample identification codes were used to uniquely identify all samples. The identification code format used in the field was:

WG-BYN–042506-SS-01. A summary of sample identification numbers for the fleetwide investigation is presented in Table 4.6.

WG - Sample matrix -groundwater
RB - Sample matrix – rinse blank
BYN - Station code (for Byron)
042506 - Date (month/day/year)
SS - Sampler's initials
01 - Sample number

4.2.5 CHAIN-OF-CUSTODY RECORD

The samples were delivered to Station personnel under chain-of-custody protocol. Subsequently, the Station or CRA shipped the samples under chain-of-custody protocol to Teledyne Brown for analyses.

4.2.6 QUALITY CONTROL SAMPLES

Quality control samples were collected to evaluate the sampling and analysis process.

Field Duplicates

Field duplicates were collected to verify the accuracy of the analytical laboratory by providing two samples collected at the same location and then comparing the analytical results for consistency. Field duplicate samples were collected at a frequency of one duplicate for every ten samples collected. The locations of duplicate samples were selected in the field during the performance of sample collection activities. The duplicate samples were collected simultaneously with the actual sample and were analyzed for the same parameters as the actual samples.

Rinsate Blank Samples

Rinsate blanks were collected during the fleetwide investigation to verify that decontamination procedures conducted in the field were adequate. Rinsate blanks were collected by routing Station-supplied demineralized water through decontaminated sampling equipment. Rinsate blanks were collected at a frequency of one rinsate blank

for every day samples were collected using non-disposable or non-dedicated equipment. A total of four rinsate blanks were collected.

Split Samples

Split samples were collected for the NRC and IEMA for tritium simultaneously with the actual sample at every sample location. Split samples were delivered to the Station personnel and made available to the NRC and IEMA.

4.2.7 ANALYSES

Groundwater samples were analyzed for tritium and gamma-emitting radionuclides as listed in NUREG-1301 and strontium-89/90 as listed in 40 CFR 141.25.

5.0 RESULTS SUMMARY

This section provides a summary of Station-specific geology and hydrogeology, along with a discussion of hydraulic gradients, groundwater elevations, and flow directions in the vicinity of the Station. This section also presents and evaluates the analytical results obtained from activities performed during the blowdown line and fleetwide investigations.

5.1 STATION GEOLOGY

Bedrock under the Station is generally found within the top 10 feet, under a veneer of unconsolidated deposits, except near the Rock River, where the bedrock has been eroded and is encountered at deeper depths. The Station geology is consistent with the regional geology and is comprised of flat-lying Ordovician-aged dolomitic and sandstone layers progressing downward as follows:

- Galena Group Dolomites;
- Platteville Group Dolomites; and
- Ancell Group, consisting of:
  - Glenwood Formation (shale with sandy dolomite, semi-confining layer),
  - St. Peter Sandstone Formation, and
  - older Cambrian formations.

The generating facility was constructed on an area of a 'bedrock high', and the foundation was installed into the bedrock.

5.2 STATION HYDROGEOLOGY

There are two aquifers within the first 230 feet beneath the Station property:

- the upper aquifer is the Galena-Platteville aquifer consisting of Galena-Platteville limestones and dolomites; and
- the lower aquifer is the St. Peter Sandstone aquifer.

The Glenwood Formation separates the above two aquifers. The Glenwood contains shale at the top and sandy dolomite at its base. The shale acts as a semi-confining aquitard between the upper Galena-Platteville aquifer and lower St. Peter Sandstone

aquifer. The first occurrence of groundwater (the water table) is encountered within the unconsolidated deposits near the Rock River, and within the upper fractured portions of the Galena-Platteville aquifer in the upland areas, east of the Rock River.

The monitoring wells at the Station were installed to monitor three intervals within the two aquifers (see Table 2.1):

- wells screened across the water table, either in the unconsolidated sediments near the Rock River or in the upper portions of the Galena-Platteville aquifer;
- wells screened at the bottom of the Galena-Platteville aquifer, just above the shale unit; and
- wells screened in the St. Peter Sandstone aquifer.

Figure 5.1 presents the locations of four hydrogeologic cross-sections prepared for the Station. The four cross-sections depict the relationship between the geology and measured groundwater elevations. Figure 5.2 presents an east-west cross-section parallel to the groundwater flow direction, along the blowdown line. Figure 5.3 presents a north-south cross-section perpendicular to the groundwater flow, through vacuum breaker 4 (VB-4). This location was chosen because water with the highest concentrations of tritium was encountered in the concrete vault at VB-4. Also indicated on Figures 5.1 through 5.3 are the approximate limits of the historical Byron Salvage Site groundwater plumes. Figure 5.4 presents two cross-sections through the PA, one trending to the northeast through Unit 2 and the other to the east through Unit 2.

5.2.1 GROUNDWATER FLOW DIRECTIONS

CRA used a commercially available contouring program (Surfer, Version 8.02, 2002) to provide an initial contouring of the measured groundwater elevations. CRA then refined the initial contours, using professional judgment, to prepare final contour maps. Figure 2.4 presents the water table groundwater contours in the upper portion of the Galena-Platteville aquifer based on data collected by CRA on March 23, 2006 for the blowdown line area, along with historical data collected in 1974 for the generating facility area. Figures 5.5 through 5.7 present the groundwater contours based on April 24, 2006 data for the upper portion of the Galena-Platteville aquifer, the bottom of the Galena-Platteville aquifer, and the St. Peter Sandstone aquifer, respectively.

The general groundwater flow direction in all three intervals is to the west toward Rock River. This is consistent with the regional flow pattern, which is to the west toward the

Rock River, since the Rock River is the major water body in the area (UFSAR, 2004 and CRA, 2001).

Within the upper portions of the Galena-Platteville aquifer, the direction of groundwater flow typically follows the topographic relief at points along the blowdown line. There is a northwest/southeast trending groundwater divide within the Former Dirk's Farm property, near Razorville Road, that is generally perpendicular to the blowdown line (Figures 2.4 and 5.5).

5.2.2 MAN-MADE INFLUENCES ON GROUNDWATER FLOW

The PA sits upon a bedrock high, and as such, the groundwater beneath this area of the Station flows radially outward in all directions. The bedrock below the generating facility foundations was pressure grouted for structural reasons prior to constructing the foundation. The pressure grouting sealed the pore space of the bedrock, thus causing the groundwater to be observed at a deeper depth than that under normal conditions in AR-7. Therefore, the groundwater elevation from AR-7 was not used in the contouring of Figure 5.5.

5.2.3 VERTICAL HYDRAULIC GRADIENTS

CRA calculated vertical hydraulic gradients at the locations where depth specific wells were clustered together. Table 5.1 presents the calculated vertical gradients. Between the upper portion of the Galena-Platteville aquifer and the bottom of the aquifer, there is a slight downward vertical gradient of approximately 0.01 feet/foot. This is consistent with the effects of recharge from the higher/elevated areas of the Station and discharge to the Rock River. However, at the PC-3B/DF-6 well cluster location on the former Dirk's Farm property, the downward vertical gradient is greater, at 0.443 feet/foot. The vertical gradients measured within the Galena-Platteville aquifer are in the same range as the measured horizontal hydraulic gradient.

There is only one cluster of wells in which both wells are screened within the St. Peter Sandstone aquifer: MW-20R and MW-21. The measured vertical hydraulic gradient at this well cluster is very low at 0.001 feet/foot. This suggests primarily horizontal flow within the St. Peter Sandstone aquifer, which is consistent with the high conductivity of the St. Peter Sandstone.

The groundwater elevation data confirm that the Galena-Platteville and St. Peter Sandstone aquifers are not hydraulically connected. The groundwater elevations measured in wells that are screened in the St. Peter Sandstone aquifer are typically more than 50 feet lower than those in wells screened at the bottom of the Galena-Platteville aquifer. Vertical hydraulic gradients between these two aquifers, measured at five well clusters, range between 0.622 feet/foot and 1.893 feet/foot, with the average being 1.127 feet/foot. These are much greater than the horizontal gradients measured in either of the two aquifers. These groundwater data provide evidence that the shale of the Glenwood Formation, which separates the bottom of the Galena-Platteville aquifer from the underlying St. Peter Sandstone aquifer, is acting as a local aquitard or semi-confining unit.

5.2.4 LATERAL GROUNDWATER FLOW AND VELOCITY

Across the more than two-mile distance between the generating facility and the Rock River, the water table elevation drops approximately 160 feet, creating a shallow horizontal hydraulic gradient of approximately 0.014 feet/foot. The limestones and dolomites that comprise the Galena-Platteville aquifer generally have hydraulic conductivities that can vary significantly; a study for the Byron Salvage Site immediately to the north of the west portion of the station, reported mean hydraulic conductivities ranging from 0.31 feet/day to 240 feet/day with a primary porosity of around 10 percent (Kay et al., 1997). With a gradient of 0.014 feet/foot, the average shallow horizontal groundwater flow velocity can be calculated to be 15.8 feet/year to 12,200 feet/year.

The groundwater flow direction at the bottom of the Galena-Platteville aquifer has a southwest component, under a horizontal hydraulic gradient of approximately 0.011 feet/foot (Figure 5.6). However, the wells screened at the bottom of the aquifer are only located near the blowdown line, on the Former Dirk's Farm property, not across the entire length of the Station property. In this same area for the upper Galena-Platteville aquifer, the groundwater contours also suggest a component of flow to the southwest.

In St. Peter Sandstone aquifer, the groundwater contours suggest a groundwater flow to the west toward the Rock River, under a low horizontal hydraulic gradient of approximately 0.001 feet/foot (Figure 5.7). This is consistent with expected regional groundwater flow within the lower aquifer. Using the hydraulic gradient of 0.001 feet/foot with a reported hydraulic conductivity range of 2.0 feet/day to 8.7 feet/day (Kay et al., 1997) and a reported primary porosity of 0.14 (Kay et al., 1997)

yields an average horizontal groundwater velocity in the St. Peter Sandstone of 5.2 feet/year to 22.7 feet/year.

5.3 GROUNDWATER QUALITY

During the blowdown line investigation and the fleetwide assessment, both CRA and Station personnel collected numerous samples from the vacuum breaker vaults and other Station locations, from nearby residential wells, from the blowdown line itself, from the on-Station CROP, and from a subset of the monitoring wells located on the Station property. As discussed in Sections 4.1 and 4.2, the samples were analyzed for tritium, and some of the samples were also analyzed for strontium-89/90 and additional radionuclides.

Table 5.2 presents a summary of tritium analyses for water samples collected by the Station from the vacuum breaker vaults, the beginning and end of the blowdown line, and the CROP. Table 5.3 presents a summary of tritium analyses for groundwater samples collected during both the blowdown line investigation and the fleetwide investigation. Table 5.4 presents a summary of tritium analyses for groundwater samples collected from residential water supply wells. Table 5.5 presents a summary of the other radionuclide analyses (strontium-89/90 and gamma-emitting radionuclides) for groundwater samples collected during both the blowdown line investigation and the fleetwide investigation.

The analytical data presented herein has been subjected to CRA's data validation process (see Appendix E for the data validation reports). CRA has used the data with appropriate qualifiers, where necessary.

The data reported in the figures and tables does not include the results of re-analyses or recounts that the laboratory completed, except if those results ultimately replaced an initial report. The tables and figures, therefore, include only the first analysis reported by the laboratory.

5.3.1 SUMMARY OF BETA-EMITTING RADIONUCLIDES ANALYTICAL RESULTS

5.3.1.1 STATION SAMPLING POINTS

During the blowdown line investigation, Station personnel collected multiple samples on different dates from the vacuum breaker vaults, the beginning and end of the blowdown line, and the CROP. A summary of the tritium results for the water samples collected from the Station sampling locations is provided in Table 5.2. The tritium data are presented graphically on Figure 5.8.

5.3.1.2 GROUNDWATER MONITORING WELL SAMPLES

A summary of the tritium results for the groundwater samples collected during both the blowdown line investigation and the fleetwide investigation is provided in Table 5.3. Figures 5.9 through 5.11 present the tritium data graphically for the groundwater samples collected on different dates from the monitoring wells screened in the upper portions of the Galena-Platteville aquifer, the bottom of Galena-Platteville aquifer, and the St. Peter Sandstone aquifer, respectively.

All tritium concentrations were below the USEPA drinking water standard of 20,000 pCi/L. Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in 35 of the 39 groundwater samples collected.

Strontium-89/90 was not detected at concentrations greater than the LLD of 2.0 pCi/L. A summary of the strontium-89/90 results for the groundwater samples collected as part of the investigations that are the subject of this HIR is provided in Table 5.5.

Galena-Platteville Aquifer

Groundwater samples were collected from 32 different monitoring wells screened in the upper portions of Galena-Platteville aquifer (Figure 5.9). Concentrations of tritium exceeding the LLD of 200 pCi/L for tritium were only detected in the groundwater samples collected from three of the monitoring wells: AR-2, AR-3, and AR-4. The most recent concentrations of tritium detected at each location were:

- AR-2 432 ± 140 pCi/L;
- AR-3 234 ± 128 pCi/L; and
- AR-4 3,260 ± 367 pCi/L.

The original groundwater sample collected from TW-13 had a tritium concentration less than the LLD of 200 pCi/L; however, a detection of tritium slightly greater than the LLD, 201 ± 110 pCi/L, was detected in a duplicate groundwater sample collected as part of the fleetwide sampling event at the same time on the same date. In consideration of the original sample being less than the LLD, and the duplicate sample at 201 pCi/L with an error of ± 110 pCi/L, the tritium concentration at this location is regarded as less than the LLD.

CRA collected five groundwater samples from monitoring wells installed at the bottom of Galena-Platteville aquifer (Figure 5.10), and only the samples from monitoring well AR-11 contained tritium at concentrations greater than the LLD of 200 pCi/L. The highest tritium concentration detected in a groundwater sample collected from monitoring well AR-11 was 2,340 ± 282 pCi/L. Monitoring well AR-11 is a bedrock well located in a downgradient direction from monitoring well AR-4 and VB-4 (Figure 2.3), and screened in a deeper portion of the bedrock (bottom of the Galena-Platteville aquifer) than AR-4 (upper portion of the Galena-Platteville aquifer) (Figure 5.2). The inferred vertical limits of the groundwater containing tritium exceeding the LLD of 200 pCi/L are depicted on Figures 5.2 and 5.3.

Strontium-89/90 was not detected at concentrations greater than the LLD of 2.0 pCi/L. A summary of the strontium 89/90 results for the groundwater samples collected as part of the investigations that are the subject of this HIR is provided in Table 5.5.

St. Peter Sandstone Aquifer

CRA collected groundwater samples from four monitoring wells screened in the St. Peter Sandstone aquifer (Figure 5.11). None of the groundwater samples contained detectable concentrations of tritium above the LLD of 200 pCi/L.

Strontium-89/90 was not detected at concentrations greater than the LLD of 2.0 pCi/L. A summary of the strontium-89/90 results for the groundwater samples collected as part of the investigations that are the subject of this HIR is provided in Table 5.5.

5.3.1.3 RESIDENTIAL WATER SUPPLY WELLS

Station personnel collected water samples from nine of the residences located adjacent to the Station property, along the blowdown line. In addition, a water sample was also

collected from the well of a residence located approximately 2 miles east of the Station (Goral Well) to be used as a background water sample.

Tritium was not detected above the LLD of 200 pCi/L in any of the 10 residential well samples collected. A summary of the tritium results for the residential water samples is provided in Table 5.4, and the tritium data is presented graphically on Figure 5.12.

Strontium-89/90 was not detected at concentrations greater than the LLD of 2.0 pCi/L. A summary of the strontium-89/90 results for the groundwater samples collected as part of the investigations that are the subject of this HIR is provided in Table 5.5.

5.3.2 SUMMARY OF GAMMA-EMITTING RADIONUCLIDES ANALYTICAL RESULTS

Gamma-emitting target radionuclides were not detected at concentrations greater than their respective LLD. CRA collected groundwater samples from 19 monitoring wells and the samples were analyzed for gamma-emitting radionuclides. A summary of the radionuclide results is provided in Table 5.5 and presented graphically on Figure 5.13.

Other non-targeted radionuclides were also included in the tables but excluded from discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.

5.3.3 SUMMARY OF FIELD MEASUREMENTS

A summary of the field measurement results for the groundwater samples collected as part of the blowdown line investigation is provided in Table 4.3. A summary of the field measurement results for the groundwater samples collected as part of the fleetwide investigation is provided in Table 4.7. These field measurements included pH, Dissolved Oxygen, Conductivity, Turbidity and Temperature.

5.4 SURFACE WATER QUALITY

No samples were collected from the surface water bodies. The two surface water drainage creeks located in the area of the Station are both ephemeral streams, flowing only during times of heavy rainfall.

6.0 RADIONUCLIDES OF CONCERN AND SOURCE AREAS

This section discusses radionuclides evaluated in this investigation, potential sources of the radionuclides detected, and their distribution.

6.1 GAMMA-EMITTING RADIONUCLIDES

Gamma-emitting target radionuclides were not detected at concentrations greater than their respective LLD. Other non-targeted radionuclides were also included in the tables but excluded from discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.

6.2 BETA-EMITTING RADIONUCLIDES

Strontium-89/90 was not detected in any of the groundwater samples collected at concentrations greater than the LLD of 2.0 pCi/L. Tritium was detected in four of the 39 total sample locations. Concentrations of tritium ranged between 234 ± 128 pCi/L to 3,260 ± 367 pCi/L.

Since only tritium was detected at concentrations greater than its LLD during the fleetwide investigation, the following sections focus on tritium; specifically, providing general characteristics of tritium, potential sources, distribution in groundwater, and a conceptual model for migration.

6.3 TRITIUM

This section discusses the general characteristics of tritium, the distribution of tritium in groundwater and surface water, and the conceptual model of tritium release and migration.

6.3.1 GENERAL CHARACTERISTICS

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most common forms of tritium are tritium gas and tritium oxide, which is also called "tritiated water."

The chemical properties of tritium are essentially those of ordinary hydrogen. Tritiated water behaves the same as ordinary water in both the environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine within a month or so after ingestion. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors, where the isotopes lithium-7 and/or boron-10 are bombarded to produce tritium.

Although tritium can be a gas, its most common form is in water because, like non-radioactive hydrogen, radioactive tritium reacts with oxygen to form water. Tritium replaces one of the stable hydrogen atoms in the water molecule and is called tritiated water. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface, and therefore tritiated water will travel at the same velocity as the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (^{3}He). This radioactive decay releases a beta particle (low-energy electron). The radioactivity of tritium is the source of the risk of exposure.

Tritium is one of the least dangerous radionuclides because it emits very weak radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

6.3.2 DISTRIBUTION IN STATION GROUNDWATER

This section provides an overview of the lateral and vertical distribution of tritium found in groundwater beneath the Station. Tritium was only detected in groundwater at concentrations exceeding the LLD of 200 pCi/L near the vaults along the blowdown line.

The groundwater under the PA does not appear to be impacted by tritium based on the groundwater analytical results from the five monitoring wells installed in and around

the PA (AR-7 through AR-10 and CAR-3) in locations that are hydraulically downgradient of Station systems. Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in any of the groundwater samples collected from these five monitoring wells during the investigation.

Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in the water samples collected from the residential water wells. The St. Peter Sandstone is the primary aquifer for residential potable water in the area, and the water in the St. Peter Sandstone aquifer is separated from the water in the Galena-Platteville aquifer by the shale unit of the Glenwood Formation (see Section 5.1.2).

The only tritium concentrations greater than the LLD of 200 pCi/L were detected during the blowdown line and fleetwide investigations in groundwater samples collected from four wells: AR-2, AR-3, AR-4, and AR-11. Monitoring wells AR-2, AR-3, and AR-4 screen the water table, and AR-11 is screened at the bottom of the Galena-Platteville aquifer. These four locations are adjacent to the three vacuum breaker vaults VB-2, VB-3, and VB-4, that had water within the concrete vaults exhibiting the highest concentrations of tritium (see Figure 5.8).

The tritium concentrations detected in the groundwater samples collected from monitoring wells AR-2 and AR-3, which are near VB-2 and VB-3, are not much higher than 200 pCi/L. The concentrations in these two wells fluctuate, but are all less than 600 pCi/L. The detected tritium concentrations in the groundwater samples collected during the fleetwide investigation from monitoring wells AR-4 and AR-11 were 3,260 ± 367 pCi/L and 2,340 ± 282 pCi/L, respectively. These wells are near VB-4. AR-4 screens the water table, and AR-11 is deeper and screens the bottom of the Galena-Platteville aquifer.

The original groundwater sample collected from TW-13 had a tritium concentration less than the LLD of 200 pCi/L; however, tritium was detected at a very low concentration, 201 ± 110 pCi/L, in a duplicate groundwater sample collected as part of the fleetwide sampling event at the same time on the same date. In consideration of the original sample being less than the LLD, and the duplicate sample at just 201 pCi/L with an error of ± 110, the tritium concentration at this location is regarded as less than the LLD. Monitoring well TW-13 is a shallow well (18 feet deep) located near River Road and installed within the unconsolidated alluvial sediments.

In summary, there are only three areas at the Station where tritium has been detected. They are all located near vacuum breakers along the blowdown line. These three areas are: VB-2 (well AR-2), VB-3 (well AR-3), and VB-4 (wells AR-4 and AR-11). The

groundwater impacted at each of these areas is localized within the Galena-Platteville aquifer. The inferred vertical limits of the groundwater containing tritium exceeding 200 pCi/L are depicted on Figures 5.2 and 5.3. Based on the data collected, none of the other aquifers appears to have been impacted.

6.3.3 CONCEPTUAL MODEL OF TRITIUM RELEASE AND MIGRATION

This section presents CRA's conceptual model of groundwater and tritium migration at the Station.

As identified in Section 6.3.2, the groundwater under the PA does not appear to be impacted by tritium above the LLD of 200 pCi/L. Tritium was also not detected at concentrations exceeding the LLD of 200 pCi/L in the water samples collected from the residential water wells.

The highest concentrations of tritium detected in the Station sampling points were from water samples collected from within the vacuum breaker vaults along the blowdown line. The source of the tritium in the groundwater at the four wells is minor failures of the blowdown line vacuum breakers. This water originated from the blowdown line. The water encountered in the vaults was pumped out and processed in accordance with the Station's NPDES permit. As discussed in Section 3.3.2.2, Exelon performed construction upgrades on each of the six breaker vaults to ensure that there will not be any future releases of tritium to the groundwater.

Sources and Migration of Tritium

The detections of tritium exceeding 200 pCi/L in monitoring wells AR-2, AR-3, AR-4, and AR-11 appear to be localized and confined to the areas around the wells. Tritium was not detected at the LLD of 200 pCi/L in the groundwater samples collected from monitoring wells and residential wells downgradient of these locations. The source of the tritium in the groundwater at these four well locations is the blowdown line vacuum breakers (AFE-Byron-2). Once in the subsurface, the tritiated water migrated downward through the unsaturated overburden and fractured bedrock to the water table. Once at the water table, downward vertical gradients caused the tritiated water to migrate downward to the base of the Galena-Platteville aquifer, where tritium was detected in the groundwater sample from monitoring well AR-11 (Figure 5.2).

The shale of the Glenwood Formation has a low permeability and acts as a barrier to further downward migration of the tritiated water. Due to the low permeabilities of the

Galena-Platteville limestones/dolomites, combined with the shallow horizontal gradient, the tritiated water should not migrate very far laterally from the vacuum breakers. There is no indication from the HIR data that tritium-impacted groundwater in this area is migrating off the Station property.

7.0 EXPOSURE PATHWAY ASSESSMENT

This section addresses the groundwater impacts from tritium and other radionuclides at the Station and potential risks to human health and the environment.

Based upon historical knowledge and data related to the Station operations and based upon radionuclide analyses of groundwater samples, the primary constituent of concern (COC) is tritium. The discussions that follow are focused on the exposure pathways related to tritium.

Teledyne Brown reports all samples to their statistically-derived minimum detectable concentration (MDC) of approximately 150 to 170 pCi/L, which is associated with 95 percent confidence interval on their hardcopy reports. However, the laboratory uses a 99 percent (± 3-sigma) confidence range for determining whether to report the sample activity concentration as detected or not. This 3-sigma confidence range typically equates to 150 (± 135.75) pCi/L.

Exelon has specified a LLD of 200 pCi/L for the Fleetwide Assessment. Exelon has also required the laboratory to report related peaks identified at the 95 percent confidence level (2-sigma).

This HIR, therefore, screens and assesses data using Exelon's LLD of 200 pCi/L. As is outlined below, this concentration is also a reasonable approximation of the background concentration of tritium in groundwater at the Station.

7.1 HEALTH EFFECTS OF TRITIUM

Tritium is a radionuclide that decays by emitting a low-energy beta particle that cannot penetrate deeply into tissue or travel far in air. A person's exposure to tritium is primarily through the ingestion of water (drinking water) or through ingestion of water bearing food products. Inhalation of tritium requires the water to be in a vapor form (i.e., through evaporation or vaporization due to heating). Inhalation is a minor exposure route when compared to direct ingestion or drinking of tritiated water. Absorption of tritium through skin is possible, but tritium exposure is more limited here versus direct ingestion or drinking of tritiated water.

7.2 BACKGROUND CONCENTRATIONS OF TRITIUM

The purpose of the following paragraphs is to establish a background concentration through review of various media.

7.2.1 GROUNDWATER

Tritium is created in the environment from naturally occurring processes both cosmic and subterranean, as well as from anthropogenic (i.e., man-made) sources. In the upper atmosphere, "cosmogenic" tritium is produced from the bombardment of stable nuclides and combines with oxygen to form tritiated water, which will then enter the hydrologic cycle. Below ground, "lithogenic" tritium is produced by the bombardment of natural lithium isotopes ^{6}Li (92.5 percent abundance) and ^{7}Li (7.5 percent abundance) present in crystalline rocks by neutrons produced by the radioactive decay of uranium and thorium. Lithogenic production of tritium is usually negligible compared to other sources due to the limited abundance of lithium in rock. The lithogenic tritium is introduced directly to groundwater.

A major anthropogenic source of tritium comes from the former atmospheric testing of thermonuclear weapons. Levels of tritium in precipitation increased during the 1950s and early 1960s, coinciding with the release of significant amounts of tritium to the atmosphere during nuclear weapons testing prior to the signing of the Limited Test Ban Treaty in 1963, which prohibited atmospheric nuclear tests.

7.2.2 PRECIPITATION DATA

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. Two publicly available databases that provided tritium concentrations in precipitation are Global Network of Isotopes in Precipitation (GNIP) and USEPA's RadNet database. GNIP provides tritium precipitation concentration data for samples collected world wide from 1960 to 2006. RadNet provides tritium precipitation concentration data for samples collected at Stations through the U.S. from 1960 up to and including 2006.

Based on GNIP data for sample stations located in the U.S. Midwest including Chicago, St. Louis and Madison, Wisconsin, as well as Ottawa Ontario, and data from the University of Chicago, tritium concentrations peaked around 1963. This peak, which approached 10,000 pCi/L for some stations, coincided with the atmospheric testing of

thermonuclear weapons. Tritium concentrations showed a sharp decline up until 1975 followed by a gradual decline since that time. Tritium concentrations in Midwest precipitation have typically been less than 100 pCi/L since around 1980.

The RadNet database for several stations in the U.S. Midwest (Chicago, Columbus, Indianapolis, Lansing, Madison, Minneapolis, Painesville, Toledo, and Welsch, MN) did not show the same trend, which can be attributed to pre-1995 data handling procedures. The pre-1995 data were rounded to the nearest 100 pCi/L, which damped out variances in the data. The post-1995 RadNet data, where rounding was not applied, exhibit much more scatter, and similar to the GNIP data, the vast majority of the data were less than 100 pCi/L.

CRA constructed a non-parametric upper tolerance limit with a confidence of 95 percent and a coverage of 95 percent based on RadNet data for USEPA Region 5 from 2004 to 2005. The resulting upper tolerance limit is 133 pCi/L, which indicates that CRA is 95 percent confident that 95 percent of the ambient precipitation concentration results are less than 133 pCi/L. The statistical confidence, however, must be compared with the limitations of the underlying RadNet data, which does not include the minimum detectable concentration for a majority of the measurements. Some of the RadNet values less than 200 pCi/L may be approximated. Nevertheless, these results show a background contribution for precipitation of up to 133 pCi/L.

7.2.3 SURFACE WATER DATA

Tritium concentrations are routinely measured in large surface water bodies, including Lake Michigan and the Mississippi River. Surface water data from the RadNet database for Illinois sampling stations include East Moline (Mississippi River), Moline (Mississippi River), Marseilles (Illinois River), Morris (Illinois River), Oregon (Rock River), and Zion (Lake Michigan). As is the case for the RadNet precipitation data, the pre-September 1995 Illinois surface water data was rounded to the nearest 100 pCi/L, creating a dampening of variances in the data. The post-1995 Illinois surface water data, similar to the post-1995 Midwest precipitation data, were less than 100 pCi/L with the exception of the Moline (Mississippi River) station. Tritium surface water concentrations at this location varied between 100 and 800 pCi/L, which may reflect local natural or anthropogenic inputs.

Recent surface water measurements for tritium sampling locations upstream of the Quad Cities Generating Station show that concentrations in the Mississippi River are consistently less than 200 pCi/L (Exelon, 2005).

These results indicate that there is a background tritium concentration in surface water that is typically less than 100 pCi/L, but have approached 800 pCi/L in the Mississippi River.

The USEPA RadNet surface water data typically has a reported "Combined Standard Uncertainty" of 35 to 50 pCi/L. According to USEPA, this corresponds to a ± 70 to 100 pCi/L 95 percent confidence bound on each given measurement. Therefore, the typical background data provided may be subject to measurement uncertainty of approximately ± 70 to 100 pCi/L.

7.2.4 DRINKING WATER DATA

Tritium concentrations in drinking water from the RadNet database for three Illinois sampling stations (Chicago, Morris, and East Chicago) exhibit similar trends as the precipitation and surface water data. As with the precipitation and surface water data, the pre-1995 data has dampened out variances due to rounding the data to the nearest 100 pCi/L. The post-1995 results show tritium concentrations in drinking water well less than 100 pCi/L and the tritium concentrations found in precipitation and surface water.

7.2.5 EXPECTED TRITIUM BACKGROUND FOR THE STATION

As reported in the GNIP and RadNet databases, tritium concentrations in U.S. Midwest precipitation have typically been less than 100 pCi/L since 1980. Tritium concentrations reported in the RadNet database for Illinois surface water and groundwater, at least since 1995, have typically been less than 100 pCi/L. Based on the USEPA Region 5's 2004 to 2005 RadNet precipitation data, 95 percent of the ambient concentrations of tritiated water in Illinois are expected to be less than 133 pCi/L, based on a 95 percent confidence limit. Tritium concentrations in surface water and drinking water are expected to be comparable or less based on historical data and trends.

Concentrations in groundwater similar to surface water and drinking water are expected to be less as compared to precipitation values. The lower groundwater concentrations are related to the age of the groundwater as compared to the half-life of tritium. Deep aquifers in proximity to crystalline basement rock, however, potentially can also show elevated concentrations of tritium due to lithogenic sources.

As was noted in Section 7.0, the analytical laboratory is reporting tritium results to a LLD of 200 pCi/L. This concentration also represents a reasonable representation of background groundwater quality, given the data for precipitation, surface water, and drinking water.

Based on the evaluation presented above, the background concentration for tritium at the Station is reasonably represented by the LLD of 200 pCi/L.

7.3 IDENTIFICATION OF POTENTIAL EXPOSURE PATHWAYS AND POTENTIAL RECEPTORS

Three potential exposure pathways were considered during the evaluation of tritium in groundwater:

- potential groundwater migration to the Station's potable water supply well;
- potential groundwater migration off the Station property to private water supply wells; and
- potential groundwater migration off the Station property to a surface water body.

The following section provides an overview of each of these three potential exposure pathways for tritium in groundwater.

7.3.1 POTENTIAL GROUNDWATER MIGRATION TO DRINKING WATER USERS AT THE STATION PROPERTY

At the Station, the tritium detected in groundwater samples has been isolated to the Galena-Platteville aquifer, which is isolated from the deeper regional groundwater aquifer by the semi-confining Glenwood Formation. Groundwater quality data from production wells and monitoring wells at the Station located below this aquitard do not indicate concentrations of tritium greater than the LLD of 200 pCi/L. As such, the tritium impact is limited to the Galena-Platteville aquifer. There are no water supply wells located on the Station property that draw water from the Galena-Platteville aquifer. The Station receives its potable water from two cased 1,500-foot bedrock wells on the Site, which are installed in the Ironton-Galesville Sandstone. The vertical movement of tritiated water from the Galena-Platteville aquifer into deeper formations is restricted by the semi-confining Glenwood Formation. Since vertical migration of tritiated water through the Glenwood Formation to the Ironton-Galesville Aquifer is

restricted but theoretically not eliminated, this is a potentially complete exposure pathway but there is no current risk for groundwater ingestion at the Station.

7.3.2 POTENTIAL GROUNDWATER MIGRATION TO DRINKING WATER USERS OFF THE STATION PROPERTY

Based on the results of the investigations and the conceptual model, the only potentially complete exposure route (pathway) for tritiated water at the Station is ingestion of the groundwater at nearby private water supply wells. However, due to low permeabilities of the limestones and dolomites of the Galena-Platteville aquifer, along with the general hardness of the water, this aquifer is typically not used for potable water in the area.

The St. Peter Sandstone is the primary source for potable water in the area. The St. Peter Sandstone aquifer is separated from the Galena-Platteville aquifer by a low permeability shale of the Glenwood Formation. Residential water wells that are both off the Station property and in the direction of groundwater flow downgradient from the blowdown line typically obtain water from the St. Peter Sandstone aquifer. These water wells were sampled and were not impacted. In addition, none of the groundwater samples collected from monitoring wells near the property line contained tritium at concentrations greater than the LLD of 200 pCi/L. Therefore, although there is a potentially complete exposure pathway, there is no current risk of exposure associated with groundwater ingestion off the Station property.

7.3.3 POTENTIAL GROUNDWATER MIGRATION TO SURFACE WATER USERS

Groundwater does not discharge to the local surface water drainages (ephemeral creeks) and the nearest wells located adjacent to the Rock River have not contained tritium. There is no potentially complete exposure pathway, therefore there is no current risk of exposure associated with groundwater migration to surface water at the Station.

7.4 SUMMARY OF POTENTIAL TRITIUM EXPOSURE PATHWAYS

There are three potential exposure pathways for tritium at the Station:

- potential groundwater migration to the Station's potable supply well;

- potential groundwater migration off the Station property to private water supply wells; and
- potential groundwater migration off the Station property to a surface water body.

Based upon the groundwater and surface water data provided and referenced in this investigation, none of the potential receptors are at risk of exposure to concentrations of tritium in excess of the USEPA drinking water standard (20,000 pCi/L).

7.5 OTHER RADIONUCLIDES

Target radionuclides were not detected at concentrations greater than the LLDs in the groundwater samples collected. Other non-targeted radionuclides were also included in the tables but excluded from discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.

8.0 CONCLUSIONS

Based on all of the studies completed to date at the Station, CRA concludes:

Groundwater Flow

- There are two groundwater aquifers within the first 230 feet beneath the Station: the Galena-Platteville aquifer (upper aquifer) and the St. Peter Sandstone aquifer (lower aquifer).
- The two aquifers are separated by a semi-confining shale layer of the Glenwood Formation and, therefore, not hydraulically connected under the Station.
- Groundwater (the water table) is first encountered in the upper fractured portions of the Galena-Platteville aquifer. Near the Rock River, the bedrock has been eroded, and the water table is in unconsolidated alluvial material.
- The general direction of groundwater flow in both aquifers is to the west toward the Rock River.
- The groundwater flows radially away from the facility.
- The horizontal gradient in the Galena-Platteville aquifer is shallow. There is a slight downward vertical gradient between the upper portion and bottom of the Galena-Platteville aquifer.

Groundwater Quality

- Tritium concentrations in groundwater were not detected at concentrations greater than the USEPA drinking water standard of 20,000 pCi/L.
- Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in samples collected from the five monitoring wells located in the PA.
- Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in 35 of the 39 groundwater samples collected. Concentrations of tritium in the four remaining samples, all collected near vacuum breakers, ranged between 234 ± 128 pCi/L to 3,260 ± 367 pCi/L.
- Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective LLDs in any of the most recent water samples collected as part of this investigation.
- Strontium-89/90 was not detected at concentrations greater than the LLD of 2 pCi/L in any sample collected as part of this investigation.

- Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in the water samples collected from the residential water wells.
- The HIR data indicate that tritium is not migrating off the Station property.

AFE-Byron-1 – Former Fiberglass Blowdown Line

- Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective LLDs in any of the 13 groundwater samples collected from the four monitoring wells in the vicinity of AFE-Byron-1.
- Strontium-89/90 was not detected at a concentration greater than the LLD of 2 pCi/L in any of the 13 groundwater samples collected from the four monitoring wells in the vicinity of AFE-Byron-1.
- Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in any of the groundwater samples collected from the four monitoring wells in the vicinity of AFE-Byron-1.
- There is no current impact from this AFE to groundwater.

AFE-Byron-2 – Vacuum Breaker Vaults

- Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective LLDs in any of the groundwater samples most recently collected from monitoring wells near AFE-Byron-2.
- Strontium-89/90 was not detected at a concentration greater than the LLD of 2 pCi/L in any of the groundwater samples collected from monitoring wells near AFE-Byron-2.
- To the west of the generating facility, near the blowdown line, the concentrations of tritium were greater than the LLD of 200 pCi/L in four monitoring wells: AR-2, AR-3, AR-4, and AR-11. These four wells are adjacent to three vacuum breaker vaults: VB-2, VB-3, and VB-4. These vaults formerly contained water with elevated concentrations of tritium.
- Two areas where tritium was found in the groundwater near VB-2 and VB-3 are limited to the shallow portions of the Galena-Platteville aquifer.
- Near VB-4, the groundwater contains tritium down to the bottom of the Galena-Platteville aquifer.

- The source of the tritium concentrations in the groundwater was periodic leaks during re-seating of the blowdown line vacuum breaker valves.
- None of the tritium concentrations detected in the groundwater exceed the USEPA drinking water standard of 20,000 pCi/L.
- The shale unit of the Glenwood Formation has a low permeability and acts as a barrier to further downward migration of impacted water down to the St. Peter Sandstone aquifer. Due to the low permeabilities of the Galena-Platteville limestones/dolomites combined with the shallow gradient of the water table, the tritiated water in the Galena-Platteville aquifer will not migrate very far laterally from the VB-2, VB-3, and VB-4 areas.
- Tritiated groundwater at the Station is isolated in three areas, and the evidence indicates that it is not migrating off Station property. This is based upon the inferred slow groundwater flow velocities and that groundwater sampling results indicate that monitoring wells outside of these three areas are not impacted. The unimpacted wells include: monitoring wells located hydraulically downgradient, monitoring wells located at the property line, and residential water wells. The tritium detected in groundwater is not the result of large failures of the blowdown line, but of minor failures of the vacuum breaker valves to re-seat during blowdown line discharge events. No knowledge or evidence of large failures of or releases from the blowdown line have been documented or identified through the investigations.
- Therefore, additional plume delineation activities or groundwater remediation are not warranted.

AFE-Byron-3 –Protected Area

- Groundwater under the PA flows radially outward due to the topographic high on which the PA was constructed. The downgradient locations of the monitoring wells were selected based on this radial groundwater flow pattern. These monitoring wells are situated to provide for an adequate indication for future leak detection.
- Tritium was not detected at concentrations greater than the LLD of 200 pCi/L in any of the groundwater samples collected from seven monitoring wells in the vicinity of AFE-Byron-3.
- Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective LLDs in any of the groundwater samples most recently collected from seven monitoring wells in the vicinity of AFE-Byron-3.

- Strontium-89/90 was not detected at a concentration greater than the LLD of 2 pCi/L in any of the groundwater samples collected from monitoring wells in the vicinity of AFE-Byron-3.
- There is no current impact from this AFE to groundwater.

Potential Receptors

- Based on the results of this investigation[1], there is no current risk from exposure to radionuclides associated with licensed plant operations through any of the identified potential exposure pathways.

General Conclusions

- Based on the results of this investigation, tritium is not migrating off the Station property at detectable concentrations.
- Based on the results of this investigation, there are no known active releases into the groundwater at the Station.

[1] Using the LLD specified in this HIR.

9.0 RECOMMENDATIONS

The following presents CRA's recommendations for proposed activities to be completed at the Byron Station.

9.1 DATA GAPS

Based on the results of this hydrogeologic investigation, there are no data gaps remaining to support CRA's conclusions regarding the characterization of the groundwater regime and potential impacts from radionuclides at the Station.

9.2 GROUNDWATER MONITORING

Based upon the information collected to date, CRA recommends that Exelon conduct periodic monitoring of selected groundwater monitoring well locations.

10.0 REFERENCES

The materials referenced in the generation of this HIR include:

Byron Station Radiological Environmental Monitoring Program (REMP) Reports.

Byron Station Radiological Effluent Tracking Statistics (RETS) Reports from 1984 to 2005.

Byron Station Updated Final Safety Analysis Report (UFSAR), Rev. #10, December 2004.

Conestoga-Rovers & Associates, June 2001. "Remedial Design Work Plan – Byron Salvage Yard".

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Exelon Generation Company, May 2005. "Quad Cities Nuclear Power Station, 2004 Annual Radiological Environmental Operating Report", Exelon, Cordoa, Illinois.

Kay, Robert T., Douglas J. Yeskis, William J. Bolen, James R. Rauman, and Scott T. Prinos, 1997. Geology, Hydrology, and Ground-Water Quality at the Byron Superfund Site Near Byron, Illinois, United States Geological Survey, Water-Resources Investigations Report 95-4240, Prepared in Cooperation with the U.S. Environmental Protection Agency Ogle County, 2006, Geographical Information System (GIS) database, http://www.Oglecountygis.org.

Puls, R.W., and M.J. Barcelona, April 1996. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA Ground Water Issue, EPA/540/S-92/005, R. S. Kerr Environmental Research Center, United States Environmental Protection Agency, Ada, Oklahoma.

RETEC Group, Inc., September 23, 2005. "Residential Well Survey".

United States Department of Agriculture, 2006. Natural Resources Conservation Service website, http.//www.nrcs.usda.gov.

The main references cited in the UFSAR related to this HIR include:

Bradbury, J.C. and Atherton, E., 1965. The Precambrian Basement of Illinois, Circular 382, Illinois State Geological Survey.

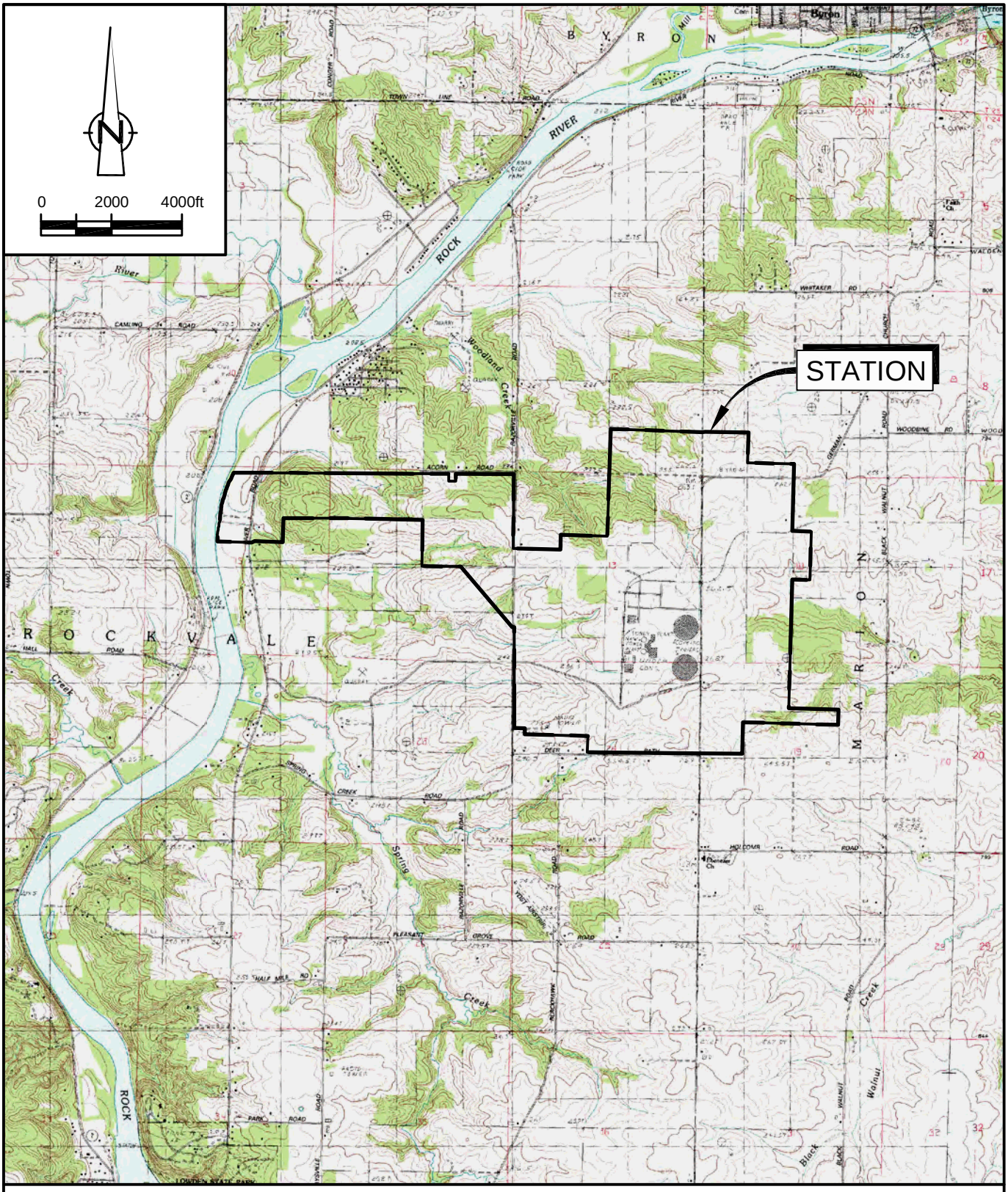
Buschbach, T.C., 1964. Cambrian and Ordovician Strata of Northeastern Illinois, Illinois State Geological Survey, Report of Investigation 218, 90 p.

Frye, J.C., et al., 1969. Glacial Tills of Northwestern Illinois, Illinois State Geological Survey, Cir. 437, 45 p.

Willman, H.B., et al., 1967. Geological Map of Illinois, Illinois State Geological Survey.

Willman, H.B., et al., 1975. Handbook of Illinois Stratigraphy, Bulletin 95, Illinois State Geological Survey.

Willman, H.B. and Frye, J.C., 1970. Pleistocene Stratigraphy of Illinois, Bulletin 94, Illinois State Geological Survey.



SOURCE: USGS QUADRANGLE MAP;
STILLMAN VALLEY, ILLINOIS (1976)
OREGON, ILLINOIS (1983)

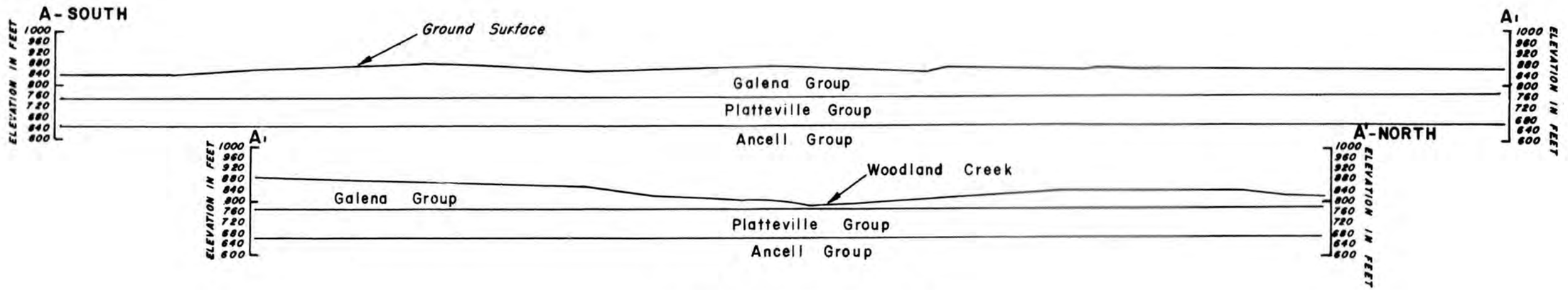
figure 1.1

STATION LOCATION MAP
BYRON GENERATING STATION
EXELON GENERATION COMPANY, LLC
Byron, Illinois

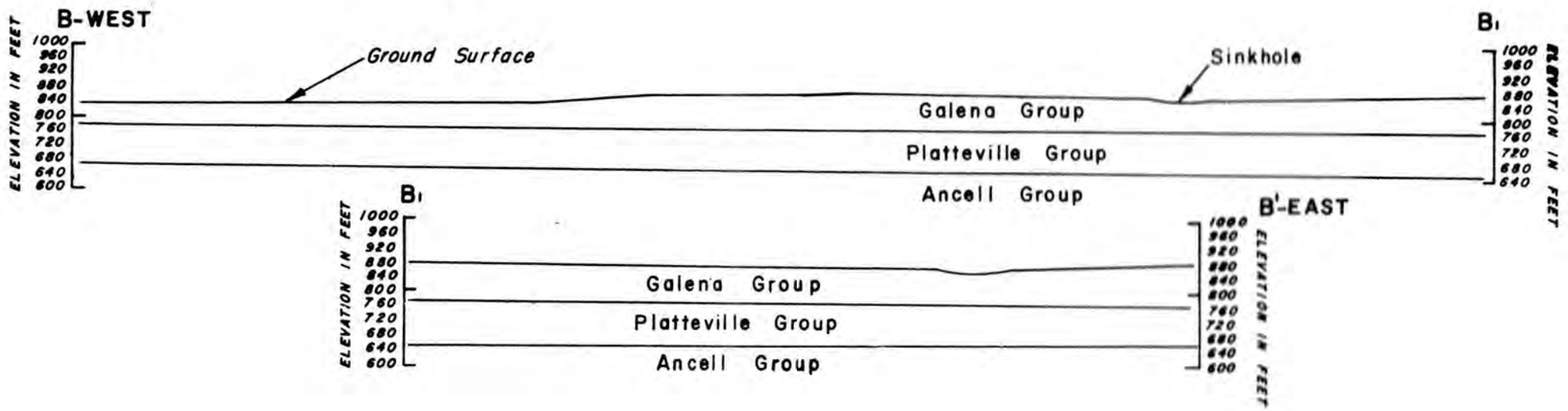
45136-21(013)GN-WA001 JUL 13/2006

FIGURE 1.2 STATION BOUNDARIES AND FEATURES

(Withheld)



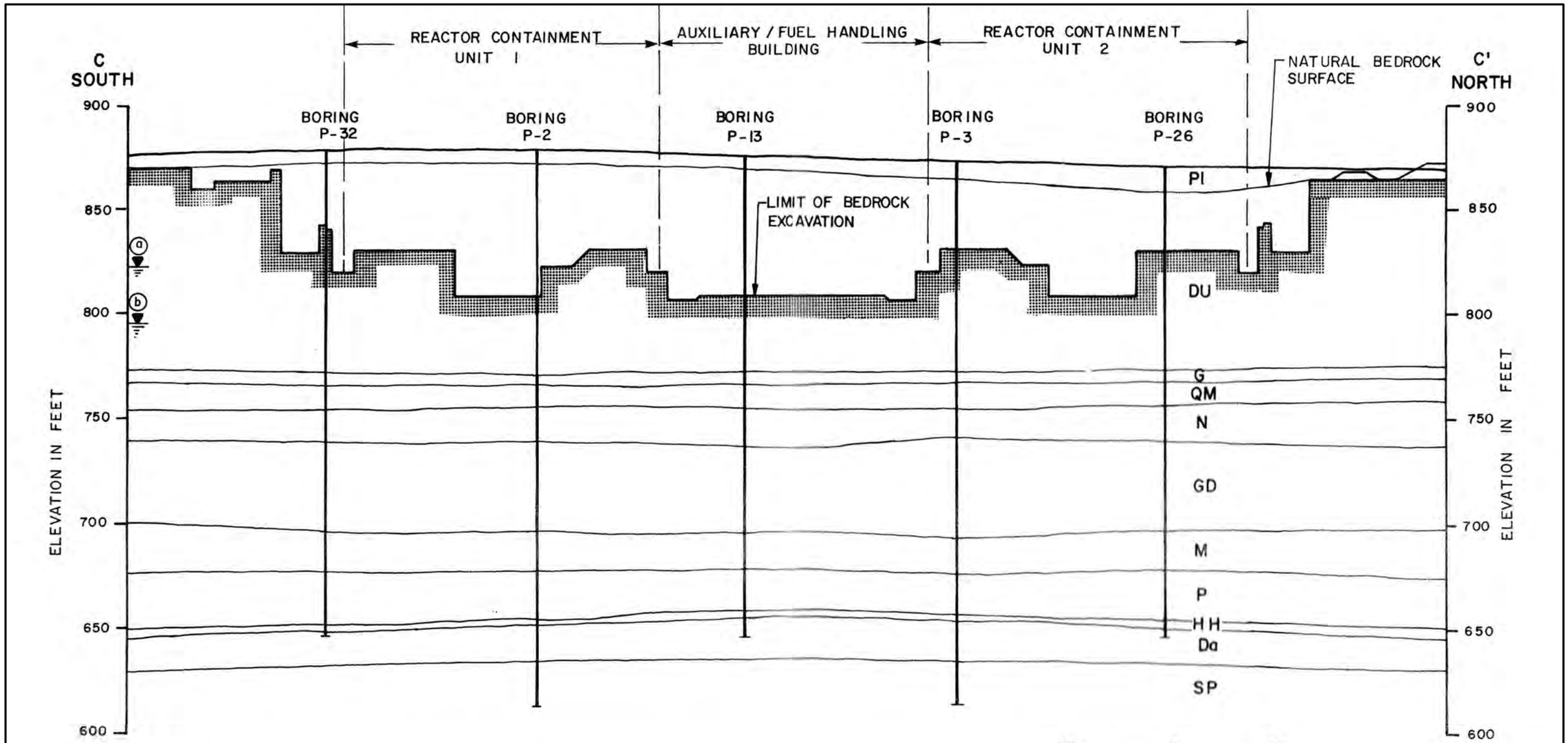
CROSS SECTION A-A'



CROSS SECTION B-B'

figure 2.1

LOCAL GEOLOGIC CROSS-SECTIONS A-A' AND B-B'
BYRON GENERATING STATION
EXELON GENERATION COMPANY, LLC
Byron, Illinois



NOTES:

1. DEPTHS AND THICKNESSES OF SOIL AND ROCK STRATA ARE INTERPRETED FROM BORINGS P-44, P-26, P-3, P-13, P-2, P-32 AND P-14. ACTUAL SUBSURFACE CONDITIONS BETWEEN BOREHOLES MAY DIFFER FROM THAT WHICH IS SHOWN.
2. LOCATION OF SECTION IS SHOWN ON FIGURE 2.5-3.
3. (a) INDICATES PERCHED GROUND WATER LEVEL
   (b) INDICATES GROUND WATER LEVEL IN GALENA–PLATTEVILLE AQUIFER.

EXPLANATION

SYMBOL	UNIT NAME	MATERIAL
PI	PLEISTOCENE OVERBURDEN	LOESS AND TILL
Du	DUNLEITH FORMATION	DOLOMITE
G	GUTTENBURG FORMATION	DOLOMITE
QM	QUIMBYS MILL FORMATION	DOLOMITE
N	NACHUSA FORMATION	DOLOMITE
GD	GRAND DETOUR FORMATION	DOLOMITE
M	MIFFLIN FORMATION	DOLOMITE
P	PECATONICA FORMATION	DOLOMITE
HH	GLENWOOD FORMATION, HARMONY HILL MEMBER	SHALE
Da	GLENWOOD FORMATION, DAYSVILLE MEMBER	SANDY SHALE, DOLOMITE AND SANDY DOLOMITE
SP	ST. PETER FORMATION	SANDSTONE

Exelon

figure 2.2

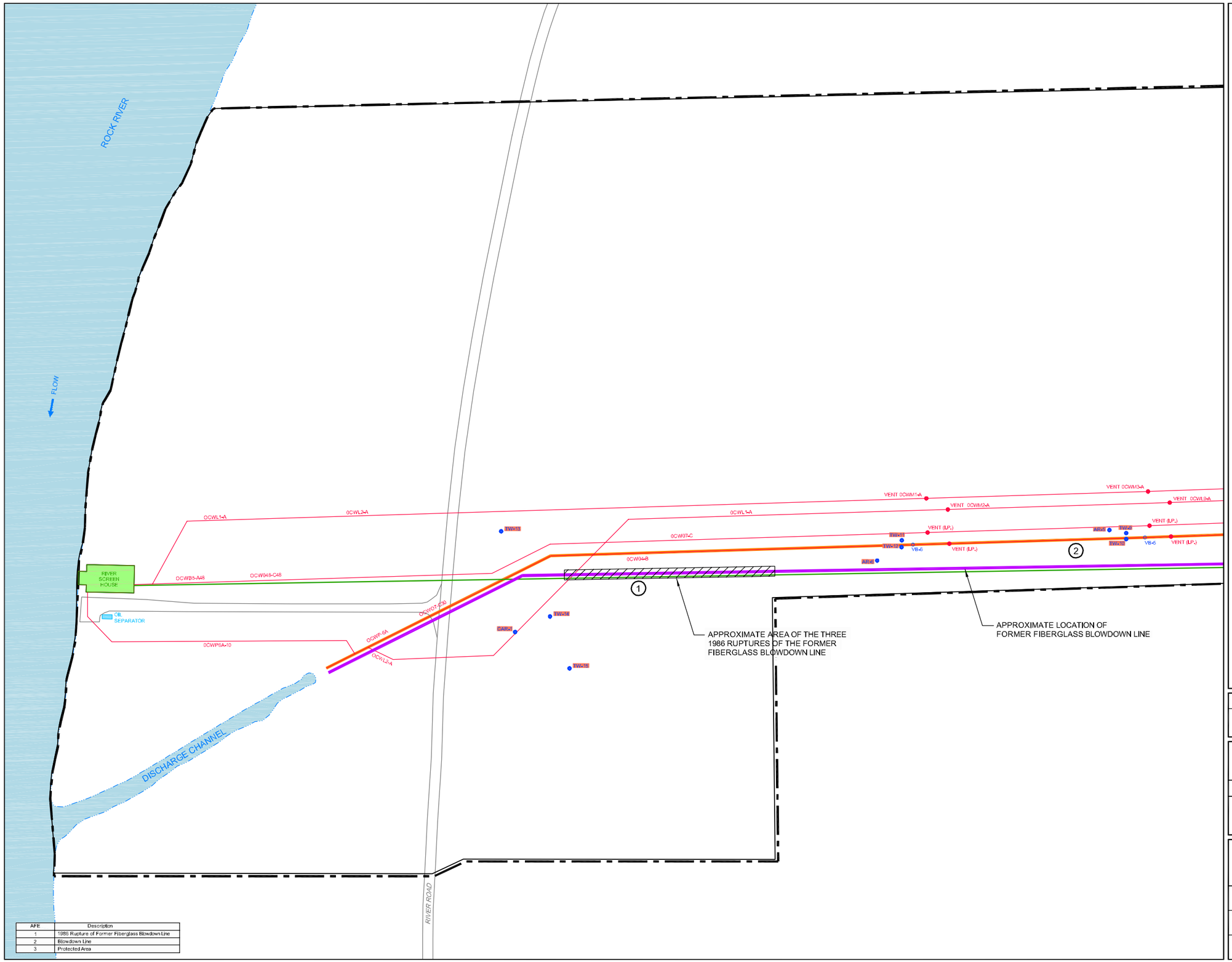
LOCAL GEOLOGIC CROSS-SECTION C-C'
BYRON GENERATING STATION
EXELON GENERATION COMPANY, LLC
Byron, Illinois

FIGURE 2.3 MONITORING WELL LOCATIONS

(Withheld)

FIGURE 2.4 GROUNDWATER CONTOUR MAP - MARCH 2006

(Withheld)



AFE	Description
1	1986 Rupture of Former Fiberglass Blowdown Line
2	Blowdown Line
3	Protected Area

0 60 120ft

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EDGE OF WATER
- FENCE
- BLOWDOWN LINE
- MW-1 — EXISTING MONITORING WELL LOCATION
- DF-2D — ABANDONED MONITORING WELL LOCATION
- BENESH SPRING — SURFACE WATER SAMPLE LOCATION
- VB-5 — VACUUM BREAKERS
- EXISTING EXELON MONITORING WELL LOCATION
- (1) AREA FOR FURTHER EVALUATION (AFE) BYRON GENERATING STATION

STATION SYSTEMS IDENTIFIED BY STATION PERSONNEL THAT CONTAIN OR POTENTIALLY CONTAIN TRITIUM

- STATION SYSTEM CIRC WATER
- STATION SYSTEM EQUIPMENT/FLOOR OIL DRAIN
- STATION SYSTEM ESSENTIAL SERVICE WATER

NOTE:

AFE 3 IS NOT SHOWN ON THIS FIGURE

SECURITY-RELATED INFORMATION
WITHHOLD FROM PUBLIC DISCLOSURE
UNDER 10 CFR 2.390 AND
5 ILCS 140/7(1)(a) & (mm)

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

EXELON GENERATION COMPANY, LLC

FLEETWIDE ASSESSMENT

AREA FOR FURTHER EVALUATION
FORMER FIBERGLASS BLOWDOWN LINE
BYRON GENERATING STATION, BYRON, ILLINOIS

Exelon

CONESTOGA-ROVERS & ASSOCIATES

Source References:

Project Manager:	Reviewed By:	Date:	
S. QUIGLEY	M. KELLY	JULY 2006	
Scale: AS SHOWN	Project N°: 45136-21	Report N°: 013	Drawing N°: figure 3.1

45136-21(013)GN-WA018 JUL 12/2006

FIGURE 3.2 AREA FOR FURTHER EVALUATION – BLOWDOWN LINE

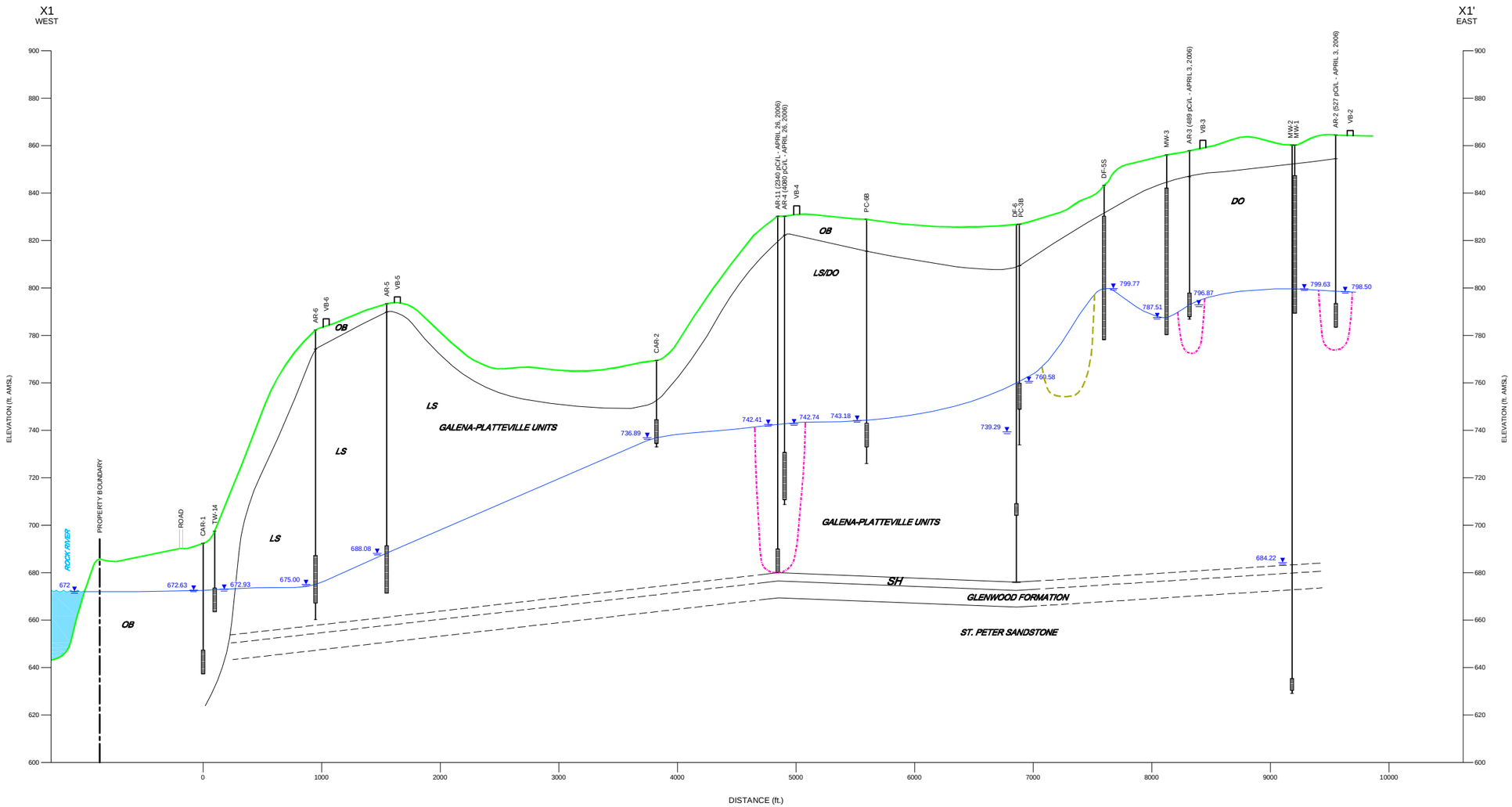
(Withheld)

FIGURE 3.3 AREA FOR FURTHER EVALUATION – PROTECTED AREA

(Withheld)

FIGURE 5.1 HYDROGEOLOGIC CROSS-SECTION LOCATIONS

(Withheld)



LEGEND

- DATE SAMPLE COLLECTED
- TRITIUM CONCENTRATION
- WELL ID
- WELL
- GROUNDWATER ELEVATION
- WELL SCREEN
- WATER TABLE POTENTIOMETRIC SURFACE
- HISTORICAL BYRON SALVAGE SITE GROUNDWATER PLUME (TCE AND TCA)
- APPROXIMATE EXTENT OF TRITIUM PLUME
- *OB* OVERBURDEN
- *LS* LIMESTONE
- *DO* DOLOMITE
- *SH* SHALE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

EXELON GENERATION COMPANY, LLC

FLEETWIDE ASSESSMENT

HYDROGEOLOGIC CROSS-SECTION X1-X1'
BYRON GENERATING STATION
BYRON, ILLINOIS

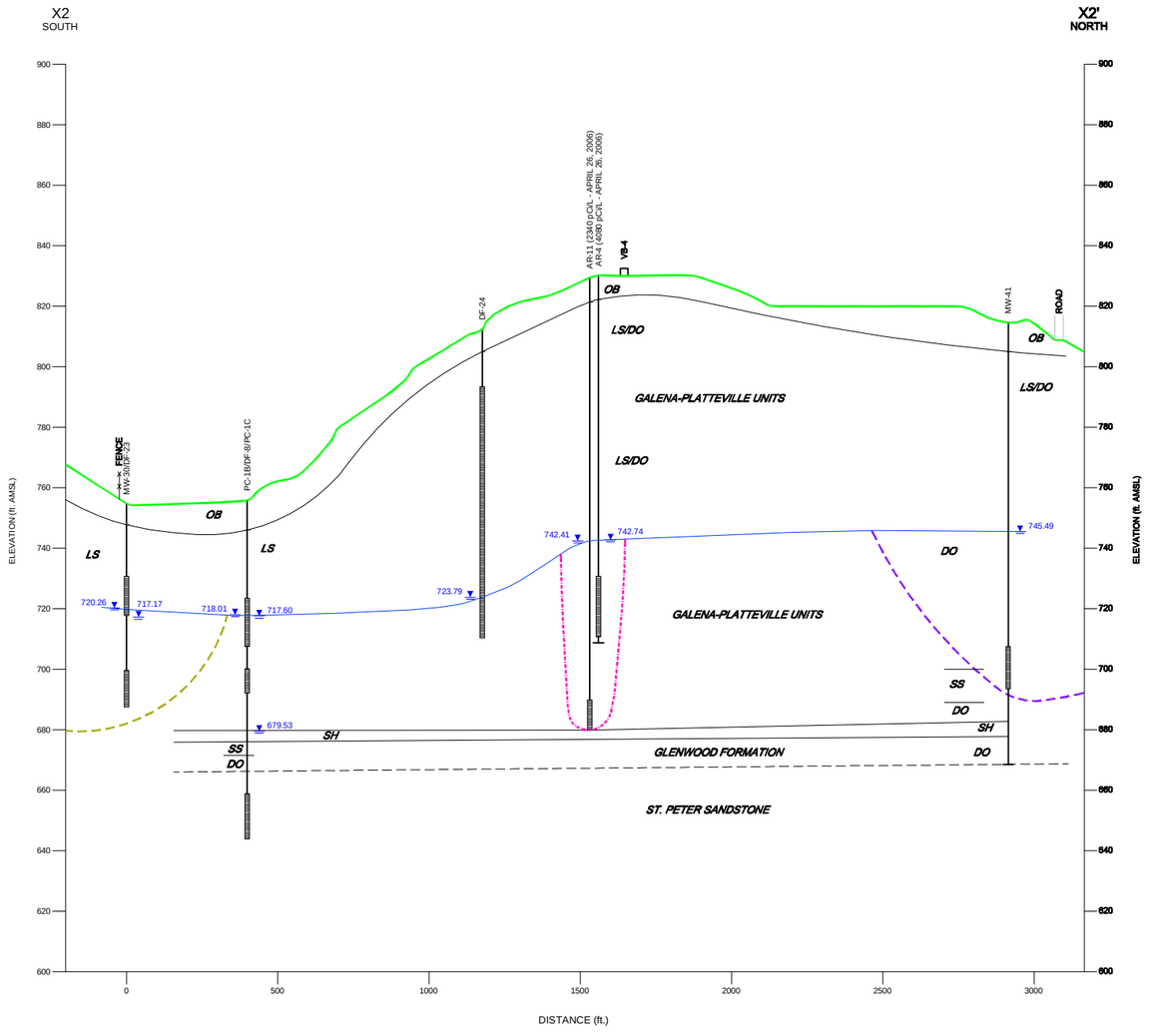
Exelon

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
S. QUIGLEY	M. KELLY	JULY 2006	
Scale: AS SHOWN	Project N°: 45136-21	Report N°: 013	Drawing N°: figure 5.2

45136-21(013)GN-WA010 JUL 13/2006



LEGEND

- DATE SAMPLE COLLECTED
- TRITIUM CONCENTRATION
- WELL ID
- WELL
- GROUNDWATER ELEVATION
- WELL SCREEN
- WATER TABLE POTENTIOMETRIC SURFACE
- HISTORICAL BYRON SALVAGE SITE GROUNDWATER PLUME (TCE AND TCA)
- HISTORICAL BYRON SALVAGE SITE GROUNDWATER PLUME (TCE)
- APPROXIMATE EXTENT OF TRITIUM PLUME
- OB — OVERBURDEN
- LS — LIMESTONE
- DO — DOLOMITE
- SH — SHALE
- SS — SANDSTONE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

EXELON GENERATION COMPANY, LLC

FLEETWIDE ASSESSMENT

HYDROGEOLOGIC CROSS-SECTION X2-X2'
BYRON GENERATING STATION
BYRON, ILLINOIS

Exelon

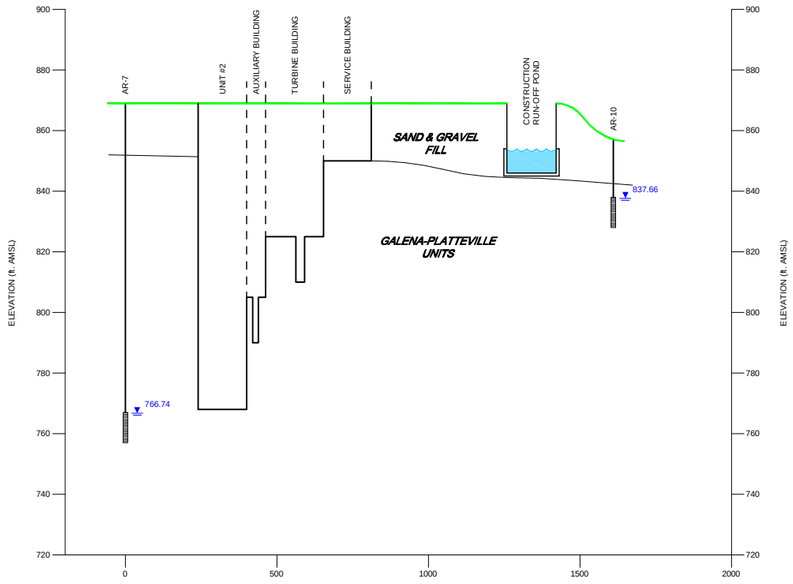
CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
S. QUIGLEY	M. KELLY	JULY 2006	
Scale: AS SHOWN	Project N°: 45136-21	Report N°: 013	Drawing N°: figure 5.3

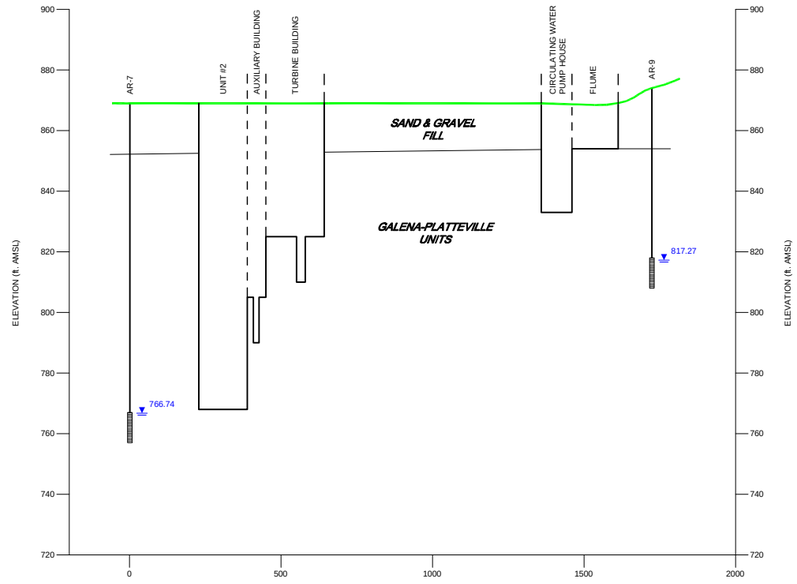
X3
WEST

X3'
NORTHEAST



X3
WEST

X3"
SOUTHEAST



LEGEND

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

EXELON GENERATION COMPANY, LLC

FLEETWIDE ASSESSMENT

HYDROGEOLOGIC CROSS-SECTION X3-X3' AND X3-X3"
BYRON GENERATING STATION
BYRON, ILLINOIS

Exelon

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
S. QUIGLEY	M. KELLY	JULY 2006	
Scale: AS SHOWN	Project N#: 45136-21	Report N#: 013	Drawing N#: figure 5.4

45136-21(013)GN-CO003 AUG 18/2006

FIGURE 5.5 POTENTIOMETRIC SURFACE CONTOURS - APRIL 2006 – UPPER GALENA-PLATTEVILLE AQUIFER

(Withheld)

FIGURE 5.6 POTENTIOMETRIC SURFACE CONTOURS - APRIL 2006 – BOTTOM OF GALENA-PLATTEVILLE AQUIFER

(Withheld)

FIGURE 5.7 POTENTIOMETRIC SURFACE CONTOURS - APRIL 2006 – ST. PETER SANDSTONE AQUIFER

(Withheld)

FIGURE 5.8 TRITIUM CONCENTRATIONS – STATION SAMPLING LOCATIONS

(Withheld)

FIGURE 5.9 TRITIUM CONCENTRATIONS – UPPER GALENA-PLATTEVILLE AQUIFER

(Withheld)

FIGURE 5.10 TRITIUM CONCENTRATIONS – BOTTOM OF GALENA.PLATTEVILLE AQUIFER

(Withheld)

FIGURE 5.11 TRITIUM CONCENTRATIONS – ST. PETER SANDSTONE AQUIFER

(Withheld)

FIGURE 5.12 TRITIUM CONCENTRATIONS – RESIDENTIAL WELL LOCATIONS

(Withheld)

FIGURE 5.13 RADIONUCLIDE CONCENTRATIONS

(Withheld)

TABLE 2.1

SUMMARY OF EXISTING WELL INFORMATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	X coor. (State Plane Coordinates)	Y coor. (State Plane Coordinates)	Surface Elevation (ft AMSL) [2]	Reference Elevation (ft AMSL)	Screened Interval Top (ft bgs) [3]	Screened Interval Bottom (ft bgs) [3]	Screened Interval Top (ft AMSL)	Screened Interval Bottom (ft AMSL)	Screened Interval Middle (ft AMSL)	Well Construction	Hydrogeologic Unit Screened [1]
Exelon-Owned Wells											
Previously Existing Water Wells											
GW-9 [4]	2532455.60	1972488.60	841.51	841.73	NA [5]	NA	- -	- -	- -	6-inch open hole	GPWT
Well 7 [4]	2538213.33	1969732.76	891.17	891.24	NA	NA	- -	- -	- -	6-inch open hole	GPWT
Deep Well 1	2537066.85	1970148.36	NA	NA	NA	~ 1500	- -	- -	- -	12 to 15-inch open hole	NA
Deep Well 2	2535936.76	1969964.84	NA	NA	NA	~ 1500	- -	- -	- -	12 to 15-inch open hole	NA
Monitoring Wells Installed During the Blowdown Line Investigation											
AR-1	2536048.98	1972460.65	868.11	871.10	50	70	818.11	798.11	808.11	2-inch PVC screen	GPWT
AR-2	2534570.16	1973401.77	864.37	867.38	71	81	793.37	783.37	788.37	2-inch PVC screen	GPWT
AR-3	2533354.08	1973345.67	857.76	860.64	60	70	797.76	787.76	792.76	2-inch PVC screen	GPWT
AR-4	2530325.59	1974343.03	830.23	832.74	99.5	119.5	730.73	710.73	720.73	2-inch PVC screen	GPWT
AR-5	2526970.90	1974279.73	793.27	795.75	102	122	691.27	671.27	681.27	2-inch PVC screen	GPWT
AR-6	2526375.64	1974201.54	782.22	784.55	95	115	687.22	667.22	677.22	2-inch PVC screen	GPWT
AR-7	2536172.26	1970914.51	868.99	871.28	102	112	766.99	756.99	761.99	2-inch PVC screen	GPWT
AR-8	2536591.62	1970080.22	869.71	872.11	30	50	839.71	819.71	829.71	2-inch PVC screen	GPWT
AR-9	2537777.21	1970783.66	873.77	876.77	55.5	65.5	818.27	808.27	813.27	2-inch PVC screen	GPWT
AR-10	2537573.15	1971916.71	856.65	859.15	19	29	837.65	827.65	832.65	2-inch PVC screen	GPWT
AR-11	2530300.13	1974330.58	829.35	831.65	139.5	149.5	689.85	679.85	684.85	2-inch PVC screen	BGP
CAR-1	2525447.90	1974018.64	692.25	694.87	45	55	647.25	637.25	642.25	2-inch PVC screen	UAWT
CAR-2	2529246.47	1974300.12	769.40	772.01	25	35	744.40	734.40	739.40	2-inch PVC screen	GPWT
CAR-3	2537064.71	1970545.52	869.11	872.16	43	63	826.11	806.11	816.11	2-inch PVC screen	GPWT
TW-1	2536119.01	1972474.04	868.81	870.70	3.5	8.5	865.31	860.31	862.81	2-inch PVC screen	Shallow Overburden
TW-2	2536137.15	1972477.09	869.11	870.73	2	7	867.11	862.11	864.61	2-inch PVC screen	Shallow Overburden
TW-3	2534676.01	1973300.70	866.92	868.35	5.5	10.5	861.42	856.42	858.92	2-inch PVC screen	Shallow Overburden
TW-4	2534674.53	1973321.59	866.53	869.48	5.5	10.5	861.03	856.03	858.53	2-inch PVC screen	Shallow Overburden
TW-5	2533371.75	1973305.18	858.37	860.78	3	8	855.37	850.37	852.87	2-inch PVC screen	Shallow Overburden
TW-6	2533370.28	1973323.29	858.07	859.93	3.5	8.5	854.57	849.57	852.07	2-inch PVC screen	Shallow Overburden
TW-7	2530360.35	1974366.22	830.91	832.25	6	11	824.91	819.91	822.41	2-inch PVC screen	Shallow Overburden
TW-8	2530358.62	1974386.10	830.10	831.67	7	12	823.10	818.10	820.60	2-inch PVC screen	Shallow Overburden
TW-9	2527013.94	1974272.31	793.82	796.42	3	8	790.82	785.82	788.32	2-inch PVC screen	Shallow Overburden
TW-10	2527013.99	1974256.60	793.70	795.88	2.5	7.5	791.20	786.20	788.70	2-inch PVC screen	Shallow Overburden
TW-11	2526439.04	1974253.50	782.38	785.16	5	10	777.38	772.38	774.88	2-inch PVC screen	Shallow Overburden
TW-12	2526438.39	1974235.97	783.38	785.32	7	12	776.38	771.38	773.88	2-inch PVC screen	Shallow Overburden
TW-13	2525412.16	1974276.44	698.03	700.47	13	18	685.03	680.03	682.53	2-inch PVC screen	Shallow Overburden

TABLE 2.1

SUMMARY OF EXISTING WELL INFORMATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	X coor. (State Plane Coordinates)	Y coor. (State Plane Coordinates)	Surface Elevation (ft AMSL) [2]	Reference Elevation (ft AMSL)	Screened Interval Top (ft bgs) [3]	Screened Interval Bottom (ft bgs) [3]	Screened Interval Top (ft AMSL)	Screened Interval Bottom (ft AMSL)	Screened Interval Middle (ft AMSL)	Well Construction	Hydrogeologic Unit Screened [1]
TW-14	2525537.43	1974058.60	697.40	699.41	24	34	673.40	663.40	668.40	2-inch PVC screen	Shallow Overburden
TW-15	2525587.27	1973925.58	694.32	695.73	24	29	670.32	665.32	667.82	2-inch PVC screen	Shallow Overburden
Byron Salvage PRP Group-Owned Monitoring Wells											
DF-1S	2531216.65	1973682.92	785.49	786.89	44	59	741.49	726.49	733.99	2-inch stainless steel screen	GPWT
DF-1D	2531226.90	1973676.38	786.32	787.48	79	84	707.32	702.32	704.82	2-inch stainless steel screen	BGP
DF-2S	2531242.96	1973864.59	794.44	794.96	59	74	735.44	720.44	727.94	2-inch stainless steel screen	GPWT
DF-3S	2531570.17	1973536.07	790.26	791.82	51	66	739.26	724.26	731.76	2-inch stainless steel screen	GPWT
DF-4DS	2532386.02	1973588.26	831.41	832.98	46	61	785.41	770.41	777.91	2-inch stainless steel screen	GPWT
DF-4DD	2532385.52	1973588.31	NA	832.79	144	149	- -	- -	- -	2-inch stainless steel screen	BGP
DF-5S	2532646.87	1973412.71	843.19	844.12	13	65	830.19	778.19	804.19	6-inch open hole	GPWT
DF-6	2531991.61	1973735.68	826.31	827.89	118	123	708.31	703.31	705.81	2-inch stainless steel screen	BGP
DF-7S	2527903.67	1975299.65	709.98	712.38	22	27	687.98	682.98	685.48	2-inch stainless steel screen	UAWT
DF-7D	2527898.09	1975298.28	709.67	712.55	43	48	666.67	661.67	664.17	2-inch stainless steel screen	UAM
DF-8	2530141.74	1973270.87	755.05	757.47	58	63	697.05	692.05	694.55	2-inch stainless steel screen	BGP
DF-10	2532417.79	1974527.51	833.04	834.01	69	84	764.04	749.04	756.54	2-inch stainless steel screen	GPWT
DF-11	2532534.02	1974574.44	833.05	834.21	68	83	765.05	750.05	757.55	2-inch stainless steel screen	GPWT
DF-12	2532609.19	1974523.28	831.43	834.48	127	132	704.43	699.43	701.93	2-inch stainless steel screen	BGP
DF-13	2532200.73	1973830.53	836.33	838.84	106	111	730.33	725.33	727.83	2-inch stainless steel screen	MGP
DF-15	2532645.11	1972942.97	846.50	847.79	7	115	839.50	731.50	785.50	6-inch open hole	GPWT
DF-17	2531725.46	1972911.91	817.65	820.14	115	120	702.65	697.65	700.15	2-inch stainless steel screen	BGP
DF-18	2531124.33	1973590.07	777.77	780.28	45	60	732.77	717.77	725.27	2-inch stainless steel screen	GPWT
DF-19	2531143.77	1973770.63	786.13	788.53	55	65	731.13	721.13	726.13	2-inch stainless steel screen	GPWT
DF-22S	2531524.65	1972931.42	808.73	811.85	76	86	732.73	722.73	727.73	2-inch stainless steel screen	GPWT
DF-22D	2531524.95	1972931.41	808.73	811.56	101	106	707.73	702.73	705.23	2-inch stainless steel screen	BGP
DF-23	2530101.41	1972863.81	752.57	755.39	60	65	692.57	687.57	690.07	2-inch stainless steel screen	BGP
DF-24	2530081.29	1974051.80	812.28	813.68	19	102	793.28	710.28	751.78	6-inch open hole	GPWT
DF-25	2530981.83	1973779.38	785.15	786.36	NA	NA	- -	- -	- -	- -	NA
MW-1	2534233.15	1973475.34	859.96	861.77	13	71	846.96	788.96	817.96	4-inch open hole	GPWT
MW-2	2534208.57	1973479.15	860.08	861.07	225	230	635.08	630.08	632.58	2-inch stainless steel screen	SS
MW-3	2533174.54	1973415.41	855.90	858.6	14	76	841.90	779.90	810.90	4-inch open hole	GPWT

TABLE 2.1

SUMMARY OF EXISTING WELL INFORMATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	X coor. (State Plane Coordinates)	Y coor. (State Plane Coordinates)	Surface Elevation (ft AMSL) [2]	Reference Elevation (ft AMSL)	Screened Interval Top (ft bgs) [3]	Screened Interval Bottom (ft bgs) [3]	Screened Interval Top (ft AMSL)	Screened Interval Bottom (ft AMSL)	Screened Interval Middle (ft AMSL)	Well Construction	Hydrogeologic Unit Screened [1]
MW-15	2532472.31	1974788.27	821.22	822.23	75	86	746.22	735.22	740.72	2-inch stainless steel screen	GPWT
MW-16	2532464.57	1974786.05	821.29	823.47	109	120	712.29	701.29	706.79	2-inch stainless steel screen	BGP
MW-20R	2532466.05	1974790.91	820.57	821.85	181	191	639.57	629.57	634.57	2-inch stainless steel screen	SS
MW-21	2532458.60	1974791.94	820.42	821.63	224	234	596.42	586.42	591.42	2-inch stainless steel screen	SS
MW-30	2530196.65	1972880.11	754.70	758.68	27	37	727.70	717.70	722.70	2-inch stainless steel screen	GPWT
MW-36	2532608.79	1973569.23	841.60	843.73	146	156	695.60	685.60	690.60	2-inch stainless steel screen	BGP
MW-37	2532608.88	1973558.19	841.16	843.33	192	202	649.16	639.16	644.16	2-inch stainless steel screen	SS
MW-39	2532616.75	1974389.87	834.18	836.67	175	185	659.18	649.18	654.18	2-inch stainless steel screen	SS
MW-41	2531156.40	1975401.53	814.46	816.87	111	121	703.46	693.46	698.46	2-inch stainless steel screen	BGP
MW-42	2532613.32	1974380.69	834.21	836.31	141	151	693.21	683.21	688.21	2-inch stainless steel screen	BGP
PC-1B	2530160.35	1973268.15	755.49	757.28	36	46	719.49	709.49	714.49	2-inch stainless steel screen	GPWT
PC-1C	2530162.01	1973286.18	755.80	757.89	101	111	654.80	644.80	649.80	2-inch stainless steel screen	SS
PC-2B	2532010.43	1974162.53	840.43	842.54	85	103	755.43	737.43	746.43	2-inch stainless steel screen	GPWT
PC-3B	2532010.72	1973717.55	826.58	828.3	67	78	759.58	748.58	754.08	2-inch stainless steel screen	GPWT
PC-4B	2531377.35	1973122.19	800.53	802.8	71	81	729.53	719.53	724.53	2-inch stainless steel screen	GPWT
PC-5B	2530689.47	1973701.97	786.26	788.35	62	72	724.26	714.26	719.26	2-inch stainless steel screen	GPWT
PC-6B	2531016.38	1974314.45	828.85	831.01	86	96	742.85	732.85	737.85	2-inch stainless steel screen	GPWT

Notes:

[1] Hydrogeologic unit screened: GPWT, well open to the water table in the Galena-Platteville aquifer
BGP, well open to the base of the Galena-Platteville aquifer
MGP, well open to the middle of the Galena-Platteville aquifer
UAWT, well open to the water table in the unconsolidated aquifer
UAM, well open to the middle of the unconsolidated aquifer
SS, well open to the St. Peter Sandstone aquifer

[2] ft AMSL - feet Above Mean Sea Level

[3] ft bgs - feet below ground surface

[4] The tops of the wells for GW-9 and Well 7 are located underground within concrete vaults. The surveyed reference elevation is actually the top of the metal rim of the concrete vault at the ground surface.

[5] NA - not available

TABLE 4.1

SUMMARY OF MONITORING WELL DEVELOPMENT - BLOWDOWN LINE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Volume Purged (gallons)*	*pH (Std. Units)* [1]	*Conductivity (µS/cm)* [2]	*Temperature (°C)* [3]	*Observations*
AR-1	3/23/06	100	NR [4]	NR	NR	NR
AR-2	3/21/06	100	NR	NR	NR	NR
AR-3	3/22/06	75	NR	NR	NR	NR
AR-4	3/27/06	NR	7.04	1,300	12.5	Murky
		NR	7.47	1,405	12.8	Murky
		15	7.32	863	12.6	Murky
AR-5	03/23/06	7	NR	NR	NR	NR
AR-6	3/22/06	1.5	NR	NR	NR	Misty, turbid
	3/23/06	5	NR	NR	NR	NR
		7	7.79	637	10.4	Murky
		9	8.01	638	10.3	Murky
			Well going dry			
AR-7	3/28/06	50	NR	NR	NR	NR
AR-8	3/31/06	10	NR	NR	NR	NR
AR-9	4/4/06	12	NR	NR	NR	NR
AR-10	4/5/06	25	NR	NR	NR	NR
AR-11	4/11/06	Development conducted by the drilling company.				
CAR-1	3/22/06	100	7.43	577	11.1	Clear
		105	7.44	577	11.2	Clear
CAR-2	3/22/06	7	NR	NR	NR	NR
		Well runs dry				
CAR-3	3/29/06	40	NR	NR	NR	NR
		Well runs dry				
		45	NR	NR	NR	NR
		Well runs dry				
TW-13	3/7/06	8	7.41	743	10.7	Cloudy, light brown
		10	7.45	744	10.5	Cloudy, light brown
		12	7.42	744	10.7	Cloudy, light brown

SUMMARY OF MONITORING WELL DEVELOPMENT - BLOWDOWN LINE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Volume Purged (gallons)*	*pH (Std. Units)* [1]	*Conductivity (µS/cm)* [2]	*Temperature (°C)* [3]	*Observations*
TW-14	3/7/06	Well is dry	- -	- -	- -	- -
	4/5/06	75	NR	NR	NR	Clear
TW-15	3/7/06	1.0	NR	NR	NR	Light brown
		Well runs dry				
		1.3	NR	NR	NR	NR
		Well runs dry				
		6.3	7.54	737	9.7	Cloudy
		11.3	7.62	704	10.6	Cloudy
		16.3	7.57	689	10.6	Cloudy

Notes:

[1] Std. Units - standard units
[2] µS/cm - microSiemens per centimeter
[3] degrees Celsius
[4] NR - Not Reported

TABLE 4.2

SUMMARY OF GROUNDWATER ELEVATIONS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

		March 23, 2006		*April 4, 2006*	
Sample Location	*Reference Elevation (ft AMSL)* [1]	*Depth to Water (feet below Reference)*	*Groundwater Elevation (feet AMSL)*	*Depth to Water (feet below Reference)*	*Groundwater Elevation (feet AMSL)*
AR-1	871.10	39.70	831.40	39.72	831.38
AR-2	864.37	65.69	798.68	66.06	798.31
AR-3	857.76	59.60	798.16	60.27	797.49
AR-5	793.27	105.37	687.90	104.21	689.06
AR-6	782.22	107.75	674.47	107.54	674.68
AR-7	868.99	- -	- -	103.02	765.96
AR-8	869.71	- -	- -	53.57	816.14
CAR-1	692.25	20.03	672.22	20.06	672.20
CAR-2	769.40	32.90	736.50	26.84	742.56
CAR-3	869.11	- -	- -	44.49	824.62
DF-12	834.48	90.13	744.35	- -	- -
DF-13	838.84	94.45	744.39	94.16	744.68
DF-15	847.79	102.30	745.49	107.32	740.47
DF-17	820.14	91.00	729.14	90.87	729.27
DF-18	780.28	55.60	724.68	55.48	724.80
DF-19	788.53	64.02	724.51	63.90	724.63
DF-1D	787.48	62.92	724.56	62.75	724.73
DF-1S	786.89	61.92	724.97	61.80	725.09
DF-22D	811.56	85.78	725.78	- -	- -
DF-22S	811.85	75.99	735.86	85.86	725.99
DF-23	755.39	28.73	726.66	60.02	695.37
DF-24	813.68	91.28	722.40	91.11	722.57
DF-2S	794.96	69.48	725.48	69.00	725.96
DF-3S	791.82	65.54	726.28	65.46	726.36
DF-4DD	832.79	88.30	744.49	88.01	744.78
DF-6	827.89	90.71	737.18	89.72	738.17
DF-8	757.47	40.57	716.90	40.47	717.00
DF-9S	707.43	21.63	685.80	21.35	686.08
MS-1	728.94	34.91	694.03	35.60	693.34
MS-2	730.86	53.95	676.91	54.08	676.78
MW-1	861.77	61.82	799.95	61.01	800.76
MW-11	747.68	- -	- -	34.01	713.67
MW-12I	726.57	21.65	704.92	21.67	704.90
MW-12S	728.15	23.70	704.45	21.86	706.29
MW-15	822.23	78.25	743.98	78.02	744.21
MW-16	823.47	79.54	743.93	79.28	744.19
MW-2	861.07	177.45	683.62	176.89	684.18
MW-20R	821.85	141.20	680.65	141.12	680.73
MW-21	821.63	141.05	680.58	140.93	680.70
MW-30	758.68	38.27	720.41	- -	- -
MW-36	843.73	99.26	744.47	99.00	744.73
MW-37	843.33	161.72	681.61	161.60	681.73
MW-39	836.67	155.73	680.94	155.61	681.06
MW-41	816.87	73.02	743.85	72.74	744.13
MW-42	836.31	92.17	744.14	91.84	744.47
OS-NW-1D	825.05	148.85	676.20	81.93	743.12

TABLE 4.2

SUMMARY OF GROUNDWATER ELEVATIONS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

		March 23, 2006		*April 4, 2006*	
Sample Location	*Reference Elevation (ft AMSL)* [1]	*Depth to Water (feet below Reference)*	*Groundwater Elevation (feet AMSL)*	*Depth to Water (feet below Reference)*	*Groundwater Elevation (feet AMSL)*
OS-NW-1S	825.10	82.50	742.60	50.94	774.16
OS-SW-1	729.34	59.40	669.94	50.91	678.43
OS-SW-2D	734.21	54.45	679.76	54.32	679.89
OS-SW-2I	734.38	54.50	679.88	54.38	680.00
OS-SW-2S	734.26	49.75	684.51	49.20	685.06
OS-SW-3D	799.65	117.13	682.52	140.53	659.12
OS-SW-3S	800.11	104.29	695.82	126.28	673.83
PC-1B	757.28	40.07	717.21	40.03	717.25
PC-1C	757.89	78.90	678.99	78.90	678.99
PC-2B	842.54	- -	- -	86.26	756.28
PC-4B	802.80	76.65	726.15	76.53	726.27
PC-5B	788.35	65.44	722.91	65.88	722.47
PC-6B	831.01	81.19	749.82	90.43	740.58
RR-9	688.97	18.05	670.92	17.92	671.05
RR-10	675.83	- -	- -	3.66	672.17

Notes:

(1) feet AMSL - feet Above Mean Sea Level

TABLE 4.3

SUMMARY OF MONITORING WELL PURGING PARAMETERS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Well Volume (gallons)*	*Volume Purged (gallons)*	*pH (Std. Units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Turbidity (NTU)* [2]	*Observations*
AR-1	3/24/06	- -	- -	7.79	609	10.3	17	- -
			- -	7.89	600	10.8	14.6	- -
			7	7.66	588	11.0	14	- -
	3/29/06	- -	- -	7.82	571	10.6	29.2	- -
			- -	7.68	572	11.2	12.1	- -
			- -	7.52	565	11.4	7.9	- -
			7	7.54	560	11.3	6.2	- -
	4/6/06	- -	5	7.35	574	11.5	121	- -
			10	7.39	570	11.6	74	- -
			15	7.41	568	11.6	47	- -
	4/12/06	- -	- -	8.44	638	14.3	- -	Clear to murky
			- -	7.89	572	13.3	- -	Clear to murky
			7	7.79	564	13.4	- -	Clear to murky
AR-2	3/24/06	- -	- -	7.53	806	9.0	216	- -
			- -	7.53	811	9.9	510	- -
			2.5	7.78	862	9.8	625	- -
	3/27/06	2.5	- -	8.39	807	10.3	80.5	- -
			- -	7.94	792	10.2	65	- -
			- -	7.78	800	10.6	41.6	- -
			- -	7.73	812	10.2	40.3	- -
			3.5	7.69	801	10.1	37.8	- -
	3/29/06	- -	- -	7.93	825	11.2	91.9	- -
			- -	7.71	830	12.1	82.7	- -
			- -	7.55	831	11.9	74.5	- -
			5	7.68	821	11.9	89.3	- -
	4/3/06	- -	- -	7.75	845	13.2	78.9	- -
			- -	7.67	854	13.3	125	- -
			5	7.65	870	13.6	127	- -
	4/10/06	- -	- -	7.45	880	12.5	166	- -
			- -	7.56	857	12.3	135	- -
			3	7.43	871	13.4	117	- -
AR-3	3/24/06	0.2	- -	7.30	735	9.6	300	- -
			- -	7.17	724	10.6	310	- -
			5	7.14	732	10.6	315	- -
	3/27/06	- -	- -	7.30	731	10.9	64.9	- -
			- -	7.19	714	11.1	46.4	- -
			- -	7.18	722	11.3	25.2	- -
			- -	7.19	723	11.4	15.3	- -
			7	- -	- -	- -	12.5	- -
	3/29/06	- -	- -	7.27	708	11.2	15.05	- -
			- -	7.28	714	11.2	7.48	- -
			7	7.21	711	11.5	4.82	- -
	4/3/06	- -	- -	7.40	762	13.1	22	- -
			- -	7.40	712	11.9	12	- -
			8	7.43	715	12.2	9.6	- -
	4/10/06	- -	- -	7.26	734	13.8	84.4	- -
			- -	7.37	728	13.4	78.2	- -
			8	7.15	726	13.4	75.3	- -
AR-4	3/28/06	4.9	- -	7.31	1,220	12.6	560	- -
			- -	7.31	1,215	13.0	416	- -
			5	7.41	1,213	12.2	518	- -
	3/29/06	1.4	- -	7.45	1,169	13.0	116	- -
			- -	7.22	1,168	13.5	165.2	- -
			6.5	7.32	1,162	13.3	160.2	- -
	4/4/06	- -	- -	7.16	1,223	11.3	608	- -
			- -	7.65	1,224	12.3	574	- -
			10	7.62	1,221	12.3	511	- -
	4/10/06	- -	- -	6.61	1,209	11.3	522	- -
			- -	6.72	1,148	13.3	439	- -
			- -	6.85	1,129	14.2	204	- -
			9.5	7.05	1,160	14.4	336	- -
AR-5	3/24/06	- -	- -	8.14	998	10.0	908	- -
			- -	7.86	930	10.1	552	- -

TABLE 4.3

SUMMARY OF MONITORING WELL PURGING PARAMETERS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Well Volume (gallons)*	*Volume Purged (gallons)*	*pH (Std. Units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Turbidity (NTU)* [2]	*Observations*
			- -	7.71	880	10.2	950	- -
	3/29/06	2.6	- -	7.85	895	10.6	205	- -
			- -	7.68	888	12.2	160	- -
			4.5	7.63	892	13.3	163.7	- -
	4/6/06	- -	- -	7.81	1,104	10.4	355	- -
			- -	7.90	1,025	11.2	313	- -
			- -	7.81	1,037	11.6	- -	- -
	4/11/06	- -	- -	7.20	1,047	12.7	862	- -
			- -	7.16	1,077	14.5	884	- -
			4.5	7.18	1,072	14.9	927	- -
AR-6	3/24/06	- -	- -	7.87	334	9.7	1,041	- -
			- -	8.06	628	10.0	1,065	- -
			2.5	7.96	624	10.2	1,030	- -
	3/29/06	1.3	- -	8.00	635	11.6	1,080	- -
			- -	7.78	614	11.3	1,182	- -
			3.5	7.69	616	11.9	1,052	- -
	4/6/06	- -	3.5	7.92	606	13.7	123	- -
	4/11/06	- -	- -	7.36	629	12.5	430	- -
			- -	7.36	645	12.5	381	- -
			- -	7.36	648	12.6	422	- -
AR-7	3/30/06	1.5	6.8	7.94	1,100	13.5	>999	- -
	4/5/06	- -	1	7.98	1,189	12.1	439	- -
			1.5	7.58	1,168	13.1	420	- -
			2.5	7.56	1,151	13.4	415	- -
	4/11/06	1.1	- -	8.08	1,205	14.4	- -	Murky
			- -	7.78	1,178	13.9	- -	Murky
			2	7.78	1,160	13.7	- -	Murky
AR-8	4/5/06	- -	0.5	8.15	522	11.5	343	- -
			0.75	8.26	509	11.9	400	- -
			2	8.46	543	11.7	609	- -
	4/11/06	3.0	- -	8.08	572	12.6	- -	- -
			- -	8.02	571	12.7	- -	- -
			3	8.35	536	12.6	- -	- -
AR-9	4/5/06	- -	0.75	7.77	985	13.6	452	- -
			1.25	7.78	989	13.0	470	- -
			- -	7.69	919	13.1	- -	- -
	4/11/06	1.6	- -	7.61	909	14.6	114	- -
			- -	7.81	912	13.8	202	- -
			2.5	7.88	911	13.8	286	- -
AR-10	4/6/06	1.6	1.6	7.11	4.64	10.5	624	- -
			3	7.00	4.28	10.6	711	- -
			4.5	6.97	4.20	10.6	763	- -
	4/12/06	1.6	- -	7.22	3,850	11.7	- -	Clear to murky
			- -	7.08	3,870	11.3	- -	Clear to murky
			3	7.03	3,800	11.2	- -	Clear to murky
AR-11	4/18/06	10.1	7.5	Water level dropped to the top of the pump, no readings				Clear, no odor
			11.5	No readings				Clear, no odor
CAR-1	3/23/06	5.6	- -	7.08	566	11.0	63	- -
			- -	7.48	562	11.7	50.2	- -
			- -	7.45	561	10.9	34	- -
	3/29/06	- -	- -	7.75	565	10.1	405	- -
			- -	7.63	551	10.4	203	- -
			- -	7.55	559	10.5	69.7	- -
			- -	7.54	561	10.5	31.7	- -
			8	- -	- -	- -	11.6	- -
	4/6/06	5.5	20	7.76	547	10.8	72	- -
	4/12/06	- -	- -	7.92	572	13.8	--	Clear to murky
			- -	7.97	562	12.7	--	Clear to murky
			5	7.90	565	13.0	--	Clear to murky

TABLE 4.3

SUMMARY OF MONITORING WELL PURGING PARAMETERS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Well Volume (gallons)*	*Volume Purged (gallons)*	*pH (Std. Units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Turbidity (NTU)* [2]	*Observations*
CAR-2	3/24/06	0.6	1	7.11	878	9.8	>999	- -
	3/29/06	0.4	- -	7.72	809	11.4	1210	- -
			0.33	7.42	807	11.0	1232	- -
	4/6/06	1.4	1.5	7.67	800	11.3	>999	- -
			3	7.60	793	11.1	>999	- -
	4/12/06	- -	- -	7.79	865	12.0	- -	- -
			- -	7.38	864	11.7	- -	- -
			1	7.37	858	12.1	- -	- -
CAR-3	3/30/06	2.9	3	7.98	920	17.1	>999	- -
	4/5/06	- -	1.25	7.75	956	16.4	168	- -
			- -	7.67	947	16.4	144	- -
			3.5	7.65	957	16.5	108	- -
	4/11/06	3.1	- -	7.79	933	17.0	- -	- -
			- -	7.89	945	17.1	- -	- -
			4	7.87	949	17.2	- -	- -
DF-1S	3/30/06	0.25	- -	7.28	823	11.6	170	- -
			- -	7.27	818	11.1	182	- -
			1	7.24	815	11.1	161	- -
	4/6/06	0.24	0.25	7.77	838	8.4	>999	- -
			0.5	7.71	844	8.4	>999	- -
			0.75	7.69	846	8.4	>999	- -
DF-1D	3/29/06	3.6	- -	7.38	820	12.2	7.65	- -
			- -	7.38	812	11.9	2.37	- -
			8.5	7.41	811	11.9	3.62	- -
	4/6/06	3.5	3.5	6.54	387	9.4	36	- -
			7	6.50	426	9.5	41	- -
			10.5	6.40	444	9.5	10	- -
DF-2S	3/29/06	1.1	- -	7.87	690	14.8	217	- -
			- -	7.27	681	13.4	217	- -
			- -	7.20	684	13.5	217	- -
			Well dry at slow purge rate					
	4/6/06	1.2	1			No readings		- -
			Dry at approximately 1.0 gallon					
DF-3S	3/31/06	0.6	- -	8.16	795	10.8	760	Murky
			- -	7.99	793	10.6	683	Murky
			2	7.94	793	10.6	694	Murky
	4/6/06	0.54	2			No readings		- -
DF-4DS	3/30/06	0.94	- -	8.05	707	11.9	1415	- -
			- -	7.93	712	11.1	1398	- -
			3	7.98	718	11.1	1440	- -
	4/6/06	0.91	3	7.94	727	11.1	>999	- -
DF-6	3/30/06	5.3	- -	7.18	668	14.0	10.55	- -
			- -	7.21	656	14.6	11.58	- -
			6	7.26	651	14.1	13.7	- -
	4/6/06	- -	- -	7.27	691	10.9	19.1	- -
			- -	7.26	670	11.2	20.2	- -
			10	7.30	656	11.4	23.2	- -
DF-12	3/31/06	7.5	- -	7.70	771	11.9	1.47	- -
			- -	7.35	773	11.6	0.97	- -
			8.5	7.28	771	11.6	1.07	- -
	4/6/06	- -	- -	7.27	779	11.8	2.08	- -
			- -	7.26	782	12.1	0.99	- -
			8.5	7.26	782	12.1	0.82	- -
DF-19	3/30/06	0.5	5	7.22	837	11.0	289	- -
	4/6/06	0.29	3	7.31	848	9.5	61	- -
DF-24	3/30/06	- -	- -	7.62	850	13.4	49.4	- -
			- -	7.32	844	13.2	34.9	- -
			- -	7.27	845	13.2	25.4	- -

TABLE 4.3

SUMMARY OF MONITORING WELL PURGING PARAMETERS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Well Volume (gallons)*	*Volume Purged (gallons)*	*pH (Std. Units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Turbidity (NTU)* [2]	*Observations*
			20	7.29	843	13.2	34.5	- -
	4/6/06	- -	- -	7.22	844	11.3	2.84	- -
			- -	7.16	846	11.4	0.8	- -
			22	7.15	848	11.4	0.37	- -
GW-9	3/7/06	39	20	7.43	816	12.6	- -	Clear, no odor
			40	7.42	814	12.6	- -	Clear, no odor
			60	7.39	811	12.4	- -	Clear, no odor
MW-1	3/31/06	1.8	- -	7.44	554	10.7	516	- -
			- -	7.67	542	10.4	600	- -
			4	7.39	541	10.3	502	- -
	4/6/06	- -	- -	7.73	560	10.4	176	- -
			7	7.71	559	10.5	160	- -
MW-2	3/31/06	6.5	- -	8.39	397	13.9	6.17	- -
			- -	8.18	543	13.7	15.4	- -
			15	7.65	563	13.9	5.43	- -
	4/6/06	- -	- -	7.50	589	12.6	3.28	- -
			- -	7.47	594	12.8	1.70	- -
			15	7.49	584	12.8	1.28	- -
MW-3	3/31/06	1.4	- -	7.67	670	11.7	156	- -
			- -	7.33	663	11.6	210	- -
			2.8	7.29	665	11.6	199	- -
	4/6/06	1.4	6	7.29	644	11.6	142	- -
MW-30	3/31/06	0.5	- -	7.60	589	9.8	840	- -
			- -	7.55	587	10.1	972	- -
			0.8	7.52	589	10.1	1,024	- -
	4/6/06	0.4	1		No readings			- -
MW-36	3/31/06	9.5	- -	7.30	842	12.9	74.9	- -
			- -	7.28	815	12.1	39.3	- -
			18	7.32	812	12.6	39.8	- -
	4/6/06	- -	- -	7.15	831	11.9	9.82	- -
			- -	7.18	833	11.9	8.19	- -
			12	7.21	831	10.9	6.19	- -
MW-37	3/31/06	6.5	- -	7.46	616	15.0	11.8	- -
			- -	7.41	604	14.6	4.81	- -
			15	7.38	604	14.4	0.67	- -
	4/6/06	- -	- -	7.21	609	12.5	5.2	- -
			- -	7.27	609	12.9	2.94	- -
			8	7.29	615	12.9	2.43	- -
MW-39	3/31/06	2.2	- -	12.20	2,630	13.1	8.41	- -
			- -	11.45	1,002	14.3	128	- -
			- -	10.55	357	13.6	9.79	- -
			- -	9.41	393	13.2	- -	- -
			10	9.27	394	13.5	- -	- -
	4/6/06	- -	- -	9.31	543	12.6	23	- -
			- -	9.16	553	12.8	14.26	- -
			8	8.96	573	12.9	13.28	- -
PC-1B	3/31/06	1.3	- -	7.37	783	9.4	1,180	- -
			- -	7.32	788	9.9	1,124	- -
			3.5	7.28	788	9.9	1,098	- -
	4/6/06	1.25	3	7.88	825	9.0	72.1	- -
PC-1C	3/31/06	6	- -	7.42	615	11.7	12.95	- -

TABLE 4.3

SUMMARY OF MONITORING WELL PURGING PARAMETERS - MARCH/APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Well Volume (gallons)*	*Volume Purged (gallons)*	*pH (Std. Units)*	*Conductivity (µS/cm)* [1]	*Temperature (°C)*	*Turbidity (NTU)* [2]	*Observations*
			- -	7.37	615	11.9	6.89	- -
			7.5	7.47	615	11.9	4.76	- -
	4/6/06	- -	5	7.44	655	10.3	98.3	- -
PC-2B	3/31/06	1.2	- -	7.49	683	12.0	798	- -
			- -	7.46	686	11.1	752	- -
			4	7.33	664	11.1	722	- -
	4/6/06	1.2	3.5	7.33	657	11.1	641	- -
PC-5B	3/31/06	1.4	- -	7.69	776	10.6	1040	- -
			- -	7.35	782	10.5	182	- -
			- -	7.27	778	10.7	144	- -
			3.5	7.27	775	10.7	138	- -
	4/6/06	1.4	1.5	7.97	763	10.6	210	- -
			3	7.48	741	10.7	164	- -
PC-6B	3/31/06	1.2	- -	7.15	975	14.1	540	- -
			- -	7.06	990	11.6	566	- -
			2.5	7.08	987	12.0	612	- -
	4/6/06	1.25	3.5	7.69	830	9.0	>999	- -
TW-13	3/8/06	0.4	0.5	7.59	757	10.3	- -	Clear
			1	7.54	757	10.3	- -	Clear
			1.5	7.54	756	10.3	- -	Clear
	4/6/06	0.48	1	7.64	800	9.9	>999	- -
	4/12/06	0.5	- -	7.77	791	11.1	- -	Murky
			- -	7.70	770	10.4	- -	Murky
			1	7.72	775	10.3	- -	Murky
TW-14	4/6/06	1.5	1	7.83	842	10.6	>999	- -
			2	7.77	836	10.7	>999	- -
			3	7.69	819	10.7	>999	- -
	4/12/06	1.4	- -	7.59	793	11.2	--	Murky
			- -	7.66	785	10.9	--	Murky
			2.5	7.60	779	10.8	--	Murky
TW-15	3/8/06	0.9	13	7.49	678	11.7	- -	Slightly cloudy
			14	7.48	681	11.7	- -	Slightly cloudy
			15	7.43	681	11.7	- -	Slightly cloudy
	4/6/06	1.12	1	7.71	782	9.8	>999	- -
			Dry at 2			No readings		- -
			3			No readings		- -
	4/12/06	1.1	- -	7.53	814	11.5	- -	Murky
			- -	7.52	775	10.3	- -	Murky
			2.5	7.51	776	10.3	- -	Murky

Notes:

(1) µS/cm - microSiemens per centimeter
(2) NTU - nephelometric turbidity units

TABLE 4.4

SAMPLE SUMMARY - BLOWDOWN LINE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINIOS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Sample Analyses*
GW-9	GW-030806-KD-01	- -	3/8/2006	Tritium
TW-13	GW-030806-KD-02	- -	3/8/2006	Tritium
TW-13	GW-030806-KD-03	Duplicate	3/8/2006	Tritium
TW-15	GW-030806-KD-04	- -	3/8/2006	Tritium
CAR-1	GW-19232-032306-SP-CAR-1	- -	3/23/2006	Tritium
AR-1	GW-19232-032306-SP-AR-1	- -	3/24/2006	Tritium
AR-2	GW-19232-032306-SP-AR-2	- -	3/24/2006	Tritium
AR-3	GW-19232-032306-SP-AR-3	- -	3/24/2006	Tritium
AR-5	GW-19232-032306-SP-AR-5	- -	3/24/2006	Tritium
AR-6	GW-19232-032306-SP-AR-6	- -	3/24/2006	Tritium
CAR-2	GW-19232-032306-SP-CAR-2	- -	3/24/2006	Tritium
AR-3	GW-19232-032706-NK-AR-3	- -	3/27/2006	Tritium
AR-2	GW-19232-032708-EV-AR-2	- -	3/27/2006	Tritium
AR-4	GW-19232-032806-NK-CAR-4	- -	3/28/2006	Tritium
AR-5	GW-19232-032906-EV-AR-5	- -	3/29/2006	Tritium
AR-6	GW-19232-032906-EV-AR-6	- -	3/29/2006	Tritium
CAR-2	GW-19232-032906-EV-CAR-2	- -	3/29/2006	Tritium
AR-4	GW-19232-032906-EV-CAR-4	- -	3/29/2006	Tritium
AR-1	GW-19232-032906-NK-AR-1	- -	3/29/2006	Tritium
AR-2	GW-19232-032906-NK-AR-2	- -	3/29/2006	Tritium
AR-3	GW-19232-032906-NK-AR-3	- -	3/29/2006	Tritium
CAR-1	GW-19232-032906-NK-CAR-1	- -	3/29/2006	Tritium
AR-7	AR-7	- -	3/30/2006	Tritium
CAR-3	CAR-3	- -	3/30/2006	Tritium
DF-19	DF-19	- -	3/30/2006	Tritium
DF-1D	DF-1D	- -	3/30/2006	Tritium
DF-1S	DF-1S	- -	3/30/2006	Tritium
DF-24	DF-24	- -	3/30/2006	Tritium
DF-2S	DF-2S	- -	3/30/2006	Tritium
DF-4DS	DF-4DS	- -	3/30/2006	Tritium
DF-6	DF-6	- -	3/30/2006	Tritium
DF-12	DF-12	- -	3/31/2006	Tritium
DF-3S	DF-3S	- -	3/31/2006	Tritium
MW-1	MW-1	- -	3/31/2006	Tritium
MW-2	MW-2	- -	3/31/2006	Tritium
MW-3	MW-3	- -	3/31/2006	Tritium
MW-30	MW-30	- -	3/31/2006	Tritium
MW-36	MW-36	- -	3/31/2006	Tritium
MW-37	MW-37	- -	3/31/2006	Tritium
MW-39	MW-39	- -	3/31/2006	Tritium
PC-1B	PC-1B	- -	3/31/2006	Tritium
PC-1C	PC-1C	- -	3/31/2006	Tritium

TABLE 4.4

SAMPLE SUMMARY - BLOWDOWN LINE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINIOS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Sample Analyses*
PC-2B	PC-2B	- -	3/31/2006	Tritium
PC-5B	PC-5B	- -	3/31/2006	Tritium
PC-5B	PC-5B	Duplicate	3/31/2006	Tritium
PC-6B	PC-6B	- -	3/31/2006	Tritium
AR-2	GW040306-NK-AR-2	- -	4/3/2006	Tritium
AR-3	GW040306-NK-AR-3	- -	4/3/2006	Tritium
AR-4	GW040406-NK-AR-4	- -	4/4/2006	Tritium
AR-7	GW-040506-NK-AR-7	- -	4/5/2006	Tritium and Radionuclides [(1)]
AR-8	GW-040506-NK-AR-8	- -	4/5/2006	Tritium and Radionuclides
AR-9	GW-040506-NK-AR-9	- -	4/5/2006	Tritium and Radionuclides
CAR-3	GW-040506-NK-CAR-3	- -	4/5/2006	Tritium and Radionuclides
AR-5	GW-040606-NK-AR-5	- -	4/6/2006	Tritium and Radionuclides
AR-6	GW-040606-NK-AR-6	- -	4/6/2006	Tritium and Radionuclides
DF-12	GW-040606-NK-DF-12	- -	4/6/2006	Tritium
DF-24	GW-040606-NK-DF-24	- -	4/6/2006	Tritium
DF-6	GW-040606-NK-DF-6	- -	4/6/2006	Tritium
DF-6	GW-040606-NK-DF-6	Duplicate	4/6/2006	Tritium
MW-1	GW-040606-NK-MW-12	- -	4/6/2006	Tritium
MW-2	GW-040606-NK-MW-12	- -	4/6/2006	Tritium
MW-36	GW-040606-NK-MW-36	- -	4/6/2006	Tritium
MW-37	GW-040606-NK-MW-37	- -	4/6/2006	Tritium
MW-39	GW-040606-NK-MW39	- -	4/6/2006	Tritium
PC-1C	GW-040606-NK-PC-1C	- -	4/6/2006	Tritium
MW-3	GW-19232-0406060-BW-MW-3	- -	4/6/2006	Tritium
AR-1	GW-19232-040606-BW-AR-1	- -	4/6/2006	Tritium and Radionuclides
AR-10	GW-19232-040606-BW-AR-10	- -	4/6/2006	Tritium and Radionuclides
CAR-1	GW-19232-040606-BW-CAR-1	- -	4/6/2006	Tritium and Radionuclides
CAR-2	GW-19232-040606-BW-CAR-2	- -	4/6/2006	Tritium and Radionuclides
DF-19	GW-19232-040606-BW-DF-19	- -	4/6/2006	Tritium
DF-1D	GW-19232-040606-BW-DF-1D	- -	4/6/2006	Tritium
DF-1S	GW-19232-040606-BW-DF-1S	- -	4/6/2006	Tritium
DF-2S	GW-19232-040606-BW-DF-2S	- -	4/6/2006	Tritium
DF-4DS	GW-19232-040606-BW-DF-4DS	- -	4/6/2006	Tritium
DF-4DS	GW-19232-040606-BW-DF-4DS	Duplicate	4/6/2006	Tritium
PC-1B	GW-19232-040606-BW-PC-1B	- -	4/6/2006	Tritium
PC-2B	GW-19232-040606-BW-PC-2B	- -	4/6/2006	Tritium
PC-5B	GW-19232-040606-BW-PC-5B	- -	4/6/2006	Tritium
PC-6B	GW-19232-040606-BW-PC-6B	- -	4/6/2006	Tritium
TW-13	GW-19232-040606-BW-TW-13	- -	4/6/2006	Tritium and Radionuclides
TW-14	GW-19232-040606-BW-TW-14	- -	4/6/2006	Tritium and Radionuclides
TW-15	GW-19232-040606-BW-TW-15	- -	4/6/2006	Tritium and Radionuclides
DF-3S	GW-19232-040606-DW-DF-3S	- -	4/6/2006	Tritium

TABLE 4.4

SAMPLE SUMMARY - BLOWDOWN LINE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINIOS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Sample Analyses*
MW-30	GW-19232-040606-GW-MW-30	- -	4/6/2006	Tritium
AR-2	GW-19232-041006-EV-AR-2	- -	4/10/2006	Tritium and Radionuclides
AR-3	GW-19232-041006-EV-AR-3	- -	4/10/2006	Tritium and Radionuclides
AR-4	GW-19232-041006-EV-AR-4	- -	4/10/2006	Tritium and Radionuclides
AR-5	GW-19232-041106-EV-AR-5	- -	4/11/2006	Tritium and Radionuclides
AR-6	GW-19232-041106-EV-AR-6	- -	4/11/2006	Tritium and Radionuclides
AR-7	GW-19232-041106-EV-AR-7	- -	4/11/2006	Tritium and Radionuclides
AR-8	GW-19232-041106-EV-AR-8	- -	4/11/2006	Tritium and Radionuclides
AR-9	GW-19232-041106-EV-AR-9	- -	4/11/2006	Tritium and Radionuclides
CAR-3	GW-19232-041106-EV-CAR-3	- -	4/11/2006	Tritium and Radionuclides
AR-1	GW-19232-041106-EV-AR-1	- -	4/12/2006	Tritium and Radionuclides
AR-10	GW-19232-041106-EV-AR-10	- -	4/12/2006	Tritium and Radionuclides
CAR-1	GW-19232-041106-EV-CAR-1	- -	4/12/2006	Tritium and Radionuclides
CAR-2	GW-19232-041106-EV-CAR-2	- -	4/12/2006	Tritium and Radionuclides
CAR-2	GW-19232-041106-EV-CAR-2	Duplicate	4/12/2006	Tritium and Radionuclides
TW-14	GW-19232-041106-EV-TW-14	- -	4/12/2006	Tritium and Radionuclides
TW-15	GW-19232-041106-EV-TW-15	- -	4/12/2006	Tritium and Radionuclides
TW-13	GW-19232-041206-EV-TW-13	- -	4/12/2006	Tritium and Radionuclides
AR-11	GW-041806-KD-AR-11	- -	4/18/2006	Tritium and Radionuclides

Notes:

QC - Quality Control
(1) Radionuclides: Sr-89/90, Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-Nb-95, I-131, Cs-134, Cs-137, and Ba-La-140

TABLE 4.5

SUMMARY OF GROUNDWATER ELEVATIONS - APRIL 24, 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Reference Elevation (ft AMSL)*	*April 24, 2006*	
		Depth to Water (ft below Reference)	*Groundwater Elevation (ft AMSL)*
Exelon-Owned Wells			
AR-1	871.10	35.16	835.94
AR-2	867.38	68.88	798.50
AR-3	860.64	63.77	796.87
AR-4	832.74	90.00	742.74
AR-5	795.75	107.67	688.08
AR-6	784.55	109.55	675.00
AR-7	871.28	104.54	766.74
AR-8	872.11	33.56	838.55
AR-9	876.77	59.50	817.27
AR-10	859.15	21.49	837.66
AR-11	831.65	89.24	742.41
CAR-1	694.87	22.24	672.63
CAR-2	772.01	35.12	736.89
CAR-3	872.16	45.64	826.52
TW-13	700.47	17.11	683.36
TW-14	699.41	26.48	672.93
TW-15	695.73	22.84	672.89
GW-9	841.73	96.27	745.46
Well 7	891.24	115.77	775.47
Byron Salvage PRP Group-Owned Wells			
DF-1S	786.89	60.85	726.04
DF-1D	787.48	61.81	725.67
DF-2S	794.96	67.88	727.08
DF-3S	791.82	64.49	727.33
DF-4DS	832.98	67.16	765.82
DF-4DD	832.79	86.62	746.17
DF-5S	844.12	44.35	799.77
DF-6	827.89	88.69	739.20
DF-7S	712.38	Dry	- -
DF-7D	712.55	37.47	675.08
DF-8	757.47	39.87	717.60
DF-10	834.01	Dry	- -
DF-11	834.21	85.21	749.00
DF-12	834.48	88.42	746.06
DF-13	838.84	92.78	746.06
DF-15	847.79	106.81	740.98
DF-17	820.14	90.38	729.76
DF-18	780.28	54.56	725.72

TABLE 4.5

SUMMARY OF GROUNDWATER ELEVATIONS - APRIL 24, 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Reference Elevation (ft AMSL)*	*April 24, 2006*	
		Depth to Water (ft below Reference)	*Groundwater Elevation (ft AMSL)*
DF-19	788.53	62.93	725.60
DF-22S	811.85	85.51	726.34
DF-22D	811.56	85.22	726.34
DF-23	755.39	38.22	717.17
DF-24	813.68	89.89	723.79
DF-25	786.36	17.25	769.11
MW-1	861.77	62.14	799.63
MW-2	861.07	176.85	684.22
MW-3	858.6	71.09	787.51
MW-15	822.23	76.67	745.56
MW-16	823.47	77.91	745.56
MW-20R	821.85	140.66	681.19
MW-21	821.63	140.47	681.16
MW-30	758.68	38.42	720.26
MW-36	843.73	97.59	746.14
MW-37	843.33	161.18	682.15
MW-39	836.67	155.18	681.49
MW-41	816.87	71.38	745.49
MW-42	836.31	90.46	745.85
PC-1B	757.28	39.27	718.01
PC-1C	757.89	78.36	679.53
PC-2B	842.54	86.31	756.23
PC-3B	828.3	67.72	760.58
PC-4B	802.8	76.31	726.49
PC-5B	788.35	64.75	723.60
PC-6B	831.01	87.83	743.18

Notes:

ft AMSL - feet above Mean Sea Level

TABLE 4.6

SAMPLE SUMMARY - FLEETWIDE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Sample Analyses*
DF-12	WG-BYN-042506-SS-01	--	4/25/06	Tritium
DF-4DS	WG-BYN-042506-JK-02	--	4/25/06	Tritium
DF-1D	WG-BYN-042506-SS-03	--	4/25/06	Tritium
DF-1S	WG-BYN-042506-JK-04	--	4/25/06	Tritium
DF-6	WG-BYN-042506-SS-05	--	4/25/06	Tritium
DF-2S	WG-BYN-042506-JK-06	--	4/25/06	Tritium
PC-2B	WG-BYN-042506-SS-07	--	4/25/06	Tritium
DF-3S	WG-BYN-042506-JK-08	--	4/25/06	Tritium
MW-36	WG-BYN-042506-SS-09	MS/MSD	4/25/06	Tritium
DF-3S	WG-BYN-042506-JK-10	Duplicate	4/25/06	Tritium
PC-5B	WG-BYN-042506-SS-11	--	4/25/06	Tritium
DF-19	WG-BYN-042506-JK-12	--	4/25/06	Tritium
DF-24	WG-BYN-042506-SS-13	--	4/25/06	Tritium
MW-1	WG-BYN-042606-JK-14	--	4/26/06	Tritium
--	RB-BYN-042606-SS-15	Rinsate	4/26/06	Tritium
--	WG-BYN-042606-JK-16	Rinsate	4/26/06	Tritium
PC-6B	WG-BYN-042606-SS-17	--	4/26/06	Tritium
MW-3	WG-BYN-042606-JK-18	--	4/26/06	Tritium
PC-6B	WG-BYN-042606-SS-19	Duplicate	4/26/06	Tritium
AR-3	WG-BYN-042606-JK-20	--	4/26/06	Tritium and Radionuclides [1]
PC-1C	WG-BYN-042606-SS-21	--	4/26/06	Tritium
AR-2	WG-BYN-042606-JK-22	--	4/26/06	Tritium and Radionuclides
PC-1B	WG-BYN-042606-SS-23	--	4/26/06	Tritium
AR-10	WG-BYN-042606-JK-24	--	4/26/06	Tritium and Radionuclides
AR-1	WG-BYN-042606-SS-25	--	4/26/06	Tritium and Radionuclides
AR-9	WG-BYN-042706-KD-26	--	4/27/06	Tritium and Radionuclides
AR-11	WG-BYN-042606-SS-27	--	4/26/06	Tritium and Radionuclides
CAR-3	WG-BYN-042706-KD-28	--	4/27/06	Tritium and Radionuclides
MW-39	WG-BYN-042606-SS-29	--	4/26/06	Tritium
AR-8	WG-BYN-042706-KD-30	--	4/27/06	Tritium and Radionuclides

TABLE 4.6

SAMPLE SUMMARY - FLEETWIDE INVESTIGATION
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Sample Analyses*
DF-13	WG-BYN-042606-SS-31	- -	4/26/06	Tritium
AR-7	WG-BYN-042706-KD-32	- -	4/27/06	Tritium and Radionuclides
MW-37	WG-BYN-042606-SS-33	- -	4/26/06	Tritium
MW-2	WG-BYN-042706-SS-34	- -	4/27/06	Tritium
- -	RB-BYN-042706-SS-35	Rinsate	4/27/06	Tritium and Radionuclides
CAR-1	WG-BYN-042706-SS-36	- -	4/27/06	Tritium and Radionuclides
TW-14	WG-BYN-042706-SS-37	- -	4/27/06	Tritium and Radionuclides
TW-15	WG-BYN-042706-SS-38	- -	4/27/06	Tritium and Radionuclides
TW-13	WG-BYN-042706-SS-39	- -	4/27/06	Tritium and Radionuclides
TW-13	WG-BYN-042706-SS-40	Duplicate	4/27/06	Tritium and Radionuclides
AR-6	WG-BYN-042706-SS-41	- -	4/27/06	Tritium and Radionuclides
AR-5	WG-BYN-042706-SS-42	- -	4/27/06	Tritium and Radionuclides
- -	RB-BYN-042706-SS-43	Rinsate	4/27/06	Tritium and Radionuclides
AR-4	WG-BYN-042706-SS-44	- -	4/27/06	Tritium and Radionuclides
Well 7	WG-BYN-042706-KD-45	- -	4/27/06	Tritium and Radionuclides
Well 7	WG-BYN-042706-KD-46	Duplicate	4/27/06	Tritium and Radionuclides
CAR-2	WG-BYN-042706-SS-47	- -	4/27/06	Tritium and Radionuclides
GW-9	WG-BYN-042806-KD-48	MS/MSD	4/28/06	Tritium and Radionuclides
MW-30	WG-BYN-042806-SS-49	- -	4/28/06	Tritium

Notes:

QC - Quality Control

MS/MSD - matrix spike/matrix spike duplicate

(1) Radionuclides: Sr-89/90, Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-Nb-95, I-131, Cs-134, Cs-137, and Ba-La-140

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
AR-1	4/26/06	34.91	7	7.70	13.37	543	11.3	53.6	10.79	37.30	- -
			12	7.51	13.72	538	- -	57.3	9.68	- -	- -
						Equipment malfunction					
			58	8.14	14.23	531	7.5	43.7	9.42	38.02	- -
			63	7.89	13.69	531	4.3	54.7	10.64	42.45	- -
			68	7.72	13.69	529	3.2	60.4	10.54	43.36	- -
			73	7.66	13.82	530	2.4	61.5	10.94	43.62	- -
			76	7.68	13.82	528	2.5	62.8	10.16	43.45	- -
AR-2	4/26/06	68.72	10	7.18	13.28	814	50	112	8.20	72.45	Slightly cloudy, no odor
			15	7.16	13.54	820	27	112	8.15	73.90	Slightly cloudy, no odor
			20	7.11	13.84	814	22	114	7.97	74.03	Clear
			25	7.13	13.22	814	18	114	7.89	74.10	Clear
			30	7.15	13.20	820	15	110	7.86	74.14	Clear
			35	7.14	13.18	824	16	109	7.82	74.17	Clear
AR-3	4/26/06	63.90	10	7.02	13.09	683	50	91	6.58	64.10	Slightly cloudy, no odor
			15	7.01	13.23	684	50	95	6.57	64.12	Slightly cloudy, no odor
			20	6.98	13.20	682	33	100	6.32	64.13	Clear
			25	7.01	13.17	683	19	101	6.29	64.15	Clear
			30	6.98	13.22	682	12	105	6.40	64.17	Clear
AR-4	4/27/06	89.63	8	7.99	15.90	1,138	232	30.1	7.45	93.27	- -
			13	9.22	15.86	1,133	265	31.4	6.97	93.59	- -
			18	9.69	15.44	1,125	294	30.3	6.48	93.91	- -
			23	9.66	15.79	1,125	282	29.3	5.90	94.31	- -
			28	9.60	15.86	1,123	270	28.3	5.40	94.62	- -
			33	9.27	16.10	1,124	252	31.3	5.11	94.88	- -
			36	9.33	16.19	1,124	226	30.2	4.92	95.00	- -
			39	9.25	16.57	1,124	208	29.7	4.72	95.09	- -
			42	9.20	16.67	1,125	188	30.6	4.62	95.15	- -
AR-5	4/27/06	107.49	5	7.55	16.16	988	497	20.4	4.88	110.99	- -
			10	7.83	16.94	997	404	16.3	3.09	111.37	- -
			15	7.96	17.52	1,002	349	17.3	2.90	111.69	- -
			20	8.19	18.23	1,008	332	13.8	2.97	112.10	- -
			25	8.38	18.52	1,013	318	10.1	2.91	112.38	- -
			28	8.39	18.77	1,017	308	8.0	2.94	112.51	- -
AR-6	4/27/06	109.51	5	7.55	15.83	606	119	15.1	5.58	111.75	- -
			10	7.76	15.48	599	167	11.7	3.23	112.47	- -
			15	7.60	17.21	608	167	17.5	2.83	112.43	- -
			20	7.49	17.93	612	197	18.1	2.70	112.74	- -
			25	7.54	18.56	617	154	16.5	2.52	113.10	- -

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
			30	7.52	19.82	615	99.1	17.9	2.17	113.50	- -
			35	7.52	20.94	616	90.2	18.4	2.04	113.59	- -
			38	7.51	21.23	619	75.9	18.3	2.02	113.66	- -
AR-7	4/27/06	104.61	10	7.28	19.45	1,206	800	325	4.63	104.40	Brown color, no odor
			15	7.42	19.08	1,199	577	333	3.70	104.60	Very cloudy
			20	7.45	19.15	1,196	454	338	3.67	104.40	Very cloudy
			25	7.31	21.10	1,221	978	335	3.46	104.40	Very cloudy
			30	7.11	21.47	1,199	>1000	329	3.70	104.40	Brown color
			35	7.39	18.58	1,190	304	337	3.79	104.40	Cloudy
			40	7.60	18.38	1,191	79	340	3.76	104.40	Slightly cloudy
			45	7.38	18.54	1,189	41.1	342	3.74	104.40	Slightly cloudy
			48	7.29	18.65	1,190	25.5	343	3.75	104.40	Slightly cloudy
			51	7.24	18.75	1,188	23	344	3.70	104.40	Clear
			54	7.24	18.75	1,187	24	344	3.71	104.40	Clear
AR-8	4/27/06	33.30	10	7.90	17.80	644	167	286	7.61	34.45	Cloudy
			15	7.76	18.20	642	154	283	7.64	34.55	Cloudy
			20	7.58	18.20	642	127	285	7.59	34.65	Cloudy
			25	7.42	18.90	639	115	291	7.45	34.63	Cloudy
			30	7.30	189.00	639	109	267	7.30	34.63	Cloudy
			33	7.28	19.00	639	112	266	7.29	34.63	Cloudy
AR-9	4/27/06	59.30	10	6.95	18.80	910	263	231	6.20	61.16	Cloudy
			20	6.87	19.80	907	83	182	5.98	61.60	Slightly cloudy
			25	6.83	20.80	906	32	175	5.59	61.90	Clear
			28	6.80	20.50	907	29	180	5.60	61.90	Clear
			31	6.80	20.50	908	29	175	5.59	61.90	Clear
			33	6.80	20.50	908	29	177	5.59	61.90	Clear
AR-10	4/26/06	21.46	10	7.05	13.00	3,220	90	119	1.11	21.55	Cloudy
			15	7.04	12.56	3,225	70	118	1.11	21.55	Slightly cloudy
			20	7.03	12.45	3,220	29	121	1.04	21.58	Clear
			25	7.02	12.42	3,225	17	127	0.93	21.60	Clear
			30	7.04	12.40	3,220	11	127	0.90	21.60	Clear
AR-11	4/26/06	87.12	18	8.27	14.78	979	179	-0.8	5.89	- -	- -
			23	8.82	14.40	983	200	5.5	2.36	97.57	- -
			28	8.69	15.17	983	138	16.6	1.70	98.32	- -
			33	8.66	14.83	979	111	18.2	1.36	99.72	- -
			38	7.49	15.55	980	77.7	29.6	1.14	100.20	- -
			43	8.48	15.40	977	69.3	19.6	1.03	100.71	- -
			48	8.53	15.86	978	59.5	16.7	0.99	100.70	- -
			53	8.32	15.53	972	79	22.7	0.95	100.70	- -
			58	8.38	14.75	975	115	21.2	0.91	101.09	- -

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
			61	8.37	14.78	967	101	20.0	0.86	101.68	- -
			64	8.45	14.76	964	68.5	19.0	0.78	102.15	- -
			67	8.43	14.71	966	52.1	16.9	0.69	102.43	- -
			70	8.43	14.92	969	46.1	15.9	0.69	102.59	- -
			73	8.43	14.79	967	46.5	15.3	0.69	102.75	- -
CAR-1	4/27/06	22.51	7	7.93	12.80	552	514	42.9	7.52	22.63	- -
			12	6.96	13.15	547	285	52.3	6.78	22.61	- -
			17	8.22	13.13	546	102	44.3	6.69	22.61	- -
			22	8.32	13.06	548	41.1	42.3	6.70	22.63	- -
			27	6.22	13.08	547	16.6	55.9	6.67	22.64	- -
			32	6.56	13.23	546	8.4	51.3	6.62	22.64	- -
			35	6.52	13.20	548	8.4	49.6	6.74	22.63	- -
			38	6.59	13.17	546	5.5	48.7	6.71	22.63	- -
CAR-2	4/27/06	35.23	0	8.06	14.02	822	32.5	29.3	10.74	- -	- -
			3	8.20	12.60	817	23.8	19.9	10.40	- -	- -
CAR-3	4/27/06	45.40	10	7.15	21.40	974	12	244	7.00	46.10	Clear
			13	7.08	21.50	986	10	254	7.00	46.10	Clear
			16	7.08	21.50	990	7.5	255	6.99	46.10	Clear
			19	7.08	21.50	991	4.8	256	6.99	46.10	Clear
DF-1D	4/25/06	61.81	7	8.43	12.89	801	4.16	25.7	3.58	61.95	- -
			12	8.26	13.23	808	2.21	27.0	2.88	61.95	- -
			17	8.30	13.42	808	1.79	33.6	2.70	61.95	- -
			22	8.41	13.36	809	1.78	18.2	2.63	61.95	- -
			25	8.49	13.26	807	1.74	13.9	2.60	61.95	- -
			28	8.52	13.32	807	1.71	10.5	2.59	61.95	- -
			31	8.49	13.24	809	1.87	11.7	2.59	61.95	- -
			36	8.62	13.19	807	1.5	10.4	2.55	61.95	- -
DF-1S	4/25/06	60.83	10	6.98	14.09	804	100	-110	0.40	61.03	Slightly cloudy, no odor
			15	7.00	13.34	794	65	-115	0.40	60.96	Slightly cloudy, no odor
			20	7.04	14.10	798	65	-125	0.33	60.97	Slightly cloudy, no odor
			25	7.02	14.12	792	50	-130	0.29	60.99	Slightly cloudy, no odor
			30	6.99	14.04	788	40	-123	0.28	61.02	Slightly cloudy, no odor
DF-2S	4/25/06	67.81	10	7.00	12.25	687	9.4	65	3.17	70.74	Clear
			15	7.05	11.54	691	13	39	2.50	71.42	Clear
			20	7.00	11.55	694	9.4	40	2.29	72.40	Clear
			25	6.98	11.55	691	7.1	42	2.28	72.66	Clear
			30	6.99	11.54	690	7	40	2.25	72.69	Clear

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
DF-3S	4/25/06	64.47	10	6.95	10.81	728	110	140	4.44	64.52	Cloudy, yellow, no odor
			15	6.95	10.87	737	70	141	3.89	64.52	Slightly cloudy, yellow, no odor
			20	6.96	10.98	745	37	139	3.38	64.52	Slightly cloudy
DF-4DS	4/25/06	57.20	10	6.96	9.68	669	55	139	7.21	59.15	Slightly cloudy, no odor
			15	6.96	10.45	670	37	130	7.48	60.35	Slightly cloudy, no odor
			20	6.96	10.70	668	270	89.0	6.83	61.35	Cloudy
DF-6	4/25/06	88.18	13	8.99	11.99	881	12.3	12.2	1.60	96.10	- -
			18	8.69	12.46	671	12.3	15.1	1.13	98.00	- -
			23	8.54	13.36	665	12.9	9.4	1.13	98.61	- -
			28	8.81	14.35	660	12.9	8.6	1.08	100.30	- -
			31	8.60	14.80	661	12.9	14.3	1.07	101.02	- -
			34	8.60	14.75	661	12.7	18.7	1.03	101.95	- -
DF-12	4/25/06	88.42	10	6.52	12.51	775	2.4	11.4	7.58	88.39	- -
			15	6.77	12.51	772	1.9	20.7	7.08	88.42	- -
			20	6.98	12.51	772	1.8	-2.1	6.97	88.41	- -
			30	8.67	11.89	768	1.6	-26.6	7.00	88.42	- -
			35	9.24	11.91	768	1.5	-34.3	6.97	88.40	- -
			40	9.55	11.90	768	1.1	-41.5	6.99	88.40	- -
			45	9.80	11.90	767	1.4	-45.8	6.97	88.40	- -
			48	9.81	11.90	767	1.3	-44.6	6.97	88.40	- -
			51	10.16	11.90	767	0.8	-53.2	6.94	88.40	- -
			54	10.17	11.90	767	1	-51.2	6.90	88.40	- -
			57	10.23	11.91	767	1.2	-53.7	6.84	88.40	- -
DF-13	4/26/06	93.13	5	10.03	14.87	825	25.6	-5.5	3.43	93.30	- -
			10	9.77	15.12	807	20	5.7	2.16	93.30	- -
			15	9.50	15.37	794	12.5	4.8	1.97	93.30	- -
			20	9.42	15.41	788	9.5	5.5	1.97	93.30	- -
			25	9.29	15.33	785	7.5	7.1	1.97	93.30	- -
			28	9.31	15.28	784	7	5.5	1.97	93.30	- -
DF-19	4/25/06	62.93	10	6.95	10.48	760	>1000	73	2.48	63.04	Orange, no odor
			15	6.97	11.12	781	>1000	32	1.28	63.08	Very cloudy, orange
			20	6.98	11.07	785	589	1	1.01	63.07	Cloudy, orange tint
			25	6.95	11.09	791	334	-7	0.93	63.08	Cloudy
			30	6.98	11.19	786	191	-18	0.96	63.08	Cloudy
			35	6.97	11.41	785	128	-19	0.96	63.08	Cloudy
			40	6.98	11.34	785	120	-13	0.95	63.08	Cloudy
			45	6.95	11.35	786	85	-11	0.97	63.08	Cloudy
DF-24	4/25/06	89.91	7	9.33	12.49	855	3.75	21.5	7.28	89.91	- -

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
			12	9.33	13.01	850	28.2	19.8	7.21	89.91	- -
			17	8.88	13.10	843	22.4	28.6	7.42	89.91	- -
			22	8.74	13.16	842	19.4	31.3	7.51	89.91	- -
			25	8.75	13.08	840	17.3	30.7	7.56	89.91	- -
GW-9	4/28/06	96.30	10	7.21	14.40	963	11	389	5.68	97.00	Clear
			15	6.65	15.20	962	7	395	5.70	97.50	Clear
			20	6.65	15.20	962	6.6	396	5.73	97.50	Clear
			23	6.63	15.20	962	6.8	396	5.72	97.50	Clear
			26	6.63	15.20	961	7	396	5.72	97.50	Clear
MW-1	4/26/06	62.30	10	7.03	10.09	543	>1000	-17	5.12	63.75	Tan color, no odor
			15	7.03	10.75	549	>1000	-11	4.97	64.25	Tan color, no odor
			20	7.03	11.11	549	>1000	-2	4.63	64.55	Tan color, no odor
			25	7.01	11.38	549	>1000	10	4.56	64.81	Tan color, no odor
			30	7.00	11.41	553	>1000	3.7	4.75	64.95	Brownish color
			35	7.06	11.72	539	>1000	26	5.31	65.70	Very cloudy
			40	6.99	11.46	536	>1000	38	5.31	65.95	Very cloudy
			45	7.00	11.40	535	>1000	40	5.36	65.99	Very cloudy
			50	7.01	11.45	537	>1000	41	5.35	65.99	Very cloudy
			55	7.04	11.36	533	950	44	5.41	66.00	Very cloudy
			60	7.04	11.33	531	950	46	5.45	66.00	Very cloudy
MW-2	4/27/06	177.10	5	8.06	13.06	489	4.5	-68.9	1.79	178.34	- -
			10	8.01	14.16	509	8.4	-72.5	0.98	178.51	- -
			15	7.72	14.26	564	4.2	-37.3	0.84	178.60	- -
			20	7.62	14.02	568	2.3	-21.2	0.72	178.66	- -
			25	7.56	13.88	569	1.9	-11.8	0.68	178.66	- -
			30	7.53	13.96	568	2.4	-7.3	0.63	178.70	- -
			33	7.52	13.92	569	2	-4.7	0.61	178.70	- -
MW-3	4/26/06	71.45	10	6.97	11.13	639	100	37	8.15	72.39	Slightly cloudy
			15	7.02	11.70	639	90	37	8.08	73.53	Slightly cloudy
			20	7.02	11.94	638	65	41	8.01	73.86	Slightly cloudy
			25	7.00	11.99	637	65	47	8.05	74.37	Slightly cloudy
			30	6.99	12.05	638	60	55	8.02	74.87	Slightly cloudy
			35	6.99	12.09	637	55	60	7.94	74.90	Slightly cloudy
			40	6.99	12.10	637	55	63	8.06	74.92	Slightly cloudy
MW-30	4/28/06	38.51	15	6.51	11.26	579	>1000	148.9	10.55	- -	- -
MW-36	4/25/06	97.16	5	9.26	12.19	974	79.4	23.8	3.66	99.70	- -
			10	8.55	13.46	973	32.2	25.9	1.59	99.80	- -
			15	9.59	13.32	852	20	11.3	1.04	99.80	- -

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
			20	9.99	13.31	828	20	2.2	0.91	99.80	- -
			25	9.98	13.34	818	12.3	1.6	0.82	99.80	- -
			30	9.88	13.45	814	9.86	10.9	0.73	99.93	- -
MW-37	4/26/06	161.37	5	8.99	14.14	602	17.2	35.6	1.80	161.95	- -
			10	8.57	15.06	603	8.8	34.3	0.90	161.97	- -
			15	8.82	14.83	601	4.9	32.2	0.65	162.03	- -
			20	8.82	14.68	599	3.5	32.2	0.57	162.02	- -
			23	8.69	14.62	598	3.1	33.3	0.54	162.02	- -
MW-39	4/26/06	154.82	5	10.98	13.76	637	682	-10.8	6.35	157.18	- -
			10	10.25	16.16	551	325	19.5	1.99	157.50	- -
			15	9.88	15.75	589	54.5	26.4	1.35	- -	- -
			20	9.77	15.58	598	28.9	26	1.05	- -	- -
			25	9.84	15.57	598	18.8	24.9	0.89	157.64	- -
			30	9.83	15.59	599	16.3	23.5	0.76	157.64	- -
			33	9.68	15.65	600	15.4	24.9	0.69	157.54	- -
			36	9.74	15.67	598	16.8	23.8	0.66	157.64	- -
PC-1B	4/26/06	39.28	35	7.18	12.53	790	6.7	56.9	6.70	39.23	- -
			40	7.30	12.59	792	6.2	59.0	6.29	39.23	- -
			45	7.33	12.60	794	4.7	60.7	6.26	39.34	- -
			48	7.64	12.59	794	3.85	54.0	6.27	39.34	- -
			51	7.64	12.56	795	3.54	52.7	6.27	39.34	- -
			54	7.69	12.59	794	3.27	51.4	6.27	39.34	- -
PC-1C	4/26/06	78.63	9	9.10	12.61	619	393	17.0	8.07	79.44	- -
			14	8.58	12.64	617	275	21.0	3.83	79.44	- -
			19	8.44	12.65	615	187	24.0	3.54	79.44	- -
			24	8.34	12.67	615	103	26.1	3.50	79.44	- -
			29	8.28	12.68	614	58.3	27.8	3.49	79.46	- -
			34	8.22	12.71	612	42.3	29.3	3.53	79.46	- -
			37	8.18	12.75	612	37.7	29.9	3.57	79.46	- -
			40	8.19	12.80	612	34.7	30.9	3.56	79.46	- -
			43	8.16	12.85	610	30.7	31.6	3.61	79.46	- -
PC-2B	4/25/06	86.67	10	9.80	13.40	696	21.1	28.4	9.60	87.79	- -
			15	8.68	13.93	695	23	0.8	7.26	87.90	- -
			20	7.22	14.88	686	18.6	53.3	7.18	88.17	- -
			25	8.11	14.50	691	22.5	27.3	6.99	88.85	- -
			30	8.17	13.77	692	13.2	26.3	6.97	89.38	- -
			35	8.35	12.72	694	22.4	19.7	6.89	89.78	- -
			40	8.52	11.76	693	22.6	13.6	6.93	89.95	- -
			45	8.61	11.06	692	23.9	17.5	6.75	90.28	- -

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
			50	8.26	18.73	705	- -	14.7	6.07	- -	- -
PC-5B	4/25/06	164.94	5	9.92	12.84	813	79.9	-11.6	6.62	64.94	- -
			10	9.23	13.02	815	25	-11.0	4.90	64.94	- -
			15	9.17	13.05	815	10.1	-5.7	4.70	64.94	- -
			20	9.15	13.02	815	5.48	-4.4	4.69	64.94	- -
			25	9.13	13.02	815	4.34	-3.7	4.69	64.94	- -
			28	9.13	13.01	816	3.75	-3.6	4.69	64.94	- -
PC-6B	4/26/06	87.78	10	8.27	14.38	929	123	-2.5	6.77	90.11	- -
			15	8.24	14.59	927	145	-2.2	6.37	90.20	- -
			20	8.18	15.42	932	141	-1.7	5.94	90.21	- -
			25	8.10	15.81	934	114	-0.6	5.57	90.15	- -
			30	8.03	16.00	936	93.2	1.3	5.52	89.97	- -
			35	8.02	15.96	936	77.2	1.5	5.40	89.93	- -
			40	7.94	15.82	935	67.1	3	5.15	89.73	- -
			45	7.93	15.75	936	58.1	2.1	5.22	89.73	- -
			50	7.92	16.01	937	48.1	0.7	5.18	89.69	- -
TW-13	4/27/06	17.16	7	6.69	13.16	784	>1000	26.7	12.38	17.37	- -
			12	6.87	11.90	769	268	36.2	10.52	17.37	- -
			17	6.87	12.03	768	71.8	43.7	10.42	17.37	- -
			22	6.89	11.97	769	26.2	43.3	10.44	17.37	- -
			27	6.93	11.91	771	12.1	41.6	10.58	17.37	- -
			32	6.94	11.94	770	8	39.8	10.48	17.37	- -
			35	6.89	11.96	770	6.6	39.6	10.47	17.37	- -
TW-14	4/27/06	26.72	7	7.31	13.28	742	712	43.0	8.88	26.73	- -
			12	7.33	14.34	738	570	39.2	7.57	26.74	- -
			17	7.34	14.66	742	448	38.1	7.50	26.75	- -
			22	7.26	14.64	742	362	38.3	7.58	26.74	- -
			27	6.89	14.78	740	299	39.3	7.47	26.75	- -
			32	6.93	14.90	738	257	38.4	7.41	26.72	- -
			35	7.21	14.98	739	236	35.0	7.19	26.74	- -
			38	7.06	15.11	739	203	36.6	7.23	26.73	- -
			41	7.56	15.24	739	178	32.7	7.19	26.73	- -
			44	7.49	15.45	739	164	33.8	7.26	26.73	- -
			47	7.46	15.48	739	158	33.4	7.17	26.73	- -
TW-15	4/27/06	23.08	13	7.08	12.83	738	261	34.3	8.18	23.08	- -
			18	7.34	12.82	735	107	40.4	7.95	23.08	- -
			23	6.91	12.81	734	49	46.6	7.99	23.08	- -
			28	6.85	12.88	732	25.4	47.4	7.99	23.08	- -
			31	6.89	12.69	732	18.5	46.3	8.06	23.08	- -

TABLE 4.7

SUMMARY OF MONITORING WELL PURGING PARAMETERS - FLEETWIDE SAMPLING EVENT
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Date*	*Initial Depth to Water (ft below Reference)*	*Time Purged (minutes)*	*pH (Std. Units)*	*Temperature (°C)*	*Conductivity (µS/cm)* [1]	*Turbidity (NTU)* [2]	*ORP (mV)* [3] [4]	*Dissolved Oxygen (mg/L)* [5]	*Depth to Water (ft below Reference)*	*Observations*
			34	6.92	12.62	732	15.1	45.0	8.16	23.08	- -
			37	6.90	12.70	731	9.7	43.4	8.19	23.08	- -
Well 7	4/27/06	115.60	10	8.00	14.60	791	10	369	7.50	115.60	Clear
			15	7.36	15.90	790	12	375	7.30	115.60	Clear
			18	7.27	16.20	790	11	375	7.26	115.60	Clear
			21	7.25	16.30	790	10	376	7.24	115.60	Clear
			24	7.25	16.30	790	10	376	7.24	115.60	Clear

Notes:

(1) µS/cm - microSiemens per centimeter
(2) NTU - nephelometric turbidity units
(3) ORP - oxidation reduction potential
(4) mV - millivolts
(5) mg/L - milligrams per liter

TABLE 5.1

CALCULATED VERTICAL HYDRAULIC GRADIENTS
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Well Cluster	*Elevation of Screen Middle (ft AMSL)* [1]	*Water Level April 24, 2006 (ft AMSL)*	*Vertical Gradient (ft/ft downward)*
Water Table to Lower Galena-Platteville			
AR-4	720.7	742.74	0.009
AR-11	684.9	742.41	
TW-14	668.4	672.93	0.011
CAR-1	642.3	672.63	
DF-1S	734.0	726.04	0.013
DF-1D	704.8	725.67	
PC-3B	754.1	760.58	0.443
DF-6	705.8	739.20	
DF-11	757.6	749.00	0.053
DF-12	701.9	746.06	
DF-22S	727.7	726.34	0.0
DF-22D	705.2	726.34	
MW-30	722.7	720.26	0.095
DF-23	690.1	717.17	
MW-15	740.7	745.56	0.0
MW-16	706.8	745.56	
PC-1B	714.5	718.01	0.021
DF-8	694.6	717.60	
Across the Glenwood Formation			
MW-1	818.0	799.63	0.622
MW-2	632.6	684.22	
MW-16	706.8	745.56	0.892
MW-20R	634.6	681.19	
MW-36	690.6	746.14	1.379
MW-37	644.2	682.15	
MW-42	688.2	745.85	1.893
MW-39	654.2	681.49	
DF-8	694.6	717.60	0.850
PC-1C	649.8	679.53	
Within the St. Peter Sandstone			
MW-20R	634.6	681.19	0.001
MW-21	591.4	681.16	

Notes:

(1) ft AMSL - feet above Mean Sea Level

TABLE 5.2

SUMMARY OF TRITIUM CONCENTRATIONS IN WATER - STATION SAMPLING LOCATIONS
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*Sample Date*	*Laboratory Analysis*	*Tritium (pCi/L)*	*Result Error*
ABANDONED VAULT	ABANDONED VAULT	2/3/2006	EI	ND (200)	-
CROP	CROP	3/23/2006	EI	ND (200)	-
CWBD STEEL POT	CWBD STEEL POT	2/27/2006	EI	ND (200)	-
CWBD STEEL POT	1CW	4/24/2006	EI	263	+/-89
OREPRO10	OREPRO10	2/27/2006	EI	ND (200)	-
Potable Water	POTABLE WATER	3/23/2006	EI	ND (200)	-
VAULT #1	1 Blowdown	3/16/2006	EI	ND (1960) *	-
VAULT #2	VAULT #2	2/3/2006	EI	40727	+/-552
VAULT #2	VAULT #2	2/16/2006	EI	33900	NR
VAULT #2	VAULT #2	3/2/2006	EI	1680	NR
VAULT #2	2 Blowdown	3/16/2006	EI	ND (1960) *	-
VAULT #3	VAULT #3	2/3/2006	EI	37895	+/-523
VAULT #3	VAULT #3	2/16/2006	EI	34400	NR
VAULT #3	3 Blowdown	3/16/2006	EI	7730	NR
VAULT #4	VAULT #4	2/3/2006	EI	80123	+/-756
VAULT #4	VAULT #4	2/16/2006	EI	72300	NR
VAULT #4	VAULT #4	3/2/2006	EI	18100	NR
VAULT #4	4 Blowdown	3/16/2006	EI	9100	NR
VAULT #4	Vault 4	4/24/2006	EI	375	+/-93
VAULT #5	VAULT #5	2/3/2006	EI	1843	+/-138
VAULT #5	VAULT #5	2/16/2006	EI	5430	NR
VAULT #5	5 Blowdown	3/16/2006	EI	3130	NR
VAULT #5	Vault 5	4/24/2006	EI	423	+/-95
VAULT #6	VAULT #6	2/3/2006	EI	29162	+/-460
VAULT #6	VAULT #6	2/16/2006	EI	29600	NR
VAULT #6	6 Blowdown	3/16/2006	EI	7580	NR
VAULT #6	Vault 6	4/24/2006	EI	645	+/-103

Notes:

EI - Environmental, Inc.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
* - Non-detect at the value in parentheses.
NR - +/- value not reported.
- - Non-detect value, +/- value not reported.

TABLE 5.3

SUMMARY OF TRITIUM CONCENTRATIONS IN GROUNDWATER - FEBRUARY - APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*Sample Date*	*QC Sample*	*Laboratory Analyses*		*Tritium (pCi/L)*	*Result Error*
AR-1	GW-19232-032306-SP-AR-1	3/24/2006		EI		ND (200)	-
AR-1	GW-19232-032906-NK-AR-1	3/29/2006		EI		ND (200)	-
AR-1	GW-19232-040606-BW-AR-1	4/6/2006		EI		ND (200)	-
AR-1	GW-19232-041106-EV-AR-1	4/12/2006		EI		ND (200)	-
AR-1	WG-BYN-042606-SS-25	4/26/2006		TBE		ND (200)	-
AR-2	GW-19232-032306-SP-AR-2	3/24/2006		EI		205	+/-84
AR-2	GW-19232-032306-SP-AR-2	3/24/2006		EI	Recount	ND (200)	-
AR-2	GW-19232-032306-SP-AR-2	3/24/2006		EI	Repeat Recount	ND (200)	-
AR-2	GW-19232-032708-EV-AR-2	3/27/2006		EI		315	+/-96
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI		361	+/-95
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI	Original Recount	208	+/-96
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI	Original Recount #2	223	+/-97
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI	1st Repeat	ND (200)	-
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI	1st Repeat Recount	200	+/-96
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI	2nd Repeat	ND (200)	-
AR-2	GW-19232-032906-NK-AR-2	3/29/2006		EI	2nd Repeat Recount	ND (200)	-
AR-2	GW040306-NK-AR-2	4/3/2006		EI		442	+/-100
AR-2	GW040306-NK-AR-2	4/3/2006		EI	Recount	475	+/-93
AR-2	GW-19232-041006-EV-AR-2	4/10/2006		EI		566	NR
AR-2	WG-BYN-042606-JK-22	4/26/2006		TBE		432	+/-140
AR-2	WG-BYN-042606-JK-22	4/26/2006		TBE	Re-run	527	+/-142
AR-3	GW-19232-032306-SP-AR-3	3/24/2006		EI		214	+/-84
AR-3	GW-19232-032306-SP-AR-3	3/24/2006		EI	Recount	ND (200)	-
AR-3	GW-19232-032306-SP-AR-3	3/24/2006		EI	Repeat Recount	271	+/-95
AR-3	GW-19232-032706-NK-AR-3	3/27/2006		EI		459	+/-124
AR-3	GW-19232-032706-NK-AR-3	3/27/2006		EI	Recount	346	+/-109
AR-3	GW-19232-032906-NK-AR-3	3/29/2006		EI		372	+/-122
AR-3	GW040306-NK-AR-3	4/3/2006		EI		489	+/-102
AR-3	GW-19232-041006-EV-AR-3	4/10/2006		EI		351	NR
AR-3	WG-BYN-042606-JK-20	4/26/2006		TBE		234	+/-128
AR-4	GW-19232-032806-NK-CAR-4	3/28/2006		EI		3572	+/-198
AR-4	GW-19232-032806-NK-CAR-4	3/28/2006		EI	Recount	3631	+/-192
AR-4	GW-19232-032906-EV-CAR-4	3/29/2006		EI		3817	+/-202
AR-4	GW040406-NK-AR-4	4/4/2006		EI		3741	+/-183
AR-4	GW-19232-041006-EV-AR-4	4/10/2006		EI		3469	NR
AR-4	WG-BYN-042706-SS-44	4/27/2006		TBE		3260	+/-367
AR-4	WG-BYN-042706-SS-44	4/27/2006		TBE	Re-run	4080	+/-463
AR-5	GW-19232-032306-SP-AR-5	3/24/2006		EI		ND (200)	-
AR-5	GW-19232-032906-EV-AR-5	3/29/2006		EI		ND (200)	-
AR-5	GW-040606-NK-AR-5	4/6/2006		EI		ND (200)	-
AR-5	GW-19232-041106-EV-AR-5	4/11/2006		EI		ND (200)	-
AR-5	WG-BYN-042706-SS-42	4/27/2006		TBE		ND (200)	-
AR-6	GW-19232-032306-SP-AR-6	3/24/2006		EI		ND (200)	-
AR-6	GW-19232-032906-EV-AR-6	3/29/2006		EI		ND (200)	-
AR-6	GW-040606-NK-AR-6	4/6/2006		EI		ND (200)	-
AR-6	GW-19232-041106-EV-AR-6	4/11/2006		EI		ND (200)	-
AR-6	WG-BYN-042706-SS-41	4/27/2006		TBE		ND (200)	-
AR-7	AR-7	3/30/2006		EI		ND (200)	-
AR-7	GW-040506-NK-AR-7	4/5/2006		EI		ND (200)	-
AR-7	GW-19232-041106-EV-AR-7	4/11/2006		EI		ND (200)	-
AR-7	WG-BYN-042706-KD-32	4/27/2006		TBE		ND (200)	-
AR-8	GW-040506-NK-AR-8	4/5/2006		EI		ND (200)	-
AR-8	GW-19232-041106-EV-AR-8	4/11/2006		EI		ND (200)	-
AR-8	WG-BYN-042706-KD-30	4/27/2006		TBE		ND (200)	-
AR-9	GW-040506-NK-AR-9	4/5/2006		EI		ND (200)	-
AR-9	GW-19232-041106-EV-AR-9	4/11/2006		EI		ND (200)	-
AR-9	WG-BYN-042706-KD-26	4/27/2006		TBE		ND (200)	-
AR-10	GW-19232-040606-BW-AR-10	4/6/2006		EI		ND (200)	-
AR-10	GW-19232-041106-EV-AR-10	4/12/2006		EI		ND (200)	-
AR-10	WG-BYN-042606-JK-24	4/26/2006		TBE		ND (200)	-
AR-11	GW-041806-KD-AR-11	4/18/2006		EI		2260	+/-162
AR-11	GW-041806-KD-AR-11	4/18/2006		EI	Repeat	1965	NR
AR-11	WG-BYN-042606-SS-27	4/26/2006		TBE		2340	+/-282
AR-11	WG-BYN-042606-SS-27	4/26/2006		TBE	Re-run	2340	+/-282

TABLE 5.3

SUMMARY OF TRITIUM CONCENTRATIONS IN GROUNDWATER - FEBRUARY - APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*Sample Date*	*QC Sample*	*Laboratory Analyses*	*Tritium (pCi/L)*	*Result Error*
CAR-1	GW-19232-032306-SP-CAR-1	3/23/2006		EI	ND (200)	-
CAR-1	GW-19232-032906-NK-CAR-1	3/29/2006		EI	ND (200)	-
CAR-1	GW-19232-040606-BW-CAR-1	4/6/2006		EI	ND (200)	-
CAR-1	GW-19232-041106-EV-CAR-1	4/12/2006		EI	ND (200)	-
CAR-1	WG-BYN-042706-SS-36	4/27/2006		TBE	ND (200)	-
CAR-2	GW-19232-032306-SP-CAR-2	3/24/2006		EI	ND (200)	-
CAR-2	GW-19232-032906-EV-CAR-2	3/29/2006		EI	ND (200)	-
CAR-2	GW-19232-040606-BW-CAR-2	4/6/2006		EI	ND (200)	-
CAR-2	GW-19232-041106-EV-CAR-2	4/12/2006		EI	ND (200)	-
CAR-2	GW-19232-041106-EV-CAR-2	4/12/2006	Duplicate (CAR-2)	EI	ND (200)	-
CAR-2	WG-BYN-042706-SS-47	4/27/2006		TBE	ND (200)	-
CAR-3	CAR-3	3/30/2006		EI	ND (200)	-
CAR-3	GW-040506-NK-CAR-3	4/5/2006		EI	ND (200)	-
CAR-3	GW-19232-041106-EV-CAR-3	4/11/2006		EI	ND (200)	-
CAR-3	WG-BYN-042706-KD-28	4/27/2006		TBE	ND (200)	-
DF-1D	DF-1D	3/30/2006		EI	ND (200)	-
DF-1D	GW-19232-040606-BW-DF-1D	4/6/2006		EI	ND (200)	-
DF-1D	WG-BYN-042506-SS-03	4/25/2006		TBE	ND (200)	-
DF-1S	DF-1S	3/30/2006		EI	ND (200)	-
DF-1S	GW-19232-040606-BW-DF-1S	4/6/2006		EI	ND (200)	-
DF-1S	WG-BYN-042506-JK-04	4/25/2006		TBE	ND (200)	-
DF-2S	DF-2S	3/30/2006		EI	ND (200)	-
DF-2S	GW-19232-040606-BW-DF-2S	4/6/2006		EI	ND (200)	-
DF-2S	WG-BYN-042506-JK-06	4/25/2006		TBE	ND (200)	-
DF-3S	DF-3S	3/31/2006		EI	ND (200)	-
DF-3S	GW-19232-040606-DW-DF-3S	4/6/2006		EI	ND (200)	-
DF-3S	WG-BYN-042506-JK-08	4/25/2006		TBE	ND (200)	-
DF-3S	WG-BYN-042506-JK-10	4/25/2006	Duplicate (JK-08)	TBE	ND (200)	-
DF-4DS	DF-4DS	3/30/2006		EI	ND (200)	-
DF-4DS	GW-19232-040606-BW-DF-4DS	4/6/2006		EI	ND (200)	-
DF-4DS	GW-19232-040606-BW-DF-4DS	4/6/2006	Duplicate (DF-4DS)	EI	ND (200)	-
DF-4DS	WG-BYN-042506-JK-02	4/25/2006		TBE	ND (200)	-
DF-6	DF-6	3/30/2006		EI	ND (200)	-
DF-6	GW-040606-NK-DF-6	4/6/2006		EI	ND (200)	-
DF-6	GW-040606-NK-DF-6	4/6/2006	Duplicate (DF-6)	EI	ND (200)	-
DF-6	WG-BYN-042506-SS-05	4/25/2006		TBE	ND (200)	-
DF-12	DF-12	3/31/2006		EI	ND (200)	-
DF-12	GW-040606-NK-DF-12	4/6/2006		EI	ND (200)	-
DF-12	WG-BYN-042506-SS-01	4/25/2006		TBE	ND (200)	-
DF-13	WG-BYN-042606-SS-31	4/26/2006		TBE	ND (200)	-
DF-19	DF-19	3/30/2006		EI	ND (200)	-
DF-19	GW-19232-040606-BW-DF-19	4/6/2006		EI	ND (200)	-
DF-19	WG-BYN-042506-JK-12	4/25/2006		TBE	ND (200)	-
DF-24	DF-24	3/30/2006		EI	ND (200)	-
DF-24	GW-040606-NK-DF-24	4/6/2006		EI	ND (200)	-
DF-24	WG-BYN-042506-SS-13	4/25/2006		TBE	ND (200)	-
GW-9	GW-030806-KD-01	3/8/2006		EI	ND (200)	-
GW-9	WG-BYN-042806-KD-48	4/28/2006		TBE	ND (200)	-
MW-1	MW-1	3/31/2006		EI	ND (200)	-
MW-1	GW-040606-NK-MW-12	4/6/2006		EI	ND (200)	-
MW-1	WG-BYN-042606-JK-14	4/26/2006		TBE	ND (200)	-
MW-2	MW-2	3/31/2006		EI	ND (200)	-
MW-2	GW-040606-NK-MW-12	4/6/2006		EI	ND (200)	-
MW-2	WG-BYN-042706-SS-34	4/27/2006		TBE	ND (200)	-
MW-3	MW-3	3/31/2006		EI	ND (200)	-
MW-3	GW-19232-0406060-BW-MW-3	4/6/2006		EI	ND (200)	-
MW-3	WG-BYN-042606-JK-18	4/26/2006		TBE	ND (200)	-
MW-30	MW-30	3/31/2006		EI	ND (200)	-
MW-30	GW-19232-040606-GW-MW-30	4/6/2006		EI	ND (200)	-
MW-30	WG-BYN-042806-SS-49	4/28/2006		TBE	ND (200)	-
MW-36	MW-36	3/31/2006		EI	ND (200)	-
MW-36	GW-040606-NK-MW-36	4/6/2006		EI	ND (200)	-
MW-36	WG-BYN-042506-SS-09	4/25/2006		TBE	ND (200)	-
MW-37	MW-37	3/31/2006		EI	ND (200)	-

TABLE 5.3

SUMMARY OF TRITIUM CONCENTRATIONS IN GROUNDWATER - FEBRUARY - APRIL 2006
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*Sample Date*	*QC Sample*	*Laboratory Analyses*	*Tritium (pCi/L)*	*Result Error*
MW-37	GW-040606-NK-MW-37	4/6/2006		EI	ND (200)	-
MW-37	WG-BYN-042606-SS-33	4/26/2006		TBE	ND (200)	-
MW-39	MW-39	3/31/2006		EI	ND (200)	-
MW-39	GW-040606-NK-MW39	4/6/2006		EI	ND (200)	-
MW-39	WG-BYN-042606-SS-29	4/26/2006		TBE	ND (200)	-
PC-1B	PC-1B	3/31/2006		EI	ND (200)	-
PC-1B	GW-19232-040606-BW-PC-1B	4/6/2006		EI	ND (200)	-
PC-1B	WG-BYN-042606-SS-23	4/26/2006		TBE	ND (200)	-
PC-1C	PC-1C	3/31/2006		EI	ND (200)	-
PC-1C	GW-040606-NK-PC-1C	4/6/2006		EI	ND (200)	-
PC-1C	WG-BYN-042606-SS-21	4/26/2006		TBE	ND (200)	-
PC-2B	PC-2B	3/31/2006		EI	ND (200)	-
PC-2B	GW-19232-040606-BW-PC-2B	4/6/2006		EI	ND (200)	-
PC-2B	WG-BYN-042506-SS-07	4/25/2006		TBE	ND (200)	-
PC-5B	PC-5B	3/31/2006		EI	ND (200)	-
PC-5B	PC-5B	3/31/2006	Duplicate (PC-5B)	EI	ND (200)	-
PC-5B	GW-19232-040606-BW-PC-5B	4/6/2006		EI	ND (200)	-
PC-5B	WG-BYN-042506-SS-11	4/25/2006		TBE	ND (200)	-
PC-6B	PC-6B	3/31/2006		EI	ND (200)	-
PC-6B	GW-19232-040606-BW-PC-6B	4/6/2006		EI	ND (200)	-
PC-6B	WG-BYN-042606-SS-17	4/26/2006		TBE	ND (200)	-
PC-6B	WG-BYN-042606-SS-19	4/26/2006	Duplicate (SS-17)	TBE	ND (200)	-
TW-13	GW-030806-KD-02	3/8/2006		EI	ND (200)	-
TW-13	GW-030806-KD-03	3/8/2006	Duplicate (KD-02)	EI	ND (200)	-
TW-13	GW-19232-040606-BW-TW-13	4/6/2006		EI	ND (200)	-
TW-13	GW-19232-041206-EV-TW-13	4/12/2006		EI	ND (200)	-
TW-13	WG-BYN-042706-SS-39	4/27/2006		TBE	ND (200)	-
TW-13	WG-BYN-042706-SS-40	4/27/2006	Duplicate (SS-39)	TBE	201	+/-110
TW-14	GW-19232-040606-BW-TW-14	4/6/2006		EI	ND (200)	-
TW-14	GW-19232-041106-EV-TW-14	4/12/2006		EI	ND (200)	-
TW-14	WG-BYN-042706-SS-37	4/27/2006		TBE	ND (200)	-
TW-15	GW-030806-KD-04	3/8/2006		EI	ND (200)	-
TW-15	GW-19232-040606-BW-TW-15	4/6/2006		EI	ND (200)	-
TW-15	GW-19232-041106-EV-TW-15	4/12/2006		EI	ND (200)	-
TW-15	WG-BYN-042706-SS-38	4/27/2006		TBE	ND (200)	-
Well 7	WG-BYN-042706-KD-45	4/27/2006		TBE	ND (200)	-
Well 7	WG-BYN-042706-KD-46	4/27/2006	Duplicate (KD-45)	TBE	ND (200)	-

Notes:

EI - Environmental, Inc.
TBE - Teledyne Brown Engineering, Inc.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
QC - Quality Control
NR - +/- value not reported.

TABLE 5.4

SUMMARY OF TRITIUM CONCENTRATIONS IN WATER - RESIDENTIAL WATER SUPPLY WELLS
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*Sample Date*	*Laboratory Analyses*	*Tritium (pCi/L)*	*Result Error*
ALEXANDER WELL	ALEXANDER WELL	2/28/2006	EI	ND (200)	-
BLANCHARD WELL	BLANCHARD RESIDENCE	2/16/2006	EI	ND (200)	-
BLANCHARD WELL	BLANCHARD WELL	2/28/2006	EI	ND (200)	-
BRENDEL WELL	BRENDEL WELL	2/28/2006	EI	ND (200)	-
DILLINGER WELL	DILLINGER WELL	2/28/2006	EI	ND (200)	-
GORAL WELL	GORAL WELL	2/28/2006	EI	ND (200)	-
LANDIS WELL	LANDIS WELL	2/28/2006	EI	ND (200)	-
MASTNY WELL	MASTNY WELL	2/28/2006	EI	ND (200)	-
STORZ WELL	STORZ WELL	2/28/2006	EI	ND (200)	-
VANCKO WELL	VANECKO RESIDENCE	2/16/2006	EI	ND (200)	-
VANCKO WELL	VANCKO WELL	2/28/2006	EI	ND (200)	-
WILSON WELL	WILSON WELL	2/28/2006	EI	ND (200)	-

Notes:

EI - Environmental, Inc.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*AR-1*	*AR-1*	*AR-1*	*AR-1*	*AR-1*	*AR-1*	*AR-2*	*AR-2*
Sample Identification:		*GW-19232-040606-BW-AR-1*	*Result*	*GW-19232-041106-EV-AR-1*	*Result*	*WG-BYN-042606-SS-25*	*Result*	*GW-19232-041006-EV-AR-2*	*Result*
Sample Date:		*4/6/2006*	*Error*	*4/12/2006*	*Error*	*4/26/2006*	*Error*	*4/10/2006*	*Error*
Laboratory:		*EI*		*EI*		*TBE*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18) U*	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	NA	-	ND (2)	-	NA	-
Strontium-90	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30)	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	NA	-	NA	-	RNI	-	NA	-
Thorium-228 [(1)]	pCi/L	NA	-	NA	-	RNI	-	NA	-

Notes:

EI - Environmental, Inc.
TBE - Teledyne Brown Engineering, Inc.
(1) - These non-targeted radionuclides are included in this table but excluded from the discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.
RNI- Radionuclide Not Identified during analysis.
NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
U* - Compound / Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, + / - value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*AR-2*	*AR-2*	*AR-3*	*AR-3*	*AR-3*	*AR-3*	*AR-4*	*AR-4*
Sample Identification:		*WG-BYN-042606-JK-22*	*Result*	*GW-19232-041006-EV-AR-3*	*Result*	*WG-BYN-042606-JK-20*	*Result*	*GW-19232-041006-EV-AR-4*	*Result*
Sample Date:		*4/26/2006*	*Error*	*4/10/2006*	*Error*	*4/26/2006*	*Error*	*4/10/2006*	*Error*
Laboratory:		*TBE*		*EI*		*TBE*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10) U*	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18) U*	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10) U*	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	NA	-	ND (2)	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	ND (2)	-	NA	-	ND (2)	-	NA	-
Strontium-90	pCi/L	NA	-	ND (2)	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30) U*	-	ND (30)	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	RNI	-	NA	-	RNI	-	NA	-
Thorium-228 [(1)]	pCi/L	RNI	-	NA	-	RNI	-	NA	-

Notes:

EI - Environmental, Inc.
TBE - Teledyne Brown Engineering, Inc.
(1) - These non-targeted radionuclides are included in this table but excluded from the discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.
RNI- Radionuclide Not Identified during analysis.
NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*AR-4*	*AR-4*	*AR-5*	*AR-5*	*AR-5*	*AR-5*	*AR-5*	*AR-5*
Sample Identification:		*WG-BYN-042706-SS-44*	*Result*	*GW-040606-NK-AR-5*	*Result*	*GW-19232-041106-EV-AR-5*	*Result*	*WG-BYN-042706-SS-42*	*Result*
Sample Date:		*4/27/2006*	*Error*	*4/6/2006*	*Error*	*4/11/2006*	*Error*	*4/27/2006*	*Error*
Laboratory:		*TBE*		*EI*		*EI*		*TBE*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10) U*	-	ND (10)	-	ND (10)	-	ND (10) U*	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Strontium-89	pCi/L	NA	-	ND (2)	-	ND (2)	-	NA	-
Strontium-89/90 (Total)	pCi/L	ND (2)	-	NA	-	NA	-	ND (2)	-
Strontium-90	pCi/L	NA	-	ND (2)	-	ND (2)	-	NA	-
Zinc-65	pCi/L	ND (30) U*	-	ND (30)	-	ND (30)	-	ND (30) U*	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	RNI	-	NA	-	NA	-	RNI	-
Thorium-228 [(1)]	pCi/L	RNI	-	NA	-	NA	-	5.123	+/-2.552

Notes:

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NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
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U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		***AR-6***	***AR-6***	***AR-6***	***AR-6***	***AR-6***	***AR-6***	***AR-7***	***AR-7***
Sample Identification:		***GW-040606-NK-AR-6***	***Result***	***GW-19232-041106-EV-AR-6***	***Result***	***WG-BYN-042706-SS-41***	***Result***	***GW-040506-NK-AR-7***	***Result***
Sample Date:		***4/6/2006***	***Error***	***4/11/2006***	***Error***	***4/27/2006***	***Error***	***4/5/2006***	***Error***
Laboratory:		***EI***		***EI***		***TBE***		***EI***	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	NA	-	ND (2)	-	NA	-
Strontium-90	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30)	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [1]									
Potassium-40 [1]	pCi/L	NA	-	NA	-	RNI	-	NA	-
Thorium-228 [1]	pCi/L	NA	-	NA	-	RNI	-	NA	-

Notes:

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NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*AR-7*	*AR-7*	*AR-7*	*AR-7*	*AR-8*	*AR-8*	*AR-8*	*AR-8*	*AR-8*
Sample Identification:		*GW-19232-041106-EV-AR-7*	*Result*	*WG-BYN-042706-KD-32*	*Result*	*GW-040506-NK-AR-8*	*Result*	*GW-19232-041106-EV-AR-8*	*Result*	*WG-BYN-042706-KD-30*
Sample Date:		*4/11/2006*	*Error*	*4/27/2006*	*Error*	*4/5/2006*	*Error*	*4/11/2006*	*Error*	*4/27/2006*
Laboratory:		*EI*		*TBE*		*EI*		*EI*		*TBE*
Analysis:										
Target Radionuclides	***Units***									
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)
Cesium-134	pCi/L	ND (10)	-	ND (10) U*	-	ND (10)	-	ND (10)	-	ND (10) U*
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)
Niobium-95	pCi/L	ND (10)	-	ND (10) U*	-	ND (10)	-	ND (10)	-	ND (10) U*
Strontium-89	pCi/L	ND (2)	-	NA	-	ND (2)	-	ND (2)	-	NA
Strontium-89/90 (Total)	pCi/L	NA	-	ND (2)	-	NA	-	NA	-	ND (2)
Strontium-90	pCi/L	ND (2)	-	NA	-	ND (2)	-	ND (2)	-	NA
Zinc-65	pCi/L	ND (30)	-	ND (30) U*	-	ND (30)	-	ND (30)	-	ND (30) U*
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)
Non-Target Radionuclides (1)										
Potassium-40 (1)	pCi/L	NA	-	RNI	-	NA	-	NA	-	RNI
Thorium-228 (1)	pCi/L	NA	-	RNI	-	NA	-	NA	-	RNI

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RNI- Radionuclide Not Identified during analysis.
NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
U* - Compound / Analyte not detected. Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, + / - value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*AR-8*	*AR-9*	*AR-9*	*AR-9*	*AR-9*	*AR-9*	*AR-9*	*AR-10*	*AR-10*
Sample Identification:		*Result*	*GW-040506-NK-AR-9*	*Result*	*GW-19232-041106-EV-AR-9*	*Result*	*WG-BYN-042706-KD-26*	*Result*	*GW-19232-040606-BW-AR-10*	*Result*
Sample Date:		*Error*	*4/5/2006*	*Error*	*4/11/2006*	*Error*	*4/27/2006*	*Error*	*4/6/2006*	*Error*
Laboratory:			*EI*		*EI*		*TBE*		*EI*	
Analysis:										
Target Radionuclides	***Units***									
Barium-140	pCi/L	-	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	-	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	-	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	-	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	-	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	-	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	-	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	-	NA	-	NA	-	ND (2)	-	NA	-
Strontium-90	pCi/L	-	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Zinc-65	pCi/L	-	ND (30)	-	ND (30)	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	-	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]										
Potassium-40 [(1)]	pCi/L	-	NA	-	NA	-	RNI	-	NA	-
Thorium-228 [(1)]	pCi/L	-	NA	-	NA	-	RNI	-	NA	-

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RNI- Radionuclide Not Identified during analysis.
NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
U* - Compound / Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, + / - value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*AR-10*	*AR-10*	*AR-10*	*AR-10*	*AR-11*	*AR-11*	*AR-11*	*AR-11*
Sample Identification:		*GW-19232-041106-EV-AR-10*	*Result*	*WG-BYN-042606-JK-24*	*Result*	*GW-041806-KD-AR-11*	*Result*	*WG-BYN-042606-SS-27*	*Result*
Sample Date:		*4/12/2006*	*Error*	*4/26/2006*	*Error*	*4/18/2006*	*Error*	*4/26/2006*	*Error*
Laboratory:		*EI*		*TBE*		*EI*		*TBE*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10) U*	-	ND (10)	-	ND (10) U*	-
Cesium-137	pCi/L	ND (18)	-	ND (18) U*	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	13.6	NR	ND (10) U*	-	ND (10)	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	NA	-	ND (2)	-	NA	-
Strontium-89/90 (Total)	pCi/L	NA	-	ND (2)	-	NA	-	ND (2)	-
Strontium-90	pCi/L	ND (2)	-	NA	-	ND (2)	-	NA	-
Zinc-65	pCi/L	ND (30)	-	ND (30) U*	-	ND (30)	-	ND (30) U*	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	NA	-	RNI	-	NA	-	RNI	-
Thorium-228 [(1)]	pCi/L	NA	-	6.173	+/-3.26	NA	-	RNI	-

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U* - Compound / Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
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TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*CAR-1*	*CAR-1*	*CAR-1*	*CAR-1*	*CAR-1*	*CAR-1*	*CAR-2*	*CAR-2*
Sample Identification:		*GW-19232-040606-BW-CAR-1*	*Result*	*GW-19232-041106-EV-CAR-1*	*Result*	*WG-BYN-042706-SS-36*	*Result*	*GW-19232-040606-BW-CAR-2*	*Result*
Sample Date:		*4/6/2006*	*Error*	*4/12/2006*	*Error*	*4/27/2006*	*Error*	*4/6/2006*	*Error*
Laboratory:		*EI*		*EI*		*TBE*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	NA	-	ND (2)	-	NA	-
Strontium-90	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30)	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	NA	-	NA	-	RNI	-	NA	-
Thorium-228 [(1)]	pCi/L	NA	-	NA	-	6.113	+/-3.568	NA	-

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Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*CAR-2*	*CAR-2*	*CAR-2*	*CAR-2*	*CAR-2*	*CAR-2*	*CAR-3*	*CAR-3*
Sample Identification:		*GW-19232-041106-EV-CAR-2*	*Result*	*GW-19232-041106-EV-CAR-2*	*Result*	*WG-BYN-042706-SS-47*	*Result*	*GW-040506-NK-CAR-3*	*Result*
Sample Date:		*4/12/2006*	*Error*	*4/12/2006 Duplicate*	*Error*	*4/27/2006*	*Error*	*4/5/2006*	*Error*
Laboratory:		*EI*		*EI*		*TBE*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	NA	-	ND (2)	-	NA	-
Strontium-90	pCi/L	ND (2)	-	ND (2)	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30)	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	NA	-	NA	-	RNI	-	NA	-
Thorium-228 [(1)]	pCi/L	NA	-	NA	-	RNI	-	NA	-

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NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
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U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*CAR-3*	*CAR-3*	*CAR-3*	*CAR-3*	*GW-9*	*GW-9*	*TW-13*	*TW-13*
Sample Identification:		*GW-19232-041106-EV-CAR-3*	*Result*	*WG-BYN-042706-KD-28*	*Result*	*WG-BYN-042806-KD-48*	*Result*	*GW-19232-040606-BW-TW-13*	*Result*
Sample Date:		*4/11/2006*	*Error*	*4/27/2006*	*Error*	*4/28/2006*	*Error*	*4/6/2006*	*Error*
Laboratory:		*EI*		*TBE*		*TBE*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10) U*	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10) U*	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	NA	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	ND (2)	-	ND (2)	-	NA	-
Strontium-90	pCi/L	ND (2)	-	NA	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30) U*	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides (1)									
Potassium-40 (1)	pCi/L	NA	-	RNI	-	40.44	+/-23.27	NA	-
Thorium-228 (1)	pCi/L	NA	-	6.427	+/-2.496	RNI	-	NA	-

Notes:

EI - Environmental, Inc.
TBE - Teledyne Brown Engineering, Inc.
(1) - These non-targeted radionuclides are included in this table but excluded from the discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.
RNI- Radionuclide Not Identified during analysis.
NA - Data not available or not analyzed.
ND ( ) - Non-detect; value in parentheses is the LLD.
LLD - Lower limit of detection.
U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*TW-13*	*TW-13*	*TW-13*	*TW-13*	*TW-13*	*TW-13*	*TW-14*	*TW-14*
Sample Identification:		*GW-19232-041206-EV-TW-13*	*Result*	*WG-BYN-042706-SS-39*	*Result*	*WG-BYN-042706-SS-40*	*Result*	*GW-19232-040606-BW-TW-14*	*Result*
Sample Date:		*4/12/2006*	*Error*	*4/27/2006*	*Error*	*4/27/2006 Duplicate*	*Error*	*4/6/2006*	*Error*
Laboratory:		*EI*		*TBE*		*TBE*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10) U*	-	ND (10) U*	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10) U*	-	ND (10) U*	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	NA	-	NA	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	ND (2)	-	ND (2)	-	NA	-
Strontium-90	pCi/L	ND (2)	-	NA	-	NA	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30) U*	-	ND (30) U*	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	NA	-	RNI	-	RNI	-	NA	-
Thorium-228 [(1)]	pCi/L	NA	-	RNI	-	RNI	-	NA	-

Notes:

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(1) - These non-targeted radionuclides are included in this table but excluded from the discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.
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NA - Data not available or not analyzed.
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LLD - Lower limit of detection.
U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		*TW-14*	*TW-14*	*TW-14*	*TW-14*	*TW-15*	*TW-15*	*TW-15*	*TW-15*
Sample Identification:		*GW-19232-041106-EV-TW-14*	*Result*	*WG-BYN-042706-SS-37*	*Result*	*GW-19232-040606-BW-TW-15*	*Result*	*GW-19232-041106-EV-TW-15*	*Result*
Sample Date:		*4/12/2006*	*Error*	*4/27/2006*	*Error*	*4/6/2006*	*Error*	*4/12/2006*	*Error*
Laboratory:		*EI*		*TBE*		*EI*		*EI*	
Analysis:									
Target Radionuclides	***Units***								
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10)	-	ND (10) U*	-	ND (10)	-	ND (10)	-
Cesium-137	pCi/L	ND (18)	-	ND (18)	-	ND (18)	-	ND (18)	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10)	-	ND (10) U*	-	ND (10)	-	ND (10)	-
Strontium-89	pCi/L	ND (2)	-	NA	-	ND (2)	-	ND (2)	-
Strontium-89/90 (Total)	pCi/L	NA	-	ND (2)	-	NA	-	NA	-
Strontium-90	pCi/L	ND (2)	-	NA	-	ND (2)	-	ND (2)	-
Zinc-65	pCi/L	ND (30)	-	ND (30) U*	-	ND (30)	-	ND (30)	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]									
Potassium-40 [(1)]	pCi/L	NA	-	RNI	-	NA	-	NA	-
Thorium-228 [(1)]	pCi/L	NA	-	RNI	-	NA	-	NA	-

Notes:

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TBE - Teledyne Brown Engineering, Inc.
(1) - These non-targeted radionuclides are included in this table but excluded from the discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.
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NA - Data not available or not analyzed.
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LLD - Lower limit of detection.
U* - Compound / Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, + / - value not reported.

TABLE 5.5

SUMMARY OF RADIONUCLIDE CONCENTRATIONS IN GROUNDWATER
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location:		***TW-15***	***TW-15***	***Well 7***	***Well 7***	***Well 7***	***Well 7***
Sample Identification:		***WG-BYN-042706-SS-38***	***Result***	***WG-BYN-042706-KD-45***	***Result***	***WG-BYN-042706-KD-46***	***Result***
Sample Date:		***4/27/2006***	***Error***	***4/27/2006***	***Error***	***4/27/2006 Duplicate***	***Error***
Laboratory:		***TBE***		***TBE***		***TBE***	
Analysis:							
Target Radionuclides	***Units***						
Barium-140	pCi/L	ND (60)	-	ND (60)	-	ND (60)	-
Cesium-134	pCi/L	ND (10) U*	-	ND (10) U*	-	ND (10) U*	-
Cesium-137	pCi/L	ND (18)	-	ND (18) U*	-	ND (18) U*	-
Cobalt-58	pCi/L	ND (15)	-	ND (15)	-	ND (15) U*	-
Cobalt-60	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-
Iron-59	pCi/L	ND (30)	-	ND (30)	-	ND (30)	-
Lanthanum-140	pCi/L	ND (15)	-	ND (15) U*	-	ND (15)	-
Manganese-54	pCi/L	ND (15)	-	ND (15)	-	ND (15)	-
Niobium-95	pCi/L	ND (10) U*	-	ND (10) U*	-	ND (10) U*	-
Strontium-89	pCi/L	NA	-	NA	-	NA	-
Strontium-89/90 (Total)	pCi/L	ND (2)	-	ND (2)	-	ND (2)	-
Strontium-90	pCi/L	NA	-	NA	-	NA	-
Zinc-65	pCi/L	ND (30) U*	-	ND (30) U*	-	ND (30) U*	-
Zirconium-95	pCi/L	ND (10)	-	ND (10)	-	ND (10)	-
Non-Target Radionuclides [(1)]							
Potassium-40 [(1)]	pCi/L	RNI	-	RNI	-	RNI	
Thorium-228 [(1)]	pCi/L	RNI	-	RNI	-	RNI	

Notes:

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TBE - Teledyne Brown Engineering, Inc.
(1) - These non-targeted radionuclides are included in this table but excluded from the discussion in this report. These radionuclides were either a) naturally occurring and thus not produced by the Station, or b) could be definitively evaluated as being naturally occurring due to the lack of presence of other radionuclides which would otherwise indicate the potential of production from the Station.
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NA - Data not available or not analyzed.
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U* - Compound/Analyte not detected.
Peak not identified, but forced activity concentration exceeds Minimum Detectable Concentration and 3 sigma.
- - Non-detect value, +/- value not reported.

APPENDIX A

WATER SUPPLY WELL INFORMATION

FIGURE A.1

(Withheld)

19230-21

ILLINOIS
DEPARTMENT OF
NATURAL
RESOURCES

Illinois State Water Survey

Main Office • 2204 Griffith Drive • Champaign, IL 61820-7495 • *Tel (217) 333-2210* • *Fax (217) 333-6540*
Peoria Office • P.O. Box 697 • Peoria, IL 61652-0697 • *Tel (309) 671-3196* • *Fax (309) 671-3106*

SWS

3/13/2006

Mr. Ken Duwall
CRA
8615 West Bryn Maur
Chicago, IL 60631

Dear Mr. Duwall:

As you requested during our telephone conversation on March 14, 2006, we are enclosing printouts from our Private Well Database and Public, Industrial, Commercial Survey (PICS) Database for the following locations:

	COUNTY	TOWNSHIP	RANGE	SECTIONS
OGLE	~~ST.CLAIR~~	24 NORTH	10 EAST	11-15, 22-27
	~~ST.CLAIR~~	24 NORTH	11 EAST	7, 8, 17-20, 29, 30

No available information is indicated on the printout by the statement "0 records were found for the specified locations." Also enclosed are explanations of the Illinois State Water Survey Private Well and PICS Databases.

The data included in the Private Well Database are those non-municipal wells which are known to the Illinois State Water Survey, and the PICS Database is an inventory of municipal well information and large industrial groundwater users. We may not have a copy of well records for these groundwater users.

The enclosed statement reflects the charges for this request which includes a $35.00 query fee for PICS information, a $35.00 query fee for Private well information, and a $0.10 per page charge for 16 pages, plus a $5.00 shipping and handling fee, totaling $76.60.

If you have any questions or if I can be of further assistance, please call.

Sincerely,

Susie Casey

Susie Dodd-Casey
Associate Supportive Scientist
Center for Groundwater Science
Phone: (217) 333-9043

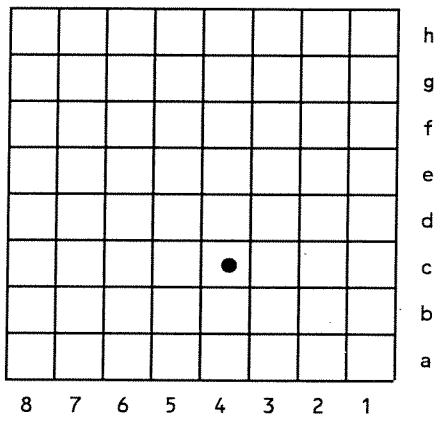
Enclosures as stated

ISWS 10-ACRE PLOT LOCATION SYSTEM

The following is an explanation of the ISWS Private Well Database location system.

The location system uses Township, Range, and Section. The location consists of five parts: County abbreviation, Township, Range, Section, and coordinate within the section (subsection or 10-acre plot). Sections are divided into rows of 1/8-mile squares. Each 1/8-mile square contains 10 acres and corresponds to a quarter of a quarter of a quarter section. A normal section of 1 square mile contains 8 rows of 1/8-mile squares; an odd-sized section contains more or fewer rows. Rows are numbered from east to west and lettered from south to north as shown in the diagram.

Example: St. Clair County, FIP No. 163
T2N, R10W
Section 23



The location of the well shown above is 163 2N10W-23.4c. The well point is located at the center of this 10-acre plot.

ILLINOIS STATE WATER SURVEY

PRIVATE WELL DATABASE EXPLANATION

WID	Illinois State Water Survey Identification Number
FIPS	County Code Number
TWN	Civil Township
RNG	Range
SEC	Section
PLOT	10-acre Plot Location within the Section
OWNER	Well Owner
DRILLER	Well Drilling Contractor of Well
DATE DRILLED	Date Initially Drilled
DEPTH	Depth (well to nearest ft)

RECORD TYPE

Record Type (types of information on file)

- R - Construction Report
- G - Geology
- S - Sealed
- A - Affidavit
- C - Chemical Analysis
- I - Inventory
- X - Indicates Comment in Owners Field Something Unusual
- O - Any Other Type of Record
- P - Pump Installation

USE

Well Use (two-letter code indicating the usage of the well)

- CO - Conservation
- CS - Community Supply
- DO - Domestic
- DW - De-Watering
- IC - Industrial/Commercial
- IN - Injection Well
- IR - Irrigation
- MO - Monitoring
- NC - Non-Community
- NW - Non-Well Source
- OB - Observation
- PK - Park
- RC - Recovery Well
- RW - Relief Well
- SC - School
- ST - State

USE	(Continued) TB - Test Boring TH - Test Hole TW - Test Well ~ - Unknown
WELL TYPE	Well Type (two-letter code indicating the type of well) BLANK - Assumed Drilled BD - Bored DL - Drilled DU - Dug (Being Phased Out) DR - Driven NW - Non-Well SP - Sand Point SG - Spring ~ - Assumed Drilled or Possibly Unknown
AQUIFER TYPE	Aquifer Type (two-letter code indicating aquifer type) BR - Bedrock DH - Dry Hole SW - Surface Water UN - Unconsolidated ~ - Unknown
STAT LVL	Static Level - Reported non-pumping water level
PUMP LVL	Pumping Level - Reported water level during initial pumping of the well
PUMP GPM	Pumping GPM - Gallons per minute at time of well construction

THE DATA IN THE PRIVATE WELL DATABASE IS A LISTING OF THE NON-COMMUNITY WELLS WHICH ARE KNOWN TO THE ILLINOIS STATE WATER SURVEY (ISWS). THIS INFORMATION HAS BEEN ENTERED VERBATIM FROM WELL LOGS SUBMITTED BY THE DRILLER, FROM CHEMICAL ANALYSIS REPORTS, FROM WELL SEALING FORMS, OR WELL INVENTORY FORMS FROM THE 1930-34 WELL SURVEY AND OTHER SPECIAL PROJECTS. THE ACCURACY OF THIS DATA IS CONTROLLED BY THOSE WHO SUBMITTED THE FORM. INFORMATION IN THE PRIVATE WELL DATABASE HAS NOT BEEN VERIFIED.

ILLINOIS STATE WATER SURVEY
PICS DATABASE EXPLANATION

SWS ID	ISWS Facility ID Number
NAME	Facility Name
WELL #	ISWS Point Source Well/Intake Number
STATUS	Point Source Status of Well/Intake
	A = Abandoned - no longer in existence, no affidavit on file, or do not know if it has been filled in C = Capped - cap attached to top D = Disconnected - disconnected from system E = Emergency - available for standby use I = In Use - produces major portion of water O = Observation - used for water level measurements S = Sealed - filled in U = Unused - exists but not used
FIPS	County Code Number
TWN	Civil Township
RNG	Range
SEC	Section
PLOT	10-acre Plot Location within the Section
DEPTH	Depth (well to nearest ft)
TYPE LOG	D = Driller's log O = Other X = Chemical C = Correlated log S = Sample study log - = Log not available
YEAR	Year Point Source Initially Constructed
DRILLER	Well Drilling Contractor of Well

May 2002

Illinois State Water Survey Private Well Database

Tuesday, March 14, 2006

County: OGLE

Township: 24N

Range: 10E

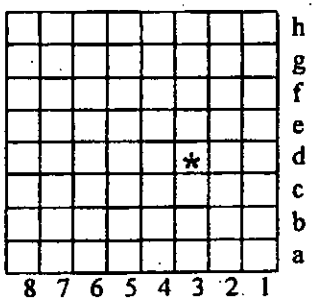
Sections: 11-15,22-27

Records Found: 120

Questions: Contact the Illinois State Water Survey's Ground Water Division @ (217)-333-9043

Publication: Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey (ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

ID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DRILL DATE	DEPTH	RECORD TYPE	WELL USE	WELL TYPE	STAT TYPE	STAT LVL	PUMP LVL	PUMP GPM
82523	141	24N	10E	11		[redacted]	LIVINGSTON	06/02/1985	50	RG	DO	DL	UN	24	29	10
)T 8 FOUR SEASONS SUBD.																
82525	141	24N	10E	11		[redacted]	LIVINGSTON	05/07/1986	45	RG	DO	DL	UN	14	19	10
)T 5 FOUR SEASONS SUBD.																
82520	141	24N	10E	11		[redacted]	BLANCHARD	00/00/1946	143	RG	DO	DL	BR	55	70	15
82521	141	24N	10E	11		[redacted]	BLANCHARD	00/00/1953	150	RG	DO	DL	BR	45	55	8
82522	141	24N	10E	11		[redacted]	LIVINGSTON	12/20/1974	64	RG	DO	DL	UN	9	24	10
)T 44 ROCK RIVER TERRACE SUBD.																
82526	141	24N	10E	11	1H	[redacted]	MARTIN	05/15/1979	240	RG	DO	DL	BR	58	69	40
82527	141	24N	10E	11	2G	[redacted]	BULL	11/20/1979	110	RG	DO	DL	BR	49	59	12
)T 13 RIVER OAKS SUBD.																
82528	141	24N	10E	11	3B	[redacted]	OLSON	08/27/1980	185	RG	DO	DL	BR	49	84	10
82530	141	24N	10E	11	3B	[redacted]	OLSON	09/08/1983	200	RG	DO	DL	BR	74	99	20
82532	141	24N	10E	11	3H	[redacted]	MCKINNEY	07/19/1982	114	RG	DO	DL	UN	17	24	40
)T 6 RIVER OAKS SUBD.																
82533	141	24N	10E	11	5D	[redacted]	MARTIN	08/02/1973	230	RG	DO	DL	BR	111	112	40
)T 10 BLK 24																
65191	141	24N	10E	11	5E	BYRON SALVAGE PRP GROUP	ALTECH SERVICES	00/00/1989	40	A	MO	DL				
								Sealed: 4/28/04								
65192	141	24N	10E	11	5E	BYRON SALVAGE PRP GROUP	ALTECH SERVICES	00/00/1990	58	A	MO	DL				
								Sealed: 4/28/04								
82534	141	24N	10E	11	5F	[redacted]	MARTIN	02/02/1978	165	RG	DO	DL	BR	59	64	30
82535	141	24N	10E	11	5G	[redacted]	MARTIN	08/22/1986	165	RG	DO	DL	BR	12	34	40
)T 2 FOUR SEASON'S SUBD.																

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRIL	DRILL DATE	RECORD DEPTH	TYPE	WELL USE	AQ TYPE	STAT TYPE	WATER LVL	WATER LVL	YIELD GPM
282536	141	24N	10E	11	5H	[redacted]	OLSON	08/22/1979	185	RG	DO	DL	BR	99	119	10
282537	141	24N	10E	11	6D	[redacted]	BULL	07/00/1975	130	RG	DO	DL	BR	59	74	10
282538	141	24N	10E	11	6D	[redacted]	MARTIN	06/19/1970	200	RG	DO	DL	BR	104	110	30
282539	141	24N	10E	11	6E	[redacted]		00/00/0000	180	C	DO	--	--			
DOCUMENT HAS DATE OF 7-23-86																
282540	141	24N	10E	11	6G	[redacted]	MARTIN	05/18/1984	140	RG	DO	DL	BR	11	34	40
282542	141	24N	10E	11	6H	[redacted]	BEAMAN	10/27/1975	160	RG	DO	DL	BR	94	104	12
LOT 14																
282543	141	24N	10E	11	7C	[redacted]	BULL	05/20/1975	120	RG	DO	DL	BR	59	84	10
282544	141	24N	10E	11	7C	[redacted]	BULL	01/04/1976	200	RG	DO	DL	BR			10
282545	141	24N	10E	11	8B	[redacted]	MARTIN	11/16/1981	120	RG	DO	DL	BR	48	60	30
282546	141	24N	10E	11	8D	[redacted]	LIVINGSTON	09/16/1983	46	RG	DO	DL	UN	19	24	10
LOT 9 FOUR SEASONS SUBD.																
282548	141	24N	10E	12		[redacted]	BLANCHARD	00/00/1954	300	RG	IR	DL	BR	170	170	300
282549	141	24N	10E	12	1C	[redacted]	MARTIN	04/09/1982	320	RG	DO	DL	BR	174	179	40
302386	141	24N	10E	12	1D	[redacted]	BULL DRLG./MARTIN	10/10/1997	325	RGP	DO	DL	BR	89	87	10
302413	141	24N	10E	12	2B	[redacted]	BULL DRLG./MARTIN	12/01/1997	325	RG	DO	DL	BR	89	93	10
282547	141	24N	10E	12	3H	[redacted]	BLANCHARD	00/00/1946	100	RG	DO	DL	BR			

ID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DRILL DATE	DEPTH	RECORD TYPE	WELL USE	AQ TYPE	STAT TYPE	TOTL LVL	TOTL LVL	GPM
57959	141	24N	10E	13	1C	EXELON BYRON GENERATING STATION	LAYNE-WESTERN	00/00/1975 Sealed: 10/23/03	600	A	IC	DL				
EPT. OF MINES #41213																
13167	141	24N	10E	13	2D	COMMONWEALTH EDISON #2	WEHLING WELL WORKS	09/29/1975	600	RGC	IC	--	BR	150	340	840
82550	141	24N	10E	13	8E	[redacted]	MARTIN	08/19/1969	275	RG	DO	DL	BR	169	177	25
68187	141	24N	10E	14	7A	[redacted]	JONAS MARTIN DRILLING/JOE	02/11/2004	215	RG	DO	DL	BR	67	79	20
89952	141	24N	10E	14	7E	[redacted]	MARTIN	07/12/1996	200	RG	DO	DL	BR	82	110	30
82551	141	24N	10E	15		[redacted]	MARTIN	00/00/1942	72	RG	DO	DL	BR	42	0	20
87725	141	24N	10E	15	1A	[redacted]	MCKINNEY	06/12/1994	240	RG	DO	DL	BR	49	79	
QUESTRIAN POINTE																
28253	141	24N	10E	15	1A	[redacted]	BULL DRILLING	09/26/2000	63	RGP	DO	DL	UN	21	28	10
OT 7 EQUESTRAIN POINT ESTES.																
68212	141	24N	10E	15	1C	[redacted]	BULL DRILLING/DAVE SCHUUR (BILL)	09/08/2003	185	RG	DO	DL	BR	59	64	10
74719	141	24N	10E	15	1C	WENBERG HOMEBUILDERS	BULL WELL DRILLING/DAVE	06/20/2005	205	RG	DO	DL	BR	29	34	1
87257	141	24N	10E	15	2B	[redacted]	MC KINNEY	04/12/1994	200	RG	DO	DL	BR	59	84	
02373	141	24N	10E	15	2B	[redacted]	BULL DRLG./MARTIN	02/20/1997	165	RG	DO	DL	BR	29	33	10
QUESTRIAN CT. LOT 6																
57551	141	24N	10E	15	2D	[redacted]	BULL DRILLING/DAVE & BILL SCHUUR	09/06/2003	185	RGP	DO	DL	BR	59	69	10
95732	141	24N	10E	15	2E	[redacted]	MARTIN	09/26/1989	238	RG	DO	--	BR	118		
94390	141	24N	10E	15	2G	[redacted]	LIVINGSTON	07/01/1989	260	RG	DO	--	BR	60		

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRIL	DRILL DATE	DEPTH	RECORD TYPE	WELL USE	WELL TYPE	STAT LVL	PUMP LVL	PUMP GPM
335659	141	24N	10E	15	3A	TODD PETROS (AAA BUILDERS)	JONAS MARTIN DRILLING	07/18/2001	180	RGP	DO	DL	BR	39	49	20
LOT 8 EQUSTRIAN POINTE SUBD.																
282552	141	24N	10E	15	4A	[redacted]	MARTIN	09/09/1981	180	RG	DO	DL	BR	31	44	40
302415	141	24N	10E	15	4D	[redacted]	BULL DRLG./MARTIN	11/22/1997	86	RG	DO	DL	UN	29	32	10
LOT 1 EQUESTRIAN POINTE SUBD.																
282554	141	24N	10E	15	4E	[redacted]	BULL	09/19/1988	165	RG	DO	DL	BR	79	79	12
282556	141	24N	10E	15	5D	[redacted]	MARTIN	08/01/1978	210	RG	DO	DL	BR	33	51	40
310319	141	24N	10E	15	5E	[redacted]	ACE P&W/ALLABAUGH	10/06/1997	65	RG	DO	DL	UN	9	14	10
302450	141	24N	10E	15	5H	COMMONWEALTH EDISON CO./#1	JONAS MARTIN/ROOP	12/29/1997	210	RG	IC	DL	BR	11	16	30
RIVER SCREEN HOUSE WASHING FLOOR IN BUILDING																
209459	141	24N	10E	15	6A	[redacted]	MARTIN	03/15/1990	155	RG	DO	--	BR	15		
287258	141	24N	10E	15	6B	[redacted]	MC KINNEY	04/17/1994	200	RGP	DO	DL	BR	74	74	
LOT 3 EQUESTRAIN POINTE																
282571	141	24N	10E	15	7B	[redacted]	MARTIN	04/20/1968	195	RG	DO	DL	BR	59	64	
282572	141	24N	10E	15	7B	[redacted]	MARTIN	01/15/1987	200	RG	DO	DL	BR	9	14	40
210458	141	24N	10E	15	8D	[redacted]	BULL	02/28/1989	185	RG	DO		BR	80		
194398	141	24N	10E	15	8E	[redacted]	MARTIN	08/05/1989	208	RG	DO	--	BR	47		
282580	141	24N	10E	22		[redacted]	MARTIN	00/00/1941	120	RG	DO	DL	BR			
352826	141	24N	10E	22	1B	[redacted]	BILL SCHUUR	Sealed: 8/7/02	28	A		DL				

/ID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE	DEPTH	RECORD TYPE	USE	WELL TYPE	IQ TYPE	STAT LVL	FORM LVL	FORM GPM
65077	141	24N	10E	22	1B	[redacted]	BULL WELL DRILLING/CURT	08/03/2002	185	RG	DO	DL	BR	44	46	10
82581	141	24N	10E	22	2B	[redacted]	MARTIN	04/24/1986	215	RG	DO	DL	BR	39	67	40
82582	141	24N	10E	22	2D	[redacted]	MARTIN	03/19/1983	200	RG	DO	DL	BR	58	66	40
41997	141	24N	10E	22	2F	THREE HAMMERS	BEAMAN	07/14/1992	200	RG	DO	--	BR	49	50	
51947	141	24N	10E	22	3C	[redacted]	ALBRECHT	02/15/1994	180	RGP	DO	--	BR	80		30
41855	141	24N	10E	22	4C	[redacted]	MARTIN	08/26/1992	225	RG	DO	--	BR	84	95	25
82583	141	24N	10E	22	4D	[redacted]	MARTIN	00/00/1967	147	RG	DO	DL	BR	37	43	40
82584	141	24N	10E	22	4E	[redacted]	MARTIN	07/05/1968	140	RG	DO	DL	BR	32	53	40
74718	141	24N	10E	22	4E	[redacted]	JONAS MARTIN DRILLING/JOE	01/07/2005	155	RG	DO	DL	BR	3	19	20
82585	141	24N	10E	22	4F	[redacted]	MARTIN	01/20/1975	179	RG	DO	DL	BR	45	52	50
82586	141	24N	10E	22	4G	[redacted]	MARTIN	05/20/1969	172	RG	DO	DL	BR	5	23	40
82587	141	24N	10E	22	5A	[redacted]	BLANCHARD	00/00/1957	250	RG	DO	DL	BR	123		
82588	141	24N	10E	22	5E	[redacted]	MARTIN	03/12/1973	165	RG	DO	DL	BR	9	29	50
67632	141	24N	10E	22	5E	[redacted]	MARTIN	03/04/1995	185	RGP	DO	DL	BR	38	48	30
46157	141	24N	10E	22	6D	[redacted]	MARTIN	12/20/1993	163	RG	DO	--	BR	15	40	30

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRIL	DATE	DEPTH	RECORD TYPE	WELL USE	WELL TYPE	WELL LVL	PUMP LVL	PUMP GPM
282589	141	24N	10E	22	8A	[redacted]	OLSON	04/28/1970	47	RG	DO	DL	UN	19	25	10
287271	141	24N	10E	22	8A	[redacted]	MC KINNEY	05/06/1993	200	RGP	DO	DL	BR	45	55	
245872	141	24N	10E	22	8B	[redacted]	BULL	10/07/1993	165	RG	DO	--	BR	14	20	
Lot 2 Wilmarth Subd.																
260388	141	24N	10E	22	8H	[redacted]	BULL	10/11/1993	165	RG	DO	DL	BR	14	15	
LOT 1 WILMARTH SUBD.																
292105	141	24N	10E	23	1B	K.M. BUILDERS	JESSIE BEAMAN	10/20/1996	240	RG	DO	DL	BR	90	139	20
282590	141	24N	10E	23	1C	[redacted]	MCKINNEY	04/03/1976	150	RG	DO	DL	BR	49	59	25
287238	141	24N	10E	23	1G	[redacted]	MC KINNEY	04/10/1994	200	RG	DO	DL	BR	79	94	
282591	141	24N	10E	23	2A	[redacted]	MARTIN	06/30/1977	200	RG	DO	DL	BR	79	84	40
242005	141	24N	10E	23	2B	[redacted]	OLSON WELL & PUMP	06/18/1992	200	RG	DO	--	BR	74		
282592	141	24N	10E	23	2D	[redacted]	ROSENQUIST	09/23/1988	184	RG	DO	DL	BR	49	66	20
282593	141	24N	10E	23	5B	[redacted]	MARTIN	08/21/1987	220	RG	DO	DL	BR	66	87	40
213149	141	24N	10E	23	5E	MR STEVE BENESH/STONE QUARRY	MARTIN	01/09/1976	460	RG	IC	--	BR	54	84	300
229705	141	24N	10E	23	8A	[redacted]	MARTIN	10/19/1991	185	RG	DO	--	BR		60	30
282594	141	24N	10E	23	8E	[redacted]	MARTIN	08/05/1976	169	RG	DO	DL	BR	23	27	40
282597	141	24N	10E	24		[redacted]	HINKLE	07/20/1971	65	RG	DO	DL	BR	24	39	10
LOT 4 ROCKVALE																

VID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE	DEPTH	TYPE	USE	TYPE	TYPE	LVL	LVL	GPM
82595	141	24N	10E	24		[redacted]	MARTIN	06/25/1968	283	RG	DO	DL	BR	104	134	30
82596	141	24N	10E	24		[redacted]	HINKLE	01/31/1975	100	RG	DO	DL	BR	49	59	10
OT 6 HER-AL SUBD.																
82598	141	24N	10E	24	2D	[redacted]	MARTIN	09/19/1973	335	RGC	DO	DL	BR	189	190	40
213169	141	24N	10E	24	2H	COMMONWEALTH EDISON #2	WEHLING	12/21/1979	1500	RGCI	IR	--	BR	206	232	893
eepened from 834' permit #033176																
213168	141	24N	10E	24	4H	COMMONWEALTH EDISON #1	WEHLING	05/27/1980	1500	RGC	IR	--	BR	148	325	1227
eepened from 853' permit #033175																
159260	141	24N	10E	24	6B	[redacted]	BULL DRILLING/BILL SCHUUR	11/10/2003	245	RGP	DO	DL	BR	119	129	10
82599	141	24N	10E	24	6B	[redacted]	ROSENQUIST	07/19/1974	165	RG	DO	DL	BR	69	69	15
82600	141	24N	10E	24	6C	[redacted]		00/00/1977	110	C	DO	--	--			
82601	141	24N	10E	24	6D	[redacted]	HINKLE	09/24/1970	110	RG	DO	DL	BR	64	79	10
82602	141	24N	10E	24	6D	[redacted]		07/17/1970	110	OC	DO	DL	BR			
82603	141	24N	10E	24	6F	[redacted]	BULL	10/14/1988	225	RG	DO	DL	BR	69	74	12
23231	141	24N	10E	24	7A	[redacted]	DRESDEN DRILLING	04/00/2000	290	RGP	DO	DL	BR	117	285	50
27540	141	24N	10E	24	7B	[redacted]	DRESDEN DRILLING	08/00/2000	285	RGP	DO	DL	BR	117	284	75
82604	141	24N	10E	24	8E	[redacted]	MARTIN	07/15/1974	225	RG	DO	DL	BR	58	130	40
82605	141	24N	10E	25		[redacted]	MCKINNEY	00/00/1983	80	A	DO	DL	UN			
								Sealed: 9/14/83								

/ID	FIPS	T	RNG	SEC	PLOT	OWNER	DRILL	DATE	DEPTH	TYPE	USE	TYPE	TYPE	LVL	VL	GPM
:82607	141	24N	10E	25	1A	[redacted]	MARTIN	08/20/1986	335	RG	DO	DL	BR	159	199	40
:54752	141	24N	10E	25	1H	[redacted]	CHARLES MARTIN	__/__/____ Sealed: 5/24/03	100	A	DO	DL	—			
154762	141	24N	10E	25	1H	[redacted]	C. MARTIN & SONS/CHUCK	05/12/2003	365	RGP	NC	DL	BR	184	199	15
282606	141	24N	10E	25	2D	[redacted]	BLANCHARD	00/00/1946	115	RG	DO	DL	BR	45	65	10
285358	141	24N	10E	25	4D	[redacted]	MARTIN	12/18/1995	305	RGP	DO	DL	BR	153	180	20
289966	141	24N	10E	25	5G	[redacted]	DRESDEN	07/23/1996	240	RG	DO	DL	BR	82	239	75
282608	141	24N	10E	25	6E	[redacted]	MARTIN	03/14/1974	172	RG	DO	DL	BR	45	53	40
245930	141	24N	10E	25	8G	[redacted]	MARTIN	09/27/1993	260	RG	DO	--	BR	135	180	30
282609	141	24N	10E	26	2D	[redacted]	MARTIN	09/07/1966	205	RG	DO	DL	BR	42	77	40
282610	141	24N	10E	26	2H	[redacted]	MARTIN	04/00/1967	220	RG	DO	DL	BR	78	83	40
293527	141	24N	10E	26	2H	[redacted]	JONAS MARTIN	01/23/1997	260	RGP	DO	DL	BR	82	104	37
282611	141	24N	10E	27	4A	[redacted]	MARTIN	08/25/1976	320	RG	DO	DL	BR	144	152	40
242032	141	24N	10E	27	4B	[redacted]	MARTIN	05/25/1993	313	RGP	DO	DL	BR	173	220	30
345509	141	24N	10E	27	5H	[redacted]	JONAS MARTIN DRILLING/JOE	05/01/2002	260	RGP	DO	DL	BR	127	139	20
282612	141	24N	10E	27	6H	[redacted]	MARTIN	07/11/1966	330	RG	DO	DL	BR	73	75	45

Illinois State Water Survey PICS Database

Tuesday, March 14, 2006

County: OGLE

Township: 24N

Range: 10E

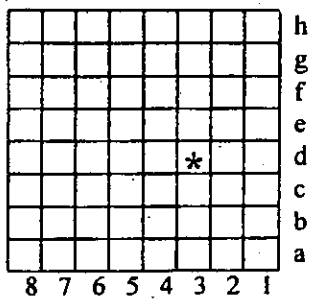
Sections: 11-15,22-27

Records Found: 3

Questions: Contact the Illinois State Water Survey's Ground Water Division @ (217)-333-9043

Publication: **Please cite the Illinois State Water Survey's PICS (Public-industrial-Commercial) Database in all publications based wholly or partially on this information.**

Note: The data in the PICS Database is a listing of municipal and commercial wells which are known to the Illinois State Water Survey (ISWS). This information was initially entered from public water supply data and supplemented with the Illinois State Water Inventory Project data. This database is updated as additional information is received and verified.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

WSID	FIPS	TWN	RNG	SEC	PLOT	NAME	DB ID	#	DEPTH	STATUS	SEALED	TYPE	YEAR	DRILLER
4131145	141	24N	10E	15	5H	EXELON - BYRON STATION	12723	1		I				
4131145	141	24N	10E	24	2H	EXELON - BYRON STATION	12722	2	1500	I				
4131145	141	24N	10E	24	4H	EXELON - BYRON STATION	12721	1	1500	I				

Illinois State Water Survey Private Well Database

Tuesday, March 14, 2006

County: OGLE

Township: 24N

Range: 11E

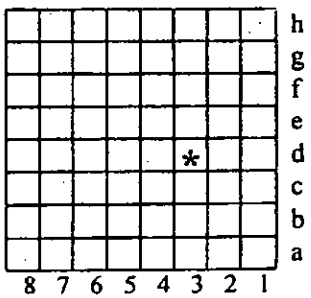
Sections: 07,08,17-20,29,30

Records Found: 36

Questions: Contact the Illinois State Water Survey's Ground Water Division @ (217)-333-9043

Publication: Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey (ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.



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WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE	DEPTH	RECORD TYPE	USE	WELL TYPE	IRR TYPE	STAT LVL	PUMP LVL	PUMP GPM
282808	141	24N	11E	07	1B	[redacted]	MARTIN	11/09/1968	275	RG	DO	DL	BR	119	127	40
282809	141	24N	11E	07	2D	[redacted]	MARTIN	10/19/1979	245	RG	DO	DL	BR	94	109	40
282807	141	24N	11E	07	3C	[redacted]	MARTIN	02/08/1966	250	RG	DO	DL	BR	105	123	40
335648	141	24N	11E	07	6H	[redacted]	JRB DRILLING	06/09/2001	300	RGP	DO	DL	BR	139	259	15
282810	141	24N	11E	08		[redacted]	BLANCHARD	00/00/1956	245	RG	DO	DL	BR	95	115	20
343314	141	24N	11E	08		[redacted]	CHARLES L. MARTIN	12/19/1990	160	P	DO	DL	—			
282812	141	24N	11E	08	1C	[redacted]	RANEY	01/17/1977	225	RG	DO	DL	BR	69	69	30
282813	141	24N	11E	08	1F	[redacted]	MARTIN	06/08/1974	250	RG	DO	DL	BR	59	93	40
282814	141	24N	11E	08	1G	[redacted]	LIVINGSTON	05/20/1971	83	RG	DO	DL	BR	39	59	20
282815	141	24N	11E	08	2A	[redacted]NNETT CONST.	BEAMAN	10/09/1976	220	RG	DO	DL	BR	149	169	12
282816	141	24N	11E	08	2A	[redacted]	BEAMAN	12/14/1977	220	RG	DO	DL	BR	164	169	10
265302	141	24N	11E	08	3B	[redacted]	NICE	08/17/1994	100	RG	DO	DL	BR	49	59	
299074	141	24N	11E	08	6A	[redacted]	COUNTRY W&P/M.NICE	09/04/1997	150	RG	DO	DL	BR	49	139	10
308998	141	24N	11E	08	8G	[redacted]	BULL DRLG./MARTIN	12/05/1998	205	RG	DO	DL	BR	29	33	10
282811	141	24N	11E	08	8H	[redacted]	MARTIN	00/00/1964	265	RG	DO	DL	BR	115	125	30

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRIL	DATE	DEPTH	TYPE	USE	TYPE	TYPE	LVL	LVL	GPM
368206	141	24N	11E	17	1A	[redacted]	JONAS MARTIN DRILLING/RANDY	12/10/2004	260	RG	DO	DL	BR	147	159	18
287254	141	24N	11E	17	1G	[redacted]	MC KINNEY	08/07/1991	240	RG	DO	DL	BR	59	69	
201610	141	24N	11E	17	1H	[redacted]	LIVINGSTON	11/14/1989	240	RG	DO	--	BR	90		
307145	141	24N	11E	17	3H	[redacted]	JONAS MARTIN/LITTLE	11/24/1998	255	RGP	DO	DL	BR	104	149	30
282886	141	24N	11E	17	6E	[redacted]	BLANCHARD	00/00/1946	145	RG	DO	DL	BR	92	98	10
282888	141	24N	11E	17	8A	[redacted]	MARTIN	12/07/1972	220	RG	DO	DL	BR	91	119	40
282889	141	24N	11E	17	8H	[redacted]	HINKLE	03/31/1969	170	RG	DO	DL	BR			10
282890	141	24N	11E	18		[redacted]	BLANCHARD	00/00/1955	300	RG	DO	DL	BR	125	135	8
372123	141	24N	11E	18	3G	[redacted]	BULL WELL DRILLING/BILL	04/13/2005	325	RG	DO	DL	BR	79	84	10
265296	141	24N	11E	18	4H	[redacted]	DRESDEN	10/03/1994	265	RG	DO	DL	BR	99	139	
282891	141	24N	11E	19		[redacted]	MARTIN	00/00/1940	70	OG	DO	DL	BR	30	40	15
282892	141	24N	11E	19		[redacted]	MARTIN	00/00/1964	192	RG	DO	DL	BR	55	60	30
282894	141	24N	11E	19	5A	[redacted]	MARTIN	06/26/1982	185	RG	DO	DL	BR	39	43	40
304144	141	24N	11E	19	7B	[redacted]	JRB DRLG./MARTIN	05/29/1998	200	RGP	DO	DL	BR	59	79	12
299061	141	24N	11E	19	8A	[redacted]	JRB DRLG./BEAMAN	07/25/1997	200	RG	DO	DL	BR	79	79	10

/ID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DATE	DEPTH	RECORD TYPE	USE	WELL TYPE	BAR TYPE	STAT LVL	PUMP LVL	YIELD GPM
99068	141	24N	11E	20	1F	[redacted]	JONAS MARTIN	09/18/1997	230	RGP	DO	DL	BR	39	89	34
82895	141	24N	11E	20	8H	[redacted]	OLSON WELL CO.	08/29/1974	105	RG	DO	DL	BR	8	19	15
82921	141	24N	11E	30		[redacted]	MARTIN	00/00/1941	117	ORG	DO	DL	BR	40	90	10
82925	141	24N	11E	30	7A	[redacted]	LIVINGSTON	06/16/1980	86	RG	DO	--	BR			
99070	141	24N	11E	30	8D	[redacted]	JONAS MARTIN	09/18/1997	360	RG	DO	DL	BR	179	202	20
82922	141	24N	11E	30	8H	EBENZER REFORMED CHURCH	DRESDEN	00/00/1968	165	RG	NC	DL	BR	30	75	30

Illinois State Water Survey PICS Database

Tuesday, March 14, 2006

County: OGLE

Township: 24N

Range: 11E

Sections: 07,08,17-20,29,30

Records Found: 0

Questions: Contact the Illinois State Water Survey's Ground Water Division @ (217)-333-9043

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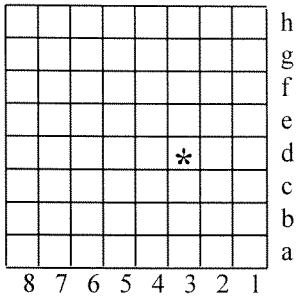

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The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

19939-21

You are receiving a telefax from:

Illinois State Water Survey
2204 Griffith Dr.
Champaign, IL 61820

Verification # - (217) 333-4300 or 333-9043

Telefax # - (217) 244-0777

To: Ken

Location:

Fax #: 773-380-6421

From: Susie Casey

Date: 4-17-06

Total number of pages including cover page: 3

If you do not receive all the pages indicated, please call back as soon as possible.

Comments: If I can be of further assistance, please call.

Susie

Illinois Department of Natural Resources

Illinois State Water Survey Private Well Database

Monday, April 17, 2006

County: OGLE

Township: 24N

Range: 10E

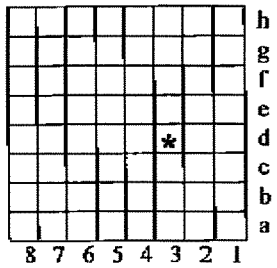
Sections: 10

Records Found: 4

Questions: Contact the Illinois State Water Survey's Ground Water Division @ (217)-333-9043

Publication: Please cite the Illinois State Water Survey's Private Well Database in all publications based wholly or partially on this information.

Note: The data in the Private Well Database is a listing of non-municipal wells which are known to the Illinois State Water Survey (ISWS). This information has been entered verbatim from well logs submitted by the driller, chemical analysis reports, well sealing forms, well inventory forms from the 1930-1934 well survey, and other special projects. The accuracy of this data is controlled by those submitting the forms. Information in the Private Well Database has not been verified.



Location of a 10-acre-plot within a section:

The origin can be found at the lower right-hand-corner of an 8 x 8 grid. In this example, the well is in the 10-acre plot '3d'.

WID	FIPS	TWN	RNG	SEC	PLOT	OWNER	DRILLER	DRILL DATE	DEPTH	RECORD TYPE	WELL USE	WELL TYPE	AQ TYPE	STAT LVL	PUMP LVL	PUMP GPM
241856	141	24N	10E	10	2G	[redacted]	MARTIN	09/19/1992	200	RG	DO	--	BR	39	50	25
273562	141	24N	10E	10	3G	[redacted]	ALLABAUGH	05/10/1995	200	RGP	DO	DL	BR	65	70	
LOT 8 FOOTHILL																
229934	141	24N	10E	10	3G	[redacted]	MARTIN	07/06/1991	163	RG	DO	--	BR	20	68	30
282519	141	24N	10E	10	3H	[redacted]	MARTIN	11/25/1987	160	RG	DO	DL	BR	30	52	40

(Withheld)

(Withheld)

Non Oil and Gas - Wells

121412360300 Martin, Jonas Willard 10-24N-10E
Ogle [redacted]
Status: WATER SW NE NE Elev: 700GL
permit: permit date: 08/18/92 comp. date: 09/19/92
Lambert X: 3048645 Lambert Y: 3299716 td: 220
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-1	173

Size hole below casing: 6 in.
Static level 40 ft. below casing top which is 1 ft. above grnd level.
Pumping level 50 ft. when pumping at 25 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
top soil	5	5
gravel	95	100
sand	50	150
sandstone	70	220

121410089400 Martin, Lawrence W. 10-24N-10E
Ogle Etnyre Inc 1
Status: WATER NE Elev: 0
permit: 0 permit date: comp. date: 01/01/41
Lambert X: 3048329 Lambert Y: 3299381 td: 255
producing formation: td formation:
latitude: 42.098119 longitude: 89.321205

121410089500 Martin, Lawrence W. 10-24N-10E
Ogle Ogle Co Nat'L Bank
Status: WATER SW NW NW Elev: 700GL
permit: 0 permit date: comp. date: 01/01/42
Lambert X: 3044758 Lambert Y: 3299649 td: 115
producing formation: td formation:
latitude: 42.098876 longitude: 89.334414

121412331600 Martin, Jonas Willard 10-24N-10E
Ogle [redacted]
Status: WATER SE NW NE Elev: 700GL
permit: permit date: 06/20/91 comp. date: 07/06/91
Lambert X: 3047997 Lambert Y: 3299705 td: 163
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 80 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-1	103

Size hole below casing: 6 in.
Static level 21 ft. below casing top which is 1 ft. above grnd level.
Pumping level 68 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	13	13
yellow limestone	22	35
gray limestone	18	53
yellow limestone	8	61
soft shale	7	68
shale sandstone	12	80
sandstone	83	163

121412307700 Martin, Jonas Willard 10-24N-10E
Ogle [redacted]
Status: WATER NE NW NE Elev: 700GL
permit: 137506 permit date: 11/19/87 comp. date: 11/25/87
Lambert X: 3047982 Lambert Y: 3300366 td: 160
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 97 to 160 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-1	98

Size hole below casing: 6 in.
Static level 31 ft. below casing top which is 1 ft. above grnd level.
Pumping level 53 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	17	17
yellow limestone	23	40
gray limestone	15	55
shale	10	65
sandstone	95	160

121412408600 Allabaugh, Neil M. 10-24N-10E
Ogle [redacted]
Status: WATER SE NW NE Elev: 0
permit: permit date: 04/27/95 comp. date: 05/10/95
Lambert X: 3047997 Lambert Y: 3299705 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 97 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	0	95

Size hole below casing: 6 in.
Static level 65 ft. below casing top which is 1 ft. above grnd level.
Pumping level 70 ft. when pumping at 0 gpm for 1 hours.

Formations Passed Through	Thickness	Bottom
brown clay	28	28
gray clay	4	32
yellow clay	6	38
gray clay	6	44
yellow clay	18	62
gray clay	13	75
Glenwood shale	7	82
yellow sandstone	15	97
white sandstone	103	200

121412183300 Badger, Floyd 11-24N-10E
Ogle [redacted]
Status: WATER NW NE NW Elev: 0
permit: 0 permit date: comp. date: 10/01/75
Lambert X: 3051245 Lambert Y: 3300424 td: 160
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412254000 Martin, Jonas Willard 11-24N-10E
Ogle [redacted]
Status: WATER 50 NL 10 EL SE NE NW Elev: 700GL
permit: 125193 permit date: 07/11/86 comp. date: 08/22/86
Lambert X: 3052235 Lambert Y: 3300063 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 114 to 165 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

6 WT STEEL -1 115
Size hole below casing: 6 in.
Static level 13 ft. below casing top which is 1 ft. above grnd level.
Pumping level 35 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
sand gravel	60	60
shale limestone	45	105
sandstone	60	165

121412245700 Livingston, Lowell 11-24N-10E
Ogle [redacted]
Status: WATER NE Elev: 0
permit: 117841 permit date: 05/14/85 comp. date: 06/02/85
Lambert X: 3053579 Lambert Y: 3299482 td: 50
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from drift at depth 0 to 0 ft.
Screen: Diam. 5 in. Length: 5 ft. Slot: .014
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A-53	0	45

Size hole below casing: 5 in.
Static level 25 ft. below casing top which is 1 ft. above grnd level.
Pumping level 30 ft. when pumping at 10 gpm for 3 hours.

Formations Passed Through	Thickness	Bottom
top soil	2	2
sand & gravel	48	50

121412251900 Livingston, Lowell 11-24N-10E
Ogle [redacted]
Status: WATER NE Elev: 0
permit: 123424 permit date: 04/28/86 comp. date: 05/07/86
Lambert X: 3053579 Lambert Y: 3299482 td: 45
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from drift at depth 0 to 0 ft.
Screen: Diam. 5 in. Length: 5 ft. Slot: .02
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A-120	0	40

Size hole below casing: 5 in.
Static level 15 ft. below casing top which is 1 ft. above grnd level.
Pumping level 20 ft. when pumping at 10 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
top soil	2	2
sand & gravel	38	40
gravel	5	45

121412288600 Bull, Jack D 11-24N-10E
Ogle [redacted]
Status: WATER SW NE NE Elev: 0
permit: 91445 permit date: 11/15/79 comp. date: 11/20/79
Lambert X: 3053900 Lambert Y: 3299816 td: 110
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 40 to 110 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	62

Size hole below casing: 5 in.
Static level 50 ft. below casing top which is 1 ft. above grnd level.
Pumping level 60 ft. when pumping at 12 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
top soil	4	4
sand & gravel	56	60
limestone	50	110

121412288700 McKinney, Melvin D. 11-24N-10E
Ogle [redacted]
Status: WATER NE NW NE Elev: 0
permit: 103875 permit date: 06/21/82 comp. date: 07/19/82
Lambert X: 3053224 Lambert Y: 3300459 td: 114
producing formation: td formation:
latitude: [redacted] longitude [redacted]
Water from sand & gravel at depth 70 to 114 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	STEEL	0	114

Size hole below casing: 5 in.
Static level 18 ft. below casing top which is 1 ft. above grnd level.
Pumping level 25 ft. when pumping at 40 gpm for 3 hours.
Formations Passed Through

	Thickness	Bottom
top soil	1	1
sand & gravel	113	114

121410152500 Martin, Jonas 11-24N-10E
Ogle [redacted]
Status: WATER 2244 SL 2250 WL Elev: 810GL
permit: 0 permit date: comp. date: 08/01/73
Lambert X: 3051928 Lambert Y: 3297741 td: 230
producing formation: td formation:
latitude: [redacted] longitude [redacted]

121412208700 Bull, Jack 11-24N-10E
Ogle [redacted]
Status: WATER NW NE SW Elev: 0
permit: 0 permit date: comp. date: 07/01/75
Lambert X: 3051321 Lambert Y: 3297788 td: 130
producing formation: td formation:
latitude: [redacted] longitude [redacted]

121412288800 Livingston, Lowell 11-24N-10E
Ogle [redacted]
Status: WATER NE Elev: 0
permit: 109084 permit date: 09/02/83 comp. date: 09/16/83
Lambert X: 3053579 Lambert Y: 3299482 td: 46
producing formation: td formation:
latitude [redacted] longitude [redacted]
Water from drift at depth 0 to 0 ft.
Screen: Diam. 5 in. Length: 5 ft. Slot: .02
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A-53	0	41

Size hole below casing: 5 in.
Static level 20 ft. below casing top which is 1 ft. above grnd level.
Pumping level 25 ft. when pumping at 10 gpm for 4 hours.
Formations Passed Through

	Thickness	Bottom
top soil	2	2
sand & gravel	44	46

121410089600 Varner C W 11-24N-10E
Ogle [redacted]
Status: WATER SE NW NW Elev: 780GL
permit: 0 permit date: comp. date: 01/01/35
Lambert X: 3050605 Lambert Y: 3299752 td: 202
producing formation: td formation:
latitude: [redacted] longitude [redacted]

121412174000 Livingston, Lowell 11-24N-10E

Ogle [redacted] 191
Status: WATER NW SW Elev: 0
permit: 0 permit date: comp. date: 12/01/74
Lambert X: 3050345 Lambert Y: 3297434 td: 64
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412201500 Bull, Jack 11-24N-10E
Ogle [redacted]
Status: WATER SE NW SW Elev: 0
permit: 0 permit date: comp. date: 01/01/76
Lambert X: 3050683 Lambert Y: 3297112 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410003000 11-24N-10E
Ogle [redacted]
Status: WATER NE NE SW Elev: 780GL
permit: 0 permit date: comp. date: 01/01/53
Lambert X: 3051979 Lambert Y: 3297803 td: 150
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412288900 Olson, Robert C 11-24N-10E
Ogle [redacted]
Status: WATER NE SW SE Elev: 0
permit: 108058 permit date: 07/13/83 comp. date: 09/08/83
Lambert X: 3053328 Lambert Y: 3296522 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 170 to 200 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	STEEL 19#	-1	9
66	SDR 21 PVC	9	39

Size hole below casing: 6 in.
Static level 75 ft. below casing top which is 1 ft. above grnd level.
Pumping level 100 ft. when pumping at 20 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
top soil	2	2
sand	8	10
soft limestone	10	20
limestone	65	85
dolomite	85	170
sandstone	30	200

121412289000 Martin, Jonas Willard 11-24N-10E
Ogle [redacted]
Status: WATER 100 SL 100 EL SW NE NW Elev: 0
permit: 112415 permit date: 05/16/84 comp. date: 05/18/84
Lambert X: 3051500 Lambert Y: 3299540 td: 140
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	-1	96

Size hole below casing: 6 in.
Static level 12 ft. below casing top which is 1 ft. above grnd level.
Pumping level 35 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
black & gry top soil	10	10
sand	75	85
sandstone	55	140

121412289100 Olson, Robert C 11-24N-10E
Ogle [redacted]
Status: WATER NE SW SE Elev: 0
permit: 95703 permit date: 08/22/80 comp. date: 08/27/80
Lambert X: 3053328 Lambert Y: 3296522 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 149 to 185 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	19# STEEL	0	41

Size hole below casing: 6 in.
Static level 50 ft. below casing top which is 1 ft. above grnd level.
Pumping level 85 ft. when pumping at 10 gpm for 2 hours.
Formations Passed Through

	Thickness	Bottom
top soil	2	2
clay-sand	6	8
soft limestone	12	20
limestone	45	65
dolomite	84	149
sandstone	36	185

121412289200 Olson, Robert C 11-24N-10E
Ogle [redacted]
Status: WATER NE NE NW Elev: 0
permit: 86424 permit date: 06/08/79 comp. date: 08/22/79
Lambert X: 3051905 Lambert Y: 3300436 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 85 to 185 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	STEEL 19.5	0	41

Size hole below casing: 6 in.
Static level 100 ft. below casing top which is 1 ft. above grnd level.
Pumping level 120 ft. when pumping at 10 gpm for 1 hours.
Formations Passed Through

	Thickness	Bottom
top soil	4	4
soft limestone	6	10
limestone	25	35
dolomite	50	85
sandstone	100	185

121412289300 Martin, Jonas Willard 11-24N-10E
Ogle [redacted]
Status: WATER 70 NL 200 WL SW SW Elev: 740GL
permit: 102024 permit date: 11/04/81 comp. date: 11/16/81
Lambert X: 3049910 Lambert Y: 3296692 td: 120
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 73 to 120 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	RT ST 19#	0	77

Size hole below casing: 6 in.
Static level 49 ft. below casing top which is 1 ft. above grnd level.
Pumping level 61 ft. when pumping at 30 gpm for 4 hours.
Formations Passed Through

	Thickness	Bottom
top soil	2	2
yellow limestone	29	31
yl & gry limestone	42	73
sandstone	47	120

121410089700 11-24N-10E
Ogle [redacted] 1
Status: WATER NW SE NW Elev: 0
permit: 0 permit date: comp. date: 01/01/46
Lambert X: 3051283 Lambert Y: 3299106 td: 143
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412289400 Bull, Jack D 11-24N-10E
Ogle [redacted]
Status: WATER SE NW SW Elev: 0
permit: 36966 permit date: 04/14/75 comp. date: 05/20/75
Lambert X: 3050683 Lambert Y: 3297112 td: 120
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 60 to 120 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	.280	0	40

Size hole below casing: 6 in.
Static level 60 ft. below casing top which is 1 ft. above grnd level.
Pumping level 85 ft. when pumping at 10 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
top soil	5	5
clay	10	15
limestone	105	120

121410122400 Martin, Jonas 11-24N-10E
Ogle [redacted]
Status: WATER 2375 SL 1830 WL Elev: 860GL
permit: 0 permit date: comp. date: 06/01/70
Lambert X: 3051504 Lambert Y: 3297859 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412382600 U. S. Geological Survey 12-24N-10E
Ogle Byron Salvage Yard PEI - Angle Hole
Status: STRAT 600 SL 150 WL SW Elev: 720GL
permit: permit date: comp. date: 01/01/90
Lambert X: 3055129 Lambert Y: 3296188 td: 106
producing formation: td formation:
latitude: 42.089282 longitude: 89.296075

121412289500 Martin, Jonas Willard 12-24N-10E
Ogle [redacted]
Status: WATER 100 NL 100 EL SE NE SE Elev: 880GL
permit: 102960 permit date: 03/31/82 comp. date: 04/19/82
Lambert X: 3060059 Lambert Y: 3297535 td: 320
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 230 to 320 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	STEEL 19#	-1	22
6	PVC	21	244

Size hole below casing: 6 in.
Static level 175 ft. below casing top which is 1 ft. above grnd level.
Pumping level 180 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
soil	1	1
clay	7	8
yellow limestone	72	80
gray limestone	130	210

Glenwood	20	230
sandstone	90	320

121412438800 Bull, Jack D. 12-24N-10E
Ogle [redacted]
Status: WATER NW SE SE Elev: 0
permit: permit date: 11/19/97 comp. date: 12/01/97
Lambert X: 3059201 Lambert Y: 3296643 td: 325
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 0 to 325 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	81

Size hole below casing: in.
Static level 90 ft. below casing top which is 1 ft. above grnd level.
Pumping level 94 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
topsoil	1	1
brown clay	3	4
limestone	43	47
dolomite	46	93
limestone	4	97
dolomite	12	109
limestone	19	128
dolomite	57	185
dolomite/shale/sandstone	10	195
sandstone	130	325

121412438900 Bull, Jack D. 12-24N-10E
Ogle [redacted]
Status: WATER NE NE SE Elev: 0
permit: permit date: 02/06/97 comp. date: 10/10/97
Lambert X: 3059824 Lambert Y: 3297957 td: 325
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 220 to 325 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 STEEL	0	80

Size hole below casing: in.
Static level 90 ft. below casing top which is 1 ft. above grnd level.
Pumping level 98 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
brown clay	9	9
limestone	39	48
dolomite	42	90
limestone	3	93
dolomite	4	97
soft limestone	2	99
dolomite	86	185
sandstone	140	325

121410003100 12-24N-10E
Ogle [redacted]
Status: WATER 1700 SL 150 EL Elev: 864GL
permit: 0 permit date: comp. date: 01/01/54
Lambert X: 3060012 Lambert Y: 3297382 td: 300
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410115000 Martin, Jonas 13-24N-10E
Ogle [redacted] 1
Status: WATER 2200 NL 400 WL Elev: 850GL

permit: 0 permit date: comp. date: 08/01/69
Lambert X: 3055458 Lambert Y: 3293394 td: 275
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412382900 U. S. Geological Survey 13-24N-10E
Ogle Byron Salvage Yard - PEI AW-1D
Status: STRAT 1550 NL 800 WL Elev: 797GL
permit: permit date: comp. date: 04/07/89
Lambert X: 3055838 Lambert Y: 3294052 td: 125
producing formation: td formation:
latitude: 42.083392 longitude: 89.293470

121412382700 U. S. Geological Survey 13-24N-10E
Ogle Byron Salvage Yard - PEI AW-4S
Status: STRAT 1300 NL 1300 WL Elev: 781GL
permit: permit date: comp. date: 04/03/89
Lambert X: 3056331 Lambert Y: 3294311 td: 50
producing formation: td formation:
latitude: 42.084102 longitude: 89.291645

121412382800 U. S. Geological Survey 13-24N-10E
Ogle Byron Salvage Yard - PEI-AW AW-4D
Status: STRAT 1300 NL 1300 WL Elev: 781GL
permit: permit date: comp. date: 04/03/89
Lambert X: 3056331 Lambert Y: 3294311 td: 119
producing formation: td formation:
latitude: 42.084102 longitude: 89.291645

121412383000 U. S. Geological Survey 13-24N-10E
Ogle Byron Salvage Yard PEI-MW MW-2
Status: STRAT 2150 NL 1600 WL Elev: 846GL
permit: permit date: comp. date: 03/07/89
Lambert X: 3056656 Lambert Y: 3293467 td: 216
producing formation: td formation:
latitude: 42.081775 longitude: 89.290450

121412183400 Wehling Well Works Inc. 13-24N-10E
Ogle Commonwealth Edison
Status: WATER 2144 SL 1236 EL Elev: 870GL
permit: 0 permit date: comp. date: 09/01/75
Lambert X: 3059109 Lambert Y: 3292434 td: 600
producing formation: td formation:
latitude: 42.078913 longitude: 89.281386

121412504000 13-24N-10E
Ogle Motosports Park Incorporated
Status: WATER NW NW SE Elev: 0
permit: permit date: comp. date:
Lambert X: 3058037 Lambert Y: 3292617 td: 0
producing formation: td formation:
latitude: 42.079424 longitude: 89.285349
Water from at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -
Diam. (in.) Kind and Weight From(ft) To(ft)
Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.
Formations Passed Through Thickness Bottom
no record 0 0

121412245800 Martin, Jonas Willard 13-24N-10E

Ogle [redacted]
Status: WATER 100 NL 100 WL NE Elev: 0
permit: 117803 permit date: 05/14/85 comp. date: 05/18/85
Lambert X: 3057699 Lambert Y: 3295537 td: 230
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 25 to 230 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL 19.45	-1	43
6	WT STL 19.45	-1	93

Size hole below casing: 6 in.
Static level 35 ft. below casing top which is 1 ft. above grnd level.
Pumping level 102 ft. when pumping at 80 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
SS.#65988 (0'-230')	0	0
SS #65988 (0'-230')	0	0
clay	4	4
clay	4	4
yellow limestone	76	80
yellow limestone	84	88
gray limestone	27	115
gray limestone	35	115
shale	15	130
shale	15	130
sandstone	100	230
sandstone	100	230

121410015900 Martin Laurence 13-24N-10E
Ogle [redacted] 1
Status: WATER 300 NL 200 WL NE Elev: 0
permit: 0 permit date: comp. date: 01/01/63
Lambert X: 3057807 Lambert Y: 3295340 td: 110
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412550000 Joe Arwood 14-24N-10E
Ogle [redacted]
Status: WATER SE SW SW Elev: 0
permit: permit date: 02/02/04 comp. date: 02/11/04
Lambert X: 3050860 Lambert Y: 3290450 td: 215
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 158 to 215 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	SA53B STEEL	-1	169

Size hole below casing: in.
Static level 68 ft. below casing top which is 1 ft. above grnd level.
Pumping level 80 ft. when pumping at 20 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	2	2
sand/clay	33	35
limestone yellow broken clay	27	62
shale/limestone yellow	58	120
sandstone soft	38	158
sandstone white hard	57	215

121412383100 U. S. Geological Survey 14-24N-10E
Ogle Byron Salvage Yard 225 MW-20
Status: STRAT 560 NL 200 EL Elev: 821GL
permit: permit date: comp. date: 09/18/85
Lambert X: 3054810 Lambert Y: 3295020 td: 186
producing formation: td formation:
latitude: 42.086066 longitude: 89.297264

121412518700 Commonwealth Edsn 14-24N-10E
Ogle Byron Station G-2
Status: ENG 1716 NL 132 EL Elev: 0
permit: permit date: comp. date:
Lambert X: 3054912 Lambert Y: 3293867 td: 190
producing formation: td formation:
latitude: 42.082888 longitude: 89.296897

121412383300 U. S. Geological Survey 14-24N-10E
Ogle [redacted] DF-10
Status: STRAT 1100 NL 200 EL Elev: 833GL
permit: permit date: comp. date: 08/28/90
Lambert X: 3054826 Lambert Y: 3294481 td: 54
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412383200 U. S. Geological Survey 14-24N-10E
Ogle [redacted] DF-4D
Status: STRAT 1850 NL 550 EL Elev: 832GL
permit: permit date: comp. date: 08/22/90
Lambert X: 3054498 Lambert Y: 3293721 td: 151
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412425200 Martin, Jonas Willard 14-24N-10E
Ogle [redacted]
Status: WATER SE SW NW Elev: 760GL
permit: permit date: 06/27/96 comp. date: 07/12/96
Lambert X: 3050791 Lambert Y: 3293123 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 137 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL 19.45#	-1	139

Size hole below casing: 6 in.
Static level 82 ft. below casing top which is 0 ft. above grnd level.
Pumping level 110 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	3	3
broken limestone	7	10
yellow limestone	20	30
gray limestone	68	98
Glenwood	17	115
sandstone	85	200

121410060000 Martin, Jonas 15-24N-10E
Ogle [redacted] 2
Status: WATER 1200 SL 1200 WL Elev: 740GL
permit: 0 permit date: comp. date: 01/01/68
Lambert X: 3045747 Lambert Y: 3291195 td: 195
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412314900 Bull, Jack D 15-24N-10E
Ogle [redacted]
Status: WATER SW SW NE Elev: 0
permit: 005281 permit date: 08/30/88 comp. date: 09/19/88
Lambert X: 3047490 Lambert Y: 3293058 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 110 to 165 ft.

Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	43

Size hole below casing: 5 in.
Static level 80 ft. below casing top which is 1 ft. above grnd level.
Pumping level 80 ft. when pumping at 12 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
top soil	6	6
yellow rock	54	60
St. Pete	5	65
gray shale	5	70
rotten rock	10	80
St. Pete yellow	30	110
St. Pete white	55	165

121410090000 Martin, Lawrence W. 15-24N-10E
Ogle [redacted]
Status: WATER SW SW NE Elev: 700GL
permit: 0 permit date: comp. date: 01/01/43
Lambert X: 3047490 Lambert Y: 3293058 td: 138
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410090100 Martin, Lawrence W. 15-24N-10E
Ogle [redacted]
Status: WATER SW SW NE Elev: 700GL
permit: 0 permit date: comp. date: 01/01/42
Lambert X: 3047490 Lambert Y: 3293058 td: 72
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412331900 Martin, Jonas Willard 15-24N-10E
Ogle [redacted]
Status: WATER SW SE NE Elev: 780GL
permit: 011904 permit date: 06/02/89 comp. date: 09/26/89
Lambert X: 3048813 Lambert Y: 3293082 td: 238
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 149 to 238 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL 19.45#	-2	150

Size hole below casing: 6 in.
Static level 118 ft. below casing top which is 1 ft. above grnd level.
Pumping level 143 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
sand	12	12
limestone	113	125
Glenwood	15	140
sandstone	98	238

121412439000 Martin, Jonas Willard 15-24N-10E
Ogle Commonwealth Edison Co. 1
Status: WATER NE NE NW Elev: 0
permit: permit date: 12/24/97 comp. date: 12/29/97
Lambert X: 3046784 Lambert Y: 3295061 td: 210
producing formation: td formation:
latitude: 42.086224 longitude: 89.326951
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	SA53B STEEL 19.45	-1	143

Size hole below casing: in.

Static level 12 ft. below casing top which is 1 ft. above grnd level.
Pumping level 17 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
earth soil	2	2
large pit run limestone	7	9
gravel & clay	81	90
shale (Glenwood)	30	120
sandstone	90	210

121412439100 Bull, Jack D. 15-24N-10E
Ogle [redacted]
Status: WATER NW SE SE Elev: 0
permit: 141-97- permit date: 02/13/97 comp. date: 02/20/97
Lambert X: 3048861 Lambert Y: 3291076 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 85 to 165 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	85

Size hole below casing: in.
Static level 30 ft. below casing top which is 1 ft. above grnd level.
Pumping level 34 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
topsoil	3	3
clay	32	35
sand gravel	35	70
sandstone	95	165

121412550100 Schuur, Bill 15-24N-10E
Ogle [redacted]
Status: WATER SE NE SE Elev: 0
permit: permit date: 09/03/03 comp. date: 09/08/03
Lambert X: 3049508 Lambert Y: 3291759 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from St. Peter at depth 100 to 185 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A53B	0	88

Size hole below casing: in.
Static level 60 ft. below casing top which is 1 ft. above grnd level.
Pumping level 65 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
sand	20	20
sand & gravel	40	60
sand & clay	20	80
St. Peter	105	185

121412257700 Martin, Jonas Willard 15-24N-10E
Ogle [redacted]
Status: WATER 50 SL 50 EL NE SW SW Elev: 695GL
permit: 129146 permit date: 01/13/87 comp. date: 01/15/87
Lambert X: 3045833 Lambert Y: 3290721 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 100 to 200 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	-4	102

Size hole below casing: 6 in.
Static level 13 ft. below casing top which is 4 ft. above grnd level.
Pumping level 30 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom

top soil	10	10
gravel	10	20
limestone gray-yl	20	40
shale-limestone	42	82
dirty sandstone (yl)	18	100
white sandstone	100	200

121412332000 Livingston, Lowell 15-24N-10E
Ogle [redacted]
Status: WATER SW NE NE Elev: 0
permit: 011515 permit date: 05/19/89 comp. date: 07/01/89
Lambert X: 3048782 Lambert Y: 3294419 td: 260
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 128 to 260 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	A-53	0	128

Size hole below casing: 6 in.
Static level 60 ft. below casing top which is 1 ft. above grnd level.
Pumping level 75 ft. when pumping at 0 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
top soil	2	2
sand & gravel	93	95
lime rock	33	128
sandstone	132	260

121412289600 Martin, Jonas Willard 15-24N-10E
Ogle [redacted]
Status: WATER 200 SL 100 WL SE Elev: 708GL
permit: 101225 permit date: 09/08/81 comp. date: 09/09/81
Lambert X: 3047321 Lambert Y: 3290234 td: 180
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 123 to 180 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT ST 19.45	-1	124

Size hole below casing: 6 in.
Static level 32 ft. below casing top which is 1 ft. above grnd level.
Pumping level 45 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
sand	18	18
sand gravel	97	115
sandstone	65	180

121412332100 Martin, Jonas Willard 15-24N-10E
Ogle [redacted]
Status: WATER SW SE SW Elev: 700GL
permit: 016939 permit date: 02/16/90 comp. date: 03/15/90
Lambert X: 3046223 Lambert Y: 3290343 td: 155
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-1	106

Size hole below casing: 6 in.
Static level 15 ft. below casing top which is 1 ft. above grnd level.
Pumping level 25 ft. when pumping at 50 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
top soil	5	5
gravel	40	45
broken limestone, shale	25	70

sandstone	85	155

121412332200 Martin, Jonas Willard 15-24N-10E
Ogle [redacted]
Status: WATER SW SW NW Elev: 735GL
permit: 012736 permit date: 07/06/89 comp. date: 08/05/89
Lambert X: 3044843 Lambert Y: 3293011 td: 208
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 97 to 208 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	-1	98

Size hole below casing: 6 in.
Static level 47 ft. below casing top which is 1 ft. above grnd level.
Pumping level 60 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	10	10
yellow limestone	40	50
gray limestone	35	85
sandstone	123	208

121412423700 McKinney, Melvin D. 15-24N-10E
Ogle [redacted]
Status: WATER SE SE SE Elev: 0
permit: permit date: 03/22/96 comp. date: 06/12/94
Lambert X: 3049540 Lambert Y: 3290424 td: 240
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 120 to 240 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	STEEL 15#/FT	0	88

Size hole below casing: 5 in.
Static level 50 ft. below casing top which is 2 ft. above grnd level.
Pumping level 80 ft. when pumping at 0 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
topsoil	3	3
sand & gravel	85	88
yellow lime & sandstone	152	240

121412420400 McKinney, Melvin D. 15-24N-10E
Ogle [redacted]
Status: WATER NW SE SE Elev: 0
permit: permit date: 04/08/94 comp. date: 04/12/94
Lambert X: 3048861 Lambert Y: 3291076 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 60 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	STEEL 15#	0	42

Size hole below casing: 5 in.
Static level 60 ft. below casing top which is 1 ft. above grnd level.
Pumping level 85 ft. when pumping at 0 gpm for 8 hours.

Formations Passed Through	Thickness	Bottom
topsoil	2	2
sand	7	9
yellow lime	71	80
gray lime	25	105
sandstone	95	200

121412502300 Randy Roop/Jonas Martin Drlg. 15-24N-10E

Ogle Petros, Todd - AAA Builders
Status: WATER SE SW SE Elev: 0
permit: permit date: 07/09/01 comp. date: 07/18/01
Lambert X: 3048213 Lambert Y: 3290392 td: 180
producing formation: td formation:
latitude: 42.073352 longitude: 89.321699
Water from sandstone at depth 130 to 180 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	SA 53B	-1	130

Size hole below casing: in.
Static level 40 ft. below casing top which is 1 ft. above grnd level.
Pumping level 50 ft. when pumping at 20 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
sand/clay	7	7
sand, 20 gpm @ 50', 30 gpm @ 60'	83	90
Glenwood	25	115
sandstone, 75 gpm @ 180'	65	180

121412533600 Schuur, Bill 15-24N-10E
Ogle [redacted]
Status: WATER NW NE SE Elev: 0
permit: permit date: 08/12/03 comp. date: 09/06/03
Lambert X: 3048829 Lambert Y: 3292413 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from St. Peter sandstone at depth 110 to 185 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A53B	0	103

Size hole below casing: in.
Static level 60 ft. below casing top which is 1 ft. above grnd level.
Pumping level 70 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
sand	40	40
sand gravel	48	88
St. Peter sandstone	97	185

121412318700 Bull, Jack D 15-24N-10E
Ogle [redacted]
Status: WATER SW SW SW Elev: 0
permit: 008125 permit date: 11/30/88 comp. date: 02/28/89
Lambert X: 3044897 Lambert Y: 3290311 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 130 to 185 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	42

Size hole below casing: 5 in.
Static level 80 ft. below casing top which is 1 ft. above grnd level.
Pumping level 85 ft. when pumping at 0 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
top soil	5	5
yellow rock	25	30
gray rock	45	75
yellow rock	35	110
gray shale	20	130
white St. Pete	55	185

121412491700 Jack Bull Well & Septic 15-24N-10E
Ogle [redacted]
Status: WATER SE SE SE Elev: 0
permit: permit date: 09/13/00 comp. date: 09/26/00

Lambert X: 3049540 Lambert Y: 3290424 td: 63
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sand gravel at depth 40 to 63 ft.
Screen: Diam. 4 in. Length: 3 ft. Slot: .015
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	ASTM A53B	0	60

Size hole below casing: in.
Static level 22 ft. below casing top which is 1 ft. above grnd level.
Pumping level 29 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
topsoil	1	1
brown sand	35	36
brown clay	8	44
brown sand & gravel	19	63

121412439200 Bull, Jack D. 15-24N-10E
Ogle Vollmer & Jennings Const.
Status: WATER NW NW SE Elev: 0
permit: permit date: 10/07/97 comp. date: 11/22/97
Lambert X: 3047505 Lambert Y: 3292387 td: 86
producing formation: td formation:
latitude: 42.078852 longitude: 89.324304
Water from gravel at depth 60 to 86 ft.
Screen: Diam. 4 in. Length: 3 ft. Slot: .015
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	83

Size hole below casing: in.
Static level 30 ft. below casing top which is 1 ft. above grnd level.
Pumping level 33 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
topsoil	3	3
brown sand	57	60
brown gravel	26	86

121412560700 Schuur, Bill 15-24N-10E
Ogle Wenberg Homebuilders
Status: WATER SE NE SE Elev: 0
permit: permit date: 02/09/05 comp. date: 06/20/05
Lambert X: 3049508 Lambert Y: 3291759 td: 205
producing formation: td formation:
latitude: 42.077095 longitude: 89.316879
Water from St. Peter at depth 120 to 205 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A53B	0	66

Size hole below casing: in.
Static level 30 ft. below casing top which is 1 ft. above grnd level.
Pumping level 35 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
topsoil	2	2
clay sand	46	48
red rock	2	50
blue shale	10	60
St. Peter	145	205

121412464300 Allabaugh, Neil M. 15-24N-10E
Ogle [redacted]
Status: WATER SE SE NW Elev: 0
permit: 141-97- permit date: 09/15/97 comp. date: 10/06/97
Lambert X: 3046828 Lambert Y: 3293046 td: 65
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from brown sand at depth 62 to 65 ft.

Screen: Diam. 5 in. Length: 4 ft. Slot: .2
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	A53	0	65

Size hole below casing: in.
Static level 10 ft. below casing top which is 1 ft. above grnd level.
Pumping level 15 ft. when pumping at 10 gpm for 1 hours.

Formations Passed Through	Thickness	Bottom
clay	6	6
sand	17	23
gravel	19	42
brown sand	23	65

121412420500 McKinney, Melvin D. 15-24N-10E
Ogle [redacted]
Status: WATER NW SE SE Elev: 0
permit: permit date: 04/08/94 comp. date: 04/17/94
Lambert X: 3048861 Lambert Y: 3291076 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 97 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	STEEL 15#	0	97
4	LINER STEEL	96	136

Size hole below casing: in.
Static level 75 ft. below casing top which is 1 ft. above grnd level.
Pumping level 75 ft. when pumping at 0 gpm for 12 hours.

Formations Passed Through	Thickness	Bottom
topsoil	4	4
red clay	41	45
sand	25	70
gray clay	24	94
sandstone	106	200

121412507600 22-24N-10E
Ogle [redacted]
Status: WATER NW NW NE Elev: 0
permit: permit date: comp. date:
Lambert X: 3047563 Lambert Y: 3289712 td: 0
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

Size hole below casing: in.
Static level 0 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

121412545800 Schuur, Bill 22-24N-10E
Ogle [redacted]
Status: WATER NE SE SE Elev: 0
permit: permit date: 07/15/02 comp. date: 08/03/02
Lambert X: 3049603 Lambert Y: 3285809 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from St. Peter at depth 100 to 185 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	A53B	0	121

Size hole below casing: in.
Static level 45 ft. below casing top which is 1 ft. above grnd level.
Pumping level 47 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom

topsoil	2	2
soft brown limestone	86	88
blue shale	12	100
St. Peter	85	185

121412385800 Martin, Jonas Willard 22-24N-10E
Ogle [redacted]
Status: WATER NW NE SW Elev: 700GL
permit: permit date: 12/20/93 comp. date: 12/20/93
Lambert X: 3046283 Lambert Y: 3287060 td: 163
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 82 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-1	82

Size hole below casing: 6 in.
Static level 15 ft. below casing top which is 0 ft. above grnd level.
Pumping level 40 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
gravel	42	42
shale	13	55
sandstone & shale	13	68
sandstone	95	163

121410147600 Martin, Jonas 22-24N-10E
Ogle [redacted]
Status: WATER 200 SL 200 EL NW Elev: 700GL
permit: 0 permit date: comp. date: 03/01/73
Lambert X: 3047066 Lambert Y: 3287604 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412251200 Martin, Jonas Willard 22-24N-10E
Ogle [redacted]
Status: WATER 200 NL 200 EL NW SE SE Elev: 750GL
permit: 123028 permit date: 04/11/86 comp. date: 04/24/86
Lambert X: 3049072 Lambert Y: 3285929 td: 215
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 112 to 215 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-2	114

Size hole below casing: 6 in.
Static level 40 ft. below casing top which is 2 ft. above grnd level.
Pumping level 68 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay-gravel	18	18
broken limestone	68	86
shale-ls-sandstone	19	105
sandstone	110	215

121412176000 Martin, Jonas 22-24N-10E
Ogle [redacted]
Status: WATER 900 SL 300 WL NE Elev: 740GL
permit: 0 permit date: comp. date: 01/01/75
Lambert X: 3047554 Lambert Y: 3288314 td: 179
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412369800 Bull, Jack D. 22-24N-10E
Ogle [redacted]

Status: WATER NW NW Elev: 0
permit: permit date: 09/20/93 comp. date: 10/11/93
Lambert X: 3045248 Lambert Y: 3289328 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 60 to 165 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	49

Size hole below casing: 5 in.
Static level 15 ft. below casing top which is 1 ft. above grnd level.
Pumping level 15 ft. when pumping at 0 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
top soil	10	10
clay	6	16
clay, sand, gravel	26	42
yellow rock	23	65
St. Peter	100	165

121412369900 Bull, Jack D. 22-24N-10E
Ogle [redacted]
Status: WATER NW NW NW Elev: 0
permit: permit date: 09/27/93 comp. date: 10/07/93
Lambert X: 3044910 Lambert Y: 3289647 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 85 to 165 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	84

Size hole below casing: 5 in.
Static level 15 ft. below casing top which is 1 ft. above grnd level.
Pumping level 20 ft. when pumping at 0 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
top soil	5	5
clay	3	8
rotten rock	17	25
yellow rock	10	35
gray rock	7	42
blue rock	13	55
St. Peter	110	165

121412560600 Joe Arwood 22-24N-10E
Ogle [redacted]
Status: WATER SW SW NE Elev: 0
permit: permit date: 11/01/04 comp. date: 01/07/05
Lambert X: 3047594 Lambert Y: 3287744 td: 155
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 67 to 155 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	A53B STEEL	-1	85

Size hole below casing: in.
Static level 4 ft. below casing top which is 1 ft. above grnd level.
Pumping level 20 ft. when pumping at 20 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay, sand, gravel	60	60
Glenwood	7	67
sandstone	88	155

121412420600 McKinney, Melvin D. 22-24N-10E
Ogle [redacted]
Status: WATER SW SW SW Elev: 0

permit: permit date: 04/28/93 comp. date: 05/06/93
Lambert X: 3045001 Lambert Y: 3285074 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 70 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	15# STEEL	0	65

Size hole below casing: 5 in.
Static level 45 ft. below casing top which is 0 ft. above grnd level.
Pumping level 55 ft. when pumping at 0 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
topsoil	2	2
red clay & sand	43	45
blue clay	20	65
yellow lime	65	130
sandstone	70	200

121412289800 Martin, Jonas Willard 22-24N-10E
Ogle [redacted]
Status: WATER 100 SL 50 WL NW NE SE Elev: 760GL
permit: 106439 permit date: 03/10/83 comp. date: 03/19/83
Lambert X: 3048649 Lambert Y: 3286879 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 128 to 200 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT ST 19.45	-2	128

Size hole below casing: 6 in.
Static level 60 ft. below casing top which is 2 ft. above grnd level.
Pumping level 68 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
top soil	2	2
limestone	87	89
Glenwood	28	117
sandstone	83	200

121410000400 22-24N-10E
Ogle [redacted] 1
Status: WATER SE SW Elev: 845GL
permit: 0 permit date: comp. date: 01/01/57
Lambert X: 3046642 Lambert Y: 3285429 td: 250
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410057100 Martin, Jonas 22-24N-10E
Ogle [redacted]
Status: WATER 100 SL 100 WL NE Elev: 700GL
permit: 0 permit date: comp. date: 07/01/68
Lambert X: 3047367 Lambert Y: 3287510 td: 140
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412403200 Martin, Jonas Willard 22-24N-10E
Ogle [redacted]
Status: WATER SE NE NW Elev: 730GL
permit: permit date: 12/19/94 comp. date: 03/04/95
Lambert X: 3046910 Lambert Y: 3289040 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-2	128

Size hole below casing: 6 in.
Static level 38 ft. below casing top which is 0 ft. above grnd level.
Pumping level 48 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
sandy clay	6	6
broken limestone - some gray	94	100
sandstone	85	185

121412183700 Martin, Jonas 22-24N-10E
Ogle [redacted]
Status: WATER 600 NL 600 EL SE Elev: 800GL
permit: 0 permit date: comp. date: 07/01/75
Lambert X: 3049320 Lambert Y: 3286850 td: 115
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410119500 Olson, Robert C. 22-24N-10E
Ogle [redacted] 107
Status: WATER 150 SL 300 WL Elev: 0
permit: 0 permit date: comp. date: 04/01/70
Lambert X: 3044975 Lambert Y: 3284896 td: 47
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410051600 Martin, Jonas 22-24N-10E
Ogle [redacted] 1
Status: WATER 2400 SL 1900 EL Elev: 700GL
permit: 0 permit date: comp. date: 01/01/67
Lambert X: 3048016 Lambert Y: 3287195 td: 147
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412385900 Stone, Herald I. 22-24N-10E
Ogle [redacted]
Status: WATER SE NW SE Elev: 0
permit: permit date: 11/10/93 comp. date: 02/15/94
Lambert X: 3048275 Lambert Y: 3286443 td: 180
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	IL APPROVED STEEL	-1	153

Size hole below casing: 5 in.
Static level 80 ft. below casing top which is 0 ft. above grnd level.
Pumping level 0 ft. when pumping at 30 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
clay	8	8
yellow & brown limestone (soft 35-48')	45	53
yellow limestone	3	56
gray limestone w/streaks of yellow	52	108
dark gray shale, sharp cutting	13	121
yellow soft limestone	2	123
sandstone & yellow soft limestone	17	140
ss w/cracks clean to 180'	40	180

121412360400 Martin, Jonas Willard 22-24N-10E
Ogle [redacted]
Status: WATER SW NW SE Elev: 760GL
permit: permit date: 08/24/92 comp. date: 08/26/92
Lambert X: 3047615 Lambert Y: 3286430 td: 225
producing formation: td formation:

latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 150 to 220 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL 19.45#/FT	0	164

Size hole below casing: 6 in.
Static level 85 ft. below casing top which is 1 ft. above grnd level.
Pumping level 95 ft. when pumping at 25 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	10	10
yellow & gray limestone	120	130
shale	15	145
yellow limestone	5	150
sandstone	75	225

121410113200 Martin, Jonas 22-24N-10E
Ogle [redacted] 1
Status: WATER 1200 NL 500 WL NE Elev: 680GL
permit: 0 permit date: comp. date: 05/01/69
Lambert X: 3047745 Lambert Y: 3288845 td: 172
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412360500 Beaman, Jessie J. 22-24N-10E
Ogle Three Hammers Const.
Status: WATER NW SE NE Elev: 0
permit: permit date: 06/24/92 comp. date: 07/14/92
Lambert X: 3048907 Lambert Y: 3288429 td: 200
producing formation: td formation:
latitude: 42.067939 longitude: 89.319147
Water from sandstone at depth 122 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	15#/FT BLACK	0	122

Size hole below casing: 5 in.
Static level 50 ft. below casing top which is 1 ft. above grnd level.
Pumping level 50 ft. when pumping at 10 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
sand	20	20
brown clay	30	50
limestone	20	70
brown clay	10	80
limestone	10	90
brown clay	10	100
shale	12	112
sandstone	88	200

121412187900 Martin, Jonas 23-24N-10E
Ogle [redacted]
Status: WATER 500 SL 500 EL NW Elev: 725GL
permit: 0 permit date: comp. date: 01/01/76
Lambert X: 3052040 Lambert Y: 3287997 td: 460
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412360600 Olson, Alan R. 23-24N-10E
Ogle [redacted]
Status: WATER NW SE SE Elev: 0
permit: permit date: 05/29/92 comp. date: 06/18/92
Lambert X: 3054209 Lambert Y: 3285881 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 133 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:

Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	STEEL 19	-1	120

Size hole below casing: 6 in.
Static level 75 ft. below casing top which is 1 ft. above grnd level.
Pumping level 0 ft. when pumping at 0 gpm for 0 hours.

Formations Passed Through	Thickness	Bottom
top soil	3	3
soft limestone	4	7
soft limestone (crevis)	107	114
dolomite	19	133
sandstone	67	200

121412429900 Beaman, Jessie J. 23-24N-10E
Ogle K.M. Builders
Status: WATER NE SE SE Elev: 0
permit: permit date: 10/24/96 comp. date: 10/20/96
Lambert X: 3054867 Lambert Y: 3285891 td: 240
producing formation: td formation:
latitude: 42.060911 longitude: 89.297129
Water from sandstone at depth 170 to 240 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	ASTM A53-B	-1	131

Size hole below casing: 5 in.
Static level 91 ft. below casing top which is 1 ft. above grnd level.
Pumping level 140 ft. when pumping at 20 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
brown clay	10	10
brown limestone	40	50
brown clay	10	60
limestone	20	80
brown clay	10	90
limestone & clay	30	120
dolomite	35	155
shale	15	170
sandstone	70	240

121412420700 McKinney, Melvin D. 23-24N-10E
Ogle [redacted]
Status: WATER SE SE NE Elev: 0
permit: permit date: 04/08/94 comp. date: 04/10/94
Lambert X: 3054846 Lambert Y: 3287872 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 70 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	SCH #40	0	56

Size hole below casing: 5 in.
Static level 80 ft. below casing top which is 1 ft. above grnd level.
Pumping level 95 ft. when pumping at 0 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
topsoil	4	4
yellow lime	71	75
gray lime	45	120
sandstone	80	200

121412190400 McKinsey, Melvin D. 23-24N-10E
Ogle [redacted]
Status: WATER SE NE SE Elev: 0
permit: 0 permit date: comp. date: 04/01/76
Lambert [redacted]3054860 Lambert Y: 3286551 td: 150
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412304300 Martin, Jonas Willard 23-24N-10E
Ogle [redacted]
Status: WATER 200 NL 200 EL SE SW Elev: 702GL
permit: 134619 permit date: 08/18/87 comp. date: 08/21/87
Lambert X: 3052363 Lambert Y: 3285982 td: 220
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 138 to 220 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	-1	138

Size hole below casing: 6 in.
Static level 67 ft. below casing top which is 1 ft. above grnd level.
Pumping level 88 ft. when pumping at 40 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	3	3
yellow limestone	62	65
gray limestone	15	80
brown clay	5	85
gray limestone	15	100
Glenwood	30	130
sandstone	90	220

121412332300 Martin, Jonas Willard 23-24N-10E
Ogle [redacted] 2
Status: WATER NW SW SW Elev: 700GL
permit: permit date: 10/15/91 comp. date: 10/19/91
Lambert X: 3050262 Lambert Y: 3285820 td: 185
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 120 to 185 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	-1	120

Size hole below casing: 6 in.
Static level 13 ft. below casing top which is 0 ft. above grnd level.
Pumping level 60 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	5	5
gravel	70	75
gray limestone	15	90
shale	7	97
shale sandstone	8	105
sandstone	80	185

121412173300 Martin, Jonas 24-24N-10E
Ogle [redacted]
Status: WATER 100 SL 500 WL NW Elev: 820GL
permit: 0 permit date: comp. date: 07/01/74
Lambert X: 3055678 Lambert Y: 3287660 td: 225
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412518800 Commonwealth Edsn 24-24N-10E
Ogle Byron Station G-6
Status: ENG 660 NL 132 EL Elev: 0
permit: permit date: comp. date:
Lambert X: 3060312 Lambert Y: 3289660 td: 267
producing formation: td formation:
latitude: 42.071261 longitude: 89.276962

121412518900 Commonwealth Edsn 24-24N-10E

Ogle Byron Station G-8
Status: ENG 2100 NL 265 WL Elev: 0
permit: permit date: comp. date:
Lambert X: 3055438 Lambert Y: 3288096 td: 123
producing formation: td formation:
latitude: 42.066983 longitude: 89.294999

121412174300 Wehling Well Works Inc. 24-24N-10E
Ogle Commonwealth Edison 1
Status: WATER 365 NL 520 WL NE Elev: 860GL
permit: 0 permit date: comp. date: 10/01/74
Lambert X: 3058319 Lambert Y: 3289904 td: 853
producing formation: td formation:
latitude: 42.071947 longitude: 89.284330

121412174400 Wehling Well Works Inc. 24-24N-10E
Ogle Commonwealth Edison 2
Status: WATER 215 NL 1010 EL Elev: 875GL
permit: 0 permit date: comp. date: 12/01/74
Lambert X: 3059432 Lambert Y: 3290083 td: 834
producing formation: td formation:
latitude: 42.072432 longitude: 89.280212

121412168200 Rosenquist, Gerald 24-24N-10E
Ogle [redacted]
Status: WATER NW SE SW Elev: 0
permit: 0 permit date: comp. date: 07/01/74
Lambert X: 3056839 Lambert Y: 3285939 td: 165
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412487700 Dresden, Edward L. 24-24N-10E
Ogle [redacted]
Status: WATER NE SW SW Elev: 0
permit: permit date: 04/25/00 comp. date: 08/01/00
Lambert X: 3056182 Lambert Y: 3285922 td: 285
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from white sandstone at depth 215 to 285 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	ASTM A53B	0	190

Size hole below casing: in.
Static level 118 ft. below casing top which is 2 ft. above grnd level.
Pumping level 285 ft. when pumping at 75 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
clay	15	15
broken limestone	95	110
limestone with shale streaks	40	150
hard limestone	20	170
Glenwood	20	190
yellow sandstone	25	215
white sandstone	70	285

121412178400 Hinkle J 24-24N-10E
Ogle [redacted]
Status: WATER E2 SW Elev: 0
permit: 0 permit date: comp. date: 01/01/75
Lambert X: 3057166 Lambert Y: 3286277 td: 100
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410128100 24-24N-10E

Ogle [redacted]
Status: WATER E2 SW Elev: 825GL
permit: 0 permit date: comp. date: 07/01/71
Lambert X: 3057166 Lambert Y: 3286277 td: 65
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412538400 Schuur, Bill 24-24N-10E
Ogle [redacted]
Status: WATER NW SE SW Elev: 0
permit: permit date: 10/31/03 comp. date: 11/10/03
Lambert X: 3056839 Lambert Y: 3285939 td: 245
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from St. Peter at depth 100 to 245 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	A53B	0	84

Size hole below casing: in.
Static level 120 ft. below casing top which is 1 ft. above grnd level.
Pumping level 130 ft. when pumping at 10 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
fill	3	3
brown clay	7	10
sand gravel	10	20
yellow rock	80	100
white rock	20	120
gray dolomite	70	190
blue shale	30	220
St. Peter	25	245

121410125900 24-24N-10E
Ogle [redacted]
Status: WATER NW NE SW Elev: 0
permit: 0 permit date: comp. date: 09/01/70
Lambert X: 3056829 Lambert Y: 3287259 td: 110
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410060100 Martin, Jonas 24-24N-10E
Ogle [redacted] 2
Status: WATER 700 NL 1200 WL SW Elev: 825GL
permit: 0 permit date: comp. date: 01/01/68
Lambert X: 3056386 Lambert Y: 3286878 td: 283
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412316300 Bull, Jack D 24-24N-10E
Ogle [redacted]
Status: WATER NW SE NW Elev: 0
permit: 006312 permit date: 09/29/88 comp. date: 10/14/88
Lambert X: 3056818 Lambert Y: 3288580 td: 225
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from rock at depth 140 to 225 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	.258 BLACK	0	42

Size hole below casing: 5 in.
Static level 70 ft. below casing top which is 1 ft. above grnd level.
Pumping level 75 ft. when pumping at 12 gpm for 6 hours.

Formations Passed Through	Thickness	Bottom
top soil	5	5
yellow rock	80	85

gray rock	45	130
yellow rock	10	140
brown rock	5	145
St. Pete	80	225

121412485600 Dresden, Edward L. 24-24N-10E
Ogle [redacted] 1
Status: WATER SE SW SW Elev: 0
permit: permit date: 10/15/99 comp. date: 04/01/00
Lambert X: 3056188 Lambert Y: 3285261 td: 290
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 220 to 290 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	ASTM A53B	0	68
4	ASTM A53B	10	220

Size hole below casing: in.
Static level 122 ft. below casing top which is 5 ft. above grnd level.
Pumping level 290 ft. when pumping at 50 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
clay & sandy rich mix	42	42
gray limestone	38	80
rock & shale mix	45	125
soft shale	20	145
hard shale	35	180
yellow limestone	5	185
sandstone	105	290

121412158600 Martin, Jonas 24-24N-10E
Ogle [redacted]
Status: WATER 150 NL 1200 EL SE Elev: 880GL
permit: 0 permit date: comp. date: 09/01/73
Lambert X: 3059250 Lambert Y: 3287502 td: 335
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412255200 Martin, Jonas Willard 25-24N-10E
Ogle [redacted]
Status: WATER 100 SL 100 EL NE NE Elev: 860GL
permit: 126036 permit date: 08/18/86 comp. date: 08/20/86
Lambert X: 3060381 Lambert Y: 3283833 td: 335
producing formation: td formation:
latitude: [redacted] longitude [redacted]
Water from sandstone at depth 267 to 335 ft.
Screen: Diam. 0 in. Length: 0 ft. Slot: 0
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	PVC	-1	269

Size hole below casing: 6 in.
Static level 160 ft. below casing top which is 1 ft. above grnd level.
Pumping level 200 ft. when pumping at 40 gpm for 1 hours.

Formations Passed Through	Thickness	Bottom
black soil & clay	13	13
sand	8	21
limestone	159	180
soft clay	8	188
limestone	47	235
shale	20	255
sandstone	80	335

121412414900 Martin, Jonas Willard 25-24N-10E
Ogle [redacted]
Status: WATER SW SW NE Elev: 860GL
permit: permit date: 12/05/95 comp. date: 12/18/95

Lambert X: 3058217 Lambert Y: 3282705 td: 305
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL 19.45	0	166

Size hole below casing: 6 in.
Static level 153 ft. below casing top which is 0 ft. above grnd level.
Pumping level 180 ft. when pumping at 20 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	9	9
yellow limestone	141	150
yellow and gray limestone	15	165
gray limestone	35	200
shale	25	225
brown sandstone	20	245
white sandstone	60	305

121412162900 Martin, Jonas 25-24N-10E
Ogle [redacted]
Status: WATER 2500 NL 1500 WL Elev: 840GL
permit: 0 permit date: comp. date: 03/01/74
Lambert X: 3056785 Lambert Y: 3282447 td: 172
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412425300 Dresden, Edward L. 25-24N-10E
Ogle [redacted]
Status: WATER SE NE NW Elev: 0
permit: permit date: 07/22/96 comp. date: 07/23/96
Lambert X: 3057530 Lambert Y: 3283990 td: 240
producing formation: td formation:
latitude: [redacted] longitude [redacted]
Water from sandstone at depth 190 to 240 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	STEEL 19.45	0	54

Size hole below casing: 6 in.
Static level 83 ft. below casing top which is 1 ft. above grnd level.
Pumping level 240 ft. when pumping at 75 gpm for 1 hours.

Formations Passed Through	Thickness	Bottom
drift	6	6
sand & coarse gravel	29	35
limestone	145	180
shale	10	190
sandstone	50	240

121410090900 25-24N-10E
Ogle [redacted]
Status: WATER NW NE SE Elev: 880GL
permit: 0 permit date: comp. date: 01/01/46
Lambert X: 3059538 Lambert Y: 3282081 td: 115
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412531300 C. Martin & Sons Well Co. 25-24N-10E
Ogle Snodgrass, R./Ebenezer Church
Status: WATER NE NE NE Elev: 0
permit: permit date: 04/03/03 comp. date: 05/12/03
Lambert X: 3060136 Lambert Y: 3284707 td: 365
producing formation: td formation:
latitude: 42.057614 longitude: 89.277658
Water from sandstone at depth 290 to 365 ft.

Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	STEEL ASTM A53	-1	290

Size hole below casing: in.
Static level 185 ft. below casing top which is 1 ft. above grnd level.
Pumping level 200 ft. when pumping at 15 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
topsoil	2	2
clay	8	10
soft limestone	35	45
limestone	115	160
dolomite	105	265
soft sandstone	20	285
sandstone	80	365

121412370000 Martin, Jonas Willard 25-24N-10E
Ogle [redacted]
Status: WATER SW NW NW Elev: 825GL
permit: permit date: 08/12/93 comp. date: 09/27/93
Lambert X: 3055565 Lambert Y: 3283943 td: 260
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 135 to 260 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT STEEL	-1	114

Size hole below casing: 6 in.
Static level 135 ft. below casing top which is 0 ft. above grnd level.
Pumping level 180 ft. when pumping at 30 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	14	14
yellow limestone	121	135
gray limestone	80	215
yellow limestone	20	235
sandstone	25	260

121410048600 Martin, Jonas 26-24N-10E
Ogle [redacted]
Status: WATER 500 NL 1100 EL Elev: 760GL
permit: 0 permit date: comp. date: 04/01/67
Lambert X: 3054123 Lambert Y: 3284389 td: 220
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410054400 Martin, Jonas 26-24N-10E
Ogle [redacted]
Status: WATER 150 NL 700 EL SE Elev: 775GL
permit: 0 permit date: comp. date: 09/01/66
Lambert X: 3054595 Lambert Y: 3282152 td: 205
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412430000 Martin, Jonas Willard 26-24N-10E
Ogle [redacted]
Status: WATER NW NE NE Elev: 810GL
permit: permit date: 12/16/96 comp. date: 01/23/97
Lambert X: 3054230 Lambert Y: 3284566 td: 260
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 0 to 0 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	WT ST 19.45	-1	173

Size hole below casing: in.
Static level 83 ft. below casing top which is 1 ft. above grnd level.
Pumping level 105 ft. when pumping at 37 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay - gravel	12	12
yellow limestone	30	42
gray limestone	25	67
yellow limestone - little clay	28	95
gray limestone	35	130
shale	24	154
sandstone	106	260

121412523900 Joe Arwood [redacted] 27-24N-10E
Ogle
Status: WATER NE NE NW Elev: 0
permit: permit date: 04/11/02 comp. date: 05/01/02
Lambert X: 3046991 Lambert Y: 3284451 td: 260
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 200 to 260 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	SA 53B	-1	170

Size hole below casing: in.
Static level 128 ft. below casing top which is 1 ft. above grnd level.
Pumping level 140 ft. when pumping at 20 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	11	11
limestone, yellow	119	130
limestone, gray	55	185
Glenwood sandstone	5	190
Glenwood	10	200
sandstone	60	260

121412370100 Martin, Jonas Willard [redacted] 27-24N-10E
Ogle
Status: WATER NW SW SE Elev: 850GL
permit: permit date: 04/30/93 comp. date: 05/25/93
Lambert X: 3047745 Lambert Y: 3280533 td: 313
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandst. & limest. at depth 134 to 313 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
6	19.45# WT STEEL	-1	125

Size hole below casing: 6 in.
Static level 135 ft. below casing top which is 1 ft. above grnd level.
Pumping level 185 ft. when pumping at 45 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	17	17
yellow limestone	81	98
gray limestone	45	143
yellow limestone	42	185
gray limestone	25	210
limestone & shale	30	240
sandstone	73	313

121410051700 Martin, Jonas [redacted] 27-24N-10E
Ogle 1
Status: WATER 200 NL 1350 WL Elev: 800GL
permit: 0 permit date: comp. date: 07/01/66
Lambert X: 3046033 Lambert Y: 3284563 td: 330
producing formation: td formation:
latitude [redacted] longitude: [redacted]

121410003300 18-24N-11E
Ogle [redacted]
Status: WATER [redacted] NL 400 WL Elev: 865GL
permit: 0 permit date: comp. date: 01/01/55
Lambert X: 3060613 Lambert Y: 3295338 td: 300
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121410094500 Martin, Lawrence W. 19-24N-11E
Ogle [redacted] 1
Status: WATER [redacted] NL 200 WL SW Elev: 0
permit: 0 permit date: comp. date: 01/01/64
Lambert X: 3060650 Lambert Y: 3287535 td: 192
producing formation: td formation:
latitude: [redacted] longitude: [redacted]

121412440600 Beaman, Jessie J. 19-24N-11E
Ogle [redacted]
Status: WATER SW SW SW Elev: 0
permit: 141-97- permit date: 07/19/97 comp. date: 07/25/97
Lambert X: 3060790 Lambert Y: 3285376 td: 200
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from limestone at depth 180 to 200 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)
5	ASTM A53B	-1	59

Size hole below casing: in.
Static level 80 ft. below casing top which is 1 ft. above grnd level.
Pumping level 80 ft. when pumping at 10 gpm for 2 hours.

Formations Passed Through	Thickness	Bottom
brown clay	18	18
limestone	32	50
dolomite	130	180
limestone	20	200

121410054600 Dresden, Edward 30-24N-11E
Ogle Ebenezer Church 4872
Status: WATER 200 NL 165 WL Elev: 880GL
permit: 0 permit date: comp. date: 05/01/68
Lambert X: 3060626 Lambert Y: 3284844 td: 165
producing formation: td formation:
latitude: 42.057989 longitude: 89.275845

121410095000 Martin, Lawrence W. 30-24N-11E
Ogle [redacted] 1
Status: WATER [redacted] SL 75 WL Elev: 862GL
permit: 0 permit date: comp. date: 01/01/41
Lambert X: 3060591 Lambert Y: 3282063 td: 117
producing formation: td formation:
latitude: [redacted] longitude [redacted]

121412440800 Martin, Jonas Willard 30-24N-11E
Ogle [redacted] 2
Status: WATER NW NW SW Elev: 0
permit: 141-97- permit date: 09/05/97 comp. date: 09/18/97
Lambert X: 3060849 Lambert Y: 3282107 td: 360
producing formation: td formation:
latitude: [redacted] longitude: [redacted]
Water from sandstone at depth 267 to 360 ft.
Screen: Diam. in. Length: 0 ft. Slot:
Casing and Liner Pipe -

Diam. (in.)	Kind and Weight	From(ft)	To(ft)

6 SA53B STEEL 19.45 -1 268

Size hole below casing: in.

Static level 180 ft. below casing top which is 1 ft. above grnd level.

Pumping level 203 ft. when pumping at 20 gpm for 4 hours.

Formations Passed Through	Thickness	Bottom
clay	12	12
gravel	18	30
yellow limestone	130	160
yellow & gray limestone	40	200
dark brown limestone	20	220
sticky shale	10	230
Glenwood	20	250
sandstone	110	360

APPENDIX B

MONITORING WELL STRATIGRAPHIC AND INSTRUMENTATION LOGS

WELL COMPLETION RECORD

Site: OTFAO5FA92 County: Ogle Well No.: MW-1

Site Name: Byron Salvage Yard Grid Coordinates:Northing 1973429.130 Easting 737685.285

Drilling Contractor: Wehling Well Works Date Drilling Started: 03/08/89

Driller: Wehling well Works Geologist: Scott Spesshardt Date Drilling Ended: 03/08/89

Drilling Method: Air Mist Rotary and Coring Drilling Fluid (type): Water

ANNULAR SPACE DETAILS:

Type of Surface Seal: N/A

Type of Annular Sealant: Cement Portlant Grout

Amount of cement: # of bags 4 lbs. per bag 94

Amount of bentonite: # of bags N/A lbs. per bag N/A

Type of bentonite seal (granular, pellets): N/A

Amount of bentonite: # of bags N/A lbs. per bag N/A

Type of Sand Pack: N/A

Source of Sand: N/A

Amount of Sand: # of bags N/A lbs. per bag N/A

WELL CONSTRUCTION MATERIALS:

Date of Construction: 3/8/89	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser Coupling Joint	N/A			
Riser pipe above W.T.	N/A			
Riser pipe below W.T.	N/A			
Screen	N/A			
Coupling joint screen to riser	N/A			
Protective Casing				6 in Steel
Surface Casing	4 in s.s.			

MEASUREMENTS

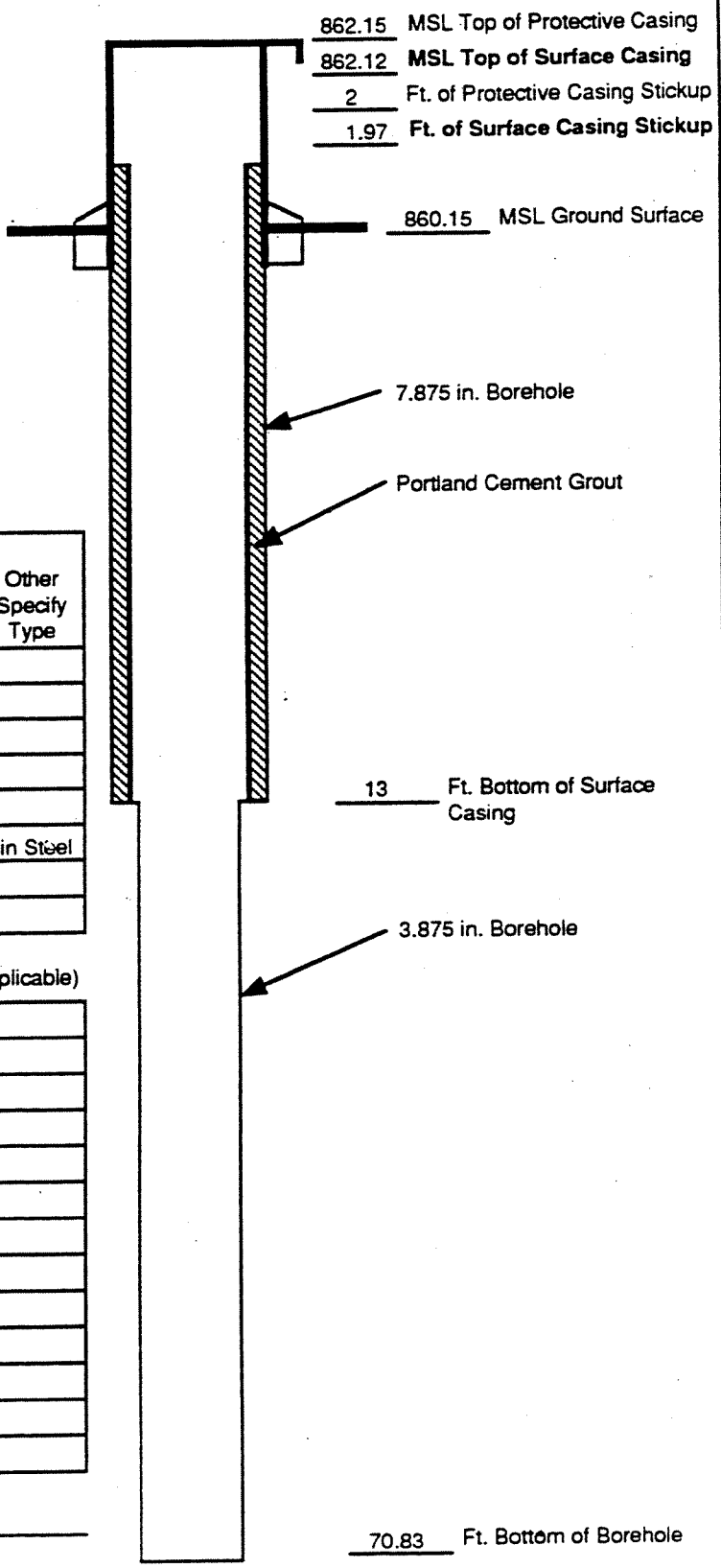
to 0.01 ft. (where applicable)

Riser pipe length	N/A
Protective casing length	N/A
Screen length	N/A
Bottom of screen to end cap	N/A
Top of screen to first joint	N/A
Length of surface casing	14.97 ft (13 ft in depth)
Screen slot size	N/A
No. of opening in screen	N/A
I D of Riser Pipe	N/A
Diameter of bore hole	7 7/8 in

Well Constructed By: Wehling Well Works

Surveyed By: U.S. Army Corps of Engineers

Form Completed By: Scott Prinos USGS



Site: OTFAO5FA92 County: Ogle Well No.: MW-2

Site Name: Byron Salvage Yard Grid Coordinates:Northing 1973432.842 Easting 737660.554

Drilling Contractor: Wehling Well Works Date Drilling Started: 02/27/89

Driller: Wehling Well Works Geologist: Scott Spesshardt Date Drilling Ended: 03/22/89

Drilling Method: Air Mist Rotary and Coring Drilling Fluid (type): Water

ANNULAR SPACE DETAILS:

Type of Surface Seal: N/A

Type of Annular Sealant: Cement Portlant Grout

Amount of cement: # of bags 29 lbs. per bag 94

Amount of bentonite: # of bags ____ lbs. per bag ____

Type of bentonite seal (granular, pellets): Volclay Pellets

Amount of bentonite: # of bags 3 buckets lbs. per bag 50 lbs/bucket

Type of Sand Pack: Silica Blasting Sand

Source of Sand: N/A

Amount of Sand: # of bags 1 1/2 lbs. per bag 100

WELL CONSTRUCTION MATERIALS:

Date of Construction: 3/22/89	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser Coupling Joint	Flush Threaded			
Riser pipe above W.T.	2 in s.s			
Riser pipe below W.T.	2 in s.s			
Screen	2 in s.s			
Coupling joint screen to riser	N/A			
Protective Casing	4 in s.s.			
Surface Casing				5" Black Steel

MEASUREMENTS

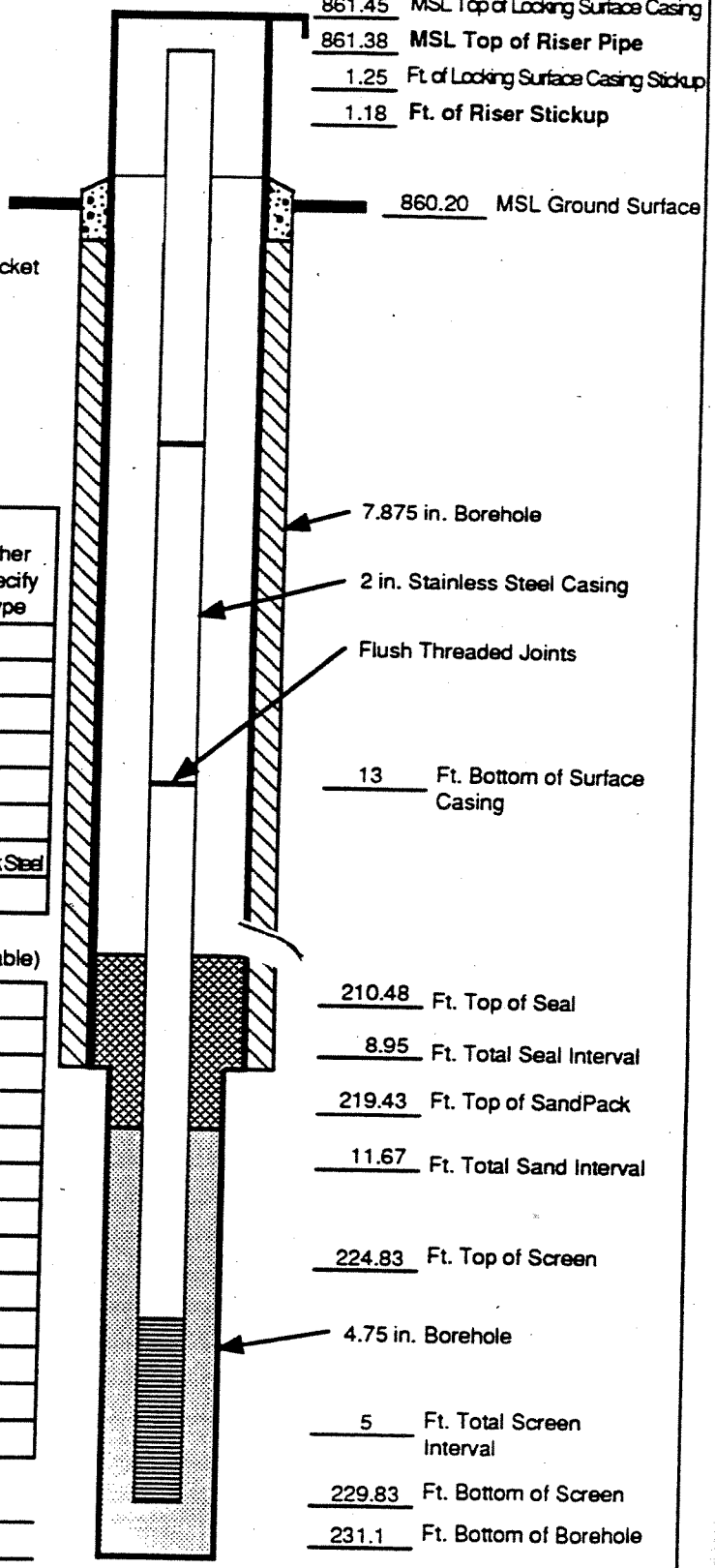
to 0.01 ft. (where applicable)

Riser pipe length	226.0
Protective casing length	N/A
Screen length	5 ft
Bottom of screen to end cap	231.0
Top of screen to first joint	N/A
Length of surface casing	14.18 ft (13 ft in depth)
Screen slot size	.010
No. of opening in screen	N/A
I D of Riser Pipe	2 in
Diameter of bore hole	7 7/8 in

Well Constructed By: Wehling Well Works

Surveyed By: U.S. Army Corps of Engineers

Form Completed By: Scott Prinos USGS



WELL COMPLETION RECORD

USGS Rev 1-91

Site: OTFAO5FA92 County: Ogle Well No.: MW-3

Site Name: Byron Salvage Yard Grid Coordinates:Northing 1974017.103 Easting 736944.336

Drilling Contractor: Wehling Well Works Date Drilling Started: 03/28/89

Driller: Wehling Well Works Geologist: Scott Spesshardt Date Drilling Ended: 03/28/89

Drilling Method: Air-mist Rotary Drilling Fluid (type): N/A

ANNULAR SPACE DETAILS:

Type of Surface Seal: N/A

Type of Annular Sealant: Portland Cement Grout

Amount of cement: # of bags 4 lbs. per bag 94

Amount of bentonite: # of bags N/A lbs. per bag N/A

Type of bentonite seal (granular, pellets): N/A

Amount of bentonite: # of bags N/A lbs. per bag N/A

Type of Sand Pack: N/A

Source of Sand: N/A

Amount of Sand: # of bags N/A lbs. per bag N/A

WELL CONSTRUCTION MATERIALS:

Date of Construction: 3/28/89	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser Coupling Joint	N/A			
Riser pipe above W.T.	N/A			
Riser pipe below W.T.	N/A			
Screen	N/A			
Coupling joint screen to riser	N/A			
Protective Casing	N/A			
Surface Casing	4 in s.s.			

MEASUREMENTS

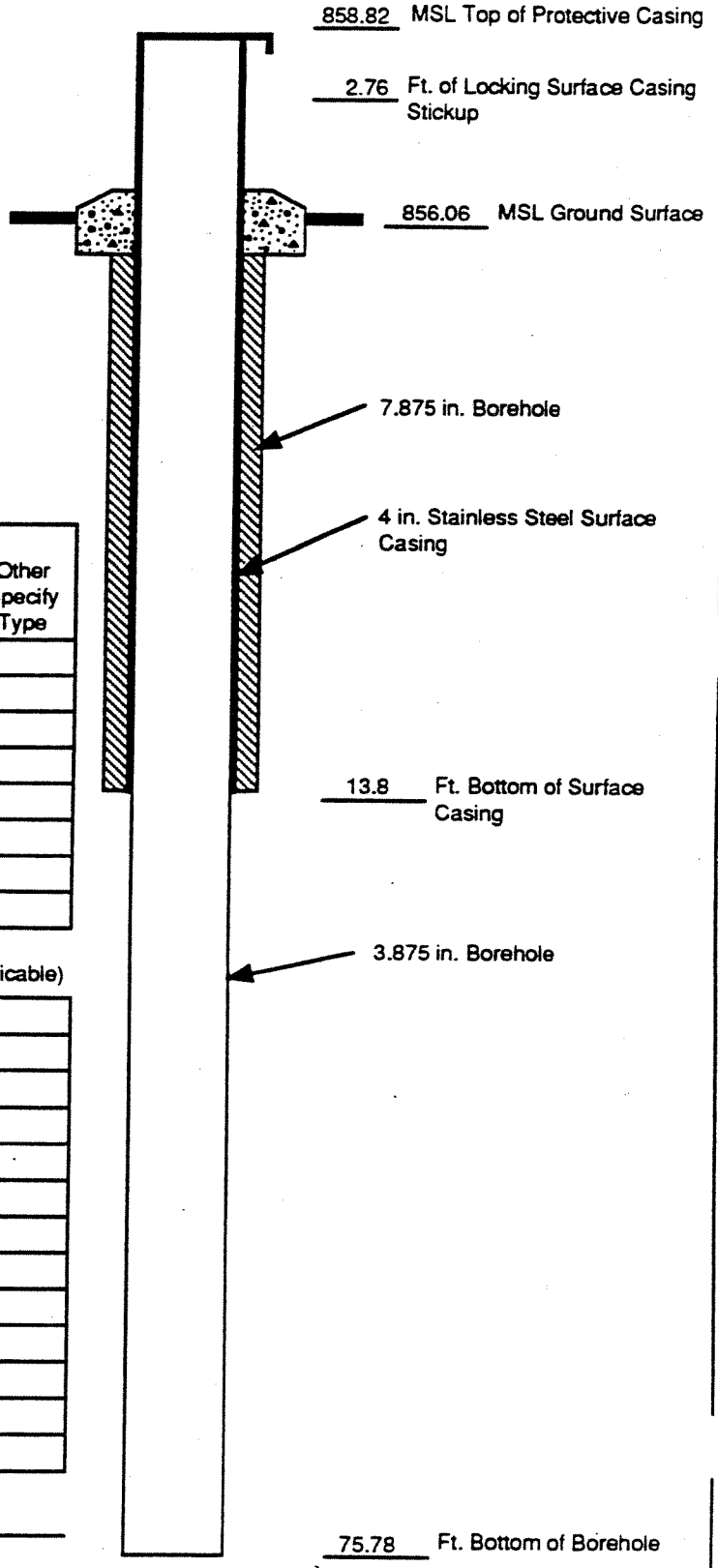
to 0.01 ft. (where applicable)

Riser pipe length	N/A
Protective casing length	N/A
Screen length	N/A
Bottom of screen to end cap	N/A
Top of screen to first joint	N/A
Length of surface casing	16.56 ft (13.8 ft in depth)
Screen slot size	N/A
No. of opening in screen	N/A
I D of Riser Pipe	N/A
Diameter of bore hole	7 7/8 in to 13.8 ft, 3 7/8 in to 75.78 ft

Well Constructed By: Wehling Well Works

Surveyed By: U.S. Army Corps of Engineers

Form Completed By: Scott Prinos USGS



WELL COMPLETION RECORD

USGS Rev. -

Site: OTFA 5AFL 92 County: Ogle Well No.: DF-2S

Site Name: Byron Salvage Yard Grid Coordinates:Northing 1973819.717 ft. Easting 734694.770 ft.

Drilling Contractor: U.S.G.S. Coal Branch Date Drilling Started: 8-10-90

Driller: U.S.G.S. Coal Branch Geologist: Bob Kay Date Drilling Ended: 8-11-90

Drilling Method: Tri Cone Roller 0 - 75 ft. Drilling Fluid (type): Air 0 - 18 ft. Water 18 - 75 ft.

ANNULAR SPACE DETAILS:

Type of Surface Seal: Quick Crete - Barker Lumber

Type of Annular Sealant: Portland Cement

Barker Lumber

Amount of cement: # of bags 6.25 lbs. per bag 94

Amount of bentonite: # of bags 0 lbs. per bag 50

Type of bentonite seal (granular, pellets): Pellets

0.65 (50 lbs. buckets) 16 lbs. per feet

Amount of bentonite: # of bags 0 lbs. per bag N/A

Type of Sand Pack: 0.35 - 0.45 mm Silica Sand

Source of Sand: American Material

Amount of Sand: # of bags 1.75 lbs. per bag 100

WELL CONSTRUCTION MATERIALS:

Date of Construction: 9/27/90	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser Coupling Joint	T304			
Riser pipe above W.T.	T304			
Riser pipe below W.T.	T304			
Screen	T304			
Coupling joint screen to riser	T304			
Protective Casing				Black Pipe
Surface Casing			Sch 80	

MEASUREMENTS

to 0.01 ft. (where applicable)

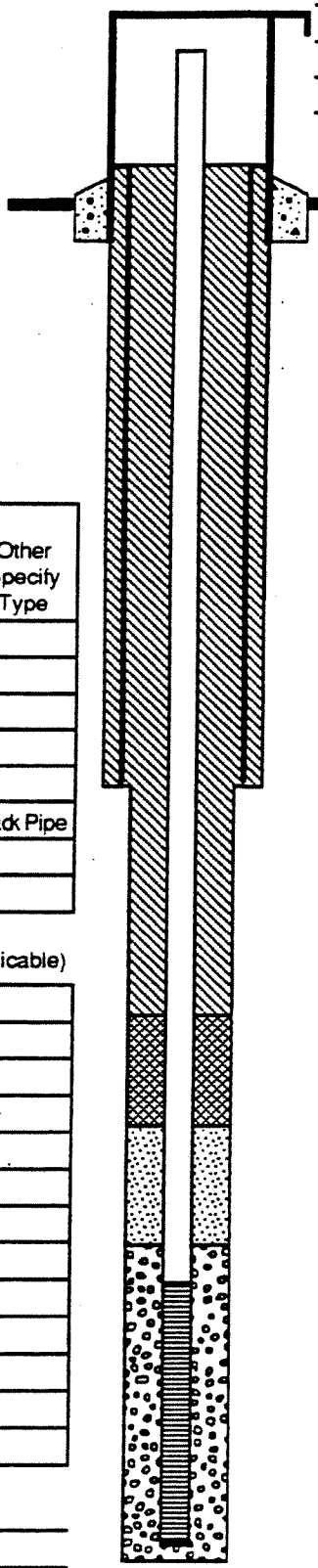
Riser pipe length	60.1 ft
Protective casing length	10.00 in. x 5.00 ft
Screen length	15.00 ft.
Bottom of screen to end cap	2.00 in.
Top of screen to first joint	2.00 in.
Total length of casing	8.00 in x 18.0 ft.
Screen slot size	0.01 in.
No. of opening in screen	2571
I D of Riser Pipe	2.067 in.
Diameter of bore hole	9.875 in.} 0.00 ft - 18.0 ft
	4.75 in.} 18.0 ft - 75.0 ft.

Well Constructed By: USGS - Wisconsin District

Surveyed By: Army Corp. of Engineers

Form Completed By: Bart J. Manion USGS - WRD

ELEVATION - 0.01 ft.



795.74 MSL Top of Protective Casing

795.29 **MSL Top of Riser Pipe**

1.14 Ft. of Protective Casing Stickup

0.69 **Ft. of Riser Stickup**

794.60 MSL Ground Surface

2.00 Ft. Bottom of Surface plug

50.0 Ft. Total Portland Cement

18.0 Ft. Bottom of Surface Casing

50.0 Ft. Top of Seal

2.0 Ft. Total Seal Interval

52.0 Ft. Top of SandPack

5.0 Ft. Total Sand Interval

57.0 Ft. Top of Pea Gravel

59.4 Ft. Top of Screen

18.0 Ft. Total Pea Gravel Interval

15.0 Ft. Total Screen Interval

74.40 Ft. Bottom of Screen

75.0 Ft. Bottom of Borehole

Site Name: Byron Salvage Yard | Well No.: DP-5S

Grid Coordinates: Northing 1973367.106 ft. Easting 736098.90

Drilling Contractor: U.S.G.S. Coal Branch

Driller: U.S.G.S. Coal Branch | Geologist: Bob Kay | Date Drilling Started: 8-23-9

Drilling Method: Tri Cone Roller 0 -13 ft. Pneumatic Hammer 13 - 65 ft. | Drilling Fluid (type): Water | Date Drilling Ended: 8-23-9

ANNULAR SPACE DETAILS:

Type of Surface Seal: Quick Crete - Barker Lumber

Type of Annular Sealant: Portland Cement Barker Lumber

Amount of cement: # of bags 0 lbs. per bag 94

Amount of bentonite: # of bags 0 lbs. per bag 50

Type of bentonite seal (granular, pellets):

Amount of bentonite: # of bags 0 lbs. per bag N/A

Type of Sand Pack: 0.35 - 0.45 mm Silica Sand

Source of Sand: American Materials

Amount of Sand: # of bags 0 lbs. per bag 100

WELL CONSTRUCTION MATERIALS:

Date of Construction: 8/23/90	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser Coupling Joint				
Riser pipe above W.T.				
Riser pipe below W.T.				
Screen				
Coupling joint screen to riser				
Protective Casing				Black Pipe
Surface Casing			Sch 80	

MEASUREMENTS

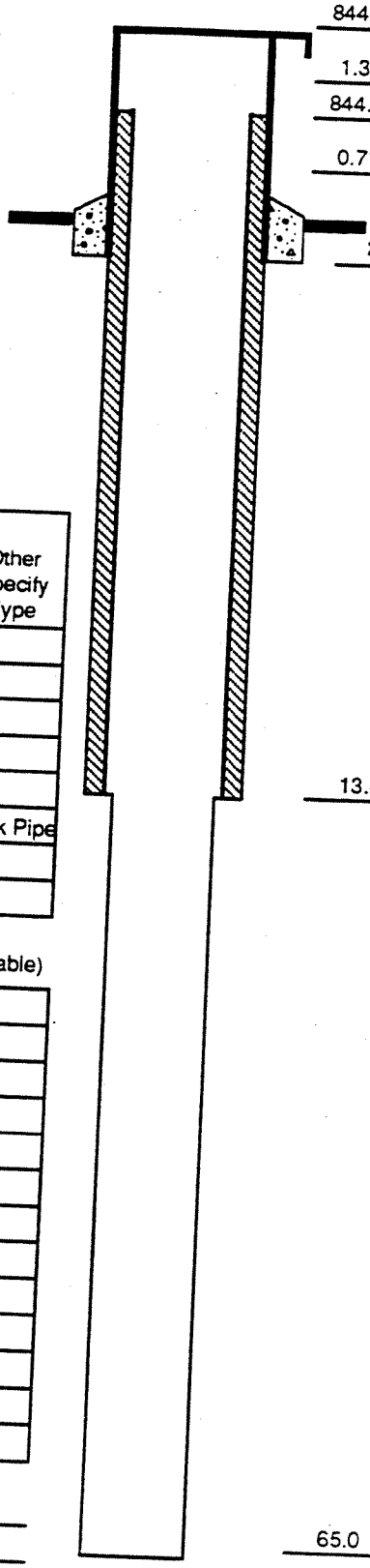
to 0.01 ft. (where applicable)

Riser pipe length	N/A
Protective casing length	10 in. x 4.00 ft
Screen length	N/A
Bottom of screen to end cap	N/A
Top of screen to first joint	N/A
Total length of casing	8.00 in x 13.0 ft.
Screen slot size	N/A
No. of opening in screen	N/A
I D of Riser Pipe	N/A
Diameter of bore hole	9.875 in.} 0.00 ft - 13.0 ft
	6.0 in.}13.0 ft - 65.0 ft.

Well Constructed By: USGS - Wisconsin District

Surveyed By: Army Corp. of Engineers / USEPA

Form Completed By: Bart J. Manion USGS - WRD



ELEVATION - 0.01 ft.

844.91 MSL Top of Protective Cas.

1.33 Ft. of Protective Casing Stic

844.29 MSL Top of Surface Casin

0.71 Ft. of Surface Casing Sticku

843.58 MSL Ground Surfa

2.00 Ft. Bottom of Surface pl

13.0 Ft. Bottom of Surface Casing

65.0 Ft. Bottom of Borehole

WELL COMPLETION RECORD

USGS Rev 1-91

Site: OTFA 5AFL 92 County: Ogle Well No.: DF-6

Site Name: Byron Salvage Yard Grid Coordinates:Northing 1973690.603 ft. Easting 7365443.429 ft.

Drilling Contractor: U.S.G.S. Coal Branch Date Drilling Started: 8-12-90

Driller: U.S.G.S. Coal Branch Geologist: Bob Kay Date Drilling Ended: 8-13-90

Drilling Method: Tri Cone Roller 0 - 150.8 ft. Drilling Fluid (type): Air 0 - 36.0 ft. Water 36.0 - 150.8 ft.

ANNULAR SPACE DETAILS:

Type of Surface Seal: Quick Crete - Barker Lumber

Type of Annular Sealant: Portland Cement- Barker Lumber

** Borehole plug: Volclay Grout, Bentonite Chips, Pellets, Silica Sand

Amount of cement: # of bags 3.0 lbs. per bag 94

Amount of bentonite: # of bags 4.0 lbs. per bag 50

Type of bentonite seal (granular, pellets): Pellets

2.0Buckets (50 lbs. buckets)

Amount of bentonite: # of bags 2.5 lbs. per bag 50

Type of Sand Pack: 0.35 - 0.45 mm Silica Sand

Source of Sand: American Material

Amount of Sand: # of bags 1.0 lbs. per bag 100

WELL CONSTRUCTION MATERIALS:

Date of Construction: 5/16/91	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser Coupling Joint	T304			
Riser pipe above W.T.	T304			
Riser pipe below W.T.	T304			
Screen	T304			
Coupling joint screen to riser	T304			
Protective Casing				Black Pipe
Surface Casing			Sch 80	

MEASUREMENTS

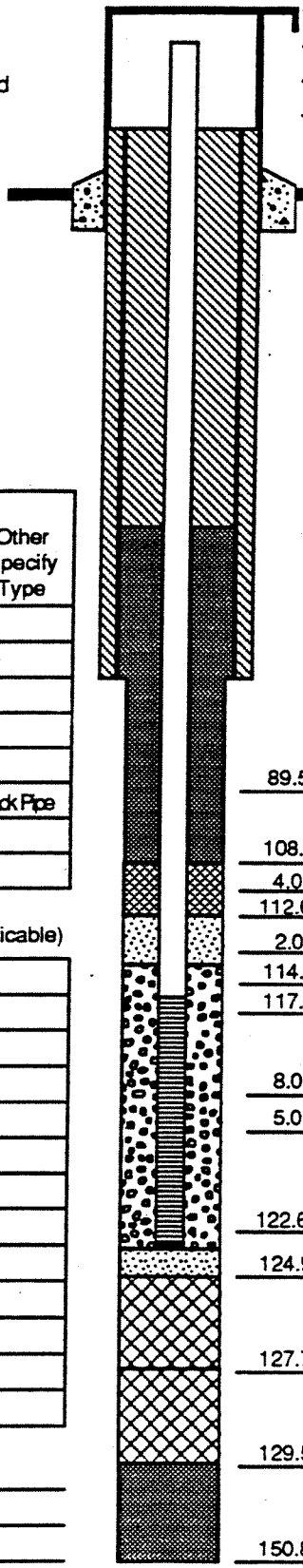
to 0.01 ft. (where applicable)

Riser pipe length	119.0 ft
Protective casing length	10.00 in. x 4.0 ft
Screen length	5.00 ft.
Bottom of screen to end cap	2.00 in.
Top of screen to first joint	2.00 in.
Total length of casing	8.00 in ID x 25.0 ft.
Screen slot size	0.01 in.
No. of opening in screen	857
I D of Riser Pipe	2.067 in.
Diameter of bore hole	9.875 in.} 0.00 ft -25.0 ft
	5.875 in.}25.0 ft - 150.8 ft.

Well Constructed By: USGS Wisconsin District

Surveyed By: Army Corp. of Engineers

Form Completed By: Bart J. Manion USGS - WRD



828.23 MSL Top of Protective Casing

828.11 **MSL Top of Riser Pipe**

1.82 Ft. of Protective Casing Stickup

1.38 **Ft. of Riser Stickup**

826.70 MSL Ground Surface

1.5 Ft. Bottom of Surface plug

19.1 Ft. Total Portland Cement

19.1 Ft. Top Bentonite Grout

25.0 Ft. Bottom of Surface Casing

89.5 Ft. Total Bentonite Grout

108.6 Ft. Top of Seal

4.0 Ft. Total Seal Interval

112.6 Ft. Top of SandPack

2.0 Ft. Total Sand Interval

114.6 Ft. Top of Pea Gravel

117.6 Ft. Top of Screen

8.0 Ft. Total Pea Gravel Interval

5.0 Ft. Total Screen Interval

122.6 Ft. Bottom of Screen and Top of Silica Sand

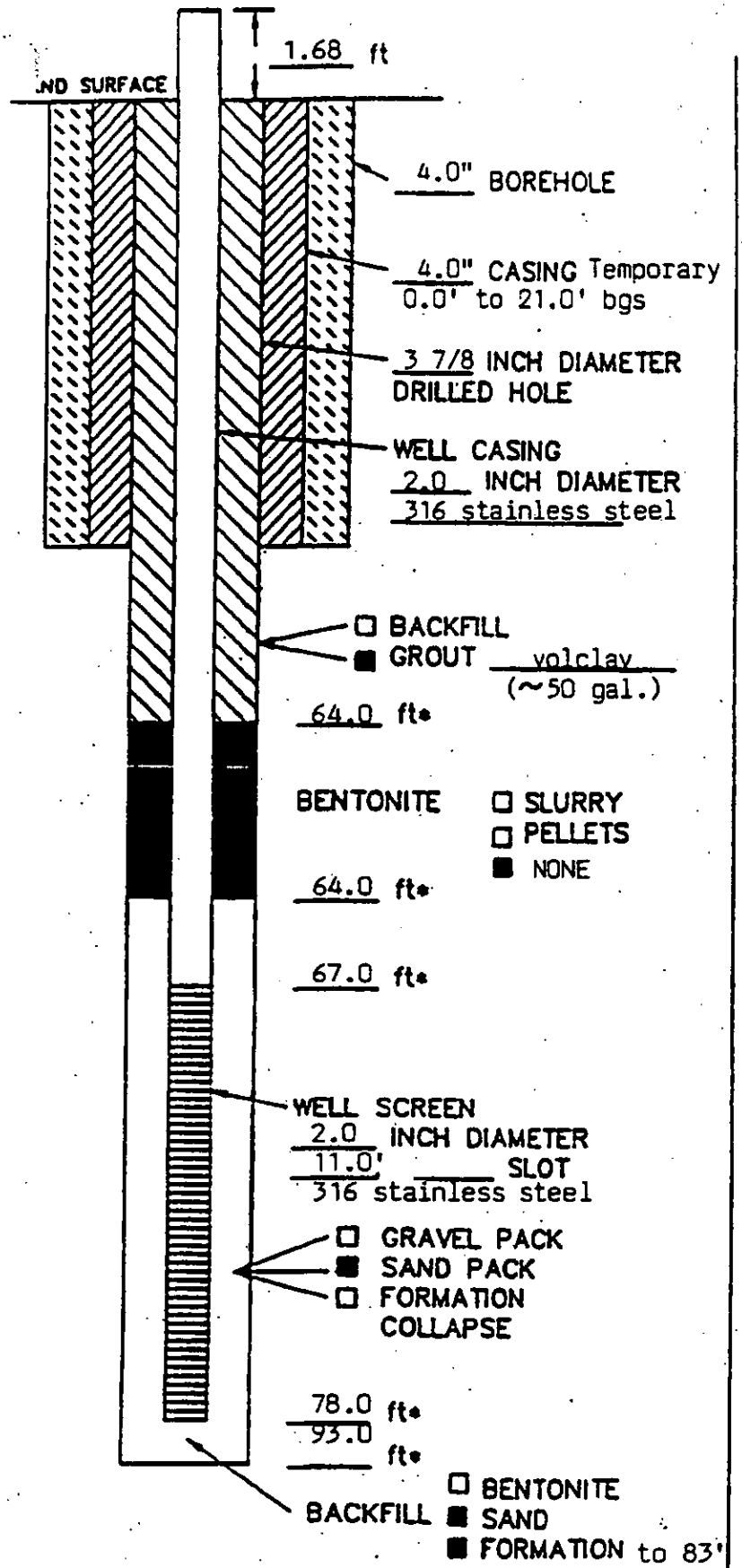
124.9 Ft. Top of Bentonite Pellets

127.7 Ft. Top of Bentonite Chips

129.5 Ft. Top of Volclay Grout

150.8 Ft. Bottom of Borehole

WELL CONSTRUCTION LOG



MEASURING POINT IS TOP OF WELL CASING UNLESS OTHERWISE NOTED.

• DEPTH BELOW LAND SURFACE

PROJECT 7089RBCECO WELL PC-3B

TOWN/CITY Byron

COUNTY Ogle STATE IL

PERMIT NO. N/A

LAND-SURFACE ELEVATION

AND DATUM 826.84 feet ■ SURVE
above MSL ☐ ESTIMATE

INSTALLATION DATE(S) 3/9/89 to 3/13/8

DRILLING METHOD Flight auger, NX core,

DRILLING CONTRACTOR Fox Drilling, Inc

DRILLING FLUID Clear water from Byron Municipal Water Supply

DEVELOPMENT TECHNIQUE(S) AND DATE(S)

4/1//89 Airlift, no water

4/24/89 Brainard-Kilman PVC hand pump

FLUID LOSS DURING DRILLING 1300

WATER REMOVED DURING DEVELOPMENT 300

STATIC DEPTH TO WATER

70.84 FEET BELOW M.P

PUMPING DEPTH TO WATER

N/A FEET BELOW M.P

PUMPING DURATION N/A HOURS

YIELD N/A gpm DATE N/A

SPECIFIC CAPACITY N/A gpm/ft

WELL PURPOSE Water table monitoring w

REMARKS

- Initial Water Level: 68.2' bgs
- Didn't use bentonite pellets for seal due to likely bridging in boring
- Tremied in volclay grout

PREPARED BY D.P. Edwards

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT	PROJECT NUMBER	SHEET NO.	HOLE NO.
[redacted]	7089RBCECO	1 OF 4	PC [illegible]

SITE	COORDINATES	ANGLE FROM HORIZ	BEARI.
[redacted]	[redacted]	Vertical	------

BEGUN	COMPLETED	DRILLER	DRILLING EQUIPMENT	BORING DIA.	TOTAL DEPTH
3-9-89	3-13-89	Fox Drilling	CME 75 w/ 4" Flight Auger & NX Core	4.0"	93.0

CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
70.6/94	8	3	828.52	826.8	▼ 68.8/758.0 ATD ▼ 68.8/758.0 24-HOUR	21.0/805.8

SAMPLE DEVICE	CASING LEFT IN HOLE: DIA./LENGTH	LOGGED BY:
2"x 2' Split Spoon and NX Core	NONE	D.P. Edwards

Samples/R. Core				Contaminant Screening			LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
Sample No. Time	Rec. (ft)	Length(ft)	Blow Count RQD(%)	Amb. Air* VOC(ppm)	Sample ** VOC(ppm)	Sample HCN(ppm)	826.8					
											Reddish brown, medium dense, moderately sorted, **CLAYEY FINE TO MEDIUM SAND** w/ trace fine gravel, moist.	
SS-1	1.3	2.0	4 4 5 9	0.0	0.0	0.0		5				
							820.3 6.5				Light brown, dense, poorly sorted, **CLAYEY FINE TO COARSE SAND** w/ trace fine & coarse gravel, moist.	
SS-2	2.0	2.0	12 11 13 17	0.0	0.0	0.0		10				
SS-3	2.0	2.0	18 27 20 24	0.0	0.0	0.0		15				
RUN 1	1.8	5.5	0.0	0.0	0.0	0.0	809.3 17.5				**DUNLEITH FORMATION of the GALENA GROUP**: Light yellowish brown, sandy to finely crystalline, thin to medium bedded, **DOLOMITIC CALCARENITE**, vuggy w/ FeOX stained fine carbonate sand infillings, fossiliferous, occasional green shale partings, preferential dissolution of	-Auger refusal 17.3' -Smooth coring; 100% water return; drill rate: 0.55 ft/min

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Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT [redacted] | PROJECT NUMBER 7089RBCECO | SHEET NO. 2 OF 4 | HOLE NO. PC-31

Samples/R. Core				Contaminant Screening			LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Sample CN(ppm)						
											skeletal fragments, fractured (2 horizontal & 1 vertical) w/ heavy mineral infillings.	
RUN 2	4.4	5.0	0.0	0.0	0.0	0.0					-Same as above w/ numerous fractures and bedding planes (22 horizontal, 1 vertical & a fracture zone from 23.5' to 24.2').	-Smooth coring; 10 water return; drill rate: 0.50 ft/min
								25				
RUN 3	4.5	5.0	8.0	0.0	0.0	0.0					-Same as above w/ fractures (33 horizontal & 4 vertical).	-Smooth coring; 10 water return; drill rate: 0.50 ft/min
								30				
							794.4 32.4				**GUTTENBURG FORMATION of the GALENA GROUP: Buff, sandy to finely crystalline, thin to medium bedded, DOLOMITE, vuggy w/ FeOX stained fine carbonate sand infillings, fossiliferous, abundant reddish-brown shale partings, preferential dissolution of skeletal fragments, extensively fractured (20 horizontal & 1 vertical) w/ heavy mineral infillings.**	
RUN 4	10.0	10.0	11.0	0.0	0.0	0.0						-Smooth coring; 90% water return; drill rate: 0.40 ft/min
								35				
							789.1 37.7					-Core blocked out
											QUIMBYS MILL FORMATION of the PLATTEVILLE GROUP: Buff and light gray, finely crystalline, argillaceous, thin to medium bedded, slightly fossiliferous, DOLOMITE w/ occasional vugs, chert nodules, shale beds, heavy mineral accumulations, peloids, phosphate nodules and FeOX stained bedding planes, some fractures (27 horizontal & 3-70 to 80 degree).	
								40				
RUN 5	10.0	10.0	42.0	0.0	0.0	0.0					-Same as above w/ abundant fractures and bedding planes (40 horizontal & 10-70 to 80 degree).	-Smooth coring; 100% water return; drill rate: 0.33 ft/min

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT [redacted] | PROJECT NUMBER 7089RBCECO | SHEET NO. 3 OF 4 | HOLE NO. PC 3

Samples/R. Core				Contaminant Screening			LAYER ELEV. DEPTH	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample* VOC(ppm)	Sample HCN(ppm)					
								50			-Lost circulation completely
							774.5 52.3				-Core blocked out
RUN 6	10.0	10.0	61.0	0.0	0.0	0.0		55		**NACHUSA FORMATION of the PLATTEVILLE GROUP:** Yellowish brown and gray, finely crystalline, argillaceous, thin bedded to massive, DOLOMITE w/ some peloids and gray shale partings; occasional FeOX staining, vugs and zones of fossils; minor fracturing (36 horizontal, 1 vertical & 5-70 degree) w/ black heavy mineral infillings and secondary calcite cement.	-Smooth coring; no water return; drill rate: 0.25 ft/min
RUN 7	10.0	10.0	83.0	0.0	0.0	0.0		60		-Same as above w/ few fractures (30 horizontal, 1 vertical & 2-70 degree fractures).	-Smooth coring; no water return; drill rate: 0.33 ft/min
								65		-Same as above, but appears more vuggy and	

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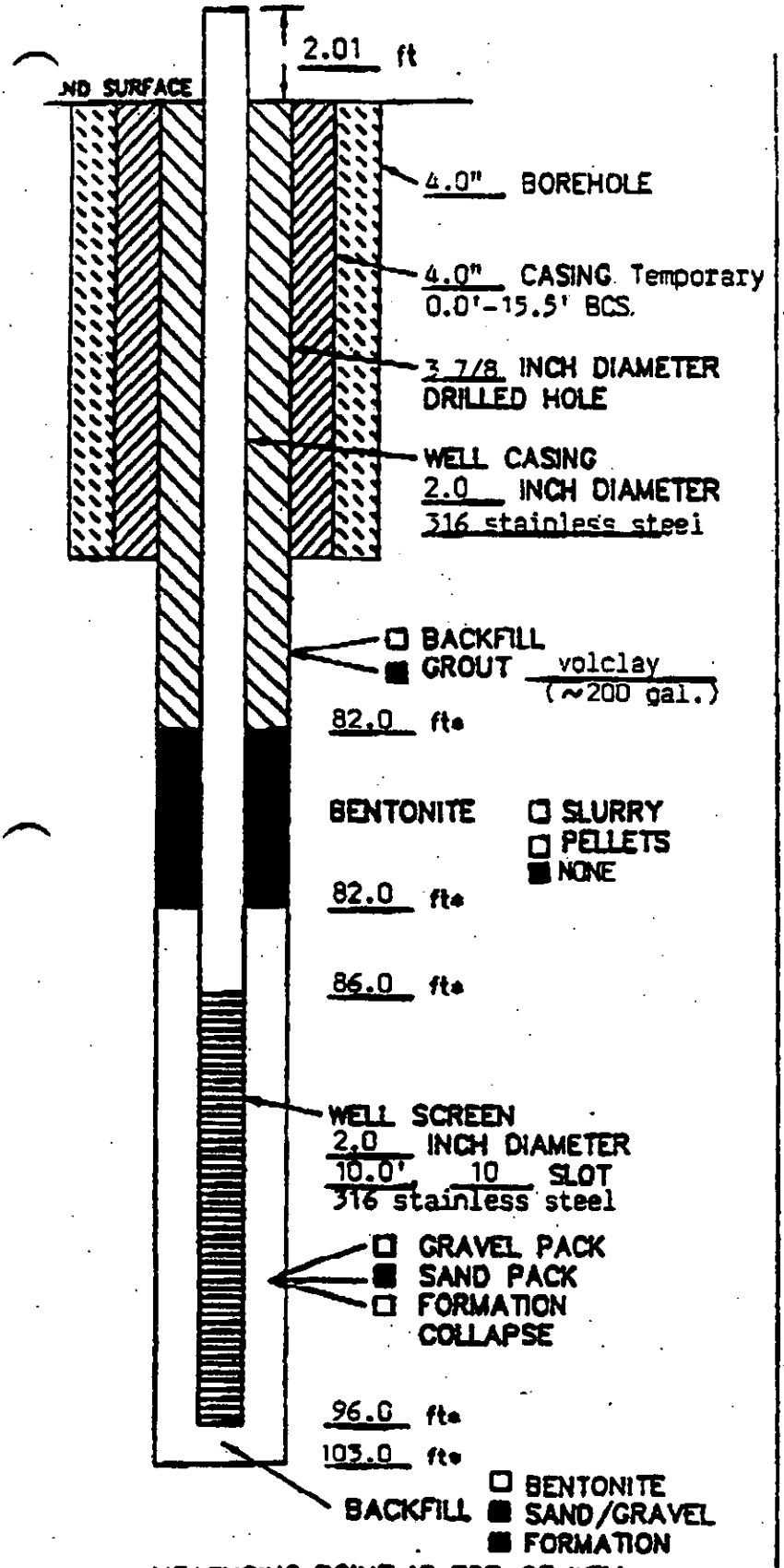
GEOLOGIC DRILL LOG

PROJECT [redacted] | PROJECT NUMBER 7089RBCECO | SHEET NO. 4 OF 4 | HOLE NO. PC-3I

Samples/R. Core				Contaminant Screening			LAYER ELEV. DEPTH	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt. RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Sample HCN(ppm)					
RUN 8	10.0	10.0	66.0	0.0	0.0	0.0				-Same as above w/ some bedding planes (11 horisontal).	-Smooth coring; no water return; drill rate: 0.50 ft/min
							751.9 74.9	75		**GRAND DETOUR FORMATION of the PLATTEVILLE GROUP:** Light and dark greenish gray, argillaceous, massive, interformational conglomerate composed of clasts up to 0.1', in diameter in a argillaceous DOLOMITIC LIMESTONE matrix w/ occasional black and dark gray shale partings, few phosphatic nodules, moderately fractured (22 horisontal) w/ pyrite and calcite infillings, moderately fossiliferous.	
								80			
										-Same as above but mottled light green and white clasts of coarse sand to cobble size interformational conglomerate in a dark green to black argillaceous matrix.	
RUN 9	10.0	10.0	80.0	0.0	0.0	0.0				-Same as above w/ few fractures and bedding planes (22 horisontal, 1 vertical & 3_20 to 30 degree), occasional phosphatic infilling.	-Smooth coring; no water return; drill rate: 0.50 ft/min
								85			
								90			
							733.8 93.0			END OF BORING, 93.0'. Drilling fluid consisted of clear water from the Byron Municipal water supply.	

WELL CONSTRUCTION LOG



MEASURING POINT IS TOP OF WELL CASING UNLESS OTHERWISE NOTED.

• DEPTH BELOW LAND SURFACE

PROJECT 7089RBDECO WELL PC-6B
TOWN/CITY Byron
COUNTY Ogle STATE IL
PERMIT NO. N/A
LAND-SURFACE ELEVATION
AND DATUM 829.29 feet ■ SURVE
above MSL □ ESTIM
INSTALLATION DATE(S) 2/27/89 to 3/2/8
DRILLING METHOD Flight auger, NX core,
DRILLING CONTRACTOR Fox Drilling, In
DRILLING FLUID Clear water from Byron
Municipal Water Supply
DEVELOPMENT TECHNIQUE(S) AND DATE(S
4/27/89 hand bailed

FLUID LOSS DURING DRILLING ~650L
WATER REMOVED DURING DEVELOPMENT
8
STATIC DEPTH TO WATER
88.27 FEET BELOW
PUMPING DEPTH TO WATER
N/A FEET BELOW
PUMPING DURATION N/A HOUR
YIELD N/A gpm DATE N/A
SPECIFIC CAPACITY N/A gpm/
WELL PURPOSE Water table monitoring
well

REMARKS
- Initial Water Level: 87.15' BGS
- Didn't use bentonite pellets for se
due to likely bridging in small bor
- Tremied in volclay grout

PREPARED BY D.P. Edwards

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GEOLOGIC DRILL LOG

PROJECT	PROJECT NUMBER	SHEET NO.	HOLE NO.
[redacted]	7089RBCECO	1 OF 5	PC-6b

SITE	COORDINATES	ANGLE FROM HORIZ	BEARING
[redacted]	[redacted]	Vertical	------

BEGUN	COMPLETED	DRILLER	DRILLING EQUIPMENT	BORING DIA.	TOTAL DEP
2-27-89	3-2-89	Fox Drilling	CME 75 w/ 4" Flight Auger & NX Core	4.0"	103.0

CORE RECOVERY (FT./%)	CORE BOXES	SAMPLES	EL. TOP CASING	GROUND EL.	DEPTH/EL. GROUND WATER	DEPTH/EL. TOP OF ROCK
82.7/95	9	3	831.30	829.3	▽ 86.2/743.1 ATD ▼ 86.2/743.1 24-HOUR	13.5/815.7

SAMPLE DEVICE	CASING LEFT IN HOLE: DIA./LENGTH	LOGGED BY:
2"x 2' Split Spoon and NX Core	NONE	D.P. Edwards

Samples/R. Core				Contaminant Screening			LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
Sample No. Time	Rec. (ft)	Length(ft)	Blow Count RQD(%)	Amb. Air* VOC(ppm)	Sample ** VOC(ppm)	Sample HCN(ppm)	829.3					
							826.3				Dark brown, CLAYEY FINE SAND w/ rootlets and other organics, moist.	
SS-1	1.7	2.0	3 2 4 3	0.0	0.0	0.0	3.0				Reddish brown, loose, well sorted, FINE SAND w/ trace clay, moist.	
							822.8	5				
							6.5				Mottled light and dark brown, firm, moderately well sorted, CLAYEY SILT w/ trace fine sand, rootlets, wood, straw and other organics, FeOX stained, moist (loess).	
SS-2	1.6	2.0	4 2 3 7	0.0	0.0	0.0		10				
							817.8					
							11.5				Light brown, medium dense, moderately well sorted, CLAYEY FINE SAND, dry.	
SS-3	1.2	2.0	7 100/6"	0.0	0.0	0.0	815.8					
							13.5				Buff, finely crystalline, massive, LIMESTONE BIOSPARITE, faint horizontal bedding, fractured (14 horizontal, 5 vertical, 1-65 degree & 1-35 degree) w/ heavy mineral, clay and carbonate sand infillings, vuggy, slightly fossiliferous w/ minor preferential dissolution of the skeletal fragments, thin clay partings, extensively weathered to carbonate sand, gravel and clay at the top.	-Auger refusal at 15.5' -Smooth coring; 90% water return; drill rate: 0.25 ft/min
								15				
RUN 1	3.8	7.5	10.0	0.0	0.0	0.0						

CONTAMINANT SCREENING NOTES

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Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT [redacted] | PROJECT NUMBER 7089RBCECO | SHEET NO. 2 OF 5 | HOLE NO. PC [illegible]

Samples/R. Core				Contaminant Screening			LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Sample HCN(ppm)						
											-Same as above w/ few white and light brown chert nodules and some fractures.	-Smooth coring; no water return below 26'; drill rate: 0.2 ft/min
RUN 2	8.9	10.0	22.0	0.0	0.0	0.0		25				
							803.7 25.6				Yellowish brown and buff, horizontally bedded, **LIMESTONE/DOLOMITE**, possibly oolitic, considerable white and light brown chert nodules and chert beds, few vugs, extensively fractured (39 horizontal & 8 vertical) w/ heavy mineral and calcite infillings.	-Core blocked out at 28.5' BGS
								30				
RUN 3	10.0	10.0	75.0	0.0	0.0	0.0					-Same as above w/ increased fossil and peloid content, clay partings, wavy bedding (alternating zones of horizontally bedded sandy biosparite and wavy bedded pelbiomicrite), some fractures (28 horizontal and 5-15 degree).	-Smooth, slow coring; no water return; drill rate: 0.15 ft/min
								35				
								40				
							786.6 42.7					
RUN 4	10.0	10.0	55.0	0.0	0.0	0.0					Yellowish brown and buff, finely crystalline, massive, fossiliferous, **LIMESTONE/DOLOMITE** w/ extensive vugs and yellow porous zones, fractured (33	-Smooth coring; no water return; drill rate: 0.22 ft/min

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Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT [redacted] | PROJECT NUMBER 7089RBCECO | SHEET NO. 3 OF 5 | HOLE NO. PC-6E

Samples/R. Core: Sample # / Time	Rec. (ft)	Length (ft)	Blow Cnt / RQD(%)	Contaminant Screening: Amb Air* VOC(ppm)	Sample** VOC(ppm)	Sample HCN(ppm)	LAYER ELEV. / DEPTH	DEPTH	GRAPHICS SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
							781.3 / 48.0				
								50		Buff, finely crystalline, massive **LIMESTONE/DOLOMITE** w/ sandy zones, wavy clay partings, skeletal fragments, and minor vugginess, few fractures w/ minor heavy mineral and calcite infillings.	-Lost 1200 gallons of water to formation between 15.5' and 53.0'
RUN 5	10.0	10.0	70.0	0.0	0.0	0.0				-Same as above w/ some fractures (24 horisontal, 4 vertical & 1-30 degree).	-Smooth, slow coring; no water return; drill rate: 0.11 ft/min
								55			
								60			
							767.8 / 61.5				
RUN 6	10.0	10.0	85.0	0.0	0.0	0.0				Gray, finely crystalline, medium bedded, **LIMESTONE/DOLOMITE** w/ horisontal and wavy black clay partings, large fossil fragments, few peloids and intraclasts, few vugs and fractures (15 horisontal, 1 vertical, 1-60 degree and 3-10 degree), occasional highly porous beds of sandy or micritic carbonate.	-Smooth, slow coring; no water return; drill rate: 0.13 ft/min
								65			

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT [redacted] | PROJECT NUMBER 7089RBCECO | SHEET NO. 4 OF 5 | HOLE NO. PC

Samples/R. Core Sample # / Time	Rec. (ft)	Length (ft)	Blow Cnt / RQD(%)	Contaminant Screening: Amb Air* VOC(ppm)	Sample** VOC(ppm)	Sample HCN(ppm)	LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
RUN 7	10.0	10.0	93.0	0.0	0.0	0.0		75			-Same as above w/ fractures (14 horisontal, 4-45 degree, 2-70 degree & 1-80 degree).	-Smooth, slow coring; no water return; drill rate: 0.14 ft/min
							731.3 78.0				Mottled brown, reddish brown and gray, finely crystalline, massive **LIMESTONE/DOLOMITE** w/ few horisontal and wavy laminae, fractures, vugs and highly porous beds, minor fossil content and some FeOX accumulations along fractures and vugs.	
RUN 8	10.0	10.0	77.0	0.0	0.0	0.0		80 85			-Same as above w/ fractures (21 horisontal & 1-70 degree).	-Smooth coring; no water return; drill rate: 0.17 ft/min
							738.8 90.5	90			Gray, finely crystalline, massive **LIMESTONE/DOLOMITE** w/ some horisontal and wavy laminae, fossiliferous, some clay partings, preferential dissolution of skeletal fragments, some fractures (15 horisontal) and heavy mineral (pyrite) accumulations along fractures.	
RUN 9	10.0	10.0	93.0	0.0	0.0	0.0						-Smooth coring; no water return; drill rate: 0.17 ft/min

ERM - North Central, Inc.
Environmental Resources Management

GEOLOGIC DRILL LOG

PROJECT [redacted]

PROJECT NUMBER	SHEET NO.	HOLE NO.
7089RBCECO	5 OF 5	PC-6B

Samples/R. Core				Contaminant Screening							
Sample # Time	Rec. (ft)	Length (ft)	Blow Cnt RQD(%)	Amb Air* VOC(ppm)	Sample** VOC(ppm)	Sample HCN(ppm)	LAYER ELEV. DEPTH	DEPTH	GRAPHICS	SAMPLE	DESCRIPTION AND CLASSIFICATION

NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.

100

726.3
103.0

END OF BORING, 103.0'.
Drilling fluid consisted of clear water from the Byron Municipal water supply.

105

110

115

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-1
DATE COMPLETED: March 23, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	SP SAND (FILL) - trace of limestone gravel, medium grain, brown, dry		Concrete; 4" Borehole; Cement/Bentonite Grout				
10	END OF OVERBURDEN HOLE @ 9.0ft BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 19232-21.GPJ CRA_CORP.GDT 5/29/06

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-1
DATE COMPLETED: March 23, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %	
10	WEATHERED DOLOMITE - fissured, fractured, light brown, wet	9.00	2" PVC Well Casing				
30			Cement/Bentonite Grout				

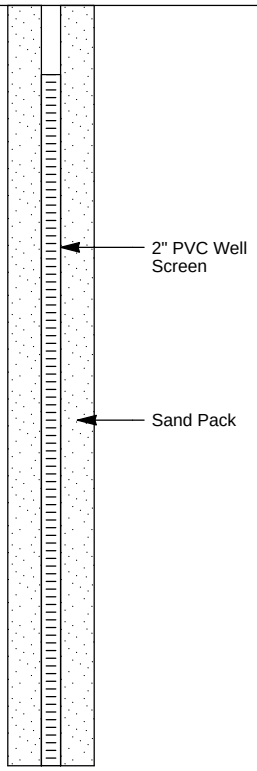
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-1
DATE COMPLETED: March 23, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %	
50							
52							
54							
56							
58							
60							
62							
64							
66							
68							
70	END OF BOREHOLE @ 70.0ft BGS	70.00					
72							
74							
76							
78							
80							
82							
84							
86							



WELL DETAILS
Screened interval:
50.00 to 70.00ft BGS
Length: 20ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
47.00 to 70.00ft BGS
Material: #2 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-10
DATE COMPLETED: April 5, 2006
DRILLING METHOD: 4-1/4" HSA/AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	UNCONSOLIDATED SEDIMENTS		Concrete				
2							
4							
6			Cement/Bentonite Grout				
8			2" PVC Well Casing				
10			9" Borehole from 0-19'				
12							
14							
15	LIMESTONE - weathered	15.00	Bentonite Chips				
16							
18							
19	- competent rock at 19.0ft BGS		4" Borehole from 19-29'				
20							
22			2" PVC Well Screen				
24			Sand Pack				
26							
28							
29	END OF BOREHOLE @ 29.0ft BGS	29.00					
30							
32							
34							
36							
38							

WELL DETAILS
Screened interval:
19.00 to 29.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
17.00 to 29.00ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-11
DATE COMPLETED: April 11, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	UNCONSOLIDATED SEDIMENTS		Concrete; 6" Borehole from 0-8'; Cement/Bentonite Grout; 4" Borehole from 8-150.5'; 2" PVC Well Casing				
8	BEDROCK - gray limestone	8.00					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-11
DATE COMPLETED: April 11, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
42							
44							
46							
48							
50			4" Borehole from 8-150.5'				
52							
54							
56							
58							
60							
62							
64							
66							
68							
70	- some red color at 70.0ft BGS						
72							
74	- gray color at 74.0ft BGS						
76							
78	- red color at 78.0ft BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-11
DATE COMPLETED: April 11, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
82							
84							
86							
88							
90			4" Borehole from 8-150.5'				
92							
94							
96							
98							
100							
102							
104							
106	- 1' of gray color at 106.0ft BGS						
108							
110							
112							
114							
116							
118							

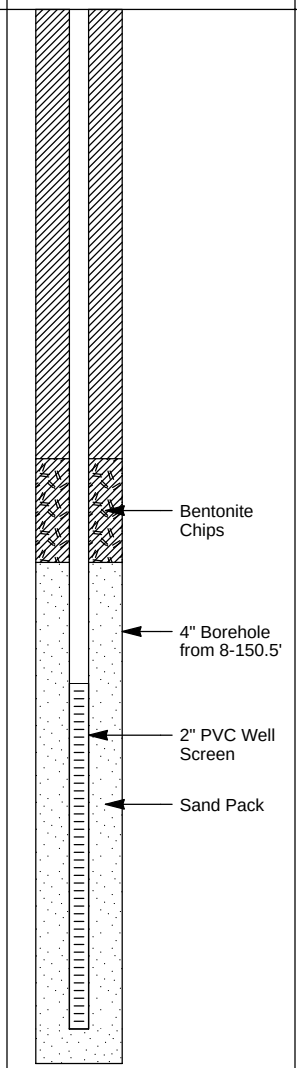
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-11
DATE COMPLETED: April 11, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
150	SHALE	150.00					
	END OF BOREHOLE @ 150.5ft BGS	150.50					



WELL DETAILS
Screened interval:
139.50 to 149.50ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
136.00 to 150.50ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-2
DATE COMPLETED: March 21, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	SM SILTY SAND - with fine gravel, compact, fine grained, poorly graded, brown, moist		Concrete; Cement/Bentonite Grout; 6" Borehole from 0-10'; 2" PVC Well Casing; 4" Borehole from 10-81'				
10	DOLOSTONE - fissured, fractured, light brown	10.00					
20	END OF OVERBURDEN HOLE @ 20.0ft BGS						

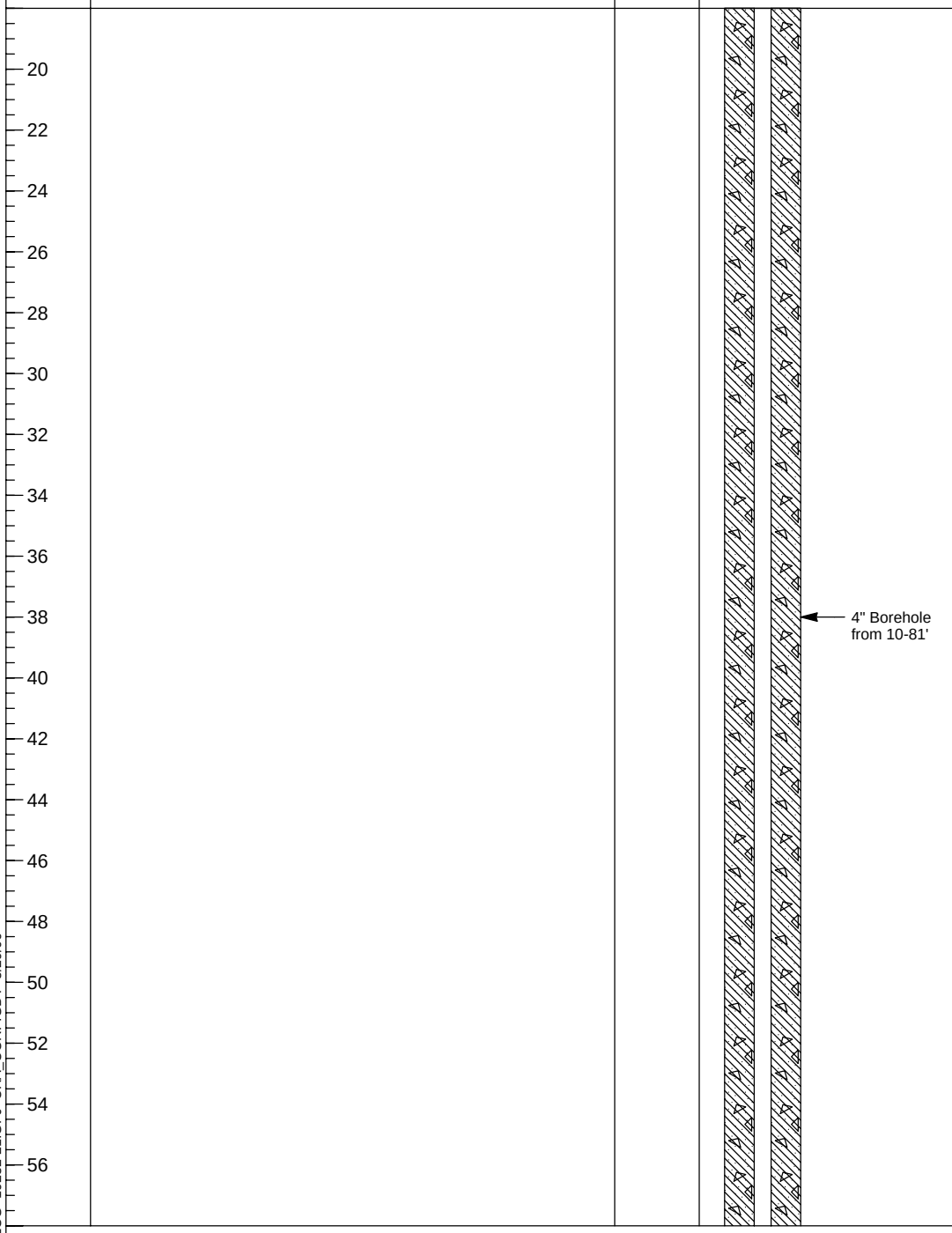
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-2
DATE COMPLETED: March 21, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %	



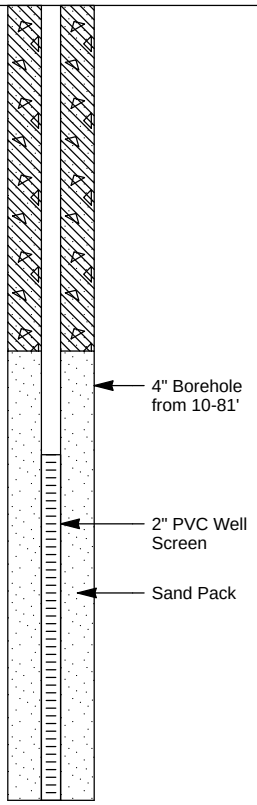
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-2
DATE COMPLETED: March 21, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %	
60							
62							
64							
66	- wet at 65.0ft BGS						
68							
70							
72							
74							
76	- wet at 75.0ft BGS						
78							
80							
82	END OF BOREHOLE @ 81.0ft BGS	81.00					
84							
86							
88							
90							
92							
94							
96							



WELL DETAILS
Screened interval:
71.00 to 81.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
68.00 to 81.00ft BGS
Material: #2 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-3
DATE COMPLETED: March 22, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	SM SILTY SAND - with fine gravel, compact, fine grained, poorly graded, brown, moist		Concrete; 4" Borehole; Cement/Bentonite Grout; 2" PVC Well Casing				
12	END OF OVERBURDEN HOLE @ 11.0ft BGS						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-3
DATE COMPLETED: March 22, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %	
12	DOLOSTONE - fissured, fractured, light brown	11.00	4" Borehole				

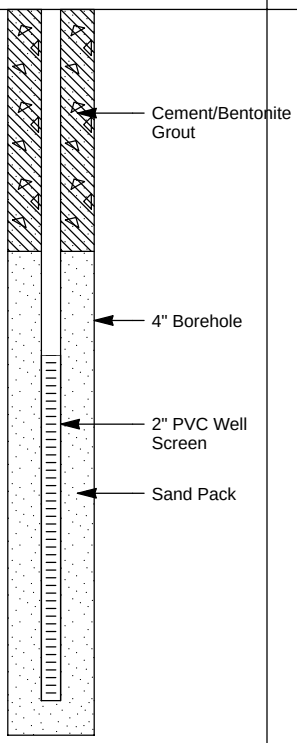
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-3
DATE COMPLETED: March 22, 2006
DRILLING METHOD: SONIC
FIELD PERSONNEL: S. POOLER

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %	
52							
54							
56							
58							
60							
62							
64	- wet at 65.0ft BGS						
66							
68							
70							
72	END OF BOREHOLE @ 71.0ft BGS	71.00					
74							
76							
78							
80							
82							
84							
86							
88							



WELL DETAILS
Screened interval:
60.00 to 70.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
57.00 to 71.00ft BGS
Material: #2 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-4
DATE COMPLETED: March 24, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: N. KUHL

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	UNCONSOLIDATED SEDIMENTS (see logs for TW-7 and TW-8)		Concrete; Bentonite Grout; 2" PVC Well Casing; 6" Borehole from 0-12'				
8	BEDROCK	8.00					
12	- competent rock at 12.0ft BGS		4" Borehole from 12-121.5				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-4
DATE COMPLETED: March 24, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: N. KUHL

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
46							
48							
50			Cement/Bentonite Grout				
52							
54			4" Borehole from 12-121.5				
56							
58							
60							
62							
64							
66							
68							
70							
72							
74							
76							
78							
80							
82							
84							
86							
88							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-4
DATE COMPLETED: March 24, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: N. KUHL

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
92							
94			Bentonite Chips				
96							
98			4" Borehole from 12-121.5				
100							
102			2" PVC Well Screen				
104			Sand Pack				
106							
108							
110							
112							
114							
116							
118							
120							
122	END OF BOREHOLE @ 121.5ft BGS	121.50	WELL DETAILS Screened interval: 99.50 to 119.50ft BGS Length: 20ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 95.50 to 121.50ft BGS Material: Sand				
124							
126							
128							
130							
132							
134							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-5
DATE COMPLETED: March 23, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: N. KUHL

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
	UNCONSOLIDATED SEDIMENTS (see logs for TW-9 and TW-10)		Concrete				
	BEDROCK - weathered, gray limestone	3.50	Cement/Bentonite Grout				
			6" Borehole from 0-12'				
			2" PVC Well Casing				
	- competent rock at 12.0ft BGS		4" Borehole from 12-122'				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 19232-21.GPJ CRA_CORP.GDT 5/29/06

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-5
DATE COMPLETED: March 23, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: N. KUHL

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
46							
48							
50							
52							
54							
56							
58							
60			4" Borehole from 12-122'				
62	- gray-brown at 62.0ft BGS						
64							
66							
68							
70							
72							
74							
76							
78							
80							
82							
84							
86							
88							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-5
DATE COMPLETED: March 23, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: N. KUHL

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
92							
94							
96			Bentonite Chips				
98							
100			4" Borehole from 12-122'				
102							
104			2" PVC Well Screen				
106			Sand Pack				
108							
110							
112							
114							
116							
118							
120							
122	END OF BOREHOLE @ 122.0ft BGS	122.00	WELL DETAILS Screened interval: 102.00 to 122.00ft BGS Length: 20ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 98.00 to 122.00ft BGS Material: #6 Sand				
124							
126							
128							
130							
132							
134							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-6
DATE COMPLETED: March 21, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	UNCONSOLIDATED SEDIMENTS (see logs for TW-11 and TW-12)		Concrete				
8	BEDROCK	8.00	Cement/Bentonite Grout; 6" Borehole from 0-12'; 2" PVC Well Casing				
12	- competent rock at 12.0ft BGS		4" Borehole from 12-122'				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

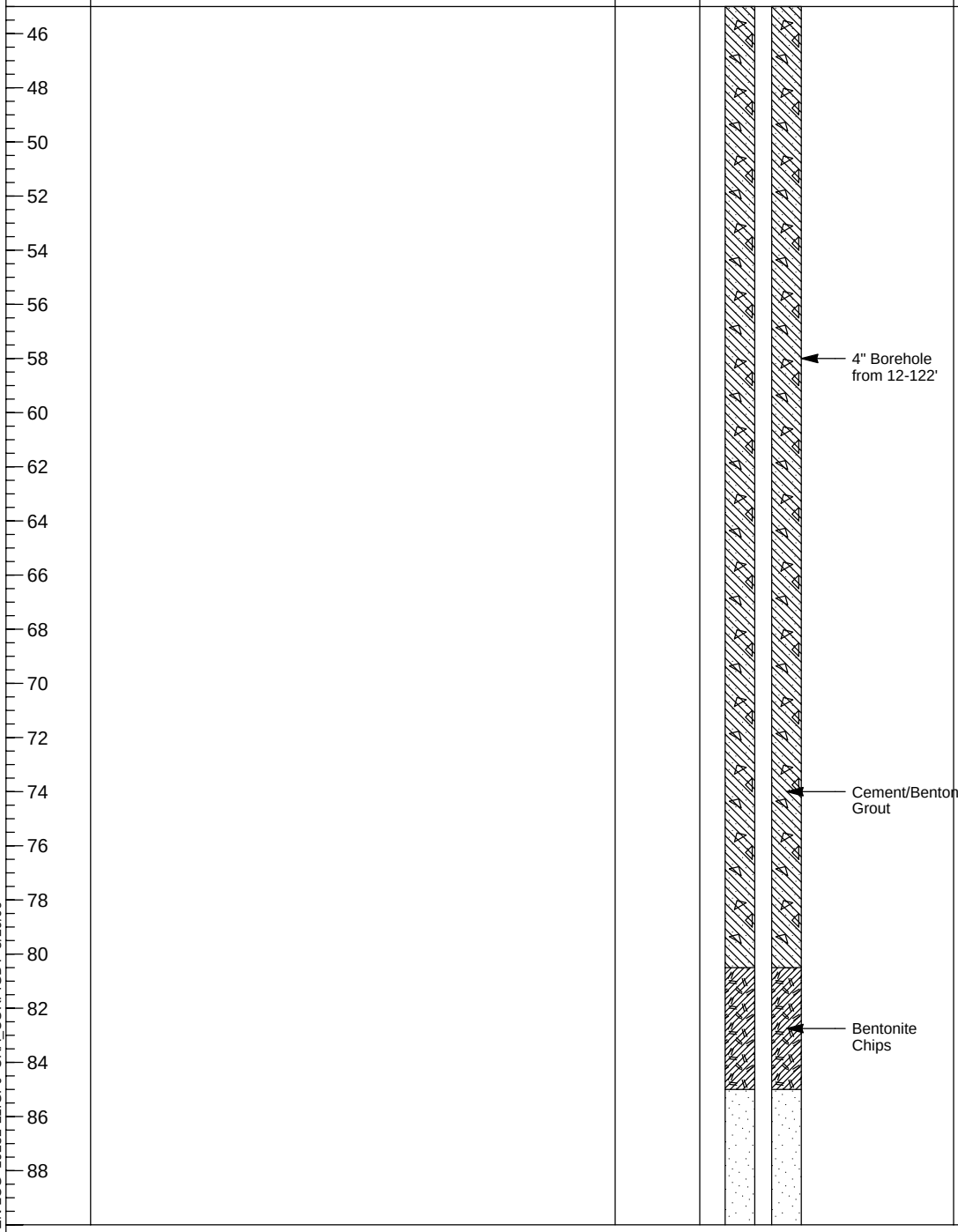
OVERBURDEN LOG 19232-21.GPJ CRA_CORP.GDT 5/29/06

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-6
DATE COMPLETED: March 21, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-6
DATE COMPLETED: March 21, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: E. VARNAS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
92			4" Borehole from 12-122'				
94							
96			2" PVC Well Screen				
98			Sand Pack				
100							
102							
104							
106							
108							
110							
112							
114							
116							
118							
120							
122	END OF BOREHOLE @ 122.0ft BGS	122.00	WELL DETAILS Screened interval: 95.00 to 115.00ft BGS Length: 20ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 85.00 to 122.00ft BGS Material: #6 Sand				
124							
126							
128							
130							
132							
134							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 19232-21.GPJ CRA_CORP.GDT 5/29/06

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-7
DATE COMPLETED: March 28, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	SP SAND/GRAVEL FILL		Concrete				
2			9" Borehole from 0-20'				
4							
6							
8			Cement/Bentonite Grout				
10			2" PVC Well Casing				
12							
14							
15	SC CLAYEY SAND	15.00					
16							
17	BEDROCK LIMESTONE - weathered	17.00					
18							
20	- competent rock at 20.0ft BGS		4" Borehole from 20-113'				
22							
24							
26							
28							
30							
32							
34							
36							
38							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-7
DATE COMPLETED: March 28, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
42							
44							
46							
48							
50							
52							
54							
56							
58							
60	- occasional sand pockets from 60-79' at 60.0ft BGS						
62							
64							
66							
68							
70							
72							
74							
76							
78							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-7
DATE COMPLETED: March 28, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
82							
84							
86							
88							
90							
92							
94							
96							
98							
100			Bentonite Chips				
102							
104			2" PVC Well Screen				
106			Sand Pack				
108							
110							
112							
114	END OF BOREHOLE @ 113.0ft BGS	113.00	WELL DETAILS Screened interval: 102.00 to 113.00ft BGS Length: 11ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 100.00 to 113.00ft BGS Material: #5 Sand				
116							
118							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-8
DATE COMPLETED: March 31, 2006
DRILLING METHOD: 4-1/4" HSA/AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	GPS SAND/GRAVEL (FILL)		Concrete				
2	LIMESTONE - weathered	2.00	9" Borehole from 0-5'				
4							
6	- competent rock at 5.0ft BGS		4" Borehole from 5-53'				
8			Cement/Bentonite Grout				
10			2" PVC Well Casing				
12							
14							
16							
18							
20							
22							
24							
26			Bentonite Chips				
28							
30							
32			2" PVC Well Screen				
34			Sand Pack				
36							
38							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-8
DATE COMPLETED: March 31, 2006
DRILLING METHOD: 4-1/4" HSA/AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
42							
44			4" Borehole from 5-53'				
46							
48							
50							
52							
54	END OF BOREHOLE @ 53.0ft BGS	53.00	WELL DETAILS Screened interval: 30.00 to 50.00ft BGS Length: 20ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 28.00 to 53.00ft BGS Material: Sand				
56							
58							
60							
62							
64							
66							
68							
70							
72							
74							
76							
78							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-9
DATE COMPLETED: April 4, 2006
DRILLING METHOD: 4-1/4" HSA/AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	UNCONSOLIDATED SEDIMENTS		Concrete				
2							
4			Cement/Bentonite Grout				
6							
8			9" Borehole from 0-25'				
10			2" PVC Well Casing				
12							
14							
16							
18							
20	BEDROCK - weathered	20.00					
22							
24							
26	- competent rock at 25.0ft BGS		4" Borehole from 25-68'				
28							
30							
32							
34							
36							
38							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: AR-9
DATE COMPLETED: April 4, 2006
DRILLING METHOD: 4-1/4" HSA/AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
42							
44							
46			4" Borehole from 25-68'				
48							
50							
52			Bentonite Chips				
54							
56							
58			2" PVC Well Screen				
60			Sand Pack				
62							
64							
66							
68	END OF BOREHOLE @ 68.0ft BGS	68.00					
70							
72							
74							
76							
78							

WELL DETAILS
Screened interval:
55.50 to 65.50ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
54.00 to 68.00ft BGS
Material: #6 Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: CAR-1
DATE COMPLETED: March 21, 2006
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	SP SAND - fine grained, trace medium sand, poorly graded, medium brown, moist		Concrete				
2							
4							
6							
8			8" Borehole				
10							
12	- some coarse sand, dark brown at 11.2ft BGS						
14							
16	- trace fine gravel at 15.0ft BGS						
18							
20	- some fine gravel at 20.0ft BGS						
22			Cement/Bentonite Grout				
24							
26							
28	- wet at 27.0ft BGS						
30							
32							
34							
36							
38			2" PVC Well Casing				

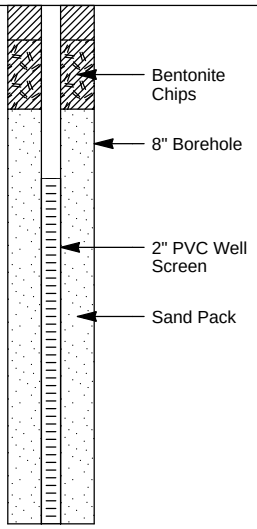
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: CAR-1
DATE COMPLETED: March 21, 2006
DRILLING METHOD: 4-1/4" HSA
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
42							
44							
46							
48							
50	- dense at 50.0ft BGS						
52							
54							
	END OF BOREHOLE @ 55.0ft BGS	55.00					
56							
58							
60							
62							
64							
66							
68							
70							
72							
74							
76							
78							



WELL DETAILS
Screened interval:
45.00 to 55.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
43.00 to 55.00ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: CAR-2
DATE COMPLETED: March 22, 2006
DRILLING METHOD: 4-1/4" HSA/4" ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	SP SAND		Concrete				
2							
4							
6							
8			9" Borehole				
10			2" PVC Well Casing				
12			Cement/Bentonite Grout				
14							
16							
18							
20	END OF OVERBURDEN HOLE @ 20.0ft BGS						
22							
24							
26							
28							
30							
32							
34							
36							
38							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: CAR-2
DATE COMPLETED: March 22, 2006
DRILLING METHOD: 4-1/4" HSA/4" ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	RUN NUMBER	CORE RECOVERY %	RQD %
20	LIMESTONE/DOLOMITE (highly weathered) - thinly bedded, trace fine sand pockets, white/beige, dry, calcareous nodules	20.00	8" Borehole from 0-20' Bentonite Chips	1	4.6	
22						
24						
26			2" PVC Well Screen 4" Borehole from 20-36.5'	2	100	
28						
30			Sand Pack			
32						
34				3	100	
36	END OF BOREHOLE @ 36.5ft BGS	36.50				
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						

WELL DETAILS
Screened interval:
25.00 to 35.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
23.00 to 36.50ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: CAR-3
DATE COMPLETED: March 29, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
0	UNCONSOLIDATED SEDIMENTS		Concrete				
2							
4							
6							
8							
10							
12							
14			Cement/Bentonite Grout				
16							
18							
19.00	WEATHERED LIMESTONE BEDROCK						
20			9" Borehole from 0-25'				
22							
24							
26			2" PVC Well Casing				
28							
30							
32							
34							
36							
38			Bentonite Chips				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: CAR-3
DATE COMPLETED: March 29, 2006
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE
42			4" Borehole from 25-63'				
44							
46			2" PVC Well Screen				
48							
50			Sand Pack				
52							
54							
56							
58							
60							
62							
	END OF BOREHOLE @ 63.0ft BGS	63.00					
64			WELL DETAILS Screened interval: 43.00 to 63.00ft BGS Length: 20ft Diameter: 2in Slot Size: 0.010 Material: PVC Sand Pack: 40.00 to 63.00ft BGS Material: #5 Sand				
66							
68							
70							
72							
74							
76							
78							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-1
DATE COMPLETED: February 27, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	SP SAND (FILL) - trace limestone gravel, medium grain, brown, dry	1.00	Bentonite Chips 2" PVC Well Casing 8" Borehole	1GP				0.0
2								
4								
6			2" PVC Well Screen					
8			Sand Pack	2GP				0.0
	LIMESTONE - sandy and silty, weathered, brown, dry	8.00						
10	- AUGER REFUSAL at 8.5ft BGS - GEOPROBE REFUSAL at 9.0ft BGS END OF BOREHOLE @ 9.0ft BGS	9.00						
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								

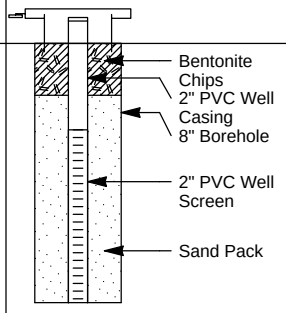
WELL DETAILS
Screened interval:
3.50 to 8.50ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
2.50 to 8.50ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-10
DATE COMPLETED: March 1, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL	1.00						
2	CL CLAY (FILL) - sandy, low plasticity, brown, moist	3.00		1GP				0.0
4	SP SAND - medium grain, brown, dry							
6		7.00		2GP				0.0
8	WEATHERED LIMESTONE - sandy, silty, brown, dry - AUGER REFUSAL at 7.5ft BGS - GEOPROBE REFUSAL at 8.0ft BGS	8.00						
10	END OF BOREHOLE @ 8.0ft BGS							
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								

WELL DETAILS
Screened interval:
2.50 to 7.50ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
1.50 to 7.50ft BGS
Material: Sand

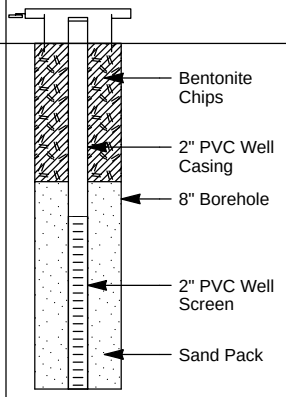
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-11
DATE COMPLETED: March 1, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00		1GP				0.0
4	SP SAND - medium grained, brown, dry	4.50						
8				2GP				0.0
	WEATHERED LIMESTONE - sandy, silty, brown, dry	9.00						
10	- GEOPROBE REFUSAL at 9.0ft BGS - AUGER REFUSAL at 10.0ft BGS	10.00						
12	END OF BOREHOLE @ 10.0ft BGS							



WELL DETAILS
Screened interval:
5.00 to 10.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
4.00 to 10.00ft BGS
Material: Sand

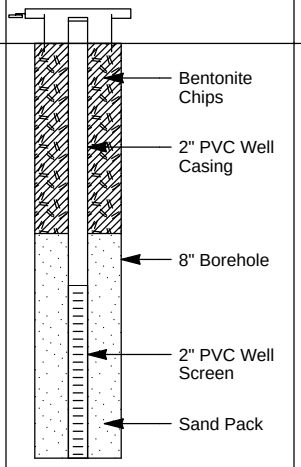
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-12
DATE COMPLETED: March 1, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, moist	1.00		1GP				0.0
4	SP SAND - medium grained, brown, dry	4.50		2GP				0.0
8	WEATHERED LIMESTONE - sandy, silty, brown, dry	9.00						
10	- GEOPROBE REFUSAL at 9.0ft BGS							
12	- AUGER REFUSAL at 12.0ft BGS	12.00						
	END OF BOREHOLE @ 12.0ft BGS							



WELL DETAILS
Screened interval:
7.00 to 12.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
5.50 to 12.00ft BGS
Material: Sand

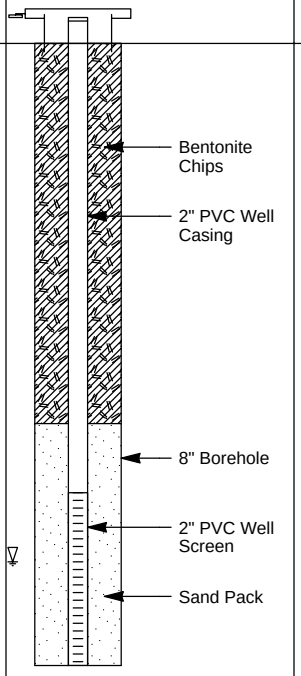
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-13
DATE COMPLETED: March 1, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY - sandy, low plasticity, brown, moist	1.00		1GP				0.0
4	SP SAND - medium grain, brown, dry	4.00						
8	GC CLAYEY GRAVEL (limestone) - sandy, orange/brown, dry	8.00		2GP				0.0
10	SP SAND - medium grain, brown, dry	10.00		3GP				0.0
12	- GEOPROBE REFUSAL at 12.0ft BGS							
14	- saturated at 15.0ft BGS							
16								
18	- AUGER REFUSAL at 18.0ft BGS	18.00						
	END OF BOREHOLE @ 18.0ft BGS							
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								



WELL DETAILS
Screened interval:
13.00 to 18.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
11.00 to 18.00ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽

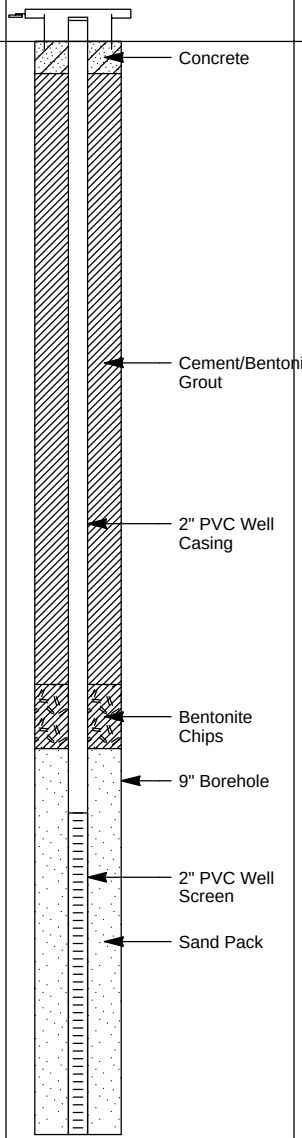
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-14
DATE COMPLETED: April 5, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS
	TOPSOIL	
	CL CLAY - sandy, low plasticity, brown, moist	1.00
	SP SAND - medium grained, brown, dry	4.00
	- moist at 8.5ft BGS	
	GC CLAYEY GRAVEL (limestone) - sandy, orange/brown, moist	13.00
	- interbedded layers of sand at 21.0ft BGS	
	- weathered sandstone pieces mixed in medium grained, green/gray at 24.0ft BGS	
	- GEOPROBE REFUSAL at 25.0ft BGS	
	END OF BOREHOLE @ 34.0ft BGS	34.00

Temporary Well



WELL DETAILS
Screened interval:
24.00 to 34.00ft BGS
Length: 10ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
22.00 to 34.00ft BGS
Material: Sand

SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1GP				0.0
2GP				0.0
3GP				0.0
4GP				0.0
5GP				0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 19232-21.GPJ CRA_CORP.GDT 5/29/06

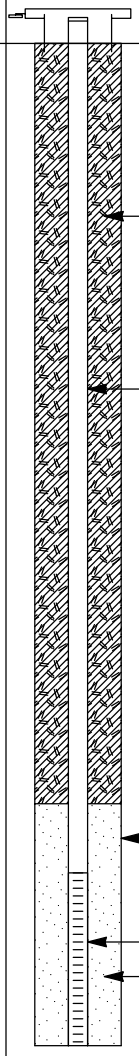
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-15
DATE COMPLETED: March 1, 2006
DRILLING METHOD: GEOPROBE/4-1/" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS
	TOPSOIL	
	SP SAND - medium grained, brown, moist	1.00
	- increasing clay with depth at 14.0ft BGS	
	CI CLAY - silty, medium plasticity, brown, moist	16.00
	SP SAND - medium grained, brown, moist	18.00
	GC CLAYEY GRAVEL - sandy, light brown, saturated	25.00
	- GEOPROBE REFUSAL at 29.0ft BGS	
	- AUGER REFUSAL at 30.0ft BGS	30.00
	END OF BOREHOLE @ 30.0ft BGS	

Temporary Well



WELL DETAILS
Screened interval:
24.00 to 29.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
22.00 to 29.00ft BGS
Material: Sand

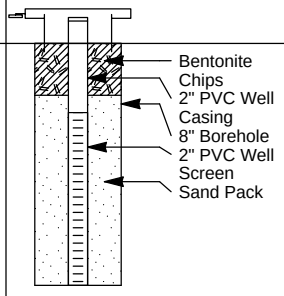
SAMPLE NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
1GP				0.0
2GP				0.0
3GP				0.0
4GP				0.0
5GP				0.0
6GP				0.0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-2
DATE COMPLETED: February 27, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL	1.00		1GP				0.0
2	SP SAND (FILL) - trace of limestone gravel, medium grain, brown, dry							
4								
6								
	- AUGER REFUSAL at 7.0ft BGS			2GP				0.0
8	WEATHERED LIMESTONE - sandy, silty, brown, dry	8.00						
	- GEOPROBE REFUSAL at 9.0ft BGS	9.00						
10	END OF BOREHOLE @ 9.0ft BGS							
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								

WELL DETAILS
Screened interval:
2.00 to 7.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
1.50 to 7.00ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

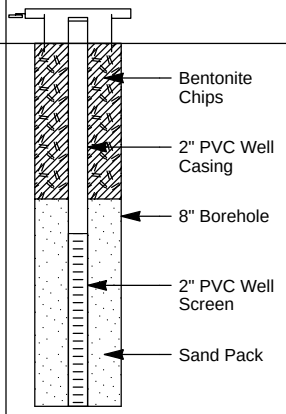
OVERBURDEN LOG 19232-21.GPJ CRA_CORP.GDT 5/29/06

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-3
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00		1GP				0.0
4	SP SAND - medium grain, brown, dry	4.00						
8	- moist at 8.5ft BGS			2GP				0.0
	WEATHERED LIMESTONE - sandy, silty, brown, dry	9.00						
10	- GEOPROBE REFUSAL at 9.0ft BGS	10.50						
	- AUGER REFUSAL at 10.5ft BGS							
12	END OF BOREHOLE @ 10.5ft BGS							



WELL DETAILS
Screened interval:
5.50 to 10.50ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
4.50 to 10.50ft BGS
Material: Sand

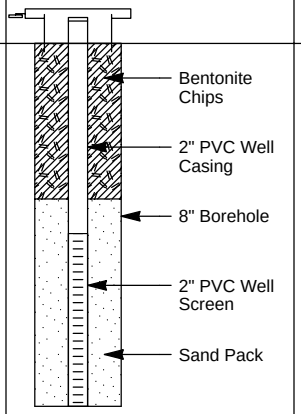
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-4
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00		1GP				0.0
4	SP SAND - medium grain, brown, dry	4.00						
8				2GP				0.0
9	WEATHERED LIMESTONE - sandy, silty, brown, dry	9.00						
10	- GEOPROBE REFUSAL at 9.0ft BGS	10.50						
	- AUGER REFUSAL at 10.5ft BGS							
12	END OF BOREHOLE @ 10.5ft BGS							



WELL DETAILS
Screened interval:
5.50 to 10.50ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
4.50 to 10.50ft BGS
Material: Sand

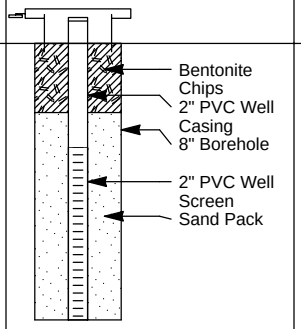
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-5
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00						
2				1GP				0.0
4	SP SAND - medium grain, brown, dry	4.00						
6				2GP				0.0
8	- GEOPROBE REFUSAL at 8.0ft BGS - AUGER REFUSAL at 8.0ft BGS	8.00						
10	END OF BOREHOLE @ 8.0ft BGS							
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								



WELL DETAILS
Screened interval:
3.00 to 8.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
2.00 to 8.00ft BGS
Material: Sand

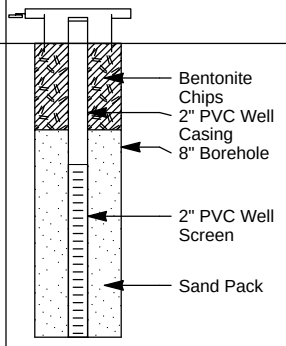
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-6
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00						
2				1GP				0.0
4	SP SAND - medium grain, brown, dry	4.00						
6				2GP				0.0
8	- GEOPROBE REFUSAL at 8.5ft BGS - AUGER REFUSAL at 8.5ft BGS	8.50						
10	END OF BOREHOLE @ 8.5ft BGS							
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								



WELL DETAILS
Screened interval:
3.50 to 8.50ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
2.50 to 8.50ft BGS
Material: Sand

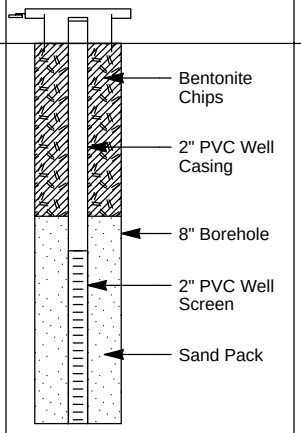
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-7
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00						
2				1GP				0.0
	SP SAND, medium grain, brown, dry	3.50						
4								
6								
8				2GP				0.0
	CL CLAY - sandy, low plasticity, brown, moist	9.50						
10	- GEOPROBE REFUSAL at 9.5ft BGS							
	- AUGER REFUSAL at 11.0ft BGS	11.00						
12	END OF BOREHOLE @ 11.0ft BGS							
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								



WELL DETAILS
Screened interval:
6.00 to 11.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
5.00 to 11.00ft BGS
Material: Sand

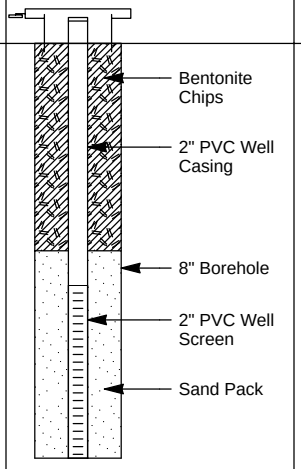
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-8
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL							
	CL CLAY (FILL) - sandy, low plasticity, brown, moist	1.00						
2				1GP				0.0
	SP SAND - medium grain, brown, dry	3.50						
4								
6								
8				2GP				0.0
	CL CLAY - sandy, low plasticity, brown, moist - GEOPROBE REFUSAL at 9.5ft BGS	9.50						
10								
	- AUGER REFUSAL at 12.0ft BGS	12.00						
12	END OF BOREHOLE @ 12.0ft BGS							
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								



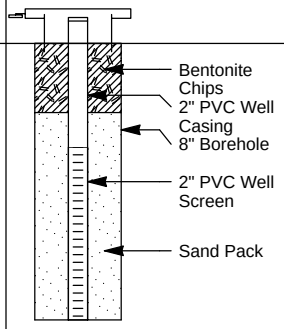
WELL DETAILS
Screened interval:
7.00 to 12.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
6.00 to 12.00ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: EXELON-BYRON
PROJECT NUMBER: 19232-21
CLIENT: EXELON GENERATION COMPANY LLC
LOCATION: BYRON, ILLINOIS

HOLE DESIGNATION: TW-9
DATE COMPLETED: February 28, 2006
DRILLING METHOD: GEOPROBE/4-1/4" HSA
FIELD PERSONNEL: R. AAMOT

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Temporary Well	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
0	TOPSOIL	1.00						
2	CL CLAY (FILL) - sandy, low plasticity, brown, moist	3.00		1GP				0.0
4	SP SAND - medium grain, brown, dry							
6		7.00		2GP				0.0
8	WEATHERED LIMESTONE - sandy, silty, brown, dry - GEOPROBE REFUSAL at 8.0ft BGS - AUGER REFUSAL at 8.0ft BGS	8.00						
10	END OF BOREHOLE @ 8.0ft BGS							
12								
14								
16								
18								
20								
22								
24								
26								
28								
30								
32								
34								
36								
38								

WELL DETAILS
Screened interval:
3.00 to 8.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Sand Pack:
2.00 to 8.00ft BGS
Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

APPENDIX C

QUALITY ASSURANCE PROGRAM

C.1 ENVIRONMENTAL, INC.

C.2 TELEDYNE BROWN ENGINEERING, INC.

C.1 ENVIRONMENTAL, INC.

Environmental, Inc.
Midwest Laboratory
an Allegheny Technologies Co.

700 Landwehr Road • Northbrook, IL 60062-2310
ph. (847) 564-0700 • fax (847) 564-4517

QUALITY ASSURANCE PROGRAM

QAP-1

Copy No. _____

Issued To:. _____

Issue Date:. _____

QUALITY POLICY

It is the policy of the Environmental, Inc., Midwest Laboratory to perform all technical work in accordance with specific written requirements. The requirements are contained in the quality assurance program manual, technical procedures and study plans. This policy applies to all employees of Environmental, Inc. and will be enforced in all areas of the laboratory. If it is determined that the needs of the laboratory or our clients are not adequately met, the requirements may be revised.

AUTHORIZATION AND APPROVAL

The Quality Assurance Program defined herein has been approved by the management of Environmental, Inc., Midwest Laboratory. The Quality Assurance Manager is authorized to develop and implement the procedures required to attain these goals. This program defines the quality related operations of the Environmental, Inc., Midwest Laboratory.

Quality Assurance Manager

S. A. Coorlim

Laboratory Manager

Bronia Grob

DOCUMENT ISSUE AND REVISION CONTROL FORM

DOCUMENT: Quality Assurance Program Manual (QAP-1)
Environmental, Inc. - Midwest Laboratory

Issue and Revisions	Pages	Prepared by:	Date	Effective Date	Approved by:
Re-issue		S. A. Coorlim	10/1/2000	10/11/2000	B. Grob
1	1-2, 8-1, 18-1,2,3,4,5,6		10/1/2003	10/15/2003	B Grob

TABLE OF CONTENTS

SECTION 1.0 ORGANIZATION

CRITERIA I IN NRC 10 CFR 50, APPENDIX B

1.1 PURPOSE

To describe the Environmental, Inc., Midwest Laboratory (EIML) Quality Assurance and technical organization and the principal duties of the Quality Assurance Manager, Laboratory Manager, supervisors and technicians.

1.2 QUALITY ASSURANCE ORGANIZATION

The Quality Assurance Manager, under the guidance of the Quality Assurance Program (QAP), has the authority and responsibility to monitor conformance of technical disciplines to QAP requirements. Any condition so adverse to quality as to affect the validity of the results of analyses shall be reported immediately to the president of the company for executive action or work stoppage of the laboratory, if necessary. The principal duties and responsibilities of the Quality Assurance Manager are as follows:

1.2.1 Prepare, distribute, and maintain the Quality Assurance Program.

1.2.2 Perform internal audits of the EIML facility at least every eighteen months to ensure compliance to QAP requirements.

1.2.3 The Quality Assurance Manager has the organizational freedom to identify quality problems and initiate, recommend or provide solutions.

1.2.4 Issue audit reports and status reports to management on a regular basis concerning audit findings.

1.2.5 Verify implementation of corrective action.

1.2.6 Select and train individuals to perform the audit function.

1.2.7 Provide for the maintenance of a permanent record of all audits, including discrepancies and their resolutions.

1.3 TECHNICAL ORGANIZATION

The Laboratory Manager is responsible for the overall supervision of the technical work performed at the facility. The Laboratory Manager reports to the president of Environmental, Incorporated and is responsible for quality assurance to the Quality Assurance manager. Responsibilities of the Laboratory Manager include:

1.3.1 Sufficient training to ensure technical competence of personnel performing the work, and provide for the continued training of the technical staff.

1.3.2 Review and approve study plans to ensure that project objectives will be satisfied.

1.3.4 Review and approve project reports, verifying their conformance to project requirements and the QAP.

1.3.5 Act as Project Manager for all projects (this responsibility may be delegated to other members of EIML).

1.4 DUTIES

The duties of various levels of responsibility are listed below: Duties may be delegated to qualified personnel.

1.4.1 Laboratory Manager

1.4.1.1 Provide quality control of all analytical results.

1.4.1.2 Establish, maintain and review analytical procedures.

1.4.1.3 Write and / or approve programming for data reduction.

1.4.1.4 Hire personnel sufficient to handle sample work load.

1.4.1.5 Review contract specifications and monitor laboratory compliance to the specifications.

1.4.1.6 Assist in training personnel.

1.4.1.7 Provide general supervision to assure good laboratory practice is followed.

1.4.1.8 Effect and monitor required corrective actions subsequent to external and internal audits.

1.4.2 Quality Assurance Manager

1.4.2.1 Maintain and/or review control charts for instrument performance and backgrounds. Investigate any out-of control conditions and issue corrective action requests when necessary.

1.4.2.2 Maintain up to date postings and provide proper notification and training in accordance with applicable regulations and contract commitments.

1.4.2.3 Perform and maintain QA / QC scheduled checks. | 1

1.4.2.4 Investigate and initiate non-conformances or out-of control conditions and issue corrective action requests when necessary.

1.4.2.5 Maintain a schedule for in-house quality control samples. Review spike, blank and cross-check results. Initiate corrective action for non-conformances and out of limit results.

1.4.2.6 Participate in all client and agency audits.

1.4.2.7 Effect and monitor required corrective actions subsequent to external and internal audits.

1.4.3 Project Coordinator

1.4.3.1 Compile and review reports of analyses to clients.

1.4.3.2 Review data for accuracy and reasonableness.

1.4.3.3 Assist in quality control of analytical results.

1.4.3.4 Review contract specifications and monitor laboratory compliance to specifications.

1.4.3.5 Assist in audits by contractors.

1.4.4 Laboratory Supervisor

1.4.4.1 Ensure that analytical procedures are followed.

1.4.4.2 Assist the Laboratory Manager in maintaining quality control.

1.4.4.3 Inspect laboratory notebooks.

1.4.4.4 Train personnel.

1.4.4.5 Schedule work of laboratory including quality control samples.

1.4.4.6 Prepare standard reference material and check sources for calibration of equipment. Establish counter efficiencies as required.

1.4.4.7 See that good laboratory and housekeeping practices are followed.

1.4.4.8 Inform management of problems or the need for equipment maintenance or personnel. Order necessary supplies.

1.4.4.10 Inspect the work of technicians at hold points, if necessary, to assure accuracy of analyses.

1.4.5 Laboratory Technician

1.4.5.1 Perform analyses in accordance with analytical procedures.

1.4.5.2 Follow good laboratory practices and maintain clean, organized work area.

1.4.5.3 Enter all data on a work sheet according to an identifying number specifying the analysis, dates of analysis and data necessary to trace accuracy of measurement.

1.4.5.4 Schedule sample counting so that delivery dates may be met.

1.4.5.5 Inform supervisor of supplies required and any problems with equipment used.

1.4.5.6 Perform required calibration or performance tests on instrumentation which could affect accuracy of measurement.

1.4.5.7 Perform quality control samples, as required, for recertification.

1.4.5.8 Follow safe laboratory practice, including knowledge of fire regulations and actions required in case of a chemical or radioactive material spill.

1.4.6 Counting Room

1.4.6.1 Schedule sample counting and data reduction. Perform special requests for data reduction and sample counting as needed.

1.4.6.2 Run performance checks and background measurements as required.

1.4.6.3 Maintain adequate supplies for functioning of counting room instrumentation. Order liquid nitrogen and other counting room gases, as required.

1.4.6.4 Maintenance and repair of counting room equipment.

1.4.6.5 Perform energy and efficiency calibrations, as required. Establish counter efficiencies, as required. Inform management if these are not within prescribed limits.

1.4.6.6 Review data for accuracy and reasonableness. Check for compliance to contract specifications.

1.4.6.7 Maintain instrumentation files.

SECTION 2.0 QUALITY ASSURANCE PROGRAM

CRITERIA II IN NRC 10 CFR 50, APPENDIX B

2.1 PURPOSE

To describe the specific objectives of the Environmental, Inc. Midwest Laboratory Quality Assurance Program (QAP-1).

2.2 PROGRAM OBJECTIVES

The QAP is designed to provide the necessary procedures and actions taken by management to ensure that results of studies and analyses are acceptable to both clients and regulatory agencies. The specific objectives are as follows:

2.2.I To ensure that technical personnel who collect and analyze samples and generate data are adequately trained.

2.2.2 To provide confidence in the methods, techniques, and procedures used to collect and analyze samples and generate data.

2.2.3 To provide assurance that methods, techniques, and procedures are documented and approved.

2.2.4 To ensure that groups and individuals who collect and analyze samples and generate data comply with contractual specifications and quality assurance/control requirements in performance of their work.

2.2.5 To ensure that the required QA/QC documentation is generated and that such records are adequate and complete.

2.2.6 To ensure that prompt corrective action measures are implemented by management to correct conditions of unacceptable quality.

2.2.7 To provide a quality assurance documentation file which is identifiable and traceable to each item.

2.3 PROGRAM REQUIREMENTS

Individual and General Subcontractor agreements must identify any applicable quality assurance requirements to be incorporated in the supplier's quality assurance program. Procurement documents must require the supplier to incorporate appropriate quality assurance program requirements into their subtier procurement documents. All procurement documents and any changes to these documents are reviewed and approved prior to release by the Project Manager or his/her designee.

Technical procedures are prepared for all activities involving the following:

2.3.1 Performance, calibration, and maintenance of field and laboratory equipment.

2.3.2 Sample collection, analyses, storage, and disposition.

2.3.3 Data collection, reduction, processing, storage and disposition.

2.4 PERSONNEL QUALIFICATIONS and TRAINING

Laboratory procedures are performed by qualified personnel. The qualifications and training necessary to become a staff member at EIML are as follows:

2.4.1 Qualifications

The qualifications necessary to become a staff member of Environmental, Inc. are listed in the Quality Control Program (QCP-1).

2.4.2 Training

Personnel shall be trained in the principles of the quality assurance program or other quality programs as they apply to their duties. The Quality Assurance Manager or a qualified designee shall perform quality assurance program training.

Personnel shall be trained in quality control and analytical procedures before analyzing samples submitted by clients. Training shall be performed by the laboratory supervisor or a qualified designee and documented on Orientation and Training Form, GOF:A-8, and shall consist of the following steps:

2.4.2.1 Employees shall familiarize themselves with the written procedures.

2.4.2.2 Observe the procedures as performed by a qualified analyst.

2.4.2.3 Performance of the procedure under the instructions of a qualified analyst.

2.4.2.4 Demonstration of competence in the procedure by analysis of quality control samples, with the attainment of specified precision and accuracy.

2.4.3 Certification

Personnel shall be considered certified to a procedure upon completion of training. The laboratory supervisor or qualified designee will review the data and the analyst's technical understanding of the procedures.
If employee performance during training is acceptable, the certification form (GOF:A-8) shall be completed, including a description and the number of the procedure for which the person is being certified, signed, and dated by the laboratory supervisor or qualified designee. Each procedure for which a technician is certified shall be listed separately. A copy of the certification form for each technician shall be kept on file and available for inspection.

2.4.4 Performance Review

Annual performance reviews shall be conducted to ensure that laboratory performance is in accordance with quality assurance requirements, written procedures and accepted laboratory practice. Performance reviews shall be documented on Form GOF/A-29.

SECTION 3.0 DESIGN CONTROL
CRITERIA III IN NRC 10 CFR 50, APPENDIX B

Design control is not applicable.

SECTION 4.0 PROCUREMENT DOCUMENT CONTROL

CRITERIA IV IN NRC 10 CFR 50, APPENDIX B

4.1. PURPOSE

To describe the quality provisions to be incorporated into procurement documents for the purchase of materials, equipment and services.

4.2 RESPONSIBILITY

The department responsible for purchase of materials, equipment and/or services shall identify and document quality provisions as required on procurement documents (e.g., agreements, purchase requisitions/orders). This is the responsibilty of the Laboratory Manager.

4.3 QUALITY PROVISIONS

Provisions to be included in the various types of procurement documents are described as follows:

4.3.1 Work Scope

A statement of the scope of the work to be performed by the supplier shall be included in procurement documents for calibration services, instrument repair services and all agreements.

4.3.2 Technical Requirements

Procurement documents shall contain or reference applicable technical requirements that describe the material, equipment or service to be furnished. These requirements may include equipment specifications, drawings, codes, regulations, procedures, instructions and required quality assurance documentation.

4.3.3 Documentation Required

Procurement documents must reference those documents and records to be submitted by the supplier to EIML for information, review or approval.

4.3.4 Quality Assurance Requirements

All procurement documents and any changes to these documents are reviewed and approved by the Quality Assurance Manager or designee prior to release. All purchase orders for quality related items must include a reference to the reporting requirements of 10 CFR 21 and, when applicable, traceability to known standards.

Subcontractor agreements may identify additional quality assurance program requirements to be incorporated into sub-tier procurement documents (e.g. 10CFR50, App. B).

SECTION 5.0 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

CRITERIA V IN NRC 10 CFR 50, APPENDIX B

5.1 PURPOSE

To describe responsibilities and requirements for the preparation of manuals and study plans.

5.2 RESPONSIBILITY

The Laboratory Manager or designee is responsible for the preparation of procedures manuals and study plans.

5.3 REQUIREMENTS

Technical procedures may be presented in either quality control manuals, procedures manuals, sampling manuals, study plans, or other document type.

5.3.1 Title Page

Each manual or study plan shall contain a title page with the following information, as appropriate:

5.3.1.1 Document type and Document title.

5.3.1.2 Approver's signature.

5.3.1.3 Revision number and date.

5.3.1.4 A statement of proprietary nature, if applicable.

5.3.2 Study Plans

A Study plan, prepared for a client, shall describe the activities or tasks to be accomplished, and contain the following information:

5.3.2.1 Client name.

5.3.2.2 Project title and Project number.

5.3.2.3 Contractual background and/or commitments.

5.3.2.4 Statement of work to be accomplished.

5.3.2.5 Federal, State, or local regulations or regulatory guides to be satisfied, as applicable.

The Proposal, accepted by the client, satisfies most requirements for a study plan.

5.4 QUALITY ASSURANCE

All quality related documents undergo a periodic review. The time between successive reviews shall not exceed 36 months. The reviewer documents the review of the quality related document by completing the information on the Document Review Log. The review is performed to ensure that:

5.4.1 The latest edition for all technical procedures are included.

5.4.2 Technical procedures support the requirement of the EIML Quality Assurance Manual.

5.4.3 Technical procedures are updated to reflect changes in methods or operations of the laboratory.

SECTION 6.0 DOCUMENT CONTROL

CRITERIA VI IN NRC 10 CFR 50, APPENDIX B

6.1 PURPOSE

To describe the controlled and non-controlled copies of the quality-related documents and procedures and the individuals responsible for their preparation, review, approval, issuance, revision, and distribution. These documents may include procedure manuals, quality control/assurance manuals, document change notices, study plans, etc.

6.2 LIST OF DOCUMENTS

The documents and the individuals responsible for preparation, review and approval are identified in the Quality Assurance Program Manual sections as listed below:

Procurement Documents	QAP 4.0
Study Plans	QAP 5.0
Technical Procedures	QAP 5.0
Supplier Documents	QAP 7.0
Quality Inspections	QAP 10.0
Project Reports	QAP 10.0
Calculation Control Procedures	QAP 10.0
Test Programs	QAP 11.0
Calibration Records	QAP 12.0
Sample Control Procedures	QAP 13.0
Data Control Procedures	QAP 13.0
Record Storage	QAP 13.0
Nonconformance Reports	QAP 15.0
Quality Assurance Records	QAP 17.0

6.3 DOCUMENT DISTRIBUTION PROCEDURES

6.3.1 Documents and procedures distributed internally to EIML personnel shall be issued as CONTROLLED documents. Recipients of documents shall acknowledge receipt by initialing the Document Control Log. Individuals distributing revised documents shall physically remove older versions of the document at the time of distribution to ensure that only the latest revisions remain in the laboratory.

6.3.2 Procedures distributed externally shall be marked NON-CONTROLLED and shall be issued for information only. The distribution list shall be kept on file. Acknowledgment by the recipient is not required.

6.3.3 Record the individual to whom the document is distributed and their affiliation, the identification number and title of the document, the revision or issue date, and the date of distribution in the Document Control Log.

6.3.4 Send the document or revised and updated materials to the individuals listed. Include any special information as to handling.

6.3.5 Maintain a file for each document. The file shall include a record of each revision, the original document and the Document Control Log listing the person to whom the document was issued, date of distribution and affiliation.

6.4 DOCUMENT REVISION PROCEDURES

6.4.1 If a portion of a document page is revised, the revised portion will be indicated with a vertical line on the right hand side of the page, followed by the latest revision number.

6.4.2 If the entire page is revised, the latest revision number and revision date need only be indicated on the revised page.

6.4.3 Revision numbers and dates are presented on the title page and on each page of all controlled documents. If a different method of revision is used, it will be noted in the respective controlled document.

6.4.4 Revisions to each controlled document are reviewed and approved by the Laboratory or Quality Assurance manager. Revised documents to individuals then replace the original documents.

6.4.5 Handwritten changes to documents will be permitted if the revision is documented and approved on an "EIML Bulletin", form QA-07. The form is distributed to clients requiring approval of procedures prior to implementation. The "Bulletin Records Log", form QA-08, will document distribution of the bulletin. A procedural revision must be completed by the time of the next scheduled document review.

SECTION 7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

CRITERIA VII IN NRC 10 CFR 50, APPENDIX B

7.1 PURPOSE

To describe several methods which may be utilized, if necessary, to evaluate the capability of suppliers to meet procurement document requirements, to accept purchased items or services, including receipt inspection and certificate review and to identify and control nonconforming items and services. Technical personnel and the purchasing department are responsible for choosing and implementing the appropriate supplier evaluation methods.

7.2 SUPPLIER EVALUATION METHODS

7.2.1 Initial Performance

A product of chemical, reagent, standard or other laboratory equipment should demonstrate satisfactory performance upon analysis of quality control samples.

7.2.2 Past Experience

Evaluate past ability of the supplier to provide a satsfactory product. The information to be evaluated can include, but not be limited to the following:

7.2.2.1 Experience of known user of supplier's product.

7.2.2.2 In-house records of previous procurement actions, product operating experience, and analytical results.

7.2.3 Supplier Product Information

7.2.4 Supplier's Quality Documents

Review and evaluate a supplier's quality-related documents and records (such as Quality Assurance Manuals, procedure manuals, etc.)

7.2.5 Surveillance Audits of Subcontractors and/or Suppliers

Acceptance of procured items shall be based on conformance to recognized quality, previous performance and grade as specified in purchase requisition and shall show no adverse reactions when used for analysis of blanks and spiked samples. Purchased items shall be reagent grade chemicals (where applicable) of recognized formulation. Audits of suppliers shall be conducted only if warranted by conditions.

7.2.6 Supplier Quality Survey

Estimate the supplier's capabilities by direct evaluation of supplier's facility, personnel and quality assurance programs, if applicable.

7.3 RECEIPT INSPECTION

The receipt inspection procedure described below shall be followed by EIML personnel.

7.3.1 Check the procurement document against the item or service received.

7.3.2 Document the disposition (accepted, rejected) etc.) of item or service by issuing a Receiving Report describing item briefly and initialing.

7.3.3 If item or service is rejected, state the reason on the procurement document. Notify the Purchasing Department and Laboratory manager to contact the supplier for their recommended disposition and technical justification.

7.4 NONCONFORMING ITEMS

The procedures specified below shall be followed in the identification and control of nonconforming items or services.

7.4.1 Inform the Laboratory Manager of any suspected nonconforming item or service.

7.4.2 Segregate and label the nonconforming purchased items or services to preclude their use.

7.4.3 Document nonconformance on the appropriate form, such as copy of procurement document and file a copy with supplier evaluation records. Indicate the requirements violated.

7.4.4 Notify the Purchasing Department to initiate appropriate action.

SECTION 8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, COMPONENTS

CRITERIA VIII IN NRC 10 CFR 50, APPENDIX B

8.1 PURPOSE

To describe the requirements for the identification and control of samples, data, reports, calculations, and purchased items or services.

8.2 PROCEDURES

Procedures for the identification and control of materials, parts and components shall be approved by the Laboratory Manager or his/her designee.

8.3 SAMPLES AND DATA

Samples and / or data collected shall be controlled and identified as to type, client, project number, unique number, date, and location according to the EIML Quality Control and Technical Procedures Manuals.

8.4 REPORTS

All reports are submitted for review to the Laboratory or Quality Assurance manager. Signature by the reviewer is required.

Reports referred to in the sections below are compilations of data, usually in a monthy, quarterly or annual format.

8.4.1 Draft reports submitted for review shall be identified and paginated. The author shall provide the client, project number, date and project name on the first page.

8.4.2 A draft report, final report or report section are accompanied through the review process by a Report Review Record form, 800-1. The form is initiated by the author, completed by the reviewer, and retained as a quality assurance record. 1

8.4.3 Commentary on reports are recorded by the reviewer on the Editorial Comment and Revision form, 800-2. These records shall be retained as quality assurance records.

8.5 PURCHASED ITEMS

8.5.1 Purchased items shall have their identity established either on the item or on a record traceable to the item. Identification of purchased items shall be unique.

8.5.2 For items which do not fall into off-shelf items and standard chemicals and reagents, the status of any inspection and tests performed on the item shall be noted. Off-shelf items shall be checked against the purchase order and the receiving date will be marked on the container. Other purchased items which are inspected or tested by or for EIML shall be identified as either accepted, reworked to specifications, or rejected.

8.5.3. Certificates shall be traceable to the item, or to test results and analyses.

SECTION 9.0 CONTROL OF SPECIAL PROCESSES
CRITERIA IX IN NRC 10 CFR 50, APPENDIX B

This section is not applicable.

SECTION 10.0 INSPECTION

CRITERIA X IN NRC 10 CFR 50, APPENDIX B

10.1 PURPOSE

To describe the requirements for the inspection and verification of the quality of work.

10.2 REQUIREMENTS

10.2.1 Inspection is the responsibility of the Laboratory Manager or designee. Data is reviewed for validity, compliance with the study plan and for quality assurance/control requirements. Quality related documents applicable to the work will be identified in the quality inspection.

10.2.2 Inspections are performed by individuals outside of the activity process being inspected. The reviewer should possess adequate knowledge and experience in the procedures, processes and activities of the technical area under review. The reviewer should verify that:

10.2.2.1 Analyses were completed.

10.2.2.2 The technical approach was proper.

10.2.2.3 Quality assurance/control tasks were performed.

10.2.2.4 Calculations were verified.

10.2.2.5 Review forms were signed and dated.

10.2.3 Questions concerning draft reports are recorded by the reviewer on an Editorial Comment and Revision form, 800-2. The comments are then returned to the author for resolution of comments or correction.

10.2.4 Documents returned to the author for review and resolution are resubmitted for the same level of review and approval as the original document. The author indicates his / her review and resolution by signing and dating the Report Review Record form, 800-1.

10.2.5 Final review and approval is made by the Laboratory Manager, who indicates approval of the report by signing the title page. Final reports are dated as to month, day and year.

10.2.6 If draft reports are submitted to the client for review and comments, the reports will be unsigned and have the words, "DRAFT SUBJECT TO CHANGE", or words to that effect printed on the title page.

SECTION 11.0 TEST CONTROL

CRITERIA XI IN NRC 10 CFR 50, APPENDIX B

11.1 PURPOSE

To describe the requirements for the control of Test Programs.

11.2 REQUIREMENTS

11.2.1 All testing is performed in accordance with approved method procedures. The written test procedures include or reference the requirements or acceptance limits contained in applicable design, procurement, or regulatory comment. The Laboratory Manager or qualified designee is responsible for the implementation of test control programs. The test procedure shall include:

11.2.1.1 A description of the testing method, and instructions for using test equipment and instrumentation.

11.2.1.2 Instrumentation, maintenance and calibration.

11.2.1.3 Equipment required.

11.2.1.4 Environmental conditions (where required).

11.2.1.5 Acceptance and rejection criteria.

11.2.1.6 Procedures for data collection and storage.

11.2.1.7 Methods for documenting or recording test data and results, and review of test results.

11.2.2 Environmental, Inc. participates in Interlaboratory Comparison (crosscheck) studies administered by Environmental Resources Associates, and others, and based on previous programs conducted by the USEPA. Any results which are outside the two sigma level from the known shall be reviewed to find the cause of the deviation. Results outside the 3 sigma level shall be investigated and the reason for deviation and any corrective action shall be documented.

11.2.3 Internal spike and blank samples shall be analyzed in accordance with the schedule specified on form, 1100-1. This schedule may be revised depending on the availability of standards.

11.2.4 Evaluation of duplicate and split sample analyses are used to assure reproducibility of measurements within established limits of precision and variation. Between five and ten percent of all samples received by the laboratory are analyzed in duplicate.

SECTION 12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

CRITERIA XII IN NRC 10 CFR 50, APPENDIX B

12.1 PURPOSE

To describe the requirements for the control of measuring, test inspection, and other data-gathering equipment. Equipment maintenance and calibration shall be the responsibility of the Laboratory Manager and subject to requirements of the Quality Control Procedures Manual.

12.2 EQUIPMENT PROCUREMENT

Equipment used for analyses, studies, and reports and testing shall be procured and controlled by the Laboratory Manager or designee.

12.3 EQUIPMENT IDENTIFICATION

A unique identification number shall be assigned to each piece of equipment. The identification number of equipment used for data or sample collection shall be recorded by the user on appropriate laboratory data sheets. This will serve as a basis for determining the past performance of an instrument if it is found to be "out of calibration".

12.4 CALIBRATION PROCEDURES

Written procedures, either furnished by the manufacturer, or approved by the Laboratory Manager, shall be used for the calibration of equipment.

12.5 CALIBRATION

Equipment shall be initially calibrated and shall be recalibrated at regularly scheduled intervals against certified measurement standards that have known and valid traceability to recognize national standards.

12.6 EFFICIENCY CALIBRATION STANDARDS

Efficiency calibration standards shall be used that are traceable to the National Institute of Standards and Technology (NIST). Should no national standard exist, the basis (standard used) for the calibration shall be documented.

12.7 EFFICIENCY CALIBRATION FREQUENCY

Efficiency calibration frequency for equipment shall be based upon the type of equipment, its accuracy, use and stability characteristics, and on other conditions affecting measurement control. Calibration frequency can be adjusted on the basis of historical calibration requirements. Frequency can either be shortened or lengthened only when the results of previous calibration data provide definite indications that each action will not adversely affect the accuracy of the equipment as used. Counting equipment shall be calibrated at least annually or before each use, if applicable, or after repair, if such repair could influence the calibration.

12.8 PERFORMANCE STANDARDS

Performance standards need not have an accurately known disintegration rate, e.g., need not be a standard source traceable to NIST. Performance standards should be of relatively long half-life, such as strontium-90 or cesium-137, should be of sufficient radiochemical purity to allow correction for decay. Standards should be prepared in such a way as to prevent physical damage or loss of activity from handling.

12.9 PERFORMANCE CHECK FREQUENCY

Instrument performance is checked according to the schedule in the Quality Control Procedures Manual (QCPM), Section 4.0

12.10 CALIBRATION STATUS

Equipment requiring periodic calibration shall be identified with a calibration label, showing the equipment's calibration status, date calibrated, due date and initials of the technician. Equipment requiring calibration, without the calibration status indicated, or whose calibration due date has passed, is considered "out-of-calibration".

12.11 CALIBRATION / MAINTENANCE RECORD

Calibration and Maintenance Records shall be maintained for each piece of equipment subject to calibration and for each associated calibration standard. Active records will be maintained and accessible for review as needed. Inactive records are filed separately.

12.12 FILES

Files shall be maintained by the Quality Assurance Manager, or designee, for each piece of equipment and for each standard. Files shall include, where applicable, the following records or information.

12.12.1 procurement documents

12.12.2 company assigned identification number

12.12.3 description of item,

12.12.4 manufacturer's serial number, if applicable

12.12.5 acceptance and / or test data

12.13 CALIBRATION SERVICE

Outside calibration sources may be used if they can demonstrate their ability to perform the work satisfactorily and can demonstrate their capability of tracing their calibration standards to a recognized national or known source. EIML shall require outside calibration sources (suppliers) to furnish objective evidence that calibration standards are traceable to national or known source prior to use.

12.14 OUT-OF-CALIBRATION EQUIPMENT

If at the end of a calibration frequency period, equipment is found to be "out-of-calibration", an investigation shall be conducted to determine the application of the equipment since the last calibration. The investigation shall also determine if corrective action is necessary to provide assurances that the quality of data generated by the use of the equipment has not been compromised.

12.15 USER TRAINING

Users shall be trained in the proper use and application of the equipment.

12.16 USER RESPONSIBILITY

Users of equipment are responsible for proper use and care. Any equipment whose calibration is suspect because of failure, damage, or mishandling or whose calibration due date has passed shall not be used. The equipment shall be marked "out-of-service".

SECTION 13.0 HANDLING, STORAGE AND SHIPPING

CRITERIA XIII IN NRC 10 CFR 50, APPENDIX B

13.1 PURPOSE

To describe the requirements for the handling, shipping and preservation of samples, data, and records.

13.2 SAMPLE AND DATA CONTROL

13.2.1 Handling, storage, shipping, prevention from contamination, and preservation of samples, and original field data shall be accomplished by qualified individuals according to written technical procedures approved by the Laboratory Manager of EIML or his/her designee.

13.2.2 Procedures for sample and / or data control shall includefrom collection through analysis to storage and final disposition. All samples will be disposed in accordance with procedures given in EIML Quality Control Program.

13.3 SAMPLE STORAGE

Samples will be retained as follows:

13.3.1 For analysis of short-lived isotopes only, samples will be held two months after collection or until any detected activity has decayed to below the required minimum sensitivity.

13.3.2 Samples requiring storage in a cooler or freezer will be held three months after collection.

13.3.3 No sample will be disposed of until at least 30 days after analyses have been completed, reviewed and reported to the client.

13.3.3 Other processed and unprocessed samples will be held for a minimum six months from the date of collection. These samples will be discarded unless alternative instruction are received from the client.

13.4 RECORD STORAGE

Original data records shall be stored in such a manner as to minimize the risk of loss by fire, flood, etc., and from possible deterioration by extreme conditions of temperature and humidity. The identification, storage, and retrieval of quality records shall be performed according to Section 17.0 of this manual.

13.5 QUALITY ASSURANCE

The identification, storage, and retrieval of quality records shall be performed according to Section 17.0 of this manual.

SECTION 14.0 INSPECTION, TEST, AND OPERATING STATUS

CRITERIA XIV IN NRC 10 CFR 50, APPENDIX B

14.1 PURPOSE

To describe the requirements for reporting the status of programs with respect to equipment operating condition and maintenance requirements.

14.2 EQUIPMENT STATUS

Copies of equipment status records shall be maintained by EIML personnel. Equipment which is non-conforming, inoperative, malfunctioning, or out-of-service for repair, maintenance, or calibration shall be so identified by tagging to prevent its inadvertent use.

SECTION 15.0 NONCONFORMING ITEMS

CRITERIA XV IN NRC 10 CFR 50, APPENDIX B

15.1 PURPOSE

To describe the procedure for reporting project nonconformance identified through means other than audit.

15.2 PROCEDURES

Approved methods of reporting non-conformance as described in the Quality Control Procedures Manual (QCPM), Section 12.0, may be used in lieu of a Nonconformance Report. Nonconformance records shall be maintained by the Quality Assurance Manager.

15.2.1 Originator

15.2.1.1 Inform the Laboratory Manager of the non-conformance. Initiate a Nonconformance Report Form.

15.2.1.2 Describe the nonconformance and reference the document which specifies the requirement. Sign and date the Nonconformance Report.

15.2.1.3 Send report to the Quality Assurance Manager for review and completion.

15.2.2 Quality Assurance

15.2.2.1 Segregate the nonconforming item or service to prevent its inadvertent use.

15.2.2.2 Complete the remainder of the Nonconformance Report form. Record the nonconformance in the appropriate log.

15.2.2.3 State the corrective action to be taken and include the date on which corrective action was or will be completed.

15.2.2.4 Describe the objective evidence reviewed to verify implementation of corrective action. Sign and date the Nonconformance Report Form.

15.2.2.5 Send the non-conformance report to the Laboratory Manager for final processing.

15.2.3 Laboratory Manager

15.2.3.1 Notify the client, if necessary, on the nonconformity and any corrective action to be taken. Record clients comments and suggestions or any agreements made with the client.

NOTE: The client shall be notified only after suitable in-house action is taken to correct the nonconformity.

15.2.3.2 Sign and date the Nonconformance Report Form.

15.2.3.3 Return original to the Quality Assurance Manager.

15.2.4 In such instances where departmental approval control forms for reporting problems (e.g., "Malfunction Report Form for Instrumentation") are utilized, the same basic procedure is followed, with copies of the pertinent documents sent to the appropriate individuals.

SECTION 16.0 CORRECTIVE ACTION
CRITERIA XVI IN NRC 10 CFR 50, APPENDIX B

16.1 PURPOSE

To describe corrective action measures for non-conformances to work.

16.2 REPORTING NON-CONFORMANCES

Non-conformances are reported to the Laboratory Manager. A nonconformance to a study plan and/or quality assurance/control requirement shall be reported on the appropriate forms, including Nonconformance Report, Audit Finding Report, or EIML-specific problem report form. The report shall contain a concise statement of the requirement and the nonconformance.

16.3 CORRECTIVE ACTION STATEMENT

Within five days of notification of a nonconformance, the Quality Assurance Manager in concurrence with the laboratory manager will complete a corrective action statement. The statement shall contain the following:

16.3.1 The apparent cause of the condition.

16.3.2 The action taken to prevent recurrence of the condition.

16.3.3 The scheduled date for completion of corrective action.

16.4 SIGNIFICANT NON-CONFORMANCES

16.4.1 Description

16.4.1.1 Deviation from prescribed requirements contained in study plans or technical manuals.

16.4.1.2 Data, or the lack of data, which does not meet predetermined technical limits and could jeopardize project goals.

16.4.1.3 Use of obsolete materials and/or data.

16.4.1.4 Non-conformances of a repetitive nature.

16.4.2 Response

Significant non-conformances shall be reported immediately to the Laboratory Manager. The Laboratory Manager or designee shall investigate the nonconformity, and respond promptly with a corrective action statement.

16.5 DRAFT REPORTS

16.5.1 Corrections and Commentary

Drafts of reports for which corrections or comment resolutions are required shall be returned to the author for corrective action.

16.5.2 Review

Documents which are corrected or modified shall be reviewed by the individual or department that reviewed the original draft report. Any comments or corrections, not incorporated into the document, shall be addressed on the Report Review Record form, 800-1.

SECTION 17.0 QUALITY ASSURANCE RECORDS
CRITERIA XVII IN NRC 10 CFR 50, APPENDIX B

17.1 PURPOSE

To define and describe the quality assurance records and general requirements for their custody and disposition, the procedure for processing project records into a quality assurance records file, and the requirements for their storage, preservation, and safekeeping.

17.2 QUALITY ASSURANCE RECORDS

17.2.1 Quality assurance records are defined as that minimum amount of documentation necessary to support the validity of work, and which would allow the work to be recreated, if necessary.

17.2.2 Quality assurance records (Project-specific) are maintained under control of the Quality Assurance Manager or designee (for the duration of the Project.

17.2.3 Records common to all projects shall be stored in generic record files. Records include quality control sample data, instrument charts, calibration records, etc.

17.2.4 Records necessary to document activities performed in the monitoring program are described in the Quality Control Procedures Manual QCPM-1. These sections describe calibration of equipment, analysis of duplicates, spiked and standard solutions, control of counting equipment, data reductions, reporting of data and records storage.

17.3 PROJECT RECORDS

17.3.1 Project records shall be moved to storage promptly after project completion. Project-specific records may be dispositioned to the client on a periodic (annual) basis at the client's discretion. Data not shipped to the client will be dispositioned according to Section 17.4.

17.3.2 Organization of project records for submission to storage is the responsibility of the Laboratory Manager or designee.

17.3.3 All project-specific records shall be packed in containers so as to preserve the quality and integrity of the records. Each container shall clearly identify its contents as to project name and number, client, and specific records contained therein.

17.4 RECORDS STORAGE

17.4.1 Records shall be stored in such a manner as to prevent deterioration, damage from condensation, and theft or vandalism.

17.4.2 After completion of the study or submission of the annual report, project-specific records shall be packed in appropriately labeled containers, and stored temporarily in a fireproof safe (no more than two years). Access to the safe is limited to EIML management.

17.4.3 After one to two years the records shall be transferred to general storage and maintained for a minimum of five years. After five years, a written request to dispose of the records may be made to the client. If the client requires the records to be retained, the Laboratory Manager may choose to either continue storing them or return them to the client. Records may be returned to the client at any time after the five year retention period in the general storage area.

SECTION 18.0 AUDITS

CRITERIA XVIII IN NRC 10 CFR 50, APPENDIX B

18.1 PURPOSE

To describe the auditor training program and the responsibilities of those who participate in the audit function, the method for scheduling audits (internal and external), the requirements for audit preparation and notification, including audit plan development, applicable document review, audit checklist preparation, and audit notification, performance of audits, including the pre-audit conference, preparation and documentation of audit findings, the post-audit conference, the preparation and distribution of the audit reports and to describe the steps to be taken to assure that corrective action on audit findings is adequate and complete.

18.2 AUDITOR TRAINING

18.2.1 Basic Training

Internal and external audits shall be performed by persons who have either a degree in a technical field, satisfactory work experience in a technical field, or knowledge and experience in the field of quality assurance. Auditors shall have or be given training to achieve the required level of competence. Training shall, as minimum, include the following.

18.2.1.1 Specific training in the content and objectives of the Quality Assurance Program Manual, QAP-1.

18.2.1.2 Participation, as a team member, in at least two internal or external audits led by an experienced auditor.

18.2.2 Supplemental Training

Training shall be supplemented where necessary by participation in professional short courses covering quality assurance principles, including auditing.

18.2.3 Documentation

A training file will be maintained for each auditor with appropriate documentation of training phases, courses and experience.

18.3 RESPONSIBILITIES

18.3.1 Auditors

Audits are performed by the Quality Assurance Manager and assisted by, if required, a technical specialist. Auditors shall have the organizational freedom to identify problems, to initiate, recommend or provide solutions to quality problems, and to verify implementation of corrective action. Auditors shall have no direct responsibilities for the technical aspects of the study audited. 1

18.3.2 Quality Assurance Manager

The Quality Assurance Manager has the overall authority and responsibility for implementing the requirements of Section 18.0 and insuring that the requirements are followed by each auditor. The duties of the Quality Assurance Manager include the following.

18.3.2.1 Plan, schedule, conduct, and analyze audits.

18.3.2.2 Insure that all audits are performed and closed-out according to written procedures.

18.3.2.3 Report the status of audit programs to upper management on a regular basis.

18.3.2.4 Document the results of each audit. 1

18.3.2.5 Review the results of each audit with laboratory management.

18.3.2.6 Prepare an Audit Finding Report for each nonconformance.

18.3.2.7 Maintain a file for all Audit Reports and all Audit Finding Reports.

18.3.2.8 Verify that corrective action has been implemented to resolve non-conformances.

18.4 AUDIT SCHEDULES

18.4.1 The audit program shall be scheduled and implemented to ensure coverage of the applicable elements of the Quality Assurance Program.

18.4.2 Audits of the Quality Assurance Program shall be performed periodically. Audits shall be performed more frequently if results of previous audits indicate a greater frequency is necessary. The need for more frequent audits shall be based on the following considerations:

18.4.2.1 The importance of the activity to the successful completion of the program.

18.4.2.2 Significant changes in the functional areas of the quality assurance program, such as significant re-organization or procedural revisions.

18.4.2.3 A suspected nonconformance in an item or service.

18.4.2.4 The necessity to verify implementation of required corrective action.

18.4.3 Audits for projects shall be performed according to contractual agreements. Comprehensive audits performed in support of a project may, at the discretion of the Quality Assurance Manager, serve to satisfy the requirements of the annual audit.

18.5 AUDIT PREPARATION

18.5.1 The auditor shall develop a written audit plan. It shall include, but not be limited to, the following information:

18.5.1.1 Organization to be audited.

18.5.1.2 Purpose of Audit.

18.5.1.3 Reference to applicable documents.

18.5.2 The auditor shall prepare an audit checklist to cover the activities to be audited. The activities to be compared, verified, or identified shall be listed on the checklist.

18.5.3 Pertinent information shall be obtained and reviewed by the auditor. This information can be found in study plans, technical procedures, quality control / assurance manuals and specifications.

18.5.4 The auditee shall be notified at least two weeks prior to the planned date of the audit. | 1

18.6 AUDIT PERFORMANCE

18.6.1 Pre-audit Conference

The auditor may conduct a pre-audit conference at the audit site with the management of the organization to be audited. The purpose of the meeting will be to:

18.6.1.1 Introduce auditors.

18.6.1.2 Meet counterparts.

18.6.1.3 Confirm the purpose and scope of the audit.

18.6.1.4 Discuss the sequence and duration of the audit.

18.6.1.5 Review previous audit results.

18.6.1.6 Establish channels of communication.

18.6.1.7 Arrange post-audit conference.

18.6.2 Audit Checklist

The audit checklist prepared by the auditor shall be used to provide a systematic approach to the assessment. The checklist shall be used as a guide and shall not restrict the audit. Audit results may necessitate that additional information be added to assure that an activity is adequately controlled.

18.6.3 Audit Findings

18.6.3.1 The auditor shall record each finding on an Audit Finding Report form. The form shall be prepared according to procedures in Section 18.7.

18.6.3.2 When a finding is detected, sufficient investigation shall be conducted to identify the basic cause of the finding.

18.6.3.3 Any finding requiring immediate corrective action shall be reported to the auditee. 1

18.6.3.4 Audit findings shall be stated in clear, concise statements of fact, which identify the problem. Persons in the audited organization who can attest to the validity of the findings shall be identified by name.

18.6.4 Post-audit Conference

At the conclusion of the audit, a post-audit conference may be held with the audited organization. Those persons should attend who can verify the validity of the findings and can assist in correcting any problems identified. The objectives of the post audit conference shall be to:

18.6.4.1 Discuss audit findings.

18.6.4.2 Determine and resolve any errors or misunderstanding regarding the findings.

18.6.4.3 Reach agreement on validity of the findings.

18.6.4.4 Recommend corrective action for findings and improvements for observations.

18.6.4.5 Establish a tentative plan for corrective action and implementation.

18.7 AUDIT FINDING REPORTS

18.7.1 Completion of the Audit Finding Report form shall be the responsibility of the auditor and the management of the audited organization. 1

18.7.2 The Audit Finding Report shall be used to record all findings identified during audits, including their resolution.

18.7.3 Each Audit Finding Report shall be assigned an audit finding number which consists of the audit identification number and a sequential number.

18.7.4 Quality Assurance

The Quality Assurance Manager maintains audit files, containing original Audit Finding Reports, documentation of corrective action responses, and final audit reports. Closed Audit Finding Reports are filed as quality assurance records.

18.8 AUDIT REPORTS

18.8.1 The auditor shall be responsible for the preparation and distribution of an audit report within 30 days of the post-audit conference.

18.8.2 An audit report shall contain the following elements:

18.8.2.1 The name of the audited organization (laboratory, technical discipline, project or supplier), project number and the date on which the audit was conducted.

18.8.2.3 The name of each auditor.

18.8.2.4 Personnel contacted during the pre- and post-audit conferences, and during the performance of the audit.

18.8.2.5 Documents which serve as a basis for the audit (title, revision number and revision date).

18.8.2.6 A brief statement of the purpose of the audit.

18.8.2.7 A general statement based on results of the audit, including a brief statement of any findings.

18.8.2.8 Recommendations for correcting non-conformances or improving the quality of work.

18.8.2.9 Observations of problem elements that could be improved, but which require no corrective action response.

18.8.2.10 An itemized list of audit findings together with assigned Audit Finding Report numbers.

18.9 AUDIT FOLLOW-UP

18.9.1 Corrective Action Responses

The auditor shall review any response to findings to assure corrective action has been adequately completed or scheduled.

18.9.2 Classification of Responses

The auditor shall classify each finding as either "unresolved", "open", or "closed".

18.9.2.1 Unresolved Status

"Unresolved" status is reserved for findings with unacceptable planned corrective actions, or those findings not responded to in the time specified. The auditor shall inform the auditee in writing of any unsatisfactory response and specify a reply due date. 1

18.9.2.2. Open Status

The "open" status is reserved for those findings that have acceptable planned corrective action, but remain open pending verification..

18.9.2.3. Closed Status

The "closed" status is reserved for those findings for which corrective action has been implemented.

18.9.3 Verification Methods

Verification of corrective actions shall be made by one of the following methods:

18.9.3.1 Review of the documentation or certification that corrective action has been implemented.

18.9.3.2 Examination of the affected area in the next scheduled audit.

18.9.3.3 Re-audit of the affected area.

18.9.4 Closure Procedures

18.9.4.1 Audit Findings

The auditor shall indicate closure of audit findings by indicating the method used to verify implementation of corrective action on the AUDIT FINDING REPORT and signing and dating the form.

18.9.4.2 Audit Report

The Audit Report will be closed upon satisfactory completion of corrective actions for all findings.

C.2 TELEDYNE BROWN ENGINEERING, INC.

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company

Rev. 8 Effective October 26, 2005
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Quality Assurance Manual

For

Teledyne Brown Engineering

Environmental Services

2508 Quality Lane
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865-690-6819

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REVISION HISTORY

Revision 7	Complete re-write	January 1, 2005	Bill Meyer
Revision 8	Updated organization chart, minor change to 1.0, 4.4, 7.5.3.2, 10.2.3, and 12.3		

1.0 Knoxville QAM Section Introduction

This Quality Assurance Manual (QAM) and related Procedures describes the Knoxville Environmental Services Laboratory's QA system. This system is designed to meet multiple quality standards imposed by Customers and regulatory agencies including:

NRC's 10 CFR 50 Appendix B
NRC's Regulatory Guide 4.15
DOE's Order 414.1
DOE's QSAS
ANSI N 42.23
ANSI N 13.30
NELAC Standard, Chapter 5

The Environmental Services (ES) Laboratory does low level radioactivity analyses for Power Plants and other customers. It primarily analyzes environmental samples (natural products from around plants such as milk), in-plant samples (air filters, waters), bioassay samples from customer's employees, and waste disposal samples (liquids and solids).

Potable and non-potable water samples are tested using methods based on EPA standards as cited in State licenses (see Procedure 4010). The listing [current as of initial printing of this Manual – see current index for revision status and additions / deletions] of implementing Procedures (SOPs) covering Administration, Methods, Counting Instruments, Technical, Miscellaneous, and LIMS is shown in Table 1-1. Reference to these Procedures by number is made throughout this QAM.

Table 1-1

Number	Title
Part 1	**Administrative Procedures**
1001	Validation and Verification of Computer Programs for Radiochemistry Data Reduction
1002	Organization and Responsibility
1003	Control, Retention, and Disposal of Quality Assurance Records
1004	Definitions
1005	Data Integrity
1006	Job Descriptions
1007	Training and Certifications
1008	Procedure and Document Control
1009	Calibration System
1010	Nonconformance Controls
1011	10CFR21 Reporting
1012	Corrective Action and Preventive Action

Number	Title
1013	Internal Audits and Management Reviews
1014	RFP, Contract Review, and Order Entry (formerly 4001)
1015	Procurement Controls
Part 2	**Method Procedures**
2001	Alpha Isotopic and Plutonium-241
2002	Carbon-14 Activity in Various Matrices
2003	Carbon-14 and Tritium in Soils, Solids, and Biological Samples; Harvey Oxidizer Method
2004	Cerium-141 and Cerium-144 by Radiochemical Separation
2005	Cesium-137 by Radiochemical Separation
2006	Iron-55 Activity in Various Matrices
2007	Gamma Emitting Radioisotope Analysis
2008	Gross Alpha and/or Gross Beta Activity in Various Matrices
2009	Gross Beta Minus Potassium-40 Activity in Urine and Fecal Samples
2010	Tritium and Carbon-14 Analysis by Liquid Scintillation
2011	Tritium Analysis in Drinking Water by Liquid Scintillation
2012	Radioiodine in Various Matrices
2013	Radionickel Activity in Various Matrices
2014	Phosphorus-32 Activity in Various Matrices
2015	Lead-210 Activity in Various Matrices
2016	Radium-226 Analysis in Various Matrices
2017	Total Radium in Water Samples
2018	Radiostrontium Analysis by Chemical Separation
2019	Radiostrontium Analysis by Ion Exchange
2020	Sulfur-35 Analysis
2021	Technetium-99 Analysis by Eichrom Resin Separation
2022	Total Uranium Analysis by KPA
2023	Compositing of Samples
2024	Dry Ashing of Environmental Samples
2025	Preparation and Standardization of Carrier Solutions
2026	Radioactive Reference Standard Solutions and Records
2027	Glassware Washing and Storage
2028	Moisture Content of Various Matrices
2029	Polonium-210 Activity in Various Matrices
2030	Promethium-147 Analysis

Number	Title
Part 3	**Instrument Procedures**
3001	Calibration and Control of Gamma-Ray Spectrometers
3002	Calibration of Alpha Spectrometers
3003	Calibration and Control of Alpha and Beta Counting Instruments
3004	Calibration and Control of Liquid Scintillation Counters
3005	Calibration and Operation of pH Meters
3006	Balance Calibration and Check
3008	Negative Results Evaluation Policy
3009	Use and Maintenance of Mechanical Pipettors
3010	Microwave Digestion System Use and Maintenance
Part 4	**Technical Procedures**
4001	Not Used
4002	QC Checks on Data
4003	Sample Regent and Control
4004	Data Package Preparation and Reporting
4005	Blank, Spike, and Duplicate Controls
4006	Inter-Laboratory Comparison Study Process
4007	Method Basis and Initial Validation Process
4008	Not Used
4009	MDL Controls
4010	State Certification Process
4011	Accuracy, Precision, Efficiency, and Bias Controls and Data Quality Objectives
4012	Not Used
4013	Not Used
4014	Facility Operation and Control
4015	Documentation of Analytical Laboratory Logbooks (formerly 1002)
4016	Total Propagated Uncertainty (formerly 1004)
4017	LIMS Operation
4018	Instrument Calibration System
4019	Radioactive Reference Material Standards
Part 5	**Miscellaneous Procedures**
5001	Laboratory Hood Operations
5002	Operation and Maintenance of Deionized Water System
5003	Waste Management
5004	Acid Neutralization and Purification System Operation Procedure

Part 6	LIMS
6001	LIMS Raw Data Processing and Reporting
6002	Software Development and/or Pilots of COTS Packages
6003	Software Change and Version Control
6004	Backup of Data and System Files
6005	Disaster Recovery Plan
6006	LIMS Hardware
6007	LIMS User Access
6008	LIMS Training
6009	LIMS Security

2.0 QUALITY SYSTEM

The TBE-ES QA system is designed to comply with multiple customer- and regulatory agency-imposed specifications related to quality. This quality system applies to all activities of TBE-ES that affect the quality of analyses performed by the laboratory.

2.1 Policy

The TBE quality policy, given in Company Policy P-501, is "TBE will continually improve our processes and effectiveness in providing products and services that exceed our customer's expectations."

This policy is amplified by this Laboratory's commitment, as attested to by the title page signatures, to perform all work to good professional practices and to deliver high quality services to our customers with full data integrity. (See Section 4.0 and Procedure 1005).

2.2 Quality System Structure

The Quality System is operated by the organizations described in Section 3.0 of this Manual. The Quality System is described in this Manual and in the Procedures Manual, both of which are maintained by the QA Manager. Procedures are divided into 6 sections – Administrative, Methods, Equipments, Technical, Miscellaneous, and LIMS. This Manual is structured as shown in the Table of Contents and refers to Procedures when applicable. Cross references to the various imposed quality specifications are contained in Appendices to this Manual.

2.3 Quality System Objectives

The Quality System is established to meet the objective of assuring all operations are planned and executed in accordance with system requirements. The Quality System also assures that performance evaluations are performed (see Procedure 4006), and that appropriate verifications are performed (see Procedures in the 1000 and 4000 series) to further assure compliance. Verification includes

examination of final reports (prior to submittal to customers) to determine their quality (see Procedure 4004).

To further these objectives, various in-process assessments of data, as well as assessments of the system, via internal audits and management reviews, are performed. Both internal experts and customer / regulatory agencies perform further assessments of the system and compliance to requirements.

2.4 Personnel Orientation, Training, and Qualification

TBE provides indoctrination and training to employees and performs proficiency evaluation of technical personnel. This effort is described in Section 4.0.

3.0 ORGANIZATION, AUTHORITY, AND RESPONSIBILITY

TBE has established an effective organization for conducting laboratory analyses at the Knoxville Environmental Services Laboratory. The basic organization is shown in Figure 3-1. Detail organization charts with names, authorities, and responsibilities are given in Procedure 1002. Job descriptions are given in Procedure 1006.

This organization provides clearly established Quality Assurance authorities, duties, and functions. QA has the organizational freedom needed to:

(1) Identify problems
(2) Stop nonconforming work
(3) Initiate investigations
(4) Recommend corrective and preventive actions
(5) Provide solutions or recommend solutions
(6) Verify implementation of actions

All Laboratory personnel have the authority and resources to do their assigned duties and have the freedom to act on problems. The QA personnel have direct, independent access to Company management as shown in Figure 3-1.

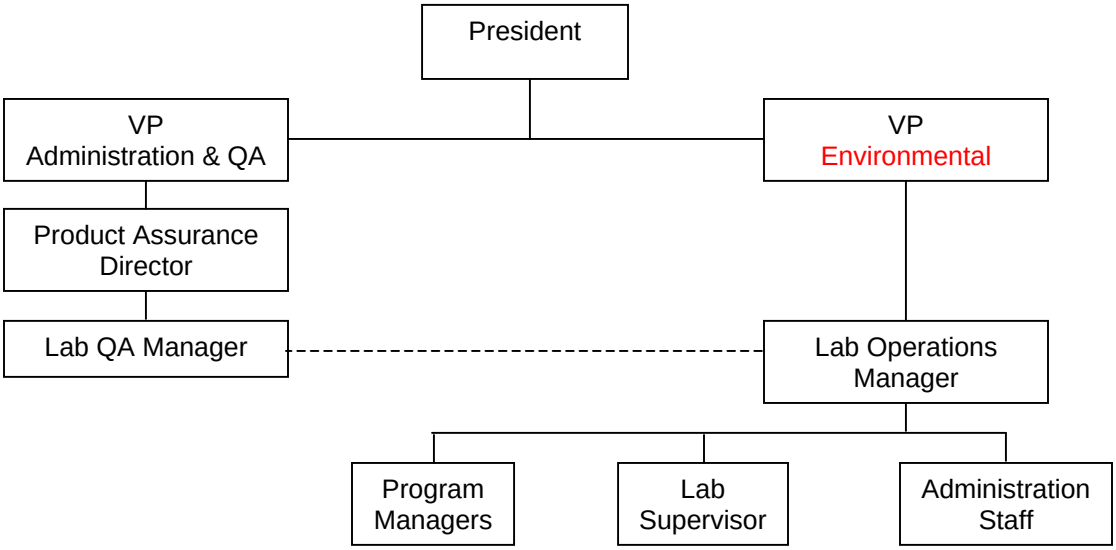

Figure 3.1. Laboratory Organization

4.0 PERSONNEL ORIENTATION, DATA INTEGRITY, TRAINING, AND QUALIFICATION

4.1 Orientation

All laboratory personnel must receive orientation to the quality program if their work can affect quality. Orientation includes a brief review of customer- and regulatory agency-imposed quality requirements, the structure of the QAM, and the implementing procedures. The goal of orientation is to cover the nature and goals of the QA program.

4.2 Data Integrity

The primary output of the Laboratory is data. Special emphasis and training in data integrity is given to all personnel whose work provides or supports data delivery. The Laboratory Data Integrity Procedure (Procedure 1005) describes training, personnel attestations, and monitoring operations. Annual reviews are required.

4.3 Training

The Quality Assurance Manager (QAM) maintains a training matrix indicating which laboratory personnel need training in which specific Procedures. This matrix is updated when personnel change or change assignments. All personnel are trained per these requirements and procedures. This training program is described in Procedure 1007. The assigned responsibilities for employees are described in Procedure 1002 (See Section 3.0) on Organization and in Procedure 1006, Job Descriptions. Refresher training or re-training is given annually as appropriate.

4.4 Qualification

Personnel are qualified as required by their job description. Management and non-analysts are evaluated based on past experience, education, and management's assessment of their capabilities. Formal qualification is required of analysts and related technical personnel who perform laboratory functions. Each applicable person is given training and then formally evaluated by the Operations Manager (or his designees) and by QA. Each analyst must initially demonstrate capability to perform each assigned analytical effort. Each year, thereafter, he or she must perform similar analyses on Interlab Comparison Samples (see Procedure 4006) or on equivalent blanks and spikes samples. Acceptable results extend qualifications (certification). Unacceptable results require retraining in the subject method / Procedures. (See Procedure 1007 for added information, records, forms, etc. used.)

4.5 Records

Records of training subjects, contents, attendees, instructors, and certifications are maintained by QA.

5.0 CUSTOMER INTERFACES

5.1 Interface Personnel

The Laboratory has designated Program Managers as the primary interface with all customers. Other interfaces may be the QA Manager or the Lab Operations Manager.

5.2 Bid Requests and Tenders

The Program Managers respond to customer requests for bids and proposals per Procedure 1014 for bids, proposals, and contract reviews. They clarify customer requests so both the customer and the lab staff understand requests. As responses are developed, internal reviews are conducted to ensure that requirements are adequately defined and documented and to verify that the Laboratory has adequate resources in physical capabilities, personal skills, and technical information to perform the work. Accreditation needs are reviewed. If subcontracts are required to perform any analysis, the subcontractor is similarly evaluated and the client notified in writing of the effort. Most qualifications are routine with standard pricing and the review of these quotes is performed by the Program Manager. Larger or more complex quotes are reviewed by the Operations Manager and the QA Manager (or designees). Evidence of review is by initialing and dating applicable papers, signatures on quotations, or by memo.

5.3 Contracts

The Program Manager's receive contract awards (oral or written) and generate the work planning for initiation preparation (charge numbers, data structure or contents in LIMS, etc.). They review contracts for possible differences from quotations and, if acceptable, contracts are processed. Documentation of the review is by initials and date as a minimum. Contract changes receive similar reviews and planning.

5.4 TBE's Expectation of Customers

TBE expects customers to provide samples suitable for lab analysis. These expectations include:

- Accurate and unambiguous identification of samples
- Proper collection and preservation of samples
- Use of appropriate containers free from external and internal contamination
- Integrity preservation during shipment and timely delivery of samples that are age sensitive
- Adequate sized samples that allow for retest, if needed
- Specification of unique MOA/MDC requirements
- Alerting the lab about abnormal samples (high activity, different chemical contents, etc.)
- Chain of custody initiation, when required.

5.5 Customer Satisfaction

TBE's quality policy centers on customer satisfaction (See 2.0). TBE will work to satisfy customers through full compliance with contract requirements, providing accurate data and properly responding to any questions or complaints. Customers are provided full cooperation in their monitoring of Laboratory performance. Customers are notified if any applicable State Accreditation is withdrawn, revoked, or suspended.

5.5.1 Customer Complaints

Any customer complaints are documented and tracked to closure. Most complaints concern analysis data and are received by Program Managers. They log each such complaint, order retests for verification, and provide documented results to customers. Complaints may also be received by QA or Operations.

If complaints are other than re-test type, the nonconformance and corrective action systems (Sections 12 and 13) are used to resolve them and record all actions taken.

5.5.2 Customer Confidentiality

All laboratory personnel maintain confidentiality of customer-unique information.

6.0 DOCUMENTATION GENERATION & CONTROL

6.1 General

The documentation generation and control system is detailed in Procedure 1008. An overview is given below. The basic quality system documents are described in Section 2.0.

6.2 New Documentation

Each Procedure and this QAM is written by appropriate personnel, validated if applicable (see Section 7.0), reviewed for adequacy, completeness, and correctness, and, if acceptable, accepted by the authorized approver [QA Manager, Operations Manager (or their designee)]. Both approvals are required if a Procedure affects both QA and Operations. (See Responsibilities in Section 3.0). These procedures control the quality measurements and their accuracy.

Each document carries a unique identification number, a revision level, dates, page numbers and total page count, and approver identification and sign off. If TBE writes code for software, the software is version identified and issued after Verification and Validation per Section 7.0.

6.3 Documentation Changes

Each change is reviewed in the same manner and by the same people as new documentation. Revision identifications are updated and changes indicated by side bars, italicized words, or by revision description when practical. Obsolete revisions are maintained by QA after being identified as obsolete.

6.4 Documentation Lists and Distributions

Computer indexes of documents are maintained by Quality showing the current authorized revision level of each document. These revisions are placed on the Laboratory server and obsolete ones are removed so that all personnel have only the current documents. If hard copies are produced and distributed, separate distribution lists are maintained indicating who has them and their revision level(s). Copies downloaded off the server are uncontrolled unless verified by the user (on the computer) to be the latest revision.

6.5 Other Documentation

In addition to TBE-generated documentation, QA maintains copies of applicable specifications, regulations, and standard methods.

6.6 Documentation Reviews

Each issued document is reviewed at least every third year by the approving personnel. This review determines continued suitability for use and compliance with requirements.

7.0 DESIGN OF LABORATORY CONTROLS

7.1 General

The Laboratory and its operating procedures are designed specifically for low level (environmental and in-plant) radioactive sample analysis. The various aspects of the laboratory design include the following which are discussed in subsequent paragraphs of this Section:

(a) Facility
(b) Technical Processes and Methods
(c) Verification of Design of Processes, Methods, and Software.
(d) Design of Quality Controls
(e) Counting Instrument Controls

7.2 Facility

The facility was designed and built in 2000 to facilitate correct performance of operations in accordance with good laboratory practices and regulatory requirements. It provides security for operations and samples. It separates sample storage areas based on activity levels, separates wet chemistry from counting instrumentation for contamination control, and provides space and electronic systems for documentation, analysis, and record storage. Procedure 4014 describes the facility, room uses, layouts, etc.

7.3 Technical Processes and Methods

7.3.1 Operational Flow

The laboratory design provides for sample receipt and storage (including special environmental provisions for perishable items) where samples are received from clients and other labs (see Section 9.0). The samples are logged into the computer based Laboratory Information Management System (LIMS) and receive unique identification numbers and bar code labels. (See Procedure 4017 for LIMS description and user procedures). The Program Managers then plan the work and assure LIMS contains any special instructions to analysts. Samples then go to sample preparation, wet chemistry (for chemical separation), and counting based on the radionuclides. See Procedures in the 2000 and 3000 series. Analysts perform the required tasks with data being entered into logbooks, LIMS, and counting equipment data systems as appropriate. Results are collected and reviewed by the Operations Manager and Program Managers and reports to clients are generated (See Section 14.0). All records (electronic or hard copy) are maintained in files or in back-up electronic copies (see Section 15.0). After the required hold periods and client notification and approval, samples are disposed of in compliance with regulatory requirements (see Procedures 5003 and 5004).

7.3.2 Methods

The laboratory methods documented in the 2000 and 3000 series of Procedures were primarily developed by senior TBE laboratory personnel based on years of experience at our prior facility in New Jersey. They have been improved, supplemented and implemented here. Where EPA or other accepted national methods exist (primarily for water analyses under State certification programs - see Procedure 4010), the TBE methods conform to the imposed requirements or State accepted alternate requirements. Any method modifications are documented and described in the Procedure. There are no nationally recognized methods for most other analysis methods but references to other method documents are noted where applicable.

7.3.3 Data Reduction and Analysis

Whenever possible automatic data capture and computerized data reduction programs are used. Calculations are either performed using commercial software (counting system operating systems) or TBE developed and validated software is used (see 7.4 below). Analysis of reduced data is performed as described in Section 14.0 and Procedure 4004.

7.4 Verification of Technical Processes, Methods, and Software

7.4.1 Operational Flow Verification

The entire QA Manual and related procedures describe the verification of elements of the technical process flow and the establishment of quality check points, reviews, and controls.

7.4.2 Method Verifications

Methods are verified and validated per Procedure 4007 prior to use unless otherwise agreed to by the client. For most TBE methods initial validation occurred well in the past. New or significantly revised Methods receive initial validation by demonstration of their performance using known analytes (NIST traceable) in appropriate matrices. Sufficient samples are run to obtain statistical data that provides evidence of process capability and control, establishes detection levels (see procedure 4009), bias and precision data (see Procedure 4011). All method procedures and validation data are available to respective clients. Also see Section 7.5 below for the Demonstration of Capability program.

7.4.3 Data Reduction and Analysis Verification

Data reduction and analysis verification is performed by personnel who did not generate the data. (See Section 14.0).

7.5 Design of Quality Controls

7.5.1 General

There are multiple quality controls designed into the laboratory operations. Many of these are described elsewhere in this manual and include personnel qualification (Section 4.0), Document control (6.0), Sample identification and control (9.0), Use of reference standards (10.0), intra- and inter- laboratory tests (10.0), etc. This Section describes the basic quality control systems used to verify Method capability and performance.

7.5.2 Demonstration of Capability (D of C)

The demonstration of capability system verifies and documents that the method, analyst, and the equipment can perform within acceptable limits. The D of C is certified for each combination of analyte, method, and instrument type. D of C's are certified based on objective evidence at least annually. This program is combined with the analyst D of C program (See Section 4.0). Initial D of C's use the method validation effort as covered above. Subsequent D of C's use Inter-Laboratory samples (Procedure 4006) or, if necessary, laboratory generated samples using NIST traceable standards. If results are outside of control limits, re-demonstration is required after investigation and corrective action is accomplished (See Sections 12.0 and 13.0)

7.5.3 Process Control Checks

Process control checks are designed to include Inter-Lab samples, Intra-lab QC check samples, and customer provided check samples. 10% of laboratory analysis samples are for process control purposes.

7.5.3.1 Inter- Lab Samples. Inter-lab samples are procured or obtained from sources providing analytes of interest in matrices similar to normal client samples. These samples may be used for Demonstration of Capability of analyst's, equipment and methods. They also provide for independent insight into the lab's process capabilities. Any value reported as being in the warning zone (over 2 sigma) is reviewed and improvements taken. Any value failing (over 3 sigma) is documented on an NCR and formal investigation per Section 12.0 and 13.0 is performed. If root causes are not clearly understood and fixed, re-tests are required using lab prepared samples (See Procedure 4006).

7.5.3.2 QC Samples. QC samples, along with Inter-lab samples and customer check samples, are 10% of the annual lab workload for the applicable analyte and method. If batch processing is used, some specifications require specific checks with each batch or each day rather than as continuous process controls. (See Procedure 4005)

QC samples consist of multiple types of samples including:

(a) Method blanks
(b) Blank spikes
(c) Matrix spikes

(d) Duplicates
(e) Tracers and carriers

Acceptance limits for these samples are given in Procedures or in lab standards. The number, frequency, and use of these sample types varies with the method, matrix, and supplemental requirements. The patterns of use versus method and the use of the resulting test data is described in Procedure 4005.

7.5.3.3 Customer Provided Check Samples. Customers may provide blind check samples and duplicates to aid in their evaluation of the Laboratory. When the lab is notified that samples are check samples their results are included in the QC sample percentage counts. Any reported problems are treated as formal complaints and investigated per Section 5.

7.6 Counting Instrument Controls

The calibration of instruments is their primary control and is described in Section 11.0. In addition, counting procedures (3000 series) also specify use of background checks (method blank data is not used for this) to evaluate possible counting equipment contamination. Instrument calibration checks using a lab standard from a different source than the one used for calibration are also used. Background data can be used to adjust client and test data. Checks with lab standards indicate potential calibration changes.

8.0 PURCHASING AND SUBCONTRACT CONTROLS

8.1 General

Procurement and Subcontracts efforts use the Huntsville-based Cost Point computer system to process orders. The Laboratory-generated Purchase Requisitions are electronically copied into Purchase Orders in Huntsville. The Laboratory also specifies sources to be used. Procured items and services are received at the Laboratory where receiving checks and inspections are made. Laboratory Procedure 1015 provides details on the procurement control system at the Laboratory and references the Huntsville procedures as applicable.

8.2 Source Selection

Sources for procurements of items and services are evaluated and approved by QA as described in Procedure 1015. Nationally recognized catalog item sources are approved by the QA Manager based on reputation. Maintenance services by an approved distributor or the equipment manufacturing company are pre-approved. Sources for other services are evaluated by QA, based on service criticality to the quality system, by phone, mail out, or site visit.

Subcontract sources for laboratory analysis services are only placed with accredited laboratories (by NELAP, NUPIC, State, Client, etc.) as applicable for the type of analysis to be performed. QA maintains lists of approved vendors and records of evaluations performed.

8.3 Procurement of Supplies and Support Services

8.3.1 Catalog Supplies

The Laboratory procures reagents, processing chemicals, laboratory "glassware," consumables, and other catalog items from nationally known vendors and to applicable laboratory grades, purities, concentrations, accuracy levels, etc. Purchase Requisitions for these items specify catalog numbers or similar call-outs for these off-the-shelf items. Requisitions are generated by the personnel in the lab needing the item and are approved by the Operations or Production Manager. Reagents are analytical reagent grade only.

8.3.2 Support Services

Purchase Requisitions for support services (such as balance calibration, equipment maintenance, etc.) are processed as in 8.3.1 but technical requirements are specified and reviewed before approvals are given.

8.3.3 Equipment and Software

Purchase Requisitions for new equipment, software programs, and major facility modifications affecting the quality system are reviewed and approved by the Operations Manager and the QA Manager.

8.4 Subcontracting of Analytical Services

When necessary, the Laboratory may subcontract analytical services required by a client. This may be because of special needs, infrequency of analysis, etc. Applicable quality and regulatory requirements are imposed in the Purchase Requisition and undergo a technical review by QA. TBE reserves the right of access by TBE and our client for verification purposes.

8.5 Acceptance of Items or Services

Items and services affecting the quality system are verified at receipt based on objective evidence supplied by the vendor. Supply items are reviewed by the requisitioner and, if acceptable, are accepted via annotation on the vendor packing list or similar document. Similarly, equipment services are accepted by the requisitioning lab person. Calibration services are accepted by QA based on certification reviews. (See Section 11.0.)

Data reports from analytical subcontractors are evaluated by Program Managers and subsequently by the Operations Manager (or designee) as part of client report reviews.

Items are not used until accepted and if items or services are rejected, QA is notified and nonconformance controls per Section 12.0 are followed. Vendors may be removed from the approved vendor's list if their performance is unacceptable.

9.0 TEST SAMPLE IDENTIFICATION AND CONTROL

9.1 Sample Identification

Incoming samples are inspected for customer identification, container condition, chain of custody forms, and radioactivity levels. If acceptable, the sample information is entered into LIMS which generates bar coded labels for attachment to the sample(s). The labels are attached and samples stored in the assigned location. If environmental controls are needed (refrigeration, freezing, etc.), the samples are placed in these storage locations. If not acceptable, the Program Manager is notified, the customer contacted, and the problem resolved (return of sample, added data receipts, etc.). See Procedure 4003 for more information on sample receipt.

9.2 LIMS

The LIMS is used to schedule work, provide special information to analysts, and record all actions taken on samples. See Procedure 4017 and the 6000 series of procedures for more information on LIMS operations.

9.3 Sample Control

The sample, with its bar coded label, is logged out to the applicable lab operation where the sample is processed per the applicable methods (Procedures 2000 and 3000). The LIMS-assigned numbers are used for identification through all operations to record data. Data is entered into LIMS, log books (kept by the analysts) or equipment data systems to record data. The combination of LIMS, logbooks, and equipment data systems provide the Chain of Custody data and document all actions taken on samples. Unused sample portions are returned to its storage area for possible verification use. Samples are discarded after required time limits are passed and after client notification and approval, if required.

10.0 SPECIAL PROCESSES, INSPECTION, AND TEST

10.1 Special Processes

The Laboratory's special processes are the methods used to analyze a sample and control equipment. These methods are defined in Procedures in the 2000 and 3000 series. These processes are performed to the qualified methods (see Section 7.0) by qualified people (see 4.0).

10.2 Inspections and Tests

The quality of the process is monitored by indirect means. This program involves calibration checks on counting equipments (see Section 11.0), intra-laboratory checks, and inter-laboratory checks. In addition, some customers submit quality control check samples (blinds, duplicates, external reference standards). All generated data gets independent reviews.

10.2.1 Intra Laboratory Checks (QC Checks)

The quantity and types of checks varies with the method, but basic checks which may include blanks, spiked blanks, matrix spikes, matrix spike duplicates, and duplicates are used as appropriate for customer samples. This process is described in Procedure 4005 and in Section 7.0.

10.2.2 Inter Laboratory Checks

TBE participates in Inter-lab performance evaluation (check) programs with multiple higher level labs. These programs provide blind matrices for the types of matrix/analyte combinations routinely processed by the Lab, if available. This program is described in Procedure 4006.

10.2.3 Data Reviews

Raw data and reports are reviewed by the Operations Manager, or designees. This review checks for data logic, expected results, procedure compliance, etc. (See Section 14.0).

10.3 Control of Sampling of Samples

Samples for analysis are supplied by customers preferably in quantities sufficient to allow re-verification analyses if needed. The samples are prepared for analysis by analysts and then an aliquot (partial sample extraction) is taken from the homogeneous customer sample for the initial analysis. Methods specify standard volumes of sample material required. Sampling data is recorded in LIMS and/or logbooks.

10.4 Reference Standards / Material

10.4.1 Weights and Temperatures

Reference standards are used by the Laboratory's calibration vendor to calibrate the Labs working instruments measuring weights and thermometers.

10.4.2 Radioactive Materials

Reference radioactive standards, traceable to NIST, are procured from higher level laboratories. These reference materials are maintained in the standards area and are diluted down for use by laboratory analysts. All original and diluted volumes are fully traceable to source, procedure, analyst, dilution, and acquisition dates. See Section 11.0 and Procedure 1009.

11.0 EQUIPMENT MAINTENANCE AND CALIBRATION

11.1 General

There are two types of equipment used by the Laboratory: support equipment (scales, glassware, weights, thermometers, etc.) and instruments for counting. Standards traceable to NIST are used for calibration and are of the needed accuracy for laboratory operations. Procedures 1009, 4018, and 4019 describe the calibration and maintenance programs.

11.2 Support Equipment

Analytical support equipment is purchased with the necessary accuracies and appropriate calibration data. If needed, initial calibration by the Laboratory or its calibration vendor is performed. Recalibration schedules are established and equipment recalibrated by the scheduled date by a calibration vendor or by Laboratory personnel. Maintenance is performed, as needed, per manufacturer's manuals or lab procedures.

In addition to calibrations and recalibrations, checks are made on the continued accuracy of items as described in Procedure 1009. Records are maintained of calibration and specified checks.

11.3 Instruments

Instruments receive initial calibration using radioactive sources traceable to NIST. The initial calibration establishes statistical limits of variation that are used to set control limits for future checks and recalibration. This process is described in Procedure 4018. Instruments are maintained per Instrument Manual requirements. Recalibrations are performed per the Procedure.

Between calibrations, check sources are used to assure no significant changes have occurred in the calibration of items. Background checks are performed to check for possible radioactive contamination. Background values are used to adjust sample results. Hardware and software are safeguarded from adjustments that could invalidate calibrations or results.

11.4 Nonconformances and Corrective Actions

If calibrations or checks indicate a problem, the nonconformance system (Section 12.0) and corrective action system (Section 13.0) are initiated to document the problem and its resolution. Equipment is promptly removed from service if questionable.

11.5 Records

Records of calibrations are maintained. Calibration certificates from calibration vendors are maintained by QA. Other calibration data and check data is maintained in log books, LIMS, or instrument software as appropriate and as described in Procedures 1009, 4018, and 4019.

12.0 NONCONFORMANCE CONTROLS

12.1 General

The nonconformance control system is implemented whenever a nonconforming condition on any aspect of Laboratory analysis, testing, or results exist. The system takes graded actions based on the nature and severity of the nonconformance. Nonconforming items or processes are controlled to prevent inadvertent use. Nonconformances are documented and dispositioned. Notification is made to affected organizations, including clients. Procedure 1010 describes the procedures followed. Sample results are only reported after resolution.

12.2 Responsibility and Authority

Each Laboratory employee has the responsibility to report nonconformances and the authority to stop performing nonconforming work or using nonconforming equipment. Laboratory supervision can disposition and take corrective actions on minor problems. Any significant problem is documented by QA using the Laboratory's NCR system per Procedure 1010. QA conducts or assures the conduct of cause analyses, disposition of items or data, and initiation of corrective action if the nonconformance could recur.

12.3 10CFR21 Reporting

The QA Manager reviews NCRs for possible need of customer and/or NRC notification per the requirements of 10CFR21. Procedure 1011 is followed in this review and for any required reporting.

13.0 CORRECTIVE AND PREVENTIVE ACTIONS

13.1 General

The Laboratory takes corrective actions on significant nonconformances (see Section 12.0). It also initiates preventive and improvement actions per the Company Quality Policy (see Section 2.0). The procedures for Corrective Action/Preventive Action systems are contained in Procedure 1012.

13.2 Corrective Actions

Corrective actions are taken by Operations and Quality to promptly correct significant conditions adverse to quality. The condition is identified and cause analysis is performed to identify root causes. Solutions are evaluated and the optimum one selected that will prevent recurrence, can be implemented by the Laboratory, allows the Laboratory to meet its other goals, and is commensurate with the significance of the problem. All steps are documented, action plans developed for major efforts, and reports made to Management. QA verifies the implementation effectiveness. Procedure 1012 provides instructions and designates authorities and responsibilities.

13.3 Preventive Actions

Preventive actions are improvements intended to reduce the potential for nonconformances. Possible preventive actions are developed from suggestions from employees and from analysis of Laboratory technical and quality systems by management. If preventive actions or improvements are selected for investigation, the issues, investigation, recommendations, and implementation actions are documented. Follow up verifies effectiveness.

14.0 RESULTS ANALYSIS AND REPORTING

14.1 General

The Laboratory's role is to provide measurement-based information to clients that is technically valid, legally defensible, and of known quality.

14.2 Results Review

The results obtained from analytical efforts are collected and reviewed by the Operations Manager and the Program Manager. This review verifies the reasonableness and consistency of the results. It includes review of sample and the related QC activity data. Procedure 4002 describes the process. Any deficiencies are corrected by re-analyses, recalculations, or corrective actions per Sections 12.0 and 13.0. Use of the LIMS with its automatic data loading features (see Procedure 4017) minimizes the possibility of transcription or calculation errors.

14.3 Reports

Reports range from simple results reporting to elaborate analytical reports based on the client requirements and imposed specifications and standards. (See Procedure 4004.) Reports present results accurately, clearly, unambiguously, objectively, and as required by the applicable Method(s). Reports include reproduction restrictions, information on any deviations from methods, and any needed data qualifiers based on QC data. If any data is supplied by analytical subcontractors (see Section 8.0), it is clearly identified and attributed to that Laboratory by either name or accreditation number.

If results are faxed or transmitted electronically, confidentiality statements are included in case of receipt by other than the intended client.

Reports are approved by the Program Manager and Operations Manager and record copies kept in file (See Section 15.0).

15.0 RECORDS

15.1 General

The Laboratory collects generated data and information related to quality or technical data and maintains them as records. Records are identified, prepared, reviewed, placed in storage, and maintained as set forth in Procedure 1003.

15.2 Type of Records

All original observations, calculations, derived data, calibration data, and test reports are included. In addition QA data such as audits, management reviews, corrective and preventive actions, manuals, and procedures are included.

15.3 Storage and Retention

Records are stored in files after completion in the lab. Files are in specified locations and under the control of custodians. Filing systems provide for retrieval. Electronic files are kept on Company servers (with regular back up) or on media stored in fireproof file cabinets. Records are kept in Laboratory files for at least 2 years after the last entry and then in Company files for another year as a minimum. Some customers specify larger periods – up to 7 years – which is also met. Generic records supporting multiple customers are kept for the longest applicable period.

15.4 Destruction or Disposal

Records may be destroyed after the retention period and after client notification and acceptance, if required. If the Laboratory closes, records will go in to company storage in Huntsville unless otherwise directed by customers. If the Laboratory is sold, either the new owner will accept record ownership or the records will go into Company storage as stated above.

16.0 ASSESSMENTS

16.1 General

Assessments consist of internal audits and management reviews as set forth in Procedure 1013.

16.2 Audits

Internal audits are planned, performed at least annually on all areas of the quality system, and are performed by qualified people who are as independent as possible from the activity audited. (The Laboratory's small size inhibits full independence in some technical areas.) Audits are coordinated by the Quality Manager who assures audit plans and checklists are generated and the results documented. Reports include descriptions of any findings and provide the auditor's assessment of the effectiveness of the audited activity. Report data includes personnel contacted.

Audit findings are reviewed with management and corrective actions agreed to and scheduled. Follow up is performed by QA to verify accomplishment and effectiveness of the corrective action.

16.3 Management Reviews

The Annual Quality Assurance Report, prepared for some clients, is the Management Review vehicle. These reports cover audit results, corrective and preventive actions, external assessments, and QC and inter-laboratory performance checks. The report is reviewed with Management by the QA Manager for the continued suitability of the Quality Program and its effectiveness. Any needed improvements are defined, documented, and implemented. Follow ups are made to verify implementation and effectiveness.

APPENDIX D

LABORATORY ANALYTICAL REPORTS

D.1 ENVIRONMENTAL, INC.

D.2 TELEDYNE BROWN ENGINEERING, INC.

D.1 ENVIRONMENTAL, INC.

Environmental, Inc.
Midwest Laboratory
An Allegheny Technologies Company
700 Landwehr Road * Northbrook, IL 60062-2310
Phone (847) 564-0700 * Fax (847) 564-4517

LABORATORY REPORT NO,:	8004-100-2439
DATE:	05-08-06
SAMPLES RECEIVED:	04-27-06
TYPE OF REPORT	COMPLETE

Mr. Ed Steinke
Byron Nuclear Station
4450 North German Church Road
Byron, IL 61010

Dear Mr. Steinke:

Below are the results of the tritium analyses performed on sixteen water samples and one duplicate collected by Byron Station.
If you have any questions or comments, please feel free to contact me.

Sample #	Tritium (pCi/L)		Sample Type	Collection Date	Location Name
BYWW-2782	263 ± 89		WW	4/24/2006	1CW
BYWW-2783	375 ± 93		WW	4/24/2006	VAULT 4
BYWW-2784	423 ± 95		WW	4/24/2006	VAULT 5
BYWW-2785	645 ± 103		WW	4/24/2006	VAULT 6
BYWW-2786	107 ± 71		WW	4/25/2006	WG-BYN-042506-SS-01
BYWW-2787	143 ± 72		WW	4/25/2006	WG-BYN-042506-SS-03
BYWW-2788	40 ± 67		WW	4/25/2006	WG-BYN-042506-SS-05
BYWW-2789	119 ± 71		WW	4/25/2006	WG-BYN-042506-SS-07
BYWW-2790	87 ± 70		WW	4/25/2006	WG-BYN-042506-SS-09
BYWW-2791	87 ± 70		WW	4/25/2006	WG-BYN-042506-SS-11
BYWW-2792	59 ± 68		WW	4/25/2006	WG-BYN-042506-SS-13
BYWW-2793	87 ± 70		WW	4/25/2006	WG-BYN-042506-JK-02
BYWW-2794	64 ± 68		WW	4/25/2006	WG-BYN-042506-JK-04
BYWW-2795	149 ± 72	Duplicate/2794	WW	4/25/2006	WG-BYN-042506-JK-04
BYWW-2796	229 ± 76		WW	4/25/2006	WG-BYN-042506-JK-06
BYWW-2797	56 ± 68		WW	4/25/2006	WG-BYN-042506-JK-08
BYWW-2798	59 ± 68		WW	4/25/2006	WG-BYN-042506-JK-12

Sincerely,

E. Saar
Program Coordinator

APPROVED BY _____

Bronia Grob, M.A.
Laboratory Manager

SAMPLES WILL BE RETAINED THIRTY DAYS AFTER ANALYSIS

D.2 TELEDYNE BROWN ENGINEERING, INC.

TELEDYNE
BROWN ENGINEERING
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931
865-690-6819 (Phone)

Work Order #: L28413

Exelon

May 4, 2006

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Kathy Shaw
Conestoga-Rovers & Associates
45 Farmington Valley Drive
Plainville CT 06062

Case Narrative - L28413
EX001-3ESPBYRON-06

05/04/2006 13:03

Sample Receipt

The following samples were received on April 27, 2006 in good condition, unless otherwise noted.

Samples WG-BYR-042606-JK-14, 16, 20, 22, 24 were received with the lids cracked. The bubble wrap bags surrounding each sample kept the slight leakage from reaching other samples.

WG-BYN-042606-JK, 20, 22 and 24 were at pH 3 at receipt.
No times were listed on the sample containers.

The client was notified of the variances.

Cross Reference Table

Client ID	Laboratory ID	Station ID(if applicable)
WG-BYR-042506-JK-02	L28413-1	
WG-BYR-042506-JK-04	L28413-2	
WG-BYR-042506-JK-06	L28413-3	
WG-BYR-042506-JK-08	L28413-4	
WG-BYR-042506-JK-10	L28413-5	
WG-BYR-042506-JK-12	L28413-6	
WG-BYR-042606-JK-14	L28413-7	
WG-BYR-042606-JK-16	L28413-8	
WG-BYR-042606-JK-18	L28413-9	
WG-BYR-042606-JK-20	L28413-10	
WG-BYR-042606-JK-22	L28413-11	
WG-BYR-042606-JK-24	L28413-12	

Analytical Method Cross Reference Table

Radiological Parameter	TBE Knoxville Method	Reference Method
Gamma Spectrometry	TBE-2007	EPA 901.1
H-3	TBE-2010	EPA 906.0
SR-90 (FAST)	TBE-2019	EPA 905.0

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Case Narrative - L28413
EX001-3ESPBYRON-06

05/04/2006 13:03

Gamma Spectroscopy

Quality Control

Quality control samples were analyzed as WG3909.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYR-042606-JK-20	L28413-10	WG3909-3

H-3

Quality Control

Quality control samples were analyzed as WG3910.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYR-042606-JK-14	L28413-7	WG3910-3

SR-90

Quality Control

Quality control samples were analyzed as WG3931.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Case Narrative - L28413
EX001-3ESPBYRON-06

05/04/2006 13:03

Certification

This is to certify that Teledyne Brown Engineering - Environmental Services, located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Sample Receipt Summary

L28413
S-30

CONESTOGA-ROVERS & ASSOCIATES
8615 W. Bryn Mawr Avenue
Chicago, Illinois 60631
(773)380-9933 phone
(773)380-6421 fax

SHIPPED TO (Laboratory Name): TELEDYNE BROWN ENGINEERING

REFERENCE NUMBER: 45136-21

PROJECT NAME: BYRON EXELON

CHAIN-OF-CUSTODY RECORD

SAMPLER'S SIGNATURE: Jeff Kolodziejski **PRINTED NAME:** JEFF KOLODZIEJSKI

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: TRITIUM	PARAMETERS: RADIONUCLIDES	REMARKS
	4/25/06	1220	WG-BYN-042506-JK-02	WATER	1	X		
		1435	04		1	X		
		1545	06		1	X		
		1745	08		1	X		
		1755	10		1	X		
		1915	12		1	X		
	4/26/06	1010	WG-BYN-042606-JK-14		1	X		
		1030	16		1	X		
		1150	18		1	X		
		1340	20		2	X	X	
		1455	22		2	X	X	
		1620	24		2	X	X	

TOTAL NUMBER OF CONTAINERS 15

RELINQUISHED BY: ① Jeff Kolodziejski	DATE: 4/26/06 TIME: 1930	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: FED EX **AIR BILL No.** 8513 8380 8581

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: KOLODZIEJSKI, GREENE

RECEIVED FOR LABORATORY BY: Pat Marshall
DATE: 4/27/06 TIME: 1000

13598

1001-00(SOURCE)GN-CO004

04/27/06 14:37

SR #: SR08066

Client: Exelon

Teledyne Brown Engineering
Sample Receipt Verification/Variance Report

Project #: EX001-3ESPBYRON-06 LIMS #: L28413

Initiated By: PMARSHALL
Init Date: 04/27/06 Receive Date: 04/27/06

Notification of Variance

Person Notified: Kathy Shaw Contacted By: D. Charles
Notify Date: 4/27/06
Notify Method: email
Notify Comment:

Client Response

Person Responding:
Response Date:
Response Method:
Response Comment

	Criteria	Yes	No	NA	Comment
1	Shipping container custody seals present and intact.	Y			
2	Sample container custody seals present and intact.			NA	
3	Sample containers received in good condition WG-BYR-042606-JK-14,16,20,22,24		N		Amber bottle arrived with lid cracked.
4	Chain of custody received with samples	Y			
5	All samples listed on chain of custody received	Y			
6	Sample container labels present and legible.	Y			
7	Information on container labels correspond with chain of custody		N		No times on sample containers
8	Sample(s) properly preserved and in appropriate container(s) WG-BYN-042606-JK-20 WG-BYN-042606-JK-22 WG-BYN-042606-JK-24		N		pH 3 pH 3 pH 3
9	Other (Describe)			NA	

4/27/06

TELEDYNE BROWN ENGINEERING
2508 Quality Lane
Knoxville, TN 37931-3133

ACKNOWLEDGEMENT
This is not an invoice

April 27, 2006

Edward Steinke
Byron Station
Exelon Nuclear
4450 N. German Church Road
Byron, IL 31010

The following sample(s) were received at Teledyne Brown Engineering Knoxville laboratory on April 27, 2006. The sample(s) have been scheduled for the analyses listed below and the report is scheduled for completion by May 04, 2006. Please review the following login information and pricing. Contact me if anything is incorrect or you have questions about the status of your sample(s).

Thank you for choosing Teledyne Brown Engineering for your analytical needs.

Sincerely,
Rebecca Charles
Project Manager
(865)934-0379

Project ID: EX001-3ESPBYRON-06
P.O. #: TBE
Release #:
Contract#: 00411203
Edward Steinke, FAX#:815-234-3301, edward.steinke@exeloncorp.com
Kathy Shaw, FAX#:860-747-1900, kshaw@craworld.com

Client ID/ Station	Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG-BYR-042506-JK-02	**L28413-1**		**04/25/06:1220**	
WG	H-3	108.00		
WG-BYR-042506-JK-04	**L28413-2**		**04/25/06:1435**	
WG	H-3	108.00		
WG-BYR-042506-JK-06	**L28413-3**		**04/25/06:1545**	
WG	H-3	108.00		
WG-BYR-042506-JK-08	**L28413-4**		**04/25/06:1745**	
WG	H-3	108.00		
WG-BYR-042506-JK-10	**L28413-5**		**04/25/06:1755**	
WG	H-3	108.00		
WG-BYR-042506-JK-12	**L28413-6**		**04/25/06:1915**	
WG	H-3	108.00		

Client ID/ Station	Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG-BYR-042606-JK-14	**L28413-7**		**04/26/06:1010**	
WG	H-3	108.00		
WG-BYR-042606-JK-16	**L28413-8**		**04/26/06:1030**	
WG	H-3	108.00		
WG-BYR-042606-JK-18	**L28413-9**		**04/26/06:1150**	
WG	H-3	108.00		
WG-BYR-042606-JK-20	**L28413-10**		**04/26/06:1340**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYR-042606-JK-22	**L28413-11**		**04/26/06:1455**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYR-042606-JK-24	**L28413-12**		**04/26/06:1620**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		

End of document

L28413

Charles, Rebecca

From: Charles, Rebecca
Sent: Thursday, April 27, 2006 3:44 PM
To: 'Shaw, Kathy'; 'edward.steinke@exeloncorp.com'
Subject: acknowledgements

Please note the Sample receipt variance report. The lids were cracked on several containers and the pH of the cubitainers was 3.

Rebecca Charles
Teledyne Brown Engineering
Project Manager
(865) 934-0379
(865) 934-0396 (fax)

Internal Chain of Custody

Internal Chain of Custody

****

Sample # L28413-1 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-2 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-3 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-4 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-5 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-6 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-7 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-8 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28413-9 Containernum 1

Prod	Analyst

****
Sample # L28413-9 Containernum 1

H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****
Sample # L28413-10 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian
04/27/2006 13:17	030854 Donna Webb	029858	Marty Webb
04/27/2006 13:17	099999 Sample Custodian	030854	Donna Webb
04/29/2006 10:16	029858 Marty Webb	030854	Donna Webb
04/29/2006 10:16	030854 Donna Webb	099999	Sample Custodian

****
Sample # L28413-10 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****
Sample # L28413-11 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian
04/27/2006 13:17	030854 Donna Webb	029858	Marty Webb
04/27/2006 13:17	099999 Sample Custodian	030854	Donna Webb
04/28/2006 09:58	029858 Marty Webb	030854	Donna Webb
04/28/2006 09:59	030854 Donna Webb	099999	Sample Custodian

****
Sample # L28413-11 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****
Sample # L28413-12 Containernum 1

Internal Chain of Custody

****

Sample # L28413-12 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
04/27/2006 13:17	030854	Donna Webb	029858	Marty Webb
04/27/2006 13:17	099999	Sample Custodian	030854	Donna Webb
04/28/2006 09:58	029858	Marty Webb	030854	Donna Webb
04/28/2006 09:59	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28413-12 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian

05/04/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28413

****

L28413-1	WG	WG-BYR-042506-JK-02		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-2	WG	WG-BYR-042506-JK-04		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-3	WG	WG-BYR-042506-JK-06		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-4	WG	WG-BYR-042506-JK-08		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-5	WG	WG-BYR-042506-JK-10		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-6	WG	WG-BYR-042506-JK-12		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-7	WG	WG-BYR-042606-JK-14		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28413-8	WG	WG-BYR-042606-JK-16		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

05/04/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28413

****

L28413-9 **WG** **WG-BYR-042606-JK-18**

Process step	Prod	Analyst	Date
Login		RCHARLES	04/27/06
Aliquot	H-3	EJ	04/28/06
Count Room	H-3	KOJ	04/29/06

****

L28413-10 **WG** **WG-BYR-042606-JK-20**

Process step	Prod	Analyst	Date
Login		RCHARLES	04/27/06
Aliquot	GELI	DW	04/27/06
Aliquot	H-3	EJ	04/28/06
Aliquot	SR-90 (FAST)	GK	05/01/06
Count Room	GELI	MVW	04/27/06
Count Room	H-3	KOJ	04/29/06
Count Room	SR-90 (FAST)	KOJ	05/03/06

****

L28413-11 **WG** **WG-BYR-042606-JK-22**

Process step	Prod	Analyst	Date
Login		RCHARLES	04/27/06
Aliquot	GELI	DW	04/27/06
Aliquot	H-3	EJ	04/28/06
Aliquot	SR-90 (FAST)	GK	05/01/06
Count Room	GELI	MVW	04/27/06
Count Room	H-3	KOJ	04/29/06
Count Room	SR-90 (FAST)	KOJ	05/03/06

****

L28413-12 **WG** **WG-BYR-042606-JK-24**

Process step	Prod	Analyst	Date
Login		RCHARLES	04/27/06
Aliquot	GELI	DW	04/27/06
Aliquot	H-3	EJ	04/28/06
Aliquot	SR-90 (FAST)	GK	05/01/06
Count Room	GELI	MVW	04/27/06
Count Room	H-3	KOJ	04/29/06
Count Room	SR-90 (FAST)	KOJ	05/03/06

Analytical Results Summary

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28413

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042506-JK-02** Collect Start: 04/25/2006 12:20 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-1

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	2.30E+00	1.16E+02	**1.91E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-JK-04** Collect Start: 04/25/2006 14:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-2

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-7.58E+01	1.07E+02	**1.85E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-JK-06** Collect Start: 04/25/2006 15:45 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-3

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-6.73E+01	1.08E+02	**1.86E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-JK-08** Collect Start: 04/25/2006 17:45 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-4

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-4.59E+00	1.15E+02	**1.90E+02**	pCi/L		10	ml		04/29/06	60	M	U

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
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Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042506-JK-10** Collect Start: 04/25/2006 17:55 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-5

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-1.15E+01	1.15E+02	**1.90E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-JK-12** Collect Start: 04/25/2006 19:15 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-6

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-1.80E+01	1.12E+02	**1.87E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042606-JK-14** Collect Start: 04/26/2006 10:10 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-7

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-6.15E+01	1.10E+02	**1.89E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042606-JK-16** Collect Start: 04/26/2006 10:30 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-8

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-1.12E+02	1.05E+02	**1.85E+02**	pCi/L		10	ml		04/29/06	60	M	U

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
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Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042606-JK-18** Collect Start: 04/26/2006 11:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-9

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-6.37E+01	1.06E+02	**1.82E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042606-JK-20** Collect Start: 04/26/2006 13:40 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-10

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	**2.34E+02**	1.28E+02	1.87E+02	pCi/L		10	ml		04/29/06	60	M	+ High
TOTAL SR	2018	-5.11E-01	6.01E-01	**1.04E+00**	pCi/L		450	ml	04/26/06 13:40	05/03/06	200	M	U
MN-54	2007	1.93E+00	1.49E+00	**2.55E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No
CO-58	2007	2.36E+00	1.81E+00	**2.59E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No
FE-59	2007	1.91E+00	2.79E+00	**4.71E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No
CO-60	2007	-9.00E-02	1.55E+00	**2.57E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No
ZN-65	2007	6.03E+01	4.96E+00	**9.20E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U* No
NB-95	2007	1.10E+01	1.66E+00	**3.08E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U* No
ZR-95	2007	-1.53E+00	2.76E+00	**4.11E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No
CS-134	2007	6.11E+01	3.72E+00	**5.00E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U* No
CS-137	2007	2.98E+00	1.87E+00	**2.76E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U* No
BA-140	2007	-8.85E-01	5.60E+00	**9.18E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No
LA-140	2007	1.39E+00	1.88E+00	**3.19E+00**	pCi/L		3010.63	ml	04/26/06 13:40	04/27/06	56755	Sec	U No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
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H = High recovery

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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

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Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042606-JK-22** Collect Start: 04/26/2006 14:55 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-11

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	**4.32E+02**	1.40E+02	1.89E+02	pCi/L		10	ml		04/29/06	60	M	+	High	
TOTAL SR	2018	-7.05E-01	6.27E-01	**1.10E+00**	pCi/L		450	ml	04/26/06 14:55	05/03/06	200	M	U		
MN-54	2007	7.59E-01	1.76E+00	**2.91E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
CO-58	2007	3.32E-02	1.72E+00	**2.81E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
FE-59	2007	6.26E-01	3.21E+00	**5.29E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
CO-60	2007	9.20E-01	1.77E+00	**2.97E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
ZN-65	2007	3.65E+01	5.11E+00	**9.04E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U*		No
NB-95	2007	6.35E+00	2.05E+00	**3.18E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U*		No
ZR-95	2007	1.45E-01	3.08E+00	**4.69E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
CS-134	2007	3.13E+01	3.75E+00	**4.72E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U*		No
CS-137	2007	2.01E+00	2.17E+00	**3.14E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
BA-140	2007	1.76E+00	6.35E+00	**1.05E+01**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No
LA-140	2007	2.49E+00	2.06E+00	**3.59E+00**	pCi/L		3076.37	ml	04/26/06 14:55	04/27/06	56759	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28413

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042606-JK-24** Collect Start: 04/26/2006 16:20 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28413-12

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	1.00E+02	1.19E+02	**1.85E+02**	pCi/L		10	ml		04/29/06	60	M	U		
TOTAL SR	2018	1.99E-01	5.25E-01	**8.44E-01**	pCi/L		450	ml	04/26/06 16:20	05/03/06	200	M	U		
MN-54	2007	1.32E+00	1.87E+00	**3.11E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
CO-58	2007	-4.37E-01	2.18E+00	**2.96E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
FE-59	2007	1.57E+00	3.50E+00	**5.82E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
CO-60	2007	-2.04E-01	1.91E+00	**3.14E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
ZN-65	2007	5.57E+01	5.95E+00	**1.08E+01**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U*		No
NB-95	2007	8.85E+00	2.02E+00	**3.65E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U*		No
ZR-95	2007	-1.24E+00	3.32E+00	**5.07E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
CS-134	2007	6.84E+01	3.70E+00	**6.27E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U*		No
CS-137	2007	3.88E+00	2.30E+00	**3.41E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U*		No
BA-140	2007	2.21E-01	6.98E+00	**1.14E+01**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
LA-140	2007	-4.95E-01	2.31E+00	**3.73E+00**	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	U		No
TH-228	2007	**6.17E+00**	3.26E+00	5.82E+00	pCi/L		3005.23	ml	04/26/06 16:20	04/27/06	56745	Sec	+		Yes

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
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L = Low recovery
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MDC - Minimum Detectable Concentration

QC Results Summary

QC Summary Report for L28413

5/4/2006 1:06:30PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

H-3

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3910-1	H-3	WO	04/29/2006 1:43	< 1.780E+00	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3910-2	H-3	WO	04/29/2006 2:47	5.05E+002	4.900E+02	pCi/Total	97.1	70-130	+	P

Spike ID: 3H-041706-1
Spike conc: 5.05E+002
Spike Vol: 1.00E+000

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3910-3 L28413-7	H-3	WG	04/29/2006 2:59	< 1.890E+02	< 1.770E+02	pCi/L		<30	**	NE

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28413

5/4/2006 1:06:30PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

L28413 **H-3**

Associated Samples for **WG3910**

SAMPLENUM	CLIENTID
L28413-1	WG-BYR-042506-JK-02
L28413-2	WG-BYR-042506-JK-04
L28413-3	WG-BYR-042506-JK-06
L28413-4	WG-BYR-042506-JK-08
L28413-5	WG-BYR-042506-JK-10
L28413-6	WG-BYR-042506-JK-12
L28413-7	WG-BYR-042606-JK-14
L28413-8	WG-BYR-042606-JK-16
L28413-9	WG-BYR-042606-JK-18
L28413-10	WG-BYR-042606-JK-20
L28413-11	WG-BYR-042606-JK-22
L28413-12	WG-BYR-042606-JK-24

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28413

5/4/2006 1:06:30PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

SR-90

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3931-1	SR-90	WO	05/03/2006 21:10	< 6.130E-01	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3931-2	SR-90	WO	05/03/2006 21:10	5.84E+001	5.090E+01	pCi/Total	87.2	70-130	+	P

Spike ID: 90SR-011905
Spike conc: 2.34E+002
Spike Vol: 2.50E-001

L28413 SR-90 (FAST)

Associated Samples for WG3931

SAMPLENUM	CLIENTID
L28413-10	WG-BYR-042606-JK-20
L28413-11	WG-BYR-042606-JK-22
L28413-12	WG-BYR-042606-JK-24

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

Raw Data

Sec. Review: KO Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 08:12:22.76
TBE07 P-10768B HpGe ********** Aquisition Date/Time: 27-APR-2006 16:26:02.03

LIMS No., Customer Name, Client ID: WG L28413-10 EXELON BYRON

Sample ID : 07L28413-10
Sample Type : WG
Quantity : 3.01060E+00 L
Start Channel : 40 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 26-APR-2006 13:40:00.
Geometry : 073L082504
BKGFILE : 07BG041406MT
Real Time : 0 15:46:10.38
Live time : 0 15:45:55.32

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	53.28	222	2064	1.05	107.40	3.31E-01	3.92E-03	34.3	3.64E+00
2	1	66.18*	582	3092	1.42	133.21	8.00E-01	1.02E-02	17.8	2.67E+00
3	1	77.07*	1381	2584	0.80	154.99	1.23E+00	2.43E-02	6.8	3.20E+00
4	5	87.24*	845	2324	1.14	175.33	1.58E+00	1.49E-02	10.5	7.63E-01
5	5	89.72	483	2608	1.28	180.31	1.65E+00	8.52E-03	19.4	
6	1	139.99*	491	2598	1.21	280.88	2.36E+00	8.65E-03	19.6	3.18E+00
7	1	198.36*	574	2407	1.23	397.65	2.25E+00	1.01E-02	16.8	2.87E+00
8	1	241.91*	2217	1466	1.15	484.77	2.04E+00	3.91E-02	3.7	2.28E+00
9	1	258.55	226	1530	1.05	518.08	1.97E+00	3.98E-03	30.6	4.85E+00
10	1	274.57	195	1594	1.71	550.11	1.90E+00	3.43E-03	37.6	7.54E-01
11	1	295.17*	4610	1881	1.07	591.34	1.81E+00	8.12E-02	2.4	4.97E-01
12	1	351.87*	7924	1511	1.16	704.75	1.61E+00	1.40E-01	1.5	1.05E+00
13	1	487.28	119	515	1.66	975.62	1.27E+00	2.10E-03	34.1	1.80E+00
14	1	595.75	303	683	1.92	1192.60	1.10E+00	5.34E-03	19.3	2.11E+00
15	1	609.23*	6598	596	1.38	1219.55	1.09E+00	1.16E-01	1.5	1.06E+00
16	1	665.33	153	437	1.44	1331.75	1.02E+00	2.69E-03	25.9	2.39E+00
17	1	768.32	663	461	1.72	1537.74	9.20E-01	1.17E-02	7.7	2.17E+00
18	1	785.81	138	437	1.72	1572.72	9.05E-01	2.43E-03	30.6	1.48E+00
19	1	806.15	126	471	1.44	1613.40	8.89E-01	2.23E-03	34.4	9.65E-01
20	1	933.88	354	357	1.45	1868.85	8.00E-01	6.23E-03	11.6	1.71E+00
21	1	1120.21*	1462	402	1.97	2241.45	7.03E-01	2.58E-02	4.2	2.38E+00
22	1	1155.08	157	308	2.02	2311.16	6.88E-01	2.77E-03	24.4	1.30E+00
23	1	1237.77	562	274	2.45	2476.52	6.55E-01	9.91E-03	7.9	4.85E+00
24	1	1280.80	151	214	1.57	2562.55	6.39E-01	2.66E-03	20.9	3.86E-01
25	1	1377.58	382	238	2.00	2756.04	6.07E-01	6.73E-03	10.2	7.24E-01
26	1	1385.47	82	221	2.21	2771.83	6.05E-01	1.44E-03	38.9	1.74E+00
27	3	1401.43	134	198	2.73	2803.73	6.00E-01	2.36E-03	22.0	1.06E+00
28	3	1408.08*	236	184	2.46	2817.02	5.98E-01	4.15E-03	14.7	
29	1	1509.29	232	245	2.95	3019.37	5.70E-01	4.08E-03	17.0	1.03E+00
30	1	1729.42	260	143	2.55	3459.42	5.19E-01	4.57E-03	11.6	2.30E+00
31	1	1764.29*	1130	189	2.24	3529.12	5.12E-01	1.99E-02	4.5	2.59E+00
32	1	1846.97	175	155	2.79	3694.38	4.97E-01	3.09E-03	18.0	1.34E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 07L28413-10 Acquisition date : 27-APR-2006 16:26:02

Total number of lines in spectrum	32	
Number of unidentified lines	27	
Number of lines tentatively identified by NID	5	15.63%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 07L28413-10

Acquisition date : 27-APR-2006 16:26:02

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	53.28	222	2064	1.05	107.40	104	7	3.92E-03	68.7	3.31E-01	
1	66.18	582	3092	1.42	133.21	129	8	1.02E-02	35.6	8.00E-01	
1	77.07	1381	2584	0.80	154.99	153	6	2.43E-02	13.7	1.23E+00	
5	87.24	845	2324	1.14	175.33	166	25	1.49E-02	21.0	1.58E+00	
5	89.72	483	2608	1.28	180.31	166	25	8.52E-03	38.8	1.65E+00	
1	139.99	491	2598	1.21	280.88	277	8	8.65E-03	39.1	2.36E+00	
1	198.36	574	2407	1.23	397.65	393	9	1.01E-02	33.6	2.25E+00	
1	241.91	2217	1466	1.15	484.77	472	20	3.91E-02	7.4	2.04E+00	T
1	258.55	226	1530	1.05	518.08	514	8	3.98E-03	61.1	1.97E+00	
1	274.57	195	1594	1.71	550.11	546	9	3.43E-03	75.3	1.90E+00	T
1	295.17	4610	1881	1.07	591.34	586	11	8.12E-02	4.8	1.81E+00	
1	351.87	7924	1511	1.16	704.75	699	12	1.40E-01	3.1	1.61E+00	
1	487.28	119	515	1.66	975.62	972	8	2.10E-03	68.2	1.27E+00	T
1	595.75	303	683	1.92	1192.60	1186	14	5.34E-03	38.7	1.10E+00	
1	609.23	6598	596	1.38	1219.55	1214	11	1.16E-01	3.0	1.09E+00	
1	665.33	153	437	1.44	1331.75	1328	9	2.69E-03	51.8	1.02E+00	
1	768.32	663	461	1.72	1537.74	1531	13	1.17E-02	15.5	9.20E-01	
1	785.81	138	437	1.72	1572.72	1568	11	2.43E-03	61.3	9.05E-01	
1	806.15	126	471	1.44	1613.40	1608	11	2.23E-03	68.8	8.89E-01	
1	933.88	354	357	1.45	1868.85	1864	11	6.23E-03	23.3	8.00E-01	
1	1120.21	1462	402	1.97	2241.45	2232	17	2.58E-02	8.5	7.03E-01	
1	1155.08	157	308	2.02	2311.16	2304	13	2.77E-03	48.8	6.88E-01	
1	1237.77	562	274	2.45	2476.52	2468	16	9.91E-03	15.9	6.55E-01	
1	1280.80	151	214	1.57	2562.55	2555	12	2.66E-03	41.8	6.39E-01	
1	1377.58	382	238	2.00	2756.04	2748	15	6.73E-03	20.3	6.07E-01	
1	1385.47	82	221	2.21	2771.83	2764	13	1.44E-03	77.8	6.05E-01	T
3	1401.43	134	198	2.73	2803.73	2798	26	2.36E-03	44.0	6.00E-01	
3	1408.08	236	184	2.46	2817.02	2798	26	4.15E-03	29.5	5.98E-01	T
1	1509.29	232	245	2.95	3019.37	3011	17	4.08E-03	33.9	5.70E-01	
1	1729.42	260	143	2.55	3459.42	3453	14	4.57E-03	23.3	5.19E-01	
1	1764.29	1130	189	2.24	3529.12	3520	22	1.99E-02	9.0	5.12E-01	
1	1846.97	175	155	2.79	3694.38	3685	17	3.09E-03	36.0	4.97E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum 32
Number of unidentified lines 27
Number of lines tentatively identified by NID 5 15.63%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	7.870E+00		1.276E+01	2.052E+01	0.000E+00	0.384
NA-24	2.683E+00		8.760E+00	1.229E+01	0.000E+00	0.218
K-40	-1.312E+01		2.011E+01	3.465E+01	0.000E+00	-0.379
CR-51	-1.891E+01		1.317E+01	2.079E+01	0.000E+00	-0.910
MN-54	1.928E+00		1.490E+00	2.548E+00	0.000E+00	0.757
CO-57	-1.501E-02		1.431E+00	2.396E+00	0.000E+00	-0.006
CO-58	2.356E+00		1.809E+00	2.590E+00	0.000E+00	0.910
FE-59	1.912E+00		2.794E+00	4.705E+00	0.000E+00	0.406
CO-60	-8.998E-02		1.554E+00	2.565E+00	0.000E+00	-0.035
ZN-65	6.033E+01		4.963E+00	9.197E+00	0.000E+00	6.560
SE-75	1.895E+00		2.327E+00	3.313E+00	0.000E+00	0.572
SR-85	1.758E+01		1.645E+00	3.142E+00	0.000E+00	5.595
Y-88	1.907E-01		1.815E+00	2.482E+00	0.000E+00	0.077
NB-94	4.014E-01		1.431E+00	2.374E+00	0.000E+00	0.169
NB-95	1.098E+01		1.664E+00	3.081E+00	0.000E+00	3.564
ZR-95	-1.532E+00		2.763E+00	4.112E+00	0.000E+00	-0.372
MO-99	-8.560E+00		1.552E+01	2.511E+01	0.000E+00	-0.341
RU-103	6.798E-02		1.524E+00	2.454E+00	0.000E+00	0.028
RU-106	3.549E+00		1.321E+01	2.158E+01	0.000E+00	0.164
AG-110m	-9.870E-02		1.620E+00	2.263E+00	0.000E+00	-0.044
SN-113	8.070E-01		1.954E+00	3.233E+00	0.000E+00	0.250
SB-124	9.787E-01		3.233E+00	2.397E+00	0.000E+00	0.408
SB-125	-6.982E-01		4.356E+00	7.081E+00	0.000E+00	-0.099
TE-129M	1.421E+01		1.727E+01	2.842E+01	0.000E+00	0.500
I-131	-1.656E+00		1.661E+00	2.700E+00	0.000E+00	-0.613
BA-133	4.117E+01		2.808E+00	4.996E+00	0.000E+00	8.240
CS-134	6.110E+01		3.720E+00	4.997E+00	0.000E+00	12.229
CS-136	-2.452E-01		1.573E+00	2.510E+00	0.000E+00	-0.098
CS-137	2.982E+00		1.872E+00	2.759E+00	0.000E+00	1.081
CE-139	-2.391E+00		1.506E+00	2.423E+00	0.000E+00	-0.987
BA-140	-8.848E-01		5.598E+00	9.182E+00	0.000E+00	-0.096
LA-140	1.389E+00		1.879E+00	3.185E+00	0.000E+00	0.436
CE-141	2.190E+00		2.971E+00	4.277E+00	0.000E+00	0.512
CE-144	-4.195E+00		1.242E+01	1.844E+01	0.000E+00	-0.227
EU-152	-1.021E+01		5.665E+00	7.685E+00	0.000E+00	-1.328
EU-154	1.173E+00		2.985E+00	5.018E+00	0.000E+00	0.234
RA-226	1.862E+01		4.032E+01	6.384E+01	0.000E+00	0.292
AC-228	-3.643E+00		5.996E+00	9.422E+00	0.000E+00	-0.387
TH-228	2.409E+01		3.648E+00	5.635E+00	0.000E+00	4.276
TH-232	-3.641E+00		5.993E+00	9.417E+00	0.000E+00	-0.387
U-235	-5.224E+00		1.359E+01	1.885E+01	0.000E+00	-0.277
U-238	-1.074E+02		1.782E+02	2.706E+02	0.000E+00	-0.397
AM-241	-1.309E+01		1.403E+01	2.110E+01	0.000E+00	-0.620

```
A,07L28413-10     ,04/28/2006 08:12,04/26/2006 13:40,   3.011E+00,WG L28413-10 E
B,07L28413-10     ,LIBD                ,06/23/2005 07:26,073L082504
C,BE-7     ,NO ,   7.870E+00,   1.276E+01,   2.052E+01,,     0.384
C,NA-24    ,NO ,   2.683E+00,   8.760E+00,   1.229E+01,,     0.218
C,K-40     ,NO ,  -1.312E+01,   2.011E+01,   3.465E+01,,    -0.379
C,CR-51    ,NO ,  -1.891E+01,   1.317E+01,   2.079E+01,,    -0.910
C,MN-54    ,NO ,   1.928E+00,   1.490E+00,   2.548E+00,,     0.757
C,CO-57    ,NO ,  -1.501E-02,   1.431E+00,   2.396E+00,,    -0.006
C,CO-58    ,NO ,   2.356E+00,   1.809E+00,   2.590E+00,,     0.910
C,FE-59    ,NO ,   1.912E+00,   2.794E+00,   4.705E+00,,     0.406
C,CO-60    ,NO ,  -8.998E-02,   1.554E+00,   2.565E+00,,    -0.035
C,ZN-65    ,NO ,   6.033E+01,   4.963E+00,   9.197E+00,,     6.560
C,SE-75    ,NO ,   1.895E+00,   2.327E+00,   3.313E+00,,     0.572
C,SR-85    ,NO ,   1.758E+01,   1.645E+00,   3.142E+00,,     5.595
C,Y-88     ,NO ,   1.907E-01,   1.815E+00,   2.482E+00,,     0.077
C,NB-94    ,NO ,   4.014E-01,   1.431E+00,   2.374E+00,,     0.169
C,NB-95    ,NO ,   1.098E+01,   1.664E+00,   3.081E+00,,     3.564
C,ZR-95    ,NO ,  -1.532E+00,   2.763E+00,   4.112E+00,,    -0.372
C,MO-99    ,NO ,  -8.560E+00,   1.552E+01,   2.511E+01,,    -0.341
C,RU-103   ,NO ,   6.798E-02,   1.524E+00,   2.454E+00,,     0.028
C,RU-106   ,NO ,   3.549E+00,   1.321E+01,   2.158E+01,,     0.164
C,AG-110m  ,NO ,  -9.870E-02,   1.620E+00,   2.263E+00,,    -0.044
C,SN-113   ,NO ,   8.070E-01,   1.954E+00,   3.233E+00,,     0.250
C,SB-124   ,NO ,   9.787E-01,   3.233E+00,   2.397E+00,,     0.408
C,SB-125   ,NO ,  -6.982E-01,   4.356E+00,   7.081E+00,,    -0.099
C,TE-129M  ,NO ,   1.421E+01,   1.727E+01,   2.842E+01,,     0.500
C,I-131    ,NO ,  -1.656E+00,   1.661E+00,   2.700E+00,,    -0.613
C,BA-133   ,NO ,   4.117E+01,   2.808E+00,   4.996E+00,,     8.240
C,CS-134   ,NO ,   6.110E+01,   3.720E+00,   4.997E+00,,    12.229
C,CS-136   ,NO ,  -2.452E-01,   1.573E+00,   2.510E+00,,    -0.098
C,CS-137   ,NO ,   2.982E+00,   1.872E+00,   2.759E+00,,     1.081
C,CE-139   ,NO ,  -2.391E+00,   1.506E+00,   2.423E+00,,    -0.987
C,BA-140   ,NO ,  -8.848E-01,   5.598E+00,   9.182E+00,,    -0.096
C,LA-140   ,NO ,   1.389E+00,   1.879E+00,   3.185E+00,,     0.436
C,CE-141   ,NO ,   2.190E+00,   2.971E+00,   4.277E+00,,     0.512
C,CE-144   ,NO ,  -4.195E+00,   1.242E+01,   1.844E+01,,    -0.227
C,EU-152   ,NO ,  -1.021E+01,   5.665E+00,   7.685E+00,,    -1.328
C,EU-154   ,NO ,   1.173E+00,   2.985E+00,   5.018E+00,,     0.234
C,RA-226   ,NO ,   1.862E+01,   4.032E+01,   6.384E+01,,     0.292
C,AC-228   ,NO ,  -3.643E+00,   5.996E+00,   9.422E+00,,    -0.387
C,TH-228   ,NO ,   2.409E+01,   3.648E+00,   5.635E+00,,     4.276
C,TH-232   ,NO ,  -3.641E+00,   5.993E+00,   9.417E+00,,    -0.387
C,U-235    ,NO ,  -5.224E+00,   1.359E+01,   1.885E+01,,    -0.277
C,U-238    ,NO ,  -1.074E+02,   1.782E+02,   2.706E+02,,    -0.397
C,AM-241   ,NO ,  -1.309E+01,   1.403E+01,   2.110E+01,,    -0.620
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Sec. Review: Analyst: LIMS:

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 08:12:33.20
TBE10 12892256 HpGe ********** Aquisition Date/Time: 27-APR-2006 16:26:18.40

LIMS No., Customer Name, Client ID: WG L28413-11 EXELON BYRON

Sample ID : 10L28413-11
Sample Type : WG
Quantity : 3.07640E+00 L
Start Channel : 80 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 26-APR-2006 14:55:00.
Geometry : 103L083004
BKGFILE : 10BG041406MT
Real Time : 0 15:46:10.09
Live time : 0 15:45:58.84

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.29*	543	2877	1.47	131.82	7.26E-01	9.56E-03	19.0	4.26E+00
2	3	74.84*	355	2234	1.09	148.94	1.03E+00	6.25E-03	25.3	2.18E+00
3	3	77.04	1021	2210	1.10	153.34	1.10E+00	1.80E-02	8.4	
4	1	87.28*	268	1828	0.93	173.82	1.39E+00	4.72E-03	27.7	2.12E+00
5	1	93.05*	221	2491	1.75	185.38	1.53E+00	3.89E-03	44.3	8.14E+00
6	1	139.95	441	2451	1.24	279.24	1.91E+00	7.77E-03	20.8	2.75E-01
7	1	185.67*	198	2244	1.58	370.74	1.77E+00	3.49E-03	48.5	2.83E+00
8	1	198.26*	229	1867	1.57	395.93	1.72E+00	4.03E-03	39.0	1.34E+00
9	2	238.66*	156	1438	1.54	476.78	1.54E+00	2.75E-03	49.5	1.41E+00
10	2	242.04	879	1173	1.13	483.55	1.52E+00	1.55E-02	7.3	
11	1	295.26*	2127	1563	1.22	590.07	1.33E+00	3.75E-02	4.7	1.50E+00
12	1	351.98*	3487	1119	1.24	703.59	1.17E+00	6.14E-02	2.7	1.02E+00
13	1	500.35	108	494	2.03	1000.57	8.97E-01	1.90E-03	39.8	1.06E+00
14	1	595.95	195	467	2.07	1191.94	7.86E-01	3.44E-03	23.2	1.97E+00
15	1	609.35*	2796	540	1.38	1218.77	7.72E-01	4.93E-02	2.7	5.16E-01
16	1	665.65	81	366	1.64	1331.47	7.22E-01	1.42E-03	47.4	2.85E+00
17	1	768.26	328	260	2.21	1536.90	6.46E-01	5.79E-03	11.9	2.57E+00
18	1	786.37	63	279	2.29	1573.15	6.34E-01	1.11E-03	54.8	2.37E+00
19	1	934.28	158	207	1.96	1869.27	5.54E-01	2.78E-03	19.4	1.52E+00
20	1	968.97*	43	194	3.13	1938.73	5.38E-01	7.59E-04	71.0	1.83E+00
21	1	1120.25*	562	233	1.78	2241.65	4.79E-01	9.90E-03	7.9	7.42E-01
22	1	1155.30	111	213	1.90	2311.81	4.67E-01	1.95E-03	31.2	8.78E-01
23	1	1238.25	239	207	1.95	2477.93	4.42E-01	4.22E-03	15.0	7.43E-01
24	1	1377.93	222	115	2.53	2757.65	4.06E-01	3.91E-03	12.9	9.06E-01
25	1	1408.18	119	120	2.75	2818.24	4.00E-01	2.10E-03	22.2	1.34E+00
26	1	1509.13	100	120	2.20	3020.40	3.79E-01	1.75E-03	24.1	6.15E-01
27	1	1659.69	114	138	15.20	3321.96	3.54E-01	2.00E-03	27.2	3.28E+00
28	1	1711.14	42	95	4.65	3425.01	3.46E-01	7.48E-04	50.5	2.31E+00
29	1	1730.10	125	96	2.87	3462.99	3.43E-01	2.21E-03	19.8	1.71E+00
30	1	1764.54*	430	137	2.04	3531.98	3.39E-01	7.57E-03	8.5	1.56E+00
31	1	1847.38	87	114	2.82	3697.90	3.29E-01	1.53E-03	30.4	1.08E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Uncorrected Decay Corr 2-Sigma

Nuclide	Energy	Area	%Abn	%Eff	pCi/L	pCi/L	%Error
RA-226	186.21	198	3.28*	1.771E+00	5.280E+01	5.280E+01	96.90
TH-228	238.63	156	44.60*	1.538E+00	3.518E+00	3.523E+00	99.05
	240.98	879	3.95	1.524E+00	2.259E+02	2.262E+02	14.50
U-235	143.76	------	10.50*	1.905E+00	------	Line Not Found	------
	163.35	------	4.70	1.860E+00	------	Line Not Found	------
	185.71	198	54.00	1.771E+00	3.207E+00	3.207E+00	96.90
	205.31	------	4.70	1.684E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 10L28413-11 Acquisition date : 27-APR-2006 16:26:18

Total number of lines in spectrum	31	
Number of unidentified lines	26	
Number of lines tentatively identified by NID	5	16.13%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	5.280E+01	5.280E+01	5.117E+01	96.90	
TH-228	1.91Y	1.00	3.518E+00	3.523E+00	3.490E+00	99.05	
U-235	7.04E+08Y	1.00	3.207E+00	3.207E+00	3.108E+00	96.90	K
			---------	---------			
	Total Activity :		5.953E+01	5.953E+01			
	Grand Total Activity :		5.953E+01	5.953E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 10L28413-11

Acquisition date : 27-APR-2006 16:26:18

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.29	543	2877	1.47	131.82	128	9	9.56E-03	38.0	7.26E-01	
3	74.84	355	2234	1.09	148.94	142	16	6.25E-03	50.6	1.03E+00	
3	77.04	1021	2210	1.10	153.34	142	16	1.80E-02	16.8	1.10E+00	
1	87.28	268	1828	0.93	173.82	171	6	4.72E-03	55.4	1.39E+00	
1	93.05	221	2491	1.75	185.38	181	9	3.89E-03	88.5	1.53E+00	
1	139.95	441	2451	1.24	279.24	275	9	7.77E-03	41.7	1.91E+00	
1	198.26	229	1867	1.57	395.93	392	9	4.03E-03	78.0	1.72E+00	
1	295.26	2127	1563	1.22	590.07	583	14	3.75E-02	9.3	1.33E+00	
1	351.98	3487	1119	1.24	703.59	698	12	6.14E-02	5.3	1.17E+00	
1	500.35	108	494	2.03	1000.57	996	10	1.90E-03	79.7	8.97E-01	
1	595.95	195	467	2.07	1191.94	1186	12	3.44E-03	46.5	7.86E-01	
1	609.35	2796	540	1.38	1218.77	1213	13	4.93E-02	5.4	7.72E-01	
1	665.65	81	366	1.64	1331.47	1325	11	1.42E-03	94.8	7.22E-01	
1	768.26	328	260	2.21	1536.90	1530	14	5.79E-03	23.8	6.46E-01	
1	786.37	63	279	2.29	1573.15	1567	12	1.11E-03	****	6.34E-01	
1	934.28	158	207	1.96	1869.27	1864	11	2.78E-03	38.8	5.54E-01	
1	968.97	43	194	3.13	1938.73	1935	11	7.59E-04	****	5.38E-01	T
1	1120.25	562	233	1.78	2241.65	2236	15	9.90E-03	15.7	4.79E-01	
1	1155.30	111	213	1.90	2311.81	2305	16	1.95E-03	62.4	4.67E-01	
1	1238.25	239	207	1.95	2477.93	2471	16	4.22E-03	29.9	4.42E-01	
1	1377.93	222	115	2.53	2757.65	2751	16	3.91E-03	25.7	4.06E-01	
1	1408.18	119	120	2.75	2818.24	2810	15	2.10E-03	44.4	4.00E-01	T
1	1509.13	100	120	2.20	3020.40	3014	12	1.75E-03	48.2	3.79E-01	
1	1659.69	114	138	15.20	3321.96	3314	22	2.00E-03	54.4	3.54E-01	
1	1711.14	42	95	4.65	3425.01	3418	14	7.48E-04	****	3.46E-01	
1	1730.10	125	96	2.87	3462.99	3454	16	2.21E-03	39.6	3.43E-01	
1	1764.54	430	137	2.04	3531.98	3525	18	7.57E-03	16.9	3.39E-01	
1	1847.38	87	114	2.82	3697.90	3688	17	1.53E-03	60.8	3.29E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	31	
Number of unidentified lines	26	
Number of lines tentatively identified by NID	5	16.13%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	5.280E+01	5.280E+01	5.117E+01	96.90	
TH-228	1.91Y	1.00	3.518E+00	3.523E+00	3.490E+00	99.05	
			---------	---------			
	Total Activity :		5.632E+01	5.632E+01			
	Grand Total Activity :		5.632E+01	5.632E+01			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
RA-226	5.280E+01	5.117E+01	7.092E+01	0.000E+00	0.745
TH-228	3.523E+00	3.490E+00	5.235E+00	0.000E+00	0.673

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	9.356E+00		1.431E+01	2.391E+01	0.000E+00	0.391
NA-24	-5.331E-01		9.701E+00	1.331E+01	0.000E+00	-0.040
K-40	-7.718E+00		2.559E+01	4.370E+01	0.000E+00	-0.177
CR-51	-1.511E+01		1.545E+01	2.486E+01	0.000E+00	-0.608
MN-54	7.585E-01		1.761E+00	2.906E+00	0.000E+00	0.261
CO-57	-3.053E-01		1.686E+00	2.792E+00	0.000E+00	-0.109
CO-58	3.321E-02		1.717E+00	2.805E+00	0.000E+00	0.012
FE-59	6.255E-01		3.214E+00	5.293E+00	0.000E+00	0.118
CO-60	9.200E-01		1.765E+00	2.969E+00	0.000E+00	0.310
ZN-65	3.647E+01		5.110E+00	9.044E+00	0.000E+00	4.032
SE-75	-1.925E+00		2.412E+00	3.943E+00	0.000E+00	-0.488
SR-85	1.733E+01		1.962E+00	3.706E+00	0.000E+00	4.676
Y-88	9.092E-01		2.137E+00	3.028E+00	0.000E+00	0.300
NB-94	1.549E+00		1.669E+00	2.818E+00	0.000E+00	0.550
NB-95	6.346E+00		2.047E+00	3.184E+00	0.000E+00	1.993
ZR-95	1.451E-01		3.082E+00	4.687E+00	0.000E+00	0.031
MO-99	1.929E+00		1.764E+01	2.907E+01	0.000E+00	0.066
RU-103	1.598E+00		2.093E+00	2.979E+00	0.000E+00	0.536
RU-106	-3.792E+00		1.559E+01	2.506E+01	0.000E+00	-0.151
AG-110m	2.294E-02		1.889E+00	2.642E+00	0.000E+00	0.009
SN-113	2.212E-01		2.239E+00	3.737E+00	0.000E+00	0.059
SB-124	-9.840E-01		3.960E+00	2.772E+00	0.000E+00	-0.355
SB-125	-2.920E-01		5.120E+00	8.478E+00	0.000E+00	-0.034
TE-129M	3.322E+00		1.968E+01	3.260E+01	0.000E+00	0.102
I-131	-1.406E-01		1.982E+00	3.215E+00	0.000E+00	-0.044
BA-133	4.887E+01		3.465E+00	6.168E+00	0.000E+00	7.924
CS-134	3.132E+01		3.747E+00	4.723E+00	0.000E+00	6.632
CS-136	-7.155E-01		1.748E+00	2.814E+00	0.000E+00	-0.254
CS-137	2.011E+00		2.168E+00	3.142E+00	0.000E+00	0.640
CE-139	2.964E-01		1.785E+00	2.928E+00	0.000E+00	0.101
BA-140	1.757E+00		6.352E+00	1.046E+01	0.000E+00	0.168
LA-140	2.494E+00		2.060E+00	3.594E+00	0.000E+00	0.694
CE-141	5.061E-01		3.509E+00	4.943E+00	0.000E+00	0.102
CE-144	7.772E+00		1.546E+01	2.201E+01	0.000E+00	0.353
EU-152	-6.154E+00		6.789E+00	9.142E+00	0.000E+00	-0.673
EU-154	7.027E-01		3.535E+00	5.876E+00	0.000E+00	0.120
AC-228	7.190E-01		6.856E+00	1.098E+01	0.000E+00	0.065
TH-232	7.187E-01		6.853E+00	1.097E+01	0.000E+00	0.065
U-235	1.038E+01		1.573E+01	2.237E+01	0.000E+00	0.464
U-238	5.280E+01		1.844E+02	3.067E+02	0.000E+00	0.172
AM-241	-1.576E+01		1.637E+01	2.448E+01	0.000E+00	-0.644

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A,10L28413-11     ,04/28/2006 08:12,04/26/2006 14:55,   3.076E+00,WG L28413-11 E
B,10L28413-11     ,LIBD                ,06/09/2005 08:04,103L083004
C,RA-226  ,YES,    5.280E+01,    5.117E+01,    7.092E+01,,     0.745
C,TH-228  ,YES,    3.523E+00,    3.490E+00,    5.235E+00,,     0.673
C,BE-7    ,NO ,    9.356E+00,    1.431E+01,    2.391E+01,,     0.391
C,NA-24   ,NO ,   -5.331E-01,    9.701E+00,    1.331E+01,,    -0.040
C,K-40    ,NO ,   -7.718E+00,    2.559E+01,    4.370E+01,,    -0.177
C,CR-51   ,NO ,   -1.511E+01,    1.545E+01,    2.486E+01,,    -0.608
C,MN-54   ,NO ,    7.585E-01,    1.761E+00,    2.906E+00,,     0.261
C,CO-57   ,NO ,   -3.053E-01,    1.686E+00,    2.792E+00,,    -0.109
C,CO-58   ,NO ,    3.321E-02,    1.717E+00,    2.805E+00,,     0.012
C,FE-59   ,NO ,    6.255E-01,    3.214E+00,    5.293E+00,,     0.118
C,CO-60   ,NO ,    9.200E-01,    1.765E+00,    2.969E+00,,     0.310
C,ZN-65   ,NO ,    3.647E+01,    5.110E+00,    9.044E+00,,     4.032
C,SE-75   ,NO ,   -1.925E+00,    2.412E+00,    3.943E+00,,    -0.488
C,SR-85   ,NO ,    1.733E+01,    1.962E+00,    3.706E+00,,     4.676
C,Y-88    ,NO ,    9.092E-01,    2.137E+00,    3.028E+00,,     0.300
C,NB-94   ,NO ,    1.549E+00,    1.669E+00,    2.818E+00,,     0.550
C,NB-95   ,NO ,    6.346E+00,    2.047E+00,    3.184E+00,,     1.993
C,ZR-95   ,NO ,    1.451E-01,    3.082E+00,    4.687E+00,,     0.031
C,MO-99   ,NO ,    1.929E+00,    1.764E+01,    2.907E+01,,     0.066
C,RU-103  ,NO ,    1.598E+00,    2.093E+00,    2.979E+00,,     0.536
C,RU-106  ,NO ,   -3.792E+00,    1.559E+01,    2.506E+01,,    -0.151
C,AG-110m ,NO ,    2.294E-02,    1.889E+00,    2.642E+00,,     0.009
C,SN-113  ,NO ,    2.212E-01,    2.239E+00,    3.737E+00,,     0.059
C,SB-124  ,NO ,   -9.840E-01,    3.960E+00,    2.772E+00,,    -0.355
C,SB-125  ,NO ,   -2.920E-01,    5.120E+00,    8.478E+00,,    -0.034
C,TE-129M ,NO ,    3.322E+00,    1.968E+01,    3.260E+01,,     0.102
C,I-131   ,NO ,   -1.406E-01,    1.982E+00,    3.215E+00,,    -0.044
C,BA-133  ,NO ,    4.887E+01,    3.465E+00,    6.168E+00,,     7.924
C,CS-134  ,NO ,    3.132E+01,    3.747E+00,    4.723E+00,,     6.632
C,CS-136  ,NO ,   -7.155E-01,    1.748E+00,    2.814E+00,,    -0.254
C,CS-137  ,NO ,    2.011E+00,    2.168E+00,    3.142E+00,,     0.640
C,CE-139  ,NO ,    2.964E-01,    1.785E+00,    2.928E+00,,     0.101
C,BA-140  ,NO ,    1.757E+00,    6.352E+00,    1.046E+01,,     0.168
C,LA-140  ,NO ,    2.494E+00,    2.060E+00,    3.594E+00,,     0.694
C,CE-141  ,NO ,    5.061E-01,    3.509E+00,    4.943E+00,,     0.102
C,CE-144  ,NO ,    7.772E+00,    1.546E+01,    2.201E+01,,     0.353
C,EU-152  ,NO ,   -6.154E+00,    6.789E+00,    9.142E+00,,    -0.673
C,EU-154  ,NO ,    7.027E-01,    3.535E+00,    5.876E+00,,     0.120
C,AC-228  ,NO ,    7.190E-01,    6.856E+00,    1.098E+01,,     0.065
C,TH-232  ,NO ,    7.187E-01,    6.853E+00,    1.097E+01,,     0.065
C,U-235   ,NO ,    1.038E+01,    1.573E+01,    2.237E+01,,     0.464
C,U-238   ,NO ,    5.280E+01,    1.844E+02,    3.067E+02,,     0.172
C,AM-241  ,NO ,   -1.576E+01,    1.637E+01,    2.448E+01,,    -0.644
```

Sec. Review: KS Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 08:12:48.80
TBE11 P-20610B HpGe ********** Aquisition Date/Time: 27-APR-2006 16:26:31.05

LIMS No., Customer Name, Client ID: WG L28413-12 EXELON BYRON

Sample ID : 11L28413-12
Sample Type : WG
Quantity : 3.00520E+00 L
Start Channel : 40 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 26-APR-2006 16:20:00.
Geometry : 113L082304
BKGFILE : 11BG041406MT
Real Time : 0 15:46:09.10
Live time : 0 15:45:44.97

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	0	66.43*	291	2694	1.00	132.04	6.91E-01	5.13E-03	31.3	
2	3	74.85*	405	2471	1.03	148.93	9.75E-01	7.13E-03	21.8	1.32E+00
3	3	77.06	1126	2287	0.96	153.37	1.05E+00	1.98E-02	7.5	
4	0	86.90*	213	2527	1.16	173.10	1.33E+00	3.76E-03	41.3	
5	0	139.51	385	2821	1.27	278.62	1.90E+00	6.79E-03	25.4	
6	0	185.68*	39	1881	0.83	371.22	1.80E+00	6.88E-04	203.3	
7	0	198.24*	312	2200	1.42	396.40	1.75E+00	5.49E-03	28.9	
8	2	238.49*	274	1302	1.58	477.12	1.58E+00	4.82E-03	26.4	1.48E+00
9	2	241.87	1478	1369	1.41	483.89	1.56E+00	2.60E-02	5.0	
10	0	295.03*	2970	1682	1.37	590.49	1.37E+00	5.23E-02	3.4	
11	0	351.72*	5092	1275	1.30	704.16	1.20E+00	8.97E-02	2.0	
12	0	595.11	242	496	1.85	1192.05	8.04E-01	4.26E-03	18.9	
13	0	608.92*	4026	617	1.51	1219.73	7.90E-01	7.09E-02	2.1	
14	0	665.26	184	382	2.19	1332.63	7.37E-01	3.24E-03	22.6	
15	0	767.90	393	327	1.34	1538.31	6.59E-01	6.92E-03	10.3	
16	0	785.77	133	419	1.78	1574.13	6.47E-01	2.34E-03	35.6	
17	0	805.80	120	264	1.76	1614.24	6.34E-01	2.12E-03	26.9	
18	0	910.52*	29	274	1.91	1824.05	5.75E-01	5.10E-04	135.4	
19	0	933.15	190	296	1.81	1869.39	5.64E-01	3.34E-03	20.1	
20	0	965.63	21	514	4.67	1934.44	5.48E-01	3.63E-04	278.8	
21	0	1119.71*	914	257	1.85	2243.06	4.86E-01	1.61E-02	5.5	
22	0	1237.33*	367	220	1.71	2478.59	4.48E-01	6.47E-03	11.7	
23	0	1280.05	76	136	1.82	2564.14	4.36E-01	1.35E-03	30.7	
24	0	1376.93	273	153	2.27	2758.09	4.11E-01	4.82E-03	11.1	
25	0	1400.62	99	137	2.47	2805.53	4.05E-01	1.74E-03	26.4	
26	0	1407.55	149	170	1.51	2819.40	4.04E-01	2.63E-03	20.7	
27	0	1508.04	139	130	2.29	3020.55	3.82E-01	2.44E-03	19.4	
28	0	1728.21	133	147	1.14	3461.17	3.44E-01	2.35E-03	21.6	
29	0	1762.37*	700	95	2.30	3529.51	3.39E-01	1.23E-02	5.3	
30	0	1845.20	80	121	0.87	3695.23	3.28E-01	1.42E-03	31.7	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error

RA-226	186.21	39	3.28*	1.799E+00	1.048E+01	1.048E+01	406.60
AC-228	835.50	------	1.75	6.158E-01	------	Line Not Found	------
	911.07	29	27.70*	5.748E-01	2.879E+00	2.880E+00	270.71
TH-228	238.63	274	44.60*	1.577E+00	6.165E+00	6.173E+00	52.82
	240.98	1478	3.95	1.564E+00	3.792E+02	3.797E+02	10.08
U-235	143.76	------	10.50*	1.906E+00	------	Line Not Found	------
	163.35	------	4.70	1.876E+00	------	Line Not Found	------
	185.71	39	54.00	1.799E+00	6.367E-01	6.367E-01	406.60
	205.31	------	4.70	1.718E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 11L28413-12

Acquisition date : 27-APR-2006 16:26:31

Total number of lines in spectrum	30	
Number of unidentified lines	25	
Number of lines tentatively identified by NID	5	16.67%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	1.048E+01	1.048E+01	4.262E+01	406.60	
AC-228	5.75Y	1.00	2.879E+00	2.880E+00	7.797E+00	270.71	
TH-228	1.91Y	1.00	6.165E+00	6.173E+00	3.260E+00	52.82	
U-235	7.04E+08Y	1.00	6.367E-01	6.367E-01	25.89E-01	406.60	K
	Total Activity :		2.016E+01	2.017E+01			
	Grand Total Activity :		2.016E+01	2.017E+01			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 11L28413-12

Acquisition date : 27-APR-2006 16:26:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	66.43	291	2694	1.00	132.04	129	7	5.13E-03	62.7	6.91E-01	
3	74.85	405	2471	1.03	148.93	145	20	7.13E-03	43.5	9.75E-01	
3	77.06	1126	2287	0.96	153.37	145	20	1.98E-02	15.0	1.05E+00	
0	86.90	213	2527	1.16	173.10	171	7	3.76E-03	82.6	1.33E+00	
0	139.51	385	2821	1.27	278.62	275	9	6.79E-03	50.8	1.90E+00	
0	198.24	312	2200	1.42	396.40	392	9	5.49E-03	57.7	1.75E+00	
0	295.03	2970	1682	1.37	590.49	585	12	5.23E-02	6.8	1.37E+00	
0	351.72	5092	1275	1.30	704.16	698	12	8.97E-02	4.1	1.20E+00	
0	595.11	242	496	1.85	1192.05	1187	11	4.26E-03	37.8	8.04E-01	
0	608.92	4026	617	1.51	1219.73	1214	13	7.09E-02	4.2	7.90E-01	
0	665.26	184	382	2.19	1332.63	1328	12	3.24E-03	45.2	7.37E-01	
0	767.90	393	327	1.34	1538.31	1533	11	6.92E-03	20.6	6.59E-01	
0	785.77	133	419	1.78	1574.13	1565	16	2.34E-03	71.3	6.47E-01	
0	805.80	120	264	1.76	1614.24	1610	10	2.12E-03	53.8	6.34E-01	
0	933.15	190	296	1.81	1869.39	1863	13	3.34E-03	40.1	5.64E-01	
0	965.63	21	514	4.67	1934.44	1931	21	3.63E-04	****	5.48E-01	
0	1119.71	914	257	1.85	2243.06	2236	17	1.61E-02	11.1	4.86E-01	
0	1237.33	367	220	1.71	2478.59	2471	18	6.47E-03	23.4	4.48E-01	
0	1280.05	76	136	1.82	2564.14	2560	10	1.35E-03	61.4	4.36E-01	
0	1376.93	273	153	2.27	2758.09	2752	13	4.82E-03	22.2	4.11E-01	
0	1400.62	99	137	2.47	2805.53	2800	13	1.74E-03	52.9	4.05E-01	
0	1407.55	149	170	1.51	2819.40	2813	15	2.63E-03	41.3	4.04E-01	T
0	1508.04	139	130	2.29	3020.55	3014	14	2.44E-03	38.7	3.82E-01	
0	1728.21	133	147	1.14	3461.17	3452	15	2.35E-03	43.1	3.44E-01	
0	1762.37	700	95	2.30	3529.51	3519	17	1.23E-02	10.6	3.39E-01	
0	1845.20	80	121	0.87	3695.23	3688	15	1.42E-03	63.5	3.28E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	30	
Number of unidentified lines	25	
Number of lines tentatively identified by NID	5	16.67%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	1.048E+01	1.048E+01	4.262E+01	406.60	
AC-228	5.75Y	1.00	2.879E+00	2.880E+00	7.797E+00	270.71	
TH-228	1.91Y	1.00	6.165E+00	6.173E+00	3.260E+00	52.82	
			---------	---------			
	Total Activity :		1.953E+01	1.954E+01			

Grand Total Activity : 1.953E+01 1.954E+01

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
RA-226	1.048E+01	4.262E+01	7.812E+01	0.000E+00	0.134
AC-228	2.880E+00	7.797E+00	1.100E+01	0.000E+00	0.262
TH-228	6.173E+00	3.260E+00	5.824E+00	0.000E+00	1.060

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	-6.144E-01		1.571E+01	2.576E+01	0.000E+00	-0.024
NA-24	1.163E-01		9.849E+00	1.363E+01	0.000E+00	0.009
K-40	9.487E+01		2.226E+01	4.152E+01	0.000E+00	2.285
CR-51	-1.975E+01		1.648E+01	2.630E+01	0.000E+00	-0.751
MN-54	1.324E+00		1.874E+00	3.113E+00	0.000E+00	0.425
CO-57	-9.587E-01		1.907E+00	3.113E+00	0.000E+00	-0.308
CO-58	-4.368E-01		2.179E+00	2.963E+00	0.000E+00	-0.147
FE-59	1.572E+00		3.498E+00	5.815E+00	0.000E+00	0.270
CO-60	-2.036E-01		1.911E+00	3.143E+00	0.000E+00	-0.065
ZN-65	5.574E+01		5.951E+00	1.083E+01	0.000E+00	5.149
SE-75	-1.275E+00		2.600E+00	4.243E+00	0.000E+00	-0.301
SR-85	1.618E+01		2.029E+00	3.765E+00	0.000E+00	4.296
Y-88	1.120E+00		2.319E+00	3.311E+00	0.000E+00	0.338
NB-94	1.737E+00		1.730E+00	2.923E+00	0.000E+00	0.594
NB-95	8.851E+00		2.019E+00	3.646E+00	0.000E+00	2.428
ZR-95	-1.238E+00		3.324E+00	5.073E+00	0.000E+00	-0.244
MO-99	1.442E+01		1.876E+01	3.145E+01	0.000E+00	0.459
RU-103	1.924E+00		1.866E+00	3.122E+00	0.000E+00	0.616
RU-106	3.792E+00		1.667E+01	2.746E+01	0.000E+00	0.138
AG-110m	-1.854E-02		2.024E+00	2.824E+00	0.000E+00	-0.007
SN-113	1.132E+00		2.446E+00	4.091E+00	0.000E+00	0.277
SB-124	2.475E+00		4.069E+00	3.078E+00	0.000E+00	0.804
SB-125	4.601E-01		5.339E+00	8.831E+00	0.000E+00	0.052
TE-129M	-8.541E+00		2.135E+01	3.484E+01	0.000E+00	-0.245
I-131	1.503E-01		2.110E+00	3.519E+00	0.000E+00	0.043
BA-133	5.418E+01		3.783E+00	6.615E+00	0.000E+00	8.191
CS-134	6.835E+01		3.697E+00	6.268E+00	0.000E+00	10.904
CS-136	2.105E+00		1.905E+00	3.171E+00	0.000E+00	0.664
CS-137	3.883E+00		2.299E+00	3.412E+00	0.000E+00	1.138
CE-139	1.933E-01		2.037E+00	3.308E+00	0.000E+00	0.058
BA-140	2.208E-01		6.978E+00	1.138E+01	0.000E+00	0.019
LA-140	-4.947E-01		2.309E+00	3.727E+00	0.000E+00	-0.133
CE-141	2.048E+00		4.043E+00	5.655E+00	0.000E+00	0.362
CE-144	-5.144E+00		1.751E+01	2.429E+01	0.000E+00	-0.212
EU-152	-7.075E+00		7.186E+00	9.601E+00	0.000E+00	-0.737
EU-154	-4.207E+00		4.021E+00	6.525E+00	0.000E+00	-0.645
TH-232	2.879E+00	+	7.793E+00	1.210E+01	0.000E+00	0.238
U-235	-1.438E+01		1.879E+01	2.525E+01	0.000E+00	-0.570
U-238	2.491E+02		2.011E+02	3.444E+02	0.000E+00	0.723
AM-241	5.274E+01		2.512E+01	3.833E+01	0.000E+00	1.376

```
A,11L28413-12     ,04/28/2006 08:12,04/26/2006 16:20,   3.005E+00,WG L28413-12 E
B,11L28413-12     ,LIBD                ,09/01/2005 07:43,113L082304
C,RA-226  ,YES,    1.048E+01,    4.262E+01,    7.812E+01,,     0.134
C,AC-228  ,YES,    2.880E+00,    7.797E+00,    1.100E+01,,     0.262
C,TH-228  ,YES,    6.173E+00,    3.260E+00,    5.824E+00,,     1.060
C,BE-7    ,NO ,   -6.144E-01,    1.571E+01,    2.576E+01,,    -0.024
C,NA-24   ,NO ,    1.163E-01,    9.849E+00,    1.363E+01,,     0.009
C,K-40    ,NO ,    9.487E+01,    2.226E+01,    4.152E+01,,     2.285
C,CR-51   ,NO ,   -1.975E+01,    1.648E+01,    2.630E+01,,    -0.751
C,MN-54   ,NO ,    1.324E+00,    1.874E+00,    3.113E+00,,     0.425
C,CO-57   ,NO ,   -9.587E-01,    1.907E+00,    3.113E+00,,    -0.308
C,CO-58   ,NO ,   -4.368E-01,    2.179E+00,    2.963E+00,,    -0.147
C,FE-59   ,NO ,    1.572E+00,    3.498E+00,    5.815E+00,,     0.270
C,CO-60   ,NO ,   -2.036E-01,    1.911E+00,    3.143E+00,,    -0.065
C,ZN-65   ,NO ,    5.574E+01,    5.951E+00,    1.083E+01,,     5.149
C,SE-75   ,NO ,   -1.275E+00,    2.600E+00,    4.243E+00,,    -0.301
C,SR-85   ,NO ,    1.618E+01,    2.029E+00,    3.765E+00,,     4.296
C,Y-88    ,NO ,    1.120E+00,    2.319E+00,    3.311E+00,,     0.338
C,NB-94   ,NO ,    1.737E+00,    1.730E+00,    2.923E+00,,     0.594
C,NB-95   ,NO ,    8.851E+00,    2.019E+00,    3.646E+00,,     2.428
C,ZR-95   ,NO ,   -1.238E+00,    3.324E+00,    5.073E+00,,    -0.244
C,MO-99   ,NO ,    1.442E+01,    1.876E+01,    3.145E+01,,     0.459
C,RU-103  ,NO ,    1.924E+00,    1.866E+00,    3.122E+00,,     0.616
C,RU-106  ,NO ,    3.792E+00,    1.667E+01,    2.746E+01,,     0.138
C,AG-110m ,NO ,   -1.854E-02,    2.024E+00,    2.824E+00,,    -0.007
C,SN-113  ,NO ,    1.132E+00,    2.446E+00,    4.091E+00,,     0.277
C,SB-124  ,NO ,    2.475E+00,    4.069E+00,    3.078E+00,,     0.804
C,SB-125  ,NO ,    4.601E-01,    5.339E+00,    8.831E+00,,     0.052
C,TE-129M ,NO ,   -8.541E+00,    2.135E+01,    3.484E+01,,    -0.245
C,I-131   ,NO ,    1.503E-01,    2.110E+00,    3.519E+00,,     0.043
C,BA-133  ,NO ,    5.418E+01,    3.783E+00,    6.615E+00,,     8.191
C,CS-134  ,NO ,    6.835E+01,    3.697E+00,    6.268E+00,,    10.904
C,CS-136  ,NO ,    2.105E+00,    1.905E+00,    3.171E+00,,     0.664
C,CS-137  ,NO ,    3.883E+00,    2.299E+00,    3.412E+00,,     1.138
C,CE-139  ,NO ,    1.933E-01,    2.037E+00,    3.308E+00,,     0.058
C,BA-140  ,NO ,    2.208E-01,    6.978E+00,    1.138E+01,,     0.019
C,LA-140  ,NO ,   -4.947E-01,    2.309E+00,    3.727E+00,,    -0.133
C,CE-141  ,NO ,    2.048E+00,    4.043E+00,    5.655E+00,,     0.362
C,CE-144  ,NO ,   -5.144E+00,    1.751E+01,    2.429E+01,,    -0.212
C,EU-152  ,NO ,   -7.075E+00,    7.186E+00,    9.601E+00,,    -0.737
C,EU-154  ,NO ,   -4.207E+00,    4.021E+00,    6.525E+00,,    -0.645
C,TH-232  ,NO ,    2.879E+00,    7.793E+00,    1.210E+01,,     0.238
C,U-235   ,NO ,   -1.438E+01,    1.879E+01,    2.525E+01,,    -0.570
C,U-238   ,NO ,    2.491E+02,    2.011E+02,    3.444E+02,,     0.723
C,AM-241  ,NO ,    5.274E+01,    2.512E+01,    3.833E+01,,     1.376
```

Raw Data Sheet (rawdata)
May 04 2006, 01:28 pm

Work Order: *L28413* Customer: *Exelon*

Nuclide: *H-3* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28413-1		H-3					0		29-apr-06	LS5	115	60	1.9	60	.196		EJ
WG-BYR-042506-JK-02				10 ml					10:51								
Activity: 2.3E+00		Error: 1.16E+02	MDC: 1.91E+02 *														
L28413-2		H-3					0		29-apr-06	LS5	94	60	1.9	60	.202		EJ
WG-BYR-042506-JK-04				10 ml					11:54								
Activity: -7.58E+01		Error: 1.07E+02	MDC: 1.85E+02 *														
L28413-3		H-3					0		29-apr-06	LS5	96	60	1.9	60	.201		EJ
WG-BYR-042506-JK-06				10 ml					12:58								
Activity: -6.73E+01		Error: 1.08E+02	MDC: 1.86E+02 *														
L28413-4		H-3					0		29-apr-06	LS5	113	60	1.9	60	.197		EJ
WG-BYR-042506-JK-08				10 ml					14:02								
Activity: -4.59E+00		Error: 1.15E+02	MDC: 1.9E+02 *														
L28413-5		H-3					0		29-apr-06	LS5	111	60	1.9	60	.197		EJ
WG-BYR-042506-JK-10				10 ml					15:06								
Activity: -1.15E+01		Error: 1.15E+02	MDC: 1.9E+02 *														
L28413-6		H-3					0		29-apr-06	LS5	109	60	1.9	60	.2		EJ
WG-BYR-042506-JK-12				10 ml					16:10								
Activity: -1.8E+01		Error: 1.12E+02	MDC: 1.87E+02 *														
L28413-7		H-3					0		29-apr-06	LS5	98	60	1.9	60	.198		EJ
WG-BYR-042606-JK-14				10 ml					17:14								
Activity: -6.15E+01		Error: 1.1E+02	MDC: 1.89E+02 *														
L28413-8		H-3					0		29-apr-06	LS5	84	60	1.9	60	.202		EJ
WG-BYR-042606-JK-16				10 ml					18:17								
Activity: -1.12E+02		Error: 1.05E+02	MDC: 1.85E+02 *														
L28413-9		H-3					0		29-apr-06	LS5	97	60	1.9	60	.205		EJ
WG-BYR-042606-JK-18				10 ml					19:22								
Activity: -6.37E+01		Error: 1.06E+02	MDC: 1.82E+02 *														
L28413-10		H-3					0		29-apr-06	LS5	176	60	1.9	60	.2		EJ
WG-BYR-042606-JK-20				10 ml					20:26								
Activity: 2.34E+02 *		Error: 1.28E+02	MDC: 1.87E+02														
L28413-11		H-3					0		29-apr-06	LS5	228	60	1.9	60	.198		EJ
WG-BYR-042606-JK-22				10 ml					21:30								
Activity: 4.32E+02 *		Error: 1.4E+02	MDC: 1.89E+02														
L28413-12		H-3					0		29-apr-06	LS5	141	60	1.9	60	.202		EJ
WG-BYR-042606-JK-24				10 ml					22:33								
Activity: 1E+02		Error: 1.19E+02	MDC: 1.85E+02 *														

TELEDYNE
BROWN ENGINEERING
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931
865-690-6819 (Phone)

Work Order #: L28414

Revised 050806

Exelon

May 8, 2006

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

REVISED
5-8-06

Edward Steinke
Byron Station
Exelon Nuclear
4450 N. German Church Road
Byron IL 31010

Case Narrative - L28414
EX001-3ESPBYRON-06

05/08/2006 15:07

Sample Receipt

The following samples were received on April 27, 2006 in good condition, unless otherwise noted.

Samples WG-BYN-042606-SS-25 preserved was received at pH 3.

Sample L28414-16 was reanalyzed for tritium and the original results were confirmed. The report has been revised and both sets of results are included in this report.

Cross Reference Table

Client ID	Laboratory ID	Station ID(if applicable)
WG-BYR-042506-SS-01	L28414-1	
WG-BYR-042506-SS-03	L28414-2	
WG-BYR-042506-SS-05	L28414-3	
WG-BYR-042506-SS-07	L28414-4	
WG-BYR-042506-SS-09	L28414-5	
WG-BYR-042506-SS-09	L28414-6	
WG-BYR-042506-SS-09	L28414-7	
WG-BYR-042506-SS-11	L28414-8	
WG-BYR-042506-SS-13	L28414-9	
WG-BYR-042606-SS-15	L28414-10	
WG-BYR-042606-SS-17	L28414-11	
WG-BYR-042606-SS-19	L28414-12	
WG-BYR-042606-SS-21	L28414-13	
WG-BYR-042606-SS-23	L28414-14	
WG-BYR-042606-SS-25	L28414-15	
WG-BYR-042606-SS-27	L28414-16	

Analytical Method Cross Reference Table

Radiological Parameter	TBE Knoxville Method	Reference Method
Gamma Spectrometry	TBE-2007	EPA 901.1
H-3	TBE-2010	EPA 906.0
SAMPLE	NA	
SR-90 (FAST)	TBE-2018	EPA 905.0

TELEDYNE
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Knoxville, TN 37931-3133

Case Narrative - L28414
EX001-3ESPBYRON-06

05/08/2006 15:07

Gamma Spectroscopy

Quality Control

Quality control samples were analyzed as WG3909.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYR-042606-JK-20	L28413-10	WG3909-3

H-3

Confirm High result

Quality Control

Quality control samples were analyzed as WG3910,WG3918,WG3942.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYR-042606-JK-14	L28413-7	WG3910-3
WG-BYR-042506-SS-11	L28414-8	WG3918-3
GW-OYS-SW-3-042806-JAS-022	L28470-1	WG3942-3

TELEDYNE
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Case Narrative - L28414
EX001-3ESPBYRON-06

05/08/2006 15:07

SR-90

Quality Control

Quality control samples were analyzed as WG3931.

Method Blank
All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample
All laboratory control samples were within acceptance limits, unless otherwise noted.

Certification

This is to certify that Teledyne Brown Engineering - Environmental Services, located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Sample Receipt

04/27/06 14:37

SR #: SR08067

Client: Exelon

Teledyne Brown Engineering
Sample Receipt Verification/Variance Report

Project #: EX001-3ESPBYRON-06 LIMS #: L28414

Initiated By: PMARSHALL
Init Date: 04/27/06 Receive Date: 04/27/06

Notification of Variance

Person Notified: Kathy Shaw Contacted By: R. Charles
Notify Date: 4/27/06
Notify Method: email
Notify Comment:

Client Response

Person Responding:
Response Date:
Response Method:
Response Comment

	Criteria	Yes	No	NA	Comment
1	Shipping container custody seals present and intact.	Y			
2	Sample container custody seals present and intact.			NA	
3	Sample containers received in good condition	Y			
4	Chain of custody received with samples	Y			
5	All samples listed on chain of custody received	Y			
6	Sample container labels present and legible.	Y			
7	Information on container labels correspond with chain of custody	Y			
8	Sample(s) properly preserved and in appropriate container(s)		N		
	WG-BYN-042606-SS-25				pH 3
	WG-BYN-042606-SS-27				pH 3
9	Other (Describe)			NA	

L28414
5-30

CONESTOGA-ROVERS & ASSOCIATES
8615 W. Bryn Mawr Avenue
Chicago, Illinois 60631
(773)380-9933 phone
(773)380-6421 fax

SHIPPED TO (Laboratory Name): Teledyne Brown Engineering

REFERENCE NUMBER: 45136-21

PROJECT NAME: Exelon - Byron

CHAIN-OF-CUSTODY RECORD

SAMPLER'S SIGNATURE: David Tyran **PRINTED NAME:** David Tyran

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	Tritium	Radionuclides	REMARKS
	4/25/06	0950	WG-BYN-042506-SS-01	water	1	X		
		1250	WG-BYN-042506-SS-03		1	X		
		1400	WG-BYN-042506-SS-05		1	X		
		1425	WG-BYN-042506-SS-07		1	X		
		1550	WG-BYN-042506-SS-09		3	X		MS/MSD
		1710	WG-BYN-042506-SS-11		1	X		
		1825	WG-BYN-042506-SS-13		1	X		
	4/26/06	0725	RB-BYN-042606-SS-15	DI Water	1	X		
		0835	WG-BYN-042606-SS-17	Water	1	X		
		0835	WG-BYN-042606-SS-19		1	X		
		1030	WG-BYN-042606-SS-21		1	X		
		1055	WG-BYN-042606-SS-23		1	X		
		1309	WG-BYN-042606-SS-25		2	X	X	
		1510	WG-BYN-042606-SS-27		2	X	X	
			TOTAL NUMBER OF CONTAINERS		16			

RELINQUISHED BY: ① S'rana Spencer	DATE: 04/26/06 TIME: 1545	RECEIVED BY: ② Patrick C. Keane	DATE: 4/26/06 TIME: 1545
RELINQUISHED BY: ②	DATE: 4/26/06 TIME: 1930	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: FED EX **AIR BILL No.** 851383808581

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: David Tyran, S'rana Spencer

RECEIVED FOR LABORATORY BY: Pat Marshall DATE: 4/27/06 TIME: 1000

13632

1001-00(SOURCE)GN-CO004

L28414

Charles, Rebecca

From: Charles, Rebecca
Sent: Thursday, April 27, 2006 3:44 PM
To: 'Shaw, Kathy'; 'edward.steinke@exeloncorp.com'
Subject: acknowledgements

Please note the Sample receipt variance report. The lids were cracked on several containers and the pH of the cubitainers was 3.

Rebecca Charles
Teledyne Brown Engineering
Project Manager
(865) 934-0379
(865) 934-0396 (fax)

4/27/06

TELEDYNE BROWN ENGINEERING
2508 Quality Lane
Knoxville, TN 37931-3133

ACKNOWLEDGEMENT
This is not an invoice

April 27, 2006

Edward Steinke
Byron Station
Exelon Nuclear
4450 N. German Church Road
Byron, IL 31010

The following sample(s) were received at Teledyne Brown Engineering Knoxville laboratory on April 27, 2006. The sample(s) have been scheduled for the analyses listed below and the report is scheduled for completion by May 04, 2006. Please review the following login information and pricing. Contact me if anything is incorrect or you have questions about the status of your sample(s).

Thank you for choosing Teledyne Brown Engineering for your analytical needs.

Sincerely,
Rebecca Charles
Project Manager
(865)934-0379

Project ID: EX001-3ESPBYRON-06
P.O. #: TBE
Release #:
Contract#: 00411203
Edward Steinke, FAX#:815-234-3301, edward.steinke@exeloncorp.com
Kathy Shaw, FAX#:860-747-1900, kshaw@craworld.com

Client ID/ Station	Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG-BYR-042506-SS-01	**L28414-1**		**04/25/06:0950**	
WG	H-3	108.00		
WG-BYR-042506-SS-03	**L28414-2**		**04/25/06:1250**	
WG	H-3	108.00		
WG-BYR-042506-SS-05	**L28414-3**		**04/25/06:1400**	
WG	H-3	108.00		
WG-BYR-042506-SS-07	**L28414-4**		**04/25/06:1425**	
WG	H-3	108.00		
WG-BYR-042506-SS-09	**L28414-5**		**04/25/06:1550**	
WG	H-3	108.00		
WG-BYR-042506-SS-09 MS	**L28414-6**		**04/25/06:1550**	
WG	H-3	108.00		

Client ID/ Station		Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG-BYR-042506-SS-09		L28414-7		04/25/06:1550	
WG	MSD	H-3	108.00		
WG-BYR-042506-SS-11		L28414-8		04/26/06:1710	
WG		H-3	108.00		
WG-BYR-042506-SS-13		L28414-9		04/26/06:1825	
WG		H-3	108.00		
WG-BYR-042606-SS-15		L28414-10		04/26/06:0725	
WG		H-3	108.00		
WG-BYR-042606-SS-17		L28414-11		04/26/06:0835	
WG		H-3	108.00		
WG-BYR-042606-SS-19		L28414-12		04/26/06:0835	
WG		H-3	108.00		
WG-BYR-042606-SS-21		L28414-13		04/26/06:1030	
WG		H-3	108.00		
WG-BYR-042606-SS-23		L28414-14		04/26/06:1055	
WG		H-3	108.00		
WG-BYR-042606-SS-25		L28414-15		04/26/06:1309	
WG		GELI	108.00		
WG		H-3	108.00		
WG		SR-90 (FAST)	140.00		
WG-BYR-042606-SS-27		L28414-16		04/26/06:1510	
WG		GELI	108.00		
WG		H-3	108.00		
WG		SR-90 (FAST)	140.00		

End of document

Internal Chain of Custody

05/04/06 13:21 Teledyne Brown Engineering

Internal Chain of Custody

****

Sample # L28414-1 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-2 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-3 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-4 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-5 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-6 Containernum 1

Prod	Analyst
SAMPLE	

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-7 Containernum 1

Prod	Analyst
SAMPLE	

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian

****

Sample # L28414-8 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By	Received By	
04/27/2006 00:00		099999	Sample Custodian
05/01/2006 15:12	099999 Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964 Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-9 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-10 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-11 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-12 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-13 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-14 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-15 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
04/27/2006 13:17	030854	Donna Webb	029858	Marty Webb
04/27/2006 13:17	099999	Sample Custodian	030854	Donna Webb
04/28/2006 09:59	029858	Marty Webb	030854	Donna Webb
04/28/2006 09:59	030854	Donna Webb	099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-15 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-16 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian
04/27/2006 13:17	030854	Donna Webb	029858	Marty Webb
04/27/2006 13:17	099999	Sample Custodian	030854	Donna Webb
04/28/2006 09:59	029858	Marty Webb	030854	Donna Webb
04/28/2006 09:59	030854	Donna Webb	099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28414-16 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/27/2006 00:00			099999	Sample Custodian

****

Sample # L28414-16 Containernum 2

Relinquish Date			Received By	
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

05/04/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28414

****

L28414-1	WG	WG-BYR-042506-SS-01		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28414-2	WG	WG-BYR-042506-SS-03		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28414-3	WG	WG-BYR-042506-SS-05		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28414-4	WG	WG-BYR-042506-SS-07		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28414-5	WG	WG-BYR-042506-SS-09		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	04/28/06
Count Room	H-3		KOJ	04/29/06

****

L28414-6	WG	WG-BYR-042506-SS-09		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	SAMPLE			
Count Room	SAMPLE			

****

L28414-7	WG	WG-BYR-042506-SS-09		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	SAMPLE			
Count Room	SAMPLE			

****

L28414-8	WG	WG-BYR-042506-SS-11		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

05/04/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28414

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L28414-9	WG	WG-BYR-042506-SS-13		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

****

L28414-10	WG	WG-BYR-042606-SS-15		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

****

L28414-11	WG	WG-BYR-042606-SS-17		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

****

L28414-12	WG	WG-BYR-042606-SS-19		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

****

L28414-13	WG	WG-BYR-042606-SS-21		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

****

L28414-14	WG	WG-BYR-042606-SS-23		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3		EJ	05/02/06
Count Room	H-3		KOJ	05/03/06

****

L28414-15	WG	WG-BYR-042606-SS-25		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	GELI		DW	04/27/06
Aliquot	SR-90	(FAST)	GK	05/01/06
Aliquot	H-3		EJ	05/02/06
Count Room	GELI		MVW	04/27/06
Count Room	H-3		KOJ	05/03/06
Count Room	SR-90	(FAST)	KOJ	05/03/06

****

L28414-16 WG WG-BYR-042606-SS-27

05/04/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28414

L28414-16	**WG**	**WG-BYR-042606-SS-27**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	GELI		DW	04/27/06
Aliquot	SR-90	(FAST)	GK	05/01/06
Aliquot	H-3		EJ	05/02/06
Count Room	GELI		MVW	04/27/06
Count Room	H-3		KOJ	05/03/06
Count Room	SR-90	(FAST)	KOJ	05/03/06

****

L28414-16R1	**WG**	**WG-BYR-042606-SS-27**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/27/06
Aliquot	H-3			

Analytical Results and QC Summary

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28414

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042506-SS-01** Collect Start: 04/25/2006 09:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-1

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	1.03E+02	1.13E+02	**1.75E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-SS-03** Collect Start: 04/25/2006 12:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-2

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-2.25E+00	1.07E+02	**1.76E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-SS-05** Collect Start: 04/25/2006 14:00 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-3

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	9.21E+01	1.13E+02	**1.76E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-SS-07** Collect Start: 04/25/2006 14:25 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-4

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	2.90E+01	1.08E+02	**1.75E+02**	pCi/L		10	ml		04/29/06	60	M	U

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28414

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042506-SS-09** Collect Start: 04/25/2006 15:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-5

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	1.58E+02	1.17E+02	**1.76E+02**	pCi/L		10	ml		04/29/06	60	M	U

Sample ID: **WG-BYR-042506-SS-09** Collect Start: 04/25/2006 15:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-6

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
SAMPLE	NA												U

Comment: 1 MS cancelled per CRA

Sample ID: **WG-BYR-042506-SS-09** Collect Start: 04/25/2006 15:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-7

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
SAMPLE	NA												U

Comment: 1 MSD cancelled per CRA

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
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Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042506-SS-11** Collect Start: 04/26/2006 17:10 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-8

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	5.86E+01	1.04E+02	**1.65E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYR-042506-SS-13** Collect Start: 04/26/2006 18:25 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-9

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	2.05E+01	1.00E+02	**1.62E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYR-042606-SS-15** Collect Start: 04/26/2006 07:25 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-10

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-2.10E+00	1.01E+02	**1.66E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYR-042606-SS-17** Collect Start: 04/26/2006 08:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-11

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	8.35E+00	1.01E+02	**1.65E+02**	pCi/L		10	ml		05/03/06	60	M	U

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
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Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042606-SS-19** Collect Start: 04/26/2006 08:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-12

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	1.88E+01	1.02E+02	**1.65E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYR-042606-SS-21** Collect Start: 04/26/2006 10:30 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-13

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-4.14E+00	9.92E+01	**1.64E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYR-042606-SS-23** Collect Start: 04/26/2006 10:55 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-14

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	6.53E+01	1.02E+02	**1.61E+02**	pCi/L		10	ml		05/03/06	60	M	U

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

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Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042606-SS-25** Collect Start: 04/26/2006 13:09 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-15

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	-3.95E+01	9.71E+01	**1.65E+02**	pCi/L		10	ml		05/03/06	60	M	U		
TOTAL SR	2018	.00E+00	5.79E-01	**9.55E-01**	pCi/L		450	ml	04/26/06 13:09	05/03/06	200	M	U		
MN-54	2007	1.41E+00	2.07E+00	**2.94E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No
CO-58	2007	2.87E+00	2.01E+00	**2.94E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No
FE-59	2007	-7.55E-02	3.29E+00	**5.41E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No
CO-60	2007	1.19E+00	1.73E+00	**2.92E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No
ZN-65	2007	7.53E+01	5.75E+00	**1.07E+01**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U*		No
NB-95	2007	1.81E+01	2.25E+00	**3.82E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U*		No
ZR-95	2007	4.00E-02	3.09E+00	**4.84E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No
CS-134	2007	6.32E+01	3.09E+00	**5.39E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U*		No
CS-137	2007	3.85E+00	2.33E+00	**3.32E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U*		No
BA-140	2007	5.18E+00	6.36E+00	**1.07E+01**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No
LA-140	2007	2.17E+00	2.40E+00	**3.68E+00**	pCi/L		3068.35	ml	04/26/06 13:09	04/27/06	56971	Sec	U		No

Flag Values
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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:40

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

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Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042606-SS-27** Collect Start: 04/26/2006 15:10 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/27/2006 % Moisture:
LIMS Number: L28414-16

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	**2.34E+03**	2.82E+02	2.25E+02	pCi/L		10	ml		05/03/06	29.96	M	+	High	
H-3	2010	**2.34E+03**	2.82E+02	2.26E+02	pCi/L	R1	10	ml		05/08/06	30.05	M	+	High	
TOTAL SR	2018	-6.23E-02	5.65E-01	**9.37E-01**	pCi/L		450	ml	04/26/06 15:10	05/03/06	200	M	U		
MN-54	2007	-9.10E-01	1.61E+00	**2.61E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
CO-58	2007	4.31E-01	1.58E+00	**2.62E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
FE-59	2007	2.00E+00	3.05E+00	**5.15E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
CO-60	2007	5.26E-01	1.63E+00	**2.71E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
ZN-65	2007	7.61E+00	4.11E+00	**6.23E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U*		No
NB-95	2007	1.49E+00	1.60E+00	**2.72E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
ZR-95	2007	-4.81E+00	2.82E+00	**4.43E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
CS-134	2007	1.01E+01	3.81E+00	**3.30E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U*		No
CS-137	2007	-5.18E-01	2.00E+00	**2.97E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
BA-140	2007	1.77E+00	6.09E+00	**1.01E+01**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No
LA-140	2007	4.76E-01	1.96E+00	**3.26E+00**	pCi/L		3012.55	ml	04/26/06 15:10	04/27/06	56683	Sec	U		No

Flag Values
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\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
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L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
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MDC - Minimum Detectable Concentration

QC Results Summary

QC Summary Report for L28414

5/8/2006 3:15:11PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

H-3

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3910-1	H-3	WO	04/29/2006 1:43	< 1.780E+00	pCi/Total	U	P
WG3918-1		WO	05/03/2006 5:55	< 1.670E+00	pCi/Total	U	P
WG3942-1		WO	05/05/2006 20:41	< 1.630E+00	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3910-2	H-3	WO	04/29/2006 2:47	5.05E+002	4.900E+02	pCi/Total	97.1	70-130	+	P
Spike ID: 3H-041706-1 Spike conc: 5.05E+002 Spike Vol: 1.00E+000 WG3918-2		WO	05/03/2006 6:59	5.05E+002	5.050E+02	pCi/Total	100.0	70-130	+	P
Spike ID: 3H-041706-1 Spike conc: 5.05E+002 Spike Vol: 1.00E+000 WG3942-2		WO	05/05/2006 23:00	5.05E+002	4.850E+02	pCi/Total	96.1	70-130	+	P
Spike ID: 3H-041706-1 Spike conc: 5.05E+002 Spike Vol: 1.00E+000										

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28414

5/8/2006 3:15:11PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

H-3

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3910-3 L28413-7	H-3	WG	04/29/2006 2:59	< 1.890E+02	< 1.770E+02	pCi/L		<30	**	NE
WG3942-3 L28470-1		WG	05/06/2006 1:18	< 1.610E+02	< 1.650E+02	pCi/L		<30	**	NE
WG3918-3 L28414-8		WG	05/03/2006 7:09	< 1.650E+02	< 1.660E+02	pCi/L		<30	**	NE

L28414 **H-3**

Associated Samples for **WG3918**

SAMPLENUM	CLIENTID
L28414-8	WG-BYR-042506-SS-11
L28414-9	WG-BYR-042506-SS-13
L28414-10	WG-BYR-042606-SS-15
L28414-11	WG-BYR-042606-SS-17
L28414-12	WG-BYR-042606-SS-19
L28414-13	WG-BYR-042606-SS-21
L28414-14	WG-BYR-042606-SS-23
L28414-15	WG-BYR-042606-SS-25
L28414-16	WG-BYR-042606-SS-27

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28414

5/8/2006 3:15:11PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

SR-90

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3931-1	SR-90	WO	05/03/2006 21:10	< 6.130E-01	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3931-2	SR-90	WO	05/03/2006 21:10	5.84E+001	5.090E+01	pCi/Total	87.2	70-130	+	P

Spike ID: 90SR-011905
Spike conc: 2.34E+002
Spike Vol: 2.50E-001

L28414 SR-90 (FAST)

Associated Samples for WG3931

SAMPLENUM	CLIENTID
L28414-15	WG-BYR-042606-SS-25
L28414-16	WG-BYR-042606-SS-27

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28414

5/8/2006 3:15:11PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

TOTAL SR

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3931-3 L28413-10	TOTAL SR	WG	05/04/2006 14:20	< 1.040E+00	< 1.890E+00	pCi/L		<30	**	NE

L28414 **SR-90 (FAST)**

Associated Samples for **WG3931**

SAMPLENUM	CLIENTID
L28414-15	WG-BYR-042606-SS-25
L28414-16	WG-BYR-042606-SS-27

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

Sec. Review: KG Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 08:17:34.95
TBE13 P-10727B HpGe ********** Aquisition Date/Time: 27-APR-2006 16:27:21.21

LIMS No., Customer Name, Client ID: WG L28414-15 EXELON BYRON

Sample ID : 13L28414-15
Sample Type : WG
Quantity : 3.06840E+00 L
Start Channel : 25 Energy Tol : 1.50000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 26-APR-2006 13:09:00.
Geometry : 133L082404
BKGFILE : 13BG041406MT
Real Time : 0 15:50:00.77
Live time : 0 15:49:30.77

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	46.48*	173	2677	1.45	92.95	1.58E-01	3.04E-03	53.1	8.69E-01
2	1	63.45*	70	4524	1.03	126.87	7.13E-01	1.23E-03	174.8	1.40E+00
3	3	74.94*	989	3593	0.83	149.83	1.17E+00	1.74E-02	10.4	9.56E+00
4	3	77.17*	2675	2934	0.82	154.27	1.25E+00	4.69E-02	3.9	
5	6	84.81*	12	4054	1.54	169.54	1.51E+00	2.08E-04	*****	1.74E+00
6	6	87.23*	1270	2675	0.99	174.38	1.59E+00	2.23E-02	7.4	
7	6	89.80	613	2640	0.95	179.52	1.66E+00	1.08E-02	13.9	
8	6	92.66*	54	2613	1.07	185.23	1.74E+00	9.42E-04	179.5	
9	1	139.85*	420	3043	0.83	279.54	2.27E+00	7.38E-03	22.1	2.54E+00
10	1	185.71*	157	3789	1.12	371.19	2.18E+00	2.76E-03	75.8	1.39E+00
11	1	198.34*	309	2823	0.96	396.42	2.12E+00	5.42E-03	30.8	1.93E+00
12	3	238.74*	101	2419	1.28	477.18	1.94E+00	1.77E-03	92.0	1.72E+00
13	3	241.95	3152	1752	1.03	483.59	1.92E+00	5.53E-02	2.8	
14	1	258.58	329	2223	1.50	516.82	1.85E+00	5.77E-03	26.4	1.83E+00
15	1	295.16*	6853	2652	1.07	589.94	1.70E+00	1.20E-01	2.0	5.50E-01
16	1	351.84*	11792	1854	1.11	703.23	1.51E+00	2.07E-01	1.2	1.61E+00
17	1	595.74	128	689	1.20	1190.85	1.02E+00	2.25E-03	37.9	2.55E+00
18	1	609.25*	9412	963	1.33	1217.86	1.01E+00	1.65E-01	1.3	1.01E+00
19	1	665.51	228	557	1.38	1330.35	9.40E-01	4.00E-03	19.9	1.21E+00
20	1	720.34	131	373	1.68	1440.01	8.84E-01	2.30E-03	27.1	1.27E+00
21	1	768.39	922	734	1.50	1536.10	8.41E-01	1.62E-02	7.1	5.43E-01
22	1	786.13	216	455	1.43	1571.57	8.26E-01	3.79E-03	20.3	2.36E+00
23	1	806.94	277	598	2.16	1613.20	8.09E-01	4.87E-03	20.4	5.86E+00
24	1	839.33	120	506	2.37	1677.97	7.85E-01	2.11E-03	37.4	1.87E+00
25	1	934.41	471	549	1.78	1868.16	7.22E-01	8.26E-03	11.5	2.46E+00
26	1	1120.56*	2105	492	1.81	2240.57	6.26E-01	3.69E-02	3.5	1.43E+00
27	1	1155.14	235	427	1.88	2309.76	6.12E-01	4.12E-03	20.3	2.58E+00
28	1	1238.29*	758	327	2.00	2476.12	5.80E-01	1.33E-02	6.7	2.79E+00
29	1	1281.14	196	306	2.34	2561.86	5.66E-01	3.43E-03	19.9	1.14E+00
30	1	1378.18	533	361	2.23	2756.07	5.36E-01	9.36E-03	9.3	2.12E+00
31	1	1386.08	120	202	2.24	2771.88	5.34E-01	2.10E-03	25.8	1.93E+00
32	1	1401.77	166	219	2.05	2803.29	5.30E-01	2.92E-03	19.6	1.41E+00
33	1	1408.64	313	333	2.32	2817.03	5.28E-01	5.49E-03	15.1	2.20E+00
34	1	1509.56	318	205	2.47	3019.04	5.03E-01	5.58E-03	10.8	4.63E-01
35	1	1540.73	219	353	1.70	3081.44	4.96E-01	3.84E-03	19.3	3.90E+01
36	1	1583.72	78	232	2.72	3167.48	4.87E-01	1.37E-03	42.8	1.45E+00
37	1	1661.72	88	185	1.97	3323.64	4.72E-01	1.54E-03	33.5	9.83E-01
38	1	1729.99	408	158	2.19	3460.32	4.60E-01	7.17E-03	8.5	6.45E-01
39	1	1764.87*	1756	171	2.24	3530.16	4.55E-01	3.08E-02	3.0	2.14E+00
40	1	1848.04	216	146	2.34	3696.70	4.43E-01	3.78E-03	14.6	1.09E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
RA-226	186.21	157	3.28*	2.179E+00	3.400E+01	3.400E+01	151.58
TH-228	238.63	101	44.60*	1.938E+00	1.799E+00	1.802E+00	183.94
	240.98	3152	3.95	1.923E+00	6.416E+02	6.426E+02	5.52
U-235	143.76	------	10.50*	2.278E+00	------	Line Not Found	------
	163.35	------	4.70	2.256E+00	------	Line Not Found	------
	185.71	157	54.00	2.179E+00	2.065E+00	2.065E+00	151.58
	205.31	------	4.70	2.093E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 13L28414-15

Acquisition date : 27-APR-2006 16:27:21

Total number of lines in spectrum	40	
Number of unidentified lines	36	
Number of lines tentatively identified by NID	4	10.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	3.400E+01	3.400E+01	5.154E+01	151.58	
TH-228	1.91Y	1.00	1.799E+00	1.802E+00	3.315E+00	183.94	
U-235	7.04E+08Y	1.00	2.065E+00	2.065E+00	3.131E+00	151.58	K
			---------	---------			
	Total Activity :		3.787E+01	3.787E+01			
	Grand Total Activity :		3.787E+01	3.787E+01			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 13L28414-15

Acquisition date : 27-APR-2006 16:27:21

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	46.48	173	2677	1.45	92.95	90	7	3.04E-03	****	1.58E-01	
1	63.45	70	4524	1.03	126.87	123	8	1.23E-03	****	7.13E-01	
3	74.94	989	3593	0.83	149.83	146	12	1.74E-02	20.8	1.17E+00	
3	77.17	2675	2934	0.82	154.27	146	12	4.69E-02	7.8	1.25E+00	
6	84.81	12	4054	1.54	169.54	165	25	2.08E-04	****	1.51E+00	
6	87.23	1270	2675	0.99	174.38	165	25	2.23E-02	14.8	1.59E+00	
6	89.80	613	2640	0.95	179.52	165	25	1.08E-02	27.8	1.66E+00	
6	92.66	54	2613	1.07	185.23	165	25	9.42E-04	****	1.74E+00	
1	139.85	420	3043	0.83	279.54	277	6	7.38E-03	44.2	2.27E+00	
1	198.34	309	2823	0.96	396.42	393	7	5.42E-03	61.6	2.12E+00	
1	258.58	329	2223	1.50	516.82	512	9	5.77E-03	52.8	1.85E+00	
1	295.16	6853	2652	1.07	589.94	584	12	1.20E-01	3.9	1.70E+00	
1	351.84	11792	1854	1.11	703.23	699	11	2.07E-01	2.4	1.51E+00	
1	595.74	128	689	1.20	1190.85	1186	9	2.25E-03	75.8	1.02E+00	
1	609.25	9412	963	1.33	1217.86	1211	14	1.65E-01	2.6	1.01E+00	
1	665.51	228	557	1.38	1330.35	1326	9	4.00E-03	39.8	9.40E-01	
1	720.34	131	373	1.68	1440.01	1436	8	2.30E-03	54.2	8.84E-01	
1	768.39	922	734	1.50	1536.10	1529	14	1.62E-02	14.1	8.41E-01	
1	786.13	216	455	1.43	1571.57	1565	11	3.79E-03	40.6	8.26E-01	
1	806.94	277	598	2.16	1613.20	1606	15	4.87E-03	40.8	8.09E-01	
1	839.33	120	506	2.37	1677.97	1673	11	2.11E-03	74.9	7.85E-01	
1	934.41	471	549	1.78	1868.16	1861	14	8.26E-03	23.0	7.22E-01	
1	1120.56	2105	492	1.81	2240.57	2230	19	3.69E-02	7.0	6.26E-01	
1	1155.14	235	427	1.88	2309.76	2303	15	4.12E-03	40.5	6.12E-01	
1	1238.29	758	327	2.00	2476.12	2469	15	1.33E-02	13.3	5.80E-01	
1	1281.14	196	306	2.34	2561.86	2557	13	3.43E-03	39.8	5.66E-01	
1	1378.18	533	361	2.23	2756.07	2749	17	9.36E-03	18.7	5.36E-01	
1	1386.08	120	202	2.24	2771.88	2767	12	2.10E-03	51.5	5.34E-01	
1	1401.77	166	219	2.05	2803.29	2797	12	2.92E-03	39.1	5.30E-01	
1	1408.64	313	333	2.32	2817.03	2811	18	5.49E-03	30.2	5.28E-01	T
1	1509.56	318	205	2.47	3019.04	3013	13	5.58E-03	21.7	5.03E-01	
1	1540.73	219	353	1.70	3081.44	3074	16	3.84E-03	38.7	4.96E-01	
1	1583.72	78	232	2.72	3167.48	3162	14	1.37E-03	85.6	4.87E-01	
1	1661.72	88	185	1.97	3323.64	3316	13	1.54E-03	67.0	4.72E-01	
1	1729.99	408	158	2.19	3460.32	3453	16	7.17E-03	17.1	4.60E-01	
1	1764.87	1756	171	2.24	3530.16	3522	17	3.08E-02	6.1	4.55E-01	
1	1848.04	216	146	2.34	3696.70	3689	17	3.78E-03	29.3	4.43E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	40	
Number of unidentified lines	36	
Number of lines tentatively identified by NID	4	10.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	3.400E+01	3.400E+01	5.154E+01	151.58	
TH-228	1.91Y	1.00	1.799E+00	1.802E+00	3.315E+00	183.94	
			---------	---------			
	Total Activity :		3.580E+01	3.580E+01			

Grand Total Activity : 3.580E+01 3.580E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
RA-226	3.400E+01	5.154E+01	7.348E+01	0.000E+00	0.463
TH-228	1.802E+00	3.315E+00	5.438E+00	0.000E+00	0.331

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	1.232E+01		1.477E+01	2.444E+01	0.000E+00	0.504
NA-24	-2.537E+00		1.064E+01	1.454E+01	0.000E+00	-0.174
K-40	-3.290E+01		2.420E+01	4.083E+01	0.000E+00	-0.806
CR-51	-1.652E+01		1.523E+01	2.441E+01	0.000E+00	-0.677
MN-54	1.413E+00		2.073E+00	2.944E+00	0.000E+00	0.480
CO-57	-4.414E-01		1.685E+00	2.805E+00	0.000E+00	-0.157
CO-58	2.873E+00		2.014E+00	2.940E+00	0.000E+00	0.977
FE-59	-7.548E-02		3.287E+00	5.406E+00	0.000E+00	-0.014
CO-60	1.193E+00		1.728E+00	2.918E+00	0.000E+00	0.409
ZN-65	7.532E+01		5.753E+00	1.070E+01	0.000E+00	7.042
SE-75	-1.777E+00		2.766E+00	3.851E+00	0.000E+00	-0.462
SR-85	1.726E+01		1.876E+00	3.451E+00	0.000E+00	5.002
Y-88	1.646E+00		2.047E+00	2.997E+00	0.000E+00	0.549
NB-94	2.489E-01		1.649E+00	2.693E+00	0.000E+00	0.092
NB-95	1.813E+01		2.252E+00	3.824E+00	0.000E+00	4.742
ZR-95	3.995E-02		3.086E+00	4.839E+00	0.000E+00	0.008
MO-99	1.301E+01		1.775E+01	2.999E+01	0.000E+00	0.434
RU-103	1.657E+00		1.698E+00	2.812E+00	0.000E+00	0.589
RU-106	-1.167E+01		1.521E+01	2.462E+01	0.000E+00	-0.474
AG-110m	9.067E-01		1.911E+00	2.681E+00	0.000E+00	0.338
SN-113	2.882E+00		2.288E+00	3.860E+00	0.000E+00	0.747
SB-124	-2.068E+00		3.823E+00	2.711E+00	0.000E+00	-0.763
SB-125	1.423E+00		5.045E+00	8.341E+00	0.000E+00	0.171
TE-129M	1.004E+01		1.963E+01	3.241E+01	0.000E+00	0.310
I-131	-9.639E-01		1.905E+00	3.150E+00	0.000E+00	-0.306
BA-133	4.712E+01		3.181E+00	5.608E+00	0.000E+00	8.402
CS-134	6.320E+01		3.093E+00	5.392E+00	0.000E+00	11.722
CS-136	-1.059E+00		1.934E+00	2.909E+00	0.000E+00	-0.364
CS-137	3.853E+00		2.325E+00	3.320E+00	0.000E+00	1.160
CE-139	-1.618E+00		1.834E+00	2.979E+00	0.000E+00	-0.543
BA-140	5.180E+00		6.355E+00	1.073E+01	0.000E+00	0.483
LA-140	2.166E+00		2.400E+00	3.683E+00	0.000E+00	0.588

CE-141	1.361E+00	3.469E+00	5.153E+00	0.000E+00	0.264
CE-144	6.747E+00	1.447E+01	2.238E+01	0.000E+00	0.302
EU-152	-1.329E+01	6.530E+00	8.942E+00	0.000E+00	-1.487
EU-154	-1.082E+00	3.561E+00	5.922E+00	0.000E+00	-0.183
AC-228	-3.988E+00	7.242E+00	1.102E+01	0.000E+00	-0.362
TH-232	-3.986E+00	7.239E+00	1.101E+01	0.000E+00	-0.362
U-235	-1.149E+01	1.670E+01	2.304E+01	0.000E+00	-0.499
U-238	1.848E+02	2.036E+02	3.339E+02	0.000E+00	0.553
AM-241	2.488E+01	1.678E+01	2.464E+01	0.000E+00	1.010

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A,13L28414-15      ,04/28/2006 08:17,04/26/2006 13:09,   3.068E+00,WG L28414-15 E
B,13L28414-15      ,LIBD                ,08/05/2005 08:16,133L082404
C,RA-226   ,YES,    3.400E+01,   5.154E+01,   7.348E+01,,     0.463
C,TH-228   ,YES,    1.802E+00,   3.315E+00,   5.438E+00,,     0.331
C,BE-7     ,NO ,    1.232E+01,   1.477E+01,   2.444E+01,,     0.504
C,NA-24    ,NO ,   -2.537E+00,   1.064E+01,   1.454E+01,,    -0.174
C,K-40     ,NO ,   -3.290E+01,   2.420E+01,   4.083E+01,,    -0.806
C,CR-51    ,NO ,   -1.652E+01,   1.523E+01,   2.441E+01,,    -0.677
C,MN-54    ,NO ,    1.413E+00,   2.073E+00,   2.944E+00,,     0.480
C,CO-57    ,NO ,   -4.414E-01,   1.685E+00,   2.805E+00,,    -0.157
C,CO-58    ,NO ,    2.873E+00,   2.014E+00,   2.940E+00,,     0.977
C,FE-59    ,NO ,   -7.548E-02,   3.287E+00,   5.406E+00,,    -0.014
C,CO-60    ,NO ,    1.193E+00,   1.728E+00,   2.918E+00,,     0.409
C,ZN-65    ,NO ,    7.532E+01,   5.753E+00,   1.070E+01,,     7.042
C,SE-75    ,NO ,   -1.777E+00,   2.766E+00,   3.851E+00,,    -0.462
C,SR-85    ,NO ,    1.726E+01,   1.876E+00,   3.451E+00,,     5.002
C,Y-88     ,NO ,    1.646E+00,   2.047E+00,   2.997E+00,,     0.549
C,NB-94    ,NO ,    2.489E-01,   1.649E+00,   2.693E+00,,     0.092
C,NB-95    ,NO ,    1.813E+01,   2.252E+00,   3.824E+00,,     4.742
C,ZR-95    ,NO ,    3.995E-02,   3.086E+00,   4.839E+00,,     0.008
C,MO-99    ,NO ,    1.301E+01,   1.775E+01,   2.999E+01,,     0.434
C,RU-103   ,NO ,    1.657E+00,   1.698E+00,   2.812E+00,,     0.589
C,RU-106   ,NO ,   -1.167E+01,   1.521E+01,   2.462E+01,,    -0.474
C,AG-110m  ,NO ,    9.067E-01,   1.911E+00,   2.681E+00,,     0.338
C,SN-113   ,NO ,    2.882E+00,   2.288E+00,   3.860E+00,,     0.747
C,SB-124   ,NO ,   -2.068E+00,   3.823E+00,   2.711E+00,,    -0.763
C,SB-125   ,NO ,    1.423E+00,   5.045E+00,   8.341E+00,,     0.171
C,TE-129M  ,NO ,    1.004E+01,   1.963E+01,   3.241E+01,,     0.310
C,I-131    ,NO ,   -9.639E-01,   1.905E+00,   3.150E+00,,    -0.306
C,BA-133   ,NO ,    4.712E+01,   3.181E+00,   5.608E+00,,     8.402
C,CS-134   ,NO ,    6.320E+01,   3.093E+00,   5.392E+00,,    11.722
C,CS-136   ,NO ,   -1.059E+00,   1.934E+00,   2.909E+00,,    -0.364
C,CS-137   ,NO ,    3.853E+00,   2.325E+00,   3.320E+00,,     1.160
C,CE-139   ,NO ,   -1.618E+00,   1.834E+00,   2.979E+00,,    -0.543
C,BA-140   ,NO ,    5.180E+00,   6.355E+00,   1.073E+01,,     0.483
C,LA-140   ,NO ,    2.166E+00,   2.400E+00,   3.683E+00,,     0.588
C,CE-141   ,NO ,    1.361E+00,   3.469E+00,   5.153E+00,,     0.264
C,CE-144   ,NO ,    6.747E+00,   1.447E+01,   2.238E+01,,     0.302
C,EU-152   ,NO ,   -1.329E+01,   6.530E+00,   8.942E+00,,    -1.487
C,EU-154   ,NO ,   -1.082E+00,   3.561E+00,   5.922E+00,,    -0.183
C,AC-228   ,NO ,   -3.988E+00,   7.242E+00,   1.102E+01,,    -0.362
C,TH-232   ,NO ,   -3.986E+00,   7.239E+00,   1.101E+01,,    -0.362
C,U-235    ,NO ,   -1.149E+01,   1.670E+01,   2.304E+01,,    -0.499
C,U-238    ,NO ,    1.848E+02,   2.036E+02,   3.339E+02,,     0.553
C,AM-241   ,NO ,    2.488E+01,   1.678E+01,   2.464E+01,,     1.010
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Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 08:12:59.88
TBE14 P-10933A HpGe ********** Aquisition Date/Time: 27-APR-2006 16:28:01.54

LIMS No., Customer Name, Client ID: WG L28414-16 EXELON BYRON

Sample ID : 14L28414-16
Sample Type : WG
Quantity : 3.01260E+00 L
Start Channel : 90 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 26-APR-2006 15:10:00.
Geometry : 143L082304
BKGFILE : 14BG041406MT
Real Time : 0 15:44:52.27
Live time : 0 15:44:42.98

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.09*	441	2244	1.49	133.31	5.05E-01	7.78E-03	21.6	2.24E+00
2	1	92.63*	52	2196	1.71	186.59	1.28E+00	9.15E-04	191.6	1.21E+00
3	1	139.76	543	1806	1.64	281.18	1.89E+00	9.59E-03	15.2	9.65E-01
4	1	175.19	329	1295	2.46	352.27	1.90E+00	5.81E-03	19.4	4.85E+00
5	1	198.37*	358	1906	1.47	398.77	1.83E+00	6.31E-03	26.3	9.43E-01
6	2	238.58*	133	1199	1.65	479.41	1.68E+00	2.34E-03	55.7	1.44E+00
7	2	241.85	285	1151	1.71	485.97	1.66E+00	5.03E-03	23.5	
8	1	295.47*	325	1099	1.99	593.43	1.46E+00	5.74E-03	22.7	3.78E+00
9	1	351.97*	533	733	1.66	706.65	1.28E+00	9.40E-03	12.2	2.13E+00
10	1	583.13*	12	345	1.99	1169.23	8.62E-01	2.13E-04	364.4	6.25E-01
11	1	595.93	161	496	1.66	1194.83	8.48E-01	2.85E-03	28.7	7.32E-01
12	1	609.17*	313	420	1.52	1221.30	8.34E-01	5.52E-03	16.4	1.91E+00
13	1	1120.24*	53	183	2.30	2240.64	5.30E-01	9.42E-04	63.1	6.69E-01
14	1	1730.48	38	87	3.36	3452.15	3.85E-01	6.71E-04	56.1	1.53E+00
15	1	1766.17	162	100	2.49	3522.83	3.79E-01	2.85E-03	16.4	1.43E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
TH-228	238.63	133	44.60*	1.675E+00	2.811E+00	2.815E+00	111.46
	240.98	285	3.95	1.662E+00	6.879E+01	6.889E+01	46.91

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 14L28414-16

Acquisition date : 27-APR-2006 16:28:01

Total number of lines in spectrum	15	
Number of unidentified lines	12	
Number of lines tentatively identified by NID	3	20.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-228	1.91Y	1.00	2.811E+00	2.815E+00	3.137E+00	111.46	
	Total Activity :		2.811E+00	2.815E+00			
	Grand Total Activity :		2.811E+00	2.815E+00			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 14L28414-16

Acquisition date : 27-APR-2006 16:28:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.09	441	2244	1.49	133.31	129	10	7.78E-03	43.1	5.05E-01	
1	92.63	52	2196	1.71	186.59	181	11	9.15E-04	****	1.28E+00	
1	139.76	543	1806	1.64	281.18	276	10	9.59E-03	30.5	1.89E+00	
1	175.19	329	1295	2.46	352.27	350	8	5.81E-03	38.9	1.90E+00	
1	198.37	358	1906	1.47	398.77	393	12	6.31E-03	52.5	1.83E+00	
1	295.47	325	1099	1.99	593.43	588	12	5.74E-03	45.4	1.46E+00	
1	351.97	533	733	1.66	706.65	702	11	9.40E-03	24.4	1.28E+00	
1	583.13	12	345	1.99	1169.23	1165	10	2.13E-04	****	8.62E-01	T
1	595.93	161	496	1.66	1194.83	1190	12	2.85E-03	57.4	8.48E-01	
1	609.17	313	420	1.52	1221.30	1216	11	5.52E-03	32.7	8.34E-01	
1	1120.24	53	183	2.30	2240.64	2235	12	9.42E-04	****	5.30E-01	
1	1730.48	38	87	3.36	3452.15	3446	15	6.71E-04	****	3.85E-01	
1	1766.17	162	100	2.49	3522.83	3515	17	2.85E-03	32.8	3.79E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	15	
Number of unidentified lines	12	
Number of lines tentatively identified by NID	3	20.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-228	1.91Y	1.00	2.811E+00	2.815E+00	3.137E+00	111.46	
	Total Activity :		2.811E+00	2.815E+00			

Grand Total Activity : 2.811E+00 2.815E+00

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
TH-228	2.815E+00	3.137E+00	4.713E+00	0.000E+00	0.597

---- Non-Identified Nuclides ----

	Key-Line Activity	K.L.	Act error	MDA	MDA error	Act/MDA

Nuclide	(pCi/L)	Ided		(pCi/L)		
BE-7	-1.034E+01	1.342E+01	2.188E+01	0.000E+00	-0.473	
NA-24	-8.720E+00	7.725E+00	1.199E+01	0.000E+00	-0.727	
K-40	1.652E+02	2.117E+01	4.275E+01	0.000E+00	3.863	
CR-51	-2.036E+01	1.377E+01	2.208E+01	0.000E+00	-0.922	
MN-54	-9.100E-01	1.613E+00	2.611E+00	0.000E+00	-0.349	
CO-57	3.632E-01	1.627E+00	2.708E+00	0.000E+00	0.134	
CO-58	4.314E-01	1.577E+00	2.623E+00	0.000E+00	0.164	
FE-59	1.997E+00	3.045E+00	5.150E+00	0.000E+00	0.388	
CO-60	5.258E-01	1.634E+00	2.707E+00	0.000E+00	0.194	
ZN-65	7.610E+00	4.113E+00	6.231E+00	0.000E+00	1.221	
SE-75	7.816E-01	2.058E+00	3.437E+00	0.000E+00	0.227	
SR-85	1.914E+01	1.848E+00	3.579E+00	0.000E+00	5.347	
Y-88	-7.679E-01	1.762E+00	2.808E+00	0.000E+00	-0.274	
NB-94	2.259E+00	1.636E+00	2.755E+00	0.000E+00	0.820	
NB-95	1.487E+00	1.603E+00	2.721E+00	0.000E+00	0.546	
ZR-95	-4.811E+00	2.817E+00	4.434E+00	0.000E+00	-1.085	
MO-99	-4.227E+00	1.683E+01	2.771E+01	0.000E+00	-0.153	
RU-103	4.640E-01	1.650E+00	2.748E+00	0.000E+00	0.169	
RU-106	1.037E+00	1.515E+01	2.450E+01	0.000E+00	0.042	
AG-110m	4.989E-01	1.609E+00	2.645E+00	0.000E+00	0.189	
SN-113	1.081E+00	2.072E+00	3.416E+00	0.000E+00	0.316	
SB-124	6.759E-01	3.817E+00	2.707E+00	0.000E+00	0.250	
SB-125	-8.443E-01	4.660E+00	7.537E+00	0.000E+00	-0.112	
TE-129M	3.798E+00	1.852E+01	3.090E+01	0.000E+00	0.123	
I-131	4.497E-01	1.828E+00	3.006E+00	0.000E+00	0.150	
BA-133	8.746E+00	2.739E+00	4.112E+00	0.000E+00	2.127	
CS-134	1.005E+01	3.812E+00	3.298E+00	0.000E+00	3.047	
CS-136	-1.682E+00	1.647E+00	2.628E+00	0.000E+00	-0.640	
CS-137	-5.182E-01	1.998E+00	2.969E+00	0.000E+00	-0.175	
CE-139	5.972E-01	1.582E+00	2.569E+00	0.000E+00	0.232	
BA-140	1.765E+00	6.092E+00	1.011E+01	0.000E+00	0.175	
LA-140	4.761E-01	1.961E+00	3.263E+00	0.000E+00	0.146	
CE-141	3.509E+00	3.172E+00	4.541E+00	0.000E+00	0.773	
CE-144	-5.269E+00	1.445E+01	2.018E+01	0.000E+00	-0.261	
EU-152	-7.039E+00	6.025E+00	8.080E+00	0.000E+00	-0.871	
EU-154	8.286E-02	3.415E+00	5.668E+00	0.000E+00	0.015	
RA-226	-6.257E+00	4.379E+01	6.554E+01	0.000E+00	-0.095	
AC-228	-2.041E+00	6.836E+00	1.025E+01	0.000E+00	-0.199	
TH-232	-2.040E+00	6.833E+00	1.024E+01	0.000E+00	-0.199	
U-235	2.708E+01	1.446E+01	2.099E+01	0.000E+00	1.290	
U-238	1.480E+02	1.809E+02	3.028E+02	0.000E+00	0.489	
AM-241	-7.084E+00	2.554E+01	3.547E+01	0.000E+00	-0.200	

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A,14L28414-16     ,04/28/2006 08:13,04/26/2006 15:10,   3.013E+00,WG L28414-16 E
B,14L28414-16     ,LIBD                ,06/22/2005 08:57,143L082304
C,TH-228   ,YES,   2.815E+00,   3.137E+00,   4.713E+00,,    0.597
C,BE-7     ,NO ,  -1.034E+01,   1.342E+01,   2.188E+01,,   -0.473
C,NA-24    ,NO ,  -8.720E+00,   7.725E+00,   1.199E+01,,   -0.727
C,K-40     ,NO ,   1.652E+02,   2.117E+01,   4.275E+01,,    3.863
C,CR-51    ,NO ,  -2.036E+01,   1.377E+01,   2.208E+01,,   -0.922
C,MN-54    ,NO ,  -9.100E-01,   1.613E+00,   2.611E+00,,   -0.349
C,CO-57    ,NO ,   3.632E-01,   1.627E+00,   2.708E+00,,    0.134
C,CO-58    ,NO ,   4.314E-01,   1.577E+00,   2.623E+00,,    0.164
C,FE-59    ,NO ,   1.997E+00,   3.045E+00,   5.150E+00,,    0.388
C,CO-60    ,NO ,   5.258E-01,   1.634E+00,   2.707E+00,,    0.194
C,ZN-65    ,NO ,   7.610E+00,   4.113E+00,   6.231E+00,,    1.221
C,SE-75    ,NO ,   7.816E-01,   2.058E+00,   3.437E+00,,    0.227
C,SR-85    ,NO ,   1.914E+01,   1.848E+00,   3.579E+00,,    5.347
C,Y-88     ,NO ,  -7.679E-01,   1.762E+00,   2.808E+00,,   -0.274
C,NB-94    ,NO ,   2.259E+00,   1.636E+00,   2.755E+00,,    0.820
C,NB-95    ,NO ,   1.487E+00,   1.603E+00,   2.721E+00,,    0.546
C,ZR-95    ,NO ,  -4.811E+00,   2.817E+00,   4.434E+00,,   -1.085
C,MO-99    ,NO ,  -4.227E+00,   1.683E+01,   2.771E+01,,   -0.153
C,RU-103   ,NO ,   4.640E-01,   1.650E+00,   2.748E+00,,    0.169
C,RU-106   ,NO ,   1.037E+00,   1.515E+01,   2.450E+01,,    0.042
C,AG-110m  ,NO ,   4.989E-01,   1.609E+00,   2.645E+00,,    0.189
C,SN-113   ,NO ,   1.081E+00,   2.072E+00,   3.416E+00,,    0.316
C,SB-124   ,NO ,   6.759E-01,   3.817E+00,   2.707E+00,,    0.250
C,SB-125   ,NO ,  -8.443E-01,   4.660E+00,   7.537E+00,,   -0.112
C,TE-129M  ,NO ,   3.798E+00,   1.852E+01,   3.090E+01,,    0.123
C,I-131    ,NO ,   4.497E-01,   1.828E+00,   3.006E+00,,    0.150
C,BA-133   ,NO ,   8.746E+00,   2.739E+00,   4.112E+00,,    2.127
C,CS-134   ,NO ,   1.005E+01,   3.812E+00,   3.298E+00,,    3.047
C,CS-136   ,NO ,  -1.682E+00,   1.647E+00,   2.628E+00,,   -0.640
C,CS-137   ,NO ,  -5.182E-01,   1.998E+00,   2.969E+00,,   -0.175
C,CE-139   ,NO ,   5.972E-01,   1.582E+00,   2.569E+00,,    0.232
C,BA-140   ,NO ,   1.765E+00,   6.092E+00,   1.011E+01,,    0.175
C,LA-140   ,NO ,   4.761E-01,   1.961E+00,   3.263E+00,,    0.146
C,CE-141   ,NO ,   3.509E+00,   3.172E+00,   4.541E+00,,    0.773
C,CE-144   ,NO ,  -5.269E+00,   1.445E+01,   2.018E+01,,   -0.261
C,EU-152   ,NO ,  -7.039E+00,   6.025E+00,   8.080E+00,,   -0.871
C,EU-154   ,NO ,   8.286E-02,   3.415E+00,   5.668E+00,,    0.015
C,RA-226   ,NO ,  -6.257E+00,   4.379E+01,   6.554E+01,,   -0.095
C,AC-228   ,NO ,  -2.041E+00,   6.836E+00,   1.025E+01,,   -0.199
C,TH-232   ,NO ,  -2.040E+00,   6.833E+00,   1.024E+01,,   -0.199
C,U-235    ,NO ,   2.708E+01,   1.446E+01,   2.099E+01,,    1.290
C,U-238    ,NO ,   1.480E+02,   1.809E+02,   3.028E+02,,    0.489
C,AM-241   ,NO ,  -7.084E+00,   2.554E+01,   3.547E+01,,   -0.200
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Raw Data Sheet (rawdata)
May 08 2006, 04:00 pm

Work Order: *L28414* Customer: *Exelon*

Nuclide: *H-3* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28414-1		H-3					0		29-apr-06 04:03	LS5	129	60	1.69	60	.202		EJ
WG-BYR-042506-SS-01				10 ml													
Activity: 1.03E+02	Error: 1.13E+02		MDC: 1.75E+02 *														
L28414-2		H-3					0		29-apr-06 05:07	LS5	101	60	1.69	60	.2		EJ
WG-BYR-042506-SS-03				10 ml													
Activity: -2.25E+00	Error: 1.07E+02		MDC: 1.76E+02 *														
L28414-3		H-3					0		29-apr-06 06:11	LS5	126	60	1.69	60	.201		EJ
WG-BYR-042506-SS-05				10 ml													
Activity: 9.21E+01	Error: 1.13E+02		MDC: 1.76E+02 *														
L28414-4		H-3					0		29-apr-06 07:15	LS5	109	60	1.69	60	.202		EJ
WG-BYR-042506-SS-07				10 ml													
Activity: 2.9E+01	Error: 1.08E+02		MDC: 1.75E+02 *														
L28414-5		H-3					0		29-apr-06 08:19	LS5	143	60	1.69	60	.2		EJ
WG-BYR-042506-SS-09				10 ml													
Activity: 1.58E+02	Error: 1.17E+02		MDC: 1.76E+02 *														
L28414-8		H-3					0		03-may-06 08:13	LS7	121	60	1.73	60	.216		EJ
WG-BYR-042506-SS-11				10 ml													
Activity: 5.86E+01	Error: 1.04E+02		MDC: 1.65E+02 *														
L28414-9		H-3					0		03-may-06 09:17	LS7	110	60	1.73	60	.22		EJ
WG-BYR-042506-SS-13				10 ml													
Activity: 2.05E+01	Error: 1E+02		MDC: 1.62E+02 *														
L28414-10		H-3					0		03-may-06 10:20	LS7	103	60	1.73	60	.215		EJ
WG-BYR-042606-SS-15				10 ml													
Activity: -2.1E+00	Error: 1.01E+02		MDC: 1.66E+02 *														
L28414-11		H-3					0		03-may-06 11:24	LS7	106	60	1.73	60	.216		EJ
WG-BYR-042606-SS-17				10 ml													
Activity: 8.35E+00	Error: 1.01E+02		MDC: 1.65E+02 *														
L28414-12		H-3					0		03-may-06 12:27	LS7	109	60	1.73	60	.216		EJ
WG-BYR-042606-SS-19				10 ml													
Activity: 1.88E+01	Error: 1.02E+02		MDC: 1.65E+02 *														
L28414-13		H-3					0		03-may-06 13:30	LS7	103	60	1.73	60	.218		EJ
WG-BYR-042606-SS-21				10 ml													
Activity: -4.14E+00	Error: 9.92E+01		MDC: 1.64E+02 *														
L28414-14		H-3					0		03-may-06 14:34	LS7	123	60	1.73	60	.221		EJ
WG-BYR-042606-SS-23				10 ml													
Activity: 6.53E+01	Error: 1.02E+02		MDC: 1.61E+02 *														
L28414-15		H-3					0		03-may-06 15:37	LS7	92	60	1.73	60	.217		EJ
WG-BYR-042606-SS-25				10 ml													
Activity: -3.95E+01	Error: 9.71E+01		MDC: 1.65E+02 *														
L28414-16		H-3					0		03-may-06 17:44	LS7	381	29.96	1.59	60	.215		EJ
WG-BYR-042606-SS-27				10 ml													
Activity: 2.34E+03 *	Error: 2.82E+02		MDC: 2.25E+02														
L28414-16 R1		H-3					0		08-may-06 04:10	LS7	382	30.05	1.59	60	.214		DW
WG-BYR-042606-SS-27				10 ml													
Activity: 2.34E+03 *	Error: 2.82E+02		MDC: 2.26E+02														

Raw Data Sheet (rawdata)
May 08 2006, 02:38 pm

Work Order: *L28414* Customer: *Exelon*

Nuclide: *SR-90 (FAST)* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28414-15		TOTAL SR	26-apr-06		03-may-06		0		03-may-06	Y1A	141	200	141	200	.341	1	GK
WG-BYR-042606-SS-25			13:09	450 ml	13:40			85.22	21:10								
Activity: 0E+00	Error: 5.79E-01		MDC: 9.55E-01 *														
L28414-16		TOTAL SR	26-apr-06		03-may-06		0		03-may-06	Y1B	163	200	167	200	.351	1	GK
WG-BYR-042606-SS-27			15:10	450 ml	13:40			91.67	21:10								
Activity: -6.23E-02	Error: 5.65E-01		MDC: 9.37E-01 *														

TELEDYNE
BROWN ENGINEERING
A Teledyne Technologies Company

2508 Quality Lane
Knoxville, TN 37931
865-690-6819 (Phone)

Work Order #: L28431

Exelon

May 5, 2006

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Kathy Shaw
Conestoga-Rovers & Associates
45 Farmington Valley Drive
Plainville CT 06062

Case Narrative - L28431
EX001-3ESPBYRON-06

05/05/2006 15:12

Sample Receipt

The following samples were received on April 28, 2006 in good condition, unless otherwise noted.

Cross Reference Table

Client ID	Laboratory ID	Station ID(if applicable)
WG-BYN-042606-SS-29	L28431-1	
WG-BYN-042606-SS-31	L28431-2	
WG-BYN-042606-SS-33	L28431-3	
WG-BYN-042706-SS-34	L28431-4	
WG-BYN-042706-SS-35	L28431-5	
WG-BYN-042706-SS-36	L28431-6	
WG-BYN-042706-SS-37	L28431-7	
WG-BYN-042706-SS-38	L28431-8	
WG-BYN-042706-SS-39	L28431-9	
WG-BYN-042706-SS-40	L28431-10	
WG-BYN-042706-SS-41	L28431-11	
WG-BYN-042706-SS-42	L28431-12	
WG-BYN-042706-SS-43	L28431-13	
WG-BYN-042706-SS-44	L28431-14	
WG-BYN-042706-KD-26	L28431-15	
WG-BYN-042706-KD-28	L28431-16	
WG-BYN-042706-KD-30	L28431-17	
WG-BYN-042706-KD-32	L28431-18	
WG-BYN-042706-KD-45	L28431-19	
WG-BYN-042706-KD-46	L28431-20	

Analytical Method Cross Reference Table

Radiological Parameter	TBE Knoxville Method	Reference Method
Gamma Spectrometry	TBE-2007	EPA 901.1
H-3	TBE-2010	EPA 906.0
SR-90 (FAST)	TBE-2019	EPA 905.0

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Case Narrative - L28431
EX001-3ESPBYRON-06

05/05/2006 15:12

Gamma Spectroscopy

Quality Control

Quality control samples were analyzed as WG3913.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYN-042706-SS-35	L28431-5	WG3913-3

H-3

Quality Control

Quality control samples were analyzed as WG3918,WG3933.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYR-042506-SS-11	L28414-8	WG3918-3
WG-BYN-042706-KD-4[illegible]	L28431-19	WG3933-3

SR-90

Quality Control

Quality control samples were analyzed as WG3939.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Case Narrative - L28431
EX001-3ESPBYRON-06

05/05/2006 15:12

Certification

This is to certify that Teledyne Brown Engineering - Environmental Services, located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter

Keith Jeter

Sample Receipt Summary

CONESTOGA-ROVERS & ASSOCIATES
8615 W. Bryn Mawr Avenue
Chicago, Illinois 60631
(773)380-9933 phone
(773)380-6421 fax

SHIPPED TO (Laboratory Name): Teledyne Brown Engineering L28431 5-30

REFERENCE NUMBER: 45136.21

PROJECT NAME: Exelon - Byron

CHAIN-OF-CUSTODY RECORD

SAMPLER'S SIGNATURE: David Tyran **PRINTED NAME:** David Tyran

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: Tritium	PARAMETERS: Radionuclides	REMARKS
1	4/26/06	1650	WG-BYN-042606-SS-29	water	1	X		
2	↓	1810	WG-BYN-042606-SS-31	↓	1	X		
3	↓	1905	WG-BYN-042606-SS-33	↓	1	X		
4	4/27/06	0835	WG-BYN-042706-SS-34	↓	1	X		
5		0900	RB-BYN-042706-SS-35	DI Water	2	X	X	
6		1015	WG-BYN-042706-SS-36	Water	2	X	X	
7		1120	WG-BYN-042706-SS-37	↓	2	X	X	
8		1235	WG-BYN-042706-SS-38	↓	2	X	X	
9		1335	WG-BYN-042706-SS-39	↓	2	X	X	
10		1335	WG-BYN-042706-SS-40	↓	2	X	X	
11		1455	WG-BYN-042706-SS-41	↓	2	X	X	
12		1600	WG-BYN-042706-SS-42	↓	2	X	X	
13		1685	RB-BYN-042706-SS-43	DI Water	2	X	X	
14	↓	1745	WG-BYN-042706-SS-44	Water	2	X	X	
			TOTAL NUMBER OF CONTAINERS		24			

RELINQUISHED BY: ① Diana Spencer	DATE: 4/27/06 TIME: 1750	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex **AIR BILL No.** 851383808342

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: S. Spencer, D. Tyran

RECEIVED FOR LABORATORY BY: Pat Marshall DATE: 4/28/06 TIME: 0930

13633

1001-00(SOURCE)GN-CO004

L28431 6 of 147

CONESTOGA-ROVERS & ASSOCIATES
8615 W. Bryn Mawr Avenue
Chicago, Illinois 60631
(773)380-9933 phone
(773)380-6421 fax

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): Teledyne Brown

L28431
5-30

REFERENCE NUMBER: 45136-21

PROJECT NAME: Exelon - Byron Generating Station

SAMPLER'S SIGNATURE: Ken Duval **PRINTED NAME:** Ken Duval

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: Tritium	PARAMETERS: Radionuclides	REMARKS
	4/27/06	10:57	WG-BYN-042706-KD-26	water	2	X	X	
		12:25	WG-BYN-042706-KD-28		2	X	X	
		14:05	WG-BYN-042706-KD-30		2	X	X	
		16:00	WG-BYN-042706-KD-32		2	X	X	
		17:30	WG-BYN-042706-KD-45		2	X	X	
		17:40	WG-BYN-042706-KD-46		2	X	X	

TOTAL NUMBER OF CONTAINERS 12

RELINQUISHED BY: ① Ken Duval	DATE: 4/27/06 TIME: 19:00	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: FedEx **AIR BILL No.** 851383808342

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: Duval, Greene

RECEIVED FOR LABORATORY BY: Pat Marshall
DATE: 4/28/06 TIME: 0930

13659

1001-00(SOURCE)GN-CO004

L28431 7 of 147

04/28/06 13:15

SR #: SR08083

Teledyne Brown Engineering
Sample Receipt Verification/Variance Report

Client: Exelon Project #: EX001-3ESPBYRON-06 LIMS #: L28431

Initiated By: PMARSHALL
Init Date: 04/28/06 Receive Date: 04/28/06

Notification of Variance

Person Notified: Kathy Shaw Contacted By: R. Charles
Notify Date: 4/28/06
Notify Method: email
Notify Comment:

Client Response

Person Responding:
Response Date:
Response Method:
Response Comment

	Criteria	Yes	No	NA	Comment
1	Shipping container custody seals present and intact.	Y			
2	Sample container custody seals present and intact.			NA	
3	Sample containers received in good condition	Y			
4	Chain of custody received with samples	Y			
5	All samples listed on chain of custody received	Y			
6	Sample container labels present and legible.	Y			
7	Information on container labels correspond with chain of custody	Y			
	WG-BYN-042706-KD-26				No date or time listed on container
	WG-BYN-042706-KD-30				No date or time listed on container
	WG-BYN-042706-KD-45				No date or time listed on container
	WG-BYN-042706-KD-46				No date or time listed on container
	WG-BYN-042706-KD-32				No date or time listed on container
	WG-BYN-042706-KD-28				No date or time listed on container
8	Sample(s) properly preserved and in appropriate container(s)			NA	
9	Other (Describe)	N			pH at or below 2 for Gamma portion

CRA email
ltp
5/1/06

TELEDYNE BROWN ENGINEERING
2508 Quality Lane
Knoxville, TN 37931-3133

ACKNOWLEDGEMENT
This is not an invoice

Edward Steinke
Byron Station
Exelon Nuclear
4450 N. German Church Road
Byron, IL 31010

April 28, 2006

The following sample(s) were received at Teledyne Brown Engineering Knoxville laboratory on April 28, 2006. The sample(s) have been scheduled for the analyses listed below and the report is scheduled for completion by May 05, 2006. Please review the following login information and pricing. Contact me if anything is incorrect or you have questions about the status of your sample(s).

Thank you for choosing Teledyne Brown Engineering for your analytical needs.

Sincerely,
Rebecca Charles
Project Manager
(865)934-0379

Project ID: EX001-3ESPBYRON-06
P.O. #: 00411203
Release #:
Contract#: 00411203
Edward Steinke, FAX#:815-234-3301, edward.steinke@exeloncorp.com
Kathy Shaw, FAX#:860-747-1900, kshaw@craworld.com

Client ID/ Station	Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG-BYN-042606-SS-29	**L28431-1**		**04/26/06:1650**	
WG	H-3	108.00		
WG-BYN-042606-SS-31	**L28431-2**		**04/26/06:1810**	
WG	H-3	108.00		
WG-BYN-042606-SS-33	**L28431-3**		**04/26/06:1905**	
WG	H-3	108.00		
WG-BYN-042706-SS-34	**L28431-4**		**04/27/06:0835**	
WG	H-3	108.00		
WG-BYN-042706-SS-35	**L28431-5**		**04/27/06:0900**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-36	**L28431-6**		**04/27/06:1015**	

Client ID/ Station	Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-37	**L28431-7**		**04/27/06:1120**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-38	**L28431-8**		**04/27/06:1235**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-39	**L28431-9**		**04/27/06:1335**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-40	**L28431-10**		**04/27/06:1335**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-41	**L28431-11**		**04/27/06:1455**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-42	**L28431-12**		**04/27/06:1600**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-43	**L28431-13**		**04/27/06:1615**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-SS-44	**L28431-14**		**04/27/06:1745**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-KD-26	**L28431-15**		**04/27/06:1057**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-KD-28	**L28431-16**		**04/27/06:1225**	

Client ID/ Station	Laboratory ID Analysis	Vol/Units Price	Start Collect Date/Time	End Collect Date/Time
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-KD-30	**L28431-17**		**04/27/06:1405**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-KD-32	**L28431-18**		**04/27/06:1600**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-KD-45	**L28431-19**		**04/27/06:1730**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		
WG-BYN-042706-KD-46	**L28431-20**		**04/27/06:1740**	
WG	GELI	108.00		
WG	H-3	108.00		
WG	SR-90 (FAST)	140.00		

End of document

Charles, Rebecca

From: Charles, Rebecca
Sent: Friday, April 28, 2006 4:27 PM
To: 'Shaw, Kathy'; Julie Czech (jczech@craworld.com); 'edward.steinke@exeloncorp.com'
Subject: Acknowledgment H-3 project

Variance attached.

Rebecca Charles
Teledyne Brown Engineering
Project Manager
(865) 934-0379
(865) 934-0396 (fax)

Internal Chain of Custody

Internal Chain of Custody

****

Sample # L28431-1 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-2 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-3 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-4 Containernum 1

Prod	Analyst
H-3	EJ

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-5 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-5 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

****

Sample # L28431-5 Containernum 2

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-6 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-6 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-7 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-7 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW

****
Sample # L28431-7 Containernum 2

SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****
Sample # L28431-8 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****
Sample # L28431-8 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****
Sample # L28431-9 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****
Sample # L28431-9 Containernum 2

Prod	Analyst

****

Sample # L28431-9 Containernum 2

H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-10 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

Sample # L28431-10 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-11 Containernum 1

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
05/01/2006 15:12	099999	Sample Custodian	029964	Erin Jenkins
05/02/2006 14:11	029964	Erin Jenkins	099999	Sample Custodian

****

****

Sample # L28431-11 Containernum 2

Prod	Analyst
H-3	EJ
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-12 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-12 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:01	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:04	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-13 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-13 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW

****
Sample # L28431-13 Containernum 2

SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****
Sample # L28431-14 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****
Sample # L28431-14 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****
Sample # L28431-15 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By	Received By	
04/28/2006 00:00		099999	Sample Custodian

****
Sample # L28431-15 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By	Received By

****

Sample # L28431-15 Containernum 2

Relinquish Date			Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-16 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-16 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-17 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-17 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb

****

Sample # L28431-17 Containernum 2

Relinquish Date			Received By	
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-18 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-18 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-19 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-19 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard

****

Sample # L28431-19 Containernum 2

Relinquish Date			Received By	
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

****

Sample # L28431-20 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian

****

Sample # L28431-20 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/28/2006 00:00			099999	Sample Custodian
04/28/2006 14:06	099999	Sample Custodian	030854	Donna Webb
04/28/2006 14:07	030854	Donna Webb	029965	Kelly Wright
05/01/2006 16:19	029965	Kelly Wright	030591	Greg Kinard
05/01/2006 17:00	030591	Greg Kinard	030854	Donna Webb
05/01/2006 17:01	030854	Donna Webb	099999	Sample Custodian

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28431

****

L28431-1 WG WG-BYN-042606-SS-29

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	H-3	EJ	05/02/06
Count Room	H-3	KOJ	05/03/06

****

L28431-2 WG WG-BYN-042606-SS-31

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	H-3	EJ	05/02/06
Count Room	H-3	KOJ	05/03/06

****

L28431-3 WG WG-BYN-042606-SS-33

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	H-3	EJ	05/02/06
Count Room	H-3	KOJ	05/03/06

****

L28431-4 WG WG-BYN-042706-SS-34

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	H-3	EJ	05/02/06
Count Room	H-3	KOJ	05/03/06

****

L28431-5 WG WG-BYN-042706-SS-35

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	EJ	05/02/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KOJ	04/28/06
Count Room	H-3	KOJ	05/03/06
Count Room	SR-90 (FAST)	KOJ	05/05/06

****

L28431-6 WG WG-BYN-042706-SS-36

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	EJ	05/02/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KOJ	04/28/06
Count Room	H-3	KOJ	05/03/06
Count Room	SR-90 (FAST)	KOJ	05/04/06

****

L28431-7 WG WG-BYN-042706-SS-37

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

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L28431-7	**WG**	**WG-BYN-042706-SS-37**		
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		EJ	05/02/06
Aliquot	SR-90	(FAST)	GK	05/04/06
Count Room	GELI		KOJ	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90	(FAST)	KOJ	05/04/06

****

L28431-8	**WG**	**WG-BYN-042706-SS-38**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		EJ	05/02/06
Aliquot	SR-90	(FAST)	GK	05/04/06
Count Room	GELI		KOJ	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90	(FAST)	KOJ	05/04/06

****

L28431-9	**WG**	**WG-BYN-042706-SS-39**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		EJ	05/02/06
Aliquot	SR-90	(FAST)	GK	05/04/06
Count Room	GELI		KOJ	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90	(FAST)	KOJ	05/04/06

****

L28431-10	**WG**	**WG-BYN-042706-SS-40**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		EJ	05/02/06
Aliquot	SR-90	(FAST)	GK	05/04/06
Count Room	GELI		KOJ	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90	(FAST)	KOJ	05/04/06

****

L28431-11	**WG**	**WG-BYN-042706-SS-41**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		EJ	05/03/06
Aliquot	SR-90	(FAST)	GK	05/04/06
Count Room	GELI		KOJ	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90	(FAST)	KOJ	05/05/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

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****

L28431-12 WG WG-BYN-042706-SS-42

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KPW	04/28/06
Count Room	H-3	KOJ	05/04/06
Count Room	SR-90 (FAST)	KOJ	05/05/06

****

L28431-13 WG WG-BYN-042706-SS-43

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KPW	04/28/06
Count Room	H-3	KOJ	05/04/06
Count Room	SR-90 (FAST)	KOJ	05/05/06

****

L28431-14 WG WG-BYN-042706-SS-44

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KPW	04/28/06
Count Room	H-3	KOJ	05/04/06
Count Room	SR-90 (FAST)	KOJ	05/04/06

****

L28431-15 WG WG-BYN-042706-KD-26

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KPW	04/28/06
Count Room	H-3	KOJ	05/04/06
Count Room	SR-90 (FAST)	KOJ	05/04/06

****

L28431-16 WG WG-BYN-042706-KD-28

Process step	Prod	Analyst	Date
Login		RCHARLES	04/28/06
Aliquot	GELI	DW	04/28/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/04/06
Count Room	GELI	KPW	04/28/06

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28431

L28431-16	**WG**	**WG-BYN-042706-KD-28**		
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90 (FAST)		KOJ	05/04/06

****

L28431-17	**WG**	**WG-BYN-042706-KD-30**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		DW	05/03/06
Aliquot	SR-90 (FAST)		GK	05/04/06
Count Room	GELI		KPW	04/29/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90 (FAST)		KOJ	05/04/06

****

L28431-18	**WG**	**WG-BYN-042706-KD-32**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		DW	05/03/06
Aliquot	SR-90 (FAST)		GK	05/04/06
Count Room	GELI		K[P	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90 (FAST)		KOJ	05/04/06

****

L28431-19	**WG**	**WG-BYN-042706-KD-45**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		DW	05/03/06
Aliquot	SR-90 (FAST)		GK	05/04/06
Count Room	GELI		KPW	04/28/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90 (FAST)		KOJ	05/04/06

****

L28431-20	**WG**	**WG-BYN-042706-KD-46**		
Process step	Prod		Analyst	Date
Login			RCHARLES	04/28/06
Aliquot	GELI		DW	04/28/06
Aliquot	H-3		DW	05/03/06
Aliquot	SR-90 (FAST)		GK	05/04/06
Count Room	GELI		KPW	04/29/06
Count Room	H-3		KOJ	05/04/06
Count Room	SR-90 (FAST)		KOJ	05/04/06

Analytical Results Summary

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042606-SS-29** Collect Start: 04/26/2006 16:50 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-1

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-8.31E+00	9.50E+01	**1.58E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYN-042606-SS-31** Collect Start: 04/26/2006 18:10 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-2

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	1.04E+01	9.69E+01	**1.58E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYN-042606-SS-33** Collect Start: 04/26/2006 19:05 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-3

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	2.71E+01	9.80E+01	**1.58E+02**	pCi/L		10	ml		05/03/06	60	M	U

Sample ID: **WG-BYN-042706-SS-34** Collect Start: 04/27/2006 08:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-4

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values
H-3	2010	-6.43E+01	9.07E+01	**1.57E+02**	pCi/L		10	ml		05/03/06	60	M	U

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-35** Collect Start: 04/27/2006 09:00 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-5

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	6.72E+01	1.01E+02	**1.59E+02**	pCi/L		10	ml		05/03/06	60	M	U		
TOTAL SR	2018	3.63E-02	6.78E-01	**1.19E+00**	pCi/L		450	ml	04/27/06 09:00	05/05/06	300	M	U		
MN-54	2007	4.88E-01	1.80E+00	**3.03E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
CO-58	2007	-1.88E+00	1.82E+00	**2.80E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
FE-59	2007	1.30E+00	3.40E+00	**5.74E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
CO-60	2007	9.42E-01	1.79E+00	**3.05E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
ZN-65	2007	-1.24E+00	3.81E+00	**6.18E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
NB-95	2007	-2.94E-01	1.72E+00	**2.78E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
ZR-95	2007	1.44E+00	3.12E+00	**5.21E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
CS-134	2007	6.13E-01	3.04E+00	**3.03E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
CS-137	2007	7.01E-01	1.81E+00	**3.06E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
BA-140	2007	-2.55E+00	6.53E+00	**1.06E+01**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No
LA-140	2007	2.63E+00	2.18E+00	**3.89E+00**	pCi/L		3525.73	ml	04/27/06 09:00	04/28/06	23400	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-36** Collect Start: 04/27/2006 10:15 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-6

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	6.71E+01	9.83E+01	**1.54E+02**	pCi/L		10	ml		05/03/06	60	M	U		
TOTAL SR	2018	1.02E+00	9.16E-01	**1.38E+00**	pCi/L		450	ml	04/27/06 10:15	05/04/06	100	M	U		
MN-54	2007	6.40E-01	2.02E+00	**3.37E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
CO-58	2007	1.08E+00	1.96E+00	**3.32E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
FE-59	2007	2.35E+00	3.81E+00	**6.47E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
CO-60	2007	1.48E+00	2.08E+00	**3.58E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
ZN-65	2007	1.33E+01	5.50E+00	**8.85E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U*		No
NB-95	2007	5.90E+00	2.41E+00	**3.86E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U*		No
ZR-95	2007	-9.12E-02	3.82E+00	**5.87E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
CS-134	2007	1.14E+01	3.43E+00	**4.58E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U*		No
CS-137	2007	-1.88E-01	2.30E+00	**3.72E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
BA-140	2007	3.43E+00	7.37E+00	**1.25E+01**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
LA-140	2007	-1.77E-01	2.56E+00	**4.22E+00**	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	U		No
TH-228	2007	**6.11E+00**	3.57E+00	6.06E+00	pCi/L		3585.9	ml	04/27/06 10:15	04/28/06	23530	Sec	+		Yes

Flag Values
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U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
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H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-37** Collect Start: 04/27/2006 11:20 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-7

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	8.46E+01	9.87E+01	**1.53E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	-6.40E-01	8.25E-01	**1.44E+00**	pCi/L		450	ml	04/27/06 11:20	05/04/06	100	M	U		
MN-54	2007	1.02E+00	1.60E+00	**2.67E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
CO-58	2007	2.51E+00	1.83E+00	**2.65E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
FE-59	2007	3.65E+00	2.99E+00	**5.08E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
CO-60	2007	-8.47E-01	1.66E+00	**2.67E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
ZN-65	2007	7.62E+01	5.27E+00	**9.81E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U*		No
NB-95	2007	1.27E+01	1.75E+00	**3.24E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U*		No
ZR-95	2007	1.64E+00	2.99E+00	**4.52E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
CS-134	2007	9.61E+01	3.87E+00	**5.84E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U*		No
CS-137	2007	2.97E+00	2.24E+00	**3.04E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
BA-140	2007	4.69E+00	6.20E+00	**1.03E+01**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No
LA-140	2007	1.19E+00	2.03E+00	**3.39E+00**	pCi/L		3576.52	ml	04/27/06 11:20	04/28/06	76936	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-38** Collect Start: 04/27/2006 12:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-8

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	9.62E+01	1.03E+02	**1.59E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	3.11E-02	7.98E-01	**1.31E+00**	pCi/L		450	ml	04/27/06 12:35	05/04/06	100	M	U		
MN-54	2007	2.26E+00	3.26E+00	**5.55E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
CO-58	2007	1.01E+00	3.64E+00	**5.21E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
FE-59	2007	6.76E+00	5.92E+00	**1.02E+01**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
CO-60	2007	8.00E-02	3.38E+00	**5.57E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
ZN-65	2007	6.21E+01	1.04E+01	**1.88E+01**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U*		No
NB-95	2007	1.47E+01	3.64E+00	**6.77E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U*		No
ZR-95	2007	8.15E-01	5.95E+00	**9.10E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
CS-134	2007	5.69E+01	7.58E+00	**9.63E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U*		No
CS-137	2007	3.65E+00	4.09E+00	**5.96E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
BA-140	2007	4.96E+00	1.20E+01	**2.02E+01**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No
LA-140	2007	1.89E+00	3.70E+00	**6.36E+00**	pCi/L		3568.1	ml	04/27/06 12:35	04/28/06	23736	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
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U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
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H = High recovery

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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-39** Collect Start: 04/27/2006 13:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-9

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	7.24E+01	1.00E+02	**1.57E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	-3.39E-02	9.33E-01	**1.54E+00**	pCi/L		450	ml	04/27/06 13:35	05/04/06	100	M	U		
MN-54	2007	-4.90E-01	1.98E+00	**3.39E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
CO-58	2007	3.94E-01	2.01E+00	**3.43E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
FE-59	2007	-5.18E-01	3.58E+00	**6.06E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
CO-60	2007	-2.86E-01	1.82E+00	**3.15E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
ZN-65	2007	2.16E+01	5.74E+00	**1.01E+01**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U*		No
NB-95	2007	6.82E+00	2.46E+00	**4.08E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U*		No
ZR-95	2007	-4.90E-01	3.52E+00	**5.65E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
CS-134	2007	1.98E+01	3.48E+00	**5.30E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U*		No
CS-137	2007	1.11E+00	2.15E+00	**3.73E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
BA-140	2007	8.18E+00	7.18E+00	**1.29E+01**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No
LA-140	2007	2.73E-01	2.31E+00	**4.01E+00**	pCi/L		3591.79	ml	04/27/06 13:35	04/28/06	23840	Sec	U		No

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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-40** Collect Start: 04/27/2006 13:35 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-10

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	**2.01E+02**	1.10E+02	1.59E+02	pCi/L		10	ml		05/04/06	60	M	+	High	
TOTAL SR	2018	2.02E-01	8.97E-01	**1.45E+00**	pCi/L		450	ml	04/27/06 13:35	05/04/06	100	M	U		
MN-54	2007	7.56E-01	2.39E+00	**3.96E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
CO-58	2007	2.23E+00	2.41E+00	**4.11E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
FE-59	2007	-4.15E+00	4.70E+00	**7.28E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
CO-60	2007	6.64E-01	2.49E+00	**4.17E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
ZN-65	2007	1.94E+01	7.09E+00	**1.16E+01**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U*		No
NB-95	2007	6.05E+00	2.52E+00	**4.55E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U*		No
ZR-95	2007	-2.34E-01	4.50E+00	**6.81E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
CS-134	2007	2.33E+01	5.86E+00	**6.23E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U*		No
CS-137	2007	4.74E-01	2.54E+00	**4.24E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
BA-140	2007	1.65E-01	9.06E+00	**1.48E+01**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No
LA-140	2007	2.14E+00	2.91E+00	**5.06E+00**	pCi/L		3570.94	ml	04/27/06 13:35	04/28/06	23958	Sec	U		No

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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-41** Collect Start: 04/27/2006 14:55 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-11

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	7.29E+01	9.84E+01	**1.53E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	-1.90E-02	9.87E-01	**1.74E+00**	pCi/L		450	ml	04/27/06 14:55	05/05/06	300	M	U		
MN-54	2007	2.40E+00	2.39E+00	**4.08E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
CO-58	2007	-2.67E+00	2.45E+00	**3.78E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
FE-59	2007	3.31E+00	4.58E+00	**7.81E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
CO-60	2007	8.40E-01	2.44E+00	**4.13E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
ZN-65	2007	2.57E+01	6.82E+00	**1.18E+01**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U*		No
NB-95	2007	6.16E+00	2.92E+00	**4.56E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U*		No
ZR-95	2007	1.40E+00	4.51E+00	**6.83E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
CS-134	2007	3.36E+01	4.18E+00	**6.91E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U*		No
CS-137	2007	3.20E+00	2.64E+00	**4.57E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
BA-140	2007	-8.32E-01	8.65E+00	**1.40E+01**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No
LA-140	2007	1.65E+00	2.81E+00	**4.78E+00**	pCi/L		3589.77	ml	04/27/06 14:55	04/28/06	24040	Sec	U		No

Flag Values
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\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-42** Collect Start: 04/27/2006 16:00 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-12

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	8.01E+01	9.76E+01	**1.51E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	2.67E-01	6.82E-01	**1.18E+00**	pCi/L		450	ml	04/27/06 16:00	05/05/06	300	M	U		
MN-54	2007	3.08E-01	1.33E+00	**2.22E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
CO-58	2007	2.81E-01	1.32E+00	**2.21E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
FE-59	2007	3.00E+00	2.51E+00	**4.36E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
CO-60	2007	7.71E-01	1.80E+00	**2.27E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		Yes
ZN-65	2007	9.23E+00	3.64E+00	**5.77E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U*		No
NB-95	2007	2.03E+00	1.33E+00	**2.28E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
ZR-95	2007	1.12E-01	2.29E+00	**3.72E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
CS-134	2007	6.77E+00	2.06E+00	**2.82E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U*		No
CS-137	2007	1.64E+00	1.46E+00	**2.48E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
BA-140	2007	4.32E-01	5.02E+00	**8.15E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
LA-140	2007	1.94E-01	1.68E+00	**2.76E+00**	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	U		No
TH-228	2007	**5.12E+00**	2.55E+00	3.68E+00	pCi/L		3579.43	ml	04/27/06 16:00	04/28/06	51695	Sec	+		Yes

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-43** Collect Start: 04/27/2006 16:15 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-13

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	2.69E+01	9.44E+01	**1.52E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	1.33E-02	7.13E-01	**1.25E+00**	pCi/L		450	ml	04/27/06 16:15	05/05/06	300	M	U		
MN-54	2007	7.08E-01	1.17E+00	**1.98E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
CO-58	2007	-1.12E-01	1.17E+00	**1.89E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
FE-59	2007	4.21E+00	2.28E+00	**4.01E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U*		No
CO-60	2007	5.54E-02	1.23E+00	**2.04E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
ZN-65	2007	5.28E+00	2.55E+00	**4.51E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U*		No
NB-95	2007	9.70E-01	1.14E+00	**1.92E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
ZR-95	2007	-1.76E+00	2.02E+00	**3.21E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
CS-134	2007	3.71E+00	2.50E+00	**2.09E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
CS-137	2007	1.17E+00	1.26E+00	**2.14E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
BA-140	2007	2.12E-01	4.24E+00	**6.99E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
LA-140	2007	5.51E-02	1.51E+00	**2.49E+00**	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	U		No
TH-228	2007	**3.68E+00**	2.36E+00	3.19E+00	pCi/L		3596.76	ml	04/27/06 16:15	04/28/06	51817	Sec	+		Yes

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
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U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
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No = Peak not identified in gamma spectrum
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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-SS-44** Collect Start: 04/27/2006 17:45 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-14

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	**3.26E+03**	3.67E+02	2.40E+02	pCi/L		10	ml		05/04/06	20.88	M	+	High	
TOTAL SR	2018	5.56E-01	7.25E-01	**1.12E+00**	pCi/L		450	ml	04/27/06 17:45	05/04/06	100	M	U		
MN-54	2007	1.94E-01	1.54E+00	**2.53E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
CO-58	2007	-1.77E-01	1.59E+00	**2.59E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
FE-59	2007	2.66E+00	2.93E+00	**4.97E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
CO-60	2007	-6.04E-01	1.56E+00	**2.52E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
ZN-65	2007	1.28E+01	4.14E+00	**6.64E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U*		No
NB-95	2007	2.06E+00	1.56E+00	**2.67E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
ZR-95	2007	-4.29E-01	2.92E+00	**4.40E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
CS-134	2007	9.17E+00	3.79E+00	**3.35E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U*		No
CS-137	2007	3.79E-01	1.63E+00	**2.72E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
BA-140	2007	-3.57E-03	5.81E+00	**9.49E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No
LA-140	2007	6.36E-01	1.90E+00	**3.20E+00**	pCi/L		3588.92	ml	04/27/06 17:45	04/28/06	51909	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
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TELEDYNE BROWN ENGINEERING, INC.
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Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-KD-26** Collect Start: 04/27/2006 10:57 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-15

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values	
H-3	2010	8.84E+01	1.01E+02	**1.55E+02**	pCi/L		10	ml		05/04/06	60	M	U	
TOTAL SR	2018	2.27E-01	7.14E-01	**1.15E+00**	pCi/L		450	ml	04/27/06 10:57	05/04/06	100	M	U	
MN-54	2007	1.43E+00	1.57E+00	**2.64E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
CO-58	2007	2.85E-01	1.57E+00	**2.58E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
FE-59	2007	8.57E-01	3.02E+00	**5.01E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
CO-60	2007	4.25E-01	1.60E+00	**2.67E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
ZN-65	2007	1.47E+01	4.26E+00	**6.91E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U*	No
NB-95	2007	4.37E+00	1.60E+00	**2.84E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U*	No
ZR-95	2007	4.56E-01	3.02E+00	**4.31E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
CS-134	2007	1.73E+01	2.76E+00	**3.84E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U*	No
CS-137	2007	3.29E-01	1.71E+00	**2.84E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
BA-140	2007	-7.75E-01	6.00E+00	**9.75E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No
LA-140	2007	6.35E-01	1.92E+00	**3.19E+00**	pCi/L		3602.28	ml	04/27/06 10:57	04/28/06	51987	Sec	U	No

Flag Values
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MDC - Minimum Detectable Concentration

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Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-KD-28** Collect Start: 04/27/2006 12:25 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-16

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	-1.02E+01	9.05E+01	**1.50E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	4.33E-01	6.85E-01	**1.07E+00**	pCi/L		450	ml	04/27/06 12:25	05/04/06	100	M	U		
MN-54	2007	9.04E-01	1.42E+00	**2.38E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
CO-58	2007	-1.17E+00	1.41E+00	**2.28E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
FE-59	2007	1.69E+00	2.72E+00	**4.56E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
CO-60	2007	8.49E-01	1.49E+00	**2.51E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
ZN-65	2007	2.29E+01	4.01E+00	**6.83E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U*		No
NB-95	2007	4.40E+00	1.48E+00	**2.63E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U*		No
ZR-95	2007	2.55E-01	2.48E+00	**4.03E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
CS-134	2007	2.00E+01	2.39E+00	**3.51E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U*		No
CS-137	2007	4.17E-01	1.95E+00	**2.67E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
BA-140	2007	4.95E+00	5.37E+00	**9.13E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
LA-140	2007	-1.60E-01	1.80E+00	**2.97E+00**	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	U		No
TH-228	2007	**6.43E+00**	2.50E+00	4.24E+00	pCi/L		3614.31	ml	04/27/06 12:25	04/28/06	52085	Sec	+		Yes

Flag Values
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High = Activity concentration exceeds customer reporting value
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Report of Analysis

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TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-KD-30** Collect Start: 04/27/2006 14:05 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-17

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	2.66E+01	9.95E+01	**1.61E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	-2.98E-01	9.37E-01	**1.58E+00**	pCi/L		450	ml	04/27/06 14:05	05/04/06	100	M	U		
MN-54	2007	8.60E-01	1.30E+00	**2.16E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
CO-58	2007	-1.00E+00	1.34E+00	**2.13E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
FE-59	2007	2.78E-01	2.48E+00	**4.07E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
CO-60	2007	5.47E-01	1.37E+00	**2.28E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
ZN-65	2007	1.88E+01	3.69E+00	**6.14E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U*		No
NB-95	2007	3.47E+00	1.58E+00	**2.37E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U*		No
ZR-95	2007	-8.88E-01	2.37E+00	**3.68E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
CS-134	2007	1.75E+01	2.23E+00	**3.16E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U*		No
CS-137	2007	1.49E+00	1.40E+00	**2.38E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
BA-140	2007	6.90E+00	5.19E+00	**8.75E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No
LA-140	2007	7.96E-01	1.67E+00	**2.82E+00**	pCi/L		3585.96	ml	04/27/06 14:05	04/29/06	75844	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
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MDC - Minimum Detectable Concentration

Report of Analysis

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TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-KD-32** Collect Start: 04/27/2006 16:00 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-18

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	1.59E+02	1.08E+02	**1.60E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	-3.39E-02	9.56E-01	**1.58E+00**	pCi/L		450	ml	04/27/06 16:00	05/04/06	100	M	U		
MN-54	2007	7.08E-01	1.86E+00	**3.12E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
CO-58	2007	-1.35E+00	1.87E+00	**3.03E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
FE-59	2007	-5.39E-01	3.71E+00	**6.01E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
CO-60	2007	1.05E+00	1.94E+00	**3.27E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
ZN-65	2007	3.32E+01	5.85E+00	**1.01E+01**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U*		No
NB-95	2007	4.65E+00	2.04E+00	**3.53E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U*		No
ZR-95	2007	2.68E+00	3.45E+00	**5.51E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
CS-134	2007	2.80E+01	3.38E+00	**4.86E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U*		No
CS-137	2007	1.55E+00	2.06E+00	**3.45E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
BA-140	2007	-3.78E+00	7.18E+00	**1.17E+01**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No
LA-140	2007	2.72E-02	2.19E+00	**3.64E+00**	pCi/L		3595.21	ml	04/27/06 16:00	04/28/06	52192	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
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MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-KD-45** Collect Start: 04/27/2006 17:30 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-19

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	-9.19E+01	9.31E+01	**1.64E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	.00E+00	1.05E+00	**1.73E+00**	pCi/L		450	ml	04/27/06 17:30	05/04/06	100	M	U		
MN-54	2007	2.73E+00	1.95E+00	**2.94E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U		No
CO-58	2007	5.84E-01	1.95E+00	**2.76E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U		No
FE-59	2007	3.54E+00	3.10E+00	**5.36E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U		No
CO-60	2007	-1.18E+00	1.67E+00	**2.76E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U		No
ZN-65	2007	7.86E+01	5.56E+00	**1.08E+01**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U*		No
NB-95	2007	1.69E+01	2.18E+00	**3.75E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U*		No
ZR-95	2007	-3.55E-01	2.97E+00	**4.70E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U		No
CS-134	2007	7.84E+01	3.17E+00	**5.96E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U*		No
CS-137	2007	4.57E+00	2.12E+00	**3.22E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U*		No
BA-140	2007	3.08E+00	6.34E+00	**1.08E+01**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U		No
LA-140	2007	3.57E+00	1.95E+00	**3.50E+00**	pCi/L		3684.69	ml	04/27/06 17:30	04/28/06	52150	Sec	U*		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/09/06 13:41

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28431

Conestoga-Rovers & Associates

Kathy Shaw

EX001-3ESPBYRON-06

Sample ID: **WG-BYN-042706-KD-46** Collect Start: 04/27/2006 17:40 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/28/2006 % Moisture:
LIMS Number: L28431-20

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	7.88E+01	1.02E+02	**1.59E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	1.35E-01	6.96E-01	**1.13E+00**	pCi/L		450	ml	04/27/06 17:40	05/04/06	100	M	U		
MN-54	2007	9.77E-01	1.57E+00	**2.23E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U		No
CO-58	2007	2.51E+00	1.55E+00	**2.22E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U*		No
FE-59	2007	2.54E+00	2.49E+00	**4.21E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U		No
CO-60	2007	6.67E-01	1.37E+00	**2.29E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U		No
ZN-65	2007	8.86E+01	4.62E+00	**8.92E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U*		No
NB-95	2007	1.53E+01	1.52E+00	**2.86E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U*		No
ZR-95	2007	1.75E+00	2.42E+00	**3.66E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U		No
CS-134	2007	7.73E+01	2.86E+00	**4.69E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U*		No
CS-137	2007	5.14E+00	1.63E+00	**2.47E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U*		No
BA-140	2007	2.52E+00	5.03E+00	**8.35E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U		No
LA-140	2007	2.11E+00	1.87E+00	**3.00E+00**	pCi/L		3582.68	ml	04/27/06 17:40	04/29/06	76164	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

QC Results Summary

QC Summary Report for L28431

5/5/2006 2:34:19PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

H-3

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3918-1	H-3	WO	05/03/2006 5:55	< 1.670E+00	pCi/Total	U	P
WG3933-1		WO	05/04/2006 7:33	< 1.460E+00	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3918-2	H-3	WO	05/03/2006 6:59	5.05E+002	5.050E+02	pCi/Total	100.0	70-130	+	P
Spike ID: 3H-041706-1 Spike conc: 5.05E+002 Spike Vol: 1.00E+000										
WG3933-2		WO	05/04/2006 8:37	5.05E+002	5.110E+02	pCi/Total	101.2	70-130	+	P
Spike ID: 3H-041706-1 Spike conc: 5.05E+002 Spike Vol: 1.00E+000										

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3918-3 L28414-8	H-3	WG	05/03/2006 7:09	< 1.650E+02	< 1.660E+02	pCi/L		<30	**	NE
WG3933-3 L28431-19		WG	05/04/2006 8:47	< 1.640E+02	< 1.530E+02	pCi/L		<30	**	NE

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28431

5/5/2006 2:34:19PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

L28431 **H-3**

Associated Samples for **WG3933**

SAMPLENUM	CLIENTID
L28431-11	WG-BYN-042706-SS-41
L28431-12	WG-BYN-042706-SS-42
L28431-13	WG-BYN-042706-SS-43
L28431-14	WG-BYN-042706-SS-44
L28431-15	WG-BYN-042706-KD-26
L28431-16	WG-BYN-042706-KD-28
L28431-17	WG-BYN-042706-KD-30
L28431-18	WG-BYN-042706-KD-32
L28431-19	WG-BYN-042706-KD-45
L28431-20	WG-BYN-042706-KD-46

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28431

5/5/2006 2:34:19PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

SR-90

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3939-1	SR-90	WO	05/05/2006 14:11	< 6.230E-01	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3939-2	SR-90	WO	05/04/2006 21:40	5.84E+001	5.780E+01	pCi/Total	99.0	70-130	+	P

Spike ID: 90SR-011905
Spike conc: 2.34E+002
Spike Vol: 2.50E-001

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28431

5/5/2006 2:34:19PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

L28431 **SR-90 (FAST)**

Associated Samples for **WG3939**

SAMPLENUM	CLIENTID
L28431-5	WG-BYN-042706-SS-35
L28431-6	WG-BYN-042706-SS-36
L28431-7	WG-BYN-042706-SS-37
L28431-8	WG-BYN-042706-SS-38
L28431-9	WG-BYN-042706-SS-39
L28431-10	WG-BYN-042706-SS-40
L28431-11	WG-BYN-042706-SS-41
L28431-12	WG-BYN-042706-SS-42
L28431-13	WG-BYN-042706-SS-43
L28431-14	WG-BYN-042706-SS-44
L28431-15	WG-BYN-042706-KD-26
L28431-16	WG-BYN-042706-KD-28
L28431-17	WG-BYN-042706-KD-30
L28431-18	WG-BYN-042706-KD-32
L28431-19	WG-BYN-042706-KD-45
L28431-20	WG-BYN-042706-KD-46

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28431

5/5/2006 2:34:19PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

TOTAL SR

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3939-3 L28431-5	TOTAL SR	WG	05/05/2006 14:11	< 1.190E+00	< 9.750E-01	pCi/L		<30	**	NE

L28431 **SR-90 (FAST)**

Associated Samples for **WG3939**

SAMPLENUM	CLIENTID
L28431-5	WG-BYN-042706-SS-35
L28431-6	WG-BYN-042706-SS-36
L28431-7	WG-BYN-042706-SS-37
L28431-8	WG-BYN-042706-SS-38
L28431-9	WG-BYN-042706-SS-39
L28431-10	WG-BYN-042706-SS-40
L28431-11	WG-BYN-042706-SS-41
L28431-12	WG-BYN-042706-SS-42
L28431-13	WG-BYN-042706-SS-43
L28431-14	WG-BYN-042706-SS-44
L28431-15	WG-BYN-042706-KD-26
L28431-16	WG-BYN-042706-KD-28
L28431-17	WG-BYN-042706-KD-30
L28431-18	WG-BYN-042706-KD-32
L28431-19	WG-BYN-042706-KD-45
L28431-20	WG-BYN-042706-KD-46

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

Raw Data

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 21:12:56.78
TBE07 P-10768B HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:39.21

LIMS No., Customer Name, Client ID: WG L28431-5 EX BYR H-3 SPEC

Sample ID : 07L28431-5
Sample Type : WG
Quantity : 3.52570E+00 L
Start Channel : 40 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 09:00:00.
Geometry : 0735L090904
BKGFILE : 07BG041406MT
Real Time : 0 06:30:04.41
Live time : 0 06:30:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.32*	172	580	0.96	133.48	7.24E-01	7.36E-03	25.7	5.29E-01
2	1	139.76*	80	447	1.09	280.41	2.09E+00	3.43E-03	49.2	5.75E+00
3	1	198.53*	159	651	1.44	398.00	1.98E+00	6.80E-03	34.5	2.91E+00
4	1	595.99	89	116	1.65	1193.06	9.96E-01	3.79E-03	23.5	4.03E+00
5	1	609.45*	57	141	1.76	1219.99	9.80E-01	2.45E-03	48.4	2.64E+00
6	1	867.90	74	98	3.61	1736.90	7.57E-01	3.15E-03	31.1	1.70E+00
7	1	1464.09	44	24	2.20	2929.00	5.14E-01	1.87E-03	40.7	4.03E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 07L28431-5 Acquisition date : 28-APR-2006 14:42:39

Total number of lines in spectrum	7	
Number of unidentified lines	7	
Number of lines tentatively identified by NID	0	0.00%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 07L28431-5 Acquisition date : 28-APR-2006 14:42:39

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.32	172	580	0.96	133.48	130	7	7.36E-03	51.3	7.24E-01	
1	139.76	80	447	1.09	280.41	277	7	3.43E-03	98.4	2.09E+00	
1	198.53	159	651	1.44	398.00	391	12	6.80E-03	69.1	1.98E+00	
1	595.99	89	116	1.65	1193.06	1190	8	3.79E-03	47.0	9.96E-01	
1	609.45	57	141	1.76	1219.99	1214	11	2.45E-03	96.7	9.80E-01	
1	867.90	74	98	3.61	1736.90	1730	14	3.15E-03	62.3	7.57E-01	
1	1464.09	44	24	2.20	2929.00	2915	25	1.87E-03	81.4	5.14E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum 7
Number of unidentified lines 7
Number of lines tentatively identified by NID 0 0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	1.108E+01		1.422E+01	2.432E+01	0.000E+00	0.456
NA-24	-8.240E+00		8.893E+00	1.380E+01	0.000E+00	-0.597
K-40	8.631E+00		2.815E+01	4.931E+01	0.000E+00	0.175
CR-51	-6.588E+00		1.488E+01	2.371E+01	0.000E+00	-0.278
MN-54	4.882E-01		1.801E+00	3.027E+00	0.000E+00	0.161
CO-57	6.937E-03		1.498E+00	2.510E+00	0.000E+00	0.003
CO-58	-1.875E+00		1.815E+00	2.800E+00	0.000E+00	-0.670
FE-59	1.299E+00		3.403E+00	5.736E+00	0.000E+00	0.227
CO-60	9.417E-01		1.785E+00	3.051E+00	0.000E+00	0.309
ZN-65	-1.235E+00		3.811E+00	6.177E+00	0.000E+00	-0.200
SE-75	1.011E+00		2.212E+00	3.681E+00	0.000E+00	0.275
SR-85	1.589E+01		2.128E+00	4.184E+00	0.000E+00	3.797
Y-88	-3.601E-01		2.074E+00	3.336E+00	0.000E+00	-0.108
NB-94	-4.065E-01		1.703E+00	2.778E+00	0.000E+00	-0.146
NB-95	-2.944E-01		1.717E+00	2.783E+00	0.000E+00	-0.106
ZR-95	1.443E+00		3.118E+00	5.212E+00	0.000E+00	0.277
MO-99	1.378E+01		1.837E+01	3.117E+01	0.000E+00	0.442
RU-103	2.440E-01		1.727E+00	2.877E+00	0.000E+00	0.085
RU-106	4.390E-01		1.669E+01	2.713E+01	0.000E+00	0.016
AG-110m	-1.684E-01		1.621E+00	2.676E+00	0.000E+00	-0.063
SN-113	-2.645E+00		2.164E+00	3.399E+00	0.000E+00	-0.778

SB-124	-2.461E+00	4.188E+00	2.740E+00	0.000E+00	-0.898
SB-125	1.553E+00	4.792E+00	7.910E+00	0.000E+00	0.196
TE-129M	3.971E+00	2.034E+01	3.320E+01	0.000E+00	0.120
I-131	4.415E-01	1.918E+00	3.196E+00	0.000E+00	0.138
BA-133	-1.646E-02	2.350E+00	3.892E+00	0.000E+00	-0.004
CS-134	6.132E-01	3.038E+00	3.026E+00	0.000E+00	0.203
CS-136	-6.419E-01	1.811E+00	2.887E+00	0.000E+00	-0.222
CS-137	7.006E-01	1.814E+00	3.057E+00	0.000E+00	0.229
CE-139	7.543E-01	1.571E+00	2.607E+00	0.000E+00	0.289
BA-140	-2.545E+00	6.530E+00	1.058E+01	0.000E+00	-0.241
LA-140	2.634E+00	2.181E+00	3.893E+00	0.000E+00	0.677
CE-141	-7.984E-01	2.990E+00	4.391E+00	0.000E+00	-0.182
CE-144	8.084E-01	1.329E+01	1.987E+01	0.000E+00	0.041
EU-152	-1.213E+01	5.412E+00	8.362E+00	0.000E+00	-1.451
EU-154	-4.334E-01	3.156E+00	5.266E+00	0.000E+00	-0.082
RA-226	5.860E+00	4.218E+01	6.879E+01	0.000E+00	0.085
AC-228	-4.888E+00	6.848E+00	1.109E+01	0.000E+00	-0.441
TH-228	4.789E+00	3.336E+00	5.712E+00	0.000E+00	0.838
TH-232	-4.885E+00	6.845E+00	1.109E+01	0.000E+00	-0.441
U-235	2.525E+00	1.401E+01	1.990E+01	0.000E+00	0.127
U-238	8.229E+01	2.060E+02	3.364E+02	0.000E+00	0.245
AM-241	-3.122E+01	1.419E+01	2.174E+01	0.000E+00	-1.436

A,07L28431-5 ,04/28/2006 21:12,04/27/2006 09:00, 3.526E+00,WG L28431-5 EX
B,07L28431-5 ,LIBD ,06/23/2005 07:26,0735L090904

C,BE-7	,NO ,	1.108E+01,	1.422E+01,	2.432E+01,,	0.456
C,NA-24	,NO ,	-8.240E+00,	8.893E+00,	1.380E+01,,	-0.597
C,K-40	,NO ,	8.631E+00,	2.815E+01,	4.931E+01,,	0.175
C,CR-51	,NO ,	-6.588E+00,	1.488E+01,	2.371E+01,,	-0.278
C,MN-54	,NO ,	4.882E-01,	1.801E+00,	3.027E+00,,	0.161
C,CO-57	,NO ,	6.937E-03,	1.498E+00,	2.510E+00,,	0.003
C,CO-58	,NO ,	-1.875E+00,	1.815E+00,	2.800E+00,,	-0.670
C,FE-59	,NO ,	1.299E+00,	3.403E+00,	5.736E+00,,	0.227
C,CO-60	,NO ,	9.417E-01,	1.785E+00,	3.051E+00,,	0.309
C,ZN-65	,NO ,	-1.235E+00,	3.811E+00,	6.177E+00,,	-0.200
C,SE-75	,NO ,	1.011E+00,	2.212E+00,	3.681E+00,,	0.275
C,SR-85	,NO ,	1.589E+01,	2.128E+00,	4.184E+00,,	3.797
C,Y-88	,NO ,	-3.601E-01,	2.074E+00,	3.336E+00,,	-0.108
C,NB-94	,NO ,	-4.065E-01,	1.703E+00,	2.778E+00,,	-0.146
C,NB-95	,NO ,	-2.944E-01,	1.717E+00,	2.783E+00,,	-0.106
C,ZR-95	,NO ,	1.443E+00,	3.118E+00,	5.212E+00,,	0.277
C,MO-99	,NO ,	1.378E+01,	1.837E+01,	3.117E+01,,	0.442
C,RU-103	,NO ,	2.440E-01,	1.727E+00,	2.877E+00,,	0.085
C,RU-106	,NO ,	4.390E-01,	1.669E+01,	2.713E+01,,	0.016
C,AG-110m	,NO ,	-1.684E-01,	1.621E+00,	2.676E+00,,	-0.063
C,SN-113	,NO ,	-2.645E+00,	2.164E+00,	3.399E+00,,	-0.778
C,SB-124	,NO ,	-2.461E+00,	4.188E+00,	2.740E+00,,	-0.898
C,SB-125	,NO ,	1.553E+00,	4.792E+00,	7.910E+00,,	0.196
C,TE-129M	,NO ,	3.971E+00,	2.034E+01,	3.320E+01,,	0.120
C,I-131	,NO ,	4.415E-01,	1.918E+00,	3.196E+00,,	0.138
C,BA-133	,NO ,	-1.646E-02,	2.350E+00,	3.892E+00,,	-0.004
C,CS-134	,NO ,	6.132E-01,	3.038E+00,	3.026E+00,,	0.203
C,CS-136	,NO ,	-6.419E-01,	1.811E+00,	2.887E+00,,	-0.222
C,CS-137	,NO ,	7.006E-01,	1.814E+00,	3.057E+00,,	0.229
C,CE-139	,NO ,	7.543E-01,	1.571E+00,	2.607E+00,,	0.289
C,BA-140	,NO ,	-2.545E+00,	6.530E+00,	1.058E+01,,	-0.241
C,LA-140	,NO ,	2.634E+00,	2.181E+00,	3.893E+00,,	0.677
C,CE-141	,NO ,	-7.984E-01,	2.990E+00,	4.391E+00,,	-0.182
C,CE-144	,NO ,	8.084E-01,	1.329E+01,	1.987E+01,,	0.041
C,EU-152	,NO ,	-1.213E+01,	5.412E+00,	8.362E+00,,	-1.451
C,EU-154	,NO ,	-4.334E-01,	3.156E+00,	5.266E+00,,	-0.082
C,RA-226	,NO ,	5.860E+00,	4.218E+01,	6.879E+01,,	0.085
C,AC-228	,NO ,	-4.888E+00,	6.848E+00,	1.109E+01,,	-0.441
C,TH-228	,NO ,	4.789E+00,	3.336E+00,	5.712E+00,,	0.838
C,TH-232	,NO ,	-4.885E+00,	6.845E+00,	1.109E+01,,	-0.441
C,U-235	,NO ,	2.525E+00,	1.401E+01,	1.990E+01,,	0.127
C,U-238	,NO ,	8.229E+01,	2.060E+02,	3.364E+02,,	0.245
C,AM-241	,NO ,	-3.122E+01,	1.419E+01,	2.174E+01,,	-1.436

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 21:15:28.57
TBE13 P-10727B HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:52.04

LIMS No., Customer Name, Client ID: WG L28431-6 EX BYR H-3 SPEC

Sample ID : 13L28431-6
Sample Type : WG
Quantity : 3.58590E+00 L
Start Channel : 25 Energy Tol : 1.50000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 10:15:00.
Geometry : 1335L090904
BKGFILE : 13BG041406MT
Real Time : 0 06:32:16.90
Live time : 0 06:32:09.67

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	63.29*	120	1578	1.78	126.55	6.20E-01	5.08E-03	65.9	4.67E+00
2	1	77.17*	239	724	0.89	154.28	1.09E+00	1.02E-02	20.1	1.79E+00
3	5	87.40*	32	602	0.84	174.71	1.39E+00	1.36E-03	121.5	9.32E-01
4	1	139.82*	189	958	0.98	279.47	2.02E+00	8.02E-03	31.0	1.93E-01
5	1	185.81*	8	849	1.03	371.39	1.95E+00	3.53E-04	684.8	1.00E+00
6	1	198.46*	199	810	1.21	396.67	1.90E+00	8.47E-03	28.6	5.72E-01
7	2	238.60*	147	508	1.09	476.89	1.73E+00	6.26E-03	29.2	1.97E+00
8	2	241.87	232	561	1.27	483.42	1.72E+00	9.86E-03	18.9	
9	1	295.18*	605	563	1.36	589.99	1.52E+00	2.57E-02	9.0	4.95E+00
10	1	351.87*	953	494	1.13	703.29	1.34E+00	4.05E-02	6.1	1.40E+00
11	1	582.90*	15	277	1.71	1165.18	9.26E-01	6.37E-04	253.4	1.12E+00
12	1	595.45	93	195	1.96	1190.27	9.12E-01	3.96E-03	29.4	3.05E+00
13	1	609.23*	651	268	1.28	1217.83	8.96E-01	2.77E-02	6.6	2.31E+00
14	1	768.08	66	230	2.76	1535.47	7.54E-01	2.79E-03	52.0	1.80E+00
15	1	933.81	62	88	2.79	1866.97	6.52E-01	2.65E-03	31.9	1.51E+00
16	1	1120.63*	150	128	2.00	2240.71	5.69E-01	6.37E-03	19.9	1.95E+00
17	1	1238.32*	45	91	1.45	2476.19	5.29E-01	1.92E-03	50.3	1.85E+00
18	1	1378.05*	61	72	3.35	2755.82	4.89E-01	2.61E-03	36.4	1.99E+00
19	1	1729.70	38	27	1.97	3459.75	4.17E-01	1.62E-03	31.9	4.25E-01
20	1	1764.92*	125	48	1.95	3530.27	4.11E-01	5.32E-03	17.4	8.85E-01

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
RA-226	186.21	8	3.28*	1.946E+00	4.163E+00	4.163E+00	1369.62
TH-228	238.63	147	44.60*	1.733E+00	6.105E+00	6.113E+00	58.38
	240.98	232	3.95	1.719E+00	1.094E+02	1.095E+02	37.75
U-235	143.76	------	10.50*	2.023E+00	------	Line Not Found	------
	163.35	------	4.70	2.011E+00	------	Line Not Found	------
	185.71	8	54.00	1.946E+00	2.529E-01	2.529E-01	1369.62
	205.31	------	4.70	1.871E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 13L28431-6 Acquisition date : 28-APR-2006 14:42:52

Total number of lines in spectrum	20	
Number of unidentified lines	16	
Number of lines tentatively identified by NID	4	20.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	4.163E+00	4.163E+00	57.02E+00	1369.62	
TH-228	1.91Y	1.00	6.105E+00	6.113E+00	3.568E+00	58.38	
U-235	7.04E+08Y	1.00	2.529E-01	2.529E-01	34.63E-01	1369.62	K
	Total Activity :		1.052E+01	1.053E+01			
	Grand Total Activity :		1.052E+01	1.053E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 13L28431-6 Acquisition date : 28-APR-2006 14:42:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	63.29	120	1578	1.78	126.55	123	11	5.08E-03	****	6.20E-01	
1	77.17	239	724	0.89	154.28	153	6	1.02E-02	40.3	1.09E+00	
5	87.40	32	602	0.84	174.71	164	15	1.36E-03	****	1.39E+00	
1	139.82	189	958	0.98	279.47	275	9	8.02E-03	61.9	2.02E+00	
1	198.46	199	810	1.21	396.67	392	10	8.47E-03	57.2	1.90E+00	
1	295.18	605	563	1.36	589.99	585	12	2.57E-02	18.0	1.52E+00	
1	351.87	953	494	1.13	703.29	696	14	4.05E-02	12.3	1.34E+00	
1	582.90	15	277	1.71	1165.18	1157	14	6.37E-04	****	9.26E-01	T
1	595.45	93	195	1.96	1190.27	1186	10	3.96E-03	58.9	9.12E-01	
1	609.23	651	268	1.28	1217.83	1213	11	2.77E-02	13.1	8.96E-01	
1	768.08	66	230	2.76	1535.47	1528	15	2.79E-03	****	7.54E-01	
1	933.81	62	88	2.79	1866.97	1862	11	2.65E-03	63.9	6.52E-01	
1	1120.63	150	128	2.00	2240.71	2234	16	6.37E-03	39.9	5.69E-01	
1	1238.32	45	91	1.45	2476.19	2467	14	1.92E-03	****	5.29E-01	
1	1378.05	61	72	3.35	2755.82	2750	18	2.61E-03	72.8	4.89E-01	
1	1729.70	38	27	1.97	3459.75	3453	12	1.62E-03	63.8	4.17E-01	
1	1764.92	125	48	1.95	3530.27	3521	19	5.32E-03	34.9	4.11E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	20	
Number of unidentified lines	16	
Number of lines tentatively identified by NID	4	20.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	4.163E+00	4.163E+00	57.02E+00	1369.62	
TH-228	1.91Y	1.00	6.105E+00	6.113E+00	3.568E+00	58.38	
	Total Activity :		1.027E+01	1.028E+01			

Grand Total Activity : 1.027E+01 1.028E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
RA-226	4.163E+00	5.702E+01	7.914E+01	0.000E+00	0.053

TH-228	6.113E+00	3.568E+00	6.060E+00	0.000E+00	1.009

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	3.232E+00		1.707E+01	2.804E+01	0.000E+00	0.115
NA-24	-6.033E+00		1.128E+01	1.482E+01	0.000E+00	-0.407
K-40	1.228E+01		2.965E+01	5.687E+01	0.000E+00	0.216
CR-51	-5.944E+00		1.783E+01	2.874E+01	0.000E+00	-0.207
MN-54	6.404E-01		2.018E+00	3.369E+00	0.000E+00	0.190
CO-57	-4.727E-01		1.913E+00	3.176E+00	0.000E+00	-0.149
CO-58	1.082E+00		1.963E+00	3.320E+00	0.000E+00	0.326
FE-59	2.347E+00		3.809E+00	6.469E+00	0.000E+00	0.363
CO-60	1.475E+00		2.077E+00	3.575E+00	0.000E+00	0.413
ZN-65	1.334E+01		5.500E+00	8.854E+00	0.000E+00	1.507
SE-75	-2.617E+00		2.654E+00	4.271E+00	0.000E+00	-0.613
SR-85	1.539E+01		2.444E+00	4.605E+00	0.000E+00	3.341
Y-88	-2.980E+00		2.323E+00	3.434E+00	0.000E+00	-0.868
NB-94	-1.017E+00		2.035E+00	3.244E+00	0.000E+00	-0.313
NB-95	5.898E+00		2.411E+00	3.862E+00	0.000E+00	1.527
ZR-95	-9.121E-02		3.820E+00	5.874E+00	0.000E+00	-0.016
MO-99	-1.504E+01		2.112E+01	3.410E+01	0.000E+00	-0.441
RU-103	2.134E+00		2.082E+00	3.507E+00	0.000E+00	0.609
RU-106	-7.994E-01		1.875E+01	3.079E+01	0.000E+00	-0.026
AG-110m	-6.089E-01		1.977E+00	3.195E+00	0.000E+00	-0.191
SN-113	-2.071E-01		2.578E+00	4.261E+00	0.000E+00	-0.049
SB-124	-1.955E+00		4.847E+00	3.383E+00	0.000E+00	-0.578
SB-125	2.158E+00		5.747E+00	9.574E+00	0.000E+00	0.225
TE-129M	8.820E+00		2.367E+01	3.922E+01	0.000E+00	0.225
I-131	-1.380E+00		2.215E+00	3.624E+00	0.000E+00	-0.381
BA-133	1.168E+01		3.348E+00	5.385E+00	0.000E+00	2.169
CS-134	1.140E+01		3.429E+00	4.577E+00	0.000E+00	2.490
CS-136	-2.311E+00		2.138E+00	3.354E+00	0.000E+00	-0.689
CS-137	-1.884E-01		2.299E+00	3.721E+00	0.000E+00	-0.051
CE-139	-3.751E-01		1.935E+00	3.156E+00	0.000E+00	-0.119
BA-140	3.434E+00		7.370E+00	1.247E+01	0.000E+00	0.275
LA-140	-1.772E-01		2.555E+00	4.216E+00	0.000E+00	-0.042
CE-141	-1.789E+00		3.989E+00	5.588E+00	0.000E+00	-0.320
CE-144	7.444E-01		1.729E+01	2.472E+01	0.000E+00	0.030
EU-152	-6.497E+00		7.515E+00	9.927E+00	0.000E+00	-0.654
EU-154	-7.446E-01		4.059E+00	6.745E+00	0.000E+00	-0.110
AC-228	3.753E-01		8.546E+00	1.395E+01	0.000E+00	0.027
TH-232	3.751E-01		8.543E+00	1.394E+01	0.000E+00	0.027
U-235	3.144E+00		1.793E+01	2.542E+01	0.000E+00	0.124
U-238	6.675E+01		2.440E+02	4.089E+02	0.000E+00	0.163
AM-241	2.534E+01		1.856E+01	2.779E+01	0.000E+00	0.912

A,13L28431-6 ,04/28/2006 21:15,04/27/2006 10:15, 3.586E+00,WG L28431-6 EX
B,13L28431-6 ,LIBD ,08/05/2005 08:16,1335L090904

C,RA-226	,YES,	4.163E+00,	5.702E+01,	7.914E+01,,	0.053
C,TH-228	,YES,	6.113E+00,	3.568E+00,	6.060E+00,,	1.009
C,BE-7	,NO ,	3.232E+00,	1.707E+01,	2.804E+01,,	0.115
C,NA-24	,NO ,	-6.033E+00,	1.128E+01,	1.482E+01,,	-0.407
C,K-40	,NO ,	1.228E+01,	2.965E+01,	5.687E+01,,	0.216
C,CR-51	,NO ,	-5.944E+00,	1.783E+01,	2.874E+01,,	-0.207
C,MN-54	,NO ,	6.404E-01,	2.018E+00,	3.369E+00,,	0.190
C,CO-57	,NO ,	-4.727E-01,	1.913E+00,	3.176E+00,,	-0.149
C,CO-58	,NO ,	1.082E+00,	1.963E+00,	3.320E+00,,	0.326
C,FE-59	,NO ,	2.347E+00,	3.809E+00,	6.469E+00,,	0.363
C,CO-60	,NO ,	1.475E+00,	2.077E+00,	3.575E+00,,	0.413
C,ZN-65	,NO ,	1.334E+01,	5.500E+00,	8.854E+00,,	1.507
C,SE-75	,NO ,	-2.617E+00,	2.654E+00,	4.271E+00,,	-0.613
C,SR-85	,NO ,	1.539E+01,	2.444E+00,	4.605E+00,,	3.341
C,Y-88	,NO ,	-2.980E+00,	2.323E+00,	3.434E+00,,	-0.868
C,NB-94	,NO ,	-1.017E+00,	2.035E+00,	3.244E+00,,	-0.313
C,NB-95	,NO ,	5.898E+00,	2.411E+00,	3.862E+00,,	1.527
C,ZR-95	,NO ,	-9.121E-02,	3.820E+00,	5.874E+00,,	-0.016
C,MO-99	,NO ,	-1.504E+01,	2.112E+01,	3.410E+01,,	-0.441
C,RU-103	,NO ,	2.134E+00,	2.082E+00,	3.507E+00,,	0.609
C,RU-106	,NO ,	-7.994E-01,	1.875E+01,	3.079E+01,,	-0.026
C,AG-110m	,NO ,	-6.089E-01,	1.977E+00,	3.195E+00,,	-0.191
C,SN-113	,NO ,	-2.071E-01,	2.578E+00,	4.261E+00,,	-0.049
C,SB-124	,NO ,	-1.955E+00,	4.847E+00,	3.383E+00,,	-0.578
C,SB-125	,NO ,	2.158E+00,	5.747E+00,	9.574E+00,,	0.225
C,TE-129M	,NO ,	8.820E+00,	2.367E+01,	3.922E+01,,	0.225
C,I-131	,NO ,	-1.380E+00,	2.215E+00,	3.624E+00,,	-0.381
C,BA-133	,NO ,	1.168E+01,	3.348E+00,	5.385E+00,,	2.169
C,CS-134	,NO ,	1.140E+01,	3.429E+00,	4.577E+00,,	2.490
C,CS-136	,NO ,	-2.311E+00,	2.138E+00,	3.354E+00,,	-0.689
C,CS-137	,NO ,	-1.884E-01,	2.299E+00,	3.721E+00,,	-0.051
C,CE-139	,NO ,	-3.751E-01,	1.935E+00,	3.156E+00,,	-0.119
C,BA-140	,NO ,	3.434E+00,	7.370E+00,	1.247E+01,,	0.275
C,LA-140	,NO ,	-1.772E-01,	2.555E+00,	4.216E+00,,	-0.042
C,CE-141	,NO ,	-1.789E+00,	3.989E+00,	5.588E+00,,	-0.320
C,CE-144	,NO ,	7.444E-01,	1.729E+01,	2.472E+01,,	0.030
C,EU-152	,NO ,	-6.497E+00,	7.515E+00,	9.927E+00,,	-0.654
C,EU-154	,NO ,	-7.446E-01,	4.059E+00,	6.745E+00,,	-0.110
C,AC-228	,NO ,	3.753E-01,	8.546E+00,	1.395E+01,,	0.027
C,TH-232	,NO ,	3.751E-01,	8.543E+00,	1.394E+01,,	0.027
C,U-235	,NO ,	3.144E+00,	1.793E+01,	2.542E+01,,	0.124
C,U-238	,NO ,	6.675E+01,	2.440E+02,	4.089E+02,,	0.163
C,AM-241	,NO ,	2.534E+01,	1.856E+01,	2.779E+01,,	0.912

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:05:39.55
TBE14 P-10933A HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:55.51

LIMS No., Customer Name, Client ID: WG L28431-7 EX BYR H-3 SPEC

Sample ID : 14L28431-7
Sample Type : WG
Quantity : 3.57650E+00 L
Start Channel : 90 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 11:20:00.
Geometry : 1435L091304
BKGFILE : 14BG041406MT
Real Time : 0 21:22:35.99
Live time : 0 21:22:16.34

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	65.85*	652	5334	1.69	132.83	4.40E-01	8.47E-03	21.3	1.41E+00
2	3	73.02*	173	4623	1.60	147.21	6.40E-01	2.25E-03	75.6	3.50E+00
3	3	74.68*	1150	5152	1.46	150.55	6.87E-01	1.49E-02	12.6	
4	3	76.93	2059	3956	1.19	155.08	7.51E-01	2.68E-02	5.7	
5	1	87.03*	565	4706	1.13	175.34	1.02E+00	7.34E-03	22.4	3.05E+00
6	1	92.60*	27	3606	1.30	186.53	1.15E+00	3.54E-04	113.5	3.24E+00
7	1	139.82	479	4478	1.50	281.31	1.67E+00	6.22E-03	24.6	6.54E-01
8	1	185.87*	141	4015	1.49	373.70	1.64E+00	1.83E-03	91.2	8.48E-01
9	1	198.50*	323	3584	1.13	399.03	1.60E+00	4.20E-03	34.8	4.68E-01
10	2	238.58*	249	3363	1.71	479.41	1.47E+00	3.24E-03	47.2	1.37E+00
11	2	242.05	2991	2592	1.39	486.36	1.46E+00	3.89E-02	3.5	
12	1	295.29*	6508	3007	1.41	593.08	1.29E+00	8.46E-02	2.2	2.26E+00
13	1	351.99*	10787	2828	1.41	706.68	1.14E+00	1.40E-01	1.5	4.75E-01
14	1	595.85	270	925	1.75	1194.67	7.79E-01	3.52E-03	22.5	7.40E-01
15	1	609.21*	8916	1067	1.58	1221.36	7.66E-01	1.16E-01	1.4	2.69E+00
16	1	665.23	219	730	1.74	1333.32	7.17E-01	2.85E-03	25.0	3.21E+00
17	1	768.14	751	838	1.61	1538.82	6.43E-01	9.76E-03	9.0	3.70E-01
18	1	785.05	216	977	2.95	1572.57	6.33E-01	2.81E-03	35.5	3.34E+00
19	1	806.18	138	512	1.44	1614.76	6.20E-01	1.79E-03	30.9	7.46E-01
20	1	933.79	454	625	1.93	1869.27	5.54E-01	5.90E-03	12.9	1.65E+00
21	1	1120.15*	1889	504	1.86	2240.47	4.81E-01	2.46E-02	3.6	4.76E-01
22	1	1154.63	309	394	3.27	2309.08	4.70E-01	4.02E-03	15.2	3.08E+00
23	1	1238.07*	785	492	2.22	2475.04	4.45E-01	1.02E-02	8.1	1.16E+00
24	1	1281.09	160	316	2.29	2560.58	4.34E-01	2.08E-03	24.4	1.15E+00
25	1	1377.79	588	339	2.47	2752.71	4.10E-01	7.64E-03	8.1	1.64E+00
26	1	1385.94	126	223	2.42	2768.89	4.09E-01	1.63E-03	24.9	1.51E+00
27	1	1402.09	201	245	2.28	2800.97	4.05E-01	2.61E-03	16.9	2.26E+00
28	1	1408.45	286	241	2.28	2813.58	4.04E-01	3.72E-03	12.3	
29	1	1461.34*	11	310	2.56	2918.58	3.93E-01	1.48E-04	468.3	2.74E+00
30	1	1509.62	262	280	2.21	3014.38	3.83E-01	3.40E-03	14.9	9.78E-01
31	1	1662.87	151	162	2.66	3318.23	3.58E-01	1.96E-03	19.6	1.64E+00
32	1	1731.16	386	222	2.25	3453.49	3.48E-01	5.02E-03	10.2	2.05E+00
33	1	1766.13	1674	214	2.36	3522.75	3.43E-01	2.18E-02	3.2	9.88E-01
34	1	1849.32	252	144	2.99	3687.39	3.33E-01	3.28E-03	13.0	1.24E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	11	10.67*	3.926E-01	2.676E+00	2.676E+00	936.57
RA-226	186.21	141	3.28*	1.640E+00	2.575E+01	2.575E+01	182.42
TH-228	238.63	249	44.60*	1.469E+00	3.733E+00	3.739E+00	94.49
	240.98	2991	3.95	1.457E+00	5.105E+02	5.113E+02	6.97
U-235	143.76	------	10.50*	1.680E+00	------	Line Not Found	------
	163.35	------	4.70	1.685E+00	------	Line Not Found	------
	185.71	141	54.00	1.640E+00	1.564E+00	1.564E+00	182.42
	205.31	------	4.70	1.582E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 14L28431-7 Acquisition date : 28-APR-2006 14:42:55

Total number of lines in spectrum	34	
Number of unidentified lines	29	
Number of lines tentatively identified by NID	5	14.71%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.676E+00	2.676E+00	25.06E+00	936.57	
RA-226	1600.00Y	1.00	2.575E+01	2.575E+01	4.697E+01	182.42	
TH-228	1.91Y	1.00	3.733E+00	3.739E+00	3.533E+00	94.49	
U-235	7.04E+08Y	1.00	1.564E+00	1.564E+00	2.853E+00	182.42	K
			---------	---------			
	Total Activity :		3.372E+01	3.373E+01			
	Grand Total Activity :		3.372E+01	3.373E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 14L28431-7

Acquisition date : 28-APR-2006 14:42:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	65.85	652	5334	1.69	132.83	129	9	8.47E-03	42.6	4.40E-01	
3	73.02	173	4623	1.60	147.21	143	18	2.25E-03	****	6.40E-01	
3	74.68	1150	5152	1.46	150.55	143	18	1.49E-02	25.2	6.87E-01	
3	76.93	2059	3956	1.19	155.08	143	18	2.68E-02	11.4	7.51E-01	
1	87.03	565	4706	1.13	175.34	172	8	7.34E-03	44.8	1.02E+00	
1	92.60	27	3606	1.30	186.53	184	7	3.54E-04	****	1.15E+00	
1	139.82	479	4478	1.50	281.31	278	8	6.22E-03	49.2	1.67E+00	
1	198.50	323	3584	1.13	399.03	396	8	4.20E-03	69.5	1.60E+00	
1	295.29	6508	3007	1.41	593.08	588	13	8.46E-02	4.4	1.29E+00	
1	351.99	10787	2828	1.41	706.68	700	15	1.40E-01	3.0	1.14E+00	
1	595.85	270	925	1.75	1194.67	1189	11	3.52E-03	45.0	7.79E-01	
1	609.21	8916	1067	1.58	1221.36	1215	13	1.16E-01	2.7	7.66E-01	
1	665.23	219	730	1.74	1333.32	1328	11	2.85E-03	50.0	7.17E-01	
1	768.14	751	838	1.61	1538.82	1532	14	9.76E-03	17.9	6.43E-01	
1	785.05	216	977	2.95	1572.57	1564	19	2.81E-03	71.1	6.33E-01	
1	806.18	138	512	1.44	1614.76	1611	9	1.79E-03	61.9	6.20E-01	
1	933.79	454	625	1.93	1869.27	1863	15	5.90E-03	25.9	5.54E-01	
1	1120.15	1889	504	1.86	2240.47	2234	14	2.46E-02	7.3	4.81E-01	
1	1154.63	309	394	3.27	2309.08	2302	15	4.02E-03	30.4	4.70E-01	
1	1238.07	785	492	2.22	2475.04	2467	19	1.02E-02	16.1	4.45E-01	
1	1281.09	160	316	2.29	2560.58	2554	13	2.08E-03	48.7	4.34E-01	
1	1377.79	588	339	2.47	2752.71	2746	16	7.64E-03	16.1	4.10E-01	
1	1385.94	126	223	2.42	2768.89	2764	11	1.63E-03	49.8	4.09E-01	
1	1402.09	201	245	2.28	2800.97	2795	25	2.61E-03	33.9	4.05E-01	
1	1408.45	286	241	2.28	2813.58	2795	25	3.72E-03	24.6	4.04E-01	T
1	1509.62	262	280	2.21	3014.38	3007	14	3.40E-03	29.9	3.83E-01	
1	1662.87	151	162	2.66	3318.23	3312	13	1.96E-03	39.1	3.58E-01	
1	1731.16	386	222	2.25	3453.49	3447	17	5.02E-03	20.5	3.48E-01	
1	1766.13	1674	214	2.36	3522.75	3513	19	2.18E-02	6.4	3.43E-01	
1	1849.32	252	144	2.99	3687.39	3680	18	3.28E-03	26.0	3.33E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	34	
Number of unidentified lines	29	
Number of lines tentatively identified by NID	5	14.71%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.676E+00	2.676E+00	25.06E+00	936.57	
RA-226	1600.00Y	1.00	2.575E+01	2.575E+01	4.697E+01	182.42	
TH-228	1.91Y	1.00	3.733E+00	3.739E+00	3.533E+00	94.49	
	Total Activity :		3.216E+01	3.216E+01			
	Grand Total Activity :		3.216E+01	3.216E+01			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	2.676E+00	2.506E+01	2.545E+01	0.000E+00	0.105
RA-226	2.575E+01	4.697E+01	7.378E+01	0.000E+00	0.349
TH-228	3.739E+00	3.533E+00	5.442E+00	0.000E+00	0.687

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	-1.012E+01		1.407E+01	2.310E+01	0.000E+00	-0.438
NA-24	-7.470E-01		1.074E+01	1.460E+01	0.000E+00	-0.051
CR-51	-5.078E+00		1.491E+01	2.446E+01	0.000E+00	-0.208
MN-54	1.015E+00		1.603E+00	2.673E+00	0.000E+00	0.380
CO-57	-1.039E+00		1.870E+00	3.091E+00	0.000E+00	-0.336
CO-58	2.513E+00		1.832E+00	2.652E+00	0.000E+00	0.948
FE-59	3.647E+00		2.985E+00	5.081E+00	0.000E+00	0.718
CO-60	-8.473E-01		1.659E+00	2.670E+00	0.000E+00	-0.317
ZN-65	7.616E+01		5.273E+00	9.811E+00	0.000E+00	7.763
SE-75	-7.035E-01		2.374E+00	3.931E+00	0.000E+00	-0.179
SR-85	1.786E+01		1.721E+00	3.209E+00	0.000E+00	5.565
Y-88	2.204E+00		1.664E+00	2.617E+00	0.000E+00	0.842
NB-94	9.768E-01		1.537E+00	2.527E+00	0.000E+00	0.387
NB-95	1.272E+01		1.748E+00	3.236E+00	0.000E+00	3.929
ZR-95	1.643E+00		2.985E+00	4.522E+00	0.000E+00	0.363
MO-99	1.393E+01		1.692E+01	2.851E+01	0.000E+00	0.488
RU-103	1.339E+00		1.658E+00	2.776E+00	0.000E+00	0.482
RU-106	-4.272E+00		1.488E+01	2.354E+01	0.000E+00	-0.181
AG-110m	7.887E-01		1.812E+00	2.514E+00	0.000E+00	0.314
SN-113	1.512E+00		2.260E+00	3.720E+00	0.000E+00	0.407
SB-124	1.235E+00		3.805E+00	2.711E+00	0.000E+00	0.456
SB-125	1.145E-01		4.902E+00	7.965E+00	0.000E+00	0.014
TE-129M	2.586E+00		1.904E+01	3.169E+01	0.000E+00	0.082
I-131	8.000E-01		1.980E+00	3.211E+00	0.000E+00	0.249
BA-133	1.293E+02		3.830E+00	7.360E+00	0.000E+00	17.570
CS-134	9.608E+01		3.868E+00	5.839E+00	0.000E+00	16.454
CS-136	2.236E-01		1.685E+00	2.684E+00	0.000E+00	0.083
CS-137	2.974E+00		2.244E+00	3.038E+00	0.000E+00	0.979
CE-139	-1.551E+00		1.886E+00	3.077E+00	0.000E+00	-0.504
BA-140	4.694E+00		6.196E+00	1.034E+01	0.000E+00	0.454
LA-140	1.189E+00		2.025E+00	3.392E+00	0.000E+00	0.350
CE-141	4.398E-01		3.875E+00	5.437E+00	0.000E+00	0.081
CE-144	-3.548E+00		1.698E+01	2.382E+01	0.000E+00	-0.149
EU-152	-5.375E+00		6.527E+00	8.917E+00	0.000E+00	-0.603
EU-154	-8.855E-01		3.923E+00	6.498E+00	0.000E+00	-0.136
AC-228	-1.818E+00		6.678E+00	1.001E+01	0.000E+00	-0.182
TH-232	-1.817E+00		6.674E+00	1.001E+01	0.000E+00	-0.182

U-235	1.708E+00	1.745E+01	2.449E+01	0.000E+00	0.070
U-238	1.018E+02	1.754E+02	2.897E+02	0.000E+00	0.352
AM-241	-7.480E+00	2.889E+01	4.020E+01	0.000E+00	-0.186

A,14L28431-7 ,04/29/2006 12:05,04/27/2006 11:20, 3.576E+00,WG L28431-7 EX
B,14L28431-7 ,LIBD ,06/22/2005 08:57,1435L091304

C,K-40	,YES,	2.676E+00,	2.506E+01,	2.545E+01,,	0.105
C,RA-226	,YES,	2.575E+01,	4.697E+01,	7.378E+01,,	0.349
C,TH-228	,YES,	3.739E+00,	3.533E+00,	5.442E+00,,	0.687
C,BE-7	,NO ,	-1.012E+01,	1.407E+01,	2.310E+01,,	-0.438
C,NA-24	,NO ,	-7.470E-01,	1.074E+01,	1.460E+01,,	-0.051
C,CR-51	,NO ,	-5.078E+00,	1.491E+01,	2.446E+01,,	-0.208
C,MN-54	,NO ,	1.015E+00,	1.603E+00,	2.673E+00,,	0.380
C,CO-57	,NO ,	-1.039E+00,	1.870E+00,	3.091E+00,,	-0.336
C,CO-58	,NO ,	2.513E+00,	1.832E+00,	2.652E+00,,	0.948
C,FE-59	,NO ,	3.647E+00,	2.985E+00,	5.081E+00,,	0.718
C,CO-60	,NO ,	-8.473E-01,	1.659E+00,	2.670E+00,,	-0.317
C,ZN-65	,NO ,	7.616E+01,	5.273E+00,	9.811E+00,,	7.763
C,SE-75	,NO ,	-7.035E-01,	2.374E+00,	3.931E+00,,	-0.179
C,SR-85	,NO ,	1.786E+01,	1.721E+00,	3.209E+00,,	5.565
C,Y-88	,NO ,	2.204E+00,	1.664E+00,	2.617E+00,,	0.842
C,NB-94	,NO ,	9.768E-01,	1.537E+00,	2.527E+00,,	0.387
C,NB-95	,NO ,	1.272E+01,	1.748E+00,	3.236E+00,,	3.929
C,ZR-95	,NO ,	1.643E+00,	2.985E+00,	4.522E+00,,	0.363
C,MO-99	,NO ,	1.393E+01,	1.692E+01,	2.851E+01,,	0.488
C,RU-103	,NO ,	1.339E+00,	1.658E+00,	2.776E+00,,	0.482
C,RU-106	,NO ,	-4.272E+00,	1.488E+01,	2.354E+01,,	-0.181
C,AG-110m	,NO ,	7.887E-01,	1.812E+00,	2.514E+00,,	0.314
C,SN-113	,NO ,	1.512E+00,	2.260E+00,	3.720E+00,,	0.407
C,SB-124	,NO ,	1.235E+00,	3.805E+00,	2.711E+00,,	0.456
C,SB-125	,NO ,	1.145E-01,	4.902E+00,	7.965E+00,,	0.014
C,TE-129M	,NO ,	2.586E+00,	1.904E+01,	3.169E+01,,	0.082
C,I-131	,NO ,	8.000E-01,	1.980E+00,	3.211E+00,,	0.249
C,BA-133	,NO ,	1.293E+02,	3.830E+00,	7.360E+00,,	17.570
C,CS-134	,NO ,	9.608E+01,	3.868E+00,	5.839E+00,,	16.454
C,CS-136	,NO ,	2.236E-01,	1.685E+00,	2.684E+00,,	0.083
C,CS-137	,NO ,	2.974E+00,	2.244E+00,	3.038E+00,,	0.979
C,CE-139	,NO ,	-1.551E+00,	1.886E+00,	3.077E+00,,	-0.504
C,BA-140	,NO ,	4.694E+00,	6.196E+00,	1.034E+01,,	0.454
C,LA-140	,NO ,	1.189E+00,	2.025E+00,	3.392E+00,,	0.350
C,CE-141	,NO ,	4.398E-01,	3.875E+00,	5.437E+00,,	0.081
C,CE-144	,NO ,	-3.548E+00,	1.698E+01,	2.382E+01,,	-0.149
C,EU-152	,NO ,	-5.375E+00,	6.527E+00,	8.917E+00,,	-0.603
C,EU-154	,NO ,	-8.855E-01,	3.923E+00,	6.498E+00,,	-0.136
C,AC-228	,NO ,	-1.818E+00,	6.678E+00,	1.001E+01,,	-0.182
C,TH-232	,NO ,	-1.817E+00,	6.674E+00,	1.001E+01,,	-0.182
C,U-235	,NO ,	1.708E+00,	1.745E+01,	2.449E+01,,	0.070
C,U-238	,NO ,	1.018E+02,	1.754E+02,	2.897E+02,,	0.352
C,AM-241	,NO ,	-7.480E+00,	2.889E+01,	4.020E+01,,	-0.186

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 21:18:39.11
TBE15 P-10635B HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:56.70

LIMS No., Customer Name, Client ID: WG L28431-8 EX BYR H-3 SPEC

Sample ID : 15L28431-8
Sample Type : WG
Quantity : 3.56810E+00 L
Start Channel : 40 Energy Tol : 1.70000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 12:35:00.
Geometry : 1535L090104
BKGFILE : 15BG041406MT
Real Time : 0 06:35:39.40
Live time : 0 06:35:35.63

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.97	204	1174	1.18	119.95	4.52E-01	8.60E-03	28.6	1.61E+00
2	2	75.47*	351	1181	1.25	137.04	6.72E-01	1.48E-02	18.8	3.47E+00
3	2	77.79	783	1099	1.26	141.72	7.32E-01	3.30E-02	8.5	
4	1	87.96*	198	1332	1.13	162.16	9.70E-01	8.36E-03	33.0	9.58E-01
5	1	140.41	244	1136	1.49	267.70	1.48E+00	1.03E-02	24.7	8.60E-01
6	2	242.49	784	637	1.32	473.04	1.21E+00	3.30E-02	6.6	2.51E+00
7	1	295.64*	1566	734	1.20	579.93	1.05E+00	6.60E-02	4.3	9.51E-01
8	1	352.26*	2690	622	1.27	693.81	9.15E-01	1.13E-01	2.7	1.41E+00
9	1	595.98	61	248	1.48	1183.80	5.97E-01	2.55E-03	53.6	7.27E-01
10	1	609.24*	2148	251	1.56	1210.45	5.86E-01	9.05E-02	2.7	1.29E+00
11	1	665.23	95	239	3.39	1322.99	5.46E-01	4.01E-03	38.8	1.92E+00
12	1	767.96	236	147	2.08	1529.43	4.86E-01	9.94E-03	12.4	9.52E-01
13	1	806.50	78	176	4.63	1606.87	4.67E-01	3.27E-03	40.8	2.54E+00
14	1	933.94	100	101	1.30	1862.90	4.15E-01	4.21E-03	20.2	1.96E+00
15	1	1119.84*	397	140	1.81	2236.26	3.58E-01	1.67E-02	8.6	1.52E+00
16	1	1237.65	171	90	1.89	2472.79	3.31E-01	7.20E-03	14.5	1.02E+00
17	1	1377.42	91	100	2.15	2753.36	3.04E-01	3.84E-03	26.1	9.82E+00
18	1	1407.52	75	47	2.52	2813.79	2.99E-01	3.16E-03	21.2	2.83E+00
19	1	1510.78	110	69	7.15	3020.99	2.83E-01	4.63E-03	22.4	2.59E+00
20	1	1729.22	75	45	2.50	3459.21	2.57E-01	3.14E-03	23.0	8.77E-01
21	1	1764.44*	353	41	2.20	3529.86	2.54E-01	1.49E-02	6.9	1.09E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 15L28431-8 Acquisition date : 28-APR-2006 14:42:56

Total number of lines in spectrum	21	
Number of unidentified lines	18	
Number of lines tentatively identified by NID	3	14.29%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 15L28431-8

Acquisition date : 28-APR-2006 14:42:56

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.97	204	1174	1.18	119.95	117	7	8.60E-03	57.1	4.52E-01	
2	75.47	351	1181	1.25	137.04	130	20	1.48E-02	37.5	6.72E-01	
2	77.79	783	1099	1.26	141.72	130	20	3.30E-02	16.9	7.32E-01	
1	87.96	198	1332	1.13	162.16	159	8	8.36E-03	66.1	9.70E-01	
1	140.41	244	1136	1.49	267.70	264	8	1.03E-02	49.5	1.48E+00	
2	242.49	784	637	1.32	473.04	463	15	3.30E-02	13.2	1.21E+00	T
1	295.64	1566	734	1.20	579.93	575	12	6.60E-02	8.7	1.05E+00	
1	352.26	2690	622	1.27	693.81	686	13	1.13E-01	5.5	9.15E-01	
1	595.98	61	248	1.48	1183.80	1179	12	2.55E-03	****	5.97E-01	
1	609.24	2148	251	1.56	1210.45	1205	15	9.05E-02	5.5	5.86E-01	
1	665.23	95	239	3.39	1322.99	1316	17	4.01E-03	77.7	5.46E-01	
1	767.96	236	147	2.08	1529.43	1522	13	9.94E-03	24.9	4.86E-01	T
1	806.50	78	176	4.63	1606.87	1600	16	3.27E-03	81.5	4.67E-01	
1	933.94	100	101	1.30	1862.90	1859	8	4.21E-03	40.4	4.15E-01	
1	1119.84	397	140	1.81	2236.26	2227	17	1.67E-02	17.3	3.58E-01	
1	1237.65	171	90	1.89	2472.79	2467	15	7.20E-03	28.9	3.31E-01	
1	1377.42	91	100	2.15	2753.36	2747	15	3.84E-03	52.1	3.04E-01	
1	1407.52	75	47	2.52	2813.79	2808	11	3.16E-03	42.3	2.99E-01	T
1	1510.78	110	69	7.15	3020.99	3010	23	4.63E-03	44.9	2.83E-01	
1	1729.22	75	45	2.50	3459.21	3452	15	3.14E-03	45.9	2.57E-01	
1	1764.44	353	41	2.20	3529.86	3521	16	1.49E-02	13.8	2.54E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum 21
Number of unidentified lines 18
Number of lines tentatively identified by NID 3 14.29%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	-1.089E+01		2.717E+01	4.342E+01	0.000E+00	-0.251
NA-24	3.761E+00		1.535E+01	2.168E+01	0.000E+00	0.173
K-40	1.464E+02		4.030E+01	7.739E+01	0.000E+00	1.891
CR-51	-2.241E+01		2.843E+01	4.616E+01	0.000E+00	-0.485
MN-54	2.257E+00		3.255E+00	5.552E+00	0.000E+00	0.407
CO-57	6.048E-01		3.329E+00	5.558E+00	0.000E+00	0.109
CO-58	1.011E+00		3.642E+00	5.206E+00	0.000E+00	0.194

FE-59	6.764E+00	5.919E+00	1.023E+01	0.000E+00	0.661
CO-60	7.999E-02	3.378E+00	5.569E+00	0.000E+00	0.014
ZN-65	6.207E+01	1.035E+01	1.883E+01	0.000E+00	3.297
SE-75	-2.547E+00	4.368E+00	7.201E+00	0.000E+00	-0.354
SR-85	1.478E+01	3.303E+00	6.139E+00	0.000E+00	2.408
Y-88	-2.645E+00	3.477E+00	5.377E+00	0.000E+00	-0.492
NB-94	1.272E+00	3.148E+00	5.221E+00	0.000E+00	0.244
NB-95	1.470E+01	3.640E+00	6.765E+00	0.000E+00	2.173
ZR-95	8.153E-01	5.951E+00	9.099E+00	0.000E+00	0.090
MO-99	2.628E+01	3.132E+01	5.286E+01	0.000E+00	0.497
RU-103	1.353E+00	3.196E+00	5.393E+00	0.000E+00	0.251
RU-106	-2.947E+00	2.857E+01	4.537E+01	0.000E+00	-0.065
AG-110m	-1.768E+00	3.562E+00	4.774E+00	0.000E+00	-0.370
SN-113	1.300E+00	4.252E+00	7.023E+00	0.000E+00	0.185
SB-124	2.882E+00	6.789E+00	5.313E+00	0.000E+00	0.542
SB-125	4.152E-01	9.713E+00	1.585E+01	0.000E+00	0.026
TE-129M	1.157E+01	3.657E+01	6.000E+01	0.000E+00	0.193
I-131	-3.028E+00	3.662E+00	5.884E+00	0.000E+00	-0.515
BA-133	1.053E+02	7.115E+00	1.357E+01	0.000E+00	7.761
CS-134	5.691E+01	7.580E+00	9.627E+00	0.000E+00	5.912
CS-136	4.813E+00	3.453E+00	5.707E+00	0.000E+00	0.843
CS-137	3.647E+00	4.088E+00	5.955E+00	0.000E+00	0.612
CE-139	3.808E+00	3.459E+00	5.792E+00	0.000E+00	0.657
BA-140	4.961E+00	1.202E+01	2.020E+01	0.000E+00	0.246
LA-140	1.889E+00	3.701E+00	6.356E+00	0.000E+00	0.297
CE-141	-2.502E+00	6.818E+00	9.556E+00	0.000E+00	-0.262
CE-144	-3.219E+01	2.940E+01	4.227E+01	0.000E+00	-0.761
EU-152	-3.962E+00	1.268E+01	1.755E+01	0.000E+00	-0.226
EU-154	9.103E-01	7.133E+00	1.178E+01	0.000E+00	0.077
RA-226	4.167E+01	8.604E+01	1.416E+02	0.000E+00	0.294
AC-228	1.391E+01	1.254E+01	2.146E+01	0.000E+00	0.648
TH-228	2.050E+01	7.543E+00	1.119E+01	0.000E+00	1.832
TH-232	1.390E+01	1.253E+01	2.145E+01	0.000E+00	0.648
U-235	3.523E+00	3.084E+01	4.372E+01	0.000E+00	0.081
U-238	4.700E+01	3.612E+02	5.958E+02	0.000E+00	0.079
AM-241	-4.464E+01	4.203E+01	6.607E+01	0.000E+00	-0.676

A,15L28431-8 ,04/28/2006 21:18,04/27/2006 12:35, 3.568E+00,WG L28431-8 EX
B,15L28431-8 ,LIBD ,03/09/2005 13:29,1535L090104

C,BE-7	,NO ,	-1.089E+01,	2.717E+01,	4.342E+01,,	-0.251
C,NA-24	,NO ,	3.761E+00,	1.535E+01,	2.168E+01,,	0.173
C,K-40	,NO ,	1.464E+02,	4.030E+01,	7.739E+01,,	1.891
C,CR-51	,NO ,	-2.241E+01,	2.843E+01,	4.616E+01,,	-0.485
C,MN-54	,NO ,	2.257E+00,	3.255E+00,	5.552E+00,,	0.407
C,CO-57	,NO ,	6.048E-01,	3.329E+00,	5.558E+00,,	0.109
C,CO-58	,NO ,	1.011E+00,	3.642E+00,	5.206E+00,,	0.194
C,FE-59	,NO ,	6.764E+00,	5.919E+00,	1.023E+01,,	0.661
C,CO-60	,NO ,	7.999E-02,	3.378E+00,	5.569E+00,,	0.014
C,ZN-65	,NO ,	6.207E+01,	1.035E+01,	1.883E+01,,	3.297
C,SE-75	,NO ,	-2.547E+00,	4.368E+00,	7.201E+00,,	-0.354
C,SR-85	,NO ,	1.478E+01,	3.303E+00,	6.139E+00,,	2.408
C,Y-88	,NO ,	-2.645E+00,	3.477E+00,	5.377E+00,,	-0.492
C,NB-94	,NO ,	1.272E+00,	3.148E+00,	5.221E+00,,	0.244
C,NB-95	,NO ,	1.470E+01,	3.640E+00,	6.765E+00,,	2.173
C,ZR-95	,NO ,	8.153E-01,	5.951E+00,	9.099E+00,,	0.090
C,MO-99	,NO ,	2.628E+01,	3.132E+01,	5.286E+01,,	0.497
C,RU-103	,NO ,	1.353E+00,	3.196E+00,	5.393E+00,,	0.251
C,RU-106	,NO ,	-2.947E+00,	2.857E+01,	4.537E+01,,	-0.065
C,AG-110m	,NO ,	-1.768E+00,	3.562E+00,	4.774E+00,,	-0.370
C,SN-113	,NO ,	1.300E+00,	4.252E+00,	7.023E+00,,	0.185
C,SB-124	,NO ,	2.882E+00,	6.789E+00,	5.313E+00,,	0.542
C,SB-125	,NO ,	4.152E-01,	9.713E+00,	1.585E+01,,	0.026
C,TE-129M	,NO ,	1.157E+01,	3.657E+01,	6.000E+01,,	0.193
C,I-131	,NO ,	-3.028E+00,	3.662E+00,	5.884E+00,,	-0.515
C,BA-133	,NO ,	1.053E+02,	7.115E+00,	1.357E+01,,	7.761
C,CS-134	,NO ,	5.691E+01,	7.580E+00,	9.627E+00,,	5.912
C,CS-136	,NO ,	4.813E+00,	3.453E+00,	5.707E+00,,	0.843
C,CS-137	,NO ,	3.647E+00,	4.088E+00,	5.955E+00,,	0.612
C,CE-139	,NO ,	3.808E+00,	3.459E+00,	5.792E+00,,	0.657
C,BA-140	,NO ,	4.961E+00,	1.202E+01,	2.020E+01,,	0.246
C,LA-140	,NO ,	1.889E+00,	3.701E+00,	6.356E+00,,	0.297
C,CE-141	,NO ,	-2.502E+00,	6.818E+00,	9.556E+00,,	-0.262
C,CE-144	,NO ,	-3.219E+01,	2.940E+01,	4.227E+01,,	-0.761
C,EU-152	,NO ,	-3.962E+00,	1.268E+01,	1.755E+01,,	-0.226
C,EU-154	,NO ,	9.103E-01,	7.133E+00,	1.178E+01,,	0.077
C,RA-226	,NO ,	4.167E+01,	8.604E+01,	1.416E+02,,	0.294
C,AC-228	,NO ,	1.391E+01,	1.254E+01,	2.146E+01,,	0.648
C,TH-228	,NO ,	2.050E+01,	7.543E+00,	1.119E+01,,	1.832
C,TH-232	,NO ,	1.390E+01,	1.253E+01,	2.145E+01,,	0.648
C,U-235	,NO ,	3.523E+00,	3.084E+01,	4.372E+01,,	0.081
C,U-238	,NO ,	4.700E+01,	3.612E+02,	5.958E+02,,	0.079
C,AM-241	,NO ,	-4.464E+01,	4.203E+01,	6.607E+01,,	-0.676

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 21:20:44.68
TBE23 03017322 HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:59.93

LIMS No., Customer Name, Client ID: WG L28431-9 EX BYR H-3 SPEC

Sample ID : 23L28431-9
Sample Type : WG
Quantity : 3.59180E+00 L
Start Channel : 50 Energy Tol : 1.50000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 13:35:00.
Geometry : 2335L090704
BKGFILE : 23BG041406MT
Real Time : 0 06:37:36.68
Live time : 0 06:37:20.37

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	6	33.86*	93	66	1.16	67.87	9.48E-02	3.91E-03	32.8	6.16E+00
2	6	35.13*	84	289	1.62	70.42	1.15E-01	3.50E-03	53.1	
3	6	36.57*	13	412	1.63	73.30	1.41E-01	5.38E-04	352.5	
4	0	40.95	56	519	0.91	82.06	2.36E-01	2.36E-03	65.2	
5	0	63.32*	5	1050	1.42	126.75	9.42E-01	2.24E-04	*****	
6	0	66.11	187	940	1.94	132.32	1.03E+00	7.83E-03	28.4	
7	3	74.77	307	1029	1.32	149.62	1.29E+00	1.29E-02	19.4	1.75E+00
8	3	77.05	483	943	1.09	154.17	1.35E+00	2.03E-02	11.5	
9	0	87.37	148	1122	0.92	174.79	1.59E+00	6.20E-03	40.1	
10	0	92.66*	41	1233	1.01	185.37	1.69E+00	1.74E-03	164.8	
11	0	139.85*	132	966	1.05	279.67	2.05E+00	5.54E-03	43.1	
12	0	197.81*	85	780	0.90	395.48	1.90E+00	3.55E-03	61.2	
13	2	238.85*	71	690	1.44	477.50	1.72E+00	2.98E-03	70.8	1.58E+00
14	2	241.83	335	449	1.08	483.46	1.71E+00	1.41E-02	11.5	
15	0	295.05*	836	660	1.23	589.81	1.50E+00	3.50E-02	7.4	
16	0	351.83*	1394	359	1.22	703.31	1.32E+00	5.85E-02	3.8	
17	0	582.91*	13	230	1.40	1165.27	8.89E-01	5.47E-04	254.2	
18	0	595.57	53	169	1.63	1190.56	8.74E-01	2.22E-03	46.1	
19	0	609.10*	1133	233	1.34	1217.63	8.59E-01	4.75E-02	4.3	
20	0	768.06	140	163	1.74	1535.50	7.22E-01	5.85E-03	20.7	
21	0	934.46	74	129	1.68	1868.31	6.27E-01	3.10E-03	34.7	
22	0	1120.37*	247	83	1.90	2240.25	5.52E-01	1.04E-02	10.4	
23	0	1237.77	137	67	1.06	2475.17	5.16E-01	5.73E-03	15.3	
24	0	1377.59	57	81	1.54	2754.99	4.79E-01	2.38E-03	38.7	
25	0	1408.08	62	36	2.34	2816.01	4.71E-01	2.58E-03	23.8	
26	0	1510.47	30	62	1.82	3020.97	4.49E-01	1.26E-03	59.9	
27	0	1729.94	39	53	1.04	3460.40	4.06E-01	1.61E-03	44.1	
28	0	1764.47*	214	33	1.90	3529.55	4.00E-01	8.99E-03	10.0	
29	0	1847.23	33	27	1.73	3695.28	3.87E-01	1.37E-03	34.7	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
TH-228	238.63	71	44.60*	1.723E+00	2.920E+00	2.923E+00	141.67

240.98	335	3.95	1.711E+00	1.566E+02	1.568E+02	22.96

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 23L28431-9 Acquisition date : 28-APR-2006 14:42:59

Total number of lines in spectrum	29	
Number of unidentified lines	25	
Number of lines tentatively identified by NID	4	13.79%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-228	1.91Y	1.00	2.920E+00	2.923E+00	4.141E+00	141.67	
Total Activity :			2.920E+00	2.923E+00			
Grand Total Activity :			2.920E+00	2.923E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines

Sample ID : 23L28431-9
Acquisition date : 28-APR-2006 14:42:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	33.86	93	66	1.16	67.87	64	16	3.91E-03	65.7	9.48E-02	
6	35.13	84	289	1.62	70.42	64	16	3.50E-03	****	1.15E-01	
6	36.57	13	412	1.63	73.30	64	16	5.38E-04	****	1.41E-01	
0	40.95	56	519	0.91	82.06	80	6	2.36E-03	****	2.36E-01	
0	63.32	5	1050	1.42	126.75	123	7	2.24E-04	****	9.42E-01	
0	66.11	187	940	1.94	132.32	130	7	7.83E-03	56.8	1.03E+00	
3	74.77	307	1029	1.32	149.62	142	16	1.29E-02	38.8	1.29E+00	
3	77.05	483	943	1.09	154.17	142	16	2.03E-02	23.0	1.35E+00	
0	87.37	148	1122	0.92	174.79	171	8	6.20E-03	80.2	1.59E+00	
0	92.66	41	1233	1.01	185.37	181	9	1.74E-03	****	1.69E+00	
0	139.85	132	966	1.05	279.67	276	8	5.54E-03	86.2	2.05E+00	
0	197.81	85	780	0.90	395.48	392	8	3.55E-03	****	1.90E+00	
0	295.05	836	660	1.23	589.81	583	13	3.50E-02	14.8	1.50E+00	
0	351.83	1394	359	1.22	703.31	699	10	5.85E-02	7.6	1.32E+00	
0	582.91	13	230	1.40	1165.27	1160	13	5.47E-04	****	8.89E-01	T
0	595.57	53	169	1.63	1190.56	1187	9	2.22E-03	92.3	8.74E-01	
0	609.10	1133	233	1.34	1217.63	1210	15	4.75E-02	8.7	8.59E-01	
0	768.06	140	163	1.74	1535.50	1529	13	5.85E-03	41.3	7.22E-01	
0	934.46	74	129	1.68	1868.31	1861	14	3.10E-03	69.4	6.27E-01	
0	1120.37	247	83	1.90	2240.25	2234	13	1.04E-02	20.8	5.52E-01	
0	1237.77	137	67	1.06	2475.17	2468	14	5.73E-03	30.6	5.16E-01	
0	1377.59	57	81	1.54	2754.99	2747	17	2.38E-03	77.4	4.79E-01	
0	1408.08	62	36	2.34	2816.01	2808	13	2.58E-03	47.5	4.71E-01	T
0	1510.47	30	62	1.82	3020.97	3012	14	1.26E-03	****	4.49E-01	
0	1729.94	39	53	1.04	3460.40	3453	15	1.61E-03	88.1	4.06E-01	
0	1764.47	214	33	1.90	3529.55	3520	19	8.99E-03	20.0	4.00E-01	
0	1847.23	33	27	1.73	3695.28	3690	10	1.37E-03	69.4	3.87E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	29	
Number of unidentified lines	25	
Number of lines tentatively identified by NID	4	13.79%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-228	1.91Y	1.00	2.920E+00	2.923E+00	4.141E+00	141.67	
			---	---			
	Total Activity :		2.920E+00	2.923E+00			
	Grand Total Activity :		2.920E+00	2.923E+00			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
TH-228	2.923E+00	4.141E+00	6.449E+00	0.000E+00	0.453

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	8.921E+00		1.686E+01	2.880E+01	0.000E+00	0.310
NA-24	8.018E+00		7.766E+00	1.260E+01	0.000E+00	0.636
K-40	-9.912E+00		2.648E+01	5.303E+01	0.000E+00	-0.187
CR-51	-1.571E+00		1.715E+01	2.912E+01	0.000E+00	-0.054
MN-54	-4.898E-01		1.982E+00	3.387E+00	0.000E+00	-0.145
CO-57	-2.330E-01		2.180E+00	3.571E+00	0.000E+00	-0.065
CO-58	3.940E-01		2.014E+00	3.427E+00	0.000E+00	0.115
FE-59	-5.181E-01		3.576E+00	6.064E+00	0.000E+00	-0.085
CO-60	-2.857E-01		1.821E+00	3.145E+00	0.000E+00	-0.091
ZN-65	2.161E+01		5.744E+00	1.012E+01	0.000E+00	2.136
SE-75	-5.530E-01		2.806E+00	4.632E+00	0.000E+00	-0.119
SR-85	8.982E+00		2.144E+00	4.010E+00	0.000E+00	2.240
Y-88	7.225E-01		2.192E+00	3.565E+00	0.000E+00	0.203
NB-94	4.858E-01		1.897E+00	3.255E+00	0.000E+00	0.149
NB-95	6.815E+00		2.460E+00	4.079E+00	0.000E+00	1.671
ZR-95	-4.897E-01		3.524E+00	5.650E+00	0.000E+00	-0.087
MO-99	-1.846E+01		1.888E+01	3.055E+01	0.000E+00	-0.604
RU-103	1.411E+00		2.074E+00	3.551E+00	0.000E+00	0.397
RU-106	-1.082E+01		1.772E+01	2.954E+01	0.000E+00	-0.366
AG-110m	-4.909E-01		1.937E+00	3.266E+00	0.000E+00	-0.150
SN-113	6.127E-01		2.652E+00	4.510E+00	0.000E+00	0.136
SB-124	-6.729E-01		4.291E+00	3.217E+00	0.000E+00	-0.209
SB-125	-2.288E+00		5.957E+00	9.904E+00	0.000E+00	-0.231
TE-129M	-8.090E+00		2.303E+01	3.822E+01	0.000E+00	-0.212
I-131	3.225E-01		2.250E+00	3.828E+00	0.000E+00	0.084
BA-133	1.627E+01		3.552E+00	5.940E+00	0.000E+00	2.740
CS-134	1.977E+01		3.479E+00	5.296E+00	0.000E+00	3.733
CS-136	1.137E+00		2.026E+00	3.513E+00	0.000E+00	0.324
CS-137	1.113E+00		2.147E+00	3.734E+00	0.000E+00	0.298
CE-139	-4.043E-02		2.169E+00	3.656E+00	0.000E+00	-0.011
BA-140	8.181E+00		7.182E+00	1.285E+01	0.000E+00	0.636
LA-140	2.731E-01		2.308E+00	4.008E+00	0.000E+00	0.068
CE-141	4.180E+00		4.305E+00	6.396E+00	0.000E+00	0.653
CE-144	-1.199E+01		1.991E+01	2.736E+01	0.000E+00	-0.438
EU-152	-7.422E+00		7.299E+00	1.047E+01	0.000E+00	-0.709
EU-154	-1.580E+00		4.598E+00	7.499E+00	0.000E+00	-0.211
RA-226	1.261E+01		5.658E+01	9.517E+01	0.000E+00	0.132
AC-228	-1.658E+00		7.559E+00	1.296E+01	0.000E+00	-0.128
TH-232	-1.658E+00		7.556E+00	1.295E+01	0.000E+00	-0.128
U-235	4.081E+00		1.982E+01	2.870E+01	0.000E+00	0.142
U-238	-8.011E+01		2.277E+02	3.807E+02	0.000E+00	-0.210
AM-241	2.265E+01		1.337E+01	2.021E+01	0.000E+00	1.121

A,23L28431-9 ,04/28/2006 21:20,04/27/2006 13:35, 3.592E+00,WG L28431-9 EX
B,23L28431-9 ,LIBD ,06/24/2005 07:59,2335L090704

C,TH-228	,YES,	2.923E+00,	4.141E+00,	6.449E+00,,	0.453
C,BE-7	,NO ,	8.921E+00,	1.686E+01,	2.880E+01,,	0.310
C,NA-24	,NO ,	8.018E+00,	7.766E+00,	1.260E+01,,	0.636
C,K-40	,NO ,	-9.912E+00,	2.648E+01,	5.303E+01,,	-0.187
C,CR-51	,NO ,	-1.571E+00,	1.715E+01,	2.912E+01,,	-0.054
C,MN-54	,NO ,	-4.898E-01,	1.982E+00,	3.387E+00,,	-0.145
C,CO-57	,NO ,	-2.330E-01,	2.180E+00,	3.571E+00,,	-0.065
C,CO-58	,NO ,	3.940E-01,	2.014E+00,	3.427E+00,,	0.115
C,FE-59	,NO ,	-5.181E-01,	3.576E+00,	6.064E+00,,	-0.085
C,CO-60	,NO ,	-2.857E-01,	1.821E+00,	3.145E+00,,	-0.091
C,ZN-65	,NO ,	2.161E+01,	5.744E+00,	1.012E+01,,	2.136
C,SE-75	,NO ,	-5.530E-01,	2.806E+00,	4.632E+00,,	-0.119
C,SR-85	,NO ,	8.982E+00,	2.144E+00,	4.010E+00,,	2.240
C,Y-88	,NO ,	7.225E-01,	2.192E+00,	3.565E+00,,	0.203
C,NB-94	,NO ,	4.858E-01,	1.897E+00,	3.255E+00,,	0.149
C,NB-95	,NO ,	6.815E+00,	2.460E+00,	4.079E+00,,	1.671
C,ZR-95	,NO ,	-4.897E-01,	3.524E+00,	5.650E+00,,	-0.087
C,MO-99	,NO ,	-1.846E+01,	1.888E+01,	3.055E+01,,	-0.604
C,RU-103	,NO ,	1.411E+00,	2.074E+00,	3.551E+00,,	0.397
C,RU-106	,NO ,	-1.082E+01,	1.772E+01,	2.954E+01,,	-0.366
C,AG-110m	,NO ,	-4.909E-01,	1.937E+00,	3.266E+00,,	-0.150
C,SN-113	,NO ,	6.127E-01,	2.652E+00,	4.510E+00,,	0.136
C,SB-124	,NO ,	-6.729E-01,	4.291E+00,	3.217E+00,,	-0.209
C,SB-125	,NO ,	-2.288E+00,	5.957E+00,	9.904E+00,,	-0.231
C,TE-129M	,NO ,	-8.090E+00,	2.303E+01,	3.822E+01,,	-0.212
C,I-131	,NO ,	3.225E-01,	2.250E+00,	3.828E+00,,	0.084
C,BA-133	,NO ,	1.627E+01,	3.552E+00,	5.940E+00,,	2.740
C,CS-134	,NO ,	1.977E+01,	3.479E+00,	5.296E+00,,	3.733
C,CS-136	,NO ,	1.137E+00,	2.026E+00,	3.513E+00,,	0.324
C,CS-137	,NO ,	1.113E+00,	2.147E+00,	3.734E+00,,	0.298
C,CE-139	,NO ,	-4.043E-02,	2.169E+00,	3.656E+00,,	-0.011
C,BA-140	,NO ,	8.181E+00,	7.182E+00,	1.285E+01,,	0.636
C,LA-140	,NO ,	2.731E-01,	2.308E+00,	4.008E+00,,	0.068
C,CE-141	,NO ,	4.180E+00,	4.305E+00,	6.396E+00,,	0.653
C,CE-144	,NO ,	-1.199E+01,	1.991E+01,	2.736E+01,,	-0.438
C,EU-152	,NO ,	-7.422E+00,	7.299E+00,	1.047E+01,,	-0.709
C,EU-154	,NO ,	-1.580E+00,	4.598E+00,	7.499E+00,,	-0.211
C,RA-226	,NO ,	1.261E+01,	5.658E+01,	9.517E+01,,	0.132
C,AC-228	,NO ,	-1.658E+00,	7.559E+00,	1.296E+01,,	-0.128
C,TH-232	,NO ,	-1.658E+00,	7.556E+00,	1.295E+01,,	-0.128
C,U-235	,NO ,	4.081E+00,	1.982E+01,	2.870E+01,,	0.142
C,U-238	,NO ,	-8.011E+01,	2.277E+02,	3.807E+02,,	-0.210
C,AM-241	,NO ,	2.265E+01,	1.337E+01,	2.021E+01,,	1.121

Sec. Review: Analyst: LIMS: ✓

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VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 21:22:09.90
TBE10 12892256 HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:42.21

LIMS No., Customer Name, Client ID: WG L28431-10 EX BYR H-3 SPEC

Sample ID : 10L28431-10
Sample Type : WG
Quantity : 3.57090E+00 L
Start Channel : 80 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 13:35:00.
Geometry : 1035L091004
BKGFILE : 10BG041406MT
Real Time : 0 06:39:21.97
Live time : 0 06:39:17.64

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.43*	171	977	1.37	132.11	6.37E-01	7.15E-03	33.2	2.57E+00
2	3	77.06	323	868	1.16	153.37	9.42E-01	1.35E-02	16.3	2.65E+00
3	1	92.56*	43	866	1.37	184.39	1.30E+00	1.78E-03	126.9	7.93E+00
4	1	139.80	122	766	1.21	278.93	1.68E+00	5.10E-03	38.5	8.03E-01
5	1	198.06*	129	720	1.45	395.53	1.55E+00	5.40E-03	40.8	4.99E+00
6	2	241.89	274	484	1.27	483.26	1.39E+00	1.14E-02	15.1	1.45E+00
7	1	295.21*	542	631	1.16	589.98	1.21E+00	2.26E-02	11.0	1.22E+00
8	1	351.95*	1024	387	1.31	703.55	1.07E+00	4.28E-02	5.2	9.72E-01
9	1	594.97	151	205	0.90	1189.98	7.07E-01	6.28E-03	19.4	5.43E+01
10	1	609.27*	796	202	1.42	1218.61	6.94E-01	3.32E-02	5.4	1.78E+00
11	1	768.10	80	130	1.81	1536.57	5.79E-01	3.36E-03	31.7	1.13E+00
12	1	969.13*	26	66	1.92	1939.04	4.83E-01	1.08E-03	63.9	1.54E+00
13	1	1120.35*	154	66	1.91	2241.85	4.33E-01	6.41E-03	15.0	7.87E-01
14	1	1238.19	59	79	1.71	2477.81	4.01E-01	2.48E-03	36.7	8.34E-01
15	1	1407.69	35	29	1.48	2817.24	3.65E-01	1.48E-03	33.6	9.77E-01
16	1	1460.85*	6	74	2.02	2923.71	3.56E-01	2.39E-04	446.4	1.19E+00
17	1	1764.66*	110	46	2.52	3532.21	3.13E-01	4.59E-03	17.6	3.12E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	6	10.67*	3.559E-01	4.760E+00	4.760E+00	892.86

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 10L28431-10 Acquisition date : 28-APR-2006 14:42:42

Total number of lines in spectrum	17	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	4	23.53%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	4.760E+00	4.760E+00	42.50E+00	892.86	
	Total Activity :		4.760E+00	4.760E+00			
	Grand Total Activity :		4.760E+00	4.760E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 10L28431-10 Acquisition date : 28-APR-2006 14:42:42

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.43	171	977	1.37	132.11	129	8	7.15E-03	66.4	6.37E-01	
3	77.06	323	868	1.16	153.37	146	15	1.35E-02	32.6	9.42E-01	
1	92.56	43	866	1.37	184.39	181	8	1.78E-03	****	1.30E+00	
1	139.80	122	766	1.21	278.93	276	7	5.10E-03	77.1	1.68E+00	
1	198.06	129	720	1.45	395.53	392	9	5.40E-03	81.5	1.55E+00	
2	241.89	274	484	1.27	483.26	473	15	1.14E-02	30.3	1.39E+00	T
1	295.21	542	631	1.16	589.98	583	14	2.26E-02	22.0	1.21E+00	
1	351.95	1024	387	1.31	703.55	696	13	4.28E-02	10.3	1.07E+00	
1	594.97	151	205	0.90	1189.98	1187	12	6.28E-03	38.8	7.07E-01	
1	609.27	796	202	1.42	1218.61	1211	14	3.32E-02	10.8	6.94E-01	
1	768.10	80	130	1.81	1536.57	1530	13	3.36E-03	63.4	5.79E-01	
1	969.13	26	66	1.92	1939.04	1935	9	1.08E-03	****	4.83E-01	T
1	1120.35	154	66	1.91	2241.85	2235	14	6.41E-03	30.0	4.33E-01	
1	1238.19	59	79	1.71	2477.81	2471	16	2.48E-03	73.4	4.01E-01	
1	1407.69	35	29	1.48	2817.24	2813	10	1.48E-03	67.1	3.65E-01	T
1	1764.66	110	46	2.52	3532.21	3525	15	4.59E-03	35.3	3.13E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	17	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	4	23.53%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	4.760E+00	4.760E+00	42.50E+00	892.86	
	Total Activity :		4.760E+00	4.760E+00			
	Grand Total Activity :		4.760E+00	4.760E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	4.760E+00	4.250E+01	3.832E+01	0.000E+00	0.124

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	7.142E-01		1.994E+01	3.288E+01	0.000E+00	0.022
NA-24	-1.774E+01		1.067E+01	1.573E+01	0.000E+00	-1.128
CR-51	-9.335E+00		2.069E+01	3.343E+01	0.000E+00	-0.279
MN-54	7.563E-01		2.390E+00	3.955E+00	0.000E+00	0.191
CO-57	1.600E+00		2.458E+00	4.126E+00	0.000E+00	0.388
CO-58	2.226E+00		2.411E+00	4.111E+00	0.000E+00	0.541
FE-59	-4.150E+00		4.695E+00	7.284E+00	0.000E+00	-0.570
CO-60	6.638E-01		2.487E+00	4.167E+00	0.000E+00	0.159
ZN-65	1.940E+01		7.086E+00	1.156E+01	0.000E+00	1.678
SE-75	-8.964E-01		3.290E+00	5.407E+00	0.000E+00	-0.166
SR-85	1.632E+01		2.776E+00	5.284E+00	0.000E+00	3.089
Y-88	-1.551E+00		2.611E+00	4.063E+00	0.000E+00	-0.382
NB-94	-1.782E+00		2.342E+00	3.733E+00	0.000E+00	-0.477
NB-95	6.050E+00		2.518E+00	4.546E+00	0.000E+00	1.331
ZR-95	-2.338E-01		4.499E+00	6.809E+00	0.000E+00	-0.034
MO-99	2.389E+01		2.400E+01	4.122E+01	0.000E+00	0.580
RU-103	1.136E+00		2.520E+00	4.205E+00	0.000E+00	0.270
RU-106	-5.577E+00		2.174E+01	3.527E+01	0.000E+00	-0.158
AG-110m	-2.394E+00		2.312E+00	3.654E+00	0.000E+00	-0.655
SN-113	2.170E+00		2.977E+00	5.074E+00	0.000E+00	0.428
SB-124	-6.460E-01		5.507E+00	3.878E+00	0.000E+00	-0.167
SB-125	-1.336E+00		6.731E+00	1.108E+01	0.000E+00	-0.121
TE-129M	-7.740E+00		2.671E+01	4.363E+01	0.000E+00	-0.177
I-131	3.705E-01		2.710E+00	4.423E+00	0.000E+00	0.084
BA-133	2.919E+01		4.548E+00	7.724E+00	0.000E+00	3.780
CS-134	2.325E+01		5.864E+00	6.231E+00	0.000E+00	3.732
CS-136	-3.361E-01		2.490E+00	4.034E+00	0.000E+00	-0.083
CS-137	4.741E-01		2.541E+00	4.240E+00	0.000E+00	0.112
CE-139	5.679E-01		2.494E+00	4.102E+00	0.000E+00	0.138
BA-140	1.649E-01		9.062E+00	1.482E+01	0.000E+00	0.011
LA-140	2.142E+00		2.911E+00	5.064E+00	0.000E+00	0.423
CE-141	4.602E+00		4.859E+00	7.009E+00	0.000E+00	0.656
CE-144	-2.137E+01		2.156E+01	3.078E+01	0.000E+00	-0.694
EU-152	-1.042E+01		9.266E+00	1.215E+01	0.000E+00	-0.858
EU-154	1.420E+00		5.210E+00	8.684E+00	0.000E+00	0.163
RA-226	4.654E+00		6.443E+01	1.040E+02	0.000E+00	0.045
AC-228	1.324E+00		9.279E+00	1.556E+01	0.000E+00	0.085
TH-228	7.541E+00		5.652E+00	8.394E+00	0.000E+00	0.898
TH-232	1.324E+00		9.276E+00	1.556E+01	0.000E+00	0.085
U-235	2.660E+01		2.204E+01	3.202E+01	0.000E+00	0.831
U-238	1.295E+02		2.688E+02	4.540E+02	0.000E+00	0.285
AM-241	-4.162E+01		2.241E+01	3.357E+01	0.000E+00	-1.240

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A,10L28431-10     ,04/28/2006 21:22,04/27/2006 13:35,   3.571E+00,WG L28431-10 E
B,10L28431-10     ,LIBD                ,06/09/2005 08:04,1035L091004
C,K-40     ,YES,   4.760E+00,   4.250E+01,   3.832E+01,,    0.124
C,BE-7     ,NO ,   7.142E-01,   1.994E+01,   3.288E+01,,    0.022
C,NA-24    ,NO ,  -1.774E+01,   1.067E+01,   1.573E+01,,   -1.128
C,CR-51    ,NO ,  -9.335E+00,   2.069E+01,   3.343E+01,,   -0.279
C,MN-54    ,NO ,   7.563E-01,   2.390E+00,   3.955E+00,,    0.191
C,CO-57    ,NO ,   1.600E+00,   2.458E+00,   4.126E+00,,    0.388
C,CO-58    ,NO ,   2.226E+00,   2.411E+00,   4.111E+00,,    0.541
C,FE-59    ,NO ,  -4.150E+00,   4.695E+00,   7.284E+00,,   -0.570
C,CO-60    ,NO ,   6.638E-01,   2.487E+00,   4.167E+00,,    0.159
C,ZN-65    ,NO ,   1.940E+01,   7.086E+00,   1.156E+01,,    1.678
C,SE-75    ,NO ,  -8.964E-01,   3.290E+00,   5.407E+00,,   -0.166
C,SR-85    ,NO ,   1.632E+01,   2.776E+00,   5.284E+00,,    3.089
C,Y-88     ,NO ,  -1.551E+00,   2.611E+00,   4.063E+00,,   -0.382
C,NB-94    ,NO ,  -1.782E+00,   2.342E+00,   3.733E+00,,   -0.477
C,NB-95    ,NO ,   6.050E+00,   2.518E+00,   4.546E+00,,    1.331
C,ZR-95    ,NO ,  -2.338E-01,   4.499E+00,   6.809E+00,,   -0.034
C,MO-99    ,NO ,   2.389E+01,   2.400E+01,   4.122E+01,,    0.580
C,RU-103   ,NO ,   1.136E+00,   2.520E+00,   4.205E+00,,    0.270
C,RU-106   ,NO ,  -5.577E+00,   2.174E+01,   3.527E+01,,   -0.158
C,AG-110m  ,NO ,  -2.394E+00,   2.312E+00,   3.654E+00,,   -0.655
C,SN-113   ,NO ,   2.170E+00,   2.977E+00,   5.074E+00,,    0.428
C,SB-124   ,NO ,  -6.460E-01,   5.507E+00,   3.878E+00,,   -0.167
C,SB-125   ,NO ,  -1.336E+00,   6.731E+00,   1.108E+01,,   -0.121
C,TE-129M  ,NO ,  -7.740E+00,   2.671E+01,   4.363E+01,,   -0.177
C,I-131    ,NO ,   3.705E-01,   2.710E+00,   4.423E+00,,    0.084
C,BA-133   ,NO ,   2.919E+01,   4.548E+00,   7.724E+00,,    3.780
C,CS-134   ,NO ,   2.325E+01,   5.864E+00,   6.231E+00,,    3.732
C,CS-136   ,NO ,  -3.361E-01,   2.490E+00,   4.034E+00,,   -0.083
C,CS-137   ,NO ,   4.741E-01,   2.541E+00,   4.240E+00,,    0.112
C,CE-139   ,NO ,   5.679E-01,   2.494E+00,   4.102E+00,,    0.138
C,BA-140   ,NO ,   1.649E-01,   9.062E+00,   1.482E+01,,    0.011
C,LA-140   ,NO ,   2.142E+00,   2.911E+00,   5.064E+00,,    0.423
C,CE-141   ,NO ,   4.602E+00,   4.859E+00,   7.009E+00,,    0.656
C,CE-144   ,NO ,  -2.137E+01,   2.156E+01,   3.078E+01,,   -0.694
C,EU-152   ,NO ,  -1.042E+01,   9.266E+00,   1.215E+01,,   -0.858
C,EU-154   ,NO ,   1.420E+00,   5.210E+00,   8.684E+00,,    0.163
C,RA-226   ,NO ,   4.654E+00,   6.443E+01,   1.040E+02,,    0.045
C,AC-228   ,NO ,   1.324E+00,   9.279E+00,   1.556E+01,,    0.085
C,TH-228   ,NO ,   7.541E+00,   5.652E+00,   8.394E+00,,    0.898
C,TH-232   ,NO ,   1.324E+00,   9.276E+00,   1.556E+01,,    0.085
C,U-235    ,NO ,   2.660E+01,   2.204E+01,   3.202E+01,,    0.831
C,U-238    ,NO ,   1.295E+02,   2.688E+02,   4.540E+02,,    0.285
C,AM-241   ,NO ,  -4.162E+01,   2.241E+01,   3.357E+01,,   -1.240
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Sec. Review: Analyst: KS LIMS: ✓

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VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 28-APR-2006 21:23:35.41
TBE11 P-20610B HpGe ********** Aquisition Date/Time: 28-APR-2006 14:42:43.38

LIMS No., Customer Name, Client ID: WG L28431-11 EX BYR H-3 SPEC

Sample ID : 11L28431-11
Sample Type : WG
Quantity : 3.58980E+00 L
Start Channel : 40 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 14:55:00.
Geometry : 1135L090204
BKGFILE : 11BG041406MT
Real Time : 0 06:40:49.00
Live time : 0 06:40:39.75

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	0	66.51*	127	821	1.21	132.21	6.08E-01	5.30E-03	39.5	
2	3	74.91*	98	999	1.46	149.05	8.50E-01	4.06E-03	64.2	2.72E+00
3	3	77.03	328	878	1.27	153.31	9.08E-01	1.37E-02	17.1	
4	0	139.78	228	785	1.19	279.17	1.69E+00	9.48E-03	23.1	
5	0	198.41*	171	720	1.41	396.74	1.57E+00	7.12E-03	31.0	
6	2	238.55*	71	472	1.29	477.24	1.42E+00	2.94E-03	58.7	7.37E-01
7	2	241.88	269	477	1.25	483.91	1.41E+00	1.12E-02	15.2	
8	0	295.02*	556	457	1.39	590.47	1.23E+00	2.31E-02	8.6	
9	0	351.78*	1003	447	1.39	704.27	1.08E+00	4.17E-02	5.6	
10	0	499.07	29	161	0.73	999.54	8.21E-01	1.20E-03	78.3	
11	0	582.70*	11	157	1.55	1167.17	7.27E-01	4.71E-04	234.5	
12	0	595.19	99	122	1.85	1192.21	7.15E-01	4.11E-03	22.5	
13	0	608.92*	864	183	1.47	1219.72	7.02E-01	3.59E-02	5.0	
14	0	767.17	120	152	1.73	1536.84	5.87E-01	4.99E-03	24.5	
15	0	911.81	50	115	4.61	1826.64	5.13E-01	2.06E-03	47.6	
16	0	1119.50*	203	64	1.41	2242.64	4.37E-01	8.44E-03	11.2	
17	0	1237.10*	93	49	1.72	2478.13	4.04E-01	3.89E-03	20.9	
18	0	1376.72	81	55	2.11	2757.67	3.71E-01	3.36E-03	23.8	
19	0	1460.14*	1	76	2.03	2924.67	3.54E-01	5.39E-05	*****	
20	0	1659.44	24	23	2.68	3323.55	3.19E-01	9.94E-04	46.0	
21	0	1762.59*	120	41	2.33	3529.95	3.04E-01	4.98E-03	16.0	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	1	10.67*	3.541E-01	1.074E+00	1.074E+00	3618.47
AC-228	835.50	------	1.75	5.493E-01	------	Line Not Found	------
	911.07	50	27.70*	5.133E-01	1.091E+01	1.092E+01	95.19
TH-228	238.63	71	44.60*	1.421E+00	3.488E+00	3.491E+00	117.46
	240.98	269	3.95	1.409E+00	1.514E+02	1.515E+02	30.49
TH-232	583.14	11	30.25	7.271E-01	1.614E+00	1.614E+00	469.00
	911.07	50	27.70*	5.133E-01	1.091E+01	1.091E+01	95.19
	969.11	------	16.60	4.895E-01	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 11L28431-11 Acquisition date : 28-APR-2006 14:42:43

Total number of lines in spectrum	21	
Number of unidentified lines	15	
Number of lines tentatively identified by NID	6	28.57%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.074E+00	1.074E+00	38.85E+00	3618.47	
AC-228	5.75Y	1.00	1.091E+01	1.092E+01	1.039E+01	95.19	
TH-228	1.91Y	1.00	3.488E+00	3.491E+00	4.101E+00	117.46	
TH-232	1.41E+10Y	1.00	1.091E+01	1.091E+01	1.039E+01	95.19	
			---------	---------			
	Total Activity :		2.638E+01	2.639E+01			
	Grand Total Activity :		2.638E+01	2.639E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 11L28431-11

Acquisition date : 28-APR-2006 14:42:43

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	66.51	127	821	1.21	132.21	129	7	5.30E-03	79.0	6.08E-01	
3	74.91	98	999	1.46	149.05	143	15	4.06E-03	****	8.50E-01	
3	77.03	328	878	1.27	153.31	143	15	1.37E-02	34.2	9.08E-01	
0	139.78	228	785	1.19	279.17	275	9	9.48E-03	46.3	1.69E+00	
0	198.41	171	720	1.41	396.74	392	10	7.12E-03	62.0	1.57E+00	
0	295.02	556	457	1.39	590.47	586	10	2.31E-02	17.2	1.23E+00	
0	351.78	1003	447	1.39	704.27	698	14	4.17E-02	11.3	1.08E+00	
0	499.07	29	161	0.73	999.54	997	8	1.20E-03	****	8.21E-01	
0	595.19	99	122	1.85	1192.21	1188	9	4.11E-03	45.0	7.15E-01	
0	608.92	864	183	1.47	1219.72	1212	15	3.59E-02	10.1	7.02E-01	
0	767.17	120	152	1.73	1536.84	1531	16	4.99E-03	49.0	5.87E-01	T
0	1119.50	203	64	1.41	2242.64	2236	14	8.44E-03	22.4	4.37E-01	
0	1237.10	93	49	1.72	2478.13	2471	15	3.89E-03	41.9	4.04E-01	
0	1376.72	81	55	2.11	2757.67	2749	17	3.36E-03	47.6	3.71E-01	
0	1659.44	24	23	2.68	3323.55	3316	13	9.94E-04	92.0	3.19E-01	
0	1762.59	120	41	2.33	3529.95	3522	15	4.98E-03	32.0	3.04E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	21	
Number of unidentified lines	15	
Number of lines tentatively identified by NID	6	28.57%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.074E+00	1.074E+00	38.85E+00	3618.47	
AC-228	5.75Y	1.00	9.298E+00	9.301E+00	12.86E+00	138.23	
TH-228	1.91Y	1.00	3.488E+00	3.491E+00	4.101E+00	117.46	
TH-232	1.41E+10Y	1.00	1.614E+00	1.614E+00	7.569E+00	469.00	
	Total Activity :		1.547E+01	1.548E+01			

Grand Total Activity : 1.547E+01 1.548E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
TH-232	911.07	AC-228	911.07

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	1.074E+00	3.885E+01	3.854E+01	0.000E+00	0.028
AC-228	9.301E+00	1.286E+01	1.228E+01	0.000E+00	0.758
TH-228	3.491E+00	4.101E+00	7.150E+00	0.000E+00	0.488
TH-232	1.614E+00	7.569E+00	1.612E+01	0.000E+00	0.100

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	-7.391E+00		2.044E+01	3.312E+01	0.000E+00	-0.223
NA-24	-8.128E+00		1.063E+01	1.352E+01	0.000E+00	-0.601
CR-51	-1.372E+01		2.075E+01	3.315E+01	0.000E+00	-0.414
MN-54	2.401E+00		2.389E+00	4.081E+00	0.000E+00	0.588
CO-57	1.993E+00		2.387E+00	3.980E+00	0.000E+00	0.501
CO-58	-2.665E+00		2.448E+00	3.782E+00	0.000E+00	-0.705
FE-59	3.313E+00		4.583E+00	7.806E+00	0.000E+00	0.424
CO-60	8.401E-01		2.443E+00	4.125E+00	0.000E+00	0.204
ZN-65	2.571E+01		6.824E+00	1.179E+01	0.000E+00	2.182
SE-75	1.018E+00		3.282E+00	5.433E+00	0.000E+00	0.187
SR-85	1.222E+01		2.633E+00	4.883E+00	0.000E+00	2.503
Y-88	-1.937E+00		2.773E+00	4.308E+00	0.000E+00	-0.450
NB-94	4.615E-01		2.386E+00	3.961E+00	0.000E+00	0.117
NB-95	6.163E+00		2.915E+00	4.564E+00	0.000E+00	1.350
ZR-95	1.403E+00		4.509E+00	6.833E+00	0.000E+00	0.205
MO-99	9.923E+00		2.274E+01	3.811E+01	0.000E+00	0.260
RU-103	8.922E-01		2.431E+00	4.034E+00	0.000E+00	0.221
RU-106	1.334E+01		2.136E+01	3.594E+01	0.000E+00	0.371
AG-110m	-3.508E-01		2.397E+00	3.941E+00	0.000E+00	-0.089
SN-113	3.229E+00		3.078E+00	5.269E+00	0.000E+00	0.613
SB-124	1.707E+00		5.234E+00	3.944E+00	0.000E+00	0.433
SB-125	-4.518E+00		6.657E+00	1.074E+01	0.000E+00	-0.421
TE-129M	-6.249E+00		2.679E+01	4.370E+01	0.000E+00	-0.143
I-131	-3.009E-01		2.555E+00	4.240E+00	0.000E+00	-0.071
BA-133	2.310E+01		4.321E+00	7.133E+00	0.000E+00	3.239
CS-134	3.363E+01		4.183E+00	6.911E+00	0.000E+00	4.866
CS-136	2.061E+00		2.430E+00	4.131E+00	0.000E+00	0.499
CS-137	3.203E+00		2.636E+00	4.572E+00	0.000E+00	0.701
CE-139	1.980E+00		2.479E+00	4.084E+00	0.000E+00	0.485
BA-140	-8.317E-01		8.645E+00	1.404E+01	0.000E+00	-0.059
LA-140	1.648E+00		2.806E+00	4.778E+00	0.000E+00	0.345
CE-141	9.645E-01		4.972E+00	6.937E+00	0.000E+00	0.139
CE-144	6.361E+00		2.162E+01	3.037E+01	0.000E+00	0.209
EU-152	-7.834E+00		9.517E+00	1.258E+01	0.000E+00	-0.623
EU-154	4.261E+00		5.007E+00	8.348E+00	0.000E+00	0.510
RA-226	-5.952E+00		6.069E+01	9.982E+01	0.000E+00	-0.060
U-235	-1.435E+01		2.304E+01	3.121E+01	0.000E+00	-0.460
U-238	1.967E+02		2.601E+02	4.461E+02	0.000E+00	0.441
AM-241	2.429E+01		3.292E+01	4.980E+01	0.000E+00	0.488

A,11L28431-11 ,04/28/2006 21:23,04/27/2006 14:55, 3.590E+00,WG L28431-11 E
B,11L28431-11 ,LIBD ,09/01/2005 07:43,1135L090204

C,K-40	,YES,	1.074E+00,	3.885E+01,	3.854E+01,,	0.028	
C,AC-228	,YES,	9.301E+00,	1.286E+01,	1.228E+01,,	0.758	
C,TH-228	,YES,	3.491E+00,	4.101E+00,	7.150E+00,,	0.488	
C,TH-232	,YES,	1.614E+00,	7.569E+00,	1.612E+01,,	0.100	
C,BE-7	,NO ,	-7.391E+00,	2.044E+01,	3.312E+01,,	-0.223	
C,NA-24	,NO ,	-8.128E+00,	1.063E+01,	1.352E+01,,	-0.601	
C,CR-51	,NO ,	-1.372E+01,	2.075E+01,	3.315E+01,,	-0.414	
C,MN-54	,NO ,	2.401E+00,	2.389E+00,	4.081E+00,,	0.588	
C,CO-57	,NO ,	1.993E+00,	2.387E+00,	3.980E+00,,	0.501	
C,CO-58	,NO ,	-2.665E+00,	2.448E+00,	3.782E+00,,	-0.705	
C,FE-59	,NO ,	3.313E+00,	4.583E+00,	7.806E+00,,	0.424	
C,CO-60	,NO ,	8.401E-01,	2.443E+00,	4.125E+00,,	0.204	
C,ZN-65	,NO ,	2.571E+01,	6.824E+00,	1.179E+01,,	2.182	
C,SE-75	,NO ,	1.018E+00,	3.282E+00,	5.433E+00,,	0.187	
C,SR-85	,NO ,	1.222E+01,	2.633E+00,	4.883E+00,,	2.503	
C,Y-88	,NO ,	-1.937E+00,	2.773E+00,	4.308E+00,,	-0.450	
C,NB-94	,NO ,	4.615E-01,	2.386E+00,	3.961E+00,,	0.117	
C,NB-95	,NO ,	6.163E+00,	2.915E+00,	4.564E+00,,	1.350	
C,ZR-95	,NO ,	1.403E+00,	4.509E+00,	6.833E+00,,	0.205	
C,MO-99	,NO ,	9.923E+00,	2.274E+01,	3.811E+01,,	0.260	
C,RU-103	,NO ,	8.922E-01,	2.431E+00,	4.034E+00,,	0.221	
C,RU-106	,NO ,	1.334E+01,	2.136E+01,	3.594E+01,,	0.371	
C,AG-110m	,NO ,	-3.508E-01,	2.397E+00,	3.941E+00,,	-0.089	
C,SN-113	,NO ,	3.229E+00,	3.078E+00,	5.269E+00,,	0.613	
C,SB-124	,NO ,	1.707E+00,	5.234E+00,	3.944E+00,,	0.433	
C,SB-125	,NO ,	-4.518E+00,	6.657E+00,	1.074E+01,,	-0.421	
C,TE-129M	,NO ,	-6.249E+00,	2.679E+01,	4.370E+01,,	-0.143	
C,I-131	,NO ,	-3.009E-01,	2.555E+00,	4.240E+00,,	-0.071	
C,BA-133	,NO ,	2.310E+01,	4.321E+00,	7.133E+00,,	3.239	
C,CS-134	,NO ,	3.363E+01,	4.183E+00,	6.911E+00,,	4.866	
C,CS-136	,NO ,	2.061E+00,	2.430E+00,	4.131E+00,,	0.499	
C,CS-137	,NO ,	3.203E+00,	2.636E+00,	4.572E+00,,	0.701	
C,CE-139	,NO ,	1.980E+00,	2.479E+00,	4.084E+00,,	0.485	
C,BA-140	,NO ,	-8.317E-01,	8.645E+00,	1.404E+01,,	-0.059	
C,LA-140	,NO ,	1.648E+00,	2.806E+00,	4.778E+00,,	0.345	
C,CE-141	,NO ,	9.645E-01,	4.972E+00,	6.937E+00,,	0.139	
C,CE-144	,NO ,	6.361E+00,	2.162E+01,	3.037E+01,,	0.209	
C,EU-152	,NO ,	-7.834E+00,	9.517E+00,	1.258E+01,,	-0.623	
C,EU-154	,NO ,	4.261E+00,	5.007E+00,	8.348E+00,,	0.510	
C,RA-226	,NO ,	-5.952E+00,	6.069E+01,	9.982E+01,,	-0.060	
C,U-235	,NO ,	-1.435E+01,	2.304E+01,	3.121E+01,,	-0.460	
C,U-238	,NO ,	1.967E+02,	2.601E+02,	4.461E+02,,	0.441	
C,AM-241	,NO ,	2.429E+01,	3.292E+01,	4.980E+01,,	0.488	

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:07:51.90
TBE04 P-40312B HpGe ********** Aquisition Date/Time: 28-APR-2006 21:45:55.89

LIMS No., Customer Name, Client ID: WG L28431-12 EX BYRON

Sample ID : 04L28431-12
Sample Type : WG
Quantity : 3.57940E+00 L
Start Channel : 90 Energy Tol : 1.70000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 16:00:00.
Geometry : 0435L090804
BKGFILE : 04BG041406MT
Real Time : 0 14:21:43.57
Live time : 0 14:21:34.95

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.21*	450	1259	1.38	132.98	6.44E-01	8.71E-03	14.7	5.20E+00
2	3	76.97	296	1006	0.92	154.51	9.86E-01	5.72E-03	18.1	6.37E-01
3	1	92.83*	125	1412	1.67	186.23	1.39E+00	2.41E-03	62.3	4.66E+00
4	1	139.82*	272	1384	0.91	280.22	1.82E+00	5.27E-03	26.7	1.01E+00
5	1	185.97*	150	1268	1.72	372.55	1.73E+00	2.90E-03	49.3	3.66E+00
6	1	198.35*	307	1187	1.12	397.30	1.68E+00	5.94E-03	23.5	2.43E+00
7	2	238.42*	238	762	1.36	477.44	1.52E+00	4.60E-03	24.9	3.16E+00
8	2	241.77*	212	688	1.23	484.15	1.51E+00	4.10E-03	23.4	
9	1	295.14*	465	855	1.27	590.90	1.32E+00	9.00E-03	14.3	2.67E+00
10	1	351.78*	623	577	1.21	704.18	1.17E+00	1.21E-02	9.3	5.54E-01
11	1	595.58	157	299	1.38	1191.77	7.87E-01	3.03E-03	21.5	2.56E+00
12	1	609.00*	544	373	1.25	1218.61	7.73E-01	1.05E-02	9.5	8.36E-01
13	1	867.73	50	203	1.83	1736.00	5.88E-01	9.63E-04	57.1	8.94E-01
14	1	968.45*	38	126	1.77	1937.40	5.39E-01	7.35E-04	73.8	1.52E+00
15	1	1119.56*	148	136	1.87	2239.55	4.81E-01	2.87E-03	20.4	1.40E+00
16	1	1237.72	129	115	1.27	2475.79	4.45E-01	2.49E-03	16.8	2.96E+01
17	1	1331.73*	22	90	2.90	2663.76	4.20E-01	4.29E-04	116.7	2.03E+00
18	1	1459.88*	42	116	2.02	2919.94	3.92E-01	8.16E-04	77.0	1.37E+00
19	1	1763.34*	121	86	2.47	3526.58	3.43E-01	2.34E-03	22.3	6.43E-01

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	42	10.67*	3.922E-01	1.473E+01	1.473E+01	153.91
RA-226	186.21	150	3.28*	1.726E+00	3.866E+01	3.866E+01	98.57
TH-228	238.63	238	44.60*	1.521E+00	5.115E+00	5.123E+00	49.81
	240.98	212	3.95	1.508E+00	5.196E+01	5.203E+01	46.83
U-235	143.76	------	10.50*	1.822E+00	------	Line Not Found	------
	163.35	------	4.70	1.796E+00	------	Line Not Found	------
	185.71	150	54.00	1.726E+00	2.348E+00	2.348E+00	98.57
	205.31	------	4.70	1.652E+00	------	Line Not Found	------

Nuclide Type: activation

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
CO-60	1173.22	------	100.00	4.637E-01	------	Line Not Found	------
	1332.49	22	100.00*	4.204E-01	7.707E-01	7.711E-01	233.35

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 04L28431-12

Acquisition date : 28-APR-2006 21:45:55

Total number of lines in spectrum	19	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	6	31.58%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.473E+01	1.473E+01	2.267E+01	153.91	
RA-226	1600.00Y	1.00	3.866E+01	3.866E+01	3.811E+01	98.57	
TH-228	1.91Y	1.00	5.115E+00	5.123E+00	2.552E+00	49.81	
U-235	7.04E+08Y	1.00	2.348E+00	2.348E+00	2.315E+00	98.57	K
			---------	---------			
	Total Activity :		6.086E+01	6.087E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	7.707E-01	7.711E-01	17.99E-01	233.35	
			---------	---------			
	Total Activity :		7.707E-01	7.711E-01			

Grand Total Activity :	6.163E+01	6.164E+01

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 04L28431-12

Acquisition date : 28-APR-2006 21:45:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.21	450	1259	1.38	132.98	130	7	8.71E-03	29.3	6.44E-01	
3	76.97	296	1006	0.92	154.51	142	17	5.72E-03	36.2	9.86E-01	
1	92.83	125	1412	1.67	186.23	182	9	2.41E-03	****	1.39E+00	
1	139.82	272	1384	0.91	280.22	276	9	5.27E-03	53.3	1.82E+00	
1	198.35	307	1187	1.12	397.30	393	10	5.94E-03	46.9	1.68E+00	
1	295.14	465	855	1.27	590.90	586	12	9.00E-03	28.6	1.32E+00	
1	351.78	623	577	1.21	704.18	699	11	1.21E-02	18.6	1.17E+00	
1	595.58	157	299	1.38	1191.77	1187	9	3.03E-03	43.1	7.87E-01	
1	609.00	544	373	1.25	1218.61	1212	13	1.05E-02	18.9	7.73E-01	
1	867.73	50	203	1.83	1736.00	1730	11	9.63E-04	****	5.88E-01	
1	968.45	38	126	1.77	1937.40	1931	12	7.35E-04	****	5.39E-01	T
1	1119.56	148	136	1.87	2239.55	2233	13	2.87E-03	40.8	4.81E-01	
1	1237.72	129	115	1.27	2475.79	2474	9	2.49E-03	33.6	4.45E-01	
1	1763.34	121	86	2.47	3526.58	3519	18	2.34E-03	44.6	3.43E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	19	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	6	31.58%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.473E+01	1.473E+01	2.267E+01	153.91	
RA-226	1600.00Y	1.00	3.866E+01	3.866E+01	3.811E+01	98.57	
TH-228	1.91Y	1.00	5.115E+00	5.123E+00	2.552E+00	49.81	
			---------	---------			
	Total Activity :		5.851E+01	5.852E+01			

Nuclide Type : activation

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	7.707E-01	7.711E-01	17.99E-01	233.35	
			---------	---------			
	Total Activity :		7.707E-01	7.711E-01			

Grand Total Activity : 5.928E+01 5.929E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	1.473E+01	2.267E+01	2.229E+01	0.000E+00	0.661
CO-60	7.711E-01	1.799E+00	2.269E+00	0.000E+00	0.340
RA-226	3.866E+01	3.811E+01	5.054E+01	0.000E+00	0.765
TH-228	5.123E+00	2.552E+00	3.684E+00	0.000E+00	1.391

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	1.484E+01		1.093E+01	1.854E+01	0.000E+00	0.800
NA-24	-9.573E+00		8.095E+00	1.268E+01	0.000E+00	-0.755
CR-51	-1.083E+01		1.141E+01	1.816E+01	0.000E+00	-0.596
MN-54	3.080E-01		1.330E+00	2.218E+00	0.000E+00	0.139
CO-57	8.797E-01		1.190E+00	1.997E+00	0.000E+00	0.440
CO-58	2.807E-01		1.324E+00	2.212E+00	0.000E+00	0.127
FE-59	2.998E+00		2.511E+00	4.360E+00	0.000E+00	0.688
ZN-65	9.225E+00		3.636E+00	5.767E+00	0.000E+00	1.600
SE-75	-1.589E+00		1.711E+00	2.765E+00	0.000E+00	-0.575
SR-85	1.145E+01		1.578E+00	2.954E+00	0.000E+00	3.875
Y-88	-5.042E-01		1.611E+00	2.609E+00	0.000E+00	-0.193
NB-94	-1.310E+00		1.296E+00	2.045E+00	0.000E+00	-0.640
NB-95	2.026E+00		1.334E+00	2.280E+00	0.000E+00	0.889
ZR-95	1.117E-01		2.287E+00	3.720E+00	0.000E+00	0.030
MO-99	-2.148E+01		1.420E+01	2.178E+01	0.000E+00	-0.986
RU-103	1.590E+00		1.345E+00	2.265E+00	0.000E+00	0.702
RU-106	1.952E+00		1.197E+01	1.985E+01	0.000E+00	0.098
AG-110m	-6.848E-01		1.312E+00	2.119E+00	0.000E+00	-0.323
SN-113	5.707E-01		1.692E+00	2.828E+00	0.000E+00	0.202
SB-124	-2.674E-01		3.043E+00	2.239E+00	0.000E+00	-0.119
SB-125	1.830E+00		3.659E+00	6.110E+00	0.000E+00	0.300
TE-129M	-7.012E+00		1.530E+01	2.476E+01	0.000E+00	-0.283
I-131	3.016E-01		1.475E+00	2.470E+00	0.000E+00	0.122
BA-133	2.952E+00		2.057E+00	3.066E+00	0.000E+00	0.963
CS-134	6.771E+00		2.064E+00	2.821E+00	0.000E+00	2.400
CS-136	-9.106E-01		1.357E+00	2.192E+00	0.000E+00	-0.415
CS-137	1.644E+00		1.457E+00	2.479E+00	0.000E+00	0.663
CE-139	4.215E-01		1.236E+00	2.028E+00	0.000E+00	0.208
BA-140	4.324E-01		5.016E+00	8.147E+00	0.000E+00	0.053
LA-140	1.936E-01		1.677E+00	2.762E+00	0.000E+00	0.070
CE-141	1.512E+00		2.454E+00	3.513E+00	0.000E+00	0.430
CE-144	1.107E+01		1.067E+01	1.552E+01	0.000E+00	0.713
EU-152	-7.020E+00		4.982E+00	6.502E+00	0.000E+00	-1.080
EU-154	1.029E+00		2.500E+00	4.174E+00	0.000E+00	0.247
AC-228	-1.004E+00		5.726E+00	8.665E+00	0.000E+00	-0.116
TH-232	-1.003E+00		5.723E+00	8.661E+00	0.000E+00	-0.116
U-235	1.118E+00		1.109E+01	1.570E+01	0.000E+00	0.071
U-238	-1.298E+01		1.467E+02	2.381E+02	0.000E+00	-0.055
AM-241	-3.338E+00		1.157E+01	1.838E+01	0.000E+00	-0.182

A,04L28431-12 ,04/29/2006 12:07,04/27/2006 16:00, 3.579E+00,WG L28431-12 E
B,04L28431-12 ,LIBD ,03/14/2005 09:04,0435L090804

C,K-40	,YES,	1.473E+01,	2.267E+01,	2.229E+01,,	0.661
C,CO-60	,YES,	7.711E-01,	1.799E+00,	2.269E+00,,	0.340
C,RA-226	,YES,	3.866E+01,	3.811E+01,	5.054E+01,,	0.765
C,TH-228	,YES,	5.123E+00,	2.552E+00,	3.684E+00,,	1.391
C,BE-7	,NO ,	1.484E+01,	1.093E+01,	1.854E+01,,	0.800
C,NA-24	,NO ,	-9.573E+00,	8.095E+00,	1.268E+01,,	-0.755
C,CR-51	,NO ,	-1.083E+01,	1.141E+01,	1.816E+01,,	-0.596
C,MN-54	,NO ,	3.080E-01,	1.330E+00,	2.218E+00,,	0.139
C,CO-57	,NO ,	8.797E-01,	1.190E+00,	1.997E+00,,	0.440
C,CO-58	,NO ,	2.807E-01,	1.324E+00,	2.212E+00,,	0.127
C,FE-59	,NO ,	2.998E+00,	2.511E+00,	4.360E+00,,	0.688
C,ZN-65	,NO ,	9.225E+00,	3.636E+00,	5.767E+00,,	1.600
C,SE-75	,NO ,	-1.589E+00,	1.711E+00,	2.765E+00,,	-0.575
C,SR-85	,NO ,	1.145E+01,	1.578E+00,	2.954E+00,,	3.875
C,Y-88	,NO ,	-5.042E-01,	1.611E+00,	2.609E+00,,	-0.193
C,NB-94	,NO ,	-1.310E+00,	1.296E+00,	2.045E+00,,	-0.640
C,NB-95	,NO ,	2.026E+00,	1.334E+00,	2.280E+00,,	0.889
C,ZR-95	,NO ,	1.117E-01,	2.287E+00,	3.720E+00,,	0.030
C,MO-99	,NO ,	-2.148E+01,	1.420E+01,	2.178E+01,,	-0.986
C,RU-103	,NO ,	1.590E+00,	1.345E+00,	2.265E+00,,	0.702
C,RU-106	,NO ,	1.952E+00,	1.197E+01,	1.985E+01,,	0.098
C,AG-110m	,NO ,	-6.848E-01,	1.312E+00,	2.119E+00,,	-0.323
C,SN-113	,NO ,	5.707E-01,	1.692E+00,	2.828E+00,,	0.202
C,SB-124	,NO ,	-2.674E-01,	3.043E+00,	2.239E+00,,	-0.119
C,SB-125	,NO ,	1.830E+00,	3.659E+00,	6.110E+00,,	0.300
C,TE-129M	,NO ,	-7.012E+00,	1.530E+01,	2.476E+01,,	-0.283
C,I-131	,NO ,	3.016E-01,	1.475E+00,	2.470E+00,,	0.122
C,BA-133	,NO ,	2.952E+00,	2.057E+00,	3.066E+00,,	0.963
C,CS-134	,NO ,	6.771E+00,	2.064E+00,	2.821E+00,,	2.400
C,CS-136	,NO ,	-9.106E-01,	1.357E+00,	2.192E+00,,	-0.415
C,CS-137	,NO ,	1.644E+00,	1.457E+00,	2.479E+00,,	0.663
C,CE-139	,NO ,	4.215E-01,	1.236E+00,	2.028E+00,,	0.208
C,BA-140	,NO ,	4.324E-01,	5.016E+00,	8.147E+00,,	0.053
C,LA-140	,NO ,	1.936E-01,	1.677E+00,	2.762E+00,,	0.070
C,CE-141	,NO ,	1.512E+00,	2.454E+00,	3.513E+00,,	0.430
C,CE-144	,NO ,	1.107E+01,	1.067E+01,	1.552E+01,,	0.713
C,EU-152	,NO ,	-7.020E+00,	4.982E+00,	6.502E+00,,	-1.080
C,EU-154	,NO ,	1.029E+00,	2.500E+00,	4.174E+00,,	0.247
C,AC-228	,NO ,	-1.004E+00,	5.726E+00,	8.665E+00,,	-0.116
C,TH-232	,NO ,	-1.003E+00,	5.723E+00,	8.661E+00,,	-0.116
C,U-235	,NO ,	1.118E+00,	1.109E+01,	1.570E+01,,	0.071
C,U-238	,NO ,	-1.298E+01,	1.467E+02,	2.381E+02,,	-0.055
C,AM-241	,NO ,	-3.338E+00,	1.157E+01,	1.838E+01,,	-0.182

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:09:56.75
TBE07 P-10768B HpGe ********** Aquisition Date/Time: 28-APR-2006 21:45:59.15

LIMS No., Customer Name, Client ID: WG L28431-13 EX BYRON

Sample ID : 07L28431-13
Sample Type : WG
Quantity : 3.59680E+00 L
Start Channel : 40 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 16:15:00.
Geometry : 0735L090904
BKGFILE : 07BG041406MT
Real Time : 0 14:23:46.72
Live time : 0 14:23:37.02

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.27*	418	1686	1.36	133.38	7.23E-01	8.07E-03	19.4	2.88E+00
2	1	139.76*	255	1095	0.92	280.41	2.09E+00	4.92E-03	24.8	5.30E-01
3	1	174.42	232	1157	1.80	349.76	2.06E+00	4.48E-03	27.0	2.49E+00
4	1	198.36*	338	1181	0.94	397.65	1.98E+00	6.53E-03	20.6	6.30E-01
5	1	238.59*	205	945	1.14	478.14	1.82E+00	3.96E-03	32.1	1.71E+00
6	1	351.84*	197	697	1.38	704.69	1.43E+00	3.80E-03	30.7	1.87E+00
7	1	500.20	56	405	1.48	1001.47	1.13E+00	1.08E-03	66.5	2.45E+00
8	1	595.82	227	403	2.07	1192.73	9.96E-01	4.38E-03	18.9	1.84E+00
9	1	609.24*	306	287	2.32	1219.58	9.81E-01	5.90E-03	15.4	4.78E+00
10	1	867.96	66	141	1.35	1737.01	7.57E-01	1.27E-03	33.4	1.39E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
TH-228	238.63	205	44.60*	1.815E+00	3.676E+00	3.682E+00	64.14
	240.98	------	3.95	1.806E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 07L28431-13 Acquisition date : 28-APR-2006 21:45:59

Total number of lines in spectrum	10	
Number of unidentified lines	9	
Number of lines tentatively identified by NID	1	10.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-228	1.91Y	1.00	3.676E+00	3.682E+00	2.361E+00	64.14	
	Total Activity :		3.676E+00	3.682E+00			
	Grand Total Activity :		3.676E+00	3.682E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 07L28431-13

Acquisition date : 28-APR-2006 21:45:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.27	418	1686	1.36	133.38	129	9	8.07E-03	38.9	7.23E-01	
1	139.76	255	1095	0.92	280.41	277	7	4.92E-03	49.6	2.09E+00	
1	174.42	232	1157	1.80	349.76	346	9	4.48E-03	54.1	2.06E+00	
1	198.36	338	1181	0.94	397.65	394	9	6.53E-03	41.2	1.98E+00	
1	351.84	197	697	1.38	704.69	700	12	3.80E-03	61.5	1.43E+00	
1	500.20	56	405	1.48	1001.47	997	9	1.08E-03	****	1.13E+00	
1	595.82	227	403	2.07	1192.73	1188	12	4.38E-03	37.8	9.96E-01	
1	609.24	306	287	2.32	1219.58	1215	13	5.90E-03	30.8	9.81E-01	
1	867.96	66	141	1.35	1737.01	1734	8	1.27E-03	66.7	7.57E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	10	
Number of unidentified lines	9	
Number of lines tentatively identified by NID	1	10.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-228	1.91Y	1.00	3.676E+00	3.682E+00	2.361E+00	64.14	
	Total Activity :		3.676E+00	3.682E+00			
Grand Total Activity :			3.676E+00	3.682E+00			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
TH-228	3.682E+00	2.361E+00	3.192E+00	0.000E+00	1.154

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	7.010E+00		9.349E+00	1.583E+01	0.000E+00	0.443
NA-24	-4.629E+00		6.958E+00	1.116E+01	0.000E+00	-0.415

K-40	3.109E+00	1.818E+01	3.257E+01	0.000E+00	0.095
CR-51	-7.019E+00	9.977E+00	1.588E+01	0.000E+00	-0.442
MN-54	7.082E-01	1.171E+00	1.980E+00	0.000E+00	0.358
CO-57	5.473E-01	1.011E+00	1.707E+00	0.000E+00	0.321
CO-58	-1.122E-01	1.169E+00	1.894E+00	0.000E+00	-0.059
FE-59	4.208E+00	2.280E+00	4.007E+00	0.000E+00	1.050
CO-60	5.535E-02	1.229E+00	2.036E+00	0.000E+00	0.027
ZN-65	5.281E+00	2.553E+00	4.509E+00	0.000E+00	1.171
SE-75	-9.200E-01	1.458E+00	2.365E+00	0.000E+00	-0.389
SR-85	1.582E+01	1.408E+00	2.772E+00	0.000E+00	5.709
Y-88	1.907E-01	1.380E+00	2.265E+00	0.000E+00	0.084
NB-94	-1.683E-01	1.140E+00	1.871E+00	0.000E+00	-0.090
NB-95	9.698E-01	1.142E+00	1.917E+00	0.000E+00	0.506
ZR-95	-1.757E+00	2.019E+00	3.211E+00	0.000E+00	-0.547
MO-99	8.052E+00	1.284E+01	2.147E+01	0.000E+00	0.375
RU-103	1.026E+00	1.411E+00	2.033E+00	0.000E+00	0.505
RU-106	-2.607E+00	1.131E+01	1.767E+01	0.000E+00	-0.148
AG-110m	7.475E-02	1.139E+00	1.892E+00	0.000E+00	0.040
SN-113	2.858E-01	1.451E+00	2.395E+00	0.000E+00	0.119
SB-124	3.156E-01	2.480E+00	1.818E+00	0.000E+00	0.174
SB-125	-1.212E+00	3.252E+00	5.253E+00	0.000E+00	-0.231
TE-129M	3.408E+00	1.285E+01	2.097E+01	0.000E+00	0.163
I-131	9.495E-02	1.268E+00	2.100E+00	0.000E+00	0.045
BA-133	2.540E+00	1.770E+00	2.609E+00	0.000E+00	0.974
CS-134	3.713E+00	2.497E+00	2.085E+00	0.000E+00	1.781
CS-136	-5.157E-01	1.185E+00	1.894E+00	0.000E+00	-0.272
CS-137	1.173E+00	1.259E+00	2.142E+00	0.000E+00	0.548
CE-139	6.313E-01	1.048E+00	1.735E+00	0.000E+00	0.364
BA-140	2.115E-01	4.242E+00	6.990E+00	0.000E+00	0.030
LA-140	5.507E-02	1.505E+00	2.492E+00	0.000E+00	0.022
CE-141	1.220E+00	1.951E+00	2.931E+00	0.000E+00	0.416
CE-144	-4.010E+00	8.613E+00	1.273E+01	0.000E+00	-0.315
EU-152	-6.170E+00	4.042E+00	5.641E+00	0.000E+00	-1.094
EU-154	1.448E+00	2.126E+00	3.596E+00	0.000E+00	0.403
RA-226	2.184E+01	2.996E+01	4.695E+01	0.000E+00	0.465
AC-228	-3.390E+00	4.934E+00	7.670E+00	0.000E+00	-0.442
TH-232	-3.389E+00	4.931E+00	7.666E+00	0.000E+00	-0.442
U-235	3.902E+00	9.590E+00	1.331E+01	0.000E+00	0.293
U-238	-2.092E+02	1.400E+02	1.989E+02	0.000E+00	-1.052
AM-241	-1.541E+01	9.516E+00	1.456E+01	0.000E+00	-1.058

A,07L28431-13 ,04/29/2006 12:09,04/27/2006 16:15, 3.597E+00,WG L28431-13 E
B,07L28431-13 ,LIBD ,06/23/2005 07:26,0735L090904

C,TH-228	,YES,	3.682E+00,	2.361E+00,	3.192E+00,,	1.154
C,BE-7	,NO ,	7.010E+00,	9.349E+00,	1.583E+01,,	0.443
C,NA-24	,NO ,	-4.629E+00,	6.958E+00,	1.116E+01,,	-0.415
C,K-40	,NO ,	3.109E+00,	1.818E+01,	3.257E+01,,	0.095
C,CR-51	,NO ,	-7.019E+00,	9.977E+00,	1.588E+01,,	-0.442
C,MN-54	,NO ,	7.082E-01,	1.171E+00,	1.980E+00,,	0.358
C,CO-57	,NO ,	5.473E-01,	1.011E+00,	1.707E+00,,	0.321
C,CO-58	,NO ,	-1.122E-01,	1.169E+00,	1.894E+00,,	-0.059
C,FE-59	,NO ,	4.208E+00,	2.280E+00,	4.007E+00,,	1.050
C,CO-60	,NO ,	5.535E-02,	1.229E+00,	2.036E+00,,	0.027
C,ZN-65	,NO ,	5.281E+00,	2.553E+00,	4.509E+00,,	1.171
C,SE-75	,NO ,	-9.200E-01,	1.458E+00,	2.365E+00,,	-0.389
C,SR-85	,NO ,	1.582E+01,	1.408E+00,	2.772E+00,,	5.709
C,Y-88	,NO ,	1.907E-01,	1.380E+00,	2.265E+00,,	0.084
C,NB-94	,NO ,	-1.683E-01,	1.140E+00,	1.871E+00,,	-0.090
C,NB-95	,NO ,	9.698E-01,	1.142E+00,	1.917E+00,,	0.506
C,ZR-95	,NO ,	-1.757E+00,	2.019E+00,	3.211E+00,,	-0.547
C,MO-99	,NO ,	8.052E+00,	1.284E+01,	2.147E+01,,	0.375
C,RU-103	,NO ,	1.026E+00,	1.411E+00,	2.033E+00,,	0.505
C,RU-106	,NO ,	-2.607E+00,	1.131E+01,	1.767E+01,,	-0.148
C,AG-110m	,NO ,	7.475E-02,	1.139E+00,	1.892E+00,,	0.040
C,SN-113	,NO ,	2.858E-01,	1.451E+00,	2.395E+00,,	0.119
C,SB-124	,NO ,	3.156E-01,	2.480E+00,	1.818E+00,,	0.174
C,SB-125	,NO ,	-1.212E+00,	3.252E+00,	5.253E+00,,	-0.231
C,TE-129M	,NO ,	3.408E+00,	1.285E+01,	2.097E+01,,	0.163
C,I-131	,NO ,	9.495E-02,	1.268E+00,	2.100E+00,,	0.045
C,BA-133	,NO ,	2.540E+00,	1.770E+00,	2.609E+00,,	0.974
C,CS-134	,NO ,	3.713E+00,	2.497E+00,	2.085E+00,,	1.781
C,CS-136	,NO ,	-5.157E-01,	1.185E+00,	1.894E+00,,	-0.272
C,CS-137	,NO ,	1.173E+00,	1.259E+00,	2.142E+00,,	0.548
C,CE-139	,NO ,	6.313E-01,	1.048E+00,	1.735E+00,,	0.364
C,BA-140	,NO ,	2.115E-01,	4.242E+00,	6.990E+00,,	0.030
C,LA-140	,NO ,	5.507E-02,	1.505E+00,	2.492E+00,,	0.022
C,CE-141	,NO ,	1.220E+00,	1.951E+00,	2.931E+00,,	0.416
C,CE-144	,NO ,	-4.010E+00,	8.613E+00,	1.273E+01,,	-0.315
C,EU-152	,NO ,	-6.170E+00,	4.042E+00,	5.641E+00,,	-1.094
C,EU-154	,NO ,	1.448E+00,	2.126E+00,	3.596E+00,,	0.403
C,RA-226	,NO ,	2.184E+01,	2.996E+01,	4.695E+01,,	0.465
C,AC-228	,NO ,	-3.390E+00,	4.934E+00,	7.670E+00,,	-0.442
C,TH-232	,NO ,	-3.389E+00,	4.931E+00,	7.666E+00,,	-0.442
C,U-235	,NO ,	3.902E+00,	9.590E+00,	1.331E+01,,	0.293
C,U-238	,NO ,	-2.092E+02,	1.400E+02,	1.989E+02,,	-1.052
C,AM-241	,NO ,	-1.541E+01,	9.516E+00,	1.456E+01,,	-1.058

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:11:32.68
TBE10 12892256 HpGe ********** Aquisition Date/Time: 28-APR-2006 21:46:05.73

LIMS No., Customer Name, Client ID: WGB L28431-14 EX BYRON

Sample ID : 10L28431-14
Sample Type : WG
Quantity : 3.58890E+00 L
Start Channel : 80 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 17:45:00.
Geometry : 1035L091004
BKGFILE : 10BG041406MT
Real Time : 0 14:25:17.48
Live time : 0 14:25:09.02

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	66.50*	229	2098	1.01	132.24	6.39E-01	4.42E-03	38.2	2.38E+00
2	1	77.20	202	1253	0.86	153.66	9.46E-01	3.90E-03	28.4	1.33E+00
3	1	92.63*	88	1752	1.47	184.53	1.30E+00	1.69E-03	94.4	1.36E+00
4	1	139.77	305	1732	1.08	278.87	1.68E+00	5.87E-03	25.2	2.94E-01
5	1	174.98	205	903	1.04	349.34	1.63E+00	3.95E-03	23.8	7.86E+00
6	1	185.87*	0	1076	1.10	371.14	1.59E+00	8.28E-06*****		4.27E-01
7	1	198.30*	193	1149	1.33	396.01	1.55E+00	3.72E-03	36.8	3.62E+00
8	2	238.70*	96	1026	1.49	476.88	1.40E+00	1.84E-03	68.7	1.87E+00
9	2	242.00	308	776	1.54	483.46	1.39E+00	5.93E-03	16.1	
10	1	295.31*	549	975	1.36	590.16	1.21E+00	1.06E-02	12.7	2.04E+00
11	1	352.01*	880	879	1.31	703.66	1.07E+00	1.70E-02	8.1	3.00E+00
12	1	583.46*	12	248	1.29	1166.93	7.18E-01	2.28E-04	292.2	2.40E+00
13	1	596.16	162	375	1.79	1192.36	7.06E-01	3.11E-03	25.3	2.05E+00
14	1	609.24*	723	391	1.44	1218.55	6.94E-01	1.39E-02	7.3	8.31E-01
15	1	767.74	110	251	3.28	1535.84	5.79E-01	2.13E-03	29.9	5.36E+00
16	1	911.05*	24	268	2.31	1822.77	5.07E-01	4.69E-04	166.4	1.25E+00
17	1	1120.10*	136	168	2.08	2241.33	4.33E-01	2.63E-03	26.3	6.24E-01
18	1	1238.12	65	136	1.58	2477.66	4.01E-01	1.26E-03	37.8	1.33E+00
19	1	1460.78*	5	157	1.85	2923.58	3.56E-01	1.02E-04	724.1	1.60E+00
20	1	1729.64	46	100	4.08	3462.07	3.17E-01	8.87E-04	49.3	9.11E+00
21	1	1764.10*	172	75	2.43	3531.09	3.13E-01	3.31E-03	16.1	1.14E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	5	10.67*	3.559E-01	2.018E+00	2.018E+00	1448.15
RA-226	186.21	0	3.28*	1.594E+00	1.192E-01	1.192E-01	29413.95
AC-228	835.50	------	1.75	5.422E-01	------ Line Not Found		------
	911.07	24	27.70*	5.070E-01	2.516E+00	2.517E+00	332.73
TH-228	238.63	96	44.60*	1.400E+00	2.219E+00	2.222E+00	137.40
	240.98	308	3.95	1.389E+00	8.137E+01	8.149E+01	32.11
TH-232	583.14	12	30.25	7.180E-01	7.909E-01	7.909E-01	584.43
	911.07	24	27.70*	5.070E-01	2.516E+00	2.516E+00	332.73
	969.11	------	16.60	4.834E-01	------ Line Not Found		------

U-235	143.76	------	10.50*	1.683E+00	------	Line Not Found	------
	163.35	------	4.70	1.659E+00	------	Line Not Found	------
	185.71	0	54.00	1.594E+00	7.239E-03	7.239E-03	29413.95
	205.31	------	4.70	1.524E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 10L28431-14 Acquisition date : 28-APR-2006 21:46:05

Total number of lines in spectrum	21	
Number of unidentified lines	15	
Number of lines tentatively identified by NID	6	28.57%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.018E+00	2.018E+00	29.22E+00	1448.15	
RA-226	1600.00Y	1.00	1.192E-01	1.192E-01	350.6E-01	29413.95	
AC-228	5.75Y	1.00	2.516E+00	2.517E+00	8.374E+00	332.73	
TH-228	1.91Y	1.00	2.219E+00	2.222E+00	3.053E+00	137.40	
TH-232	1.41E+10Y	1.00	2.516E+00	2.516E+00	8.370E+00	332.73	
U-235	7.04E+08Y	1.00	7.239E-03	7.239E-03	2129.E-03	29413.95	K
			---------	---------			
	Total Activity :		9.394E+00	9.399E+00			
	Grand Total Activity :		9.394E+00	9.399E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 10L28431-14 Acquisition date : 28-APR-2006 21:46:05

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	66.50	229	2098	1.01	132.24	127	9	4.42E-03	76.3	6.39E-01	
1	77.20	202	1253	0.86	153.66	152	6	3.90E-03	56.9	9.46E-01	
1	92.63	88	1752	1.47	184.53	181	9	1.69E-03	****	1.30E+00	
1	139.77	305	1732	1.08	278.87	275	9	5.87E-03	50.4	1.68E+00	
1	174.98	205	903	1.04	349.34	347	6	3.95E-03	47.7	1.63E+00	
1	198.30	193	1149	1.33	396.01	392	8	3.72E-03	73.6	1.55E+00	
1	295.31	549	975	1.36	590.16	585	12	1.06E-02	25.5	1.21E+00	
1	352.01	880	879	1.31	703.66	697	13	1.70E-02	16.2	1.07E+00	
1	596.16	162	375	1.79	1192.36	1187	12	3.11E-03	50.6	7.06E-01	
1	609.24	723	391	1.44	1218.55	1213	12	1.39E-02	14.5	6.94E-01	
1	767.74	110	251	3.28	1535.84	1530	12	2.13E-03	59.7	5.79E-01	
1	1120.10	136	168	2.08	2241.33	2234	17	2.63E-03	52.5	4.33E-01	
1	1238.12	65	136	1.58	2477.66	2471	12	1.26E-03	75.6	4.01E-01	
1	1729.64	46	100	4.08	3462.07	3455	15	8.87E-04	98.5	3.17E-01	
1	1764.10	172	75	2.43	3531.09	3522	20	3.31E-03	32.3	3.13E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	21	
Number of unidentified lines	15	
Number of lines tentatively identified by NID	6	28.57%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.018E+00	2.018E+00	29.22E+00	1448.15	
RA-226	1600.00Y	1.00	1.192E-01	1.192E-01	350.6E-01	29413.95	
AC-228	5.75Y	1.00	1.725E+00	1.726E+00	9.566E+00	554.39	
TH-228	1.91Y	1.00	2.219E+00	2.222E+00	3.053E+00	137.40	
TH-232	1.41E+10Y	1.00	7.909E-01	7.909E-01	46.22E-01	584.43	
	Total Activity :		6.871E+00	6.876E+00			

Grand Total Activity : 6.871E+00 6.876E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
TH-232	911.07	AC-228	911.07

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	2.018E+00	2.922E+01	2.508E+01	0.000E+00	0.080
RA-226	1.192E-01	3.506E+01	6.151E+01	0.000E+00	0.002
AC-228	1.726E+00	9.566E+00	9.661E+00	0.000E+00	0.179
TH-228	2.222E+00	3.053E+00	4.611E+00	0.000E+00	0.482
TH-232	7.909E-01	4.622E+00	1.031E+01	0.000E+00	0.077

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	8.286E+00		1.303E+01	2.180E+01	0.000E+00	0.380
NA-24	-1.172E+01		8.407E+00	1.289E+01	0.000E+00	-0.909
CR-51	-1.694E+01		1.312E+01	2.090E+01	0.000E+00	-0.811
MN-54	1.942E-01		1.543E+00	2.526E+00	0.000E+00	0.077
CO-57	7.991E-01		1.523E+00	2.544E+00	0.000E+00	0.314
CO-58	-1.773E-01		1.590E+00	2.586E+00	0.000E+00	-0.069
FE-59	2.659E+00		2.932E+00	4.972E+00	0.000E+00	0.535
CO-60	-6.042E-01		1.557E+00	2.515E+00	0.000E+00	-0.240
ZN-65	1.277E+01		4.138E+00	6.637E+00	0.000E+00	1.924
SE-75	-1.935E+00		2.016E+00	3.277E+00	0.000E+00	-0.591
SR-85	1.546E+01		1.804E+00	3.447E+00	0.000E+00	4.483
Y-88	-1.123E+00		1.818E+00	2.877E+00	0.000E+00	-0.390
NB-94	2.618E-01		1.549E+00	2.568E+00	0.000E+00	0.102
NB-95	2.055E+00		1.561E+00	2.667E+00	0.000E+00	0.770
ZR-95	-4.289E-01		2.915E+00	4.398E+00	0.000E+00	-0.098
MO-99	1.490E+00		1.637E+01	2.698E+01	0.000E+00	0.055
RU-103	-4.502E-01		1.607E+00	2.620E+00	0.000E+00	-0.172
RU-106	3.669E+00		1.429E+01	2.363E+01	0.000E+00	0.155
AG-110m	6.770E-01		1.459E+00	2.452E+00	0.000E+00	0.276
SN-113	-6.639E-01		1.959E+00	3.239E+00	0.000E+00	-0.205
SB-124	-2.314E+00		3.695E+00	2.462E+00	0.000E+00	-0.940
SB-125	2.409E+00		4.314E+00	7.248E+00	0.000E+00	0.332
TE-129M	6.702E+00		1.766E+01	2.942E+01	0.000E+00	0.228
I-131	-1.678E-02		1.751E+00	2.844E+00	0.000E+00	-0.006
BA-133	1.368E+01		2.704E+00	4.273E+00	0.000E+00	3.201
CS-134	9.169E+00		3.791E+00	3.351E+00	0.000E+00	2.736
CS-136	-1.395E+00		1.603E+00	2.530E+00	0.000E+00	-0.551
CS-137	3.792E-01		1.632E+00	2.721E+00	0.000E+00	0.139
CE-139	-1.905E-02		1.513E+00	2.477E+00	0.000E+00	-0.008
BA-140	-3.569E-03		5.806E+00	9.489E+00	0.000E+00	0.000
LA-140	6.364E-01		1.898E+00	3.196E+00	0.000E+00	0.199
CE-141	2.701E+00		3.069E+00	4.391E+00	0.000E+00	0.615
CE-144	-7.288E+00		1.374E+01	1.920E+01	0.000E+00	-0.380
EU-152	-1.118E+00		5.733E+00	7.862E+00	0.000E+00	-0.142
EU-154	-8.242E-01		3.207E+00	5.302E+00	0.000E+00	-0.155
U-235	1.052E+01		1.392E+01	1.988E+01	0.000E+00	0.529
U-238	2.309E+02		1.697E+02	2.939E+02	0.000E+00	0.785
AM-241	-7.865E+00		1.444E+01	2.094E+01	0.000E+00	-0.376

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A,10L28431-14     ,04/29/2006 12:11,04/27/2006 17:45,   3.589E+00,WGB L28431-14
B,10L28431-14     ,LIBD                ,06/09/2005 08:04,1035L091004
C,K-40     ,YES,   2.018E+00,   2.922E+01,   2.508E+01,,    0.080
C,RA-226   ,YES,   1.192E-01,   3.506E+01,   6.151E+01,,    0.002
C,AC-228   ,YES,   1.726E+00,   9.566E+00,   9.661E+00,,    0.179
C,TH-228   ,YES,   2.222E+00,   3.053E+00,   4.611E+00,,    0.482
C,TH-232   ,YES,   7.909E-01,   4.622E+00,   1.031E+01,,    0.077
C,BE-7     ,NO ,   8.286E+00,   1.303E+01,   2.180E+01,,    0.380
C,NA-24    ,NO ,  -1.172E+01,   8.407E+00,   1.289E+01,,   -0.909
C,CR-51    ,NO ,  -1.694E+01,   1.312E+01,   2.090E+01,,   -0.811
C,MN-54    ,NO ,   1.942E-01,   1.543E+00,   2.526E+00,,    0.077
C,CO-57    ,NO ,   7.991E-01,   1.523E+00,   2.544E+00,,    0.314
C,CO-58    ,NO ,  -1.773E-01,   1.590E+00,   2.586E+00,,   -0.069
C,FE-59    ,NO ,   2.659E+00,   2.932E+00,   4.972E+00,,    0.535
C,CO-60    ,NO ,  -6.042E-01,   1.557E+00,   2.515E+00,,   -0.240
C,ZN-65    ,NO ,   1.277E+01,   4.138E+00,   6.637E+00,,    1.924
C,SE-75    ,NO ,  -1.935E+00,   2.016E+00,   3.277E+00,,   -0.591
C,SR-85    ,NO ,   1.546E+01,   1.804E+00,   3.447E+00,,    4.483
C,Y-88     ,NO ,  -1.123E+00,   1.818E+00,   2.877E+00,,   -0.390
C,NB-94    ,NO ,   2.618E-01,   1.549E+00,   2.568E+00,,    0.102
C,NB-95    ,NO ,   2.055E+00,   1.561E+00,   2.667E+00,,    0.770
C,ZR-95    ,NO ,  -4.289E-01,   2.915E+00,   4.398E+00,,   -0.098
C,MO-99    ,NO ,   1.490E+00,   1.637E+01,   2.698E+01,,    0.055
C,RU-103   ,NO ,  -4.502E-01,   1.607E+00,   2.620E+00,,   -0.172
C,RU-106   ,NO ,   3.669E+00,   1.429E+01,   2.363E+01,,    0.155
C,AG-110m  ,NO ,   6.770E-01,   1.459E+00,   2.452E+00,,    0.276
C,SN-113   ,NO ,  -6.639E-01,   1.959E+00,   3.239E+00,,   -0.205
C,SB-124   ,NO ,  -2.314E+00,   3.695E+00,   2.462E+00,,   -0.940
C,SB-125   ,NO ,   2.409E+00,   4.314E+00,   7.248E+00,,    0.332
C,TE-129M  ,NO ,   6.702E+00,   1.766E+01,   2.942E+01,,    0.228
C,I-131    ,NO ,  -1.678E-02,   1.751E+00,   2.844E+00,,   -0.006
C,BA-133   ,NO ,   1.368E+01,   2.704E+00,   4.273E+00,,    3.201
C,CS-134   ,NO ,   9.169E+00,   3.791E+00,   3.351E+00,,    2.736
C,CS-136   ,NO ,  -1.395E+00,   1.603E+00,   2.530E+00,,   -0.551
C,CS-137   ,NO ,   3.792E-01,   1.632E+00,   2.721E+00,,    0.139
C,CE-139   ,NO ,  -1.905E-02,   1.513E+00,   2.477E+00,,   -0.008
C,BA-140   ,NO ,  -3.569E-03,   5.806E+00,   9.489E+00,,    0.000
C,LA-140   ,NO ,   6.364E-01,   1.898E+00,   3.196E+00,,    0.199
C,CE-141   ,NO ,   2.701E+00,   3.069E+00,   4.391E+00,,    0.615
C,CE-144   ,NO ,  -7.288E+00,   1.374E+01,   1.920E+01,,   -0.380
C,EU-152   ,NO ,  -1.118E+00,   5.733E+00,   7.862E+00,,   -0.142
C,EU-154   ,NO ,  -8.242E-01,   3.207E+00,   5.302E+00,,   -0.155
C,U-235    ,NO ,   1.052E+01,   1.392E+01,   1.988E+01,,    0.529
C,U-238    ,NO ,   2.309E+02,   1.697E+02,   2.939E+02,,    0.785
C,AM-241   ,NO ,  -7.865E+00,   1.444E+01,   2.094E+01,,   -0.376
```

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 2-MAY-2006 08:40:43.10
TBE11 P-20610B HpGe ********** Aquisition Date/Time: 28-APR-2006 21:46:12.39

LIMS No., Customer Name, Client ID: WG L28431-15 EX BYRON

Sample ID : 11L28431-15
Sample Type : WG
Quantity : 3.60230E+00 L
Start Channel : 40 Energy Tol : 1.00000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 10:57:00.
Geometry : 1135L090204
BKGFILE : 11BG041406MT
Real Time : 0 14:26:45.75
Live time : 0 14:26:26.59

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	0	66.30*	268	2132	1.26	131.79	6.02E-01	5.15E-03	33.0	
2	0	77.35	218	1625	1.04	153.96	9.17E-01	4.19E-03	31.7	
3	0	87.19*	53	1417	1.17	173.68	1.16E+00	1.02E-03	126.3	
4	0	139.78	351	1453	1.45	279.17	1.69E+00	6.75E-03	19.6	
5	0	185.95*	42	1185	1.36	371.76	1.62E+00	8.03E-04	161.2	
6	0	198.53*	352	1609	1.25	396.98	1.57E+00	6.78E-03	24.3	
7	1	238.36*	162	972	1.44	476.84	1.42E+00	3.11E-03	39.7	3.26E+00
8	1	241.79	411	770	1.18	483.74	1.41E+00	7.91E-03	12.1	
9	0	295.06*	634	1001	1.20	590.55	1.23E+00	1.22E-02	11.1	
10	0	351.79*	1165	684	1.39	704.30	1.08E+00	2.24E-02	5.6	
11	0	595.26	128	391	1.19	1192.34	7.15E-01	2.47E-03	32.1	
12	0	608.93*	1029	361	1.52	1219.75	7.02E-01	1.98E-02	5.4	
13	0	726.98*	53	187	1.44	1456.31	6.12E-01	1.01E-03	54.3	
14	0	767.02	163	315	1.73	1536.56	5.87E-01	3.14E-03	25.0	
15	0	910.98*	15	158	1.26	1824.97	5.14E-01	2.95E-04	206.9	
16	0	933.63	74	230	2.14	1870.35	5.04E-01	1.42E-03	45.3	
17	0	1119.70*	206	150	1.72	2243.05	4.37E-01	3.97E-03	15.4	
18	0	1237.07*	67	147	1.57	2478.08	4.04E-01	1.29E-03	46.2	
19	0	1376.74	115	120	1.75	2757.72	3.71E-01	2.21E-03	22.8	
20	0	1406.75	78	50	1.30	2817.80	3.65E-01	1.49E-03	20.9	
21	0	1762.42*	166	88	1.87	3529.62	3.04E-01	3.19E-03	16.9	
22	0	1845.06	36	63	1.06	3694.96	2.93E-01	6.98E-04	46.8	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
RA-226	186.21	42	3.28*	1.615E+00	1.137E+01	1.137E+01	322.44
AC-228	835.50	------	1.75	5.493E-01	------ Line Not Found		------
	911.07	15	27.70*	5.136E-01	1.556E+00	1.557E+00	413.80
TH-228	238.63	162	44.60*	1.422E+00	3.683E+00	3.690E+00	79.49
	240.98	411	3.95	1.410E+00	1.065E+02	1.067E+02	24.19
U-235	143.76	------	10.50*	1.695E+00	------ Line Not Found		------
	163.35	------	4.70	1.678E+00	------ Line Not Found		------
	185.71	42	54.00	1.615E+00	6.904E-01	6.904E-01	322.44

205.31	------	4.70	1.546E+00	------	Line Not Found ------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 11L28431-15 Acquisition date : 28-APR-2006 21:46:12

Total number of lines in spectrum	22	
Number of unidentified lines	17	
Number of lines tentatively identified by NID	5	22.73%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	1.137E+01	1.137E+01	3.665E+01	322.44	
AC-228	5.75Y	1.00	1.556E+00	1.557E+00	6.442E+00	413.80	
TH-228	1.91Y	1.00	3.683E+00	3.690E+00	2.933E+00	79.49	
U-235	7.04E+08Y	1.00	6.904E-01	6.904E-01	22.26E-01	322.44	K
	Total Activity :		1.730E+01	1.730E+01			
	Grand Total Activity :		1.730E+01	1.730E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 11L28431-15 Acquisition date : 28-APR-2006 21:46:12

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	66.30	268	2132	1.26	131.79	128	9	5.15E-03	65.9	6.02E-01	
0	77.35	218	1625	1.04	153.96	151	7	4.19E-03	63.4	9.17E-01	
0	87.19	53	1417	1.17	173.68	171	7	1.02E-03	****	1.16E+00	
0	139.78	351	1453	1.45	279.17	275	8	6.75E-03	39.1	1.69E+00	
0	198.53	352	1609	1.25	396.98	391	12	6.78E-03	48.5	1.57E+00	
0	295.06	634	1001	1.20	590.55	586	11	1.22E-02	22.2	1.23E+00	
0	351.79	1165	684	1.39	704.30	699	11	2.24E-02	11.2	1.08E+00	
0	595.26	128	391	1.19	1192.34	1186	12	2.47E-03	64.1	7.15E-01	
0	608.93	1029	361	1.52	1219.75	1213	13	1.98E-02	10.9	7.02E-01	
0	726.98	53	187	1.44	1456.31	1453	9	1.01E-03	****	6.12E-01	
0	767.02	163	315	1.73	1536.56	1529	15	3.14E-03	50.0	5.87E-01	T
0	933.63	74	230	2.14	1870.35	1861	14	1.42E-03	90.6	5.04E-01	
0	1119.70	206	150	1.72	2243.05	2237	12	3.97E-03	30.8	4.37E-01	
0	1237.07	67	147	1.57	2478.08	2470	14	1.29E-03	92.4	4.04E-01	
0	1376.74	115	120	1.75	2757.72	2751	15	2.21E-03	45.5	3.71E-01	
0	1406.75	78	50	1.30	2817.80	2812	11	1.49E-03	41.9	3.65E-01	
0	1762.42	166	88	1.87	3529.62	3523	17	3.19E-03	33.8	3.04E-01	
0	1845.06	36	63	1.06	3694.96	3689	12	6.98E-04	93.5	2.93E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	22	
Number of unidentified lines	17	
Number of lines tentatively identified by NID	5	22.73%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	1.137E+01	1.137E+01	3.665E+01	322.44	
AC-228	5.75Y	1.00	1.556E+00	1.557E+00	6.442E+00	413.80	
TH-228	1.91Y	1.00	3.683E+00	3.690E+00	2.933E+00	79.49	
	Total Activity :		1.661E+01	1.661E+01			
	Grand Total Activity :		1.661E+01	1.661E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA

RA-226	1.137E+01	3.665E+01	5.975E+01	0.000E+00	0.190
AC-228	1.557E+00	6.442E+00	9.060E+00	0.000E+00	0.172
TH-228	3.690E+00	2.933E+00	4.652E+00	0.000E+00	0.793

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	1.707E+01		1.347E+01	2.280E+01	0.000E+00	0.748
NA-24	-4.476E+00		1.291E+01	1.738E+01	0.000E+00	-0.258
K-40	1.087E+02		1.972E+01	3.870E+01	0.000E+00	2.810
CR-51	-1.124E+01		1.375E+01	2.202E+01	0.000E+00	-0.510
MN-54	1.430E+00		1.570E+00	2.637E+00	0.000E+00	0.542
CO-57	-3.803E-01		1.495E+00	2.446E+00	0.000E+00	-0.155
CO-58	2.854E-01		1.573E+00	2.583E+00	0.000E+00	0.110
FE-59	8.570E-01		3.023E+00	5.007E+00	0.000E+00	0.171
CO-60	4.248E-01		1.597E+00	2.669E+00	0.000E+00	0.159
ZN-65	1.472E+01		4.259E+00	6.906E+00	0.000E+00	2.132
SE-75	-1.659E+00		2.052E+00	3.323E+00	0.000E+00	-0.499
SR-85	1.421E+01		1.788E+00	3.377E+00	0.000E+00	4.207
Y-88	6.305E-02		2.042E+00	2.819E+00	0.000E+00	0.022
NB-94	-2.654E-01		1.504E+00	2.464E+00	0.000E+00	-0.108
NB-95	4.372E+00		1.602E+00	2.842E+00	0.000E+00	1.538
ZR-95	4.555E-01		3.017E+00	4.314E+00	0.000E+00	0.106
MO-99	1.165E+01		1.764E+01	2.959E+01	0.000E+00	0.394
RU-103	8.729E-01		1.569E+00	2.606E+00	0.000E+00	0.335
RU-106	-5.328E-01		1.462E+01	2.424E+01	0.000E+00	-0.022
AG-110m	2.532E-01		1.535E+00	2.552E+00	0.000E+00	0.099
SN-113	-6.947E-02		2.003E+00	3.320E+00	0.000E+00	-0.021
SB-124	3.358E-01		3.525E+00	2.549E+00	0.000E+00	0.132
SB-125	-3.470E-01		4.393E+00	7.241E+00	0.000E+00	-0.048
TE-129M	1.185E+01		1.763E+01	2.948E+01	0.000E+00	0.402
I-131	-7.528E-02		1.776E+00	2.955E+00	0.000E+00	-0.025
BA-133	1.420E+01		2.696E+00	4.257E+00	0.000E+00	3.336
CS-134	1.734E+01		2.756E+00	3.839E+00	0.000E+00	4.516
CS-136	-6.478E-01		1.624E+00	2.611E+00	0.000E+00	-0.248
CS-137	3.286E-01		1.705E+00	2.835E+00	0.000E+00	0.116
CE-139	8.291E-01		1.571E+00	2.567E+00	0.000E+00	0.323
BA-140	-7.750E-01		6.004E+00	9.752E+00	0.000E+00	-0.079
LA-140	6.352E-01		1.921E+00	3.186E+00	0.000E+00	0.199
CE-141	-1.522E+00		3.138E+00	4.310E+00	0.000E+00	-0.353
CE-144	-3.371E+00		1.383E+01	1.917E+01	0.000E+00	-0.176
EU-152	-1.101E+01		6.055E+00	7.822E+00	0.000E+00	-1.408
EU-154	1.512E-01		3.142E+00	5.159E+00	0.000E+00	0.029
TH-232	1.556E+00	+	6.438E+00	1.001E+01	0.000E+00	0.155
U-235	-9.126E+00		1.464E+01	1.948E+01	0.000E+00	-0.468
U-238	-9.913E+01		1.694E+02	2.730E+02	0.000E+00	-0.363
AM-241	3.895E+01		2.242E+01	3.307E+01	0.000E+00	1.178

A,11L28431-15 ,05/02/2006 08:40,04/27/2006 10:57, 3.602E+00,WG L28431-15 E
B,11L28431-15 ,LIBD ,09/01/2005 07:43,1135L090204

C,RA-226	,YES,	1.137E+01,	3.665E+01,	5.975E+01,,	0.190
C,AC-228	,YES,	1.557E+00,	6.442E+00,	9.060E+00,,	0.172
C,TH-228	,YES,	3.690E+00,	2.933E+00,	4.652E+00,,	0.793
C,BE-7	,NO ,	1.707E+01,	1.347E+01,	2.280E+01,,	0.748
C,NA-24	,NO ,	-4.476E+00,	1.291E+01,	1.738E+01,,	-0.258
C,K-40	,NO ,	1.087E+02,	1.972E+01,	3.870E+01,,	2.810
C,CR-51	,NO ,	-1.124E+01,	1.375E+01,	2.202E+01,,	-0.510
C,MN-54	,NO ,	1.430E+00,	1.570E+00,	2.637E+00,,	0.542
C,CO-57	,NO ,	-3.803E-01,	1.495E+00,	2.446E+00,,	-0.155
C,CO-58	,NO ,	2.854E-01,	1.573E+00,	2.583E+00,,	0.110
C,FE-59	,NO ,	8.570E-01,	3.023E+00,	5.007E+00,,	0.171
C,CO-60	,NO ,	4.248E-01,	1.597E+00,	2.669E+00,,	0.159
C,ZN-65	,NO ,	1.472E+01,	4.259E+00,	6.906E+00,,	2.132
C,SE-75	,NO ,	-1.659E+00,	2.052E+00,	3.323E+00,,	-0.499
C,SR-85	,NO ,	1.421E+01,	1.788E+00,	3.377E+00,,	4.207
C,Y-88	,NO ,	6.305E-02,	2.042E+00,	2.819E+00,,	0.022
C,NB-94	,NO ,	-2.654E-01,	1.504E+00,	2.464E+00,,	-0.108
C,NB-95	,NO ,	4.372E+00,	1.602E+00,	2.842E+00,,	1.538
C,ZR-95	,NO ,	4.555E-01,	3.017E+00,	4.314E+00,,	0.106
C,MO-99	,NO ,	1.165E+01,	1.764E+01,	2.959E+01,,	0.394
C,RU-103	,NO ,	8.729E-01,	1.569E+00,	2.606E+00,,	0.335
C,RU-106	,NO ,	-5.328E-01,	1.462E+01,	2.424E+01,,	-0.022
C,AG-110m	,NO ,	2.532E-01,	1.535E+00,	2.552E+00,,	0.099
C,SN-113	,NO ,	-6.947E-02,	2.003E+00,	3.320E+00,,	-0.021
C,SB-124	,NO ,	3.358E-01,	3.525E+00,	2.549E+00,,	0.132
C,SB-125	,NO ,	-3.470E-01,	4.393E+00,	7.241E+00,,	-0.048
C,TE-129M	,NO ,	1.185E+01,	1.763E+01,	2.948E+01,,	0.402
C,I-131	,NO ,	-7.528E-02,	1.776E+00,	2.955E+00,,	-0.025
C,BA-133	,NO ,	1.420E+01,	2.696E+00,	4.257E+00,,	3.336
C,CS-134	,NO ,	1.734E+01,	2.756E+00,	3.839E+00,,	4.516
C,CS-136	,NO ,	-6.478E-01,	1.624E+00,	2.611E+00,,	-0.248
C,CS-137	,NO ,	3.286E-01,	1.705E+00,	2.835E+00,,	0.116
C,CE-139	,NO ,	8.291E-01,	1.571E+00,	2.567E+00,,	0.323
C,BA-140	,NO ,	-7.750E-01,	6.004E+00,	9.752E+00,,	-0.079
C,LA-140	,NO ,	6.352E-01,	1.921E+00,	3.186E+00,,	0.199
C,CE-141	,NO ,	-1.522E+00,	3.138E+00,	4.310E+00,,	-0.353
C,CE-144	,NO ,	-3.371E+00,	1.383E+01,	1.917E+01,,	-0.176
C,EU-152	,NO ,	-1.101E+01,	6.055E+00,	7.822E+00,,	-1.408
C,EU-154	,NO ,	1.512E-01,	3.142E+00,	5.159E+00,,	0.029
C,TH-232	,NO ,	1.556E+00,	6.438E+00,	1.001E+01,,	0.155
C,U-235	,NO ,	-9.126E+00,	1.464E+01,	1.948E+01,,	-0.468
C,U-238	,NO ,	-9.913E+01,	1.694E+02,	2.730E+02,,	-0.363
C,AM-241	,NO ,	3.895E+01,	2.242E+01,	3.307E+01,,	1.178

Sec. Review: Analyst: KD LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:14:54.56
TBE13 P-10727B HpGe ********** Aquisition Date/Time: 28-APR-2006 21:46:20.63

LIMS No., Customer Name, Client ID: WG L28431-16 EX BYRON

Sample ID : 13L28431-16
Sample Type : WG
Quantity : 3.61430E+00 L
Start Channel : 25 Energy Tol : 1.50000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 12:25:00.
Geometry : 1335L090904
BKGFILE : 13BG041406MT
Real Time : 0 14:28:21.78
Live time : 0 14:28:05.41

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	5	63.32*	167	2053	1.09	126.61	6.21E-01	3.20E-03	50.9	1.04E+00
2	5	66.33	283	2387	1.33	132.61	7.24E-01	5.42E-03	30.6	
3	1	77.18*	566	2018	0.82	154.30	1.09E+00	1.09E-02	14.3	5.54E+00
4	4	87.23*	182	1522	0.87	174.38	1.39E+00	3.50E-03	35.3	2.25E+00
5	1	92.69*	28	2274	1.03	185.30	1.52E+00	5.34E-04	342.9	2.78E+00
6	1	139.74*	414	2071	1.16	279.32	2.02E+00	7.95E-03	20.4	4.44E+00
7	1	143.45*	101	1785	1.31	286.73	2.02E+00	1.94E-03	76.1	6.43E-01
8	1	185.71*	76	1985	1.12	371.20	1.95E+00	1.45E-03	117.9	2.67E+00
9	1	198.49*	305	1660	1.02	396.74	1.90E+00	5.86E-03	25.7	1.28E+00
10	2	238.62*	345	1107	1.13	476.93	1.73E+00	6.63E-03	19.4	4.50E+00
11	2	241.93	1092	1093	1.16	483.54	1.72E+00	2.10E-02	5.8	
12	2	295.16*	1923	842	1.20	589.94	1.52E+00	3.69E-02	3.6	3.99E+00
13	2	297.42	121	687	0.96	594.45	1.51E+00	2.33E-03	36.0	
14	1	351.85*	3098	856	1.10	703.26	1.34E+00	5.95E-02	2.6	4.61E-01
15	1	499.64	133	523	1.58	998.70	1.04E+00	2.55E-03	33.5	1.93E+00
16	1	583.17*	27	546	1.14	1165.71	9.26E-01	5.25E-04	182.1	2.82E+00
17	1	595.87	217	405	1.63	1191.11	9.11E-01	4.17E-03	18.0	5.71E-01
18	1	609.27*	2702	639	1.34	1217.91	8.96E-01	5.19E-02	2.9	7.59E-01
19	1	665.61	90	327	1.28	1330.57	8.39E-01	1.72E-03	38.1	1.47E+00
20	1	768.13	282	285	1.90	1535.58	7.54E-01	5.42E-03	12.7	1.78E+00
21	1	786.00	123	370	2.43	1571.32	7.41E-01	2.36E-03	32.7	6.27E-01
22	1	911.21*	3	261	1.70	1821.76	6.64E-01	6.03E-05	*****	1.38E+00
23	1	934.06	126	297	1.63	1867.45	6.52E-01	2.42E-03	29.0	9.85E-01
24	1	1001.69*	40	310	3.15	2002.74	6.19E-01	7.75E-04	106.1	1.15E+00
25	1	1120.34*	582	286	2.07	2240.12	5.69E-01	1.12E-02	8.2	2.79E+00
26	1	1155.38	102	166	2.60	2310.22	5.56E-01	1.96E-03	26.3	1.03E+00
27	1	1238.73*	276	243	2.78	2477.00	5.29E-01	5.29E-03	16.4	2.32E+00
28	1	1281.64	93	158	3.36	2562.87	5.16E-01	1.79E-03	30.6	1.44E+00
29	1	1378.44	238	135	2.29	2756.59	4.89E-01	4.57E-03	12.4	1.60E+00
30	1	1408.57	97	178	2.72	2816.89	4.81E-01	1.86E-03	31.1	2.19E+00
31	1	1461.23*	6	180	1.99	2922.30	4.69E-01	1.25E-04	646.4	1.86E+00
32	1	1509.52	95	164	3.14	3018.96	4.58E-01	1.83E-03	32.6	1.54E+00
33	1	1730.40	123	117	2.89	3461.15	4.17E-01	2.36E-03	22.6	1.29E+00
34	1	1764.88*	411	146	2.16	3530.19	4.11E-01	7.88E-03	9.3	2.09E+00
35	1	1848.21	112	93	2.98	3697.04	3.99E-01	2.16E-03	23.1	1.55E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	6	10.67*	4.687E-01	1.863E+00	1.863E+00	1292.80
RA-226	186.21	76	3.28*	1.946E+00	1.704E+01	1.704E+01	235.87
AC-228	835.50	------	1.75	7.084E-01	------ Line Not Found		------
	911.07	3	27.70*	6.640E-01	2.453E-01	2.455E-01	2386.04
TH-228	238.63	345	44.60*	1.733E+00	6.416E+00	6.427E+00	38.84
	240.98	1092	3.95	1.719E+00	2.309E+02	2.313E+02	11.69
TH-232	583.14	27	30.25	9.262E-01	1.402E+00	1.402E+00	364.20
	911.07	3	27.70*	6.640E-01	2.453E-01	2.453E-01	2386.04
	969.11	------	16.60	6.342E-01	------ Line Not Found		------
U-235	143.76	101	10.50*	2.023E+00	6.828E+00	6.828E+00	152.20
	163.35	------	4.70	2.011E+00	------ Line Not Found		------
	185.71	76	54.00	1.946E+00	1.035E+00	1.035E+00	235.87
	205.31	------	4.70	1.871E+00	------ Line Not Found		------
U-238	766.41	------	0.21	7.555E-01	------ Line Not Found		------
	1001.03	40	0.92*	6.188E-01	1.018E+02	1.018E+02	212.25

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 13L28431-16 Acquisition date : 28-APR-2006 21:46:20

Total number of lines in spectrum	35	
Number of unidentified lines	26	
Number of lines tentatively identified by NID	9	25.71%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.863E+00	1.863E+00	24.08E+00	1292.80	
RA-226	1600.00Y	1.00	1.704E+01	1.704E+01	4.019E+01	235.87	
AC-228	5.75Y	1.00	2.453E-01	2.455E-01	58.57E-01	2386.04	
TH-228	1.91Y	1.00	6.416E+00	6.427E+00	2.496E+00	38.84	
TH-232	1.41E+10Y	1.00	2.453E-01	2.453E-01	58.54E-01	2386.04	
U-235	7.04E+08Y	1.00	6.828E+00	6.828E+00	10.39E+00	152.20	
U-238	4.47E+09Y	1.00	1.018E+02	1.018E+02	2.160E+02	212.25	
			---------	---------			
	Total Activity :		1.344E+02	1.344E+02			
	Grand Total Activity :		1.344E+02	1.344E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 13L28431-16 Acquisition date : 28-APR-2006 21:46:20

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	63.32	167	2053	1.09	126.61	122	15	3.20E-03	****	6.21E-01	
5	66.33	283	2387	1.33	132.61	122	15	5.42E-03	61.1	7.24E-01	
1	77.18	566	2018	0.82	154.30	153	6	1.09E-02	28.5	1.09E+00	
4	87.23	182	1522	0.87	174.38	166	13	3.50E-03	70.7	1.39E+00	
1	92.69	28	2274	1.03	185.30	182	8	5.34E-04	****	1.52E+00	
1	139.74	414	2071	1.16	279.32	276	8	7.95E-03	40.8	2.02E+00	
1	198.49	305	1660	1.02	396.74	393	8	5.86E-03	51.4	1.90E+00	
2	295.16	1923	842	1.20	589.94	585	13	3.69E-02	7.2	1.52E+00	
2	297.42	121	687	0.96	594.45	585	13	2.33E-03	72.0	1.51E+00	
1	351.85	3098	856	1.10	703.26	699	9	5.95E-02	5.2	1.34E+00	
1	499.64	133	523	1.58	998.70	993	10	2.55E-03	67.0	1.04E+00	
1	595.87	217	405	1.63	1191.11	1187	9	4.17E-03	35.9	9.11E-01	
1	609.27	2702	639	1.34	1217.91	1211	13	5.19E-02	5.8	8.96E-01	
1	665.61	90	327	1.28	1330.57	1327	9	1.72E-03	76.2	8.39E-01	
1	768.13	282	285	1.90	1535.58	1531	10	5.42E-03	25.4	7.54E-01	
1	786.00	123	370	2.43	1571.32	1565	12	2.36E-03	65.3	7.41E-01	
1	934.06	126	297	1.63	1867.45	1861	12	2.42E-03	58.0	6.52E-01	
1	1120.34	582	286	2.07	2240.12	2233	15	1.12E-02	16.5	5.69E-01	
1	1155.38	102	166	2.60	2310.22	2306	11	1.96E-03	52.7	5.56E-01	
1	1238.73	276	243	2.78	2477.00	2468	21	5.29E-03	32.8	5.29E-01	
1	1281.64	93	158	3.36	2562.87	2556	14	1.79E-03	61.1	5.16E-01	
1	1378.44	238	135	2.29	2756.59	2748	15	4.57E-03	24.9	4.89E-01	
1	1408.57	97	178	2.72	2816.89	2809	14	1.86E-03	62.2	4.81E-01	T
1	1509.52	95	164	3.14	3018.96	3011	17	1.83E-03	65.2	4.58E-01	
1	1730.40	123	117	2.89	3461.15	3454	17	2.36E-03	45.1	4.17E-01	
1	1764.88	411	146	2.16	3530.19	3520	19	7.88E-03	18.6	4.11E-01	
1	1848.21	112	93	2.98	3697.04	3690	18	2.16E-03	46.2	3.99E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	35	
Number of unidentified lines	26	
Number of lines tentatively identified by NID	9	25.71%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.863E+00	1.863E+00	24.08E+00	1292.80	
TH-228	1.91Y	1.00	6.416E+00	6.427E+00	2.496E+00	38.84	
TH-232	1.41E+10Y	1.00	9.022E-01	9.022E-01	38.48E-01	426.50	
U-235	7.04E+08Y	1.00	1.338E+00	1.338E+00	2.376E+00	177.63	
U-238	4.47E+09Y	1.00	1.018E+02	1.018E+02	2.160E+02	212.25	
			---	---			
	Total Activity :		1.123E+02	1.123E+02			
	Grand Total Activity :		1.123E+02	1.123E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
U-235	185.71	RA-226	186.21
TH-232	911.07	AC-228	911.07

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	1.863E+00	2.408E+01	2.400E+01	0.000E+00	0.078
TH-228	6.427E+00	2.496E+00	4.236E+00	0.000E+00	1.517
TH-232	9.022E-01	3.848E+00	8.621E+00	0.000E+00	0.105
U-235	1.338E+00	2.376E+00	1.830E+01	0.000E+00	0.073
U-238	1.018E+02	2.160E+02	2.572E+02	0.000E+00	0.396

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	-6.349E-01		1.197E+01	1.951E+01	0.000E+00	-0.033
NA-24	-4.337E+00		1.107E+01	1.494E+01	0.000E+00	-0.290
CR-51	-1.258E+01		1.228E+01	1.961E+01	0.000E+00	-0.642
MN-54	9.040E-01		1.421E+00	2.382E+00	0.000E+00	0.380
CO-57	5.426E-01		1.336E+00	2.240E+00	0.000E+00	0.242
CO-58	-1.165E+00		1.413E+00	2.279E+00	0.000E+00	-0.511
FE-59	1.694E+00		2.716E+00	4.562E+00	0.000E+00	0.371
CO-60	8.488E-01		1.486E+00	2.508E+00	0.000E+00	0.338
ZN-65	2.292E+01		4.014E+00	6.833E+00	0.000E+00	3.355
SE-75	-1.165E+00		1.907E+00	3.116E+00	0.000E+00	-0.374
SR-85	1.651E+01		1.683E+00	3.179E+00	0.000E+00	5.193
Y-88	-4.322E-01		1.709E+00	2.392E+00	0.000E+00	-0.181
NB-94	-2.519E-01		1.383E+00	2.240E+00	0.000E+00	-0.112
NB-95	4.399E+00		1.481E+00	2.634E+00	0.000E+00	1.670
ZR-95	2.545E-01		2.484E+00	4.030E+00	0.000E+00	0.063
MO-99	7.599E+00		1.585E+01	2.671E+01	0.000E+00	0.284
RU-103	2.158E+00		1.447E+00	2.433E+00	0.000E+00	0.887
RU-106	-2.099E+00		1.290E+01	2.113E+01	0.000E+00	-0.099
AG-110m	-5.536E-01		1.595E+00	2.241E+00	0.000E+00	-0.247
SN-113	6.289E-02		1.805E+00	2.993E+00	0.000E+00	0.021
SB-124	1.372E+00		3.024E+00	2.333E+00	0.000E+00	0.588
SB-125	-2.144E+00		4.070E+00	6.626E+00	0.000E+00	-0.324
TE-129M	2.561E+00		1.649E+01	2.708E+01	0.000E+00	0.095
I-131	-2.601E-01		1.600E+00	2.657E+00	0.000E+00	-0.098
BA-133	1.527E+01		2.367E+00	3.879E+00	0.000E+00	3.937
CS-134	1.998E+01		2.390E+00	3.505E+00	0.000E+00	5.701
CS-136	1.859E-02		1.472E+00	2.429E+00	0.000E+00	0.008
CS-137	4.174E-01		1.951E+00	2.670E+00	0.000E+00	0.156
CE-139	2.493E-01		1.394E+00	2.288E+00	0.000E+00	0.109
BA-140	4.954E+00		5.372E+00	9.125E+00	0.000E+00	0.543
LA-140	-1.604E-01		1.797E+00	2.968E+00	0.000E+00	-0.054
CE-141	1.685E+00		2.822E+00	4.048E+00	0.000E+00	0.416

CE-144	-2.887E-02	1.170E+01	1.739E+01	0.000E+00	-0.002
EU-152	-7.702E+00	5.211E+00	7.152E+00	0.000E+00	-1.077
EU-154	1.316E+00	2.815E+00	4.721E+00	0.000E+00	0.279
RA-226	1.704E+01	4.019E+01	6.159E+01	0.000E+00	0.277
AC-228	2.455E-01	5.857E+00	9.796E+00	0.000E+00	0.025
AM-241	2.290E+01	1.311E+01	1.949E+01	0.000E+00	1.175

A,13L28431-16 ,04/29/2006 12:14,04/27/2006 12:25, 3.614E+00,WG L28431-16 E
B,13L28431-16 ,LIBD ,08/05/2005 08:16,1335L090904

C,K-40	,YES,	1.863E+00,	2.408E+01,	2.400E+01,,	0.078
C,TH-228	,YES,	6.427E+00,	2.496E+00,	4.236E+00,,	1.517
C,TH-232	,YES,	9.022E-01,	3.848E+00,	8.621E+00,,	0.105
C,U-235	,YES,	1.338E+00,	2.376E+00,	1.830E+01,,	0.073
C,U-238	,YES,	1.018E+02,	2.160E+02,	2.572E+02,,	0.396
C,BE-7	,NO ,	-6.349E-01,	1.197E+01,	1.951E+01,,	-0.033
C,NA-24	,NO ,	-4.337E+00,	1.107E+01,	1.494E+01,,	-0.290
C,CR-51	,NO ,	-1.258E+01,	1.228E+01,	1.961E+01,,	-0.642
C,MN-54	,NO ,	9.040E-01,	1.421E+00,	2.382E+00,,	0.380
C,CO-57	,NO ,	5.426E-01,	1.336E+00,	2.240E+00,,	0.242
C,CO-58	,NO ,	-1.165E+00,	1.413E+00,	2.279E+00,,	-0.511
C,FE-59	,NO ,	1.694E+00,	2.716E+00,	4.562E+00,,	0.371
C,CO-60	,NO ,	8.488E-01,	1.486E+00,	2.508E+00,,	0.338
C,ZN-65	,NO ,	2.292E+01,	4.014E+00,	6.833E+00,,	3.355
C,SE-75	,NO ,	-1.165E+00,	1.907E+00,	3.116E+00,,	-0.374
C,SR-85	,NO ,	1.651E+01,	1.683E+00,	3.179E+00,,	5.193
C,Y-88	,NO ,	-4.322E-01,	1.709E+00,	2.392E+00,,	-0.181
C,NB-94	,NO ,	-2.519E-01,	1.383E+00,	2.240E+00,,	-0.112
C,NB-95	,NO ,	4.399E+00,	1.481E+00,	2.634E+00,,	1.670
C,ZR-95	,NO ,	2.545E-01,	2.484E+00,	4.030E+00,,	0.063
C,MO-99	,NO ,	7.599E+00,	1.585E+01,	2.671E+01,,	0.284
C,RU-103	,NO ,	2.158E+00,	1.447E+00,	2.433E+00,,	0.887
C,RU-106	,NO ,	-2.099E+00,	1.290E+01,	2.113E+01,,	-0.099
C,AG-110m	,NO ,	-5.536E-01,	1.595E+00,	2.241E+00,,	-0.247
C,SN-113	,NO ,	6.289E-02,	1.805E+00,	2.993E+00,,	0.021
C,SB-124	,NO ,	1.372E+00,	3.024E+00,	2.333E+00,,	0.588
C,SB-125	,NO ,	-2.144E+00,	4.070E+00,	6.626E+00,,	-0.324
C,TE-129M	,NO ,	2.561E+00,	1.649E+01,	2.708E+01,,	0.095
C,I-131	,NO ,	-2.601E-01,	1.600E+00,	2.657E+00,,	-0.098
C,BA-133	,NO ,	1.527E+01,	2.367E+00,	3.879E+00,,	3.937
C,CS-134	,NO ,	1.998E+01,	2.390E+00,	3.505E+00,,	5.701
C,CS-136	,NO ,	1.859E-02,	1.472E+00,	2.429E+00,,	0.008
C,CS-137	,NO ,	4.174E-01,	1.951E+00,	2.670E+00,,	0.156
C,CE-139	,NO ,	2.493E-01,	1.394E+00,	2.288E+00,,	0.109
C,BA-140	,NO ,	4.954E+00,	5.372E+00,	9.125E+00,,	0.543
C,LA-140	,NO ,	-1.604E-01,	1.797E+00,	2.968E+00,,	-0.054
C,CE-141	,NO ,	1.685E+00,	2.822E+00,	4.048E+00,,	0.416
C,CE-144	,NO ,	-2.887E-02,	1.170E+01,	1.739E+01,,	-0.002
C,EU-152	,NO ,	-7.702E+00,	5.211E+00,	7.152E+00,,	-1.077
C,EU-154	,NO ,	1.316E+00,	2.815E+00,	4.721E+00,,	0.279
C,RA-226	,NO ,	1.704E+01,	4.019E+01,	6.159E+01,,	0.277
C,AC-228	,NO ,	2.455E-01,	5.857E+00,	9.796E+00,,	0.025
C,AM-241	,NO ,	2.290E+01,	1.311E+01,	1.949E+01,,	1.175

Sec. Review: Analyst: LIMS: ✓

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VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 30-APR-2006 10:07:56.80
TBE10 12892256 HpGe ********** Aquisition Date/Time: 29-APR-2006 13:03:32.65

LIMS No., Customer Name, Client ID: WG L28431-17 EX BYRON

Sample ID : 10L28431-17
Sample Type : WG
Quantity : 3.58600E+00 L
Start Channel : 80 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 14:05:00.
Geometry : 1035L091004
BKGFILE : 10BG041406MT
Real Time : 0 21:04:17.43
Live time : 0 21:04:04.24

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	52.94	196	1970	1.29	105.10	2.62E-01	2.58E-03	38.2	2.40E-01
2	1	66.30*	495	2928	1.33	131.83	6.33E-01	6.53E-03	20.8	1.51E+00
3	2	74.81*	58	2687	1.26	148.88	8.81E-01	7.60E-04	177.7	4.32E+00
4	2	77.08	731	2243	1.09	153.42	9.43E-01	9.64E-03	11.7	
5	1	87.27*	44	2082	0.86	173.81	1.19E+00	5.75E-04	182.2	1.37E+00
6	1	92.76*	188	2862	1.80	184.79	1.30E+00	2.48E-03	57.1	2.92E+00
7	1	139.71	665	2610	1.51	278.76	1.68E+00	8.76E-03	14.3	3.96E+00
8	1	185.68*	36	1941	1.21	370.75	1.59E+00	4.70E-04	249.2	2.71E+00
9	1	198.18*	281	2514	1.77	395.77	1.55E+00	3.71E-03	39.9	1.20E+00
10	2	238.64*	140	1435	1.26	476.74	1.40E+00	1.84E-03	56.4	1.07E+00
11	2	241.97	616	1438	1.30	483.41	1.39E+00	8.13E-03	11.4	
12	1	295.21*	1217	1567	1.24	589.97	1.21E+00	1.60E-02	7.6	6.83E-01
13	1	351.94*	2166	1442	1.32	703.51	1.07E+00	2.86E-02	4.5	1.60E+00
14	1	583.84*	20	580	2.04	1167.71	7.18E-01	2.63E-04	285.7	3.17E+00
15	1	595.67	257	457	1.50	1191.39	7.06E-01	3.39E-03	16.9	1.80E+00
16	1	609.24*	1796	560	1.39	1218.56	6.94E-01	2.37E-02	4.1	6.24E-01
17	1	768.20	186	386	1.71	1536.77	5.79E-01	2.45E-03	22.6	1.09E+00
18	1	910.97*	28	270	2.10	1822.61	5.07E-01	3.74E-04	134.1	8.79E-01
19	1	934.18	150	336	2.91	1869.07	4.97E-01	1.97E-03	29.5	1.21E+00
20	1	968.75*	32	208	2.93	1938.30	4.84E-01	4.28E-04	102.1	1.25E+00
21	1	1120.01*	324	231	1.83	2241.16	4.33E-01	4.28E-03	13.0	9.73E-01
22	1	1237.86	185	200	2.42	2477.14	4.01E-01	2.43E-03	18.2	1.33E+00
23	1	1377.58	118	122	2.39	2756.94	3.71E-01	1.55E-03	20.2	1.45E+00
24	1	1407.96	70	158	2.27	2817.78	3.65E-01	9.22E-04	38.2	1.58E+00
25	1	1729.40	76	122	2.83	3461.59	3.17E-01	9.96E-04	34.9	7.88E-01
26	1	1764.31*	322	132	2.23	3531.52	3.13E-01	4.25E-03	11.2	4.99E-01
27	1	1847.17	78	79	3.30	3697.49	3.05E-01	1.03E-03	26.9	1.73E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
RA-226	186.21	36	3.28*	1.595E+00	6.769E+00	6.769E+00	498.37
AC-228	835.50	------	1.75	5.422E-01	------	Line Not Found	------
	911.07	28	27.70*	5.070E-01	2.006E+00	2.007E+00	268.21

TH-228	238.63	140	44.60*	1.401E+00	2.224E+00	2.229E+00	112.90
	240.98	616	3.95	1.389E+00	1.117E+02	1.119E+02	22.74
TH-232	583.14	20	30.25	7.176E-01	9.134E-01	9.134E-01	571.36
	911.07	28	27.70*	5.070E-01	2.006E+00	2.006E+00	268.21
	969.11	32	16.60	4.835E-01	4.017E+00	4.017E+00	204.17
U-235	143.76	------	10.50*	1.683E+00	------	Line Not Found	------
	163.35	------	4.70	1.659E+00	------	Line Not Found	------
	185.71	36	54.00	1.595E+00	4.111E-01	4.111E-01	498.37
	205.31	------	4.70	1.524E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 10L28431-17 Acquisition date : 29-APR-2006 13:03:32

Total number of lines in spectrum	27	
Number of unidentified lines	20	
Number of lines tentatively identified by NID	7	25.93%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	6.769E+00	6.769E+00	33.73E+00	498.37	
AC-228	5.75Y	1.00	2.006E+00	2.007E+00	5.384E+00	268.21	
TH-228	1.91Y	1.00	2.224E+00	2.229E+00	2.517E+00	112.90	
TH-232	1.41E+10Y	1.00	2.006E+00	2.006E+00	5.380E+00	268.21	
U-235	7.04E+08Y	1.00	4.111E-01	4.111E-01	20.49E-01	498.37	K
			---------	---------			
	Total Activity :		1.342E+01	1.342E+01			
	Grand Total Activity :		1.342E+01	1.342E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 10L28431-17

Acquisition date : 29-APR-2006 13:03:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	52.94	196	1970	1.29	105.10	102	7	2.58E-03	76.4	2.62E-01	
1	66.30	495	2928	1.33	131.83	128	8	6.53E-03	41.5	6.33E-01	
2	74.81	58	2687	1.26	148.88	142	15	7.60E-04	****	8.81E-01	
2	77.08	731	2243	1.09	153.42	142	15	9.64E-03	23.4	9.43E-01	
1	87.27	44	2082	0.86	173.81	172	6	5.75E-04	****	1.19E+00	
1	92.76	188	2862	1.80	184.79	181	9	2.48E-03	****	1.30E+00	
1	139.71	665	2610	1.51	278.76	275	9	8.76E-03	28.7	1.68E+00	
1	198.18	281	2514	1.77	395.77	391	11	3.71E-03	79.7	1.55E+00	
1	295.21	1217	1567	1.24	589.97	584	12	1.60E-02	15.1	1.21E+00	
1	351.94	2166	1442	1.32	703.51	696	14	2.86E-02	9.1	1.07E+00	
1	595.67	257	457	1.50	1191.39	1186	10	3.39E-03	33.8	7.06E-01	
1	609.24	1796	560	1.39	1218.56	1213	14	2.37E-02	8.1	6.94E-01	
1	768.20	186	386	1.71	1536.77	1532	12	2.45E-03	45.1	5.79E-01	
1	934.18	150	336	2.91	1869.07	1861	17	1.97E-03	59.1	4.97E-01	
1	1120.01	324	231	1.83	2241.16	2235	13	4.28E-03	25.9	4.33E-01	
1	1237.86	185	200	2.42	2477.14	2472	15	2.43E-03	36.5	4.01E-01	
1	1377.58	118	122	2.39	2756.94	2752	11	1.55E-03	40.4	3.71E-01	
1	1407.96	70	158	2.27	2817.78	2813	12	9.22E-04	76.5	3.65E-01	T
1	1729.40	76	122	2.83	3461.59	3456	16	9.96E-04	69.9	3.17E-01	
1	1764.31	322	132	2.23	3531.52	3525	19	4.25E-03	22.5	3.13E-01	
1	1847.17	78	79	3.30	3697.49	3693	14	1.03E-03	53.8	3.05E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	27	
Number of unidentified lines	20	
Number of lines tentatively identified by NID	7	25.93%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-226	1600.00Y	1.00	6.769E+00	6.769E+00	33.73E+00	498.37	
AC-228	5.75Y	1.00	1.977E-01	1.979E-01	69.57E-01	3516.21	
TH-228	1.91Y	1.00	2.224E+00	2.229E+00	2.517E+00	112.90	
TH-232	1.41E+10Y	1.00	1.808E+00	1.808E+00	4.403E+00	243.54	
			---------	---------			
	Total Activity :		1.100E+01	1.100E+01			
	Grand Total Activity :		1.100E+01	1.100E+01			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
TH-232	911.07	AC-228	911.07

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
RA-226	6.769E+00	3.373E+01	5.265E+01	0.000E+00	0.129
AC-228	1.979E-01	6.957E+00	7.669E+00	0.000E+00	0.026
TH-228	2.229E+00	2.517E+00	3.963E+00	0.000E+00	0.563
TH-232	1.808E+00	4.403E+00	8.685E+00	0.000E+00	0.208

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	9.420E+00		1.126E+01	1.886E+01	0.000E+00	0.499
NA-24	9.459E+00		2.161E+01	3.057E+01	0.000E+00	0.309
K-40	-6.658E-01		2.070E+01	3.441E+01	0.000E+00	-0.019
CR-51	-9.748E+00		1.183E+01	1.911E+01	0.000E+00	-0.510
MN-54	8.596E-01		1.300E+00	2.158E+00	0.000E+00	0.398
CO-57	-5.423E-01		1.328E+00	2.195E+00	0.000E+00	-0.247
CO-58	-1.004E+00		1.335E+00	2.132E+00	0.000E+00	-0.471
FE-59	2.783E-01		2.476E+00	4.065E+00	0.000E+00	0.068
CO-60	5.473E-01		1.366E+00	2.284E+00	0.000E+00	0.240
ZN-65	1.884E+01		3.690E+00	6.135E+00	0.000E+00	3.072
SE-75	-1.879E-01		1.773E+00	2.928E+00	0.000E+00	-0.064
SR-85	1.379E+01		1.507E+00	2.837E+00	0.000E+00	4.861
Y-88	9.194E-01		1.566E+00	2.365E+00	0.000E+00	0.389
NB-94	-5.836E-01		1.266E+00	2.062E+00	0.000E+00	-0.283
NB-95	3.471E+00		1.584E+00	2.373E+00	0.000E+00	1.463
ZR-95	-8.881E-01		2.371E+00	3.684E+00	0.000E+00	-0.241
MO-99	1.098E+00		1.710E+01	2.814E+01	0.000E+00	0.039
RU-103	1.398E+00		1.357E+00	2.278E+00	0.000E+00	0.614
RU-106	6.894E+00		1.266E+01	2.048E+01	0.000E+00	0.337
AG-110m	-1.296E-01		1.284E+00	2.122E+00	0.000E+00	-0.061
SN-113	3.185E-01		1.704E+00	2.849E+00	0.000E+00	0.112
SB-124	1.401E+00		2.853E+00	2.146E+00	0.000E+00	0.653
SB-125	-9.363E-01		3.791E+00	6.256E+00	0.000E+00	-0.150
TE-129M	6.149E+00		1.532E+01	2.550E+01	0.000E+00	0.241
I-131	-3.492E-01		1.622E+00	2.625E+00	0.000E+00	-0.133
BA-133	2.236E+01		2.369E+00	3.945E+00	0.000E+00	5.669
CS-134	1.751E+01		2.232E+00	3.161E+00	0.000E+00	5.541
CS-136	9.633E-01		1.409E+00	2.345E+00	0.000E+00	0.411
CS-137	1.488E+00		1.399E+00	2.376E+00	0.000E+00	0.626
CE-139	4.137E-01		1.347E+00	2.212E+00	0.000E+00	0.187
BA-140	6.900E+00		5.194E+00	8.749E+00	0.000E+00	0.789
LA-140	7.961E-01		1.670E+00	2.820E+00	0.000E+00	0.282
CE-141	1.994E-01		2.734E+00	3.847E+00	0.000E+00	0.052
CE-144	-1.107E+01		1.205E+01	1.676E+01	0.000E+00	-0.660
EU-152	-4.323E+00		5.038E+00	6.801E+00	0.000E+00	-0.636
EU-154	-9.091E-01		2.792E+00	4.615E+00	0.000E+00	-0.197
U-235	1.449E+01		1.187E+01	1.702E+01	0.000E+00	0.851
U-238	6.187E+01		1.394E+02	2.329E+02	0.000E+00	0.266
AM-241	-2.619E+01		1.405E+01	1.814E+01	0.000E+00	-1.444

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A,10L28431-17     ,04/30/2006 10:07,04/27/2006 14:05,   3.586E+00,WG L28431-17 E
B,10L28431-17     ,LIBD                ,06/09/2005 08:04,1035L091004
C,RA-226  ,YES,    6.769E+00,    3.373E+01,    5.265E+01,,     0.129
C,AC-228  ,YES,    1.979E-01,    6.957E+00,    7.669E+00,,     0.026
C,TH-228  ,YES,    2.229E+00,    2.517E+00,    3.963E+00,,     0.563
C,TH-232  ,YES,    1.808E+00,    4.403E+00,    8.685E+00,,     0.208
C,BE-7    ,NO ,    9.420E+00,    1.126E+01,    1.886E+01,,     0.499
C,NA-24   ,NO ,    9.459E+00,    2.161E+01,    3.057E+01,,     0.309
C,K-40    ,NO ,   -6.658E-01,    2.070E+01,    3.441E+01,,    -0.019
C,CR-51   ,NO ,   -9.748E+00,    1.183E+01,    1.911E+01,,    -0.510
C,MN-54   ,NO ,    8.596E-01,    1.300E+00,    2.158E+00,,     0.398
C,CO-57   ,NO ,   -5.423E-01,    1.328E+00,    2.195E+00,,    -0.247
C,CO-58   ,NO ,   -1.004E+00,    1.335E+00,    2.132E+00,,    -0.471
C,FE-59   ,NO ,    2.783E-01,    2.476E+00,    4.065E+00,,     0.068
C,CO-60   ,NO ,    5.473E-01,    1.366E+00,    2.284E+00,,     0.240
C,ZN-65   ,NO ,    1.884E+01,    3.690E+00,    6.135E+00,,     3.072
C,SE-75   ,NO ,   -1.879E-01,    1.773E+00,    2.928E+00,,    -0.064
C,SR-85   ,NO ,    1.379E+01,    1.507E+00,    2.837E+00,,     4.861
C,Y-88    ,NO ,    9.194E-01,    1.566E+00,    2.365E+00,,     0.389
C,NB-94   ,NO ,   -5.836E-01,    1.266E+00,    2.062E+00,,    -0.283
C,NB-95   ,NO ,    3.471E+00,    1.584E+00,    2.373E+00,,     1.463
C,ZR-95   ,NO ,   -8.881E-01,    2.371E+00,    3.684E+00,,    -0.241
C,MO-99   ,NO ,    1.098E+00,    1.710E+01,    2.814E+01,,     0.039
C,RU-103  ,NO ,    1.398E+00,    1.357E+00,    2.278E+00,,     0.614
C,RU-106  ,NO ,    6.894E+00,    1.266E+01,    2.048E+01,,     0.337
C,AG-110m ,NO ,   -1.296E-01,    1.284E+00,    2.122E+00,,    -0.061
C,SN-113  ,NO ,    3.185E-01,    1.704E+00,    2.849E+00,,     0.112
C,SB-124  ,NO ,    1.401E+00,    2.853E+00,    2.146E+00,,     0.653
C,SB-125  ,NO ,   -9.363E-01,    3.791E+00,    6.256E+00,,    -0.150
C,TE-129M ,NO ,    6.149E+00,    1.532E+01,    2.550E+01,,     0.241
C,I-131   ,NO ,   -3.492E-01,    1.622E+00,    2.625E+00,,    -0.133
C,BA-133  ,NO ,    2.236E+01,    2.369E+00,    3.945E+00,,     5.669
C,CS-134  ,NO ,    1.751E+01,    2.232E+00,    3.161E+00,,     5.541
C,CS-136  ,NO ,    9.633E-01,    1.409E+00,    2.345E+00,,     0.411
C,CS-137  ,NO ,    1.488E+00,    1.399E+00,    2.376E+00,,     0.626
C,CE-139  ,NO ,    4.137E-01,    1.347E+00,    2.212E+00,,     0.187
C,BA-140  ,NO ,    6.900E+00,    5.194E+00,    8.749E+00,,     0.789
C,LA-140  ,NO ,    7.961E-01,    1.670E+00,    2.820E+00,,     0.282
C,CE-141  ,NO ,    1.994E-01,    2.734E+00,    3.847E+00,,     0.052
C,CE-144  ,NO ,   -1.107E+01,    1.205E+01,    1.676E+01,,    -0.660
C,EU-152  ,NO ,   -4.323E+00,    5.038E+00,    6.801E+00,,    -0.636
C,EU-154  ,NO ,   -9.091E-01,    2.792E+00,    4.615E+00,,    -0.197
C,U-235   ,NO ,    1.449E+01,    1.187E+01,    1.702E+01,,     0.851
C,U-238   ,NO ,    6.187E+01,    1.394E+02,    2.329E+02,,     0.266
C,AM-241  ,NO ,   -2.619E+01,    1.405E+01,    1.814E+01,,    -1.444
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Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:16:35.54
TBE15 P-10635B HpGe ********** Aquisition Date/Time: 28-APR-2006 21:46:24.49

LIMS No., Customer Name, Client ID: WG L28431-18 EX BYRON

Sample ID : 15L28431-18
Sample Type : WG
Quantity : 3.59520E+00 L
Start Channel : 40 Energy Tol : 1.70000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 16:00:00.
Geometry : 1535L090104
BKGFILE : 15BG041406MT
Real Time : 0 14:29:58.43
Live time : 0 14:29:51.92

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	53.90	223	1561	1.00	93.64	1.60E-01	4.28E-03	30.0	9.39E-01
2	1	67.13	319	1864	1.31	120.26	4.55E-01	6.12E-03	23.1	2.03E+00
3	2	77.77	614	1260	0.87	141.67	7.31E-01	1.18E-02	9.8	3.85E+00
4	1	87.90*	171	1520	1.01	162.06	9.69E-01	3.28E-03	39.4	3.77E+00
5	1	140.57	260	1966	1.25	268.02	1.48E+00	4.99E-03	30.0	1.20E+00
6	1	198.88*	199	1273	1.03	385.32	1.36E+00	3.82E-03	32.5	2.78E+00
7	1	242.47	765	1095	1.26	473.00	1.21E+00	1.46E-02	8.3	3.22E+00
8	1	295.62*	1630	1142	1.29	579.89	1.05E+00	3.12E-02	5.0	1.72E+00
9	1	352.20*	2704	853	1.32	693.69	9.15E-01	5.18E-02	3.0	7.41E-01
10	1	595.85	117	322	1.47	1183.55	5.97E-01	2.25E-03	29.0	6.58E-01
11	1	609.15*	2115	438	1.49	1210.28	5.86E-01	4.05E-02	3.2	5.80E-01
12	1	768.03	210	283	2.01	1529.57	4.86E-01	4.02E-03	18.0	9.59E-01
13	1	933.52	137	213	1.94	1862.06	4.15E-01	2.63E-03	22.8	9.71E-01
14	1	1119.64*	453	227	2.04	2235.86	3.58E-01	8.68E-03	9.6	2.78E+00
15	1	1154.75	83	110	2.18	2306.35	3.50E-01	1.59E-03	26.3	1.84E+00
16	1	1237.73	141	196	1.90	2472.96	3.31E-01	2.70E-03	22.9	2.77E+00
17	1	1377.00	131	123	2.33	2752.52	3.04E-01	2.51E-03	19.0	7.68E-01
18	1	1408.26	72	105	2.65	2815.26	2.99E-01	1.38E-03	34.4	1.14E+00
19	1	1729.42	65	65	2.24	3459.61	2.57E-01	1.25E-03	27.6	2.27E+00
20	1	1764.06*	393	100	2.22	3529.09	2.54E-01	7.53E-03	8.5	1.69E+00
21	1	1847.13	50	68	2.16	3695.69	2.46E-01	9.52E-04	37.5	1.18E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 15L28431-18 Acquisition date : 28-APR-2006 21:46:24

Total number of lines in spectrum	21	
Number of unidentified lines	18	
Number of lines tentatively identified by NID	3	14.29%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 15L28431-18 Acquisition date : 28-APR-2006 21:46:24

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	53.90	223	1561	1.00	93.64	91	7	4.28E-03	60.0	1.60E-01	
1	67.13	319	1864	1.31	120.26	117	7	6.12E-03	46.1	4.55E-01	
2	77.77	614	1260	0.87	141.67	130	15	1.18E-02	19.5	7.31E-01	
1	87.90	171	1520	1.01	162.06	160	6	3.28E-03	78.9	9.69E-01	
1	140.57	260	1966	1.25	268.02	264	8	4.99E-03	60.1	1.48E+00	
1	198.88	199	1273	1.03	385.32	382	7	3.82E-03	64.9	1.36E+00	
1	242.47	765	1095	1.26	473.00	460	18	1.46E-02	16.7	1.21E+00	T
1	295.62	1630	1142	1.29	579.89	575	12	3.12E-02	10.1	1.05E+00	
1	352.20	2704	853	1.32	693.69	687	11	5.18E-02	5.9	9.15E-01	
1	595.85	117	322	1.47	1183.55	1180	9	2.25E-03	58.0	5.97E-01	
1	609.15	2115	438	1.49	1210.28	1204	14	4.05E-02	6.4	5.86E-01	
1	768.03	210	283	2.01	1529.57	1523	13	4.02E-03	35.9	4.86E-01	T
1	933.52	137	213	1.94	1862.06	1856	12	2.63E-03	45.7	4.15E-01	
1	1119.64	453	227	2.04	2235.86	2228	18	8.68E-03	19.2	3.58E-01	
1	1154.75	83	110	2.18	2306.35	2302	10	1.59E-03	52.6	3.50E-01	
1	1237.73	141	196	1.90	2472.96	2465	14	2.70E-03	45.8	3.31E-01	
1	1377.00	131	123	2.33	2752.52	2747	12	2.51E-03	38.0	3.04E-01	
1	1408.26	72	105	2.65	2815.26	2810	14	1.38E-03	68.7	2.99E-01	T
1	1729.42	65	65	2.24	3459.61	3453	12	1.25E-03	55.1	2.57E-01	
1	1764.06	393	100	2.22	3529.09	3521	19	7.53E-03	16.9	2.54E-01	
1	1847.13	50	68	2.16	3695.69	3688	13	9.52E-04	74.9	2.46E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum 21
Number of unidentified lines 18
Number of lines tentatively identified by NID 3 14.29%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	4.818E+00		1.618E+01	2.642E+01	0.000E+00	0.182
NA-24	9.421E+00		1.215E+01	1.775E+01	0.000E+00	0.531
K-40	1.470E+02		2.554E+01	4.990E+01	0.000E+00	2.947
CR-51	-1.568E+01		1.661E+01	2.700E+01	0.000E+00	-0.581
MN-54	7.083E-01		1.860E+00	3.123E+00	0.000E+00	0.227
CO-57	1.381E+00		1.881E+00	3.158E+00	0.000E+00	0.437
CO-58	-1.345E+00		1.868E+00	3.030E+00	0.000E+00	-0.444

FE-59	-5.385E-01	3.710E+00	6.007E+00	0.000E+00	-0.090
CO-60	1.046E+00	1.936E+00	3.268E+00	0.000E+00	0.320
ZN-65	3.318E+01	5.854E+00	1.006E+01	0.000E+00	3.298
SE-75	-1.560E+00	2.560E+00	4.231E+00	0.000E+00	-0.369
SR-85	1.442E+01	2.058E+00	3.879E+00	0.000E+00	3.719
Y-88	2.488E-01	2.154E+00	3.072E+00	0.000E+00	0.081
NB-94	-1.979E-01	1.842E+00	2.997E+00	0.000E+00	-0.066
NB-95	4.650E+00	2.037E+00	3.534E+00	0.000E+00	1.316
ZR-95	2.684E+00	3.454E+00	5.506E+00	0.000E+00	0.488
MO-99	1.288E+01	2.044E+01	3.396E+01	0.000E+00	0.379
RU-103	-1.275E+00	1.920E+00	3.146E+00	0.000E+00	-0.405
RU-106	1.067E+01	1.750E+01	2.929E+01	0.000E+00	0.364
AG-110m	-3.064E+00	1.841E+00	2.860E+00	0.000E+00	-1.072
SN-113	-9.582E-01	2.515E+00	4.084E+00	0.000E+00	-0.235
SB-124	-6.946E-01	4.094E+00	2.964E+00	0.000E+00	-0.234
SB-125	5.667E-01	5.605E+00	9.157E+00	0.000E+00	0.062
TE-129M	3.869E+01	2.153E+01	3.652E+01	0.000E+00	1.059
I-131	-2.761E+00	2.173E+00	3.474E+00	0.000E+00	-0.795
BA-133	4.845E+01	3.670E+00	6.632E+00	0.000E+00	7.305
CS-134	2.801E+01	3.375E+00	4.864E+00	0.000E+00	5.759
CS-136	-7.163E-01	1.910E+00	3.131E+00	0.000E+00	-0.229
CS-137	1.546E+00	2.060E+00	3.451E+00	0.000E+00	0.448
CE-139	1.060E+00	1.911E+00	3.168E+00	0.000E+00	0.335
BA-140	-3.778E+00	7.177E+00	1.174E+01	0.000E+00	-0.322
LA-140	2.720E-02	2.189E+00	3.637E+00	0.000E+00	0.007
CE-141	3.295E+00	3.835E+00	5.506E+00	0.000E+00	0.598
CE-144	-8.701E+00	1.647E+01	2.401E+01	0.000E+00	-0.362
EU-152	-2.719E+00	7.187E+00	9.950E+00	0.000E+00	-0.273
EU-154	-2.940E+00	4.161E+00	6.611E+00	0.000E+00	-0.445
RA-226	-4.662E+01	5.078E+01	7.926E+01	0.000E+00	-0.588
AC-228	4.925E+00	7.906E+00	1.254E+01	0.000E+00	0.393
TH-228	5.983E+00	4.484E+00	6.251E+00	0.000E+00	0.957
TH-232	4.922E+00	7.902E+00	1.253E+01	0.000E+00	0.393
U-235	2.341E+01	1.742E+01	2.523E+01	0.000E+00	0.928
U-238	1.956E+02	2.219E+02	3.752E+02	0.000E+00	0.521
AM-241	-3.242E+01	2.930E+01	3.823E+01	0.000E+00	-0.848

A,15L28431-18 ,04/29/2006 12:16,04/27/2006 16:00, 3.595E+00,WG L28431-18 E
B,15L28431-18 ,LIBD ,03/09/2005 13:29,1535L090104
C,BE-7 ,NO , 4.818E+00, 1.618E+01, 2.642E+01,, 0.182
C,NA-24 ,NO , 9.421E+00, 1.215E+01, 1.775E+01,, 0.531
C,K-40 ,NO , 1.470E+02, 2.554E+01, 4.990E+01,, 2.947
C,CR-51 ,NO , -1.568E+01, 1.661E+01, 2.700E+01,, -0.581
C,MN-54 ,NO , 7.083E-01, 1.860E+00, 3.123E+00,, 0.227
C,CO-57 ,NO , 1.381E+00, 1.881E+00, 3.158E+00,, 0.437
C,CO-58 ,NO , -1.345E+00, 1.868E+00, 3.030E+00,, -0.444
C,FE-59 ,NO , -5.385E-01, 3.710E+00, 6.007E+00,, -0.090
C,CO-60 ,NO , 1.046E+00, 1.936E+00, 3.268E+00,, 0.320
C,ZN-65 ,NO , 3.318E+01, 5.854E+00, 1.006E+01,, 3.298
C,SE-75 ,NO , -1.560E+00, 2.560E+00, 4.231E+00,, -0.369
C,SR-85 ,NO , 1.442E+01, 2.058E+00, 3.879E+00,, 3.719
C,Y-88 ,NO , 2.488E-01, 2.154E+00, 3.072E+00,, 0.081
C,NB-94 ,NO , -1.979E-01, 1.842E+00, 2.997E+00,, -0.066
C,NB-95 ,NO , 4.650E+00, 2.037E+00, 3.534E+00,, 1.316
C,ZR-95 ,NO , 2.684E+00, 3.454E+00, 5.506E+00,, 0.488
C,MO-99 ,NO , 1.288E+01, 2.044E+01, 3.396E+01,, 0.379
C,RU-103 ,NO , -1.275E+00, 1.920E+00, 3.146E+00,, -0.405
C,RU-106 ,NO , 1.067E+01, 1.750E+01, 2.929E+01,, 0.364
C,AG-110m ,NO , -3.064E+00, 1.841E+00, 2.860E+00,, -1.072
C,SN-113 ,NO , -9.582E-01, 2.515E+00, 4.084E+00,, -0.235
C,SB-124 ,NO , -6.946E-01, 4.094E+00, 2.964E+00,, -0.234
C,SB-125 ,NO , 5.667E-01, 5.605E+00, 9.157E+00,, 0.062
C,TE-129M ,NO , 3.869E+01, 2.153E+01, 3.652E+01,, 1.059
C,I-131 ,NO , -2.761E+00, 2.173E+00, 3.474E+00,, -0.795
C,BA-133 ,NO , 4.845E+01, 3.670E+00, 6.632E+00,, 7.305
C,CS-134 ,NO , 2.801E+01, 3.375E+00, 4.864E+00,, 5.759
C,CS-136 ,NO , -7.163E-01, 1.910E+00, 3.131E+00,, -0.229
C,CS-137 ,NO , 1.546E+00, 2.060E+00, 3.451E+00,, 0.448
C,CE-139 ,NO , 1.060E+00, 1.911E+00, 3.168E+00,, 0.335
C,BA-140 ,NO , -3.778E+00, 7.177E+00, 1.174E+01,, -0.322
C,LA-140 ,NO , 2.720E-02, 2.189E+00, 3.637E+00,, 0.007
C,CE-141 ,NO , 3.295E+00, 3.835E+00, 5.506E+00,, 0.598
C,CE-144 ,NO , -8.701E+00, 1.647E+01, 2.401E+01,, -0.362
C,EU-152 ,NO , -2.719E+00, 7.187E+00, 9.950E+00,, -0.273
C,EU-154 ,NO , -2.940E+00, 4.161E+00, 6.611E+00,, -0.445
C,RA-226 ,NO , -4.662E+01, 5.078E+01, 7.926E+01,, -0.588
C,AC-228 ,NO , 4.925E+00, 7.906E+00, 1.254E+01,, 0.393
C,TH-228 ,NO , 5.983E+00, 4.484E+00, 6.251E+00,, 0.957
C,TH-232 ,NO , 4.922E+00, 7.902E+00, 1.253E+01,, 0.393
C,U-235 ,NO , 2.341E+01, 1.742E+01, 2.523E+01,, 0.928
C,U-238 ,NO , 1.956E+02, 2.219E+02, 3.752E+02,, 0.521
C,AM-241 ,NO , -3.242E+01, 2.930E+01, 3.823E+01,, -0.848

Sec. Review: Analyst: KG LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 29-APR-2006 12:17:53.22
TBE23 03017322 HpGe ********** Aquisition Date/Time: 28-APR-2006 21:47:50.09

LIMS No., Customer Name, Client ID: WG L28431-19 EX BYRON

Sample ID : 23L28431-19
Sample Type : WG
Quantity : 3.68470E+00 L
Start Channel : 50 Energy Tol : 1.50000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 17:30:00.
Geometry : 2335L090704
BKGFILE : 23BG041406MT
Real Time : 0 14:29:50.14
Live time : 0 14:29:10.04

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	10	33.76*	446	498	0.98	67.68	9.34E-02	8.56E-03	13.6	1.11E+01
2	10	35.11*	465	1798	1.54	70.39	1.15E-01	8.91E-03	19.0	
3	4	41.57	158	2659	1.11	83.30	2.52E-01	3.02E-03	55.1	1.53E+00
4	2	74.79	2378	4403	1.20	149.66	1.29E+00	4.56E-02	5.1	3.07E+00
5	2	77.08	3894	3694	1.02	154.24	1.35E+00	7.47E-02	3.0	
6	0	87.14	1144	4166	1.25	174.33	1.59E+00	2.19E-02	9.8	
7	0	140.12*	276	4353	1.06	280.20	2.05E+00	5.30E-03	43.2	
8	0	185.57*	35	3467	1.11	371.02	1.95E+00	6.70E-04	314.6	
9	0	198.27*	251	3315	1.22	396.41	1.90E+00	4.81E-03	42.4	
10	2	238.85*	178	2671	1.44	477.50	1.72E+00	3.41E-03	55.4	2.78E+00
11	2	241.88	3113	1996	1.16	483.55	1.71E+00	5.97E-02	3.0	
12	0	258.83	287	1930	1.09	517.42	1.64E+00	5.51E-03	27.1	
13	0	295.11*	6945	2087	1.24	589.93	1.50E+00	1.33E-01	1.8	
14	0	351.78*	12046	2028	1.26	703.21	1.32E+00	2.31E-01	1.2	
15	0	461.97	109	688	1.03	923.47	1.07E+00	2.10E-03	42.6	
16	0	487.26	149	705	1.59	974.03	1.02E+00	2.85E-03	33.2	
17	0	583.39*	13	501	1.59	1166.23	8.88E-01	2.57E-04	327.3	
18	0	595.67	169	495	1.21	1190.77	8.74E-01	3.25E-03	24.0	
19	0	609.10*	9413	886	1.44	1217.63	8.59E-01	1.81E-01	1.3	
20	0	665.07	326	462	1.61	1329.54	8.03E-01	6.25E-03	13.9	
21	0	702.65	143	374	1.37	1404.68	7.71E-01	2.73E-03	25.8	
22	0	768.18	845	539	1.43	1535.74	7.22E-01	1.62E-02	6.6	
23	0	785.93	276	330	1.83	1571.23	7.10E-01	5.30E-03	13.8	
24	0	806.05	216	400	1.31	1611.47	6.97E-01	4.15E-03	18.8	
25	0	838.48	77	406	1.05	1676.33	6.77E-01	1.48E-03	48.2	
26	0	933.92	543	436	2.03	1867.24	6.27E-01	1.04E-02	9.4	
27	0	1120.25*	2202	336	1.77	2240.00	5.52E-01	4.22E-02	2.9	
28	0	1155.25	298	280	1.98	2310.04	5.41E-01	5.71E-03	13.0	
29	0	1207.57	94	172	1.39	2414.72	5.25E-01	1.80E-03	27.2	
30	0	1238.04	800	304	1.79	2475.71	5.16E-01	1.53E-02	5.9	
31	0	1280.64	248	266	2.28	2560.97	5.04E-01	4.75E-03	15.7	
32	0	1377.69	620	246	1.91	2755.19	4.79E-01	1.19E-02	6.7	
33	0	1385.24	104	231	1.55	2770.30	4.77E-01	2.00E-03	32.6	
34	1	1401.39	178	189	2.02	2802.63	4.73E-01	3.41E-03	17.7	9.33E-01
35	1	1407.75	278	214	2.03	2815.37	4.72E-01	5.33E-03	11.9	
36	0	1460.65*	1	259	1.90	2921.24	4.59E-01	1.41E-05	*****	
37	0	1508.66	264	301	2.10	3017.35	4.49E-01	5.05E-03	15.9	
38	0	1661.76	133	140	1.78	3323.87	4.19E-01	2.56E-03	22.1	
39	0	1729.55	401	136	1.91	3459.62	4.07E-01	7.68E-03	8.5	
40	0	1764.40*	1642	207	2.32	3529.42	4.00E-01	3.15E-02	3.4	
41	0	1847.07	306	83	2.01	3694.96	3.87E-01	5.87E-03	8.6	

Peak Search Report (continued)
Sample ID : 23L28431-19 Acquisition date : 28-APR-2006 21:47:50

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	1	10.67*	4.595E-01	2.114E-01	2.114E-01	12455.01
RA-226	186.21	35	3.28*	1.948E+00	7.693E+00	7.693E+00	629.29
TH-228	238.63	178	44.60*	1.723E+00	3.254E+00	3.258E+00	110.76
	240.98	3113	3.95	1.711E+00	6.481E+02	6.491E+02	5.99

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 23L28431-19 Acquisition date : 28-APR-2006 21:47:50

Total number of lines in spectrum	41	
Number of unidentified lines	31	
Number of lines tentatively identified by NID	10	24.39%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.114E-01	2.114E-01	263.3E-01	12455.01	
RA-226	1600.00Y	1.00	7.693E+00	7.693E+00	48.41E+00	629.29	
TH-228	1.91Y	1.00	3.254E+00	3.258E+00	3.609E+00	110.76	
	Total Activity :		1.116E+01	1.116E+01			
	Grand Total Activity :		1.116E+01	1.116E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 23L28431-19

Acquisition date : 28-APR-2006 21:47:50

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
10	33.76	446	498	0.98	67.68	65	10	8.56E-03	27.3	9.34E-02	
10	35.11	465	1798	1.54	70.39	65	10	8.91E-03	38.0	1.15E-01	
4	41.57	158	2659	1.11	83.30	75	12	3.02E-03	****	2.52E-01	
2	74.79	2378	4403	1.20	149.66	143	15	4.56E-02	10.2	1.29E+00	
2	77.08	3894	3694	1.02	154.24	143	15	7.47E-02	6.0	1.35E+00	
0	87.14	1144	4166	1.25	174.33	171	7	2.19E-02	19.6	1.59E+00	
0	140.12	276	4353	1.06	280.20	277	8	5.30E-03	86.3	2.05E+00	
0	198.27	251	3315	1.22	396.41	393	8	4.81E-03	84.7	1.90E+00	
0	258.83	287	1930	1.09	517.42	514	8	5.51E-03	54.3	1.64E+00	
0	295.11	6945	2087	1.24	589.93	585	10	1.33E-01	3.5	1.50E+00	
0	351.78	12046	2028	1.26	703.21	696	14	2.31E-01	2.5	1.32E+00	
0	461.97	109	688	1.03	923.47	920	8	2.10E-03	85.3	1.07E+00	T
0	487.26	149	705	1.59	974.03	970	9	2.85E-03	66.5	1.02E+00	T
0	583.39	13	501	1.59	1166.23	1163	8	2.57E-04	****	8.88E-01	T
0	595.67	169	495	1.21	1190.77	1187	8	3.25E-03	48.0	8.74E-01	
0	609.10	9413	886	1.44	1217.63	1210	15	1.81E-01	2.5	8.59E-01	
0	665.07	326	462	1.61	1329.54	1325	11	6.25E-03	27.8	8.03E-01	
0	702.65	143	374	1.37	1404.68	1401	9	2.73E-03	51.7	7.71E-01	T
0	768.18	845	539	1.43	1535.74	1529	13	1.62E-02	13.3	7.22E-01	
0	785.93	276	330	1.83	1571.23	1567	10	5.30E-03	27.5	7.10E-01	
0	806.05	216	400	1.31	1611.47	1607	10	4.15E-03	37.6	6.97E-01	
0	838.48	77	406	1.05	1676.33	1673	9	1.48E-03	96.4	6.77E-01	
0	933.92	543	436	2.03	1867.24	1860	15	1.04E-02	18.8	6.27E-01	
0	1120.25	2202	336	1.77	2240.00	2233	15	4.22E-02	5.7	5.52E-01	
0	1155.25	298	280	1.98	2310.04	2304	13	5.71E-03	26.0	5.41E-01	
0	1207.57	94	172	1.39	2414.72	2411	9	1.80E-03	54.3	5.25E-01	
0	1238.04	800	304	1.79	2475.71	2468	15	1.53E-02	11.8	5.16E-01	
0	1280.64	248	266	2.28	2560.97	2553	15	4.75E-03	31.4	5.04E-01	
0	1377.69	620	246	1.91	2755.19	2750	14	1.19E-02	13.3	4.79E-01	
0	1385.24	104	231	1.55	2770.30	2763	14	2.00E-03	65.1	4.77E-01	T
1	1401.39	178	189	2.02	2802.63	2794	32	3.41E-03	35.3	4.73E-01	
1	1407.75	278	214	2.03	2815.37	2794	32	5.33E-03	23.7	4.72E-01	T
0	1508.66	264	301	2.10	3017.35	3011	16	5.05E-03	31.9	4.49E-01	
0	1661.76	133	140	1.78	3323.87	3317	17	2.56E-03	44.2	4.19E-01	
0	1729.55	401	136	1.91	3459.62	3451	18	7.68E-03	17.0	4.07E-01	
0	1764.40	1642	207	2.32	3529.42	3519	23	3.15E-02	6.9	4.00E-01	
0	1847.07	306	83	2.01	3694.96	3687	15	5.87E-03	17.3	3.87E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	41	
Number of unidentified lines	31	
Number of lines tentatively identified by NID	10	24.39%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.114E-01	2.114E-01	263.3E-01	12455.01	
RA-226	1600.00Y	1.00	7.693E+00	7.693E+00	48.41E+00	629.29	
TH-228	1.91Y	1.00	3.254E+00	3.258E+00	3.609E+00	110.76	
			---------	---------			
	Total Activity :		1.116E+01	1.116E+01			

Grand Total Activity : 1.116E+01 1.116E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	2.114E-01	2.633E+01	2.599E+01	0.000E+00	0.008
RA-226	7.693E+00	4.841E+01	7.907E+01	0.000E+00	0.097
TH-228	3.258E+00	3.609E+00	5.724E+00	0.000E+00	0.569

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	1.637E+01		1.507E+01	2.460E+01	0.000E+00	0.665
NA-24	-2.121E+00		9.905E+00	1.394E+01	0.000E+00	-0.152
CR-51	-1.026E+01		1.505E+01	2.512E+01	0.000E+00	-0.408
MN-54	2.728E+00		1.954E+00	2.943E+00	0.000E+00	0.927
CO-57	-1.085E-02		1.972E+00	3.214E+00	0.000E+00	-0.003
CO-58	5.836E-01		1.951E+00	2.756E+00	0.000E+00	0.212
FE-59	3.535E+00		3.101E+00	5.357E+00	0.000E+00	0.660
CO-60	-1.183E+00		1.667E+00	2.759E+00	0.000E+00	-0.429
ZN-65	7.860E+01		5.561E+00	1.080E+01	0.000E+00	7.275
SE-75	1.010E+00		2.906E+00	4.085E+00	0.000E+00	0.247
SR-85	1.102E+01		1.748E+00	3.176E+00	0.000E+00	3.470
Y-88	2.862E+00		1.724E+00	2.769E+00	0.000E+00	1.034
NB-94	2.600E+00	+	1.344E+00	2.716E+00	0.000E+00	0.957
NB-95	1.690E+01		2.176E+00	3.748E+00	0.000E+00	4.508
ZR-95	-3.552E-01		2.970E+00	4.696E+00	0.000E+00	-0.076
MO-99	-1.174E+01		1.729E+01	2.834E+01	0.000E+00	-0.414
RU-103	-1.414E+00		1.742E+00	2.728E+00	0.000E+00	-0.518
RU-106	-4.320E+00		1.469E+01	2.457E+01	0.000E+00	-0.176
AG-110m	1.128E+00		1.765E+00	2.565E+00	0.000E+00	0.440
SN-113	1.155E+00		2.296E+00	3.863E+00	0.000E+00	0.299
SB-124	-1.518E+00		3.639E+00	2.660E+00	0.000E+00	-0.571
SB-125	3.078E+00		5.171E+00	8.678E+00	0.000E+00	0.355
TE-129M	5.347E+00		1.986E+01	3.307E+01	0.000E+00	0.162
I-131	3.760E-01		1.967E+00	3.305E+00	0.000E+00	0.114
BA-133	5.902E+01		3.402E+00	6.169E+00	0.000E+00	9.567
CS-134	7.835E+01		3.169E+00	5.955E+00	0.000E+00	13.157
CS-136	1.212E+00		1.745E+00	2.943E+00	0.000E+00	0.412
CS-137	4.569E+00		2.124E+00	3.222E+00	0.000E+00	1.418
CE-139	-1.120E+00		1.985E+00	3.306E+00	0.000E+00	-0.339
BA-140	3.081E+00		6.343E+00	1.084E+01	0.000E+00	0.284

LA-140	3.568E+00	1.951E+00	3.496E+00	0.000E+00	1.021
CE-141	3.726E+00	4.036E+00	5.879E+00	0.000E+00	0.634
CE-144	1.818E+00	1.740E+01	2.521E+01	0.000E+00	0.072
EU-152	-4.600E+00	6.571E+00	9.249E+00	0.000E+00	-0.497
EU-154	5.315E-01	4.167E+00	6.796E+00	0.000E+00	0.078
AC-228	1.030E+00	6.458E+00	1.075E+01	0.000E+00	0.096
TH-232	1.029E+00	6.455E+00	1.075E+01	0.000E+00	0.096
U-235	1.944E+01	1.835E+01	2.641E+01	0.000E+00	0.736
U-238	1.391E+01	1.913E+02	3.132E+02	0.000E+00	0.044
AM-241	-1.845E+01	1.122E+01	1.848E+01	0.000E+00	-0.998

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A,23L28431-19     ,04/29/2006 12:17,04/27/2006 17:30,   3.685E+00,WG L28431-19 E
B,23L28431-19     ,LIBD                ,06/24/2005 07:59,2335L090704
C,K-40     ,YES,   2.114E-01,   2.633E+01,   2.599E+01,,    0.008
C,RA-226   ,YES,   7.693E+00,   4.841E+01,   7.907E+01,,    0.097
C,TH-228   ,YES,   3.258E+00,   3.609E+00,   5.724E+00,,    0.569
C,BE-7     ,NO ,   1.637E+01,   1.507E+01,   2.460E+01,,    0.665
C,NA-24    ,NO ,  -2.121E+00,   9.905E+00,   1.394E+01,,   -0.152
C,CR-51    ,NO ,  -1.026E+01,   1.505E+01,   2.512E+01,,   -0.408
C,MN-54    ,NO ,   2.728E+00,   1.954E+00,   2.943E+00,,    0.927
C,CO-57    ,NO ,  -1.085E-02,   1.972E+00,   3.214E+00,,   -0.003
C,CO-58    ,NO ,   5.836E-01,   1.951E+00,   2.756E+00,,    0.212
C,FE-59    ,NO ,   3.535E+00,   3.101E+00,   5.357E+00,,    0.660
C,CO-60    ,NO ,  -1.183E+00,   1.667E+00,   2.759E+00,,   -0.429
C,ZN-65    ,NO ,   7.860E+01,   5.561E+00,   1.080E+01,,    7.275
C,SE-75    ,NO ,   1.010E+00,   2.906E+00,   4.085E+00,,    0.247
C,SR-85    ,NO ,   1.102E+01,   1.748E+00,   3.176E+00,,    3.470
C,Y-88     ,NO ,   2.862E+00,   1.724E+00,   2.769E+00,,    1.034
C,NB-94    ,NO ,   2.600E+00,   1.344E+00,   2.716E+00,,    0.957
C,NB-95    ,NO ,   1.690E+01,   2.176E+00,   3.748E+00,,    4.508
C,ZR-95    ,NO ,  -3.552E-01,   2.970E+00,   4.696E+00,,   -0.076
C,MO-99    ,NO ,  -1.174E+01,   1.729E+01,   2.834E+01,,   -0.414
C,RU-103   ,NO ,  -1.414E+00,   1.742E+00,   2.728E+00,,   -0.518
C,RU-106   ,NO ,  -4.320E+00,   1.469E+01,   2.457E+01,,   -0.176
C,AG-110m  ,NO ,   1.128E+00,   1.765E+00,   2.565E+00,,    0.440
C,SN-113   ,NO ,   1.155E+00,   2.296E+00,   3.863E+00,,    0.299
C,SB-124   ,NO ,  -1.518E+00,   3.639E+00,   2.660E+00,,   -0.571
C,SB-125   ,NO ,   3.078E+00,   5.171E+00,   8.678E+00,,    0.355
C,TE-129M  ,NO ,   5.347E+00,   1.986E+01,   3.307E+01,,    0.162
C,I-131    ,NO ,   3.760E-01,   1.967E+00,   3.305E+00,,    0.114
C,BA-133   ,NO ,   5.902E+01,   3.402E+00,   6.169E+00,,    9.567
C,CS-134   ,NO ,   7.835E+01,   3.169E+00,   5.955E+00,,   13.157
C,CS-136   ,NO ,   1.212E+00,   1.745E+00,   2.943E+00,,    0.412
C,CS-137   ,NO ,   4.569E+00,   2.124E+00,   3.222E+00,,    1.418
C,CE-139   ,NO ,  -1.120E+00,   1.985E+00,   3.306E+00,,   -0.339
C,BA-140   ,NO ,   3.081E+00,   6.343E+00,   1.084E+01,,    0.284
C,LA-140   ,NO ,   3.568E+00,   1.951E+00,   3.496E+00,,    1.021
C,CE-141   ,NO ,   3.726E+00,   4.036E+00,   5.879E+00,,    0.634
C,CE-144   ,NO ,   1.818E+00,   1.740E+01,   2.521E+01,,    0.072
C,EU-152   ,NO ,  -4.600E+00,   6.571E+00,   9.249E+00,,   -0.497
C,EU-154   ,NO ,   5.315E-01,   4.167E+00,   6.796E+00,,    0.078
C,AC-228   ,NO ,   1.030E+00,   6.458E+00,   1.075E+01,,    0.096
C,TH-232   ,NO ,   1.029E+00,   6.455E+00,   1.075E+01,,    0.096
C,U-235    ,NO ,   1.944E+01,   1.835E+01,   2.641E+01,,    0.736
C,U-238    ,NO ,   1.391E+01,   1.913E+02,   3.132E+02,,    0.044
C,AM-241   ,NO ,  -1.845E+01,   1.122E+01,   1.848E+01,,   -0.998
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Sec. Review: Analyst: KD LIMS: ✓

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VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 30-APR-2006 10:13:31.10
TBE07 P-10768B HpGe ********** Aquisition Date/Time: 29-APR-2006 13:03:35.88

LIMS No., Customer Name, Client ID: WG L28431-20 EX BYRON

Sample ID : 07L28431-20
Sample Type : WG
Quantity : 3.58270E+00 L
Start Channel : 40 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 17:40:00.
Geometry : 0735L090904
BKGFILE : 07BG041406MT
Real Time : 0 21:09:47.14
Live time : 0 21:09:23.89

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	52.69	318	4082	1.40	106.22	2.76E-01	4.17E-03	35.1	1.74E+00
2	7	66.11*	717	5213	1.32	133.05	7.17E-01	9.42E-03	18.6	2.25E+00
3	1	74.77*	332	6513	0.70	150.40	1.03E+00	4.35E-03	40.8	1.13E+02
4	1	77.02*	2811	4532	0.82	154.89	1.10E+00	3.69E-02	4.5	7.41E+00
5	5	87.21*	1210	3684	1.05	175.28	1.42E+00	1.59E-02	8.8	3.46E+00
6	1	89.78	590	3651	0.90	180.42	1.49E+00	7.75E-03	16.7	2.35E+00
7	1	139.75*	474	4904	0.88	280.41	2.09E+00	6.23E-03	27.2	8.55E-01
8	1	198.31*	530	3386	1.15	397.56	1.98E+00	6.96E-03	20.1	2.90E+00
9	1	241.93*	3830	2141	1.04	484.82	1.80E+00	5.03E-02	2.6	1.59E+00
10	1	258.89	274	2536	0.98	518.74	1.74E+00	3.59E-03	32.5	5.87E-01
11	1	274.45	326	2051	1.52	549.87	1.68E+00	4.28E-03	23.6	2.80E+00
12	1	295.14*	8562	2959	1.10	591.28	1.61E+00	1.12E-01	1.7	1.24E+00
13	1	351.85*	15282	2364	1.16	704.72	1.43E+00	2.01E-01	1.1	3.46E+00
14	1	454.69	261	832	1.35	910.44	1.21E+00	3.43E-03	19.2	8.30E+00
15	3	579.93	136	846	1.56	1160.95	1.02E+00	1.79E-03	38.8	1.69E+00
16	1	595.84	334	975	1.45	1192.77	9.96E-01	4.39E-03	18.2	3.13E-01
17	1	609.22*	12568	1388	1.36	1219.54	9.81E-01	1.65E-01	1.1	1.40E+00
18	1	665.33	384	632	1.44	1331.76	9.20E-01	5.04E-03	12.8	8.60E-01
19	1	702.53	149	633	1.72	1406.16	8.85E-01	1.96E-03	32.7	1.47E+00
20	1	768.19	1361	734	1.79	1537.48	8.29E-01	1.79E-02	4.9	5.78E+00
21	1	785.98	273	681	1.66	1573.06	8.15E-01	3.58E-03	20.2	1.11E+00
22	1	806.19	294	712	1.34	1613.48	8.00E-01	3.86E-03	18.5	1.45E+00
23	1	838.85	103	706	2.44	1678.79	7.77E-01	1.35E-03	51.2	1.96E+00
24	1	867.64	102	650	1.56	1736.37	7.58E-01	1.34E-03	51.1	2.58E+00
25	1	933.90	691	615	1.72	1868.87	7.17E-01	9.07E-03	8.3	1.45E+00
26	1	964.49	99	439	1.96	1930.05	7.00E-01	1.31E-03	39.4	9.06E-01
27	1	1120.14*	2798	570	1.78	2241.30	6.26E-01	3.67E-02	2.7	8.48E-01
28	1	1154.90	262	411	1.99	2310.82	6.12E-01	3.43E-03	16.3	1.24E+00
29	1	1238.02	1098	425	1.94	2477.01	5.81E-01	1.44E-02	5.0	1.46E+00
30	1	1280.74	191	340	1.83	2562.43	5.66E-01	2.50E-03	20.3	1.85E+00
31	1	1377.58	864	484	2.24	2756.05	5.37E-01	1.13E-02	7.0	1.01E+00
32	1	1385.22	161	331	2.84	2771.33	5.35E-01	2.11E-03	25.4	1.08E+00
33	3	1401.33	271	396	2.88	2803.54	5.31E-01	3.56E-03	17.3	1.44E+00
34	3	1407.94*	490	342	2.88	2816.74	5.29E-01	6.43E-03	10.6	
35	1	1509.28	415	496	2.29	3019.34	5.03E-01	5.45E-03	14.9	1.35E+00
36	1	1582.06	130	270	3.18	3164.83	4.87E-01	1.71E-03	27.4	3.69E+00
37	1	1661.06	129	332	2.69	3322.77	4.72E-01	1.70E-03	36.4	1.28E+00
38	1	1729.50	511	301	2.26	3459.57	4.60E-01	6.71E-03	9.0	1.07E+00
39	1	1764.27*	2348	199	2.32	3529.08	4.54E-01	3.08E-02	2.7	1.95E+00
40	1	1847.35	393	182	2.65	3695.15	4.42E-01	5.16E-03	9.5	1.26E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 07L28431-20 Acquisition date : 29-APR-2006 13:03:35

Total number of lines in spectrum	40	
Number of unidentified lines	34	
Number of lines tentatively identified by NID	6	15.00%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 07L28431-20

Acquisition date : 29-APR-2006 13:03:35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	52.69	318	4082	1.40	106.22	103	8	4.17E-03	70.2	2.76E-01	
7	66.11	717	5213	1.32	133.05	124	14	9.42E-03	37.1	7.17E-01	
1	74.77	332	6513	0.70	150.40	148	6	4.35E-03	81.7	1.03E+00	
1	77.02	2811	4532	0.82	154.89	153	6	3.69E-02	9.0	1.10E+00	
5	87.21	1210	3684	1.05	175.28	164	15	1.59E-02	17.6	1.42E+00	
1	89.78	590	3651	0.90	180.42	178	6	7.75E-03	33.3	1.49E+00	
1	139.75	474	4904	0.88	280.41	277	8	6.23E-03	54.4	2.09E+00	
1	198.31	530	3386	1.15	397.56	394	7	6.96E-03	40.1	1.98E+00	
1	241.93	3830	2141	1.04	484.82	473	16	5.03E-02	5.2	1.80E+00	T
1	258.89	274	2536	0.98	518.74	515	8	3.59E-03	65.0	1.74E+00	
1	274.45	326	2051	1.52	549.87	547	7	4.28E-03	47.3	1.68E+00	T
1	295.14	8562	2959	1.10	591.28	586	11	1.12E-01	3.4	1.61E+00	
1	351.85	15282	2364	1.16	704.72	698	12	2.01E-01	2.1	1.43E+00	
1	454.69	261	832	1.35	910.44	907	7	3.43E-03	38.3	1.21E+00	
3	579.93	136	846	1.56	1160.95	1153	19	1.79E-03	77.7	1.02E+00	
1	595.84	334	975	1.45	1192.77	1188	10	4.39E-03	36.5	9.96E-01	
1	609.22	12568	1388	1.36	1219.54	1212	14	1.65E-01	2.3	9.81E-01	
1	665.33	384	632	1.44	1331.76	1327	9	5.04E-03	25.7	9.20E-01	
1	702.53	149	633	1.72	1406.16	1402	10	1.96E-03	65.4	8.85E-01	T
1	768.19	1361	734	1.79	1537.48	1530	13	1.79E-02	9.8	8.29E-01	
1	785.98	273	681	1.66	1573.06	1567	12	3.58E-03	40.5	8.15E-01	
1	806.19	294	712	1.34	1613.48	1608	11	3.86E-03	37.1	8.00E-01	
1	838.85	103	706	2.44	1678.79	1676	11	1.35E-03	****	7.77E-01	
1	867.64	102	650	1.56	1736.37	1730	12	1.34E-03	****	7.58E-01	
1	933.90	691	615	1.72	1868.87	1863	13	9.07E-03	16.6	7.17E-01	
1	964.49	99	439	1.96	1930.05	1926	9	1.31E-03	78.9	7.00E-01	T
1	1120.14	2798	570	1.78	2241.30	2235	14	3.67E-02	5.5	6.26E-01	
1	1154.90	262	411	1.99	2310.82	2306	11	3.43E-03	32.6	6.12E-01	
1	1238.02	1098	425	1.94	2477.01	2470	14	1.44E-02	10.0	5.81E-01	
1	1280.74	191	340	1.83	2562.43	2557	11	2.50E-03	40.6	5.66E-01	
1	1377.58	864	484	2.24	2756.05	2747	19	1.13E-02	14.0	5.37E-01	
1	1385.22	161	331	2.84	2771.33	2766	14	2.11E-03	50.7	5.35E-01	T
3	1401.33	271	396	2.88	2803.54	2794	32	3.56E-03	34.7	5.31E-01	
3	1407.94	490	342	2.88	2816.74	2794	32	6.43E-03	21.3	5.29E-01	T
1	1509.28	415	496	2.29	3019.34	3009	23	5.45E-03	29.8	5.03E-01	
1	1582.06	130	270	3.18	3164.83	3159	13	1.71E-03	54.9	4.87E-01	
1	1661.06	129	332	2.69	3322.77	3313	21	1.70E-03	72.9	4.72E-01	
1	1729.50	511	301	2.26	3459.57	3449	18	6.71E-03	18.1	4.60E-01	
1	1764.27	2348	199	2.32	3529.08	3519	21	3.08E-02	5.4	4.54E-01	
1	1847.35	393	182	2.65	3695.15	3689	17	5.16E-03	19.0	4.42E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum 40
Number of unidentified lines 34
Number of lines tentatively identified by NID 6 15.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	7.941E+00		1.091E+01	1.834E+01	0.000E+00	0.433
NA-24	-3.764E+00		1.921E+01	2.631E+01	0.000E+00	-0.143
K-40	-7.086E+00		1.816E+01	3.050E+01	0.000E+00	-0.232
CR-51	-2.408E+01		1.208E+01	1.903E+01	0.000E+00	-1.265
MN-54	9.769E-01		1.565E+00	2.229E+00	0.000E+00	0.438
CO-57	-4.290E-01		1.329E+00	2.220E+00	0.000E+00	-0.193
CO-58	2.506E+00		1.551E+00	2.223E+00	0.000E+00	1.128
FE-59	2.542E+00		2.490E+00	4.207E+00	0.000E+00	0.604
CO-60	6.672E-01		1.365E+00	2.286E+00	0.000E+00	0.292
ZN-65	8.858E+01		4.620E+00	8.921E+00	0.000E+00	9.929
SE-75	-7.397E-01		2.193E+00	3.054E+00	0.000E+00	-0.242
SR-85	1.729E+01		1.438E+00	2.711E+00	0.000E+00	6.376
Y-88	5.341E-01		1.563E+00	2.162E+00	0.000E+00	0.247
NB-94	1.669E+00	+	1.092E+00	2.045E+00	0.000E+00	0.816
NB-95	1.532E+01		1.518E+00	2.864E+00	0.000E+00	5.347
ZR-95	1.750E+00		2.420E+00	3.659E+00	0.000E+00	0.478
MO-99	8.743E+00		1.635E+01	2.710E+01	0.000E+00	0.323
RU-103	1.760E+00		1.284E+00	2.173E+00	0.000E+00	0.810
RU-106	-2.065E+00		1.166E+01	1.886E+01	0.000E+00	-0.109
AG-110m	-4.734E-01		1.425E+00	1.976E+00	0.000E+00	-0.239
SN-113	9.455E-01		1.758E+00	2.909E+00	0.000E+00	0.325
SB-124	-1.447E+00		3.022E+00	2.115E+00	0.000E+00	-0.684
SB-125	-4.420E-01		3.859E+00	6.281E+00	0.000E+00	-0.070
TE-129M	1.332E+01		1.802E+01	2.510E+01	0.000E+00	0.531
I-131	-6.181E-01		1.577E+00	2.594E+00	0.000E+00	-0.238
BA-133	5.440E+01		2.572E+00	4.665E+00	0.000E+00	11.660
CS-134	7.729E+01		2.864E+00	4.691E+00	0.000E+00	16.476
CS-136	-2.586E-01		1.423E+00	2.272E+00	0.000E+00	-0.114
CS-137	5.135E+00		1.627E+00	2.465E+00	0.000E+00	2.083
CE-139	-5.016E-01		1.415E+00	2.312E+00	0.000E+00	-0.217
BA-140	2.524E+00		5.033E+00	8.351E+00	0.000E+00	0.302
LA-140	2.112E+00		1.867E+00	3.002E+00	0.000E+00	0.704
CE-141	4.525E-01		2.870E+00	4.092E+00	0.000E+00	0.111
CE-144	5.203E+00		1.163E+01	1.744E+01	0.000E+00	0.298
EU-152	-8.562E+00		4.997E+00	6.850E+00	0.000E+00	-1.250
EU-154	-9.610E-01		2.802E+00	4.678E+00	0.000E+00	-0.205
RA-226	2.023E+01		3.757E+01	5.898E+01	0.000E+00	0.343
AC-228	2.158E+00		5.392E+00	8.546E+00	0.000E+00	0.252
TH-228	2.776E+01		3.349E+00	5.123E+00	0.000E+00	5.419
TH-232	2.156E+00		5.388E+00	8.540E+00	0.000E+00	0.252
U-235	-2.713E-01		1.291E+01	1.799E+01	0.000E+00	-0.015
U-238	-3.543E+01		1.559E+02	2.363E+02	0.000E+00	-0.150
AM-241	1.667E+01		1.394E+01	1.953E+01	0.000E+00	0.854

A,07L28431-20 ,04/30/2006 10:13,04/27/2006 17:40, 3.583E+00,WG L28431-20 E
B,07L28431-20 ,LIBD ,06/23/2005 07:26,0735L090904

C,BE-7	,NO ,	7.941E+00,	1.091E+01,	1.834E+01,,	0.433
C,NA-24	,NO ,	-3.764E+00,	1.921E+01,	2.631E+01,,	-0.143
C,K-40	,NO ,	-7.086E+00,	1.816E+01,	3.050E+01,,	-0.232
C,CR-51	,NO ,	-2.408E+01,	1.208E+01,	1.903E+01,,	-1.265
C,MN-54	,NO ,	9.769E-01,	1.565E+00,	2.229E+00,,	0.438
C,CO-57	,NO ,	-4.290E-01,	1.329E+00,	2.220E+00,,	-0.193
C,CO-58	,NO ,	2.506E+00,	1.551E+00,	2.223E+00,,	1.128
C,FE-59	,NO ,	2.542E+00,	2.490E+00,	4.207E+00,,	0.604
C,CO-60	,NO ,	6.672E-01,	1.365E+00,	2.286E+00,,	0.292
C,ZN-65	,NO ,	8.858E+01,	4.620E+00,	8.921E+00,,	9.929
C,SE-75	,NO ,	-7.397E-01,	2.193E+00,	3.054E+00,,	-0.242
C,SR-85	,NO ,	1.729E+01,	1.438E+00,	2.711E+00,,	6.376
C,Y-88	,NO ,	5.341E-01,	1.563E+00,	2.162E+00,,	0.247
C,NB-94	,NO ,	1.669E+00,	1.092E+00,	2.045E+00,,	0.816
C,NB-95	,NO ,	1.532E+01,	1.518E+00,	2.864E+00,,	5.347
C,ZR-95	,NO ,	1.750E+00,	2.420E+00,	3.659E+00,,	0.478
C,MO-99	,NO ,	8.743E+00,	1.635E+01,	2.710E+01,,	0.323
C,RU-103	,NO ,	1.760E+00,	1.284E+00,	2.173E+00,,	0.810
C,RU-106	,NO ,	-2.065E+00,	1.166E+01,	1.886E+01,,	-0.109
C,AG-110m	,NO ,	-4.734E-01,	1.425E+00,	1.976E+00,,	-0.239
C,SN-113	,NO ,	9.455E-01,	1.758E+00,	2.909E+00,,	0.325
C,SB-124	,NO ,	-1.447E+00,	3.022E+00,	2.115E+00,,	-0.684
C,SB-125	,NO ,	-4.420E-01,	3.859E+00,	6.281E+00,,	-0.070
C,TE-129M	,NO ,	1.332E+01,	1.802E+01,	2.510E+01,,	0.531
C,I-131	,NO ,	-6.181E-01,	1.577E+00,	2.594E+00,,	-0.238
C,BA-133	,NO ,	5.440E+01,	2.572E+00,	4.665E+00,,	11.660
C,CS-134	,NO ,	7.729E+01,	2.864E+00,	4.691E+00,,	16.476
C,CS-136	,NO ,	-2.586E-01,	1.423E+00,	2.272E+00,,	-0.114
C,CS-137	,NO ,	5.135E+00,	1.627E+00,	2.465E+00,,	2.083
C,CE-139	,NO ,	-5.016E-01,	1.415E+00,	2.312E+00,,	-0.217
C,BA-140	,NO ,	2.524E+00,	5.033E+00,	8.351E+00,,	0.302
C,LA-140	,NO ,	2.112E+00,	1.867E+00,	3.002E+00,,	0.704
C,CE-141	,NO ,	4.525E-01,	2.870E+00,	4.092E+00,,	0.111
C,CE-144	,NO ,	5.203E+00,	1.163E+01,	1.744E+01,,	0.298
C,EU-152	,NO ,	-8.562E+00,	4.997E+00,	6.850E+00,,	-1.250
C,EU-154	,NO ,	-9.610E-01,	2.802E+00,	4.678E+00,,	-0.205
C,RA-226	,NO ,	2.023E+01,	3.757E+01,	5.898E+01,,	0.343
C,AC-228	,NO ,	2.158E+00,	5.392E+00,	8.546E+00,,	0.252
C,TH-228	,NO ,	2.776E+01,	3.349E+00,	5.123E+00,,	5.419
C,TH-232	,NO ,	2.156E+00,	5.388E+00,	8.540E+00,,	0.252
C,U-235	,NO ,	-2.713E-01,	1.291E+01,	1.799E+01,,	-0.015
C,U-238	,NO ,	-3.543E+01,	1.559E+02,	2.363E+02,,	-0.150
C,AM-241	,NO ,	1.667E+01,	1.394E+01,	1.953E+01,,	0.854

Raw Data Sheet (rawdata)
May 05 2006, 02:46 pm

Work Order: *L28431* Customer: *Exelon*

Nuclide: *H-3* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28431-1		H-3					0		03-may-06	LS7	93	60	1.59	60	.217		EJ
WG-BYN-042606-SS-29				10 ml					18:17								
Activity: -8.31E+00	Error: 9.5E+01		MDC: 1.58E+02 *														
L28431-2		H-3					0		03-may-06	LS7	98	60	1.59	60	.216		EJ
WG-BYN-042606-SS-31				10 ml					19:21								
Activity: 1.04E+01	Error: 9.69E+01		MDC: 1.58E+02 *														
L28431-3		H-3					0		03-may-06	LS7	103	60	1.59	60	.216		EJ
WG-BYN-042606-SS-33				10 ml					20:24								
Activity: 2.71E+01	Error: 9.8E+01		MDC: 1.58E+02 *														
L28431-4		H-3					0		03-may-06	LS7	77	60	1.59	60	.217		EJ
WG-BYN-042706-SS-34				10 ml					21:28								
Activity: -6.43E+01	Error: 9.07E+01		MDC: 1.57E+02 *														
L28431-5		H-3					0		03-may-06	LS7	115	60	1.59	60	.215		EJ
WG-BYN-042706-SS-35				10 ml					22:31								
Activity: 6.72E+01	Error: 1.01E+02		MDC: 1.59E+02 *														
L28431-6		H-3					0		03-may-06	LS7	115	60	1.59	60	.222		EJ
WG-BYN-042706-SS-36				10 ml					23:35								
Activity: 6.71E+01	Error: 9.83E+01		MDC: 1.54E+02 *														
L28431-7		H-3					0		04-may-06	LS7	121	60	1.59	60	.224		EJ
WG-BYN-042706-SS-37				10 ml					00:38								
Activity: 8.46E+01	Error: 9.87E+01		MDC: 1.53E+02 *														
L28431-8		H-3					0		04-may-06	LS7	123	60	1.59	60	.216		EJ
WG-BYN-042706-SS-38				10 ml					01:42								
Activity: 9.62E+01	Error: 1.03E+02		MDC: 1.59E+02 *														
L28431-9		H-3					0		04-may-06	LS7	116	60	1.59	60	.218		EJ
WG-BYN-042706-SS-39				10 ml					02:46								
Activity: 7.24E+01	Error: 1E+02		MDC: 1.57E+02 *														
L28431-10		H-3					0		04-may-06	LS7	153	60	1.59	60	.215		EJ
WG-BYN-042706-SS-40				10 ml					03:50								
Activity: 2.01E+02 *	Error: 1.1E+02		MDC: 1.59E+02														
L28431-11		H-3					0		04-may-06	LS7	111	60	1.5	60	.217		EJ
WG-BYN-042706-SS-41				10 ml					09:50								
Activity: 7.29E+01	Error: 9.84E+01		MDC: 1.53E+02 *														
L28431-12		H-3					0		04-may-06	LS7	113	60	1.5	60	.22		DW
WG-BYN-042706-SS-42				10 ml					10:53								
Activity: 8.01E+01	Error: 9.76E+01		MDC: 1.51E+02 *														
L28431-13		H-3					0		04-may-06	LS7	98	60	1.5	60	.218		DW
WG-BYN-042706-SS-43				10 ml					11:57								
Activity: 2.69E+01	Error: 9.44E+01		MDC: 1.52E+02 *														
L28431-14		H-3					0		04-may-06	LS7	385	20.88	1.5	60	.234		DW
WG-BYN-042706-SS-44				10 ml					13:01								
Activity: 3.26E+03 *	Error: 3.67E+02		MDC: 2.4E+02														
L28431-15		H-3					0		04-may-06	LS7	115	60	1.5	60	.214		DW
WG-BYN-042706-KD-26				10 ml					13:25								
Activity: 8.84E+01	Error: 1.01E+02		MDC: 1.55E+02 *														
L28431-16		H-3					0		04-may-06	LS7	87	60	1.5	60	.221		DW
WG-BYN-042706-KD-28				10 ml					14:28								
Activity: -1.02E+01	Error: 9.05E+01		MDC: 1.5E+02 *														

Raw Data Sheet (rawdata)
May 05 2006, 02:46 pm

Work Order: *L28431* Customer: *Exelon*

Nuclide: *H-3* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28431-17		H-3					0		04-may-06	LS7	110	60	1.71	60	.221		DW
WG-BYN-042706-KD-30				10 ml					16:35								
Activity: 2.66E+01	Error: 9.95E+01		MDC: 1.61E+02 *														
L28431-18		H-3					0		04-may-06	LS7	149	60	1.71	60	.221		DW
WG-BYN-042706-KD-32				10 ml					17:39								
Activity: 1.59E+02	Error: 1.08E+02		MDC: 1.6E+02 *														
L28431-19		H-3					0		04-may-06	LS7	76	60	1.71	60	.216		DW
WG-BYN-042706-KD-45				10 ml					18:42								
Activity: -9.19E+01	Error: 9.31E+01		MDC: 1.64E+02 *														
L28431-20		H-3					0		04-may-06	LS7	126	60	1.71	60	.223		DW
WG-BYN-042706-KD-46				10 ml					19:45								
Activity: 7.88E+01	Error: 1.02E+02		MDC: 1.59E+02 *														

Raw Data Sheet (rawdata)
May 05 2006, 02:46 pm

Work Order: *L28431* Customer: *Exelon*

Nuclide: *SR-90 (FAST)* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28431-5		TOTAL SR	27-apr-06		04-may-06		0		05-may-06	X2A	200	300	264	400	.354	.999	GK
WG-BYN-042706-SS-35			09:00	450 ml	15:25			51.88	14:11								
Activity: 3.63E-02		Error: 6.78E-01		MDC: 1.19E+00 *													
L28431-6		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X1A	106	100	76	100	.346	1	GK
WG-BYN-042706-SS-36			10:15	450 ml	15:25			85.22	21:40								
Activity: 1.02E+00		Error: 9.16E-01		MDC: 1.38E+00 *													
L28431-7		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X1B	73	100	93	100	.343	1	GK
WG-BYN-042706-SS-37			11:20	450 ml	15:25			91.13	21:40								
Activity: -6.4E-01		Error: 8.25E-01		MDC: 1.44E+00 *													
L28431-8		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X1C	83	100	82	100	.354	1	GK
WG-BYN-042706-SS-38			12:35	450 ml	15:25			91.13	21:40								
Activity: 3.11E-02		Error: 7.98E-01		MDC: 1.31E+00 *													
L28431-9		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X1D	94	100	95	100	.344	1	GK
WG-BYN-042706-SS-39			13:35	450 ml	15:25			85.75	21:40								
Activity: -3.39E-02		Error: 9.33E-01		MDC: 1.54E+00 *													
L28431-10		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X4A	92	100	86	100	.358	1	GK
WG-BYN-042706-SS-40			13:35	450 ml	15:25			83.33	21:40								
Activity: 2.02E-01		Error: 8.97E-01		MDC: 1.45E+00 *													
L28431-11		TOTAL SR	27-apr-06		04-may-06		0		05-may-06	X2B	216	300	289	400	.345	.999	GK
WG-BYN-042706-SS-41			14:55	450 ml	15:25			38.17	14:11								
Activity: -1.9E-02		Error: 9.87E-01		MDC: 1.74E+00 *													
L28431-12		TOTAL SR	27-apr-06		04-may-06		0		05-may-06	X2C	223	300	277	400	.344	.999	GK
WG-BYN-042706-SS-42			16:00	450 ml	15:25			55.38	14:11								
Activity: 2.67E-01		Error: 6.82E-01		MDC: 1.18E+00 *													
L28431-13		TOTAL SR	27-apr-06		04-may-06		0		05-may-06	X2D	231	300	307	400	.343	.999	GK
WG-BYN-042706-SS-43			16:15	450 ml	15:25			54.84	14:11								
Activity: 1.33E-02		Error: 7.13E-01		MDC: 1.25E+00 *													
L28431-14		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X2A	95	100	75	100	.354	1	GK
WG-BYN-042706-SS-44			17:45	450 ml	15:25			101.61	21:40								
Activity: 5.56E-01		Error: 7.25E-01		MDC: 1.12E+00 *													
L28431-15		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X2B	83	100	75	100	.345	1	GK
WG-BYN-042706-KD-26			10:57	450 ml	15:25			102.15	21:40								
Activity: 2.27E-01		Error: 7.14E-01		MDC: 1.15E+00 *													
L28431-16		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X2C	88	100	72	100	.344	1	GK
WG-BYN-042706-KD-28			12:25	450 ml	15:25			107.53	21:40								
Activity: 4.33E-01		Error: 6.85E-01		MDC: 1.07E+00 *													
L28431-17		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X2D	75	100	83	100	.343	1	GK
WG-BYN-042706-KD-30			14:05	450 ml	15:25			78.23	21:40								
Activity: -2.98E-01		Error: 9.37E-01		MDC: 1.58E+00 *													
L28431-18		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X3A	99	100	100	100	.335	1	GK
WG-BYN-042706-KD-32			16:00	450 ml	15:25			88.17	21:40								
Activity: -3.39E-02		Error: 9.56E-01		MDC: 1.58E+00 *													
L28431-19		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X3B	83	100	83	100	.343	1	GK
WG-BYN-042706-KD-45			17:30	450 ml	15:25			71.77	21:40								
Activity: 0E+00		Error: 1.05E+00		MDC: 1.73E+00 *													
L28431-20		TOTAL SR	27-apr-06		04-may-06		0		04-may-06	X3C	86	100	81	100	.345	1	GK
WG-BYN-042706-KD-46			17:40	450 ml	15:25			107.80	21:40								
Activity: 1.35E-01		Error: 6.96E-01		MDC: 1.13E+00 *													

TELEDYNE
BROWN ENGINEERING
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931
865-690-6819 (Phone)

Work Order #: L28439

Exelon

May 8, 2006

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Kathy Shaw
Conestoga-Rovers & Associates
45 Farmington Valley Drive
Plainville CT 06062

Case Narrative - L28439
EX001-3ESPBYRON-06

05/08/2006 11:39

Sample Receipt

The following samples were received on April 29, 2006 in good condition, unless otherwise noted.

Cross Reference Table

Client ID	Laboratory ID	Station ID(if applicable)
WG-BYR-042706-SS-47	L28439-1	
WG-BYR-042806-SS-49	L28439-2	
WG-BYR-042806-KD-48	L28439-3	

Analytical Method Cross Reference Table

Radiological Parameter	TBE Knoxville Method	Reference Method
Gamma Spectrometry	TBE-2007	EPA 901.1
H-3	TBE-2010	EPA 906.0
SR-90 (FAST)	TBE-2018	EPA 905.0

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Case Narrative - L28439
EX001-3ESPBYRON-06

05/08/2006 11:39

Gamma Spectroscopy

Quality Control

Quality control samples were analyzed as WG3925.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYR-042706-SS-47	L28439-1	WG3925-3

H-3

Quality Control

Quality control samples were analyzed as WG3933.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

Duplicate Sample

Duplicates were analyzed for the following samples. All duplicate results were within acceptance limits, unless otherwise noted.

Client ID	Laboratory ID	QC Sample #
WG-BYN-042706-KD-45	L28431-19	WG3933-3

SR-90

Quality Control

Quality control samples were analyzed as WG3946.

Method Blank

All blanks were within acceptance limits, unless otherwise noted.

Laboratory Control Sample

All laboratory control samples were within acceptance limits, unless otherwise noted.

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Case Narrative - L28439
EX001-3ESPBYRON-06

05/08/2006 11:39

Certification

This is to certify that Teledyne Brown Engineering - Environmental Services, located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Sample Receipt

05/01/06 10:21

SR #: SR08103

Client: Exelon

Teledyne Brown Engineering
Sample Receipt Verification/Variance Report

Project #: EX001-3ESPBYRON-06 LIMS #: L28439

Initiated By: PMARSHALL
Init Date: 05/01/06 Receive Date: 04/29/06

Notification of Variance

Person Notified: Contacted By:

Notify Date:

Notify Method:

Notify Comment:

Client Response

Person Responding:

Response Date:

Response Method:

Response Comment

	Criteria	Yes No NA	Comment
1	Shipping container custody seals present and intact.	Y	
2	Sample container custody seals present and intact.	NA	
3	Sample containers received in good condition	Y	
4	Chain of custody received with samples	Y	
5	All samples listed on chain of custody received	Y	
6	Sample container labels present and legible.	Y	
7	Information on container labels correspond with chain of custody	Y	
8	Sample(s) properly preserved and in appropriate container(s)	NA	
9	Other (Describe)	N	pH of Gamma containers at or below 2.

CONESTOGA-ROVERS & ASSOCIATES
8615 W. Bryn Mawr Avenue
Chicago, Illinois 60631
(773)380-9933 phone
(773)380-6421 fax

CHAIN-OF-CUSTODY RECORD

SHIPPED TO (Laboratory Name): Teledyne Brown Engineering L28439 5-30

REFERENCE NUMBER: 45136-21

PROJECT NAME: Exelon-Byron Generating Station

SAMPLER'S SIGNATURE: Shana Spencer **PRINTED NAME:** Shana Spencer

SEQ. No.	DATE	TIME	SAMPLE IDENTIFICATION No.	SAMPLE MATRIX	No. OF CONTAINERS	PARAMETERS: Tritium	PARAMETERS: Radionuclides	REMARKS
1	4/27/06	1920	WG-BYN-042706-SS-47	Water	2	X	X	
2	4/28/06	0940	WG-BYN-042806-SS-49	↓	1	X		
3	4/28/06	0938	WG-BYN-042806-KD-48	Water	4	X	X	MS/MSD

TOTAL NUMBER OF CONTAINERS 37 (42)

RELINQUISHED BY: ① Shana Spencer	DATE: 4/28/06 TIME: 15:00	RECEIVED BY: ②	DATE: TIME:
RELINQUISHED BY: ②	DATE: TIME:	RECEIVED BY: ③	DATE: TIME:
RELINQUISHED BY: ③	DATE: TIME:	RECEIVED BY: ④	DATE: TIME:

METHOD OF SHIPMENT: Fed Ex **AIR BILL No.** 7135 2916 0101 6

White -Fully Executed Copy
Yellow -Receiving Laboratory Copy
Pink -Shipper Copy
Goldenrod -Sampler Copy

SAMPLE TEAM: D. Tyran Dywal, S. Spencer Greene

RECEIVED FOR LABORATORY BY: Pat Marshall DATE: 4/29/06 TIME: 0930

13635

1001-00(SOURCE)GN-CO004

Internal Chain of Custody

Internal Chain of Custody

****

Sample # L28439-1 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/02/2006 14:12	099999	Sample Custodian	029964	Erin Jenkins

****

Sample # L28439-1 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/01/2006 11:45	099999	Sample Custodian	030854	Donna Webb
05/01/2006 11:46	099999	Sample Custodian	030854	Donna Webb
05/01/2006 11:46	030854	Donna Webb	099999	Sample Custodian
05/01/2006 11:47	030854	Donna Webb	029965	Kelly Wright
05/02/2006 14:15	029965	Kelly Wright	030854	Donna Webb
05/02/2006 14:16	030854	Donna Webb	099999	Sample Custodian
05/05/2006 12:51	099999	Sample Custodian	030591	Greg Kinard
05/05/2006 12:55	030591	Greg Kinard	099999	Sample Custodian

****

Sample # L28439-2 Containernum 1

Prod	Analyst
H-3	DW

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/02/2006 14:12	099999	Sample Custodian	029964	Erin Jenkins

****

Sample # L28439-3 Containernum 1

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/02/2006 14:12	099999	Sample Custodian	029964	Erin Jenkins

****

Sample # L28439-3 Containernum 2

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Internal Chain of Custody

****

Sample # L28439-3 Containernum 2

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/01/2006 11:45	099999	Sample Custodian	030854	Donna Webb
05/01/2006 11:46	099999	Sample Custodian	030854	Donna Webb
05/01/2006 11:46	030854	Donna Webb	099999	Sample Custodian
05/01/2006 11:47	030854	Donna Webb	029965	Kelly Wright
05/03/2006 11:40	029965	Kelly Wright	030854	Donna Webb
05/03/2006 11:42	030854	Donna Webb	099999	Sample Custodian
05/05/2006 12:51	099999	Sample Custodian	030591	Greg Kinard
05/05/2006 12:55	030591	Greg Kinard	099999	Sample Custodian

****

Sample # L28439-3 Containernum 3

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/02/2006 14:12	099999	Sample Custodian	029964	Erin Jenkins

****

Sample # L28439-3 Containernum 4

Prod	Analyst
H-3	DW
GELI	DW
SR-90 (FAST)	GK

Relinquish Date	Relinquish By		Received By	
04/29/2006 00:00			099999	Sample Custodian
05/02/2006 14:12	099999	Sample Custodian	029964	Erin Jenkins

Teledyne Brown Engineering
Internal Chain of Custody
Supplemental Sheet

L28439

****

L28439-1 WG WG-BYR-042706-SS-47

Process step	Prod	Analyst	Date
Login		RCHARLES	04/29/06
Aliquot	GELI	DW	05/01/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/05/06
Count Room	GELI	KPW	05/01/06
Count Room	H-3	KOJ	05/04/06
Count Room	SR-90 (FAST)	KOJ	05/05/06

****

L28439-2 WG WG-BYR-042806-SS-49

Process step	Prod	Analyst	Date
Login		RCHARLES	04/29/06
Aliquot	H-3	DW	05/03/06
Count Room	H-3	KOJ	05/04/06

****

L28439-3 WG WG-BYR-042806-KD-48

Process step	Prod	Analyst	Date
Login		RCHARLES	04/29/06
Aliquot	GELI	DW	05/01/06
Aliquot	H-3	DW	05/03/06
Aliquot	SR-90 (FAST)	GK	05/05/06
Count Room	GELI	KPW	05/01/06
Count Room	H-3	KOJ	05/04/06
Count Room	SR-90 (FAST)	KOJ	05/05/06

Analytical Results and QC Summary

Report of Analysis

05/08/06 11:22

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28439

Byron Station

Edward Steinke

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042706-SS-47** Collect Start: 04/27/2006 19:20 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/29/2006 % Moisture:
LIMS Number: L28439-1

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	-2.02E+00	9.62E+01	**1.59E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	.00E+00	6.57E-01	**1.16E+00**	pCi/L		450	ml	04/27/06 19:20	05/05/06	300	M	U		
MN-54	2007	4.62E-01	1.61E+00	**2.64E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No
CO-58	2007	1.03E-01	1.63E+00	**2.67E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No
FE-59	2007	3.72E+00	3.25E+00	**5.54E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No
ZN-65	2007	2.14E+01	4.75E+00	**7.88E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U*		No
NB-95	2007	3.50E+00	1.96E+00	**2.93E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U*		No
ZR-95	2007	-1.53E+00	3.17E+00	**4.72E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No
CS-134	2007	2.19E+01	3.21E+00	**4.02E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U*		No
CS-137	2007	1.41E+00	1.71E+00	**2.90E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No
BA-140	2007	-5.14E+00	7.08E+00	**1.14E+01**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No
LA-140	2007	-2.92E-01	2.19E+00	**3.60E+00**	pCi/L		3569.7	ml	04/27/06 19:20	05/01/06	53648	Sec	U		No

Sample ID: **WG-BYR-042806-SS-49** Collect Start: 04/28/2006 09:40 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/29/2006 % Moisture:
LIMS Number: L28439-2

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	1.30E+02	1.06E+02	**1.60E+02**	pCi/L		10	ml		05/04/06	60	M	U		

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

05/08/06 11:22

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28439

Byron Station

Edward Steinke

EX001-3ESPBYRON-06

Sample ID: **WG-BYR-042806-KD-48** Collect Start: 04/28/2006 09:38 Matrix: Ground Water (WG)
Station: Collect Stop: Volume:
Description: Receive Date: 04/29/2006 % Moisture:
LIMS Number: L28439-3

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values		
H-3	2010	2.83E+01	9.84E+01	**1.59E+02**	pCi/L		10	ml		05/04/06	60	M	U		
TOTAL SR	2018	-2.63E-01	4.27E-01	**7.76E-01**	pCi/L		450	ml	04/28/06 09:38	05/05/06	300	M	U		
K-40	2007	**4.04E+01**	2.33E+01	2.02E+01	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	+		Yes
MN-54	2007	1.11E+00	1.28E+00	**2.25E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No
CO-58	2007	-2.28E+00	1.38E+00	**2.18E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No
FE-59	2007	-6.52E-01	2.63E+00	**4.39E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No
ZN-65	2007	2.18E+01	3.97E+00	**6.83E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U*		No
NB-95	2007	4.16E+00	1.69E+00	**2.61E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U*		No
ZR-95	2007	3.94E-01	2.46E+00	**3.87E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No
CS-134	2007	2.50E+01	2.79E+00	**3.75E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U*		No
CS-137	2007	1.52E+00	1.66E+00	**2.45E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No
BA-140	2007	2.77E+00	5.71E+00	**9.81E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No
LA-140	2007	1.41E+00	1.75E+00	**3.07E+00**	pCi/L		3606.54	ml	04/28/06 09:38	05/01/06	54479	Sec	U		No

Flag Values
U = Compound/Analyte not detected or less than 3 sigma
\+ = Activity concentration exceeds MDC and 3 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

QC Summary Report for L28439

5/8/2006 11:40:09AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

H-3

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3933-1	H-3	WO	05/04/2006 7:33	< 1.460E+00	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3933-2	H-3	WO	05/04/2006 8:37	5.05E+002	5.110E+02	pCi/Total	101.2	70-130	+	P

Spike ID: 3H-041706-1
Spike conc: 5.05E+002
Spike Vol: 1.00E+000

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3933-3 L28431-19	H-3	WG	05/04/2006 8:47	< 1.640E+02	< 1.530E+02	pCi/L		<30	**	NE

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28439

5/8/2006 11:40:09AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

L28439 **H-3**

Associated Samples for **WG3933**

SAMPLENUM	CLIENTID
L28439-1	WG-BYR-042706-SS-47
L28439-2	WG-BYR-042806-SS-49
L28439-3	WG-BYR-042806-KD-48

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28439

5/8/2006 11:40:09AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

SR-90

Method Blank Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Blank Result	Units	Qualifier	P/F
WG3946-1	SR-90	WO	05/05/2006 22:18	< 4.170E-01	pCi/Total	U	P

LCS Sample Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Spike Value	LCS Result	Units	Spike Recovery	Range	Qualifier	P/F
WG3946-2	SR-90	WO	05/05/2006 22:18	5.84E+001	5.830E+01	pCi/Total	99.9	70-130	+	P

Spike ID: 90SR-011905
Spike conc: 2.34E+002
Spike Vol: 2.50E-001

L28439 SR-90 (FAST)

Associated Samples for WG3946

SAMPLENUM	CLIENTID
L28439-1	WG-BYR-042706-SS-47
L28439-3	WG-BYR-042806-KD-48

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

QC Summary Report for L28439

5/8/2006 11:40:09AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

TOTAL SR

Duplicate Summary

TBE Sample ID	Radionuclide	Matrix	Count Date/Time	Original Result	DUP Result	Units	RPD	Range	Qualifier	P/F
WG3946-3	TOTAL SR	WG	05/05/2006 22:18	< 1.160E+00	< 7.280E-01	pCi/L		<30	**	NE
L28439-1										

L28439 **SR-90 (FAST)**

Associated Samples for **WG3946**

SAMPLENUM	CLIENTID
L28439-1	WG-BYR-042706-SS-47
L28439-3	WG-BYR-042806-KD-48

+	Positive Result
U	Compound/analyte was analyzed, peak not identified and/or not detected above MDC
*	< 5 times the MDC are not evaluated
**	Nuclide not detected
***	Spiking level < 5 times activity
P	Pass
F	Fail
NE	Not evaluated

Raw Data

Raw Data Sheet (rawdata)
May 08 2006, 11:35 am

Work Order: *L28439* Customer: *Exelon*

Nuclide: *H-3* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28439-1		H-3					0		04-may-06 20:49	LS7	102	60	1.71	60	.224		DW
WG-BYR-042706-SS-47				10 ml													
Activity: -2.02E+00	Error: 9.62E+01		MDC: 1.59E+02 *														
L28439-2		H-3					0		04-may-06 21:52	LS7	141	60	1.71	60	.222		DW
WG-BYR-042806-SS-49				10 ml													
Activity: 1.3E+02	Error: 1.06E+02		MDC: 1.6E+02 *														
L28439-3		H-3					0		04-may-06 22:56	LS7	111	60	1.71	60	.223		DW
WG-BYR-042806-KD-48				10 ml													
Activity: 2.83E+01	Error: 9.84E+01		MDC: 1.59E+02 *														

Raw Data Sheet (rawdata)
May 08 2006, 11:35 am

Work Order: *L28439* Customer: *Exelon*

Nuclide: *SR-90 (FAST)* Project : *EX001-3ESPBYRON-06*

Sample ID / Client ID	Run #	Analysis	Reference Date/time	Volume/ Aliquot	Scavenge Date/time	Milking Date/time	Mount Weight	Recovery	Count Date/time	Counter ID	Total counts	Sample dt(min)	Bkg counts	Bkg dt(min)	Eff.	Decay & Ingrowth Factor	Analyst
L28439-1		TOTAL SR	27-apr-06		05-may-06		0		05-may-06	Y2A	210	300	280	400	.349	.999	GK
WG-BYR-042706-SS-47			19:20	450 ml	14:45			55.91	22:18								
Activity: 0E+00	Error: 6.57E-01		MDC: 1.16E+00 *														
L28439-3		TOTAL SR	28-apr-06		05-may-06		0		05-may-06	Y2B	212	300	315	400	.356	1	GK
WG-BYR-042806-KD-48			09:38	450 ml	14:45			86.56	22:18								
Activity: -2.63E-01	Error: 4.27E-01		MDC: 7.76E-01 *														

Sec. Review: Analyst: KG LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 2-MAY-2006 08:20:18.13
TBE10 12892256 HpGe ********** Aquisition Date/Time: 1-MAY-2006 17:25:53.47

LIMS No., Customer Name, Client ID: WG L28439-1 BYRON

Sample ID : 10L28439-1
Sample Type : WG
Quantity : 3.56970E+00 L
Start Channel : 80 Energy Tol : 1.30000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 27-APR-2006 19:20:00.
Geometry : 1035L091004
BKGFILE : 10BG041406MT
Real Time : 0 14:54:17.73
Live time : 0 14:54:07.98

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	53.23	217	1449	1.27	105.69	2.69E-01	4.05E-03	29.7	1.32E+00
2	1	66.33*	373	2172	1.45	131.89	6.34E-01	6.95E-03	23.4	1.29E+00
3	2	74.92*	187	2029	1.26	149.09	8.84E-01	3.49E-03	46.7	2.55E+00
4	2	77.06	594	1498	0.94	153.38	9.42E-01	1.11E-02	11.2	
5	5	87.17*	155	1398	1.00	173.60	1.19E+00	2.89E-03	42.5	1.40E+00
6	1	92.76*	50	1921	1.16	184.79	1.30E+00	9.33E-04	167.0	2.58E+00
7	1	139.86	514	1988	1.47	279.06	1.68E+00	9.57E-03	16.2	2.49E+00
8	1	186.02*	142	1630	1.69	371.44	1.59E+00	2.65E-03	56.9	1.51E+00
9	1	198.41*	72	1483	1.13	396.23	1.55E+00	1.35E-03	107.2	1.65E+00
10	1	238.64*	75	1047	1.30	476.75	1.40E+00	1.41E-03	85.4	1.56E+00
11	1	242.14	654	990	1.40	483.74	1.39E+00	1.22E-02	9.3	
12	1	295.31*	1310	1204	1.52	590.17	1.21E+00	2.44E-02	6.3	6.62E+00
13	1	351.96*	2035	925	1.27	703.56	1.07E+00	3.79E-02	4.0	6.86E-01
14	1	596.15	178	391	1.94	1192.35	7.06E-01	3.31E-03	22.9	2.09E+00
15	1	609.32*	1721	463	1.53	1218.71	6.94E-01	3.21E-02	3.9	9.30E-01
16	1	768.50	160	334	2.12	1537.38	5.79E-01	2.98E-03	27.0	1.28E+00
17	1	868.27	79	220	1.78	1737.10	5.26E-01	1.47E-03	41.0	1.68E+00
18	1	911.27*	32	234	2.42	1823.21	5.07E-01	6.05E-04	109.8	2.41E+00
19	1	934.82	122	275	3.10	1870.35	4.97E-01	2.27E-03	32.0	3.00E+00
20	1	1120.37*	362	198	2.16	2241.88	4.33E-01	6.74E-03	11.8	2.32E+00
21	1	1238.16	208	184	2.01	2477.74	4.01E-01	3.87E-03	16.9	1.16E+00
22	1	1377.83	100	185	2.02	2757.44	3.71E-01	1.86E-03	31.8	1.48E+00
23	1	1408.44	78	102	3.28	2818.74	3.65E-01	1.46E-03	28.7	1.43E+00
24	1	1460.97*	37	131	2.37	2923.96	3.56E-01	6.86E-04	100.5	2.97E+00
25	1	1729.64	89	104	2.53	3462.06	3.17E-01	1.66E-03	27.9	1.51E+00
26	1	1764.65*	252	155	1.97	3532.20	3.13E-01	4.69E-03	14.3	1.63E+00
27	1	1847.96	62	59	1.86	3699.08	3.04E-01	1.15E-03	26.6	3.98E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	37	10.67*	3.559E-01	1.368E+01	1.368E+01	200.98
RA-226	186.21	142	3.28*	1.594E+00	3.836E+01	3.836E+01	113.76
AC-228	835.50	------	1.75	5.422E-01	------	Line Not Found	------

	911.07	32	27.70*	5.069E-01	3.262E+00	3.266E+00	219.56
TH-228	238.63	75	44.60*	1.401E+00	1.705E+00	1.712E+00	170.70
	240.98	654	3.95	1.388E+00	1.683E+02	1.690E+02	18.51
U-235	143.76	------	10.50*	1.683E+00	------	Line Not Found	------
	163.35	------	4.70	1.659E+00	------	Line Not Found	------
	185.71	142	54.00	1.594E+00	2.330E+00	2.330E+00	113.76
	205.31	------	4.70	1.524E+00	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 10L28439-1 Acquisition date : 1-MAY-2006 17:25:53

Total number of lines in spectrum	27	
Number of unidentified lines	21	
Number of lines tentatively identified by NID	6	22.22%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.368E+01	1.368E+01	2.749E+01	200.98	
RA-226	1600.00Y	1.00	3.836E+01	3.836E+01	4.364E+01	113.76	
AC-228	5.75Y	1.00	3.262E+00	3.266E+00	7.171E+00	219.56	
TH-228	1.91Y	1.00	1.705E+00	1.712E+00	2.923E+00	170.70	
U-235	7.04E+08Y	1.00	2.330E+00	2.330E+00	2.651E+00	113.76	K
			---------	---------			
	Total Activity :		5.934E+01	5.935E+01			
	Grand Total Activity :		5.934E+01	5.935E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : 10L28439-1 Acquisition date : 1-MAY-2006 17:25:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	53.23	217	1449	1.27	105.69	103	7	4.05E-03	59.3	2.69E-01	
1	66.33	373	2172	1.45	131.89	128	8	6.95E-03	46.8	6.34E-01	
2	74.92	187	2029	1.26	149.09	142	16	3.49E-03	93.5	8.84E-01	
2	77.06	594	1498	0.94	153.38	142	16	1.11E-02	22.3	9.42E-01	
5	87.17	155	1398	1.00	173.60	163	14	2.89E-03	85.1	1.19E+00	
1	92.76	50	1921	1.16	184.79	181	8	9.33E-04	****	1.30E+00	
1	139.86	514	1988	1.47	279.06	275	9	9.57E-03	32.4	1.68E+00	
1	198.41	72	1483	1.13	396.23	393	8	1.35E-03	****	1.55E+00	
1	295.31	1310	1204	1.52	590.17	584	13	2.44E-02	12.6	1.21E+00	
1	351.96	2035	925	1.27	703.56	698	13	3.79E-02	8.0	1.07E+00	
1	596.15	178	391	1.94	1192.35	1187	11	3.31E-03	45.7	7.06E-01	
1	609.32	1721	463	1.53	1218.71	1210	16	3.21E-02	7.8	6.94E-01	
1	768.50	160	334	2.12	1537.38	1530	16	2.98E-03	53.9	5.79E-01	
1	868.27	79	220	1.78	1737.10	1730	13	1.47E-03	82.0	5.26E-01	
1	934.82	122	275	3.10	1870.35	1861	16	2.27E-03	63.9	4.97E-01	
1	1120.37	362	198	2.16	2241.88	2233	19	6.74E-03	23.5	4.33E-01	
1	1238.16	208	184	2.01	2477.74	2468	18	3.87E-03	33.8	4.01E-01	
1	1377.83	100	185	2.02	2757.44	2750	16	1.86E-03	63.7	3.71E-01	
1	1408.44	78	102	3.28	2818.74	2814	13	1.46E-03	57.4	3.65E-01	T
1	1729.64	89	104	2.53	3462.06	3455	16	1.66E-03	55.9	3.17E-01	
1	1764.65	252	155	1.97	3532.20	3524	19	4.69E-03	28.6	3.13E-01	
1	1847.96	62	59	1.86	3699.08	3694	10	1.15E-03	53.2	3.04E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	27	
Number of unidentified lines	21	
Number of lines tentatively identified by NID	6	22.22%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	1.368E+01	1.368E+01	2.749E+01	200.98	
RA-226	1600.00Y	1.00	3.836E+01	3.836E+01	4.364E+01	113.76	
AC-228	5.75Y	1.00	3.262E+00	3.266E+00	7.171E+00	219.56	
TH-228	1.91Y	1.00	1.705E+00	1.712E+00	2.923E+00	170.70	
			---------	---------			
	Total Activity :		5.701E+01	5.702E+01			
	Grand Total Activity :		5.701E+01	5.702E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	1.368E+01	2.749E+01	2.774E+01	0.000E+00	0.493
RA-226	3.836E+01	4.364E+01	6.561E+01	0.000E+00	0.585
AC-228	3.266E+00	7.171E+00	9.441E+00	0.000E+00	0.346
TH-228	1.712E+00	2.923E+00	4.972E+00	0.000E+00	0.344

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	3.875E+00		1.410E+01	2.336E+01	0.000E+00	0.166
NA-24	-2.520E+02		2.177E+02	2.750E+02	0.000E+00	-0.916
CR-51	-1.365E+01		1.509E+01	2.428E+01	0.000E+00	-0.562
MN-54	4.618E-01		1.608E+00	2.644E+00	0.000E+00	0.175
CO-57	-3.435E-01		1.620E+00	2.681E+00	0.000E+00	-0.128
CO-58	1.028E-01		1.634E+00	2.673E+00	0.000E+00	0.038
FE-59	3.723E+00		3.247E+00	5.538E+00	0.000E+00	0.672
CO-60	5.118E-02		1.636E+00	2.698E+00	0.000E+00	0.019
ZN-65	2.144E+01		4.754E+00	7.876E+00	0.000E+00	2.722
SE-75	-2.049E+00		2.217E+00	3.612E+00	0.000E+00	-0.567
SR-85	1.811E+01		1.890E+00	3.645E+00	0.000E+00	4.968
Y-88	-3.298E-02		1.852E+00	2.737E+00	0.000E+00	-0.012
NB-94	-9.202E-01		1.568E+00	2.541E+00	0.000E+00	-0.362
NB-95	3.500E+00		1.963E+00	2.930E+00	0.000E+00	1.194
ZR-95	-1.532E+00		3.169E+00	4.720E+00	0.000E+00	-0.324
MO-99	-2.196E+01		3.382E+01	5.440E+01	0.000E+00	-0.404
RU-103	2.315E+00		1.672E+00	2.840E+00	0.000E+00	0.815
RU-106	-4.459E+00		1.450E+01	2.324E+01	0.000E+00	-0.192
AG-110m	-2.044E+00		1.567E+00	2.495E+00	0.000E+00	-0.819
SN-113	6.151E-01		2.103E+00	3.525E+00	0.000E+00	0.174
SB-124	-3.954E-01		3.733E+00	2.648E+00	0.000E+00	-0.149
SB-125	7.190E-01		4.551E+00	7.572E+00	0.000E+00	0.095
TE-129M	1.943E+01		1.967E+01	3.320E+01	0.000E+00	0.585
I-131	-1.506E+00		2.363E+00	3.786E+00	0.000E+00	-0.398
BA-133	2.838E+01		2.980E+00	5.071E+00	0.000E+00	5.598
CS-134	2.191E+01		3.214E+00	4.015E+00	0.000E+00	5.456
CS-136	2.298E-01		1.892E+00	3.100E+00	0.000E+00	0.074
CS-137	1.410E+00		1.714E+00	2.904E+00	0.000E+00	0.486
CE-139	1.926E+00		1.664E+00	2.766E+00	0.000E+00	0.696
BA-140	-5.138E+00		7.083E+00	1.135E+01	0.000E+00	-0.453
LA-140	-2.922E-01		2.191E+00	3.604E+00	0.000E+00	-0.081
CE-141	3.664E+00		3.514E+00	5.034E+00	0.000E+00	0.728
CE-144	-1.087E+01		1.482E+01	2.065E+01	0.000E+00	-0.526
EU-152	-8.684E+00		6.311E+00	8.360E+00	0.000E+00	-1.039
EU-154	-2.520E+00		3.390E+00	5.573E+00	0.000E+00	-0.452
TH-232	3.262E+00	+	7.161E+00	1.034E+01	0.000E+00	0.315
U-235	1.971E+01		1.488E+01	2.144E+01	0.000E+00	0.919
U-238	1.615E+02		1.781E+02	3.027E+02	0.000E+00	0.534
AM-241	-3.999E+01		1.890E+01	2.254E+01	0.000E+00	-1.774

```
A,10L28439-1      ,05/02/2006 08:20,04/27/2006 19:20,   3.570E+00,WG L28439-1 BY
B,10L28439-1      ,LIBD                ,06/09/2005 08:04,1035L091004
C,K-40     ,YES,   1.368E+01,   2.749E+01,   2.774E+01,,    0.493
C,RA-226   ,YES,   3.836E+01,   4.364E+01,   6.561E+01,,    0.585
C,AC-228   ,YES,   3.266E+00,   7.171E+00,   9.441E+00,,    0.346
C,TH-228   ,YES,   1.712E+00,   2.923E+00,   4.972E+00,,    0.344
C,BE-7     ,NO ,   3.875E+00,   1.410E+01,   2.336E+01,,    0.166
C,NA-24    ,NO ,  -2.520E+02,   2.177E+02,   2.750E+02,,   -0.916
C,CR-51    ,NO ,  -1.365E+01,   1.509E+01,   2.428E+01,,   -0.562
C,MN-54    ,NO ,   4.618E-01,   1.608E+00,   2.644E+00,,    0.175
C,CO-57    ,NO ,  -3.435E-01,   1.620E+00,   2.681E+00,,   -0.128
C,CO-58    ,NO ,   1.028E-01,   1.634E+00,   2.673E+00,,    0.038
C,FE-59    ,NO ,   3.723E+00,   3.247E+00,   5.538E+00,,    0.672
C,CO-60    ,NO ,   5.118E-02,   1.636E+00,   2.698E+00,,    0.019
C,ZN-65    ,NO ,   2.144E+01,   4.754E+00,   7.876E+00,,    2.722
C,SE-75    ,NO ,  -2.049E+00,   2.217E+00,   3.612E+00,,   -0.567
C,SR-85    ,NO ,   1.811E+01,   1.890E+00,   3.645E+00,,    4.968
C,Y-88     ,NO ,  -3.298E-02,   1.852E+00,   2.737E+00,,   -0.012
C,NB-94    ,NO ,  -9.202E-01,   1.568E+00,   2.541E+00,,   -0.362
C,NB-95    ,NO ,   3.500E+00,   1.963E+00,   2.930E+00,,    1.194
C,ZR-95    ,NO ,  -1.532E+00,   3.169E+00,   4.720E+00,,   -0.324
C,MO-99    ,NO ,  -2.196E+01,   3.382E+01,   5.440E+01,,   -0.404
C,RU-103   ,NO ,   2.315E+00,   1.672E+00,   2.840E+00,,    0.815
C,RU-106   ,NO ,  -4.459E+00,   1.450E+01,   2.324E+01,,   -0.192
C,AG-110m  ,NO ,  -2.044E+00,   1.567E+00,   2.495E+00,,   -0.819
C,SN-113   ,NO ,   6.151E-01,   2.103E+00,   3.525E+00,,    0.174
C,SB-124   ,NO ,  -3.954E-01,   3.733E+00,   2.648E+00,,   -0.149
C,SB-125   ,NO ,   7.190E-01,   4.551E+00,   7.572E+00,,    0.095
C,TE-129M  ,NO ,   1.943E+01,   1.967E+01,   3.320E+01,,    0.585
C,I-131    ,NO ,  -1.506E+00,   2.363E+00,   3.786E+00,,   -0.398
C,BA-133   ,NO ,   2.838E+01,   2.980E+00,   5.071E+00,,    5.598
C,CS-134   ,NO ,   2.191E+01,   3.214E+00,   4.015E+00,,    5.456
C,CS-136   ,NO ,   2.298E-01,   1.892E+00,   3.100E+00,,    0.074
C,CS-137   ,NO ,   1.410E+00,   1.714E+00,   2.904E+00,,    0.486
C,CE-139   ,NO ,   1.926E+00,   1.664E+00,   2.766E+00,,    0.696
C,BA-140   ,NO ,  -5.138E+00,   7.083E+00,   1.135E+01,,   -0.453
C,LA-140   ,NO ,  -2.922E-01,   2.191E+00,   3.604E+00,,   -0.081
C,CE-141   ,NO ,   3.664E+00,   3.514E+00,   5.034E+00,,    0.728
C,CE-144   ,NO ,  -1.087E+01,   1.482E+01,   2.065E+01,,   -0.526
C,EU-152   ,NO ,  -8.684E+00,   6.311E+00,   8.360E+00,,   -1.039
C,EU-154   ,NO ,  -2.520E+00,   3.390E+00,   5.573E+00,,   -0.452
C,TH-232   ,NO ,   3.262E+00,   7.161E+00,   1.034E+01,,    0.315
C,U-235    ,NO ,   1.971E+01,   1.488E+01,   2.144E+01,,    0.919
C,U-238    ,NO ,   1.615E+02,   1.781E+02,   3.027E+02,,    0.534
C,AM-241   ,NO ,  -3.999E+01,   1.890E+01,   2.254E+01,,   -1.774
```

Sec. Review: Analyst: LIMS: ___

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 2-MAY-2006 08:21:09.85
TBE23 03017322 HpGe ********** Aquisition Date/Time: 1-MAY-2006 17:12:20.68

LIMS No., Customer Name, Client ID: WG L28439-3 BYRON

Sample ID : 23L28439-3
Sample Type : WG
Quantity : 3.60650E+00 L
Start Channel : 50 Energy Tol : 1.50000
End Channel : 4090 Pk Srch Sens: 5.00000
MDA Constant : 0.00 Library Used: LIBD

Smple Date: 28-APR-2006 09:38:00.
Geometry : 2335L090704
BKGFILE : 23BG041406MT
Real Time : 0 15:08:36.79
Live time : 0 15:07:58.53

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	9	33.83*	218	62	1.12	67.83	9.45E-02	4.00E-03	18.6	7.87E+00
2	9	35.49*	565	662	2.16	71.14	1.21E-01	1.04E-02	15.4	
3	9	37.05	454	877	1.80	74.25	1.50E-01	8.33E-03	16.7	
4	9	39.39*	282	1544	2.18	78.93	1.99E-01	5.17E-03	31.5	
5	9	42.12	115	1234	1.13	84.39	2.66E-01	2.12E-03	46.6	
6	0	66.30	226	2380	0.98	132.69	1.04E+00	4.15E-03	36.5	
7	2	74.75	701	2319	1.18	149.59	1.29E+00	1.29E-02	12.1	1.00E+00
8	2	77.10	1230	2283	1.09	154.28	1.35E+00	2.26E-02	7.1	
9	0	86.80	165	2782	1.07	173.66	1.58E+00	3.02E-03	55.9	
10	0	92.68*	66	2659	1.29	185.40	1.70E+00	1.21E-03	152.2	
11	0	139.66*	298	2390	1.05	279.27	2.05E+00	5.47E-03	30.8	
12	0	185.43*	39	1935	1.15	370.75	1.95E+00	7.12E-04	224.5	
13	0	198.46*	223	1856	1.30	396.79	1.90E+00	4.09E-03	37.6	
14	2	238.53*	104	1356	1.26	476.85	1.72E+00	1.92E-03	69.4	9.13E-01
15	2	241.81	886	1164	1.15	483.40	1.71E+00	1.63E-02	7.2	
16	0	295.08*	1945	1384	1.33	589.88	1.50E+00	3.57E-02	4.6	
17	0	351.78*	3328	1051	1.26	703.22	1.32E+00	6.11E-02	2.7	
18	0	583.31*	6	459	1.06	1166.06	8.88E-01	1.15E-04	718.9	
19	0	595.64	222	561	1.25	1190.71	8.74E-01	4.07E-03	23.6	
20	0	609.01*	2823	541	1.48	1217.45	8.59E-01	5.18E-02	2.7	
21	0	665.57	63	303	1.34	1330.54	8.03E-01	1.16E-03	51.6	
22	0	768.35	312	411	1.69	1536.08	7.22E-01	5.72E-03	15.6	
23	0	785.46	46	291	0.85	1570.29	7.10E-01	8.40E-04	71.2	
24	0	911.23*	17	234	1.66	1821.86	6.38E-01	3.16E-04	189.7	
25	0	933.80	229	238	1.98	1867.00	6.27E-01	4.20E-03	15.4	
26	0	1120.05*	614	208	1.65	2239.60	5.53E-01	1.13E-02	6.8	
27	0	1238.23	246	162	1.69	2476.08	5.16E-01	4.52E-03	12.2	
28	0	1377.79	204	134	2.15	2755.39	4.79E-01	3.75E-03	13.4	
29	0	1408.72	116	152	4.66	2817.30	4.71E-01	2.13E-03	25.7	
30	0	1460.60*	144	162	1.73	2921.16	4.59E-01	2.65E-03	28.8	
31	0	1508.58	68	94	2.11	3017.19	4.49E-01	1.25E-03	28.8	
32	0	1729.28	122	82	2.18	3459.08	4.07E-01	2.24E-03	17.0	
33	0	1764.05*	531	61	1.77	3528.71	4.01E-01	9.74E-03	5.9	
34	0	1848.59	99	84	2.35	3698.02	3.86E-01	1.82E-03	25.4	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/L	Decay Corr pCi/L	2-Sigma %Error
K-40	1460.81	144	10.67*	4.595E-01	4.044E+01	4.044E+01	57.53
RA-226	186.21	39	3.28*	1.948E+00	8.346E+00	8.346E+00	449.09
AC-228	835.50	------	1.75	6.790E-01	------	Line Not Found	------
	911.07	17	27.70*	6.382E-01	1.341E+00	1.342E+00	379.38
TH-228	238.63	104	44.60*	1.725E+00	1.868E+00	1.875E+00	138.74
	240.98	886	3.95	1.711E+00	1.804E+02	1.810E+02	14.48
TH-232	583.14	6	30.25	8.882E-01	3.214E-01	3.214E-01	1437.81
	911.07	17	27.70*	6.382E-01	1.341E+00	1.341E+00	379.38
	969.11	------	16.60	6.111E-01	------	Line Not Found	------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 23L28439-3 Acquisition date : 1-MAY-2006 17:12:20

Total number of lines in spectrum	34	
Number of unidentified lines	27	
Number of lines tentatively identified by NID	7	20.59%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/L	Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	4.044E+01	4.044E+01	2.327E+01	57.53	
RA-226	1600.00Y	1.00	8.346E+00	8.346E+00	37.48E+00	449.09	
AC-228	5.75Y	1.00	1.341E+00	1.342E+00	5.092E+00	379.38	
TH-228	1.91Y	1.00	1.868E+00	1.875E+00	2.601E+00	138.74	
TH-232	1.41E+10Y	1.00	1.341E+00	1.341E+00	5.086E+00	379.38	
			---------	---------			
	Total Activity :		5.334E+01	5.335E+01			
	Grand Total Activity :		5.334E+01	5.335E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 23L28439-3
Acquisition date : 1-MAY-2006 17:12:20

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
9	33.83	218	62	1.12	67.83	65	24	4.00E-03	37.3	9.45E-02	
9	35.49	565	662	2.16	71.14	65	24	1.04E-02	30.8	1.21E-01	
9	37.05	454	877	1.80	74.25	65	24	8.33E-03	33.4	1.50E-01	
9	39.39	282	1544	2.18	78.93	65	24	5.17E-03	63.0	1.99E-01	
9	42.12	115	1234	1.13	84.39	65	24	2.12E-03	93.2	2.66E-01	
0	66.30	226	2380	0.98	132.69	130	7	4.15E-03	73.1	1.04E+00	
2	74.75	701	2319	1.18	149.59	144	15	1.29E-02	24.1	1.29E+00	
2	77.10	1230	2283	1.09	154.28	144	15	2.26E-02	14.2	1.35E+00	
0	86.80	165	2782	1.07	173.66	171	8	3.02E-03	****	1.58E+00	
0	92.68	66	2659	1.29	185.40	182	8	1.21E-03	****	1.70E+00	
0	139.66	298	2390	1.05	279.27	276	8	5.47E-03	61.6	2.05E+00	
0	198.46	223	1856	1.30	396.79	393	8	4.09E-03	75.1	1.90E+00	
0	295.08	1945	1384	1.33	589.88	585	11	3.57E-02	9.2	1.50E+00	
0	351.78	3328	1051	1.26	703.22	698	11	6.11E-02	5.4	1.32E+00	
0	595.64	222	561	1.25	1190.71	1184	14	4.07E-03	47.3	8.74E-01	
0	609.01	2823	541	1.48	1217.45	1210	14	5.18E-02	5.5	8.59E-01	
0	665.57	63	303	1.34	1330.54	1325	9	1.16E-03	****	8.03E-01	
0	768.35	312	411	1.69	1536.08	1528	16	5.72E-03	31.2	7.22E-01	
0	785.46	46	291	0.85	1570.29	1567	10	8.40E-04	****	7.10E-01	
0	933.80	229	238	1.98	1867.00	1861	13	4.20E-03	30.8	6.27E-01	
0	1120.05	614	208	1.65	2239.60	2234	14	1.13E-02	13.6	5.53E-01	
0	1238.23	246	162	1.69	2476.08	2470	12	4.52E-03	24.4	5.16E-01	
0	1377.79	204	134	2.15	2755.39	2749	12	3.75E-03	26.9	4.79E-01	
0	1408.72	116	152	4.66	2817.30	2809	16	2.13E-03	51.4	4.71E-01	T
0	1508.58	68	94	2.11	3017.19	3014	10	1.25E-03	57.7	4.49E-01	
0	1729.28	122	82	2.18	3459.08	3453	11	2.24E-03	34.0	4.07E-01	
0	1764.05	531	61	1.77	3528.71	3522	15	9.74E-03	11.8	4.01E-01	
0	1848.59	99	84	2.35	3698.02	3689	19	1.82E-03	50.8	3.86E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	34	
Number of unidentified lines	27	
Number of lines tentatively identified by NID	7	20.59%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/L	Wtd Mean Decay Corr pCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	4.044E+01	4.044E+01	2.327E+01	57.53	
RA-226	1600.00Y	1.00	8.346E+00	8.346E+00	37.48E+00	449.09	
AC-228	5.75Y	1.00	1.019E+00	1.020E+00	6.881E+00	674.28	
TH-228	1.91Y	1.00	1.868E+00	1.875E+00	2.601E+00	138.74	
TH-232	1.41E+10Y	1.00	3.214E-01	3.214E-01	46.22E-01	1437.81	
	Total Activity :		5.200E+01	5.201E+01			

Grand Total Activity : 5.200E+01 5.201E+01

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Interference Report

Interfering		Interfered	
Nuclide	Line	Nuclide	Line
TH-232	911.07	AC-228	911.07

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/L)	Act error	MDA (pCi/L)	MDA error	Act/MDA
K-40	4.044E+01	2.327E+01	2.017E+01	0.000E+00	2.005
RA-226	8.346E+00	3.748E+01	5.874E+01	0.000E+00	0.142
AC-228	1.020E+00	6.881E+00	7.906E+00	0.000E+00	0.129
TH-228	1.875E+00	2.601E+00	4.227E+00	0.000E+00	0.444
TH-232	3.214E-01	4.622E+00	8.607E+00	0.000E+00	0.037

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/L)	K.L. Ided	Act error	MDA (pCi/L)	MDA error	Act/MDA
BE-7	8.762E+00		1.154E+01	1.950E+01	0.000E+00	0.449
NA-24	-3.002E+01		8.573E+01	1.200E+02	0.000E+00	-0.250
CR-51	-1.470E+01		1.266E+01	2.097E+01	0.000E+00	-0.701
MN-54	1.113E+00		1.283E+00	2.246E+00	0.000E+00	0.495
CO-57	-5.642E-01		1.478E+00	2.404E+00	0.000E+00	-0.235
CO-58	-2.281E+00		1.381E+00	2.179E+00	0.000E+00	-1.047
FE-59	-6.517E-01		2.634E+00	4.387E+00	0.000E+00	-0.149
CO-60	1.817E-01		1.346E+00	2.309E+00	0.000E+00	0.079
ZN-65	2.179E+01		3.974E+00	6.833E+00	0.000E+00	3.189
SE-75	-8.844E-01		1.912E+00	3.127E+00	0.000E+00	-0.283
SR-85	9.559E+00		1.534E+00	2.825E+00	0.000E+00	3.384
Y-88	5.125E-01		1.459E+00	2.261E+00	0.000E+00	0.227
NB-94	7.190E-01		1.275E+00	2.172E+00	0.000E+00	0.331
NB-95	4.162E+00		1.690E+00	2.614E+00	0.000E+00	1.592
ZR-95	3.944E-01		2.460E+00	3.870E+00	0.000E+00	0.102
MO-99	6.480E+00		2.399E+01	4.050E+01	0.000E+00	0.160
RU-103	1.425E+00		1.435E+00	2.431E+00	0.000E+00	0.586
RU-106	5.298E-01		1.163E+01	1.970E+01	0.000E+00	0.027
AG-110m	-1.406E-01		1.471E+00	2.088E+00	0.000E+00	-0.067
SN-113	-3.370E-01		1.792E+00	2.991E+00	0.000E+00	-0.113
SB-124	-1.636E+00		3.158E+00	2.279E+00	0.000E+00	-0.718
SB-125	4.381E-01		4.016E+00	6.713E+00	0.000E+00	0.065
TE-129M	1.683E+00		1.620E+01	2.700E+01	0.000E+00	0.062
I-131	8.376E-01		1.865E+00	3.161E+00	0.000E+00	0.265
BA-133	1.441E+01		2.379E+00	3.880E+00	0.000E+00	3.713
CS-134	2.497E+01		2.794E+00	3.747E+00	0.000E+00	6.663
CS-136	1.662E+00		1.538E+00	2.649E+00	0.000E+00	0.627
CS-137	1.515E+00		1.659E+00	2.452E+00	0.000E+00	0.618
CE-139	-6.831E-01		1.469E+00	2.451E+00	0.000E+00	-0.279
BA-140	2.768E+00		5.705E+00	9.806E+00	0.000E+00	0.282
LA-140	1.409E+00		1.750E+00	3.065E+00	0.000E+00	0.459
CE-141	9.832E-01		3.088E+00	4.482E+00	0.000E+00	0.219

CE-144	3.155E+00	1.346E+01	1.878E+01	0.000E+00	0.168
EU-152	-6.725E+00	5.170E+00	7.156E+00	0.000E+00	-0.940
EU-154	3.652E-01	3.087E+00	5.048E+00	0.000E+00	0.072
U-235	-1.721E+00	1.365E+01	1.914E+01	0.000E+00	-0.090
U-238	6.094E+01	1.515E+02	2.473E+02	0.000E+00	0.246
AM-241	-1.089E+01	8.468E+00	1.330E+01	0.000E+00	-0.819

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A,23L28439-3      ,05/02/2006 08:21,04/28/2006 09:38,   3.606E+00,WG L28439-3 BY
B,23L28439-3      ,LIBD                ,06/24/2005 07:59,2335L090704
C,K-40     ,YES,   4.044E+01,   2.327E+01,   2.017E+01,,    2.005
C,RA-226   ,YES,   8.346E+00,   3.748E+01,   5.874E+01,,    0.142
C,AC-228   ,YES,   1.020E+00,   6.881E+00,   7.906E+00,,    0.129
C,TH-228   ,YES,   1.875E+00,   2.601E+00,   4.227E+00,,    0.444
C,TH-232   ,YES,   3.214E-01,   4.622E+00,   8.607E+00,,    0.037
C,BE-7     ,NO ,   8.762E+00,   1.154E+01,   1.950E+01,,    0.449
C,NA-24    ,NO ,  -3.002E+01,   8.573E+01,   1.200E+02,,   -0.250
C,CR-51    ,NO ,  -1.470E+01,   1.266E+01,   2.097E+01,,   -0.701
C,MN-54    ,NO ,   1.113E+00,   1.283E+00,   2.246E+00,,    0.495
C,CO-57    ,NO ,  -5.642E-01,   1.478E+00,   2.404E+00,,   -0.235
C,CO-58    ,NO ,  -2.281E+00,   1.381E+00,   2.179E+00,,   -1.047
C,FE-59    ,NO ,  -6.517E-01,   2.634E+00,   4.387E+00,,   -0.149
C,CO-60    ,NO ,   1.817E-01,   1.346E+00,   2.309E+00,,    0.079
C,ZN-65    ,NO ,   2.179E+01,   3.974E+00,   6.833E+00,,    3.189
C,SE-75    ,NO ,  -8.844E-01,   1.912E+00,   3.127E+00,,   -0.283
C,SR-85    ,NO ,   9.559E+00,   1.534E+00,   2.825E+00,,    3.384
C,Y-88     ,NO ,   5.125E-01,   1.459E+00,   2.261E+00,,    0.227
C,NB-94    ,NO ,   7.190E-01,   1.275E+00,   2.172E+00,,    0.331
C,NB-95    ,NO ,   4.162E+00,   1.690E+00,   2.614E+00,,    1.592
C,ZR-95    ,NO ,   3.944E-01,   2.460E+00,   3.870E+00,,    0.102
C,MO-99    ,NO ,   6.480E+00,   2.399E+01,   4.050E+01,,    0.160
C,RU-103   ,NO ,   1.425E+00,   1.435E+00,   2.431E+00,,    0.586
C,RU-106   ,NO ,   5.298E-01,   1.163E+01,   1.970E+01,,    0.027
C,AG-110m  ,NO ,  -1.406E-01,   1.471E+00,   2.088E+00,,   -0.067
C,SN-113   ,NO ,  -3.370E-01,   1.792E+00,   2.991E+00,,   -0.113
C,SB-124   ,NO ,  -1.636E+00,   3.158E+00,   2.279E+00,,   -0.718
C,SB-125   ,NO ,   4.381E-01,   4.016E+00,   6.713E+00,,    0.065
C,TE-129M  ,NO ,   1.683E+00,   1.620E+01,   2.700E+01,,    0.062
C,I-131    ,NO ,   8.376E-01,   1.865E+00,   3.161E+00,,    0.265
C,BA-133   ,NO ,   1.441E+01,   2.379E+00,   3.880E+00,,    3.713
C,CS-134   ,NO ,   2.497E+01,   2.794E+00,   3.747E+00,,    6.663
C,CS-136   ,NO ,   1.662E+00,   1.538E+00,   2.649E+00,,    0.627
C,CS-137   ,NO ,   1.515E+00,   1.659E+00,   2.452E+00,,    0.618
C,CE-139   ,NO ,  -6.831E-01,   1.469E+00,   2.451E+00,,   -0.279
C,BA-140   ,NO ,   2.768E+00,   5.705E+00,   9.806E+00,,    0.282
C,LA-140   ,NO ,   1.409E+00,   1.750E+00,   3.065E+00,,    0.459
C,CE-141   ,NO ,   9.832E-01,   3.088E+00,   4.482E+00,,    0.219
C,CE-144   ,NO ,   3.155E+00,   1.346E+01,   1.878E+01,,    0.168
C,EU-152   ,NO ,  -6.725E+00,   5.170E+00,   7.156E+00,,   -0.940
C,EU-154   ,NO ,   3.652E-01,   3.087E+00,   5.048E+00,,    0.072
C,U-235    ,NO ,  -1.721E+00,   1.365E+01,   1.914E+01,,   -0.090
C,U-238    ,NO ,   6.094E+01,   1.515E+02,   2.473E+02,,    0.246
C,AM-241   ,NO ,  -1.089E+01,   8.468E+00,   1.330E+01,,   -0.819
```

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Edward Steinke
Byron Station
Exelon Nuclear
4450 N. German Church Road
Byron IL 31010

Report of Analysis/Certificate of Conformance

06/22/2006

LIMS #: L28642
Project ID#: EX001-3EREMPBYRON-05
Received: 05/16/2006
Delivery Date: 06/20/2006
P.O. #: 01000298 REL.#00011
Release #:
SDG #:

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	Station ID(if applicable)
UPSTREAM (CONTROL)	L28642-1	BY-29
UPSTREAM (CONTROL)	L28642-2	BY-29
DISCHARGE AREA	L28642-3	BY-31
DISCHARGE AREA	L28642-4	BY-31

Report of Analysis

06/22/06 09:06

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28642

Byron Station

Edward Steinke

EX001-3EREMPBYRON-05

Sample ID: **UPSTREAM (CONTROL)**
Station: BY-29
Description:
LIMS Number: L28642-1

Collect Start: 05/10/2006 09:00
Collect Stop: 05/10/2006 09:00
Receive Date: 05/16/2006

Matrix: Fish (FI)
Volume:
% Moisture:

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values	
BE-7	2007	-4.85E+01	4.46E+02	**7.62E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
K-40	2007	**3.03E+03**	6.72E+02	4.88E+02	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	+	Yes
MN-54	2007	-5.33E+00	3.52E+01	**6.10E+01**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
CO-58	2007	-2.86E+01	4.40E+01	**7.32E+01**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
FE-59	2007	-5.07E+01	9.98E+01	**1.71E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
CO-60	2007	-3.08E+01	3.53E+01	**5.71E+01**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
ZN-65	2007	1.79E+02	9.45E+01	**1.74E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U*	No
ZRNB-95	2007	6.72E+00	4.85E+01	**8.61E+01**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
RU-103	2007	2.41E+01	6.12E+01	**1.08E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
RU-106	2007	6.76E+01	3.21E+02	**5.73E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
I-131	2007	9.87E+02	9.54E+02	**1.74E+03**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
CS-134	2007	1.71E+02	4.72E+01	**8.72E+01**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U*	No
CS-137	2007	-9.05E+00	3.28E+01	**5.68E+01**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
Ba-La-140	2007	1.09E+02	3.12E+02	**5.98E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
CE-141	2007	1.41E+01	1.03E+02	**1.76E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
CE-144	2007	-1.26E+02	2.10E+02	**3.48E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
RA-226	2007	-4.10E+02	7.20E+02	**1.20E+03**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No
TH-232	2007	7.30E+00	1.17E+02	**2.04E+02**	pCi/kg		281.44	g wet	05/10/06 09:00	06/19/06	5804	Sec	U	No

Comment: 1 Channel Catfish

Flag Values
U = Compound/Analyte not detected or less than 2 sigma
\+ = Activity concentration exceeds MDC and 2 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 2 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Bolded text indicates reportable value.

Report of Analysis

06/22/06 09:06

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28642

Byron Station

Edward Steinke

EX001-3EREMPBYRON-05

Sample ID: **UPSTREAM (CONTROL)**
Station: BY-29
Description:
LIMS Number: L28642-2

Collect Start: 05/10/2006 09:00
Collect Stop: 05/10/2006 09:00
Receive Date: 05/16/2006

Matrix: Fish (FI)
Volume:
% Moisture:

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values	
BE-7	2007	4.16E+01	6.33E+02	**1.04E+03**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
K-40	2007	**4.09E+03**	7.71E+02	6.64E+02	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	+	Yes
MN-54	2007	-3.61E+01	5.22E+01	**8.31E+01**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
CO-58	2007	1.17E+01	6.69E+01	**1.11E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
FE-59	2007	-6.12E+01	1.57E+02	**2.54E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
CO-60	2007	1.15E+01	4.65E+01	**7.77E+01**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
ZN-65	2007	1.41E+02	1.13E+02	**1.99E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
ZRNB-95	2007	2.03E+01	6.96E+01	**1.16E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
RU-103	2007	-5.76E+02	1.09E+02	**1.47E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
RU-106	2007	1.79E+02	5.36E+02	**7.70E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
I-131	2007	-2.13E+02	1.69E+03	**2.45E+03**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
CS-134	2007	1.72E+02	5.14E+01	**9.34E+01**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U*	No
CS-137	2007	-2.14E+01	5.13E+01	**8.34E+01**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
Ba-La-140	2007	-9.63E+01	3.79E+02	**6.13E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
CE-141	2007	1.39E+02	1.48E+02	**2.49E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
CE-144	2007	1.28E+02	3.13E+02	**5.23E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
RA-226	2007	-9.05E+02	1.06E+03	**1.66E+03**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No
TH-232	2007	-2.47E+02	1.83E+02	**2.77E+02**	pCi/kg		167.63	g wet	05/10/06 09:00	06/19/06	16202	Sec	U	No

Comment: 1 Freshwater Drum

Flag Values
U = Compound/Analyte not detected or less than 2 sigma
\+ = Activity concentration exceeds MDC and 2 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 2 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

Bolded text indicates reportable value.

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Report of Analysis

06/22/06 09:06

L28642

Byron Station

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

Edward Steinke

EX001-3EREMPBYRON-05

Sample ID: **DISCHARGE AREA**
Station: BY-31
Description:
LIMS Number: L28642-3

Collect Start: 05/10/2006 14:30
Collect Stop: 05/10/2006 14:30
Receive Date: 05/16/2006

Matrix: Fish (FI)
Volume:
% Moisture:

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values	
BE-7	2007	-1.09E+02	5.86E+02	**9.41E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
K-40	2007	**5.12E+03**	1.02E+03	6.71E+02	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	+	Yes
MN-54	2007	1.26E+01	5.03E+01	**8.44E+01**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
CO-58	2007	4.02E+01	6.95E+01	**1.20E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
FE-59	2007	1.84E+01	1.40E+02	**2.36E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
CO-60	2007	-1.15E+01	5.31E+01	**8.45E+01**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
ZN-65	2007	2.38E+02	1.30E+02	**2.33E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U*	No
ZRNB-95	2007	3.31E+00	6.66E+01	**1.10E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
RU-103	2007	6.18E+01	9.06E+01	**1.55E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
RU-106	2007	2.09E+02	4.61E+02	**7.85E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
I-131	2007	4.84E+01	1.47E+03	**2.42E+03**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
CS-134	2007	4.62E+01	6.30E+01	**9.48E+01**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
CS-137	2007	2.47E+01	5.11E+01	**8.80E+01**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
Ba-La-140	2007	-8.57E+01	3.65E+02	**5.78E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
CE-141	2007	1.74E+02	1.47E+02	**2.54E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
CE-144	2007	1.04E+02	3.10E+02	**5.18E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
RA-226	2007	-5.05E+01	1.07E+03	**1.74E+03**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No
TH-232	2007	-1.67E+02	2.06E+02	**3.12E+02**	pCi/kg		184.94	g wet	05/10/06 14:30	06/19/06	6601	Sec	U	No

Comment: 1 Channel Catfish

Flag Values
U = Compound/Analyte not detected or less than 2 sigma
\+ = Activity concentration exceeds MDC and 2 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 2 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Bolded text indicates reportable value.

Report of Analysis

06/22/06 09:06

TELEDYNE BROWN ENGINEERING, INC.
A Teledyne Technologies Company

L28642

Byron Station

Edward Steinke

EX001-3EREMPBYRON-05

Sample ID: **DISCHARGE AREA**
Station: BY-31
Description:
LIMS Number: L28642-4

Collect Start: 05/10/2006 14:30
Collect Stop: 05/10/2006 14:30
Receive Date: 05/16/2006

Matrix: Fish (FI)
Volume:
% Moisture:

Radionuclide	SOP#	Activity Conc	Uncertainty 2 Sigma	MDC	Units	Run #	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Units	Flag Values	
BE-7	2007	-7.65E+01	6.48E+02	**1.04E+03**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
K-40	2007	**2.56E+03**	7.99E+02	6.92E+02	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	+	Yes
MN-54	2007	1.50E+01	5.04E+01	**8.55E+01**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
CO-58	2007	-1.92E+01	6.38E+01	**1.01E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
FE-59	2007	-1.08E+02	1.70E+02	**2.56E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
CO-60	2007	-6.65E+00	4.90E+01	**7.93E+01**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
ZN-65	2007	9.77E+01	1.26E+02	**2.24E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
ZRNB-95	2007	3.59E+01	5.87E+01	**1.04E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
RU-103	2007	-2.02E+00	8.37E+01	**1.39E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
RU-106	2007	2.27E+02	4.76E+02	**8.13E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
I-131	2007	9.90E+02	1.46E+03	**2.51E+03**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
CS-134	2007	4.78E+01	5.67E+01	**9.88E+01**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
CS-137	2007	2.34E+01	5.29E+01	**8.96E+01**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
Ba-La-140	2007	2.52E+02	3.54E+02	**6.61E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
CE-141	2007	5.26E+00	1.35E+02	**2.20E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
CE-144	2007	-7.41E+01	2.63E+02	**4.22E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No
RA-226	2007	2.43E+02	8.17E+02	**1.39E+03**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	Yes
TH-232	2007	1.59E+02	1.68E+02	**3.22E+02**	pCi/kg		239.78	g wet	05/10/06 14:30	06/19/06	4321	Sec	U	No

Comment: 1 Freshwater Drum

Flag Values
U = Compound/Analyte not detected or less than 2 sigma
\+ = Activity concentration exceeds MDC and 2 sigma; peak identified(gamma only)
U* = Compound/Analyte not detected. Peak not identified, but forced activity concentration exceeds MDC and 2 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
L = Low recovery
H = High recovery

No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
**** Results are reported on an as received basis unless otherwise noted

MDC - Minimum Detectable Concentration

Bolded text indicates reportable value.

L28642
D. Cooler - 3

Byron Generating Station

Fish Samples

Sample Collection/Receipt Sheet

EXELON NUCLEAR

Lab. No.	Client ID	Station Code	Sample Medium	Start date	Start time	Stop date	Stop time	Sample Size	Analysis	Comments
L28642-1	Upstream (Control)	BY-29	AQF	05/10/2006	9:00	05/10/2006	9:00	3100 gr.	GAMMA	Channel Catfish
-2	Upstream (Control)	BY-29	AQF	05/10/2006	9:00	05/10/2006	9:00	2340 gr.	GAMMA	Freshwater Drum
-3	Discharge Area	BY-31	AQF	05/10/2006	14:30	05/10/2006	14:30	2480 gr.	GAMMA	Channel Catfish
-4	Discharge Area	BY-31	AQF	05/10/2006	14:30	05/10/2006	14:30	2840 gr.	GAMMA	Freshwater Drum

Collected by: EA Engineering, Science & Technology Date: 05/10/2006

Shipped by: FedEx Jacque Barcik Date: 05/15/2006

Received by: Pat Marshall Date: 5/16/06 BY-29; BY-31

L28642 6 of 28

Environmental, Inc.
Midwest Laboratory
An Allegheny Technologies Company

SR NO. 2213

Shipping Request

MIDWEST LABORATORY
700 LANDWEHR ROAD • NORTHBROOK, IL 60062-2310 • (847) 564-0700
FAX (847) 564-4517

NOTE!! When returning or replacing this material, please reference S/R No. on all documents.

PART I (To be completed by originator)

A. Description of items (Include, Quantity, Model No., Type, Serial No., and Gov't Property No.)

BYRON:
4 BAGS OF FISH

B. Purpose of Shipment:

- ☐ Return for credit-No replacement:
- ☐ Return for rework or replacement at Vendor's expense.
- ☐ Return for rework or replacement at Environmental, Inc's expense.
- ☐ Furnished on Consignment for use on P.O. No. _____
- ☐ Other (explain) _____

C. Comments or instructions to Vendor:

D. Control Data:

Vendor _____
P.O. No. _____
W.O./Acct. No. _____
Location of material _____
Ship no later than _____
Ship via _____ Collect ☐ Prepaid ☐
No. Pcs./ctns. _____ Cu. Ft. _____
Weight _____ Est. Val. _____

Part II (To be completed by Shipping Dept.)

Actual method of shipment Federal Express
Date Shipped 05-15-2006
Collect _____ Prepaid _____
FOB point _____
Waybill No. _____
Misc. _____

SHIP TO: TBE

L.B.
ORIGINATOR'S INITIALS

ATTN: _____

05/16/06 16:06

SR #: SR08408

Teledyne Brown Engineering
Sample Receipt Verification/Variance Report

Client: Exelon

Project #: EX001-3EREMPBYRON-05 LIMS #: L28642

Initiated By: PMARSHALL
Init Date: 05/16/06 Receive Date: 05/16/06

Notification of Variance

Person Notified: Contacted By:

Notify Date:

Notify Method:

Notify Comment:

Client Response

Person Responding:

Response Date:

Response Method:

Response Comment

	Criteria	Yes	No	NA	Comment
1	Shipping container custody seals present and intact.			NA	
2	Sample container custody seals present and intact.			NA	
3	Sample containers received in good condition	Y			
4	Chain of custody received with samples	Y			
5	All samples listed on chain of custody received	Y			
6	Sample container labels present and legible.	Y			
7	Information on container labels correspond with chain of custody	Y			
8	Sample(s) properly preserved and in appropriate container(s)			NA	
9	Other (Describe)			NA	

Sec. Review: KD Analyst: JM LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 19-JUN-2006 13:06:27.15
TBE23 03017322 HpGe ********** Aquisition Date/Time: 19-JUN-2006 11:29:31.99

LIMS No., Customer Name, Client ID: L28642-1 FI EXELON/BYRON

Sample ID	: 23L28642-1		Smple Date: 10-MAY-2006 09:00:00.
Sample Type	: FI		Geometry : 23B300082404
Quantity	: 2.81440E-01 KG WET		BKGFILE : 23BG060306MT
Start Channel	: 50	Energy Tol : 1.50000	Real Time : 0 01:36:47.67
End Channel	: 4090	Pk Srch Sens: 5.00000	Live time : 0 01:36:43.96
MDA Constant	: 0.00	Library Used: EXELONFSSDVG	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	8	34.72*	14	17	1.94	69.77	2.93E-01	2.46E-03	128.0	5.18E+00
2	8	38.82*	37	73	2.47	77.95	4.89E-01	6.29E-03	68.4	
3	8	41.60*	60	113	2.61	83.52	6.49E-01	1.03E-02	44.8	
4	8	44.85*	11	66	1.22	90.00	8.57E-01	1.87E-03	141.7	
5	8	46.35*	13	74	1.22	93.00	9.59E-01	2.20E-03	118.8	
6	0	77.04	77	167	1.27	154.35	3.03E+00	1.33E-02	32.6	
7	0	92.73*	32	220	1.10	185.69	3.67E+00	5.57E-03	97.5	
8	0	295.06*	149	113	1.39	590.09	2.82E+00	2.56E-02	17.9	
9	0	351.85*	201	114	1.22	703.61	2.44E+00	3.46E-02	13.7	
10	0	609.02*	197	20	1.55	1217.72	1.53E+00	3.39E-02	8.8	
11	0	1120.40*	42	22	1.99	2240.32	9.47E-01	7.32E-03	30.1	
12	0	1377.54	18	5	0.74	2754.67	8.08E-01	3.04E-03	35.0	
13	0	1460.76*	151	10	1.80	2921.15	7.72E-01	2.60E-02	11.1	
14	0	1764.93*	27	7	0.90	3529.75	6.62E-01	4.70E-03	31.8	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	2-Sigma %Error
K-40	1460.81	151	10.67*	7.723E-01	3.033E+03	3.033E+03	22.16

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 23L28642-1

Acquisition date : 19-JUN-2006 11:29:31

Total number of lines in spectrum	14	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	1	7.14%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.033E+03	3.033E+03	0.672E+03	22.16	
	Total Activity :		3.033E+03	3.033E+03			
Grand Total Activity :			3.033E+03	3.033E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 23L28642-1

Acquisition date : 19-JUN-2006 11:29:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
8	34.72	14	17	1.94	69.77	65	32	2.46E-03	****	2.93E-01	
8	38.82	37	73	2.47	77.95	65	32	6.29E-03	****	4.89E-01	
8	41.60	60	113	2.61	83.52	65	32	1.03E-02	89.7	6.49E-01	
8	44.85	11	66	1.22	90.00	65	32	1.87E-03	****	8.57E-01	
8	46.35	13	74	1.22	93.00	65	32	2.20E-03	****	9.59E-01	
0	77.04	77	167	1.27	154.35	152	9	1.33E-02	65.2	3.03E+00	
0	92.73	32	220	1.10	185.69	182	11	5.57E-03	****	3.67E+00	
0	295.06	149	113	1.39	590.09	583	15	2.56E-02	35.9	2.82E+00	
0	351.85	201	114	1.22	703.61	697	14	3.46E-02	27.4	2.44E+00	
0	609.02	197	20	1.55	1217.72	1213	9	3.39E-02	17.7	1.53E+00	
0	1120.40	42	22	1.99	2240.32	2232	15	7.32E-03	60.3	9.47E-01	
0	1377.54	18	5	0.74	2754.67	2749	11	3.04E-03	70.0	8.08E-01	
0	1764.93	27	7	0.90	3529.75	3523	14	4.70E-03	63.5	6.62E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	14	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	1	7.14%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/KG WET	Wtd Mean Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.033E+03	3.033E+03	0.672E+03	22.16	
	Total Activity :		3.033E+03	3.033E+03			
Grand Total Activity :			3.033E+03	3.033E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/KG WET)	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA
K-40	3.033E+03	6.720E+02	4.880E+02	0.000E+00	6.215

---- Non-Identified Nuclides ----

Key-Line Activity	K.L.	Act error	MDA	MDA error	Act/MDA

Nuclide	(pCi/KG WET)	Ided	(pCi/KG WET)		
BE-7	-4.851E+01	4.461E+02	7.619E+02	0.000E+00	-0.064
NA-24	3.495E+14	2.939E+14	Half-Life too short		
CR-51	1.664E+02	6.642E+02	1.161E+03	0.000E+00	0.143
MN-54	-5.328E+00	3.515E+01	6.097E+01	0.000E+00	-0.087
CO-57	1.276E+01	2.705E+01	4.684E+01	0.000E+00	0.272
CO-58	-2.855E+01	4.398E+01	7.317E+01	0.000E+00	-0.390
FE-59	-5.066E+01	9.980E+01	1.712E+02	0.000E+00	-0.296
CO-60	-3.080E+01	3.525E+01	5.713E+01	0.000E+00	-0.539
ZN-65	1.794E+02	9.446E+01	1.744E+02	0.000E+00	1.029
SE-75	-1.482E+01	4.676E+01	7.984E+01	0.000E+00	-0.186
SR-85	1.508E+02	5.150E+01	1.011E+02	0.000E+00	1.491
Y-88	-4.951E+01	4.975E+01	7.929E+01	0.000E+00	-0.624
NB-94	-2.676E+00	3.069E+01	5.362E+01	0.000E+00	-0.050
ZRNB-95	6.723E+00	4.847E+01	8.611E+01	0.000E+00	0.078
MO-99	-2.505E-01	2.623E+00	Half-Life too short		
RU-103	2.406E+01	6.118E+01	1.081E+02	0.000E+00	0.223
RU-106	6.757E+01	3.207E+02	5.731E+02	0.000E+00	0.118
AG-110m	-1.713E+01	3.357E+01	5.698E+01	0.000E+00	-0.301
SN-113	6.400E+01	4.763E+01	8.850E+01	0.000E+00	0.723
SB-124	-2.805E-01	5.578E+01	8.300E+01	0.000E+00	-0.003
SB-125	2.838E+00	8.371E+01	1.452E+02	0.000E+00	0.020
TE-129M	3.558E+02	7.117E+02	1.274E+03	0.000E+00	0.279
I-131	9.871E+02	9.535E+02	1.737E+03	0.000E+00	0.568
BA-133	1.495E+02	5.260E+01	9.128E+01	0.000E+00	1.638
CS-134	1.712E+02	4.721E+01	8.723E+01	0.000E+00	1.963
CS-136	-4.991E+01	2.511E+02	4.352E+02	0.000E+00	-0.115
CS-137	-9.045E+00	3.281E+01	5.678E+01	0.000E+00	-0.159
CE-139	-3.995E+00	3.259E+01	5.487E+01	0.000E+00	-0.073
BALA140	1.086E+02	3.118E+02	5.981E+02	0.000E+00	0.182
CE-141	1.411E+01	1.032E+02	1.759E+02	0.000E+00	0.080
CE-144	-1.261E+02	2.097E+02	3.484E+02	0.000E+00	-0.362
EU-152	-6.897E+01	1.107E+02	1.537E+02	0.000E+00	-0.449
EU-154	2.891E+01	5.218E+01	9.060E+01	0.000E+00	0.319
RA-226	-4.100E+02	7.200E+02	1.198E+03	0.000E+00	-0.342
AC-228	7.393E+00	1.183E+02	2.065E+02	0.000E+00	0.036
TH-228	4.113E+01	5.855E+01	1.012E+02	0.000E+00	0.406
TH-232	7.296E+00	1.168E+02	2.037E+02	0.000E+00	0.036
U-235	-5.512E+00	2.050E+02	3.444E+02	0.000E+00	-0.016
U-238	-9.159E+02	3.344E+03	5.770E+03	0.000E+00	-0.159
AM-241	3.904E+00	1.227E+02	2.054E+02	0.000E+00	0.019

```
A,23L28642-1       ,06/19/2006 13:06,05/10/2006 09:00,   2.814E-01,L28642-1 FI EX
B,23L28642-1       ,EXELONFSSDVG        ,06/01/2006 10:14,23B300082404
C,K-40     ,YES,    3.033E+03,   6.720E+02,   4.880E+02,,    6.215
C,BE-7     ,NO ,   -4.851E+01,   4.461E+02,   7.619E+02,,   -0.064
C,CR-51    ,NO ,    1.664E+02,   6.642E+02,   1.161E+03,,    0.143
C,MN-54    ,NO ,   -5.328E+00,   3.515E+01,   6.097E+01,,   -0.087
C,CO-57    ,NO ,    1.276E+01,   2.705E+01,   4.684E+01,,    0.272
C,CO-58    ,NO ,   -2.855E+01,   4.398E+01,   7.317E+01,,   -0.390
C,FE-59    ,NO ,   -5.066E+01,   9.980E+01,   1.712E+02,,   -0.296
C,CO-60    ,NO ,   -3.080E+01,   3.525E+01,   5.713E+01,,   -0.539
C,ZN-65    ,NO ,    1.794E+02,   9.446E+01,   1.744E+02,,    1.029
C,SE-75    ,NO ,   -1.482E+01,   4.676E+01,   7.984E+01,,   -0.186
C,SR-85    ,NO ,    1.508E+02,   5.150E+01,   1.011E+02,,    1.491
C,Y-88     ,NO ,   -4.951E+01,   4.975E+01,   7.929E+01,,   -0.624
C,NB-94    ,NO ,   -2.676E+00,   3.069E+01,   5.362E+01,,   -0.050
C,ZRNB-95  ,NO ,    6.723E+00,   4.847E+01,   8.611E+01,,    0.078
C,RU-103   ,NO ,    2.406E+01,   6.118E+01,   1.081E+02,,    0.223
C,RU-106   ,NO ,    6.757E+01,   3.207E+02,   5.731E+02,,    0.118
C,AG-110m  ,NO ,   -1.713E+01,   3.357E+01,   5.698E+01,,   -0.301
C,SN-113   ,NO ,    6.400E+01,   4.763E+01,   8.850E+01,,    0.723
C,SB-124   ,NO ,   -2.805E-01,   5.578E+01,   8.300E+01,,   -0.003
C,SB-125   ,NO ,    2.838E+00,   8.371E+01,   1.452E+02,,    0.020
C,TE-129M  ,NO ,    3.558E+02,   7.117E+02,   1.274E+03,,    0.279
C,I-131    ,NO ,    9.871E+02,   9.535E+02,   1.737E+03,,    0.568
C,BA-133   ,NO ,    1.495E+02,   5.260E+01,   9.128E+01,,    1.638
C,CS-134   ,NO ,    1.712E+02,   4.721E+01,   8.723E+01,,    1.963
C,CS-136   ,NO ,   -4.991E+01,   2.511E+02,   4.352E+02,,   -0.115
C,CS-137   ,NO ,   -9.045E+00,   3.281E+01,   5.678E+01,,   -0.159
C,CE-139   ,NO ,   -3.995E+00,   3.259E+01,   5.487E+01,,   -0.073
C,BALA140  ,NO ,    1.086E+02,   3.118E+02,   5.981E+02,,    0.182
C,CE-141   ,NO ,    1.411E+01,   1.032E+02,   1.759E+02,,    0.080
C,CE-144   ,NO ,   -1.261E+02,   2.097E+02,   3.484E+02,,   -0.362
C,EU-152   ,NO ,   -6.897E+01,   1.107E+02,   1.537E+02,,   -0.449
C,EU-154   ,NO ,    2.891E+01,   5.218E+01,   9.060E+01,,    0.319
C,RA-226   ,NO ,   -4.100E+02,   7.200E+02,   1.198E+03,,   -0.342
C,AC-228   ,NO ,    7.393E+00,   1.183E+02,   2.065E+02,,    0.036
C,TH-228   ,NO ,    4.113E+01,   5.855E+01,   1.012E+02,,    0.406
C,TH-232   ,NO ,    7.296E+00,   1.168E+02,   2.037E+02,,    0.036
C,U-235    ,NO ,   -5.512E+00,   2.050E+02,   3.444E+02,,   -0.016
C,U-238    ,NO ,   -9.159E+02,   3.344E+03,   5.770E+03,,   -0.159
C,AM-241   ,NO ,    3.904E+00,   1.227E+02,   2.054E+02,,    0.019
```

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 19-JUN-2006 15:45:20.82
TBE14 P-10933A HpGe ********** Aquisition Date/Time: 19-JUN-2006 11:15:08.20

LIMS No., Customer Name, Client ID: L28642-2 FI EXELON/BYRON

Sample ID	: 14L28642-2			Smple Date	: 10-MAY-2006 09:00:00.
Sample Type	: FI			Geometry	: 14B300082004
Quantity	: 1.67630E-01 KG WET			BKGFILE	: 14BG060306MT
Start Channel	: 90	Energy Tol	: 1.50000	Real Time	: 0 04:30:03.91
End Channel	: 4090	Pk Srch Sens	: 5.00000	Live time	: 0 04:30:01.62
MDA Constant	: 0.00	Library Used	: EXELONFSSDVG		

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	1	84.95*	57	340	1.64	171.20	1.87E+00	3.51E-03	63.8	2.52E+00
2	1	352.61*	48	201	1.64	708.12	1.79E+00	2.96E-03	67.7	1.49E+00
3	1	609.69*	41	166	2.16	1222.76	1.18E+00	2.52E-03	74.2	1.14E+00
4	1	1461.55*	258	29	2.24	2920.79	5.88E-01	1.59E-02	9.4	3.21E+00

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	2-Sigma %Error
K-40	1460.81	258	10.67*	5.885E-01	4.090E+03	4.090E+03	18.86

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 14L28642-2

Acquisition date : 19-JUN-2006 11:15:08

Total number of lines in spectrum	4	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	1	25.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	4.090E+03	4.090E+03	0.771E+03	18.86	
	Total Activity :		4.090E+03	4.090E+03			
	Grand Total Activity :		4.090E+03	4.090E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 14L28642-2

Acquisition date : 19-JUN-2006 11:15:08

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	84.95	57	340	1.64	171.20	167	8	3.51E-03	****	1.87E+00	
1	352.61	48	201	1.64	708.12	702	11	2.96E-03	****	1.79E+00	
1	609.69	41	166	2.16	1222.76	1216	13	2.52E-03	****	1.18E+00	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	4	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	1	25.00%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/KG WET	Wtd Mean Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	4.090E+03	4.090E+03	0.771E+03	18.86	
	Total Activity :		4.090E+03	4.090E+03			
	Grand Total Activity :		4.090E+03	4.090E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/KG WET)	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA
K-40	4.090E+03	7.714E+02	6.644E+02	0.000E+00	6.156

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/KG WET)	K.L. Ided	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA
BE-7	4.157E+01		6.331E+02	1.042E+03	0.000E+00	0.040
NA-24	-5.101E+14		5.175E+14	Half-Life too short		
CR-51	3.306E+02		1.045E+03	1.747E+03	0.000E+00	0.189
MN-54	-3.611E+01		5.222E+01	8.309E+01	0.000E+00	-0.435
CO-57	-3.392E-01		4.048E+01	6.700E+01	0.000E+00	-0.005
CO-58	1.170E+01		6.686E+01	1.109E+02	0.000E+00	0.105
FE-59	-6.122E+01		1.571E+02	2.541E+02	0.000E+00	-0.241
CO-60	1.154E+01		4.650E+01	7.769E+01	0.000E+00	0.149

ZN-65	1.413E+02	1.130E+02	1.987E+02	0.000E+00	0.711
SE-75	1.927E+01	7.676E+01	1.263E+02	0.000E+00	0.153
SR-85	5.443E+02	7.800E+01	1.520E+02	0.000E+00	3.581
Y-88	5.809E+00	5.371E+01	8.931E+01	0.000E+00	0.065
NB-94	3.097E+01	4.592E+01	7.789E+01	0.000E+00	0.398
ZRNB-95	2.030E+01	6.961E+01	1.162E+02	0.000E+00	0.175
MO-99	3.960E+00	4.421E+00	Half-Life too short		
RU-103	-5.757E+02	1.090E+02	1.474E+02	0.000E+00	-3.905
RU-106	1.788E+02	5.356E+02	7.700E+02	0.000E+00	0.232
AG-110m	-1.038E+01	5.146E+01	8.447E+01	0.000E+00	-0.123
SN-113	-7.513E-01	7.531E+01	1.242E+02	0.000E+00	-0.006
SB-124	2.108E+02	9.183E+01	1.401E+02	0.000E+00	1.505
SB-125	7.094E+01	1.390E+02	2.325E+02	0.000E+00	0.305
TE-129M	-7.514E+02	1.137E+03	1.824E+03	0.000E+00	-0.412
I-131	-2.132E+02	1.690E+03	2.449E+03	0.000E+00	-0.087
BA-133	1.371E+02	6.588E+01	1.151E+02	0.000E+00	1.192
CS-134	1.721E+02	5.144E+01	9.342E+01	0.000E+00	1.843
CS-136	-3.995E+01	3.759E+02	6.151E+02	0.000E+00	-0.065
CS-137	-2.137E+01	5.127E+01	8.339E+01	0.000E+00	-0.256
CE-139	4.497E+01	4.839E+01	8.134E+01	0.000E+00	0.553
BALA140	-9.627E+01	3.786E+02	6.130E+02	0.000E+00	-0.157
CE-141	1.393E+02	1.477E+02	2.489E+02	0.000E+00	0.560
CE-144	1.278E+02	3.133E+02	5.226E+02	0.000E+00	0.245
EU-152	-3.953E+01	1.738E+02	2.378E+02	0.000E+00	-0.166
EU-154	-1.005E+01	7.782E+01	1.285E+02	0.000E+00	-0.078
RA-226	-9.047E+02	1.055E+03	1.659E+03	0.000E+00	-0.545
AC-228	-2.498E+02	1.854E+02	2.806E+02	0.000E+00	-0.890
TH-228	3.674E+01	8.755E+01	1.416E+02	0.000E+00	0.259
TH-232	-2.465E+02	1.829E+02	2.769E+02	0.000E+00	-0.890
U-235	1.235E+02	2.906E+02	4.845E+02	0.000E+00	0.255
U-238	-1.184E+02	5.231E+03	8.537E+03	0.000E+00	-0.014
AM-241	-7.186E+02	5.191E+02	8.271E+02	0.000E+00	-0.869

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A,14L28642-2       ,06/19/2006 15:45,05/10/2006 09:00,   1.676E-01,L28642-2 FI EX
B,14L28642-2       ,EXELONFSSDVG        ,06/14/2006 10:50,14B300082004
C,K-40     ,YES,    4.090E+03,   7.714E+02,   6.644E+02,,    6.156
C,BE-7     ,NO ,    4.157E+01,   6.331E+02,   1.042E+03,,    0.040
C,CR-51    ,NO ,    3.306E+02,   1.045E+03,   1.747E+03,,    0.189
C,MN-54    ,NO ,   -3.611E+01,   5.222E+01,   8.309E+01,,   -0.435
C,CO-57    ,NO ,   -3.392E-01,   4.048E+01,   6.700E+01,,   -0.005
C,CO-58    ,NO ,    1.170E+01,   6.686E+01,   1.109E+02,,    0.105
C,FE-59    ,NO ,   -6.122E+01,   1.571E+02,   2.541E+02,,   -0.241
C,CO-60    ,NO ,    1.154E+01,   4.650E+01,   7.769E+01,,    0.149
C,ZN-65    ,NO ,    1.413E+02,   1.130E+02,   1.987E+02,,    0.711
C,SE-75    ,NO ,    1.927E+01,   7.676E+01,   1.263E+02,,    0.153
C,SR-85    ,NO ,    5.443E+02,   7.800E+01,   1.520E+02,,    3.581
C,Y-88     ,NO ,    5.809E+00,   5.371E+01,   8.931E+01,,    0.065
C,NB-94    ,NO ,    3.097E+01,   4.592E+01,   7.789E+01,,    0.398
C,ZRNB-95  ,NO ,    2.030E+01,   6.961E+01,   1.162E+02,,    0.175
C,RU-103   ,NO ,   -5.757E+02,   1.090E+02,   1.474E+02,,   -3.905
C,RU-106   ,NO ,    1.788E+02,   5.356E+02,   7.700E+02,,    0.232
C,AG-110m  ,NO ,   -1.038E+01,   5.146E+01,   8.447E+01,,   -0.123
C,SN-113   ,NO ,   -7.513E-01,   7.531E+01,   1.242E+02,,   -0.006
C,SB-124   ,NO ,    2.108E+02,   9.183E+01,   1.401E+02,,    1.505
C,SB-125   ,NO ,    7.094E+01,   1.390E+02,   2.325E+02,,    0.305
C,TE-129M  ,NO ,   -7.514E+02,   1.137E+03,   1.824E+03,,   -0.412
C,I-131    ,NO ,   -2.132E+02,   1.690E+03,   2.449E+03,,   -0.087
C,BA-133   ,NO ,    1.371E+02,   6.588E+01,   1.151E+02,,    1.192
C,CS-134   ,NO ,    1.721E+02,   5.144E+01,   9.342E+01,,    1.843
C,CS-136   ,NO ,   -3.995E+01,   3.759E+02,   6.151E+02,,   -0.065
C,CS-137   ,NO ,   -2.137E+01,   5.127E+01,   8.339E+01,,   -0.256
C,CE-139   ,NO ,    4.497E+01,   4.839E+01,   8.134E+01,,    0.553
C,BALA140  ,NO ,   -9.627E+01,   3.786E+02,   6.130E+02,,   -0.157
C,CE-141   ,NO ,    1.393E+02,   1.477E+02,   2.489E+02,,    0.560
C,CE-144   ,NO ,    1.278E+02,   3.133E+02,   5.226E+02,,    0.245
C,EU-152   ,NO ,   -3.953E+01,   1.738E+02,   2.378E+02,,   -0.166
C,EU-154   ,NO ,   -1.005E+01,   7.782E+01,   1.285E+02,,   -0.078
C,RA-226   ,NO ,   -9.047E+02,   1.055E+03,   1.659E+03,,   -0.545
C,AC-228   ,NO ,   -2.498E+02,   1.854E+02,   2.806E+02,,   -0.890
C,TH-228   ,NO ,    3.674E+01,   8.755E+01,   1.416E+02,,    0.259
C,TH-232   ,NO ,   -2.465E+02,   1.829E+02,   2.769E+02,,   -0.890
C,U-235    ,NO ,    1.235E+02,   2.906E+02,   4.845E+02,,    0.255
C,U-238    ,NO ,   -1.184E+02,   5.231E+03,   8.537E+03,,   -0.014
C,AM-241   ,NO ,   -7.186E+02,   5.191E+02,   8.271E+02,,   -0.869
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Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 19-JUN-2006 13:05:15.41
TBE11 P-20610B HpGe ********** Aquisition Date/Time: 19-JUN-2006 11:15:10.15

LIMS No., Customer Name, Client ID: L28642-3 FI EXELON

Sample ID	: 11L28642-3	Smple Date	: 10-MAY-2006 14:30:00.
Sample Type	: FI	Geometry	: 11B300082404
Quantity	: 1.84940E-01 KG WET	BKGFILE	: 11BG060306MT
Start Channel	: 40 Energy Tol : 1.00000	Real Time	: 0 01:50:03.08
End Channel	: 4090 Pk Srch Sens: 5.00000	Live time	: 0 01:50:01.07
MDA Constant	: 0.00 Library Used: EXELONFSSDVG		

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	0	85.24*	47	239	0.64	169.59	2.44E+00	7.15E-03	72.8	
2	0	238.38*	58	80	1.32	476.72	2.63E+00	8.83E-03	35.9	
3	0	352.16*	14	67	1.39	704.78	1.96E+00	2.18E-03	110.6	
4	0	608.67*	47	49	1.22	1218.61	1.24E+00	7.19E-03	36.4	
5	0	1120.36*	30	12	1.86	2242.16	7.34E-01	4.61E-03	33.0	
6	0	1237.39	15	15	2.94	2475.98	6.73E-01	2.33E-03	52.5	
7	0	1460.00*	144	4	2.36	2920.51	5.84E-01	2.18E-02	10.0	

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	2-Sigma %Error
K-40	1460.81	144	10.67*	5.840E-01	5.118E+03	5.118E+03	19.99
TH-228	238.63	58	44.60*	2.634E+00	1.098E+02	1.143E+02	71.78

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 11L28642-3

Acquisition date : 19-JUN-2006 11:15:10

Total number of lines in spectrum	7	
Number of unidentified lines	5	
Number of lines tentatively identified by NID	2	28.57%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	5.118E+03	5.118E+03	1.023E+03	19.99	
TH-228	1.91Y	1.04	1.098E+02	1.143E+02	0.820E+02	71.78	
	Total Activity :		5.227E+03	5.232E+03			
	Grand Total Activity :		5.227E+03	5.232E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 11L28642-3

Acquisition date : 19-JUN-2006 11:15:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	85.24	47	239	0.64	169.59	163	14	7.15E-03	****	2.44E+00	
0	352.16	14	67	1.39	704.78	702	8	2.18E-03	****	1.96E+00	
0	608.67	47	49	1.22	1218.61	1212	14	7.19E-03	72.8	1.24E+00	
0	1120.36	30	12	1.86	2242.16	2234	16	4.61E-03	66.0	7.34E-01	
0	1237.39	15	15	2.94	2475.98	2471	9	2.33E-03	****	6.73E-01	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	7	
Number of unidentified lines	5	
Number of lines tentatively identified by NID	2	28.57%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/KG WET	Wtd Mean Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	5.118E+03	5.118E+03	1.023E+03	19.99	
TH-228	1.91Y	1.04	1.098E+02	1.143E+02	0.820E+02	71.78	
	Total Activity :		5.227E+03	5.232E+03			
	Grand Total Activity :		5.227E+03	5.232E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/KG WET)	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA
K-40	5.118E+03	1.023E+03	6.710E+02	0.000E+00	7.627
TH-228	1.143E+02	8.203E+01	1.213E+02	0.000E+00	0.942

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/KG WET)	K.L. Ided	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA
BE-7	-1.085E+02		5.855E+02	9.407E+02	0.000E+00	-0.115
NA-24	2.852E+12		3.708E+14	Half-Life too short		
CR-51	-4.130E+02		1.020E+03	1.650E+03	0.000E+00	-0.250
MN-54	1.255E+01		5.026E+01	8.440E+01	0.000E+00	0.149

CO-57	1.202E+01	3.983E+01	6.652E+01	0.000E+00	0.181
CO-58	4.020E+01	6.946E+01	1.202E+02	0.000E+00	0.334
FE-59	1.838E+01	1.403E+02	2.364E+02	0.000E+00	0.078
CO-60	-1.147E+01	5.308E+01	8.445E+01	0.000E+00	-0.136
ZN-65	2.376E+02	1.296E+02	2.333E+02	0.000E+00	1.019
SE-75	5.273E+01	7.372E+01	1.269E+02	0.000E+00	0.415
SR-85	3.120E+02	8.787E+01	1.693E+02	0.000E+00	1.843
Y-88	-1.829E+01	5.909E+01	9.109E+01	0.000E+00	-0.201
NB-94	-1.504E+01	4.685E+01	7.517E+01	0.000E+00	-0.200
ZRNB-95	3.309E+00	6.657E+01	1.100E+02	0.000E+00	0.030
MO-99	3.365E+00	4.185E+00	Half-Life too short		
RU-103	6.178E+01	9.060E+01	1.553E+02	0.000E+00	0.398
RU-106	2.088E+02	4.613E+02	7.847E+02	0.000E+00	0.266
AG-110m	-7.340E-01	5.099E+01	8.425E+01	0.000E+00	-0.009
SN-113	4.103E+01	7.385E+01	1.257E+02	0.000E+00	0.326
SB-124	-5.387E+01	9.127E+01	1.195E+02	0.000E+00	-0.451
SB-125	1.050E+02	1.322E+02	2.286E+02	0.000E+00	0.459
TE-129M	2.396E+02	1.186E+03	1.966E+03	0.000E+00	0.122
I-131	4.844E+01	1.467E+03	2.422E+03	0.000E+00	0.020
BA-133	5.640E+01	7.944E+01	1.173E+02	0.000E+00	0.481
CS-134	4.623E+01	6.295E+01	9.483E+01	0.000E+00	0.487
CS-136	-3.443E+01	3.487E+02	5.653E+02	0.000E+00	-0.061
CS-137	2.474E+01	5.109E+01	8.796E+01	0.000E+00	0.281
CE-139	-8.060E+00	4.597E+01	7.462E+01	0.000E+00	-0.108
BALA140	-8.567E+01	3.654E+02	5.780E+02	0.000E+00	-0.148
CE-141	1.739E+02	1.473E+02	2.542E+02	0.000E+00	0.684
CE-144	1.035E+02	3.104E+02	5.181E+02	0.000E+00	0.200
EU-152	-1.032E+02	1.614E+02	2.264E+02	0.000E+00	-0.456
EU-154	4.285E+01	7.654E+01	1.292E+02	0.000E+00	0.332
RA-226	-5.049E+01	1.068E+03	1.737E+03	0.000E+00	-0.029
AC-228	-1.693E+02	2.083E+02	3.163E+02	0.000E+00	-0.535
TH-232	-1.671E+02	2.055E+02	3.122E+02	0.000E+00	-0.535
U-235	4.606E+02	2.884E+02	5.060E+02	0.000E+00	0.910
U-238	2.568E+03	4.979E+03	8.752E+03	0.000E+00	0.293
AM-241	-6.680E+01	4.300E+02	6.914E+02	0.000E+00	-0.097

```
A,11L28642-3       ,06/19/2006 13:05,05/10/2006 14:30,   1.849E-01,L28642-3 FI EX
B,11L28642-3       ,EXELONFSSDVG        ,06/07/2006 09:40,11B300082404
C,K-40     ,YES,    5.118E+03,    1.023E+03,    6.710E+02,,     7.627
C,TH-228   ,YES,    1.143E+02,    8.203E+01,    1.213E+02,,     0.942
C,BE-7     ,NO ,   -1.085E+02,    5.855E+02,    9.407E+02,,    -0.115
C,CR-51    ,NO ,   -4.130E+02,    1.020E+03,    1.650E+03,,    -0.250
C,MN-54    ,NO ,    1.255E+01,    5.026E+01,    8.440E+01,,     0.149
C,CO-57    ,NO ,    1.202E+01,    3.983E+01,    6.652E+01,,     0.181
C,CO-58    ,NO ,    4.020E+01,    6.946E+01,    1.202E+02,,     0.334
C,FE-59    ,NO ,    1.838E+01,    1.403E+02,    2.364E+02,,     0.078
C,CO-60    ,NO ,   -1.147E+01,    5.308E+01,    8.445E+01,,    -0.136
C,ZN-65    ,NO ,    2.376E+02,    1.296E+02,    2.333E+02,,     1.019
C,SE-75    ,NO ,    5.273E+01,    7.372E+01,    1.269E+02,,     0.415
C,SR-85    ,NO ,    3.120E+02,    8.787E+01,    1.693E+02,,     1.843
C,Y-88     ,NO ,   -1.829E+01,    5.909E+01,    9.109E+01,,    -0.201
C,NB-94    ,NO ,   -1.504E+01,    4.685E+01,    7.517E+01,,    -0.200
C,ZRNB-95  ,NO ,    3.309E+00,    6.657E+01,    1.100E+02,,     0.030
C,RU-103   ,NO ,    6.178E+01,    9.060E+01,    1.553E+02,,     0.398
C,RU-106   ,NO ,    2.088E+02,    4.613E+02,    7.847E+02,,     0.266
C,AG-110m  ,NO ,   -7.340E-01,    5.099E+01,    8.425E+01,,    -0.009
C,SN-113   ,NO ,    4.103E+01,    7.385E+01,    1.257E+02,,     0.326
C,SB-124   ,NO ,   -5.387E+01,    9.127E+01,    1.195E+02,,    -0.451
C,SB-125   ,NO ,    1.050E+02,    1.322E+02,    2.286E+02,,     0.459
C,TE-129M  ,NO ,    2.396E+02,    1.186E+03,    1.966E+03,,     0.122
C,I-131    ,NO ,    4.844E+01,    1.467E+03,    2.422E+03,,     0.020
C,BA-133   ,NO ,    5.640E+01,    7.944E+01,    1.173E+02,,     0.481
C,CS-134   ,NO ,    4.623E+01,    6.295E+01,    9.483E+01,,     0.487
C,CS-136   ,NO ,   -3.443E+01,    3.487E+02,    5.653E+02,,    -0.061
C,CS-137   ,NO ,    2.474E+01,    5.109E+01,    8.796E+01,,     0.281
C,CE-139   ,NO ,   -8.060E+00,    4.597E+01,    7.462E+01,,    -0.108
C,BALA140  ,NO ,   -8.567E+01,    3.654E+02,    5.780E+02,,    -0.148
C,CE-141   ,NO ,    1.739E+02,    1.473E+02,    2.542E+02,,     0.684
C,CE-144   ,NO ,    1.035E+02,    3.104E+02,    5.181E+02,,     0.200
C,EU-152   ,NO ,   -1.032E+02,    1.614E+02,    2.264E+02,,    -0.456
C,EU-154   ,NO ,    4.285E+01,    7.654E+01,    1.292E+02,,     0.332
C,RA-226   ,NO ,   -5.049E+01,    1.068E+03,    1.737E+03,,    -0.029
C,AC-228   ,NO ,   -1.693E+02,    2.083E+02,    3.163E+02,,    -0.535
C,TH-232   ,NO ,   -1.671E+02,    2.055E+02,    3.122E+02,,    -0.535
C,U-235    ,NO ,    4.606E+02,    2.884E+02,    5.060E+02,,     0.910
C,U-238    ,NO ,    2.568E+03,    4.979E+03,    8.752E+03,,     0.293
C,AM-241   ,NO ,   -6.680E+01,    4.300E+02,    6.914E+02,,    -0.097
```

Sec. Review: Analyst: LIMS: ✓

VAX/VMS Teledyne Brown Eng. Laboratory Gamma Report: 19-JUN-2006 12:27:26.98
TBE13 P-10727B HpGe ********** Aquisition Date/Time: 19-JUN-2006 11:15:13.71

LIMS No., Customer Name, Client ID: L28642-4 FI EXELON/BYRON

Sample ID : 13L28642-4 Smple Date: 10-MAY-2006 14:30:00.
Sample Type : FI Geometry : 13B300082504
Quantity : 2.39780E-01 KG WET BKGFILE : 13BG060306MT
Start Channel : 25 Energy Tol : 1.50000 Real Time : 0 01:12:02.47
End Channel : 4090 Pk Srch Sens: 5.00000 Live time : 0 01:12:01.33
MDA Constant : 0.00 Library Used: EXELONFSSDVG

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	%Eff	Cts/Sec	%Err	Fit
1	2	77.21*	15	91	1.12	154.39	2.00E+00	3.51E-03	118.3	1.17E+00
2	1	85.40*	74	144	1.16	170.77	2.41E+00	1.71E-02	35.8	1.47E+01
3	1	185.47*	9	58	1.51	370.91	3.04E+00	2.15E-03	168.0	6.46E+00
4	1	238.46*	7	55	0.95	476.91	2.63E+00	1.69E-03	195.4	9.74E-01
5	1	294.78*	23	31	1.67	589.55	2.28E+00	5.44E-03	49.0	2.27E+00
6	1	351.70*	4	63	1.33	703.42	2.00E+00	8.88E-04	417.9	8.59E-01
7	1	510.65*	24	66	3.06	1021.39	1.51E+00	5.57E-03	87.4	2.20E+00
8	1	911.69*	16	11	2.70	1823.83	9.52E-01	3.73E-03	52.7	5.43E-01
9	1	1461.13*	69	0	2.30	2923.56	6.60E-01	1.60E-02	15.6	2.75E-01

Flag: "*" = Peak area was modified by background subtraction

Nuclide Line Activity Report

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	2-Sigma %Error
K-40	1460.81	69	10.67*	6.602E-01	2.561E+03	2.561E+03	31.20
RA-226	186.21	9	3.28*	3.036E+00	2.432E+02	2.432E+02	336.04
AC-228	835.71	------	1.75	1.022E+00	------ Line Not Found		------
	911.07	16	27.70*	9.525E-01	1.592E+02	1.613E+02	105.47
TH-228	238.63	7	44.60*	2.631E+00	1.621E+01	1.687E+01	390.78
U-235	143.76	------	10.50*	3.285E+00	------ Line Not Found		------
	163.35	------	4.70	3.193E+00	------ Line Not Found		------
	185.71	9	54.00	3.036E+00	1.477E+01	1.477E+01	336.04
	205.31	------	4.70	2.881E+00	------ Line Not Found		------

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : 13L28642-4

Acquisition date : 19-JUN-2006 11:15:13

Total number of lines in spectrum	9	
Number of unidentified lines	5	
Number of lines tentatively identified by NID	4	44.44%

Nuclide Type : natural

Nuclide	Hlife	Decay	Uncorrected pCi/KG WET	Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.561E+03	2.561E+03	0.799E+03	31.20	
RA-226	1600.00Y	1.00	2.432E+02	2.432E+02	8.172E+02	336.04	
AC-228	5.75Y	1.01	1.592E+02	1.613E+02	1.702E+02	105.47	
TH-228	1.91Y	1.04	1.621E+01	1.687E+01	6.592E+01	390.78	
U-235	7.04E+08Y	1.00	1.477E+01	1.477E+01	4.964E+01	336.04	K
	Total Activity :		2.995E+03	2.998E+03			
	Grand Total Activity :		2.995E+03	2.998E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 13L28642-4

Acquisition date : 19-JUN-2006 11:15:13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	77.21	15	91	1.12	154.39	148	10	3.51E-03	****	2.00E+00	
1	85.40	74	144	1.16	170.77	165	13	1.71E-02	71.6	2.41E+00	
1	294.78	23	31	1.67	589.55	586	7	5.44E-03	97.9	2.28E+00	
1	351.70	4	63	1.33	703.42	699	10	8.88E-04	****	2.00E+00	
1	510.65	24	66	3.06	1021.39	1014	17	5.57E-03	****	1.51E+00	

Flags: "T" = Tentatively associated

Summary of Nuclide Activity

Total number of lines in spectrum	9	
Number of unidentified lines	5	
Number of lines tentatively identified by NID	4	44.44%

Nuclide Type : natural

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/KG WET	Wtd Mean Decay Corr pCi/KG WET	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.561E+03	2.561E+03	0.799E+03	31.20	
RA-226	1600.00Y	1.00	2.432E+02	2.432E+02	8.172E+02	336.04	
AC-228	5.75Y	1.01	1.592E+02	1.613E+02	1.702E+02	105.47	
TH-228	1.91Y	1.04	1.621E+01	1.687E+01	6.592E+01	390.78	
	Total Activity :		2.980E+03	2.983E+03			
	Grand Total Activity :		2.980E+03	2.983E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Interference Report

No interference correction performed

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/KG WET)	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA
K-40	2.561E+03	7.991E+02	6.916E+02	0.000E+00	3.703
RA-226	2.432E+02	8.172E+02	1.393E+03	0.000E+00	0.175
AC-228	1.613E+02	1.702E+02	2.503E+02	0.000E+00	0.645
TH-228	1.687E+01	6.592E+01	1.193E+02	0.000E+00	0.141

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/KG WET)	K.L. Ided	Act error	MDA (pCi/KG WET)	MDA error	Act/MDA

BE-7	-7.646E+01	6.480E+02	1.039E+03	0.000E+00	-0.074
NA-24	-3.700E+14	3.844E+14	Half-Life too short		
CR-51	-1.494E+02	9.525E+02	1.569E+03	0.000E+00	-0.095
MN-54	1.501E+01	5.041E+01	8.550E+01	0.000E+00	0.176
CO-57	-1.261E+00	3.333E+01	5.449E+01	0.000E+00	-0.023
CO-58	-1.924E+01	6.377E+01	1.013E+02	0.000E+00	-0.190
FE-59	-1.075E+02	1.695E+02	2.561E+02	0.000E+00	-0.420
CO-60	-6.645E+00	4.898E+01	7.932E+01	0.000E+00	-0.084
ZN-65	9.768E+01	1.256E+02	2.238E+02	0.000E+00	0.437
SE-75	2.771E+01	6.358E+01	1.069E+02	0.000E+00	0.259
SR-85	3.825E+02	9.565E+01	1.794E+02	0.000E+00	2.133
Y-88	-4.359E+01	5.167E+01	6.614E+01	0.000E+00	-0.659
NB-94	1.956E+01	4.716E+01	8.137E+01	0.000E+00	0.240
ZRNB-95	3.594E+01	5.868E+01	1.040E+02	0.000E+00	0.345
MO-99	-6.951E+00	3.887E+00	Half-Life too short		
RU-103	-2.022E+00	8.373E+01	1.390E+02	0.000E+00	-0.015
RU-106	2.272E+02	4.758E+02	8.133E+02	0.000E+00	0.279
AG-110m	-2.896E+00	5.234E+01	8.484E+01	0.000E+00	-0.034
SN-113	5.258E+01	7.040E+01	1.223E+02	0.000E+00	0.430
SB-124	-8.688E+01	8.855E+01	1.345E+02	0.000E+00	-0.646
SB-125	5.352E+01	1.278E+02	2.159E+02	0.000E+00	0.248
TE-129M	-1.375E+02	1.171E+03	1.883E+03	0.000E+00	-0.073
I-131	9.901E+02	1.456E+03	2.514E+03	0.000E+00	0.394
BA-133	-3.711E+01	7.854E+01	1.052E+02	0.000E+00	-0.353
CS-134	4.775E+01	5.674E+01	9.875E+01	0.000E+00	0.484
CS-136	1.394E+02	3.553E+02	6.104E+02	0.000E+00	0.228
CS-137	2.341E+01	5.287E+01	8.960E+01	0.000E+00	0.261
CE-139	-1.270E+01	4.212E+01	6.657E+01	0.000E+00	-0.191
BALA140	2.518E+02	3.535E+02	6.610E+02	0.000E+00	0.381
CE-141	5.261E+00	1.353E+02	2.202E+02	0.000E+00	0.024
CE-144	-7.405E+01	2.632E+02	4.216E+02	0.000E+00	-0.176
EU-152	-4.502E+01	1.457E+02	2.053E+02	0.000E+00	-0.219
EU-154	-3.446E+01	6.502E+01	1.029E+02	0.000E+00	-0.335
TH-232	1.592E+02 +	1.679E+02	3.219E+02	0.000E+00	0.495
U-235	1.111E+02	2.681E+02	4.480E+02	0.000E+00	0.248
U-238	3.147E+03	5.570E+03	9.829E+03	0.000E+00	0.320
AM-241	-4.441E+02	2.755E+02	3.988E+02	0.000E+00	-1.114

```
A,13L28642-4       ,06/19/2006 12:27,05/10/2006 14:30,   2.398E-01,L28642-4 FI EX
B,13L28642-4       ,EXELONFSSDVG        ,06/13/2006 09:43,13B300082504
C,K-40     ,YES,    2.561E+03,   7.991E+02,   6.916E+02,,    3.703
C,RA-226   ,YES,    2.432E+02,   8.172E+02,   1.393E+03,,    0.175
C,AC-228   ,YES,    1.613E+02,   1.702E+02,   2.503E+02,,    0.645
C,TH-228   ,YES,    1.687E+01,   6.592E+01,   1.193E+02,,    0.141
C,BE-7     ,NO ,   -7.646E+01,   6.480E+02,   1.039E+03,,   -0.074
C,CR-51    ,NO ,   -1.494E+02,   9.525E+02,   1.569E+03,,   -0.095
C,MN-54    ,NO ,    1.501E+01,   5.041E+01,   8.550E+01,,    0.176
C,CO-57    ,NO ,   -1.261E+00,   3.333E+01,   5.449E+01,,   -0.023
C,CO-58    ,NO ,   -1.924E+01,   6.377E+01,   1.013E+02,,   -0.190
C,FE-59    ,NO ,   -1.075E+02,   1.695E+02,   2.561E+02,,   -0.420
C,CO-60    ,NO ,   -6.645E+00,   4.898E+01,   7.932E+01,,   -0.084
C,ZN-65    ,NO ,    9.768E+01,   1.256E+02,   2.238E+02,,    0.437
C,SE-75    ,NO ,    2.771E+01,   6.358E+01,   1.069E+02,,    0.259
C,SR-85    ,NO ,    3.825E+02,   9.565E+01,   1.794E+02,,    2.133
C,Y-88     ,NO ,   -4.359E+01,   5.167E+01,   6.614E+01,,   -0.659
C,NB-94    ,NO ,    1.956E+01,   4.716E+01,   8.137E+01,,    0.240
C,ZRNB-95  ,NO ,    3.594E+01,   5.868E+01,   1.040E+02,,    0.345
C,RU-103   ,NO ,   -2.022E+00,   8.373E+01,   1.390E+02,,   -0.015
C,RU-106   ,NO ,    2.272E+02,   4.758E+02,   8.133E+02,,    0.279
C,AG-110m  ,NO ,   -2.896E+00,   5.234E+01,   8.484E+01,,   -0.034
C,SN-113   ,NO ,    5.258E+01,   7.040E+01,   1.223E+02,,    0.430
C,SB-124   ,NO ,   -8.688E+01,   8.855E+01,   1.345E+02,,   -0.646
C,SB-125   ,NO ,    5.352E+01,   1.278E+02,   2.159E+02,,    0.248
C,TE-129M  ,NO ,   -1.375E+02,   1.171E+03,   1.883E+03,,   -0.073
C,I-131    ,NO ,    9.901E+02,   1.456E+03,   2.514E+03,,    0.394
C,BA-133   ,NO ,   -3.711E+01,   7.854E+01,   1.052E+02,,   -0.353
C,CS-134   ,NO ,    4.775E+01,   5.674E+01,   9.875E+01,,    0.484
C,CS-136   ,NO ,    1.394E+02,   3.553E+02,   6.104E+02,,    0.228
C,CS-137   ,NO ,    2.341E+01,   5.287E+01,   8.960E+01,,    0.261
C,CE-139   ,NO ,   -1.270E+01,   4.212E+01,   6.657E+01,,   -0.191
C,BALA140  ,NO ,    2.518E+02,   3.535E+02,   6.610E+02,,    0.381
C,CE-141   ,NO ,    5.261E+00,   1.353E+02,   2.202E+02,,    0.024
C,CE-144   ,NO ,   -7.405E+01,   2.632E+02,   4.216E+02,,   -0.176
C,EU-152   ,NO ,   -4.502E+01,   1.457E+02,   2.053E+02,,   -0.219
C,EU-154   ,NO ,   -3.446E+01,   6.502E+01,   1.029E+02,,   -0.335
C,TH-232   ,NO ,    1.592E+02,   1.679E+02,   3.219E+02,,    0.495
C,U-235    ,NO ,    1.111E+02,   2.681E+02,   4.480E+02,,    0.248
C,U-238    ,NO ,    3.147E+03,   5.570E+03,   9.829E+03,,    0.320
C,AM-241   ,NO ,   -4.441E+02,   2.755E+02,   3.988E+02,,   -1.114
```

APPENDIX E

DATA VALIDATION MEMORANDUM

CONESTOGA-ROVERS & ASSOCIATES

45 Farmington Valley Drive
Plainville, Connecticut 06062
Telephone: (860) 747-1800 Fax: (860) 747-1900
www.CRAworld.com

MEMORANDUM

TO: Steve Quigley

REF. NO.: 45136-21

FROM: Kathy Shaw/ks/9/CT

DATE: July 6, 2006

RE: Data Quality Assessment and Verification
Fleetwide Assessment - Hydrogeologic Investigation
Byron Generating Station – Byron, Illinois

This memorandum details a data verification of the radiochemical data resulting from the collection of 41 groundwater, and eight (8) quality control samples from the Byron Generating Station in Byron, Illinois. The sample summary detailing sample identification, sample location, quality control samples, and analytical parameters is presented in Table 1. Sample analysis was completed at Teledyne Brown Engineering in Knoxville, Tennessee (TBE) in accordance with the methodologies presented in Table 2. The quality control criteria used to assess the data were established by the methods.[1]

Sample Quantitation

The laboratory reported several radionuclides with activity concentrations above the minimum detectable concentration (MDC) and greater than the three (3) sigma critical level (99% confidence interval), but qualified them as not detected due to the presence of interference preventing identification of the major peaks, with a U* flag. Based on the laboratory qualification definition these concentrations should be qualified as not-detected (U*) above the laboratory reported MDC.

Sample Preservation

Samples collected for gamma scan and total strontium analyses are to be preserved to a pH of less than or equal to two (2) during shipment and laboratory storage with nitric acid at the time of collection. The samples were shipped and maintained in accordance with the sample preservation requirements.

Method Blank Samples

Contamination of samples contributed by laboratory conditions or procedures was monitored by concurrent preparation and analysis of method blank samples. The method blank samples were reported to be free of radioactive material contamination produced by the laboratory conditions or procedures.

[1] PRESCRIBED PROCEDURE FOR MEASUREMENT OF RADIOACTIVITY IN DRINKING WATER EPA-600/4-80-032

Laboratory Control Sample Analysis

The laboratory control sample (LCS) is a sample containing a known amount of a radionuclide that is equivalent to internal or external control samples prepared by the analytical laboratory or a Federal/State agency. The LCS percent recoveries were within the laboratory or agency control limits, indicating that an acceptable level of overall performance was achieved.

Duplicate Sample Analyses

The laboratory precision of matrix-specific measurement system was monitored by the analyses of duplicate samples. The duplicate relative percent difference (RPD) data were within the acceptance criteria. No targeted analytes were reported as detected in the laboratory duplicate sample sets.

Field Quality Assurance/Quality Control

The field quality assurance/quality control consisted of four (4) field duplicate sample sets and four (4) rinsate blank samples.

To assess the efficiency of field decontamination procedures and cleanliness of sample containers, the rinsate samples identified in Table 1 were collected and analyzed. No target radionuclides were reported as detected in the rinsate samples.

Overall precision for the sampling event and laboratory procedures were monitored using the results of the field duplicate sample sets. No matching pairs of analytes were reported as detected in the field duplicate sample sets; therefore, the level of precision could not be determined.

Overall Assessment

The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted.

TABLE 1

SAMPLE SUMMARY - FLEETWIDE INVESTIGATION
FLEETWIDE TRITIUM ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Matrix*	*Analysis*
WG-BYN-042506-SS-01	DF-12		4/25/06	Groundwater	Tritium
WG-BYN-042506-JK-02	DF-4DS		4/25/06	Groundwater	Tritium
WG-BYN-042506-SS-03	DF-1D		4/25/06	Groundwater	Tritium
WG-BYN-042506-JK-04	DF-1S		4/25/06	Groundwater	Tritium
WG-BYN-042506-SS-05	DF-6		4/25/06	Groundwater	Tritium
WG-BYN-042506-JK-06	DF-2S		4/25/06	Groundwater	Tritium
WG-BYN-042506-SS-07	PC-2B		4/25/06	Groundwater	Tritium
WG-BYN-042506-JK-08	DF-3S		4/25/06	Groundwater	Tritium
WG-BYN-042506-SS-09	MW-36	MS/MSD	4/25/06	Groundwater	Tritium
WG-BYN-042506-JK-10	DF-3S	Duplicate (08)	4/25/06	Groundwater	Tritium
WG-BYN-042506-SS-11	PC-5B		4/25/06	Groundwater	Tritium
WG-BYN-042506-JK-12	DF-19		4/25/06	Groundwater	Tritium
WG-BYN-042506-SS-13	DF-24		4/25/06	Groundwater	Tritium
WG-BYN-042606-JK-14	MW-1		4/26/06	Groundwater	Tritium
RB-BYN-042606-SS-15	- -	Rinsate	4/26/06	Water	Tritium
WG-BYN-042606-JK-16	- -	Rinsate	4/26/06	Groundwater	Tritium
WG-BYN-042606-SS-17	PC-6B		4/26/06	Groundwater	Tritium
WG-BYN-042606-JK-18	MW-3		4/26/06	Groundwater	Tritium
WG-BYN-042606-SS-19	PC-6B	Duplicate (17)	4/26/06	Groundwater	Tritium
WG-BYN-042606-JK-20	AR-3		4/26/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-21	PC-1C		4/26/06	Groundwater	Tritium

TABLE 1

SAMPLE SUMMARY - FLEETWIDE INVESTIGATION
FLEETWIDE TRITIUM ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Matrix*	*Analysis*
WG-BYN-042606-JK-22	AR-2		4/26/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-23	PC-1B		4/26/06	Groundwater	Tritium
WG-BYN-042606-JK-24	AR-10		4/26/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-25	AR-1		4/26/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-KD-26	AR-9		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-27	AR-11		4/26/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-KD-28	CAR-3		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-29	MW-39		4/26/06	Groundwater	Tritium
WG-BYN-042706-KD-30	AR-8		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-31	DF-13		4/26/06	Groundwater	Tritium
WG-BYN-042706-KD-32	AR-7		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042606-SS-33	MW-37		4/26/06	Groundwater	Tritium
WG-BYN-042706-SS-34	MW-2		4/27/06	Groundwater	Tritium
RB-BYN-042706-SS-35	- -	Rinsate	4/27/06	Water	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-36	CAR-1		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-37	TW-14		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-38	TW-15		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-39	TW-13		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-40	TW-13	Duplicate (39)	4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-41	AR-6		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-42	AR-5		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum

TABLE 1

SAMPLE SUMMARY - FLEETWIDE INVESTIGATION
FLEETWIDE TRITIUM ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Sample Location	*Sample Identification*	*QC Sample*	*Sample Date*	*Matrix*	*Analysis*
RB-BYN-042706-SS-43	- -	Rinsate	4/27/06	Water	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-44	AR-4		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-KD-45	Well 7		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-KD-46	Well 7	Duplicate (45)	4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042706-SS-47	CAR-2		4/27/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042806-KD-48	GW-9	MS/MSD	4/28/06	Groundwater	Tritium/Strontium/Gamma Spectrum
WG-BYN-042806-SS-49	MW-30		4/28/06	Groundwater	Tritium

QC - Quality Control
Gamma Spectrum - Barium-140, Cesium-134, Cesium-137, Cobalt-58, Cobalt-60, Iron-59, Lanthanum-140, Manganese-54, Niobium-95, Zinc-65, Zirconium-95
Isotopes not listed in Table 1, but typically detected in environmental samples (i.e. Ac-228, K-40, Be-7, Ra-226, Th-228, Th-232, etc.) were reported if detected.

TABLE 2

SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
FLEETWIDE ASSESSMENT
BYRON GENERATING STATION
BYRON, ILLINOIS

Parameter	*Method*[1]	*Matrix*	*Holding Time*	*Preservation*
Tritium	EPA 906.0	Water	- 6 months	None
Strontium-89/90 (Total)	EPA 905.0	Water	- 6 months	HNO3 to pH<2
Gamma Spectrum	EPA 901.1	Water	- 6 months	HNO3 to pH<2

[1] EPA-60/40-80-032 August 1980 "Precribed Procedures For Measurement of Radioactivity In Drinking Water