Remedial Work Plan For Areas 2 and 4 American National Can Company Oakland, California Facility

Prepared for:

American National Can Company Chicago, Illinois

Date: December, 1993

QUALITY

INTEGRITY

CREATIVITY

RESPONSIVENESS





HAZMAT

Formerly DUNN Corporation

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December 9, 1993

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Subject:

American National Can Company

3801 East 8th Street Oakland, California

hater O. Hawane for

Enclosed please find our proposed Remedial Work Plan for Areas 2 and 4 of the subject site for your review and approval. If you have any questions, please do not hesitate to call me at 518/458-1313.

Sincerely

Edward W. Alusow

Senior Project Manager

EWA:ce

enclosures

cc:

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1.0 INTRODUCTION

American National Can Company (ANC) proposes to initiate remedial activities at certain portions of their facility in Oakland, California (Figure 1). The primary purpose of the remediation will be to prepare the property for redevelopment as a major retail shopping center for the area. Rust Environment & Infrastructure (RUST - formerly Dunn Corporation) has completed extensive investigations at the property which define the nature and extent of contamination at three areas of concern (Areas 2, 3 and 4) and to provide sufficient information for the design and implementation of appropriate remedial measures. The details of these investigations have been previously reported by DUNN in a Subsurface Investigation Report dated August, 1991 and a Subsurface Investigation Summary Report dated June, 1992.

This Remedial Work Plan is specific to Areas 2 & 4. Area 2 is located along the northeast perimeter of the site in the vicinity of a former underground heating oil tank. Area 4 is located on the southern perimeter of the site and includes the vicinity of the compound storage building and extends along former underground product pipelines to the lithography building (Building #12). A 500-gallon underground storage tank (UST) was removed from Area 4. Other USTs and soil have been removed from Area 4 during past remedial activities. Figure 2 is a map showing the location of Area 2 & 4. A separate remedial work plan has been prepared for Area 3 because the nature of contaminants and the subsurface conditions in Areas 2 & 4 are significantly different from those in Area 3. Because of these differences, the potential remedial measures for Area 2 & 4 are also significantly different. The remedial measures to be implemented in Areas 2 & 4 are consistent with the practices employed for closure of underground storage tanks in California.

1.1 WORK PLAN SCOPE AND ORGANIZATION

The elements of this work plan consist of removal of an existing underground storage tank, excavation of contaminated soil adjacent to the tank or former tanks, and management and treatment of ground water encountered during excavation activities, as appropriate. A review of the site conditions for Area 2 & 4 is provided in Section 2.0. Section 3.0 presents the purpose, objectives and scope of the proposed remedial actions. Section 4.0 describes in detail the proposed remedial actions at Areas 2 & 4 and Section 5.0 describes the responsibilities which will be required of the contractor selected to perform the remedial actions at each area. The general provisions for proposed post-closure ground water monitoring is presented in Section 6.0 and Section 7.0.

1.2 SITE DEVELOPMENT AND SCHEDULE

It is our understanding that Area 2 is scheduled for development at the approximate location of a primary entrance to the redeveloped Site from East 8th Street. Site development plans show that Area 4 will be located beneath a parking area adjacent to Alameda Avenue. Following development, both areas will be essentially level and covered with asphalt. Site development plans include initial demolition of existing facility structures and removal of existing utilities.

Remedial activities associated with Areas 2 & 4 would likely be implemented simultaneous with, or shortly after, demolition activities. This approach will allow removal of utilities which previously had inhibited remedial efforts in these areas. Furthermore, this approach will allow maximum flexibility for the excavation and staging activities associated with remediation of Areas 2 & 4.

1.3 REGULATORY FRAMEWORK AND PERSPECTIVE

The remedial actions to be undertaken in Areas 2 & 4 consist of standard practices associated with closure of underground storage tanks in the State of California. The methods to be employed for the removal of USTs, excavation of contaminated soil, post-excavation sampling and analyses, sampling of staged soils and management or treatment of ground water will be performed consistent with the regulations and guidance for closure of USTs in California.

To date, the objectives and scope of investigations at the site have been in response to specific requests from environmental regulatory agencies in the State of California. No portion of the site, however, has been listed as a state or federal superfund site. The work to be performed under this work plan (i.e., tank closures) falls within the purview of the San Francisco Bay Regional Water Quality Control Board (Board) and the Alameda County Department of Environmental Health (Agency). The Agency will provide recommendations as to the adequacy of remedial schemes for any area of the site to the Board, who retains overall signoff for the site as a whole. A primary objective of this work plan is to provide sufficient information and analysis of the proposed remedial measures to solicit input and response from the appropriate California regulatory agencies. In so doing, the involved parties may proceed with the development of the property with the knowledge that the appropriate agencies have been involved in the decision making process to remediate the property.

2.0 SITE CONDITIONS

2.1 SITE CONDITIONS

2.1.1 Site Setting and History

The site is located at 3801 East 8th Street in Oakland, California. The property, shown on Figure 1, is a triangular shaped parcel bordered by East 8th Street to the northeast, 37th Avenue to the west and Alameda Avenue to the south. The site occupies approximately 16 acres of which 80% is covered by a series of interconnected buildings. Most of the remaining land areas are paved and are principally used for vehicle parking and truck loading/unloading. Unpaved areas exist around two railroad spurs entering the southern perimeter of the site; on the west side of Building No. 11; adjacent to the water tank and wash shed; and within the triangular section of land on the north side of the site between Building No. 11 and East 8th Street (Area 2). The unpaved areas mainly consist of open soil covered with grass and/or crushed stone.

The two railroad spurs were used for the unloading of sheet metal and the loading and distribution of manufactured cans.

The subject property has been used exclusively for the manufacturing of steel beverage and food cans since American Can Company began operations at the Site in the early 1900's. The merger of National Can Corporation and American Can Packaging, Inc. in 1987 led to the formation of the current site owner, ANC. In 1988, the manufacturing process was discontinued and through December, 1992, the site was used only for warehousing purposes.

2.1.2 Adjacent Land Use

The site is located within an industrialized area. Immediately west of the site and across 37th Avenue is the Owens Glass Company. A Michelin tire warehouse/distributor is located on the south side of Alameda Avenue, southwest of the site. Immediately south of the site just across Alameda Avenue is a newly developed light industrial complex consisting of offices and small warehouses. This lot apparently was formerly owned by Uni-Cal and was used as a rail yard for the delivery and shipment of products. The EKOTEK Lube site directly adjoins the southeastern perimeter of the property. The EKOTEK Lube site is a former waste oil recycling operation and solvent reclamation operation. There is some residential housing interspersed through this industrial area. Residential units are present along East 8th Street from 37th Avenue (adjacent to the site) west for 3/4 of a mile to Fruitvale Avenue.

There are other notable features in the immediate vicinity of the site. A tidal canal is located one quarter mile south of the site and empties into the San Leandro Bay, another mile further to the south. North of the site, just beyond East 8th Street, is an eight-lane-wide interstate highway (I-880).

2.1.3 Geologic and Hydrogeologic Conditions

The geology at the site consists of approximately 800 feet of unconsolidated sediments over undifferentiated bedrock (Hickenbottom and Muir 1988). Several soil samples have been collected during recent investigations in order to characterize the geology and hydrogeology beneath the site.

Based on the visual description of the samples, the stratigraphy present at the site may be grouped into three units: fill, tidal marsh, and fluvial deposits, in order of increasing depth. The composition of fill material varies from reworked natural silty clay surficial deposits to mixtures of sand and gravel. Where observed, this deposit contained very little foreign matter or unnatural debris. The tidal marsh unit exists immediately below the fill unit or at the surface in areas where the fill is not present. This unit is primarily composed of very dense, stiff silt and clay that is highly plastic when remolded. The unit is rich in organic matter, although it is essentially devoid of any shell fragments. The fluvial deposit lies immediately beneath the tidal marsh unit. This unit consists of numerous individual fining-upwards sequences which grade vertically upwards in grain size from sandy gravels to clayey silts. On a site-wide basis, the fluvial unit was found to vary substantially in textural composition. The unit is relatively coarsegrained across the southern portion of the site (Area 4). However, in Area 2, the unit is composed predominantly of fairly dense clay and silt with occasional seams of sand and fine gravel. Some of the fluvial sequences appear to have been truncated and replaced by subsequently deposited channel sediments. Where repeated channel sequences were encountered at individual locations, the deeper sequences were generally coarser textured than the shallower sequences.

Ground water is present beneath the site in the fluvial stratigraphic unit described above. Ground water level data and subsurface stratigraphic information gathered to date indicate that the ground water bearing unit being monitored at the site exhibits unconfined ground water table characteristics. The water table rises and falls with changes in recharge and discharge.

Based on ground water elevations recorded from monitoring wells on a quarterly basis since April, 1991, ground water generally flows in a southerly direction across the site. Based on the proximity of the site to the San Francisco Bay and the nearby tidal canal, this flow direction reflects the regional ground water flow regime. A local reversal in the ground water gradient exists along the eastern perimeter of the site in response to apparent ground water mounding in that area.

2.2 AREA 2 CONDITIONS

2.2.1 Geologic and Hydrogeologic Conditions

Soil samples collected from Area 2 borings indicate that fill materials of varying thickness are present from the ground surface to a depth of as much as 10 feet. The fill materials consist of a mix of gravel, sand and clayey silt.

Soil below the fill layer was classified as belonging to the fluvial stratigraphic unit identified during the preliminary investigation. However, the fluvial unit in Area 2 is much finer grained than in other areas of the site. Consisting predominantly of stiff silt and clay, with occasional thin layers, partings, and seams of coarser sediments, this unit was most likely deposited in a low energy environment of the fluvial system.

Ground water is present at depths ranging from 10 to 13 feet below grade in Area 2. Although ground water level monitoring has depicted a relatively steep ground water gradient in Area 2, pump tests conducted on well TW-1 demonstrate that the fluvial unit in this area has a relatively low permeability.

Table 1 provides the results of the pump test conducted on December 8, 1992. Due to the low hydraulic conductivity of the aquifer in Area 2, the submersible pump was run in cycles to maintain a drawdown in TW-1. The average pumping cycles consisted of running the pump for approximately 14 seconds and stopping the pump for approximately 9 minutes. On the average, approximately 1-gallon of water was pumped from well TW-1 during each pumping cycle. This translates into an average well yield of only 0.11 gallons per minute.

Based on the results of the pumping test and the fine grained nature of the soils, it appears that ground water moves quite slowly.

2.2.2 Soil and Ground Water Quality

Soil

A total of eight soil samples collected from above the ground water table from borings drilled in Area 2 were analyzed at an off site laboratory. Two samples from boring SB-18 and two samples from SB-19 were analyzed for total petroleum hydrocarbons as diesel (TPHd) by DHS LUFT methods. One sample from the soil boring for well MW-15 and three samples from the soil boring for well TW-1 were analyzed for TPHd and also for benzene, toluene, ethylbenzene and total xylenes (BTEX). The results of these analyses are summarized on Table 2.

Analytical results for TPHd analyses ranged from not detected (<10 mg/kg) to 1100 mg/kg. The extent of soil impact, above the ground water table, in Area 2, is shown on Figure 3.

Ground Water

There are 5 wells present in Area 2 (MW-13, MW-15, MW-21, TW-1 and GW-6). Ground water samples have been collected on a quarterly basis from selected wells since April, 1991. Initially, samples were being collected from wells GW-6 and MW-13. Following the installation and sampling of the additional three wells, DUNN reduced the quarterly sampling program in Area 2, with the approval of the Agency, to include wells TW-1 and MW-21 only. These wells effectively monitor downgradient ground water quality. Based on preliminary analytical results from 1991, the samples are analyzed for TPHd, nickel and zinc.

24 168 A thin free phase layer of hydrocarbon product has been present on the surface of the water in well GW-6. Monitoring well TW-1 was installed within 5 feet of GW-6 as a product recovery well. However, for a year after being installed, well TW-1 did not yield any product. Samples collected during that period, which represent downgradient ground water quality, revealed only low concentrations (<3,000 ppb) of TPHd. These results indicate that the product present in Area 2 is not dissolving into the ground water to any significant degree. The concentration of TPHd in TW-1 increased in December, 1992, and beginning in February, 1993 a very thin layer (0.01') of product developed on the surface of the water in this well.

Samples have been collected from well MW-21 on 6 occasions between February, 1992 and June, 1993 to provide further downgradient monitoring from Area 2. TPHd was detected in this well at a concentration of 55 ppb in February, 1992 and then not detected during three subsequent rounds of sampling (May, August and December, 1992). During the March, 1993 and June, 1993 rounds of sampling, TPHd was detected in well MW-21 at concentrations of 64 ppb and 120 ppb, respectively. The fluctuation of the TPHd concentrations in this well is likely a reflection of seasonal climatological variances. Periods of increased precipitation and ground water recharge during the regions wet season are probably accompanied by desorbtion and mobilization of constituents from Area 2 to the downgradient monitoring point, well MW-21. However, the concentrations detected to date indicate that downgradient ground water quality at this time has not been significantly impacted by petroleum compounds in Area 2.

The source of the zinc detected in the samples from ground water monitoring well MW-13 is not known. There is no information available that zinc or zinc compounds were used in operations at the facility during its history. Speculative sources of zinc include the ashes in the adjacent boiler room chimney; backfill material imported during construction of the plant; or an off site source. During the performance of excavation activities proposed in this work plan, soil samples collected in Area 2 will be analyzed for zinc to evaluate the possibility that on site soils are the source of the ground water impact.

Summaries of quarterly ground water samples are provided in Table 3. Figure 4 is a map which depicts the distribution of TPHd in ground water in Area 2.

2.2.3 Contaminant Migration Pathways

As discussed in Section 2.2.1, the surficial unconsolidated deposits consist of silt and clay sediments with occasional layers, partings and seams of coarse sediments. Pump test data collected in the area demonstrate the low hydraulic conductivity of these sediments. As a result of the subsurface conditions, the contaminants are restricted to these coarser partings in the relatively impermeable clay. However, due to the depositional nature of fluvial systems, it is not likely that these relatively permeable features extend laterally more than a few feet. As a result, it is likely that continuous pathways do not exist for the migration of the contaminants from the source. The absence of any significant migration pathway is evidenced by the downgradient ground water quality.

2.2.4 Source Identification

A 15,000 gallon heating oil tank was abandoned in place in Area 2 in 1986. The tank was abandoned by removing its contents and filling it with a cement/bentonite grout. It appears that at some time prior to its closure, some product was released from the tank. Based on the closure of the tank, the source of contamination includes the residual soil contamination around the former underground storage tank.

2.2.5 Receptor Evaluation

The nature of the subsurface materials has prevented the migration of contaminants, to any significant degree, from Area 2. Therefore, there are no sensitive receptors of the small quantities of petroleum remaining in Area 2.

2.3 AREA 4 CONDITIONS

2.3.1 Geologic and Hydrogeologic Conditions

Soil borings drilled in Area 4 penetrated varying amounts of fill materials, the tidal marsh clay deposit and also the fluvial unit. Where present, the tidal marsh unit is similar in composition to other areas of the site. It consists of black silty clay. It is highly organic, very dense and is very plastic. In the area around well GW-3, the tidal marsh clay was removed during the excavation and removal of a group of underground storage tanks. This area has been backfilled with a moderately well sorted medium to fine sand.

The upper 15 feet of the fluvial unit was penetrated in borings completed in Area 4. Soil sample descriptions indicate that the unit is generally coarse-textured, consisting predominantly of coarse-to-fine sand with traces of silt and gravel. Above the ground water table, the unit is fairly dense and fine-grained.

The water table in Area 4 is present at a depth ranging from 8.5 to 10 feet below grade. Ground water contour maps produced from water level measurements show that ground water flows generally in a southerly direction. The ground water gradient in the area is very small. Based on ground water elevations measured between MW-10 and GW-3, an average gradient of 0.002 ft/ft exists in the area.

2.3.2 Soil and Ground Water Quality

Soil

Subsurface investigation activities performed by DUNN in Area 4 of the site revealed soil contamination in two isolated locations. Soil impacted with xylenes, ethylbenzene and TPH as gasoline (TPHg) was identified beneath a series of underground product pipelines which extended from a group of former underground coatings storage tanks (removed in 1987) to

Building No. 12. Investigation activities also revealed residual impacted soil along the north and northwest walls of the former excavation created for the removal of the group of product USTs. This soil was not removed during excavation because of the presence of a buried propane line and the proximity of the compound storage building.

In October, 1992, remedial activities approved by the Agency were carried out in Area 4. At that time, the product pipelines and approximately 450 yards of associated contaminated soil were removed and disposed of at an approved off site landfill. A previously abandoned and non-regulated 550-gallon gasoline UST was also removed and disposed of off site as part of the remedial activities. During the excavation of contaminated soil, some soil which exhibited elevated photoionization detector (PID) readings was left in place around a network of water pipes and a storm drain pipe. Because further excavation in this area could have undermined and disturbed these utilities, additional soil was not removed as agreed to by the Agency.

At this time there are two small areas of residual soil impact, not removed during previous remedial activities. Figure 5 is a map which depicts these two areas. Table 4 provides a summary of soil analytical results in Area 4.

Ground Water

There presently are 6 monitoring wells in Area 4 (MW-8, MW-9, MW-10, MW-14, MW-16 and GW-3). Ground water samples have been collected on a quarterly basis from selected wells since April, 1991.

Ground water samples from well GW-3 have consistently revealed elevated concentrations of petroleum compounds including primarily xylenes, ethylbenzene and TPHg. Wells MW-9, MW-14 and MW-16 have demonstrated that the areal extent of ground water impact around well GW-3 is limited. The data indicate that the impacted ground water is restricted to the former excavation area where the coatings USTs were removed.

Table 3 provides a summary of ground water analytical results obtained from Area 4 wells. Figure 6 delineates the areal extent of ground water impact in Area 4.

2.3.3 Contaminant Migration Pathways

Contaminant migration pathways in Area 4 are limited to downward vertical migration through the unsaturated soil horizon. The downward vertical migration of contaminants is minimized by the dense impermeable nature of both the tidal marsh clay deposit and the upper section of the fluvial deposit, and by the presence of the asphalt or concrete covering this area. The pavement effectively prevents infiltration and subsequent flushing of contaminants into the ground water. The absence of any significant downgradient impact on ground water quality indicates that the contaminants do not migrate via ground water flow. The absence of contaminants in downgradient ground water can be attributed to the very small ground water gradient in Area 4 resulting in fairly stagnant ground water conditions.

2.3.4 Source Evaluation

As discussed in Section 2.3.2, two areas of impacted soil remain in Area 4 following removal of USTs and impacted soil. These two areas are considered potential source areas.

2.3.5 Receptor Evaluation

The potential migration pathways are generally inoperative and do not result in the spread of contaminants in Area 4. Ground water analytical results demonstrate that contaminants are not migrating through the ground water, either downgradient or off site, and therefore, there are no impacted sensitive receptors.

3:0 PURPOSE, OBJECTIVES AND SCOPE OF REMEDIATION

Remedial measures are proposed on this work plan to mitigate environmental impacts in Areas 2 and 4. The mitigation is being driven by the need to improve the environmental quality in these two areas of the site so that the site may be redeveloped into a retail shopping center.

Based on the nature of contaminants and subsurface conditions in Areas 2 & 4, remedial objectives have been identified and include the following

- Select and implement a remedial measure which is consistent with, and does not inhibit, the proposed redevelopment for this area.
- Eliminate, minimize or reduce potential health and environmental risks posed by the existing contaminants.
- Control or prevent the release of contaminants during remedial activities which may pose a public health threat.
- Monitor ground water after remediation to confirm the effectiveness of the implemented remedial measure(s).
- Prevent exposure to the public and workers, to the extent necessary, during and after remediation.
- Provide the public with a beneficial use of the property.
- Manage and treat ground water to meet applicable discharge standards, if necessary during remediation.
- Limit short term capital costs for treatment and long term operation, maintenance and monitoring requirements, to the extent possible.
- Achieve the above objectives in a cost effective manner and implement the remedial measure(s) at minimum cost.

Achieving these remedial objectives will result in a completed remediation which is acceptable to the regulatory agencies and which is protective of public health and the environment.

To achieve these remedial objectives, RUST proposes the excavation and removal of materials and contaminants from Areas 2 and 4. In area 2 this will include the removal and offsite disposal of the 15,000 gallon UST, the removal of free product and the removal of impacted soil. In Area 4, this will most likely only include removal of impacted soil as all USTs and product were removed at an earlier date. The level of ground water impact in each area does not warrant remediation however excavation in each of the areas is proposed to depths of 2 to 3 feet below



the water table. As a result, ground water that may contain elevated levels of petroleum compounds will likely be removed during excavation activities. Post closure ground water monitoring is being proposed to evaluate the effectiveness of the remedial measures.

4.0 PROPOSED REMEDIAL ACTIONS

RUST has reviewed and evaluated several remedial technologies which could be utilized and applied to complete the closure of the two UST areas at the ANC Oakland facility. In a geologic and hydrologic setting which exhibits minimal ground water flow and limited areal and vertical migration of contaminants, many technologies prove to be difficult to implement or are not cost effective.

The extensive soil and ground water sampling and analyses performed in Areas 2 & 4 has accurately defined limited source areas and has adequately identified the types of contaminants of concern. The most applicable method for the remediation of Area 2 & 4 under these circumstances is excavation and removal with off-site disposal, as appropriate. Pretreatment of impacted soil may also be desirable prior to removal of the soil from the site to reduce the levels of constituents in the soil. Ground water removal and treatment technologies may be necessary during excavation below the water table.

A description of the remedial actions to be undertaken in Areas 2 & 4 is provided in the following sections.

4.1 AREA 2 - REMEDIAL ACTION

Contamination of Area 2 resulted from previous operations of a fuel oil tank located along the north central portion of the site. In 1987, during an attempted tank removal operation, this tank was abandoned in place due to access constraints and proximity of various utilities. Once the ANC facilities have been properly decommissioned as part of redevelopment, these issues will no longer be an impediment to tank removal and associated remediation. The conceptual remedy for this area is to excavate and remove the tank for off site disposal, and to excavate contaminated soils to a depth of approximately 2 to 3 feet below the water table or to the base of contamination, whichever is greater, to remove contaminated soil and ground water. These excavated soils will be removed for off site disposal by a licensed hauler to an approved facility for petroleum contaminated soils. Prior to transport off site, soils may be treated on site as described in Section 4.5. A series of ground water removal well points may be used during excavation below the water table to remove any residual product or contaminated ground water which may enter the excavation.

Proper closure of this fuel oil UST will entail excavation and removal of the tank and any attached appurtenances (fill pipes/vent tubes, distribution lines). Impacted soil adjacent to the tank will be removed to an estimated depth of 16 feet. A field screening procedure previously utilized at this facility will be utilized to separate the clean soils from those which have been affected by the UST. All soils which exhibit an elevated response (greater than 10 parts per million) to an HNU/PID headspace screening will be stockpiled on plastic sheeting or concrete pads and separated from clean soils. This soil will be considered as a Non-RCRA hazardous waste and is eligible for landfill disposal. Water or product recovered from the excavation, along with any water which accumulates within the contaminated soil stockpile area, will be contained and sent off site for proper disposal. Only clean soils will be utilized as backfill.

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Clean backfill materials may be available on site due to work associated with development. If necessary, clean soils may be imported from off site borrow sources.

No construction problems are anticipated with the removal and off site disposal, provided plant decommissioning has first been accomplished. This decommissioning includes removal and/or disconnection of all utilities in the immediate vicinity including the smoke stack located approximately 25 feet north of the UST. The anticipated time for removal of the estimated 1200 cubic yards of soils and the UST (assumed to be 15,000 gallons) is approximately two weeks. Procedures previously approved by the Agency will be utilized to determine the extent of actual excavation. Soils displaying PID headspace screening readings below 10 parts per million will remain in place and those with higher readings will be excavated and stockpiled. Post-excavation soil samples will be collected and analyzed as described in Section 4.3 to confirm the adequacy of the remediation.

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4.2 AREA 4 - REMEDIAL ACTION

The corrective action to be implemented in Area 4 is excavation and removal of remnant contaminated soils and ground water for off site disposal. Soils exhibiting a PID response greater than 10 parts per million will be excavated and stockpiled on plastic sheeting. In areas where ground water contamination has been documented, the excavation will extend approximately 2 to 3 feet below the water table in order to remove impacted soil and ground water. This may require the removal of contaminated ground water through a well point recovery system. The ground water will be collected and disposed of by a licensed transporter at an approved facility.

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The estimated volume of soil for excavation based on previous investigations and remediation activities is 500 to 750 cubic yards with an average excavation depth of 8 feet. Excavation within the former UST area is anticipated to continue below the water table as much as five feet. The maximum anticipated excavation depth is estimated to be 15 feet below grade. Ground water is anticipated to be encountered at approximately 10 feet below grade.

This soil will be characterized for waste disposal purposes. Water recovered from the excavation, along with any water which accumulates within the contaminated soil stockpile area, will be contained and sent off site for proper disposal. Only clean soils will be utilized as backfill. Clean backfill materials may be available on site due to work associated with development. If necessary, clean soils may be imported from off site borrow sources.

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4.3 POST-EXCAVATION SAMPLING

Post-excavation confirmatory soil samples will be collected to ensure that all impacted soils have been removed. These samples will be collected on a 20-foot spaced grid pattern along the floors of the excavations and at 20-foot spacings along the excavation walls. The wall samples will be collected within the "smear zone" or in a "worst case" location as determined in the field. These samples will be analyzed by the DHS LUFT Method. An analytical result for a sample above 5 ppm for any single BTEX compound or 20 ppm for total BTEX or 250 ppm for TPHd (Area 2)

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or TPHg (Area 4) will require additional remediation in the area of the sample. The area represented by a sample is considered to be the area halfway to the nearest sample location in each direction.

4.4 SAMPLING OF STOCKPILED SOILS

Soils excavated from Areas 2 and 4 which, based on PID screening results, appear to not be contaminated will be stockpiled separately from contaminated soils and sampled to determine if they can be reused as site backfill. In addition, all Area 2 soils will be stockpiled separate from Area 4 soils. Composite soil samples will be collected from the stockpiles of clean soil at a frequency of 1 per every 100 yards to determine if it can be utilized as backfill. These samples will be analyzed at an off-site laboratory. Samples collected from the area will be analyzed for BTEX and TPHd (Area 2) or BTEX and TPHg (Area 4) by DHS LUFT Methods. Soil exhibiting less than 10 ppm of TPHd (Area 2) or BTEX and TPHg (Area 4) and no detectable concentrations of BTEX will be used as on-site backfill. Soil not meeting these criteria will be placed with the contaminated soil and subsequently disposed of at an approved off site disposal facility. Contaminated soil may be treated on site as described in Section 4.5 prior to off-site disposal.

/w/ Ruses

Composite samples will be collected of contaminated soil which is stockpiled to determine characteristics for disposal. The frequency of composite samples collected will be determined by requirements of the disposal facility. Each composite will consist of 5 soil samples collected from beneath the surface of the stockpile. Analytical parameters will be consistent with those required by the proposed disposal facility. Expedited turnaround will be requested by the analytical laboratory to facilitate completion of remedial activities (e.g., backfilling).

4.5 ON SITE SOIL TREATMENT

Soil removed during excavation of Areas 2 and 4 will be screened and separated based on conformance with landfill disposal criteria. Soil which is not suitable for disposal at a landfill will be treated on site to reduce contaminant concentrations to an acceptable level for landfill disposal.

5.0 CONTRACTORS RESPONSIBILITIES

A qualified California State UST contractor will be contracted to complete the scope of work associated with the final closure activities for the Area 2 fuel oil UST and the Area 4 UST remnant soils. RUST anticipates providing both engineering support and field oversight services to support and document these closure activities.

RUST (the engineer) will provide the contractor with drawings of site conditions, tank locations, authorized staging areas and soil stockpile location plans. Proposed staging areas, stockpile locations and treatment areas will be selected based on site development plans. A field survey of the anticipated excavation areas will be performed by the contractor prior to any excavation activity. A copy of the updated excavation plan will be prepared in the field based on a PID survey and will serve as the primary guidance document for the contractor. The final limits of excavation, however, will be determined by RUST based on PID readings and confirmed with laboratory sampling and analyses.

5.1 SITE PREPARATION & DECONTAMINATION FACILITIES

The contractor will complete necessary site preparation to implement this tank closure and remnant soil removal. This is anticipated to include construction and maintenance of staging and decontamination areas. All equipment utilized in this project will be decontaminated prior to leaving the site. It will be the contractor's responsibility to effectively collect and contain all decontamination water and to dispose of the waters in a manner consistent with State and local regulations. The contractor will submit shop drawings of the decontamination and staging areas for approval by RUST prior to start of work activity. The location of these areas will be provided by RUST based on site development plans.

5.2 AREA 2 - TANK REMOVAL

The contractor will comply with all State and local regulations, rules and permit requirements for UST removal and closure activities. The contractor will be responsible for maintaining safe working conditions in and around all open excavations, in accordance with OSHA (29 CFR 1926) requirements. The contractor will clearly mark and block off all open excavations. The contractor is responsible for preventing the accumulation of rainfall runoff in excavations, and will be required to remove and dispose of any such accumulated runoff prior to backfilling of excavations.

Soils will be segregated and stockpiled during excavation based on PID headspace screening measurements as discussed in Sections 4.1 and 4.2. The basis of this separation will be at the direction of the engineer's on-site representative. The contaminated soil stockpile will be located within a temporarily bermed area which will prevent release of any soil fluid or rainwater which may come into contact with these soils. Alternatively, this soil will be moved to an on-site treatment area or transported off site for proper disposal. This stockpile area will be isolated from the clean native soils. All excavated soil from Area 2 which is contaminated will be handled and managed separately from Area 4 soil.

The UST will be inspected in accordance with NFPA 30 to confirm non-explosive conditions prior to removal from the site for final disposal. The abandoned UST has allegedly been filled with a cement/sand mixture. The tank is believed to be a 15,000 gallon steel structure with hold down slabs and retainer straps. Appropriate equipment for removal of the filled tank will be determined by the contractor.

5.3 AREA 2 - SOIL EXCAVATION AND DEWATERING

The contractor shall excavate all soils within the area represented on the engineer's updated excavation plans. Area 2 excavation plan has approximately a surface area of 2200 square feet. The excavations in Area 2 are anticipated to continue to a maximum depth of 16 feet. The limits of excavation shall be determined in the field by the engineer's on site representative. It is anticipated that the excavation may extend as much as five feet below the water table. The contractor is responsible for providing sufficient pumping and storage/transport capacity to manage seepage into the excavation. All waters from within the excavation will be removed such that sampling activities can be accomplished (from within the excavation, bottom and each side wall) and the excavation bottom visually inspected for signs of contamination. If determined necessary, the contractor will supply, install and operate a well point system to manage ground water at the excavation.

S.4 AREA 4 - SOIL EXCAVATION AND DEWATERING

Remediation of Area 4 will involve excavation of remnant contamination left in place during prior removal actions. Soils to be excavated will be delineated in the engineer's drawings and will be based on field surveys of the soil PID responses. These areas include the north and west faces of the former tank area and the soils below the crossing points for subsurface utilities (water pipes, drain pipes and gas lines). All plant utilities are anticipated to be inactive/abandoned or removed prior to this work. It is the contractor's responsibility to verify utility conditions prior to excavation. The engineer will assist and coordinate with the developer as necessary to verify utility conditions.

Soil will be excavated from the areas described above to the depth necessary to remove any visual contamination. It is anticipated that all work will occur above the water table except for portions of the excavation in the former tank area. Excavation in the former tank area is anticipated to be limited to the area outside the perimeter of the previous backfill soils, placed during the 1987 UST removal action. However, if visible staining/contamination is present or if the PID response is greater than 10 parts per million, the impacted backfill will also be removed. In the former tank area, the contractor will potentially be required to excavate as much as five feet below the water table. The contractor will be required to provide dewatering capacity as outlined above for excavation of Area 2. Soils will be segregated based on PID responses as described above for remedial activities in Area 2.

Soil will be segregated and stockpiled during excavation based on PID measurements. The basis for this segregation will be at the on-site engineers direction. The contaminated soil will be located within a temporary bermed area to prevent the release of soil fluids or rainwater which

may come into contact with this soil. Alternatively, this soil will be moved to an on-site treatment area or transported off site for proper disposal. The stockpile area for contaminated soil will be isolated from the clean native soil. All contaminated soil removed from Area 4 will be handled and managed separately from Area 2 soil.

5.5 SITE RESTORATION

All excavations are to be maintained in good and safe condition during the period of inactivity while laboratory analytical results are obtained and evaluated. All excavated areas will be returned to grade and compacted as required for future site development. Excavated soil which is not considered contaminated, as described in Section 4.4, shall be reused as on-site fill. Backfill from other portions of the site resulting from site development activities may also be used to bring the excavated areas to grade.

Approved backfill materials shall be placed and compacted in successive horizontal uniformly spread layers of loose material not more than 2 feet thick. Compaction shall be accomplished by a vibratory compactor attached to the excavator, or other similar equipment suited to the soil being compacted. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining acceptable compaction with the equipment used.

6.0 POST CLOSURE GROUND WATER MONITORING

Following the completion of the remedial activities, RUST proposes to implement post closure ground water monitoring programs in both Areas 2 and 4 to evaluate the effectiveness of the remedial activities. The programs will generally consist of monitoring ground water quality, on a quarterly basis, for the contaminants of concern, for a period of 1 year. In each area, three to four wells at locations to be specified at a later date will be utilized to facilitate the monitoring programs. Details of the monitoring programs will be based on the results of the remedial activities, and will be provided in the corrective action report. The corrective action report will also identify a decision making process for determining whether or not monitoring should continue beyond the initial 1 year period.

7.0 ENGINEER'S REPORTS

A corrective action report will be prepared describing the details of the remedial activity at both Areas 2 & 4. All raw laboratory data will be included along with any waste manifests generated during field activity. If on site treatment of soil is performed, the methods and results of these activities will be provided. A post closure ground water monitoring program, as appropriate, will be included in the report.

d:/word/tmj/area2&4.doc December 9, 1993 TMJ:ce **TABLES**

TABLE 1 AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA PLANT

Pumping Test Results - December 8, 1992

		*	PC		G WEI		V-1	An	lu						
TIME		TW-	1	-		******	GW-6			Ĭ	MW-1	5		MW-13	3
Actual	Elapsed	DTW	ELEV	DD	DTP	DTW	ELEV	PT	DD	DTW	ELEV	DD	DTW	ELEV	DD
13.50	5:40									12.45	5.43	0.06)		
13:52:30 - 13:52:43	Run Pump	18.69 - 19.24	-1.21	6.58											
14:02:25 - 14:02:38	Run Pump	18.69 - 19.24	-1.21	6.58											()
14:04	5:54												10.49	7.82	(-0.01
14:05	5:55				17.01	17.14	2.77	0.13	2.91						$\underline{}$
14:11:30 - 14:11:42	Run Pump	18.69 - 19.24	-1.21	6.58		•									
14:20	6:10									12.45	5.43	0.06			
14:21:55 - 14:22:08	Run Pump	18.69 - 19.24	-1.21	6.58											
14:25	6:15				17.03	17.17	2.75	0.14	2.93						
14:34:30 - 14:35	Run Pump	18.69 - 19.24	-1.21	6.58											
14:41:57 - 14:42:08	Run Pump	18.69 - 19.24	-1.21	6.58											
14:45	6:35	·			17.05	17.18	2.73	0.13	2.95						
14:50	6:40									12.46	5.42	0.07			
14:54:10 - 14:54:25	Run Pump	18.69 - 19.24	-1.21	6.58											
15:02	6:52						_			ļ			10.48	7 83	-0.02
15:03:45 - 15:03:58	Run Pump														
15:14	7:04	LOWER !	PUMP T	о вот	том о	F WEL	Ļ					•			
15:14:30 - 15:17:55	Run Pump	21.14 - 21.69	-3.66	9.03											
15:19	7:09				17.06	17.22	2.72	0.16	2.96						
15:21:13 - 15:21:28	Run Pump	21.14 - 21.69	-3. <u>66</u>	9.03									<u> </u>		
15:35:30 - 15:36:20	Run Pump	21.14 - 21.69	-3.66	9.03			•								
15:37	7:27				17.08	17.29	2.70	0.21	2.98	ļ					
15:44:50 - 15:45:10	Run Pump	21.14 - 21.69	-3.66	9.03											
15:45:10	Stop Pump	Test													,
16:05	0:19:50				Remov	e some	product	with b	ailer.				ļ		
16:10	0:24:50				17.38	17.49	2.40	0.11	3.28						
12/9/92 - 6:40	12:54:50					14.28	5.50	0.00	0.18	12.40	5.48	0.01			

NOTES:

DTW = Depth to water, expressed in feet below the well's measuring point.

DTP = Depth to product, expressed in feet below the well's measuring point.

ELEV = Elevation of DTW, expressed in feet above mean sea level.

DD = Drawdown of water level below starting DTW, expressed in feet.

PT = Product thickness which equals the differnce between the DTW and the DTP, expressed in feet.

• = Continued DTW fluctuation between 18.69' and 19.24' during pumping translates to an average DTW of 18.97' which corresponds to an average ELEV of -1.21' and an average DD of 6.58'

Measuring point elevations:

TW-1 = 17.76' GW-6 = 19.78' MW-15 = 17.88' MW-13 = 18.31'

TABLE 2 AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Soil Anlaytical Results - Area 2

Analysis/Compound		Boring No./Sar	mple No./Depth	
	SB-18 S-4	SB-18 S-6	SB-19 SB-3	SB-19 S-4
	5.25'	8.75'	7.25'	10.25'
TPH as diesel (DHS method) (mg/kg)	130	91	nd	nd
PID Headspace (ppm)	12.5	84.0	14.9	13.4

nd indicates compound was not detected.

Sample depth represents the midpoint of 6-inch long sample tube in feet below grade.

TABLE 2 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Soil Anlaytical Results - Area 2 September, 1991

<u>Analysis</u>	Boring No./Sample No./Depth													
	MW-15	TW-1	TW-1	TW-1										
	S-2	S-1	S-2	S-4										
	9.25'	5.75'	9.25'	12.25'										
TPH as gasoline (EPA Method 5030) (mg/kg)	0.9	7.8	870	nd										
BTEX (EPA Method 8020)(mg/kg)														
Benzene	nd .	nd	nd	nd										
Toluene	nd	nd	nd	nd										
Ethylbenzene	nd	nd	nd	nd										
Total Xylenes	0.9	0.018	3.9	nd										
TPH as diesel (EPA Method 3550) (mg/kg)	nd	<u>(19) U</u>	1,100	nd										
PID Headspace (ppm)		82)	(106)	5										

NOTES:

--: Indicates compound was not analyzed for.

nd: Indicates compound was not detected.

Sample depth represents the midpoint of 6-inch long sample tube in feet below grade.

TABLE 3 AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA PLANT

Summary of Detected Volatile Organic Compounds in Groundwater (EPA Method 8240) April, 1991

	AREA 2		-			AREA 3						AR	EA 4		ARE	CA 5
Soil Boring No.	SB-19	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8			SB-9	SB-10	SB-11		SB-14	
Monitoring Well No.	MW-13	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	GW-1	GW-2	MW-8 ,	_MW-9	MW-10	GW-3	MW-11	GW-4
Dilution Factor	1.00	5.00	10.00	2.00	1.00	10.00	1.00	1.00	10.00	1.00	1.00	1.00	1.00	100.00	1.00	1.00
Vinyl Chloride	nd	nd	nd	nd	nd	nd	nd	nd	nd	28	nd	nd	nd	nd	nd	nd
Chloroethane	nd	nd	nd	35	8 J	nd	nd	nd	nd	5 J	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	2 J	nd	nd	nd	nd	nd	nd	nd	nd	nd
Acetone	nd	nd	nd	12 J	nd	nd	nd	nd	200	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride	nd	390	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	nd	nd	110	66	nd	nd	32	nd	nd	11	nd	nd	nd	nd	nd .	nd
cis-1,2-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd	nd	8	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	nd	nd	nd	nd	nd	nd	2 J	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nđ	16 J	410	220	230 E	230	nd	nd	540	45	nd	nd	nd	nd	nd	nd
Toluene	nd	nd	450	26	6	nd	nd	nd	950	14	nd	nd	nd	nd	nd	nd
Tetrachloroethene	nđ	nd	nd	nd	nd	nđ	nd	nd	nd	nd	nd	nd	nd	nd	3 J	nd
Chlorobenzene	nd	21 J	53	5 J	19	48 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	nd	39	170	36	8	56	nd	nd	150	nd	nd	nd	nd	4,600	nd	nd
Xylene (total)	nd	53	1,300	190	36	260	nd	nd	1,500	nd	nd	nd	nd (20,000	nd	nd
1,4-Dichlorobenzene	nd	47	nd	nd	8	nd	nd	2 J	130	nd	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	nd	43	29 J	11	22	nd	nd	nd	32 J	9	nd	nd	nd	nd	nd	nd
Total	nd	219	2,522	601	337	594	36	2	3,502	120	nd	nd	nd	nd	3	nd

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

E indicates the amount reported exceeded the linear range of the instrument calibration.

All concentrations expressed in ug/l (ppb).

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Semi-Volatile Organic Compounds

in Groundwater (EPA Method 8270) April, 1991

	AREA 2					AREA 3	-					ARI	EA 4		ARI	EA 5
Soil Boring Number	SB-19	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8			SB-9	SB-10	SB-11		SB-14	
Monitoring Well Number	MW-13	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	GW-1	GW-2	MW-8	MW-9	MW-10	GW-3	MW-11	GW-4
Dilution Factor	1.00	1.00	10.00	1.00	1.00	1.00	1.00	1.00	100.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Phenol	nd	5 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
bis (2-Chloroethyl) ether	nd	nd	nd	nd	27	nd	nd	nd	nd	4 J	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	nd	nd	nd	nd	6 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	nd	26	nd	nd	nd	23	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	nd	21	23 J	9 J	15	40	nd	nd	nd	7 J	nd	nd	nd	nđ	nd	nd
2-Methylphenol	nd	nd	120	nd .	nd	nd	nd	nd	530 J	nd	nd	nd	nd	3 J	nd	nd
4-Methylphenol	nd	nd	nd	nd	nd	nd	nđ	nd	730 J	nd	nd	nd	nd	13	nd	nd
2,4-Dimethylphenol	nd	nd	1,300	nd	nd	nd	nd	nd	8,900	nd	nd	nd	nđ	40	nd	nd
1,2,4-Trichlorobenzene	nd	nd	nđ	nd	nd	2 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Napthalene	nd	61	260	27	14	140	nd	nd	270 J	nd	nd	nd	nd	24	nd	nd
4-Chloro-3-Methylphenol	nd	nd	nd	nd	120	nd	nd	nd	nd	nd	nd	nđ	nd .	nd	nd	nd
2-Methylnapthalene	nd	30	nd	nd	nd	130	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Fluorene	nd	nd	nd	nd	nd	6 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Phenanthrene	nd	nd	nd	nd	nd	11 J	nd	nd	nd	nd	nd	nd	nd	4 J	nd	. nd
Pyrene	nd	nd	nd	nd	nd	3 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	nd	143	1,703	36	182	355	nd	nd	10,430	11	nd	nd	nd	84	nd	nd

nd indicates compound was not detected.

I indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

All concentrations expressed in ug/l (ppb).

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Total Petroleum Hydrocarbons,

PCBs, and Metals in Groundwater April, 1991

		A 1	AREA 2	i				AREA 3					1	ARI	EA 4		ARE	CA 5
Soil Boring Number	SB-15		SB-19	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8			SB-9	SB-10	SB-11		SB-14	
Monitoring Well Number	MW-12	GW-5	MW-13	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	GW-1	GW-2	MW-8	MW-9	MW-10	GW-3	MW-11	GV
ΓΡΗ (418.1) (mg/l)			••	8.5	48.0	29.0	4.5	650	nd	1.5	43.0	2.5	nd	nd	1.1	6.7	6.8	3.
PH as gasoline	nd	nd		- <i>-</i>		- •												_
DHS method) (ug/l)	1			Ì													Ì	
BTEX																		
Benzene	nd	nd																
l'oluene	nd	nd																
Ethylbenzene	nd	nd																
Total Xylenes	nd	nd										• •			<u> </u>			
「PH as diesel			430						••			• •						
DHS method) (ug/l)															.=			
PCB (EPA 8080) (ug/l)													Ì					
Aroclor-1260			nd	7.9	6.0	nd	nd	10.0	nd	nd	33 E	nđ	nd	nd	nd	nd	nd	
Metals (Title 22) (ug/l)																		
Silver			nd	nd	nd	nd	nd	nd	nđ	nd	nd	nd	nd	10.0	nd	nd	nd	
Arsenic			nd	13.4	41.2	nd	24.6	20.9	nd	12.0	92.9	nd	nd	ad	nd	13.0	nd	
Barium			nd	180	317	163	549	668	129	127	1,030	579	nd	201	101	220	nd	
Beryllium			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Cadmium			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Cobalt			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
otal Chromium			13.4	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	14.8	nd	nd	
Copper			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
dercury			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Aolybdenum		• -	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
lickel			90.3	nd	98.9	nd	nd	73.7	nd	44.5	113	nd	nd	48.6	40.0	nd	nd	
.ead			18.0	4.0	33.3	3.2	30.3	33.5	nd	50.4	25.7	10.9	nd	nd	nd	nd	15.8	
antimony			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
Gelenium			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
'hallium			nd	nđ	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1
anadium			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1
line			9,940	26.2	77.1	79.7	45.6	61.6	50.8	54.1	79.5	nd	23.4	29.0	37.6	34.0	48.7	ı
Organic Lead	nd	nd																

^{- -} indicates compound was not analyzed.

nd indicates compound was not detected.

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA PLANT

Summary of Detected Volatile Organic Compounds

in Groundwater (EPA Method 8240) July, 1991

	ARI	EA2					AREA 3						AR	EA4		ARE	A 5
Soll Boring No.	SB-19		SB-2	SB-3	SB-4	SB-5	DUP.	SB-6	SB-7	SB-8		SB-9	SB-10	SB-11		SB-14	
Monitoring Well No.	MW-13	GW-6	MW-1	MW-2	MW-3	MW-4	X-1	MW-5	MW-6	MW-7	GW-2	MW-8	MW-9	MW-10	GW-3	MW-11	GW⊸
Dilution Factor	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	100.00	1.00	1.00
Vinyi Chloride	nd	nd	9.J	30 J	5 J	nd	nd	nd	nd	nd	14 J	nd	nd	nd	4	nd	
•			-		_								шu	nu	nd	nu	рą
Chloroethane	nd	nd	nd	14 J	50 J	15 J	11 J	13 J	nd	nd	5 J	nd	nd	nd	nd	nd	nd
Acetone	nd	nd	nd	65 J	33	nd	nd	22 J	nd	ad	20 J	nd	nd	nd	nd	nd	nd
Trans-1,2-Dichloroethene	nd	ba	nd	nd	3 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nđ
1,1-Dichloroethane	nd	nd	nd	95 J	91 J	nd	nd	nd	31 J	nd	13 J	nd	nđ	nd	nd	nd	nd
cis-1,2-Dichloroethene	nd	nd	nd	7 J	nd	nd	nd	nd	nd	nd .	3 J	nd	nd	nd	nd	nd	nd
2-Butanone	nd	nđ	nd	41 J	nd	nđ	nd	nd	nd	nd	33 J	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	nd	nd	nd	nđ	ba	nd	nd	nd	3 J	nd	nd	nd	nd	nđ	nd	nd	nc
Vinyl Acetate	nd	nd nd	nd	nd	nd	27 J	30 J	nd	nd	nd	nd	nd	nd	nđ	nd	nđ	BC
Benzene	nd	nd	41	350 J	300 E	300 E	280 J	210 E	nđ	nd	70 J	nd	nđ	nd	nd	nd	nd
1,2-Dichloroethane	nd	nd	nd	8 J	7 J	nd	nd	nd	nd	nd	nd	nd	nđ	nd	nd	nd	D.C
Toluene	nd	3 J	4 J	160 J	14 J	7 J	7 J	6 J	nd	nd	31 J	nd	nd	nd	220 J	ad	ac
Tetrachloroethene	nd	nd	nd	nđ	nđ	nd	nd	nd	nd	nd	nd	nd	nđ	nd	nd	3 J	nd
2-Hexanone	nd	nd	nd	170 J	27 J	180 J	210 J	110 J	nd	ba	33 J	nd	nd	nd	nd	ba	nd
Chlorobenzene	nd	3 J	36	50 J	9	24 J	21	56 J	nd	nd	16 J	nd	nd	nd	nd	nd	nd
Ethylbenzene	рđ	nd	72 J	110 J	48 J	10 J	9 J	36 J	nd	nd	8 J	nd	nd	nd	10,000	nd.	ad
Xylene (total)	, nđ	nd	74 J	730 E	160 J	38 J	34 J	51 J	nd	nd	28 J	nd	nd	nd	35,000 E	nd	nd
1,3-Dichlorobenzene	nd	nd	12 J	nd	nd	12 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	no
1,4-Dichlorobenzene	bd	nd	70 J	7 J	3 J	11 J	11 J	27 J	nd	5 J	nd	nd	nđ	nd	nd	nd	DC
1,2-Dichlorobenzene	nd	nd	67 J	40	17 J	27 J	28 J	54 J	nd	3 Ј	13 J	nd	nd	nđ	nd	nđ	nd
Total	nd	6 J	385 J	1877 J	767 J	651 J	641 J	585 J	34 J	8 J	281 J	nđ	nd	nd	45220 J	3 J	DC
TICs (total)	nd	34	353	614	135	226	266	349	nd	nd	40	nd	nd	nd	51	nd	nd

nd indicates compound was not detected.

All concentrations expressed in ug/l (ppb).

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

E indicates the amount reported exceeded the linear range of the instrument calibration.

TICs = Tentatively Identified Compounds, all should be considered approximate values.

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Semi-Volatile Organic Compounds in Groundwater (EPA Method 8270) July 1991

	AR	EA 2			-			AREA 3					AREA 4			AREA :	τ
Soil Boring Number	SB-19		SB-2	SB-3	SB-4	SB-5	DUP	SB-6	SB-7	SB-8		SB-9	SB-10	SB-11		SB-14	,
Monitoring Well Number	MW-13	GW-6	MW-1	MW-2	MW-3	MW-4	X-1	MW-5	MW-6	MW-7	GW-2	MW-8	MW-9	MW-10	GW-3	MW-11	GW-
Dilution Factor	1.00	1.00	1.00	10.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
bls (2-Chloroethyl) ether	nd	nd	-4	1		22	25	10	•			_					
Dis (2-Chioi octuyi) etnei	110	114	nd	nđ	nd	23	25	13	nd	nd	53	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	nd	nd	38	nd	nd	nd	nd	23	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	nd	nd	33	nd	6 J	13	14	38	nd	nd	10 J	nd	nd	nd	nd	nd	nd
2-Methylphenol	nd	nd	nd	49J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
4-Methylphenol	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	9J	nd	nd
2,4-Dimethylphenol	. nd	nd	nđ	750	nd	nd -	nd	nd	nd	nd	nd	nd	nd	nd	39	nd	nd
Napthalene	nd	31	79	140	16	8J	8J	69	nd	nd	3J	nd	nd	nd	25	nd	nđ
2-Methylnapthalene	nd	58	39	41J	nd	11	12	47	nd	nd -	nd	nd	nd	nd	nd	nd	nd
Acenapthene	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	5J	nd	nd
Fluorene	nd	10	nd	nd	nd	nd	nd	3 J	nd	nd	nd	nđ	nd	nd	3 J	nd	nd
Phenanthrene	nd	16	nd	nd	nd	nd	nd	4J	nd	nd	nd	nd	nd	nd	8J	nd	nd
Total	nd	115	189	980 J	22 J	55 J	59 J	197 J	nd	nd	18 J	nd	nd	nd	89 J	nd	nd
TICs (total)	70	960	550	2,700	1,010	1,050	1,050	690	40	30	260	29	19	7	2,570	27	65

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

TICs + Tentatively Identified Compunds, all should be considered approximate values.

All concentrations expressed in ug/l (ppb).

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Total Petroleum Hydrocarbons, PCBs, and Metals in Groundwater July 1991

Can Davida No. 1	ARI	AI	1	EA 2	1					AREA							EA 4		AR	EA S
Soil Boring Number	SB-15	OW 6	SB-19		SB-2	SB-3	SB-4	MW-3	SB-5	DUP	SB-6	SB-7	SB-8		_		SB-11		SB-14	
Monitoring Well Number	MW-12	GW-5	MW-13	GW-6	MW-1	MW-2	MW-3	DUP	MW-4	X-1	MW-5	MW-6	MW-7	GW-2	MW-8	MW-9	MW-10	GW-3	MW-11	G١
TPH as gasoline	nd	nd .																		
(DHS method) (ug/l)																				
BTEX																				
Benzene	nd	nd																		
Toluene	nd	nd		••						• •		••		••		• -				
Ethylbenzene Total Xylenes	nd nd	nd nd												••		• •				
	na	na												••						
TPH as diesel			500	29,000																
(DHS method) (ug/l)	-																			
PCB (EPA 8080) (ug/l)																				
Aroclor-1260			nd	nd	2.4	6.0	nd		nd	nd	2.0	nd	nd	nd	nd	nđ	nd	nd	nđ	
Metals (ug/l)							-													
Arsenic (total)					12.3	48.9	25.0	21.4	33.1	38.1	43.1	nd	nd	nd	nd	nd	16.9	52.3		
Arsenic (filtered)					nd	42.1	23.2		31.8	31.2	39.5	nd	nd	nd	nd	nđ	10.3	43.4		
Barium (total)					200	213	213	214	633	573	644	129	269	580	108	209	nd	285		
Barium (filtered)					187	195	151		541	482	536	nd	189	479	101	142	nd	231		
Chromium (total)			nd	nd											nd	13.8				
Chromium (filtered)			nd	nd													nd	nd	••	
om omiani (incita)			IIu	110					••						nd	nd	nd	nd		
Nickel (total)			73.3	nd	nd	109	nd	nd	nd	nd	41.6	nd	100	nd	nd	71.5	nd	nd		
Nickel (filtered)			51.4	nđ	nd	101	nd		nd	nd	nd	nd	51.3	nd	nd	nd	nd	nd		
Zinc (totai)			8740	nd	25.0	41.6	20.0	25.0												
• •							28.0	27.0	nd	nd	36.0	nd	24.8	nd	31.9	30.6	nd	28.8	48.3	
Zinc (filtered)			7410	nd	29.7	30.4	nd		nd	nd	nd	nd	23.1	nd	49.4	24.8	nd	82.1	23.3	
Lead (total)			nd	5.0	3.1	8.0	nd	nd	4.0	6.4	4.1	nd	5.5	4.0	nd	4.3	nd	27.2	3.2	
Lead (flitered)			nd	nd	11.6	nd	nd		4.2	4.6	nd	nd	nd	4.3	nd	nd	nd	4.1	nd	
Silver (total)																				
Silver (filtered)			•	1							••				nd	nd	12.1	15.7	• •	
antel (intelet)						••									nd	nd	28.3	11.7		
		- 1												- 1						

-- indicates compound was not analyzed.

nd indicates compound was not detected.

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA PLANT

Summary of Detected Volatile Organic Compounds

in Groundwater (EPA Method 624) October 1991

	AREA 2			AREA 3								AREA 4						
Soil Boring No.	SB-19			SB-2	SB-4	SB-5	SB-7	SB-8	SB-8		SB-9	SB-10	SB-11				ARE/	
Monitoring Well No.	MW-13	MW-15	TW-1	MW-1	MW-3	MW-4	MW-6	MW-7	GW-2	DUP X-1	MW-8	MW-9	MW-10	MW-14	MW-16	GW-3	MW-	
Dilution Factor	<u> </u>		••	1.00	2.00	2.00	1.00	1.00	2.00	1.99	1.00	1.00	1.00	1.00	1.90	50.00	1.00	
]														
Vinyl Chloride			••	11	bd	nđ	nd	nđ	nd	nđ				nd	nd	nd	nd	
Chloroethane			• •	nd	49	nd	nd	nd	nd	7 J		••		nd	bđ	nd	nd	
Acetone			• -	ba	nđ	nd	nd	nd	nd	nd				nd	nd	nd	nd	
Trans-1,2-Dichloroethene				nd	nd	nd	nd	nd	nd	nd			• •	nd	nd	nd	nd	
l,1-Dichloroethane				nd	72	nd	26	nd	10 J	13		••		nd	nd	nd	nd	
is-1,2-Dichloroethene				nd	nd	nd	nd	nd	nd	nd				nd	nd	nd	nd	
2-Butanone				nd	nd	nd	nd	nd	nd	nd				nd	nd	nd	00	
1,1,1-Trichloroethane				nd	nd	nd	3.]	nd	nd	nd	• •			nd	nd	nd	no	
Vinyl Acetate				nd	nd	nd	nđ	nd	nd	nd		••		nd	nd	nd	ac	
Benzene				29	270	200	nd	nd	64	74			,	nd	nd	nd	Do	
1,2-Dichloroethane				nđ	5 J	nd	nd	nd	nd	nd	• •			nd	nd	nd	De la	
Foluene				3 J	nd	5	nd	nd	33	47	••			nd	nd	nd	nd	
l'etrachloroethene				nd	nd	nd	nd	nd	nd	nd				nd	nd	nd	5.J	
2-Hexanone				nd	nd	nd	nd	nd	nd	nd				nd	nd	nd	nd	
Chlorobenzene				33	7 J	18	nd	nd	1 0 J	11				nd	nd	nd	nd	
Ethylbenzene				55	13	6 J	nd	nd	9 J	13				nd	nd	3,800	nd	
Kylene (total)				59	30	25	nd	nd	42	69			••	nd	nd	12,000	nd	
Styrene		••		nđ	nd	nd	nd	nd	nd	2 ј				nd	nd	nd	nd	
,3-Dichlorobenzene				10	nd	nd	nd	nd	nd	nd				nd	nd	nd	no.	
,4-Dichlorobenzene		·	•	65	nd	8 J	nd	nd	nd	3.1				nd	nd	nd .	nd	
,2-Dichlorobenzene				65	16	23	nd	nd	16	17				nd	uq	nd		
Fotal														ш	iki	щ	ad	

⁻⁻ indicates compound was not analyzed for.

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

E indicates the amount reported exceeded the linear range of the instrument calibration.

All concentrations expressed in ug/l (ppb).

TABLE 3 continued AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Semi-Volatile Organic Compounds in Groundwater (EPA Method 625) October 1991

	AREA 2			AREA 3								AREA 4						
Soil Boring Number	SB-19			SB-2	SB-4	SB-5	SB-7	SB-8			SB-9	SB-10	SB-11				AREA 5 SB-14	
Monitoring Well Number	MW-13	MW-15	TW-1	MW-1	MW-3	MW-4	MW-6	MW-7	GW-2	DUP X-1	MW-8	MW-9	MW-10	MW-14	MW-16	GW-3	MW-11	
Dilution Factor			••	1.00	1.00	1.00	1.00	1.00	1.00	1.00		• •		1.00	1.00	1.00		
bis (2-Chloroethyl) ether				nd	nd	21	nd	nd	3 J	3 J				nd	nd	nd		
1,4-Dichlorobenzene				19	nd	nd	nd	nd	nd	nd				nd	nd	nd		
1,2-Dichlorobenzene			- -	16	4 J	9 J	nd	nd	5 J	5 J			••	nd	nd	nđ		
2-Methylphenol				nd	nd	nd	nd	nd	nd	nd	• -			nd	nd	nd		
4-Methylphenol			• •	nd	nd	nd	nd	nd	nd	nd				nd	nd	nd		
2,4-Dimethylphenol				nd	nd	nd	nd	nd	nd	nd			••	nd	nd	15		
Naphthalene				45	6 J	6 J	nd	nd	4 J	4 J	• -			nd	nd	13		
4-Chloro-3-Methylphenol				nd	nd	120	nd	nd	nd	nd		* *	. -	nđ	nd	nd		
2-Methylnaphthalene				29	nd	nd	nd	nd	2 J	nd				nd	nd	nd		
Acenaphthene				nd	nd	4 J	nd	nd	nd	nd	••		• `•	nd	nd	4 J		
Fluorene				nd	3 J	nd	nd	nd	nd	nd				nd	nd	2 J		
Phenanthrene				nd	nd	nd	nd	nd	nd	nd				nd	nd	11		
Anthracene			·	nd	nd	nd	nd	nd	nd	nd				nd	nd	3 J		
Fluoranthene			• •	nđ	nd	nd	nd	nd	nd	nd				nd	nd	7 J		
Pyrene		• •		nd	nd	nd	nd	nd	nd	nd				nd	nd	7 J		
Benzo(A)Anthracene				nd	nd	nd	nd	nd	nd	nd				nd	nd	3 Ј		
Chrysene				nd	nd	nd	nd	nd	nd	nd	. -	•• .		nd	nd	3 J		
Bis(2-Ethylhexyl)Phthalate				nd	nd	nd	nd	nd	140	110	- •			nd	nd	nd		
Total	 			109	13 J	160	nd	nd	154	122				nd	nd	68 J		

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

All concentrations expressed in ug/l (ppb).

TABLE 3 continued

AMERICAN NATIONAL CAN COMPANY

OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Total Petroleum Hydrocarbons,

PCBs, and Metals in Groundwater

October 1991

i	AREA 1		AREA 2		1			AREA 3	}					AREA 4		_		ARE
il Boring Number	SB-15	SB-19			SB-2	SB-4	SB-5				DUP	SB-9	SB-10	SB-11				SB-
onitoring Well Number	MW-12	MW-13	MW-15	TW-1	MW-1	MW-3	MW-4	MW-6	MW-7	G₩-2	X-1	MW-8			MW-14	MW-16	GW-3	MW
PH as gasoline	nd	nd	nd	рф	2300	950	2388	nd	58	910	820							
PA method 5030)(ug/l)					2000	,,,,	42504	ш	30	710	644	**		••	- •		• •	no
ΓΕΧ (624) (ug/l)		ŀ			 													
nzene	nd	nd	nd	nd														
duene	nd	nd	nd	nd		• •												
hylbenzene	nd	nd	nd	nd	• • •													
otal Xylenes	nd	nd	nd	nd														_
PH as diesel	•-	200	260	680	1900	7000	6190		190	(200						-		
PA method 3510) (ug/l)		200	200	000	1000	1000	9190	nd	TAA	6200	74 00						••	89
tal Oil & Grease		 			nd	21	13	nd	nd	18	17							
PA method 5520)(mg/l)					****		15		IKI	10	17					••		
CB(EPA 8080)(ug/l)																		
roclor-1260					3.3	nd	nd	nd	nd	nd	nd							
etale (val)																		
etals (ug/l)												Į.						•
senic (total)					14.4	35.1	41.2	nd	nd	nd	nd	nd	nd	nd	14.1	nd	20.0	
senic (filtered)					11.9	33.0	36.6	nd	nd	nd	ad	nd	nd	nđ	12.3	nd	28.4	
rium (total)					268	237	733		314	580								
rium (filtered)					276	್ರ nd	606	nd nd	210	501	597 524	nd	250 nd	nd	232	255.0	282	-
					270	ш	000	Bu	210	341	324	nd	na	nd	nd	nd	244	-
romium (total)	• •											nd	nd	nd	nđ	nd	nd	_
romium (filtered)	"_		• -									nd	nd	11.1	nd	ad	nd	
		İ											124		щ	iki.	167	•
ckel (total)		170	82.7	nd	nd	nd	nd	nd	84.8	nd	nđ	nd	56.7	nd	nd	96.5	nd	-
ckel (filtered)		55.9	nd	ba	nd	nd	nd	nd	40.5	nd	nd	nd	42.6	nd	nd	nd	nd	
nc (total)		10300	55.9	24.0	nd	55.3					_							
` '							nd	nd	nd	nđ	nd-	nd	nd	nd	nđ	46.2	nd	•
nc (filtered)		6880	21.8	26.9	nd	nd	nd	nd	Dď	nd	nd	nd	nd	nd	nd .	24.9	nd	
ad (total)			• -		nd	nđ	nd	nd	nd	nd	12.3	10.4	nd	nd	nd	10.1	5.0	nd
ad (filtered)					nd	nd	nd	nd									i	
	-		- -		1MI	щ	ыч	nu	nd	nd	nd	nd	3.5	nd	5.5	nd	3.1	3.7
ver (total)												nd	nd	nd	nd	nd	nd	
ver (filtered)												nd	nd	nd	nd	nd	nd	
														ud	nu.	ini	TEST	• •
														-				

. -- indicates compound was not analyzed.

nd indicates compound was not detected.

Summary of Detected Volatile Organic Compounds

In Groundwater (EPA Method 624) January 1992

		AREA 2						AREA 3				AREA 4		AREA
Soil Boring No.	SB-19			SB-2	SB-4	DUP	SB-5	SB-7	SB-8	SB-8				SB-14
Monitoring Well No.	MW-13	MW-15	TW-1	MW-1	MW-3	X-1	MW-4	MW-6	MW-7	GW-2	MW-14	MW-16	GW-3	MW-1
Dilution Factor			<u> </u>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.00	1.00
Vinyl Chloride				11	nd	nd	nd	ba	nd	nd	nd	nd	nd	nd
Chloroethane		• •		nd	56 .	60	11	ba	ba	6 J	nd	nd	nd	nd
Acetone		••	• •	nd	nd	nd	17	nd	nd	nd	nd	nd	ba	od -
Trans-1,2-Dichloroethene				nd	2 J	2 J	nd	nd	nd	bd	nd	nd	nd	nd
1,1-Dichloroethane	. • •	•• .	• •	nd	50	52	nd	23	nd	22	nd	nd	nd	nd
cis-1,2-Dichloroethene			• •	3.3	2 J	2 J	nd	pd	nd	3 J	nd	nd	nd	nd
2-Butanone	••			nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane				nd	nd	nd	nd	2 J	nd	nd	nd	nd	nd	nd
Vinyl Acetate				nd	nd .	nd	nd	nd	nd	nd	pd	nd	nd	nd
Benzene		••		6	230	230	210	nd	nd	66	nd	nd	nd	nd
1,2-Dichloroethane				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene				nd	4.J	4 J	7	nd	nd	66	nd	nd	100	nd
Tetrachloroethene	+-			nd	ad	nd	nd	nd	nd	nđ	nd	nd		
2-Hexanone				nd	nd	nd	nd	nd	nd				nd .	4 J
Chlorobenzene				14	7	8	27			nd	nd	ed	nd	nd
Ethylbenzene				12	11	12	7	nd	nd	11	nd	nd	nd	nd
Xylene (total)				12			-	nd	nd	14	nd	ad (19,866)	nd
Styrene					54	58	37	nd	nd	63	nd	6 (31,000) nd
-				nd	nd	nd	nd	nd ,	nđ	nd	nd	nd	nd	nd
1,3-Dichlorobenzene				4 J	nd	nđ	nd	nd	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene				22	nd	2 J	9	nd	nd	2 J	nd	nd	nd	nd
1,2-Dichlorobenzene		*-	••	20	13	13	26	, nd	nd	13	nd	nd	nd	4 J
Total		* *		104 J	429 J	443 J	351	25 J	nd	266]	nd	6	41,100	8 J

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

I indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

E indicates the amount reported exceeded the linear range of the instrument calibration.

All concentrations expressed in ug/l (ppb).

Sample DUP X-1 is a field duplicate of sample MW-3

TABLE 3 continued

AMERICAN NATIONAL CAN COMPANY

OAKLAND, CALIFORNIA, FACILITY

Summary of Detected Semi-Volatile Organic Compounds

in Groundwater (EPA Method 625)

January 1992

202		AREA 2]				AREA 3				AREA 4		AREA 5
Soil Boring Number Monitoring Well Number	SB-19	MW-15	TW-1	SB-2 MW-1	SB-4	DUP	SB-5	SB-7	SB-8					SB-14
_	MW-13	M1M-13	1 W-1		MW-3	X-1	MW-4	MW-6	MW-7	GW-2	MW-14	MW-16	GW-3	MW-11
Dilution Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
F1-70 CM 1 1 1 1 1 1	ļ										•			
bls (2-Chloroethyl) ether		• •	•-	nd	nd	nd	nd	nd	nd	3 J	nd	nd	nd	
1,3-Dichlorobenzene				2 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	
1,4-Dichlorobenzene				16	nd	nd	5 J	nd	nd	nd	nd	nd	nd	
1,2-Dichiorobenzene			•-	14	6 J	6 J	13	nd	nd	8 J	nd	nd	nd	
2-Methylphenol				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
4-Methylphenol				nd	nd	nđ	nd	nd	nd	nd	nd	nd	nd	
2,4-Dimethylphenol				nd	nd	nd	nd	nd	nd	nd	nd	nd	34	••
Naphthalene			••	15	9 J	8 J	6 J	nd	nd	nd	nd	nd	32	
4-Chioro-3-Methylphenol				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
2-Methylnaphthalene			• •	14	nd	nd	8 J	nd	nd	nd	nd	*		
Acenaphthene				nd	nd	nd	3 J					nd	2 J	••
Dibenzofuran							-	nd	nd	nd	nd	nd	10 J	
	•			nd	nd	nd	nd	nd	nd	nd	nd	nd	4 J	
Fluorene		•-	• -	nd	3 Ј	nd	nd	nd	nd	nd	nd	nd	5 J	
Phenanthrene				nd	nd	nd	nd	nd	nd	nd	nd	nd	29	••
Anthracene				nd	nd	nd	nd	nd	nd	nd	nd	nd	8 J	
DI-N-Butylphthalate				nd	nd	nd	18	nd	nd	nd	nd	nd.	nd	
Fluoranthene				nd	nd	nd	nd	nd	nd	nd	nd	nd	21	
Pyrene				nd	nd	nd	nd	nd	nd	nd	nd	nd	23	
Benzo(A)Anthracene		••		nd	nd	nd	nd	nd	nd	nd	nd	nd	8.1	
Chrysene				nd	nd	nd	nd	nd	nd	nd	nd	nd	10 J	
Bis(2-Ethylhexyl)Phthalate				nd	nd	nd	nd	nd	nd	nd	nd	nd .	_	
Benzo(K)Fluoroanthene		•-		nd	nd	nd	nd	nd	nd	nd			nd	
Benzo(A)Pyrene				nd							nd	nd	8]	
				, nu	nd	nd	nd	nd	nd	nd	nd	nd	7 3	
Total				61 J	18 J	14 J	53 J	nd	nd	8.J	nd	nd	201 Ј	

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

All concentrations expressed in ug/l (ppb).

Sample DUP X-1 is a field duplicate of sample MW-3.

Summary of Detected Total Petroleum Hydrocarbons,

PCBs, and Metals in Groundwater January 1992

	AREA 1		AREA 2					AREA 3	3				AREA 4		AREA
Soil Boring Number	SB-15	SB-19			SB-2	SB-4	DUP	SB-5							SB-14
Monitoring Well Number	MW-12	MW-13	MW-15	TW-1	MW-1	MW-3	X-1	MW-4	MW-6	MW-7	GW-2	MW-14	MW-16	GW-3	MW-11
TPH as gasoline	nd	nd	nd	nd	1100	1600	1120	1900	nd	nd	820	nd	nd	42,000	nd
(EPA method 5030)(ug/l)		1												,	
BTEX (624) (ug/l)															
Benzene	nd	nd	nd	nd											
Toluene	nd	nd	nd	nd											·
Ethylbenzene	nd	nd	nd	nd											
Total Xylenes	nd	nd	nd	nd											
TPH as diesel		180	610	2,600	2600	5900	6000	7100	nd	220	6300				nd
(EPA method 3510) (ug/l)				_,	2000	0,00	0000	7100	110	220	0500			••	""
Total Oil & Grease					nd	8.9	13	29	nd	nd	12				<u> </u>
(EPA method 5520)(mg/l)		1													
PCB(EPA 8080)(ug/l)															
Aroclor-1260					nd	nd	nd	nd	nd	nd	nd				
Aroclor-1248					3.5	nd	nd	nd	nd	nd	nd				
Nickel (total)		59.3	nd	nd					. -					•	
Nickel (filtered)		54.1										• •			
Zinc (total)		8770	nd	nd								- -			
Zinc (filtered)		7890	••												
		A													[
			10								•				

- - indicates compound was not analyzed.

nd indicates compound was not detected.

sample DUP X-1 is a field duplicate of sample MW-3.

AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA, FACILITY

Summary of Groundwater Analytical Results February, 1992

Analysis		Mon	itoring Well Nu	mber	
	MW-17	MW-18	MW-19	MW-20	MW-21
Volatile Organics					1/31/
(EPA Methods 624)(ug/l)					
Dilution Factor	1.00	1.00	1.00	1.00	1.00
Benzene	nd	nd	13	nd	nd
Tetrachioroethene	nd	nd	nd	2 J	nd
Chlorobenzene	nd	nd ·	42	nd	nd
Ethylbenzene	nd	nd	4 J	nd	nd
Total Xylenes	nd	nd	. 9	nd	nd
1,3-Dichlorobenzene	nd	nd	4 J	nd	nd
1,4-Dichlorobenzene	nd	nd	24	nd	nd
1,2-Dichlorobenzene	nd	nd	39	nd	nd
TICs (Total)	nd	nd	130 J	nd	nd
Semi-Volatile Organics					
(EPA Methods 625) (ug/l)					
Dilution Factor	1.00	1.00	5.00	1.00	1.00
1,4-Dichlorobenzene	nd	nd	22 J	nd	nd
1,2-Dichlorobenzene	nď	nđ	30 J	nd	` nd
Naphthalene	nd	nd	19 J	nd	nd
2 Methylnaphthalene	nd	nd	59.0	nd	nd
Pentachiorophenol	13 J	nd	nd	nd	nd
TICs (total)	10 J	20 J	360 J	31 J	18 J
TPH as gasoline					
(EPA Method 5030) (ug/i)	nd	nd	1,500	nd	nd
LET A Welliod 3000) (ug/l)			1,000	- IIG	110
TPH as diesel					
EPA Method 3510) (ug/l)	110	nd	6,000	nd	55
Total oil & grease					
(EPA Method 5520) (mg/l)	nd	nd	22	nd	nd
PCBs					
EPA Method 8080) (ug/l)	nd	nd	nd	nd	nd
METALS (ug/l)					
Nickel (total)	nd				152
Nickel (filtered)	nd			• •	nd
Zinc (total)	nd				30.8
Zinc (filtered)	nd				nd

NOTES:

nd: Indicates compound was not detected.

--: Indicates compound was not analyzed for

J: Indicates compound was detected below the reporting limit and should be considered an approximate value.

Summary of Quarterly Ground Water Analytical Results - May, 1992

ANALYSIS	ARE	A - 2				AREA - 3	3				AREA - 4	•
ANALISIS	MW-21	TW-1	MW-1	MW-6	MW-7	MW-18	MW-19	Dup X-1	MW-20	MW-8	MW-9	MW-14
Volatile Organics												
(EPA Methods 624)(ug/l)												
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
				-110	***	•••	2.0	1.0		1.0		
Vinyl Chloride			4 J	nd	nd	nd	nd	nd	nd	nd		
Chloroethane			nd	nd	nd	nd	5 J	6 J	nd	nd		
i,1-Dichloroethene			nd	4 J	nd	nd	nd	nd	nd	nd		
Carbon Disuifide			nd	nd	nd	nd	8	nd	nd ·	nd		
l,1-Dichloroethane			nd	140	nd	nd	nd	nd	nd	nd		
1,1,1-Trichloroethane			nd	10	nd	nd	nd	nd	nd	nd	 .	
Benzene			15	nd	nd	nd	14	15	nd	nd		
Coluene			nd	nd	nd	nd	2 J	2 J	nd	nd		
Tetracbloroethene			nd	nd	nd	nd	nd	nd	2 J	nd		
Chlorobenzene			15	nd	nd	nd	38	39	nd	nd		-,-
Ethylbenzene			11	nd	nd	nd	5 J	5	nd .	nd		
Total Xylenes			18	nd	nd	nd	7	6	nd	nd		
1,3-Dichlorobenzene			4 J	nd	nd	nd	nd	nd	nd	nd		
l,4-Dichlorobenzene			30	nd	2 J	ad	26	27	nd	nd		
1,2-Dichlorobenzene			27	nd	nd	nd	36	39	nd	nd		
Total			124 J	154 J	2 J	nd	141 J	139 J	2 J	nd		
TICS Total			110	0	0	0	240	280	0	0		
Semi-Voiatile Organics												
EPA Methods 625)(ug/l)]						į			
Dilution Factor			1.00				1.00	1.00				
1,4-Dichlorobenzene			16				ΩΤ	111				
1,2-Dichlorobenzene			13				9J	11 J				
Naphthalene			l			7-	13	15				
		77	18				10 J	12				
2-Methylnaphthalene			12				26	31				
Total			59				58 J	69 J				
TICS Total			170				220	168				
IPH as Gasoline												
EPA Methods 5030/8015)(ug/l)							=-				nd	nd
втех											IIG	110
EPA Methods 5030/8020)(ug/l)									1			
Benzene												
Foluene											nd	nd
·						 ,					nd	nd
Ethylbenzene											nd	nd
Total Xylenes						••		<u></u>			nd	nd
PH as Diesel												
EPA Method 3510)(ug/l)	nd	2700	3600	73	400	50	39000	16000	nd	410		
				,			27000	10000	11/4	410		
CBs												
EPA Method 8080)(ug/l)		ļ										
Aroclor-1260			nd	nd	nd	nd	55		nd	nd		
			-									
Metals									- 1			
1												
Vickel (filtered) Zinc (filtered)	nd	nd										

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

I indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

Dup X-1 is a field duplicate of sample MW - 19.

Summary of Quarterly Ground Water Analytical Results - August, 1992

ANALYSIS	ARE	A - 2					AREA - 3	,			AREA - 4	4
TRIVIDIO I	MW-21	TW-1	MW-1	Dup X-1	MW-6	MW-7	MW-18	MW-19	MW-20	MW-8	MW-9	MW-14
Volatile Organics				,								
(EPA Methods 624)(ug/l)			ļ						j			
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Vinyl Chloride			15	14	nd	nd	nd	nd	nd	nd	•	
Chloroethane			nd	nd	nd	nd	nd	nd	nd	nd		
1.1-Dichloroethene			nd	nd	2 J	nd	nd	nd	nd nd			
Carbon Disulfide			nd	nd	5 J	nd	nd	8-		nd 1		
.1-Dichloroethane			2 J	3 J	5 J	nd	nd	2 J	nd	nd		
,1,1-Trichioroethane			nd	nd	4 J	nd	nd nd		nd	nd		
Benzene			17	18	nd	nd		nd	nd	nd		
Foluene			nd	nd	nd	nd nd	nd d	13	nd	nd		
l'etrachioroethene			nd	nd nd			nd	2 J	nd	nd		
Chlorobenzene			1		nd	nd	nd	nd	2 J	nđ		
Chylbenzene Cthylbenzene			23	23	nd d	nd	nd	49	nđ	nd		
·			19	19	nd	nd	nd	4 J	nd	nd		
Total Xylenes			28	28	nd	nd	nd	7_	nd	nd		
,3-Dichlorobenzene			7	7	nd	nd	nd	5 J	nd	nd		
,4-Dichlorobenzene			47	47 .	nd	nd	nd	32	nd	nd		
,2-Dichlorobenzene			40	42	nd	nd	nd	44	nd	nd		
Total	**		198 J	201 J	65 J	nd	nd	158 J	2 J	nd		
TICS Total			160	160	0	0	0	140	. 0	0		
emi-Volatile Organics									1			
EPA Methods 625)(ug/l)												
Dilution Factor			1.00	1.00				10.00				
Diddon't actor			1.00	1.00				10.00				
4-Dichlorobenzene			16	17				16 J				
,2-Dichlorobenzene			14	14				18 J				
laphthalene			13	11	·			11 J				
-Methylnaphthalene			nd	nd				40 J				
Total			43	42				85 J				
TICS Total			103	106				790				
PH as Gasoline												
4									ŀ			
EPA Methods 5030/8015)(ug/l)											nd	nd
TEX		-										
EPA Methods 5030/8020)(ug/l)												
enzene]		nd	nd
oluene											nd	nd
thylbenzene											nd	nd
otal Xylenes											nd	nd
PH as Diesel												
EPA Method 3510)(ug/l)	nd	2500	2500	2600		220		24000				
A Method 3310/(Ug/I)	nd	4300	3500	3600	nd	220	nd	34000	nd	nd		
CBs												
PA Method 8080)(ug/l)									ŀ			
roclor-1260			9.4	17	nd	nd	nd	3.1	nd	nd		
			/17		110		IIU	J.1	na	nd		
letals									- 1			ĺ
ickel (filtered)	nd	nd										1

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

Dup X-1 is a field duplicate of sample MW - 1.

Summary of Quarterly Ground Water Analytical Results - December, 1992

ANALYSIS	ARE	A - 2					AREA - :	3			AREA - 4	1
ANALISES	MW-21	TW-1	MW-1	MW-6	DUP X-1	MW-7	MW-18	MW-19	MW-20	MW-8	MW-9	MW-14
Volatile Organics										-		
(EPA Methods 624)(ug/l)												
Dilution Factor			1.0	1.0	1.0	1.0	1.0	10.0	1.0	1.0		
				1.0	1.0	1.0	1.0	10.0	1.0	1.0		
Vinyl Chloride			10 J	nd	nd	nd	nd	nd	nd	nd		
Chloroethane			nd	nd	nd	nd	nd	nd	nd	nd		
1,1-Dichloroethene			nd	nd	nd	nd	nd	nd	nd	nd		
Carbon Disulfide			9	nd	nd	nd	nd	nd	nd	nd		
Trans-1,2-Dichloroethene			3 J	nd	nd	nd	nd	nd	nd	nd		
1,1-Dichloroethane			4 J	31	33	nd	nd	nd	nd	nd		
Cis-1,2-Dichloroethene			6	nd	nd	nd	nd	nd	nd	nd		
1,1,1-Trichloroethane			nd	2 J	3 J	nd	nd	nd	nd	nd		
Benzene			3 J	nd	nd	nd	nd	nd	nd	nd		
Toluene			nd	nd	nd	nd	nd	nd	nd	nd		
Tetrachioroethene			nd	nd	nd	nd	nd	nd	2 J	nd		
Chlorobenzene			15	nd	nd	nd	nd	nd	nd	nd		
Ethylbenzene			17	nd	nd	nd	nd	nd	nd	nd		
Total Xylenes			19	nd	nd	nd	nd	nd	nd	nd		
1,3-Dichlorobenzene			nd	nd	nđ	nđ	nd	nd	nd	nd		
1,4-Dichlorobenzene			47	nd	nd	nd	nd	60	nd	nd		
1,2-Dichlorobenzene			36	nd	nd	nd	nd	74	nd	nd		
Total			169 J	33 J	36 J	nd	nd	134 J	2 Ј	nd		
TICS Total			350 J	0	0	7 J	0	3400 J	0	0		
Semi-Volatile Organics (EPA Methods 625)(ug/l)												
Dilution Factor			5.0	1.0	1.0			10.0				
2-Methylnaphthalene			nd	nd	nd			38 J				
Bis (2-Ethylhexyl) Phthalate			nd	nd	nd			21 J				
Total		_ 	0	0	0			59 J				
TICS Total			280 J	11 J	34 J			1250 J				
TPH as Gasoline										-		
(EPA Methods 5030/8015)(ug/l) BTEX										nd	nd	nd
(EPA Methods 5030/8020)(ug/l)												
Benzene	••											
Toluene											nd	nd
Ethylbenzene											nd nd	nd a
Total Xylenes		[nd nd	nd nd
						····					no	<u>nu</u>
TPH as Diesel		- 1										
(EPA Method 3510)(ug/l)	nd	4600	4700	130	310	260	77	22000	nd	220		
PCBs (EPA Method 8080)(ug/l)										-		
Aroclor-1260		[21	nd	nd	nd	nd	4.4	nd	nd		
Madala.												
Metals		.										
Nickel (filtered)	nd	nd										
Zinc (filtered)	nd	nd										

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

Dup X-1 is a field duplicate of sample MW - 6.

Summary of Quarterly Ground Water Analytical Results - March, 1993

ANALYSIS	ARE		1		_	AREA - 3				AREA - 4	}
	MW-21	TW-1	MW-1	MW-6	MW-7	MW-18	MW-19	MW-20	MW-8	MW-9	MW-14
Volatile Organics											
(EPA Methods 624)(ug/l)											
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Vinyl Chloride			12	nd	nd	nd	nd	nd	nd		
Chloroethane			nd	nd	nd	nd	3 J	nd	nd		
1,1-Dichloroethene			nd	6	nd	nd	nd	nd	nd		
1,1-Dichloroethane			nd	200	nd	nd	nd	nd	2 J		
1,1,1-Trichloroethane			nd	15	nd	nd	nd	nd	nd	~~	
Benzene			nd	nd	nd	nd	9	nd	nd		
Tetrachloroethene			nd	nd	nd	nd	nd	3 J	nd		
2-Hexanone			nd	nd	nd	nd	45	nd	nd		
Chiorobenzene			4 J	nd	nd	nd	35	nd	nd		
Ethylbenzene			nd	nd	nd	nd	nd	nd ·	nd		
Total Xylenes			3 Ј	nd	nd	nd	5 J	nd	nd		
1,3-Dichlorobenzene			3 J	nd	nd	nd	4 J	nd	nd		
1,4-Dichlorobenzene			17	nd	nd	nd	25	nd	nd		
1,2-Dichlorobenzene			14	nd	nd	nd	31	nd	nd		
Total			53 J	221	nd	nd	157 J	3 J	2 J		
TICS Total			90 J	0	0	0	1300 J	0	0		
Semi-Volatile Organics						<u>~</u>	v				
(EPA Methods 625)(ug/l)											
Dilution Factor			1.0	1.0			1.0				
Diagon i actor			1.0	1.0			1.0				
1,3-Dichlorobenzene			2 J	nd			3 J				
1,4-Dichlorobenzene			13	nd			20				
1,2-Dichlorobenzene			10	nd			26				
Benzoic Acid			6 J	nd			nd				
Naphthalene			2 J	nd			12				
2-Methylnaphthalene	••		nd	nd			61				
Acenaphthene			nd	nd			3 J				
Fluorene			nd	nd			3 J				
Phenanthrene			nd	nd			_				
							7 J				
Di-N-Butyiphthalate			2 J	nd			2 J				
Fluoranthene			nd	nd			2 J				
Pyrene			nd	nd			2 J				
Bis (2-Ethylbexyl) Phthalate			34 B	15 B			22 B				
Total			69 JB	15 B			163 JB				
TICS Total			119 J	24 J			300 J				
TPH as Gasoline											
(EPA Methods 5030/8015)(ug/i)									nd	nd	nd
BTEX								.]		•	
(EPA Methods 5030/8020)(ug/l)					-						
Benzene										nd	nd
Toluene			 .							nd	nd ·
Ethylbenzene										nd	nd
Total Xylenes										nd	nd
TPH as Diesel								·		110	nu
1	44		COA		1/4	<u>.</u> .	(#0 00	.			
(EPA Method 3510)(ug/l)	64		680	nd	160	nd	67000	nd	nd		
PCBs											
(EPA Method 8080)(ug/l)											
Aroclor-1260			3.2	nd	nd	nd	9.7	nd	nd		
100101-1200											
		1						ı			
Metals	nd										
	nd nd	~~ ~~	, 								

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

I indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

B indicates compound was detected in the associated laboratory method blank.

Summary of Quarterly Ground Water Analytical Results - June, 1993

ANALYSIS	AT	REA - 2	Τ			AREA - 3	3	 			AREA -	1
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	MW-2		MW-1	MW-6	DUPX-1	MW-7		MW-19	MW-20	MW-8		, MW-14
Volatile Organics	.,.,.											11111-14
(EPA Methods 624)(ug/l)			1									
Dilution Factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		***
					•••	•	***			1.0		-
Vinyl Chloride			4 J	nd	nd	nd	nd	nd	nd	nd		
Chloroethane			nd	nd	nd	nd	nd	nd	nd	nd		
1,1-Dichloroethene			nd	3 J	nd	nd	nd	nd	nd	nd		
Carbon Disulfide			nd	nd	nd	nd	4 J	nd	nd	nd	· 	
1,1-Dichloroethane			nd	95	80	nd	nd	nd	nd	nd		
1,1,1-Trichloroethane			nd	9	6	nd	nd	nd	nd	nd		
Benzene			10	nd	nd	nd	nd	10	nd	nd		
Tetrachloroethene			nd	nd	nd	nd	nd	nd	3 J	nd		
Chlorobenzene			16	nd	nd	nd	nd	41	nd	nd		
Ethylbenzene			8	nd	nd	nd	nd	nd	nd	nd		
Total Xylenes			12	nd	nd	nd	nd	4 J	nd	nd		
1,3-Dichlorobenzene			5 J	nd	nd	nđ	nd	3 J	nd	nd	~~	
1,4-Dichlorobenzene			31	nd	nd	nd	nd	21	nd	nd		
1,2-Dichlorobenzene			27	nd	nd	nd	nd	30	nd	nd	~	
Total			113 J	107 J	86	nd	4 J	109 J	3 J	nd		
TICS Total			79 J	0	0	0	0	110 J	0	0		
Semi-Volatile Organics		,										
(EPA Methods 625)(ug/l)												
Dilution Factor			1.0	1.0	1.0			1.0				
				_	_							
1,3-Dichlorobenzene			nd	nd	nd			nd				
1,4-Dichtorobenzene			14	nd	nd			11	~-			
1,2-Dichlorobenzene			11	nd	nd			14				
Benzolc Acid			nd	nd	nd			nd				
Naphthalene			7 J	nd	nd			nd				
2-Methylnaphthalene			4 J	nd	nd			26				
Acenaphthene			nd	nđ	nd			nd				
Fluorene			nd	nd	nd			4 J				
Phenanthrene			nd	nd	nd			nd				
Anthracene			nd	nd	nd			4 J				
Fluoranthene			nd	nd	nd			nd				
Pyrene			nd	nd	nd			nd				
Bis (2-Ethylhexyl) Phthalate			nd	nd	nd			nd				
Total			36 J	nd	nd			59 J				
TICS Total			122 J	0	0			420 J				
TPH as Gasoline												
(EPA Methods 5030/8015)(ug/l)										nd	nd	nd
BTEX									1			
(EPA Methods 5030/8020)(ug/l)												
Benzene			+-								nd	nd
Toluene											nd	nd
Ethylbenzene											nd	nd
Total Xylenes											nd	nd
TPH as Diesel												
	120		2400	120	140	100	90	27000	140	41		
(EPA Method 3510)(ug/l)	120	••	2400	120	140	180	88	37000	140	61		
PCBs												
(EPA Method 8080)(ug/l)		Ì										
Arocior-1260			3.8	nd	nd	nd	nd	4.6	nd	nd		
Metals												
Nickel (filtered)	nd											
Zinc (filtered)	nd				~-							
•••••••••••••••••••••••••••••••••••••••												

^{- -} indicates compound was not analyzed for.

nd indicates compound was not detected.

J indicates compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value.

DUP X-1 is a field duplicate of sample MW-6.

Summary of Soil Analytical Results - Area 4

Analysis/Compound				Boring N	io/Sample No.	/Depth			
	SB-9	SB-9	SB-9	SB-10	SB-10	SB-11	SB-11	SB-13A	SB-13A
	S-1	S-3	S-5	S-1	S-5	S-2	S-5	S-1	S-4
	1.75	4.75'	8.00'	1.75'	7.75'	4.25'	8.75'	4.25'	9.25'
VOC (8240) (ug/kg)									
Dilution Factor	5,000	1.00	1.00	1.00	1.00	1.00	1.00		
Acetone	nd	nd	110	nd	nd	nd	nd		
Xylene (total)	490,000	nd	nd	nd	350 E	nd	nd		
TIC (Total)	750,000 J	nd	nd	nď	410 Ј	nd	nd		
PID Headspace (ppm)	>200	2.8	3.5	3.0	1.8	11.0	11.4	9.4	9.8
BNA (8270) (ug/kg)			•						
Dilution Factor	1		1.00	4		1.00	1.00		
Diddon Pactor			1.00			1.00	1.00		
Results (Total)			nd			nd	nd		
TIC (Total)			nd			nd	nd		
TPH (418.1) (mg/Kg)	27,000	126	• •	3.7	5.0	21.0	4.2		
TPH as Gasoline								nd	nd
(DHS method) (mg/Kg)									
BTEX (DHS Method)(mg/kg	3)								
Benzene								nd	nd
Tolume	• •							nd	nd
Ethylbenzene								nd	nd
Total Xylenes								nđ	nd
PCB (EPA 8080) (ug/kg)									
Aroclor-1260			nd			. -			
Metals (Title 22) (mg/kg)									
Silver			nd						
Arsenic			1.6				• -		
Barium			111	<u>-</u> -					
Beryllium			nd			- -			
Cadmium			nd			. -			• •
Cobalt			20.5						
Total Chromium			86.6				••		
Copper			21.2						
Mercury			0.217			<u> </u>			
Molybdenum			nd						
Nickel			193			- -			
Lead			7.6						
Antimony	1		nd						
Selenium			nd						
Thallium	l		nd						
Vanadium	1		37.4						
Zinc			29.2			••			••

nd indicates compound was not detected.

^{- -} indicates compound was not analyzed for.

TIC = Tentatively Identified Compounds

J indicates compound was detected below the specified reporting limit. Consequently, the amount is considered approximate.

E indicates the amount reported exceeded the linear range of the instrument calibration.

Sample depth represents the midpoint of 6-inch long sample tube in feet below grade.

Summary of Soil Anlaytical Results - Area 4 September, 1991

Analysis			Boring No.	o./Sample	No./Depth	l	
	SB-4-3	SB-4-6	SB-4-6	MW-14	MW-14	MW-16	MW-16
	S-3	S-2	S-3	S-2	S-3	S-2	S-3
	9.25'	6.25'	9.25'	5.75'	9.25'	6.25'	9.75'
BTEX							
(EPA Method 8020)(mg/kg)							
Benzene	nd	nd	nd	nd	nd	∙nd	nd
Toluene	0.006	nd	nđ	nd	nd	nd	nd
Ethylbenzene	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.013	nd	nd	0.015	nd	nd	nd
TPH as diesel (EPA Method 3550)(mg/kg)	nd	nd	nd	84	22	nd	nd
PID Headspace (ppm)	9	0.8	0.8		<u> </u>	1.8	4.5

NOTES:

--: Indicates compound was not analyzed for.

nd: Indicates compound was not detected.

Sample depth represents the midpoint of 6-inch long sample tube in feet below grade.

AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA PLANT

Pumping Test Results - December 8, 1992 PUMPING WELL: TW-1

Page 1 of 3															
TTM	TW-1					GW-6				MW-15	MW-13				
Actual	Elapsed	DTW	ELEV	DD	DTP	DTW	ELEV	PT	DD	DTW	ELEV	DD	1	ELEV	
		12.20	6 27	0.00		1410	5 (0	0.00	0.00	12.20	5.40	0.00	10.50	701	0.0
7:55	Second December	12.39	5.37	0.00		14.10	5.68	0.00	0.00	12.39	5.49	0.00	10.50	7.81	0.0
8:10	Start Pump	16.43	1.74	4.03											
8:13	0:03	16.42	1.34	4.03		1414	6.61	0.00	0.04						
8:14	0:04	18.40	0.04	6 21		14.14	5:64	0.00	0.04						
8:15	0:05	18.60		6.21	 								 		
8:16	Stop Pump	19.24	-1.48	6.85		14.20	5.58	0.00	0.10			•			
8:17	. 0:07					14.20	3.36	0.00	0.10	12.20	5.49	0.00			
8:18	0:08	10 4 6	0.00	6 26						12.39	3.49	0.00			
8:19:45	Start Pump	18.65		6.26		1425	6.42	0.00	0.06						
8:23	Stop Pump	19.24	-1.48	6.85		14.35	5.32	0.00	0.25	 					
8:27	0:17			* / #0	• •	14.40	3.32	0.00	0.30						
8:29:00 - 8:29:30	•	* 18.69 - 19.24	* -1.21	- 0.38						10.10	.				
8:31	0:21					14.50	610	0.00	0.40	12.40	5.48	0.01			
8:32	0:22	·				14.59	5.19	0.00	0.49					4 0.	
8:34	0:24	10.40 10.01		(50			· · · · · · · · · · · · · · · · · · ·						10.50	7.81	0.00
8:37;35 - 8:37:55	Run Pump	18.69 - 19.24	-1.21	6.58		14.76	6.00	0.00	0.44						
8:39	0:29				• •	14.76	3.02	0.00	0.66		<i>-</i>				
8:43	0:33									12.41	5.47	0.02		7 00	
8:44	0:34												10.51	7.80	0.0
8:45:31 - 8:45:45	Run Pump	18.69 - 19.24	-1.21	6.58							·				
8:49	0:39				• •	15.01	4.77	0.00	0.91						
8:53:36 - 8:53:51	Run Pump	18.69 - 19.24	-1.21	6.58											
8:59	0:49					15.23	4.55	0.00	1.13						
9:01:02 - 9:01:34	Run Pump	18.69 - 19.24	-1.21	6.38			4.00				,				
9:07	0:57					15.40	4.38	0.00	1.30		-			•••••	
9:08	0:58	10.60 10.04					. •								
9:09:46 - 9:09:59	Run Pump	18.69 - 19.24	-1.21	6.38											
9:15	1:05					15.55	4.23	0.00	1.45			•			
9:18:22 - 9:18:35	Run Pump	18.69 - 19.24	-1.21	6.58											
9:20	1:10						·····			12.41	5.47	0.02			
9:21	1:11												10.51	7.80	0.01
9:25	1:15				15.71	15.72	4.07	0.01	1.61						
9:26:57 - 9:27:11	- I	18.69 - 19.24	-1.21	6.58											
9:35	1:25			1	15.85	15.86	3.93	0.01	1.75						
9:35:46 - 9:35:59		18.69 - 19.24			· · · · · · · · · · · · · · · · · · ·										
9:44:34 - 9:44:46	Run Pump	18.69 - 19.24	-1.21	6.58											
9:45	1:35				• •	15.99	3.79	0.00	1.89						
9:50	1:40									12.42	5.46	0.03			
9:53:30 - 9:53:45	Run Pump	18.69 - 19.24	-1.21	6.58						•					
9:55	1:45					16.10	3.68	0.00	2.00						
10:02:24 - 10:02:36	Run Pump	18.69 - 19.24	-1.21	6.58											
10:04	1:54												10.50	7.81	0.00
10:05	1:55				16.20	16.21	3.58	0.01	2.10						
10:11:43 - 10:11:56	Run Pump	18.69 - 19.24	-1.21	6.58								1			
10:15	2:05				16.31	16.33	3.47	0.02	2.21						

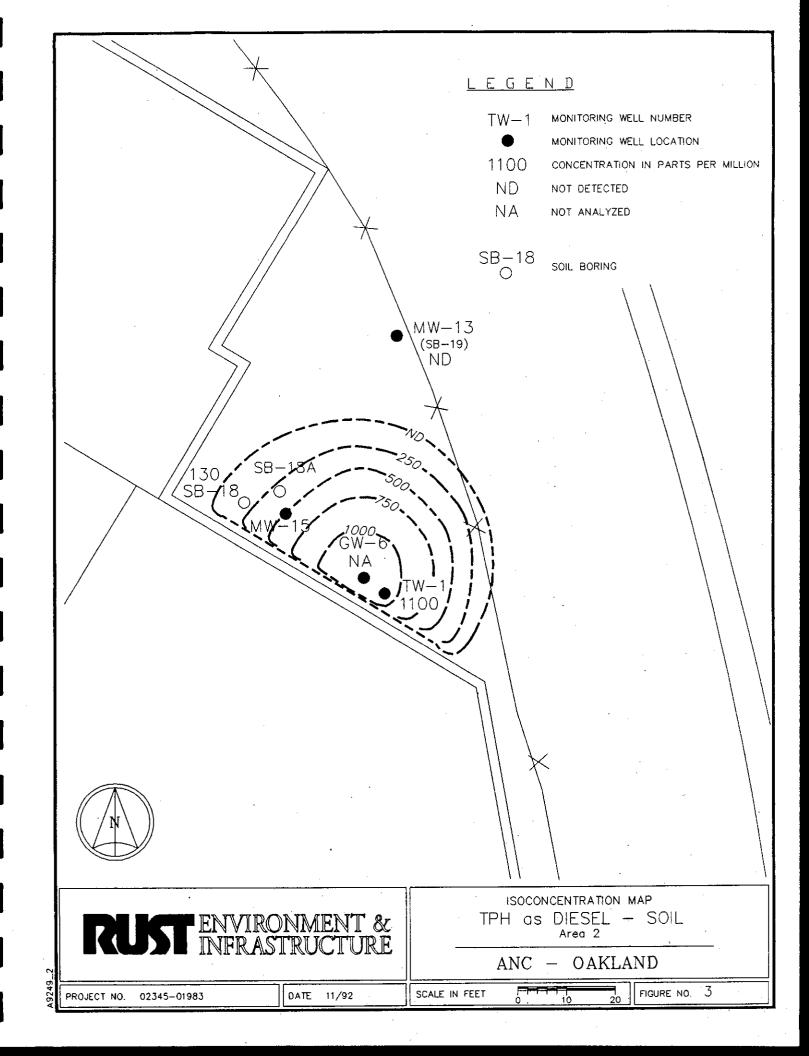
TABLE 1 AMERICAN NATIONAL CAN COMPANY OAKLAND, CALIFORNIA PLANT

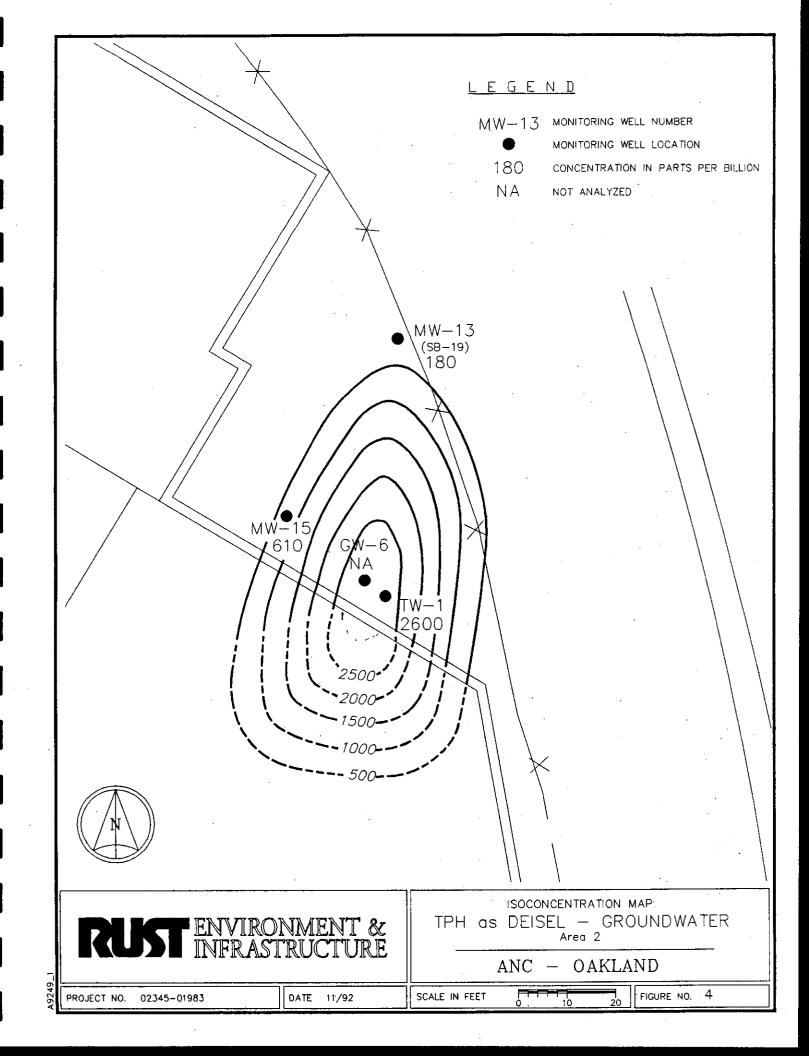
Pumping Test Results - December 8, 1992 PUMPING WELL: TW-1

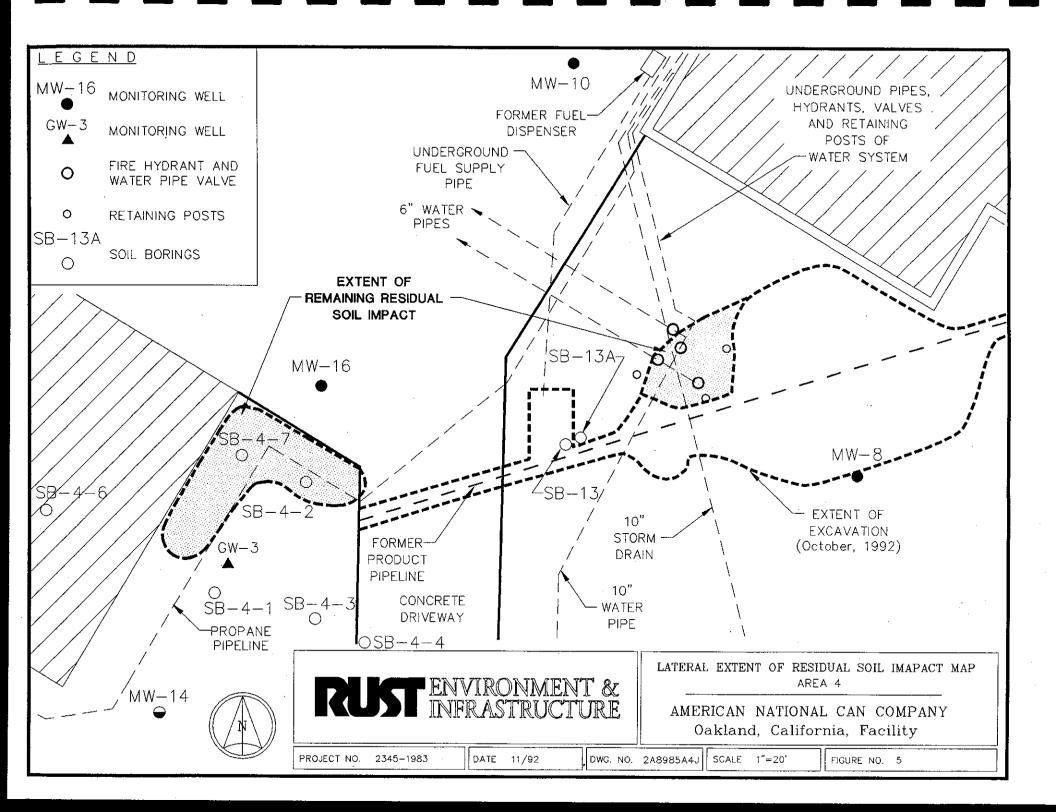
Page 2 of 3

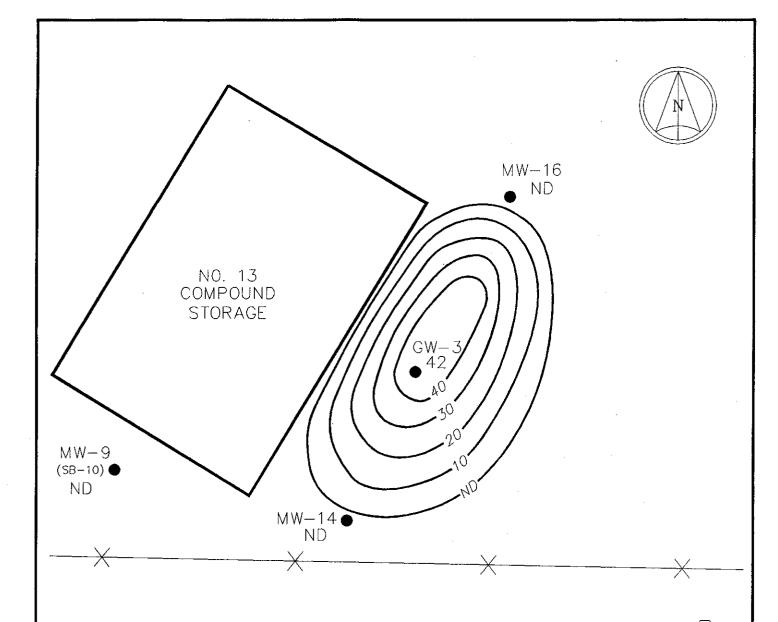
TIME TW-1 GW-6 MW-15 MW-1											VOS.				
Actual	Elapsed	DTW	ELEV	DD	DTP	DTW	ELEV		DD	שדת	MW. Gree	V DD	חדש	MW-L	
7,0,042					1				- 00	DIN	تلكنا	• 00	DIW	ELEV	
10:20	2:10									12.42	5.46	0.03			
10:20:36 - 10:20:50	Run Pump	18.69 - 19.24	-1.21	6.58											
10:25	2:15]			16.40	16.43	3:38	0.03	2.30						
10:29:48 - 10:30:00	Run Pump	18.69 - 19.24	-1.21	6.58	}										
10-35	2:25				16.47	16.50	3.31	0.03	2.37	-			<u> </u>		
10:38:47 - 10.39:00	Run Pump	18.69 - 19.24	-1.21	6.58											
10:45	2:35				16.55	16.57	3.23	0.02	2.45		,	•			
10:48:13 - 10:48:25	Run Pump	18.69 - 19.24	-1.21	6.58	1										
10:50	2:40									12.43	5.45	0.04			
10:55	2:45				16.61	16.63	3.17	0.02	2.51						
10:57:30 - 10:57:42	Run Pump	18.69 - 19.24	-1.21	6.58											
11:04	2:54												10.50	7.81	0.00
11:05	2:55				16.67	16.70	3.11	0.03	2.57						
11:07:33 - 11:07:47	Run Pump	18.69 - 19.24	-1.21	6.58											
11:16:49 - 11:17:02	Run Pump	18.69 - 19.24	-1.21	6.58							····		<u> </u>		
11:20	3:10									12.43	5.45	0.04			
11:25	3:15			:	16.73	16.75	3.05	0.02	2.63						
11:25:20 - 11:25:34	Run Pump	18.69 - 19.24	-1.21	6.58											
11:35:38 - 11:35:53	Run Pump	18.69 - 19.24	-1.21	6.58											
11:44:34 - 11:44:47	Run Pump	18.69 - 19.24	-1.21	6.58		····									
11:45	3:35				16.80	16.82	2.98	0.02	2.70						
11:50	3:40								i	12.43	5.45	0.04			
11:53:42 - 11:53:54	Run Pump	18.69 - 19.24	-1.21	6.58											
12:02:39 - 12:02:52	Run Pump	18.69 - 19.24	-1.21	6.58											
12:04	3:54				.								10.50	7.81	0.00
12:05	3:55				16.85	16.88	2.93	0.03	2.75						
12:11:50 - 12:12:04	Run Pump	18.69 - 19.24	-1.21	6.58											
12:20	4:10								·	12.44	5.44	0.05			
12:21:11 - 12:21:25	Run Pump	18.69 - 19.24	-1.21	6.58											ļ
12:25	4:15				16.89	16.94	2.89	0.05	2.79						
12:31:13 - 12:31:36	Run Pump	18.69 - 19.24	-1.21	6.58				• •			-			•	
12:41:00 - 12:41:15	Run Pump	18.69 - 19.24	-1.21	6.58											
12:45	4:35			Ì	16.93	16.99	2.85	0.06	2.83						
12:50	4:40			ļ						12.45	5.43	0.06			1
12:51:19 - 12:51:31	Run Pump	18.69 - 19.24	-1.21	6.58											
13:01:45 - 13:01:57	Run Pump	18.69 - 19.24	-1.21	6.58											
13:04	4:54												10.49	7.82	-0.01
13:05	4:55			ļ	16.95	17.04	2.83	0.09	2.85			-			
13:11:53 - 13:12:06	Run Pump	18.69 - 19.24	-1.21	6.58						•					
13:20	5:10			j						12.45	5.43	0.06			
13:22:54 - 13:23:07	Run Pump	18.69 - 19.24	-1.21	6.58											\neg
13:25					16.97	17.07	2.81	0.10	2.87			ľ			ļ
13:32:32 -13:32:44	Run Pump	18.69 - 19.24	-1.21						İ						ĺ
13:42:52 - 13:43:05	Run Pump		-1.21												
13:45	5:35			- 1	16.99	17.11	2.79	0.12	2.89			1			
	<u> j</u>														

FIGURES









LEGEND

Alameda Ave.

GW-3 MONITORING WELL NUMBER

MONITORING WELL LOCATION

42 HIGHEST CONCENTRATION DETECTED (parts per million)

ND NOT DETECTED

RUST ENVIRONMENT & INFRASTRUCTURE

ISOCONCENTRATION MAP
TPH as GAS — GROUNDWATER
Area 4

ANC - OAKLAND

PROJECT NO. 02345-01983

DATE 11/92

SCALE IN FEET

. 10

FIGURE NO. 6

