RUST ENVIRONMENT & INFRASTRUCTURE

Rec'd 6/1/95

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May 31, 1995

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Subject: Site-wide Risk Management Plan
Former ANC Oakland Plant

Gentlemen:

The enclosed Site-wide Risk Management Plan has been prepared for American National Can Company by RUST Environment & Infrastructure for the subject site. The SRMP addresses comments and issues raised by your agencies, P.E.S. Environmental Consultants, Inc. (on behalf of Kmart Corporation), and Rust E&I (for ANC) during several meetings and telephone conferences.

Please call me at (518) 437-8373 if you have any questions regarding this plan.

Sincerely,

Edward W. Alusow

Edward W. Alusow
Senior Project Manager

Enclosure

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Site-Wide Risk Management Plan
Former ANC Facility
Oakland, California
3801 East 8th Street
Oakland, California 94601

Prepared for:
American National Can Company
Chicago, Illinois

Prepared by:
Rust Environment & Infrastructure
Albany, New York

May, 1995

QUALITY
♦
INTEGRITY
♦
CREATIVITY
♦
RESPONSIVENESS

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1.0 INTRODUCTION

American Can Company began operations of the facility located at 3801 East 8th Street, Oakland, California ("Oakland Plant" or "Plant") in 1913. The company sold its packaging division, including the Oakland Plant, in November 1986. The division sold was then incorporated as American Can Packaging, Inc., a Delaware corporation. In April 1987, American Can Packaging Inc. merged into National Can Corporation. At the same time, the surviving corporation changed its name to American National Can Company (ANC), a Delaware corporation, which continued to own the facility until February 1994. ANC manufactured food and beverage cans at the facility from early 1913 to 1988. Portions of the facility were used to warehouse various materials until 1992. ANC sold the property to Kmart Corporation in February 1994 for the construction of a retail shopping center.

ANC has pursued a site-wide environmental remediation which has included evaluation of the nature and extent of soil and groundwater contamination in various areas at the site, and the design and implementation of remediation measures in those areas. The California Regional Water Quality Board - San Francisco Bay Region (RWQCB), in conjunction with the Alameda County Department of Environmental Health Services (ACDEH), is overseeing the investigation, cleanup and management of soil and groundwater contamination at several locations on the subject site. Several underground storage tanks (USTs), associated product pipelines, and contaminated soil have been removed from the site. ANC has received the approval of the RWQCB to utilize the Alternative Points of Compliance Program. In accordance with that program, this Site-wide Risk Management Plan (SRMP) addresses the management of risks which might remain following the completion of remedial activities.

1.1 LOCAL LAND USE

The former ANC property (site) is located in Oakland, California in an old industrial area. East 8th Street and Interstate-880 bound the property on the north and east sides. Alameda Avenue and 37th Avenue bound the property on the south and west sides, respectively. Figure 1 depicts the overall site location. The Kmart Corporation has begun construction of a retail store on the site.

1.2 REGIONAL GEOLOGY

The region surrounding the site is comprised of consolidated deep bedrock units and younger unconsolidated sediments. The top of the bedrock lies at a maximum depth of 1,100 feet below ground surface, and it slopes up to the east, where it outcrops at or near the surface trace of the Hayward Fault Zone.

The unconsolidated units that overlie the bedrock in the region consist of sand, gravel and clay deposited by alluvial sedimentation processes, and sand, silt, clay and organic rich sediments deposited on the basin margins or within bays and lakes. The coarse grained alluvial deposit was formed from alluvial fans and streams emanating primarily from the bedrock hills to the east of the Hayward Fault Zone. The alluvial deposits are interlayered with, and grade laterally into, the finer grained sediments that were formed within and along the margins of interfluvial basins and marine bays.

1.3 REGIONAL HYDROGEOLOGY

The unconsolidated sediments in the region collectively make up the groundwater reservoir of the East Bay Plain. This reservoir is bounded on the east by the Hayward Fault Zone. The northern and southern boundaries are not defined physiographically. The reservoir depth is not clearly established.

The primary water bearing zone in the East Bay Plain groundwater reservoir consists of older alluvial deposits at depths of 50 feet or greater. Groundwater is also present in the younger and shallower sedimentary formations in the region. However, due to their low yields and small quantities of groundwater, these near surface units are not extensively used.

The East Bay Plain Groundwater Reservoir is recharged directly by precipitation. Groundwater in the reservoir generally flows in a west and southwesterly direction from the Hayward Fault Zone towards the San Francisco Bay. Under natural conditions, upward movement of groundwater occurs due to differential pressures between confined layers. It is expected that upward flow gradients become more pronounced toward the San Francisco Bay, which acts as the primary discharge area for this groundwater reservoir.

1.4 LOCAL GEOLOGY AND HYDROGEOLOGY

The ANC site is underlain by fill, tidal marsh and fluvial deposits. The composition of the fill varies from reworked natural silty clay surface deposits to mixtures of sand and gravel. Very little foreign materials or debris was observed during drilling and excavation activities at the site. Tidal marsh deposits immediately underlie the fill and is at the surface in areas where fill is lacking. The tidal marsh deposits are characterized by very dense, stiff, and highly plastic dark gray to black clay and silt. The tidal marsh unit is rich in organic matter, although it is devoid of any shell fragments. Fluvial deposits lie immediately beneath the tidal marsh unit. This unit is brown to gray in color and is composed predominantly of clay, silt and occasional seams of sand and fine gravel. The fluvial unit is generally fine grained in the upper sections and coarse grained in the lower sections of this stratigraphic unit. This unit is relatively more coarse-grained across the southern portion of the site.

Groundwater is present beneath the site in the fluvial unit. Site groundwater level data and subsurface geologic information collected to date indicate that the groundwater occurs under unconfined conditions at the site at an average depth of 8 to 10 feet below ground surface. The water table rises and falls with changes in seasonal recharge and discharge. Groundwater generally flows in a southerly direction across the site, which reflects the overall regional groundwater flow direction. A local reversal in the groundwater gradient exists in the southeast section of the site. It has been concluded that the reversed groundwater flow pattern reflects the existence of a groundwater mound beneath the adjacent Ekotek Lube site.

This SRMP addresses the risk, and management of that risk in specific areas of the subject site: Area 2, Area 3, Area 4, and RCRA units (DSA/SDSA areas). These areas are noted on Figure 2.

2.0 AREA 2 RISK MANAGEMENT PLAN

2.1 SITE BACKGROUND AND CONDITIONS

Area 2 is located along the northeast perimeter of the site, adjacent to East 8th Street. This area contained an inactive 12,000 gallon single walled steel underground storage tank (UST). Excavation of this UST was attempted in 1987. However, due to physical obstacles, including proximity to underground pipelines and utilities, the UST was closed in place.

2.1.1 Previous Investigations

The analyses of soil and groundwater samples collected from this area indicated subsurface impacts by petroleum hydrocarbons. Area specific investigations included drilling seven borings and converting four of them to groundwater monitoring wells. The subsurface conditions in the immediate vicinity of Area 2 are characterized by relatively impermeable fluvial sediments.

Soil samples collected during drilling activities indicated concentrations of total petroleum hydrocarbons as diesel fuel (TPHd) and total petroleum hydrocarbons as gasoline (TPHg) in soil above the groundwater table (between 5.75 feet and 9.25 feet below grade).

Groundwater quality has been monitored on a quarterly basis since April, 1991 for TPHd, nickel, and zinc. Dissolved nickel and zinc concentrations were highest in an upgradient well (MW-13). Floating product had been observed in monitoring well GW-6. However, TPHd concentrations in groundwater samples collected from downgradient wells had been less than 3 milligrams per liter (mg/l) or parts per million (ppm). The relatively impermeable subsurface materials in this area have limited the migration of petroleum hydrocarbons detected in the groundwater.

2.1.2 Remedial Activities

UST removal activities in this area occurred in November and December of 1994. The previously described 12,000 gallon UST was excavated and transported off site as a non-RCRA hazardous waste solid, for proper disposal. No appurtenant piping was encountered during the excavation. The initial UST excavation measured 30 feet long by 10 feet wide by 13 feet deep. Soil samples collected from the excavation sidewalls did not detect TPHd or BTEX at or above the testing method detection limits. The excavated area was backfilled with previously excavated soil.

Additional soil remediation was performed in January and February, 1995 to remove impacted soil not excavated during the December, 1994 tank removal activities. Past investigations in this area indicated that over excavation of soils would be appropriate to remove the source of groundwater contamination. The additional remediation activities included the excavation and off-site disposal of approximately 4500 cubic yards of soil. The excavation was backfilled and the excavated soil was transported off site, by rail, to the ECDC facility in Idaho. Confirmatory sidewall samples, when analyzed, indicated that with the exception of one isolated pocket, all hydrocarbon impacted soils had been removed. One of the sidewall samples also contained elevated levels of total inorganic lead. Details are presented in an "Area 2 Remedial Activities Report", submitted to the ACDEH on May 23, 1995.

2.2 ASSESSMENT OF POST CONSTRUCTION HUMAN HEALTH AND ENVIRONMENTAL RISKS

2.2.1 Exposure Pathways and Receptors: Soil

The potential exposure pathways for residual contaminated soil at present are ingestion, inhalation, and dermal contact. The residual concentrations of petroleum hydrocarbons in the soil overlying groundwater in Area 2 are well below the TPH guidance level of 100 mg/Kg cited in the California LUFT manual (Cal. DHS, 1989). Area 2 will be encapsulated by an asphalt paved parking lot which will effectively eliminate any post construction exposure pathways.

2.2.2 Exposure Pathways and Receptors: Groundwater

The soils in Area 2 have very low permeability, which will inhibit downgradient migration of impacted groundwater. Considering this, and considering that Area 2 is located along the upgradient side of the site, any residual dissolved chemistry should naturally attenuate prior to reaching the downgradient areas or property boundaries. In addition, groundwater usage from the site is prohibited by a deed restriction. Groundwater is not withdrawn for drinking, industrial or agricultural uses. As a result of these conditions, there are no exposure pathways or receptors for groundwater at present.

2.3 RISK MANAGEMENT MEASURES

The purpose of the risk management measures is to describe which methods will be used or are already in place to protect human health and the environment. The risk management measures proposed for the property include engineering and administrative controls, and assessment, which ANC will implement following the construction of the Kmart shopping center.

2.3.1 Risk Management Measures: Soil

Petroleum impacted soil has been excavated and removed from Area 2. In addition this area will be encapsulated by an asphalt paved parking lot. Therefore, risk management measures will not be necessary for the soils in this area.

2.3.2 Risk Management Measures: Groundwater

Assessment of groundwater quality in Area 2 and its environmental impacts have been reported in several reports during the last 6 years. In addition to the deed restriction imposed on the usage of groundwater from this property, a groundwater monitoring program will be implemented for this area. A copy of the deed restriction is included in an appendix and a description of the groundwater monitoring program is provided below.

2.4 GROUNDWATER MONITORING PROGRAM

The intent of the groundwater monitoring program is to collect and analyze groundwater quality and hydrogeologic data to ensure that impacted groundwater, if any, is being contained. The monitoring

well network will consist of a combination of existing and newly installed wells. Field methods and procedures for the installation, development, and sampling of monitoring wells are appended. Figure 2 shows the location of existing and proposed monitoring wells.

As previously mentioned, the source of the petroleum hydrocarbons detected in Area 2 is residual soil contamination resulting from a former UST. Elevated levels of zinc have also been detected in an upgradient well, MW-13.

(1) MW 13

Three monitoring wells will be used to monitor groundwater quality in Area 2. Previously existing (2) Rep TW-1 well MW-13 will be sampled to test upgradient groundwater quality. Monitoring well TW-1, which was destroyed during UST and soil excavation activities, will be re-installed to monitor the former source area. A new monitoring well will be installed directly downgradient of the former source area and no more than 10 feet outside the limits of the soil remediation excavation. The locations of these monitoring wells are noted on Figure 2.

Water levels in each of these wells will be measured and water samples will be collected on a quarterly basis. The collected water samples will be analyzed for total petroleum hydrocarbons as diesel by California Department of Health Services (Cal DHS) methods (TPHd); benzene, toluene, ethylbenzene and total xylenes by ~~EPA SW-846 method 8020 (BTEX); and,~~ total lead and total zinc by EPA SW-846 method 6010. All groundwater analyses will be performed by a State Certified laboratory.

ok. *

? clarify this Appendix C

(3) The new downgradient monitoring well will be the containment monitoring point for Area 2. If four consecutive quarters of sampling and testing indicate the concentration of the monitored analytes have been below or did not exceed the containment concentrations at this containment monitoring point, ANC will petition the RWQCB for closure of Area 2. The containment concentrations for the analytes of concern in Area 2 are provided in Appendix C.

Monitoring wells MW-13 and TW-1 are located upgradient to and within the Area 2 former source area, respectively, where recent remedial activities included the removal of impacted soils from above groundwater. Based on this, there is no mechanism, related to the former Area 2 source, for groundwater quality at these locations to deteriorate from current conditions. Accordingly, ANC does not consider these two wells to be containment monitoring points. ANC will petition the RWQCB for closure of these wells as soon as groundwater analytical data demonstrate that groundwater at these locations meets the containment concentrations of this plan, or reveal a decreasing trend in chemical constituents.

Base closure on downgradient well not MW 13 or replacement for TW-1. ok

3.0 AREA 3 RISK MANAGEMENT PLAN

3.1 SITE BACKGROUND AND CONDITIONS

Area 3 is located in the southeastern corner of the site, adjacent to the Ekotek Lube property. Soil and groundwater in this area are severely impacted. The results of several field investigations have demonstrated that the source of soil and groundwater contamination in Area 3 is the Ekotek Lube property. The western limit of this impacted area is currently on Kmart's property, beneath where Building #12 was located.

3.1.1 Previous Investigations

Area specific investigations included a Preliminary Site Assessment in 1990, a Phase I investigation in 1991, subsurface investigations performed in 1992, and an ongoing quarterly groundwater monitoring program.

Two groundwater monitoring wells (GW-1 and GW-2) were installed during the preliminary site assessment. These wells revealed the presence of significant levels of contaminants in groundwater. This warranted the need for conducting further subsurface investigations in this area. In 1991, eight soil borings were advanced. Soil samples were collected and analyzed to define the extent of soil contamination in this area. Soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenols (PCBs) and Title 22 California Assessment Manual (CAM) metals.

Borings SB-2 through SB-8 were converted into monitoring wells MW-1 through MW-7. In 1992, three more monitoring wells (MW-18, MW-19 and MW-20) were installed and sampled. To date a total of 12 monitoring wells have been used to define and evaluate the extent of groundwater contamination in Area 3. Water samples collected from wells MW-1 through MW-7 were analyzed for VOCs, SVOCs, PCBs, total petroleum hydrocarbons (TPH) and Title 22 CAM metals. Water samples from wells MW-18, MW-19 and MW-20 were analyzed for VOCs, SVOCs, TPHg, TPHd, total oil and grease, and PCBs. The majority of soil and groundwater samples were found to be contaminated by one or more of the above mentioned constituents. Wells GW-1, GW-2, MW-2, MW-3 and MW-5 have contained floating product.

In general, the concentration of contaminants in soil and groundwater increase toward the Ekotek Lube property. This fact is supported by the mounding of groundwater beneath and around the Ekotek Lube property, which indicates the that groundwater bearing zone in this area is being recharged by the contaminated water that emanates from the Ekotek Lube property.

Based on the analysis of data gathered from the subsurface hydrogeologic investigations and quarterly groundwater monitoring and testing in and around Area 3, it is concluded that Ekotek Lube is the source of soil and groundwater contamination in this area. The regional groundwater flow (towards Ekotek Lube) has limited the extent to which impacted groundwater has migrated onto the subject property, and also redirects the impacted groundwater emanating from Ekotek Lube back to this suspected source property.

3.1.2 Remedial Activities

Remedial activities in this area have included floating product removal from the ANC monitoring wells. In addition, the responsible property owners have reportedly evacuated and sealed the underground sumps on the Ekotek Lube property; however, the effectiveness of those efforts has not been conclusively demonstrated.

} requested reports of Ekotek

3.2 ASSESSMENT OF POST-CONSTRUCTION HUMAN HEALTH AND ENVIRONMENTAL RISKS

ANC retained Soma Environmental Engineering, Inc. to prepare a baseline Human Health Risk Assessment (HRA) for Area 3 of the site. The HRA, dated December 7, 1993, concluded the potential for public health risks existed if groundwater was used for consumptive purposes. However, no other potential health risks to the general public, including future Kmart customers, employees or construction workers were identified. The HRA was reviewed and approved by the RWQCB and the ACDEH with the condition that a deed restriction be imposed to prevent the use of site groundwater. ANC filed a deed restriction (Appendix D) in response to the agencies requests. The following sections provide a summary of potential exposure pathways and sensitive receptors, based on existing subsurface conditions and future land use.

3.2.1 Exposure Pathways and Receptors: Soil

The current soil exposure pathways are ingestion, inhalation, and dermal contact. There will be no exposure pathways or receptors after the construction of the asphalt parking lot for the Kmart shopping center in Area 3. The area will be effectively encapsulated.

3.2.2 Exposure Pathways and Receptors: Groundwater

At present, there are no exposure pathways nor receptors for groundwater. Usage of any groundwater from the site is prohibited by a deed restriction. Therefore, there will be no exposure pathways or receptors in the future.

3.3 RISK MANAGEMENT MEASURES

3.3.1 Risk Management Measures: Soil

No risk management measures will be necessary for Area 3, since it will be paved with asphalt as a parking lot, essentially encapsulating the entire area.

3.3.2 Risk Management Measures: Groundwater

The deed restriction discussed above prevents the usage of groundwater from the property, including Area 3. In addition, ANC will continue the groundwater monitoring program presently being performed in this area, with some modifications. The present groundwater monitoring program includes the collection and analysis of groundwater samples from selected wells on a quarterly basis to provide on-going groundwater quality data. Theprogram also includes a groundwater mound and

product thickness monitoring program, which is conducted on a monthly basis to provide data to evaluate the effectiveness of the remedial actions reportedly taken on the Ekotek Lube property.

3.4 GROUNDWATER MONITORING PROGRAM

The groundwater monitoring program performed in Area 3 as part of this SRMP will include quarterly sampling and analysis and monthly water level and product thickness monitoring, consistent with the present program. The intent of the program will be to provide data regarding groundwater conditions (i.e.; groundwater quality, groundwater mound height and product thickness) to the RWQCB and ACDEH so that the effectiveness of remedial measures taken on the Ekotek Lube property can continue to be assessed.

ok

All existing Area 3 wells will be sampled as part of the program. They include MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, GW-1R and GW-2R. Water levels will be measured and water samples will be collected and analyzed for volatile organic compounds by EPA SW-846 method 8240 (VOCs), semi-volatile organic compounds by EPA SW-846 method 8270 (SVOCs), TPHd and TPHg by Cal-DHS methods. Any well that contains any detectable (when monitored with an electronic oil/water interface probe) product layers will not be purged and sampled in that quarter.

* remove any fp?

As an addition to the Area 3 groundwater monitoring program, MW-1 (previously decommissioned) will be reinstalled and water levels measured monthly to augment the groundwater information for Area 3. The well will be sampled on a quarterly basis, for TPH as mineral spirits (TPHms) only, to address concerns with possible residual contamination from Building #12 soil excavation activities previously conducted. All groundwater analyses will be performed by a State Certified laboratory.

add * 8240

tph d, semi-vocs, pcbs

The results of the monthly groundwater mound and product thickness monitoring will become part of this SRMP. As part of this program, on a monthly basis, groundwater levels in all Area 3 wells and floating product thicknesses in wells GW-1R, GW-2R, MW-2, MW-3 and MW-5 will be measured and recorded. Product layers that are >0.02 feet thick will be bailed from those wells.

Considering that the Area 3 groundwater plume orginates from an off-site source, and the RWQCB and ACDEH have accepted the public health risk assessment prepared for Area 3 and the groundwater deed restriction as being protective of human health, the Area 3 groundwater monitoring program is not designed to demonstrate containment of the Area 3 groundwater plume. Accordingly, the plan does not specify actual containment monitoring points, containment concentrations or contingency options.

ok.

4.0 AREA 4 RISK MANAGEMENT PLAN

4.1 SITE BACKGROUND AND CONDITIONS

Area 4 is located on the southern perimeter of the site adjacent to Alameda Avenue. It includes the vicinity of the compound storage building (now demolished) and extends along the previously removed underground product pipelines to the now demolished Lithography Building (Building #12). This area contained eight USTs and their associated underground pipelines, which have been excavated, removed and properly manifested and disposed of.

4.1.1 Previous Investigations

Area specific investigations included a Phase I investigation by Dames & Moore in 1989 within the excavated area of the previously removed USTs. Monitoring well GW-3 was installed. The water in this well contained xylene and TPH. Additional borings were advanced and soil samples were collected and analyzed. Elevated levels of xylene and ethylbenzene were detected in the soil samples. In 1991, DUNN conducted a more detailed soil and groundwater investigation in this area. This investigation included advancing 10 soil borings, soil sample collection, analyses, and installation of 5 monitoring wells. Water samples were collected from all monitoring wells in this area and were analyzed for VOCs, SVOCs, TPHg and TPHd.

The laboratory analytical results of samples gathered during the previous investigations indicated that the impacted soil and groundwater were limited in areal extent and confined to the area immediately around the backfilled excavation of the former USTs, and along the former traverse of the underground product pipelines. The limited extent of the impacted area was primarily due to the presence of low permeability silty and clayey soils from ground surface to the capillary fringe of the groundwater table.

4.1.2 Remedial Activities

Seven USTs were excavated and removed from Area 4 in 1987. These USTs were located immediately east of the compound storage building and were used for storing petroleum related solvents and coating-related products. The underground pipelines were not removed during this remediation phase because the facility was still operating and the underground utility lines in this area could not be disconnected. Therefore, a limited amount of impacted soil was removed during the excavation of the seven USTs. The excavated area was backfilled with clean sand.

During October and November of 1992, a 500 gallon UST and a series of underground pipelines were excavated and removed from Area 4.

Remediation work for removal of the remaining impacted soil in this area was performed in November of 1994. Approximately 6,000 tons of soil was excavated from this area. In addition, approximately 120,000 gallons of water was pumped from the excavation, into portable storage tanks. Excavations were backfilled and compacted with clean fill material imported from an off site source. Remedial activities included the off-site disposal of both the residual impacted soils and the excavation groundwater. Laboratory analysis of the post-excavation confirmation soil samples did

not detect BTEX or TPHg, at the LUFT detection limit, for all samples analyzed. These results demonstrated that the remedial measures implemented were successful in remediating Area 4 soils to the maximum extent feasible in accordance with a RWQCB and Alameda County Department of Environmental Health (ACDEH) approved remedial work plan for Areas 2 and 4. Details are presented in an "Area 4 Remedial Activities Report".

4.2 ASSESSMENT OF POST-CONSTRUCTION HUMAN HEALTH AND ENVIRONMENTAL RISKS

4.2.1 Exposure Pathways and Receptors: Soil

Current exposure pathways are ingestion, inhalation, and dermal contact. All contaminated soil above human health based clean-up levels for industrial or residential soils has been excavated and removed from Area 4. This has effectively eliminated the soil exposure pathways and risks to human health and the environment. In addition, a concrete slab building and asphalt paved parking lot will ultimately cover and effectively encapsulate the area.

4.2.2 Exposure Pathways and Receptors: Groundwater

There are, at present, no exposure pathways for groundwater. Groundwater in this area and other areas of the site is not withdrawn for any kind of use. Therefore, there are no human receptors. The usage of groundwater from this property is prohibited by a deed restriction..

Groundwater analyses prior to the most recent Area 4 remediation indicated low levels of TPHs, VOCs and SVOCs present in the immediate vicinity of the former UST excavation. The analytical results of water samples collected from well MW-14 (non-detect) indicated that the impacted groundwater had not migrated downgradient of Area 4 and that any groundwater contamination remaining was confined to the limits of the excavation of the former USTs. During the November, 1994 soil remediation, over 120,000 gallons of groundwater were removed from the excavation. As a result, most of the groundwater that may have contained elevated levels of TPH, VOCs and SVOCs has been removed

4.3 RISK MANAGEMENT MEASURES

4.3.1 Risk Management Measures: Soil

USTs, underground pipelines and impacted soil have been removed from Area 4. These remedial actions have eliminated the source of contamination in this area. No risk management measures will be necessary for the soil in Area 4. This area will also be covered by a paved asphalt parking lot, thus effectively encapsulating the area.

4.3.2 Risk Management Measures: Groundwater

In addition to a deed restriction imposed on the site on the usage of groundwater from this property and removal of the contamination source, a groundwater monitoring program will be implemented for Area 4. The intent is to provide objective data to ensure that any residual impacted groundwater

is not migrating to downgradient areas. The assessment of the hydrogeologic conditions and analytical results thus far do not indicate the potential for any off site migration of groundwater from this area.

4.4 GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program will be performed in Area 4 to ensure that any residual pollution remains contained.

re installed (?)

Containment monitoring points will include wells MW-9, MW-14 and a new well that will be installed east of MW-14, on the property boundary (see Figure 2). These wells will be monitored and sampled on a quarterly basis to determine if containment is being maintained. Samples will be analyzed for TPHg, TPHd and BTEX. All groundwater analyses will be performed by a State Certified laboratory.

If the analytical results of four consecutive quarters indicate a decreasing trend in concentration of these constituents, or do not exceed the containment concentrations, ANC will petition the RWQCB for closure of the wells or a decrease in monitoring. The containment concentrations for the analytes of concern in Area 4 are provided in Appendix C.

oh

5.0 DRUM STORAGE AREA (DSA) AND SOLDER DROSS STORAGE AREA (SDSA) RISK MANAGEMENT PLAN

5.1 SITE BACKGROUND AND CONDITIONS

The Drum Storage Area (DSA) and Solder Dross Storage Area (SDSA) are located in the south central section of the Kmart property, near Area 5.

The DSA dimensions are 76 feet by 43 feet. This area was used for storing liquid hazardous waste in drums. The DSA has a 6-inch thick concrete flooring and is surrounded by a 6-inch high concrete curbing. The DSA has no floor drains. The SDSA is a smaller area (40 feet by 8 feet). It is a fenced section of an elevated concrete railroad finger dock. Solid hazardous waste was stored in drums in this area

5.1.1 Previous Investigations

Area specific investigations in the DSA and SDSA were conducted between October, 1994 and February, 1995 under the guidance of the Cal. EPA, DTSC Region 2, as part of the closure of these RCRA units. These investigations are summarized as follows:

DSA: Several concrete chip samples from the DSA floor, and over three dozen soil samples from the soil beneath the concrete slab and beneath the perimeter of the DSA, were collected and analyzed for the constituents mandated by RCRA, and CCR Title 22. The analytical results indicated that a two to three foot thick layer of fill soil immediately beneath the concrete floor had been impacted by chromium, lead and zinc. Additionally, analytical results indicated that petroleum based hydrocarbon contamination may extend to a greater depth in a small portion of the soils on the eastern side of the DSA. TPHd, TPHms

SDSA: Several concrete chip samples were collected from the slab, and over a dozen soil samples were collected from the soil beneath this area and beneath the perimeter of this area. The samples were analyzed for the constituents mandated by RCRA and CCR Title 22. The analytical results did not indicate that the soil beneath and around the SDSA had been impacted by past site activities.

5.1.2 Remedial Activities

The preliminary phase of remedial work in the DSA and SDSA included grinding and removal of the top 1/4 inch of the concrete slabs, followed by sweeping, washing and steam cleaning of the grounded concrete surface. All water and grindings were collected and stored in drums, and properly manifested and disposed of.

The final phase of the remedial action for these RCRA units have been implemented according to the procedures described in the closure certification report that will be submitted to Cal. EPA, DTSC Region 2.

In general, this included excavation and disposal of concrete from both areas, and impacted soil beneath and around the DSA in accordance with all applicable disposal laws and regulations. The

depth of excavation at the DSA, on its eastern periphery (i.e.; where petroleum based soil contamination was suspected), extended to approximately two feet below the groundwater table. Approximately 900 cubic yards of soil was excavated and disposed of. Upon completion of excavation activities, thirty one (31) post excavation samples were collected in the DSA and 21 post-excavation samples were collected in the SDSA. Analytical results of these samples demonstrated that the excavations were effective in removing all soil and concrete that previously exceeded human health based performance standards established by the DTSC.

5.2 ASSESSMENT OF POST-CONSTRUCTION HUMAN HEALTH AND ENVIRONMENTAL RISKS

5.2.1 Exposure Pathways and Receptors: Soil

The current exposure pathways are ingestion, inhalation, and dermal contact. After construction of the Kmart shopping center, there will be no exposure pathways or receptors, as these areas will be covered by an asphalt parking lot and the building pads itself, effectively encapsulating the area.

5.2.2 Exposure Pathways and Receptors: Groundwater

Usage of any groundwater from this property is prohibited by a deed restriction, consequently there are no groundwater exposure pathways.

5.3 RISK MANAGEMENT MEASURES

5.3.1 Risk Management Measures: Soil

After implementation of the remedial measures described in the RCRA closure report and completion of the shopping center construction, no risk management measures for soils will be necessary for these areas, as all soils deemed to be a potential threat to human health have been removed and the area will be effectively encapsulated by an asphalt paved parking lot and the Kmart building itself.

5.3.2 Risk Management Measures: Groundwater

Usage of groundwater from this property is prohibited by a deed restriction. In addition, a groundwater monitoring plan will be implemented as part of this SRMP to determine if groundwater beneath the DSA has been impacted due to past site activities.

5.4 GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program will be conducted in the DSA. The purpose of the monitoring program will be to determine if impacted soils previously present in the DSA impacted groundwater quality. As part of this program, a new monitoring well will be installed within 10 feet of the DSA, in the down gradient direction of inferred groundwater flow and designated as the containment monitoring point for this area. Monitoring well drilling and construction standard procedures are found in Appendix A.

The monitoring well will be sampled on a quarterly basis. Samples will be analyzed for TPHd, TPHms, VOCs, total lead and total zinc. All groundwater analyses will be performed by a State Certified laboratory.

If the analytical results of four consecutive quarters have not exceeded the containment concentrations or a decreasing trend is established, ANC will petition the RWQCB for the closure of this well or a decrease in monitoring. The containment concentrations for the analytes known at this time to be of concern in this area are provided in Appendix C.

6.0 CONTINGENCY OPTIONS

Contingency options for Areas 2 or 4 will be evaluated if the containment concentrations are exceeded at the area's containment monitoring points. If the concentration of the analytes at these points show an increasing trend over the period of monitoring during the first four quarters of monitoring, contingency options will be considered. Good professional judgement will be used to evaluate and implement the contingency options. Possible contingency options may include: performance of a more detailed/focused assessment of the environmental risks of that area; additional groundwater monitoring in that area; and/or an evaluation and implementation of groundwater remediation activities. Contingency options for Area 3 are not included in this SRMP as discussed in Section 3.4.

7.0 HEALTH AND SAFETY PLAN

A health and safety plan has previously been developed and accepted that will be followed to protect the workers that will actively participate in performing field activities associated with this SRMP.

Reference. previous H+S. plan.

FIGURES

APPENDIX A

MONITORING WELL DRILLING, INSTALLATION & DEVELOPMENT PROCEDURES

MONITORING WELL DRILLING, INSTALLATION, AND DEVELOPMENT PROCEDURES

The monitoring wells will be drilled using a truck mounted drill rig equipped with 8-inch outside, and 6 5/8-inch inside diameter hollow stem augers. Soil samples will be collected at 5 feet depth intervals, utilizing a 2-foot long split spoon core barrel containing 6-inch long, 1.5-inch diameter stainless steel liners or sleeves, for lithologic identification. The wells will be drilled to a depth of ten feet below the encounter of first groundwater. Soil samples will be described using the Unified Soil Classification System and will be logged by a registered geologist or professional engineer. The augers and sampling equipment will be decontaminated by steam cleaning prior to drilling the first well, and between each boring.

The wells will be constructed of 2-inch diameter, flush threaded, schedule 40 PVC casing and screen. The bottom of the screened section in each well will be capped by a PVC cap. The annular space between the bore hole and the screened section of each well will be filled with an appropriate size sand filter pack to allow optimum groundwater flow into each well. The wells will have solid casing from ground surface down to five feet above the water table and screened or slotted casing from the bottom of the solid casing to total depth of hole. A sand filter pack will be extended from the bottom of the hole to two feet above the screen. A two foot thick bentonite seal will be placed on the top of the sand filter pack. The remaining annular space from the bentonite seal to ground surface will be filled with a mixture of cement grout and bentonite. The wellheads will be protected at the surface with a traffic rated locking vault.

The wells will be developed by a combination of bailing, surging and pumping. A minimum of ten well volumes will be extracted. Groundwater will be extracted from each well until the water parameters of pH, temperature and conductivity have stabilized.

Well development water, equipment rinsate water, and the drill cuttings will be contained in 55 gallon steel drums and stored on site until laboratory analyses indicates the appropriate disposal.

APPENDIX B

GROUNDWATER SAMPLING PROCEDURES

GROUNDWATER SAMPLING PROCEDURES

Prior to purging, water and/or product levels in the wells will be measured by an oil/water interface probe. The presence and amount of any floating product will be assessed using a clear acrylic or Teflon bailer as well.

The wells will be purged by a combination of bailing and pumping until at least four casing volumes of water are removed and water parameters of pH, temperature and conductivity have stabilized. These parameters will be recorded on a well sampling form.

Water samples will be collected and preserved in appropriate containers provided by the analytical laboratory. The containers will vary with each type of analytical method, and/or analytes that will be tested for. The water samples for Title 22, CAM metals analyses will be filtered prior to filling the containers. All sampling equipment will be decontaminated before and after collecting each sample by washing in special detergent and rinsing in both tap and deionized water. Disposable bailers, one per well, will be used to collect the water sample.

Sample containers will be properly labeled showing the sample number, well number, date, time, sampler's name, and preservation method. The samples will be maintained in a cooler containing blue ice until delivery to a State certified laboratory, for performing the analyses. Chain-of-custody documentation will be maintained from the sampling location to the laboratory. The chain-of-custody documents will be signed by the sampler and by each recipient of each transfer of the samples from the site to the laboratory. Condition of the samples will be noted on the chain-of custody documents by the laboratory. One travel blank will be submitted with each set of groundwater samples.

APPENDIX C

CONTAINMENT CONCENTRATIONS

American National Can Company
Former Oakland, California, Facility

Summary of Containment Concentrations Conc in ppb in water

Organics	*Concentration*	*Regulatory Citation*
Acetone	700	IRIS Ref Dose
Vinyl Chloride	0.5	CAL DHS MCL
Chloroethane	100	CAL Prop 65
1,1-DCE	6	CAL DHS MCL
Methylene Chloride	5	USEPA MCL
1,1-DCA	5	CAL DHS MCL
cis 1,2-DCE	6	CAL DHS MCL
1,1,1-TCA	200	CAL DHS MCL
Benzene	1	CAL DHS MCL
Toluene	1000	USEPA MCL
Tetrachloroethene	5	CAL DHS MCL
Chlorobenzene	30	CAL DHS MCL
Ethylbenzene	680	CAL DHS MCL
Xylenes	1750	CAL DHS MCL
1,4-DCB	5	CAL DHS MCL
1,3-DCB	600	USEPA MCL
1,2-DCB	600	USEPA MCL
TPH as gas	500	
TPH as diesel	500	
TPH as mineral spirits	500	

Inorganics		
Lead	50	CAL DHS MCL
Zinc	5000	CAL DHS MCL

All concentrations are expressed in ug/l (ppb)

APPENDIX D

PROPERTY DEED RESTRICTION - GROUNDWATER

NOTICE OF RESTRICTION OF USE OF PROPERTY
3801 EAST EIGHTH STREET
OAKLAND, CALIFORNIA

Notice is given this 17th day of February, 1994, by American National Can Company ("ANC"), who is the owner of record of certain property situated in Oakland, California, County of Alameda, State of California, known and numbered as 3801 East Eighth Street, Oakland, California, and more fully described in Exhibit "A" attached hereto and incorporated herein by this reference ("the Property") with reference to the following facts:

A. Contaminants are present in the groundwater beneath the Property at levels which are in excess of the California Drinking Water Standards and not suitable for use as a drinking water supply.

B. Contaminants are migrating from adjacent property onto the Property. The Property, which was formerly a manufacturing facility, is intended to be developed for retail use. There are no known currently used sources of drinking water within a one-half mile radius of the Property. Potable water is supplied to the area by the East Bay Municipal Utility District.

C. ANC desires and intends that in order to protect the present or future public health and safety, the Property shall be used in such a manner as to avoid potential harm to persons or property which may result from the presence of contaminants in the groundwater at levels above California Drinking Water Standards.

ARTICLE I
GENERAL PROVISIONS

1.01 Provisions to Run With the Land. This Notice sets forth protective provisions, covenants, restrictions, and conditions, (collectively referred to as "Restrictions"), upon and subject to which the Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. Each and all of the Restrictions shall run with the land, and pass with each and every portion of the Property, and shall apply to and bind the respective successors in interest thereof. Each and all of the Restrictions are imposed upon the entire Property unless expressly stated as applicable to a specific portion of the Property. Each and all of the Restrictions run with the land.

1.02 Concurrence of Owners Presumed. All purchasers, lessees, or possessors of any portion of the Property shall be deemed by their purchase, leasing, or possession of such Property, to be in accord with the foregoing and to agree for and among

themselves, their heirs, successors, and assignees, and the agents, employees, and lessees of such owners, heirs, successors, and assignees, that the Restrictions as herein established must be adhered to for the benefit of future Owners and Occupants, and that their interest in the Property shall be subject to the Restrictions contained herein.

Article II
DEFINITIONS

2.01 Board. "Board" shall mean the Regional Water Quality Control Board - San Francisco Bay Region, and successor agencies, if any.

2.02 Occupants. "Occupants" shall mean those persons entitled by ownership, leasehold, or other legal relationship to the exclusive right to occupy any portion of the Property.

2.03 Owner. "Owner" shall mean ANC or its successors in interest, including heirs, and assigns, who hold title to all or any portion of the Property.

ARTICLE II
DEVELOPMENT, USE, AND CONVEYANCE OF THE PROPERTY

3.01 Restrictions on Use. ANC promises not to use the groundwater for drinking water purposes, until such time it is determined in writing by the Board that the groundwater is suitable for such use.

3.02 Enforcement. Failure of the owner to comply with this restriction, as set forth in paragraph 3.01, shall be grounds for the Board, by reason of the Restrictions, to require that the Owner cease and desist using the groundwater for drinking water purposes, and remove any facilities or equipment designed to draw and distribute groundwater for such purposes. Violation of the Restrictions shall be grounds for the Board to seek administrative or judicial relief against the Owner, as provided by law.

3.03 Notice in Agreements. All Owners shall execute a written instrument which shall accompany or be included in all purchase agreements relating to the Property. The instrument shall contain the following statement:

> "The land described herein is subject to Restrictions which restricts the use of the groundwater beneath the Property for drinking water purposes. Such Restriction renders the owner, lessee, or other possessor of the land subject to, and responsible for compliance with such restriction, and failure to comply with said restriction may subject such persons to actions for enforcement and liability for any damages resulting from such non-compliance."

ARTICLE IV
VARIANCE AND TERMINATION

4.01 Variance. Any Owner or, with the Owner's consent, any Occupant of the Property or any portion thereof may apply to the Board for a written variance from the provisions of this Covenant. Such application shall be made in accordance with applicable law.

4.02 Termination. Any Owner or, with the Owner's consent, any Occupant of the Property or a portion thereof may apply to the Board for a termination of the Restrictions as they apply to all or any portion of the Property. Such application shall be made in accordance with applicable law.

4.03 Term. Unless terminated in accordance with paragraph 4.02 above, by law or otherwise, these Restrictions shall continue in effect in perpetuity.

ARTICLE V
MISCELLANEOUS

5.01 No Dedication Intended. Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property or any portion thereof to the general public or for any purposes whatsoever.

5.02 Partial Invalidity. If any portion of the Restrictions set forth herein or terms is determined to be invalid for any reason, the remaining portion shall remain in full force and effect as if such portion had not been included herein.

5.04 Article Headings. Headings at the beginning of each numbered article of these Restrictions are solely for the convenience of the parties and are not a part of the Restrictions.

5.05 Recordation. This instrument shall be recorded by the covenantor in the County of Alameda, within (10) days of the date of execution.

IN WITNESS WHEREOF, ANC executes this instrument as of the date set forth above.

OWNER:
AMERICAN NATIONAL CAN COMPANY

BY: _____

TITLE: Senior Vice President

DATE: 2/17/1994

STATE OF ILLINOIS)
)
COUNTY OF Cook)

On February 17, 1994 before me, the undersigned, a Notary Public in and for said state, personally appeared Guy Chaddon, personally known to me or proved to me on the basis of satisfactory evidence to be the person who executed the within instrument as Sr. Vice President of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same pursuant to its bylaws or a resolution of its board of directors.

WITNESS my hand and official seal.

" OFFICIAL SEAL "
ELAINE RUFENER
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 3/2/94

Elaine Rufener
Notary Public in and for said
County and State

APPENDIX E

BORING LOGS FOR EXISTING MONITORING WELLS

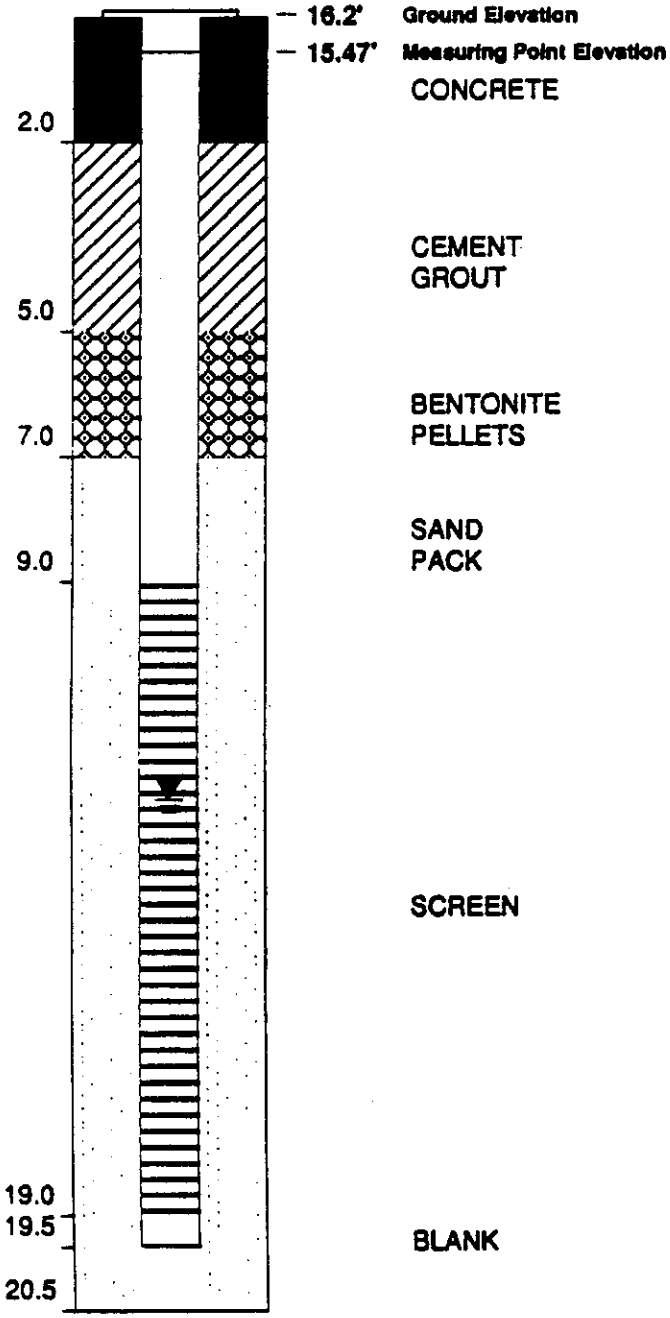
MONITORING WELL LOG

WELL NO. MW-1

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/11/91 to 03/12/91
Date Developed 3/23/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 3.71' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 19.5'
Total Depth of Boring 20.5'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 0.0'-20.5' Continuous

Riser Pipe Left in Place
Material Sch. 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 9.0'

Screen
Material Sch. 40 PVC Diameter 4" ID
Slot Size 0.020" Length 10.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 7 Bags Interval 7.0'-20.0'

Seal(s)
Type Bentonite Pellets Interval 5.0'-7.0'
Type Cement Grout Interval 2.0'-5.0'
Type Interval

Locking Casing YES

Notes: Augered to 20.0', sampled to 20.0'. Used 1.5 pails of pellets, 3 bags of concrete and 2 bags of cement.

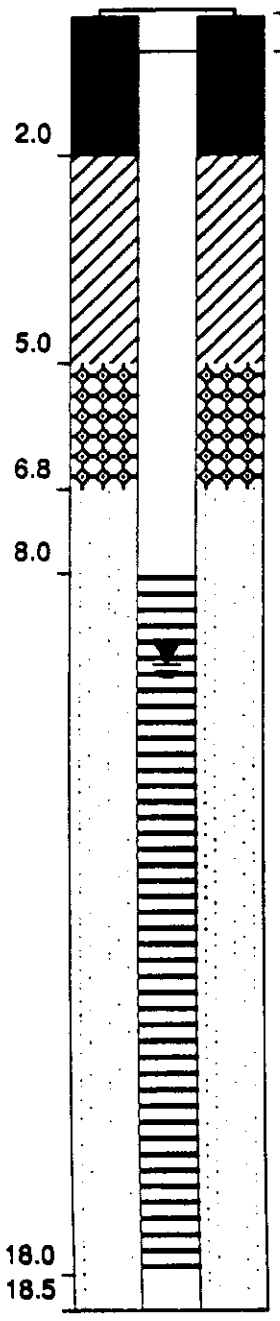
MONITORING WELL LOG

WELL NO. MW-2

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/13/91 to 03/14/91
Date Developed 3/27/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor 0Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 5.91' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 18.5'
Total Depth of Boring 18.5'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-17.5'(continuous)

Riser Pipe Left in Place
Material Sch. 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 8.0'

Screen
Material Sch. 40 PVC Diameter 4" ID
Slot Size 0.020" Length 10.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 6 Bags Interval 6.8'-18.5'

Seal(s)
Type Bentonite Pellets Interval 5.0'-6.8'
Type Cement Grout Interval 2.0'-5.0'
Type Interval

Locking Casing YES

Notes: Augered to 18.5', sampled to 17.5'. Used 1.5 pails of pellets, 2 bags of cement and 2.5 bags of concrete.

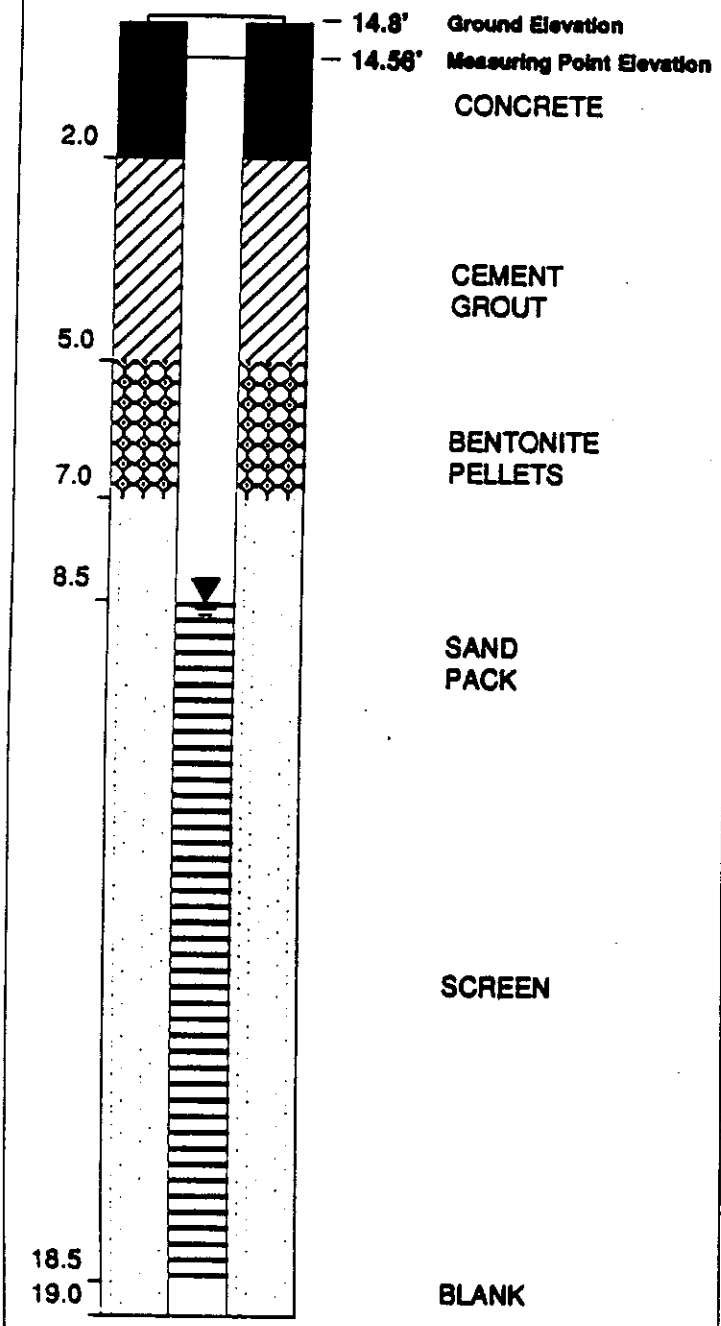
MONITORING WELL LOG

WELL NO. MW-3

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/14/91 to 03/14/91
Date Developed 3/27/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling
Type of Well Groundwater Monitoring
Static Water Level Elev. 6.29' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 19.0'
Total Depth of Boring 19.0'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-19.0' (continuous)

Riser Pipe Left in Place
Material Sch. 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 8.5'

Screen
Material Sch. 40 PVC Diameter 4" ID
Slot Size 0.020" Length 10.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 6 Bags Interval 7.0'-19.0'

Seal(s)
Type Bentonite Pellets Interval 5.0'-7.0'
Type Cement Grout Interval 2.0'-5.0'
Type Interval

Locking Casing YES

Notes: Augered to 19.0'. Used 1.5 pails of pellets, 2 bags of cement, and 2.5 bags of concrete.

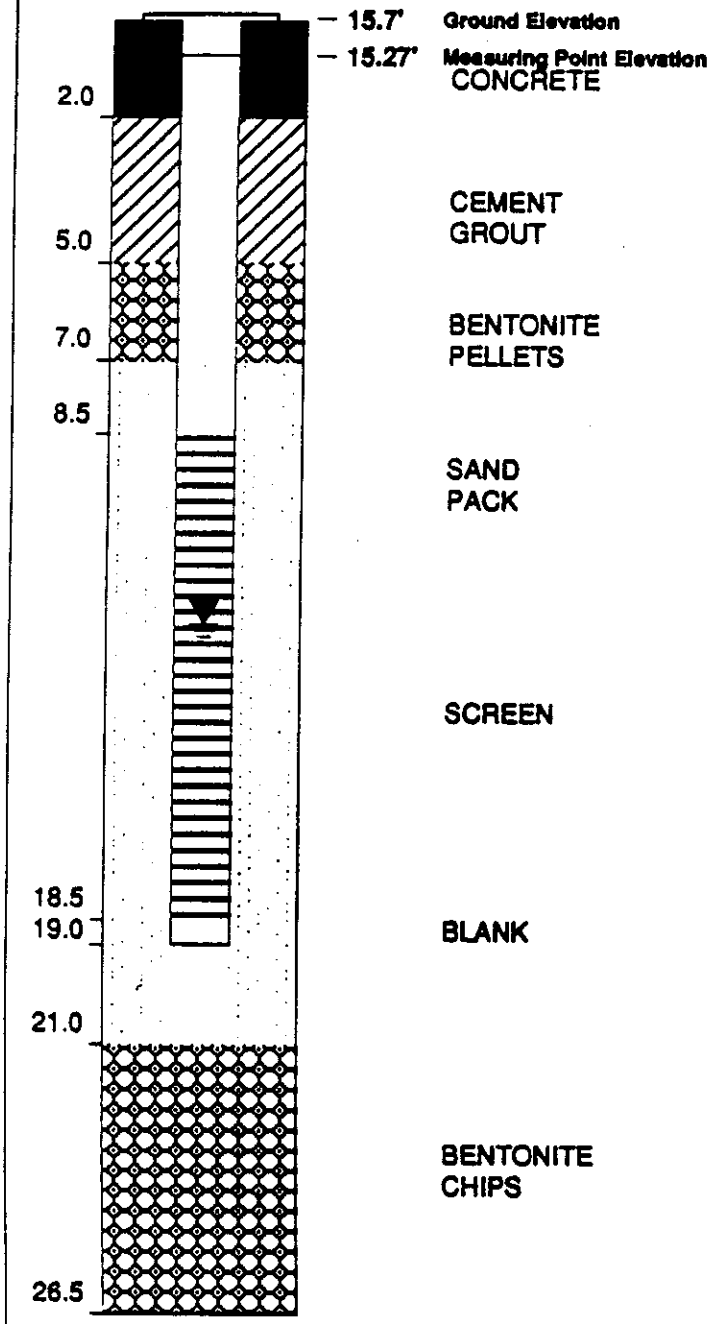
MONITORING WELL LOG

WELL NO. MW-4

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/15/91 to 03/15/91
Date Developed 3/23/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 3.27' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 19.0"
Total Depth of Boring 26.5'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-20.0',25.0'-26.5'

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 8.5"

Screen
Material Sch 40 PVC Diameter 4" ID
Slot Size 0.020" Length 10.0"
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 7 Bags Interval 7.0'-21.0'

Seal(s)
Type Bentonite Chips Interval 21.0'-26.5'
Type Bentonite Pellets Interval 5.0'-7.0'
Type Cement Grout Interval 2.0'-5.0'
Locking Casing YES

Notes: Augered to 22.5', sampled to 26.5'. Used 1.5 pails of bentonite pellets, 2.5 bags bentonite chips, 2 bags of cement and 2.5 bags of concrete. 2 Shelby Tubes: 20.0'-25.0'.

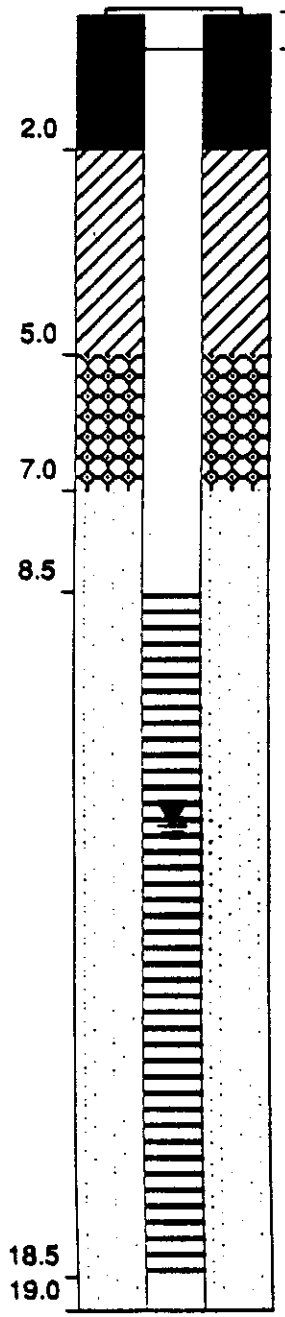
MONITORING WELL LOG

WELL NO. MW-5

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/15/91 to 03/16/91
Date Developed 3/23/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 3.23' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 19.0'
Total Depth of Boring 19.0'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-18.5' (continuous)

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 8.5'

Screen
Material Sch 40 PVC Diameter 4" ID
Slot Size 0.020" Length 10.0"
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 6 Bags Interval 7.0'-19.0'

Seal(s)
Type Bentonite Pellets Interval 5.0'-7.0'
Type Cement Grout Interval 2.0'-5.0"
Type Interval

Locking Casing YES

Notes: Augered to 19.0'. Used 1.5 pails of bentonite pellets, 2 bags of cement, and 2.5 bags of concrete. Water level elevation denotes top of product. Actual data level elevation is 2.94'.

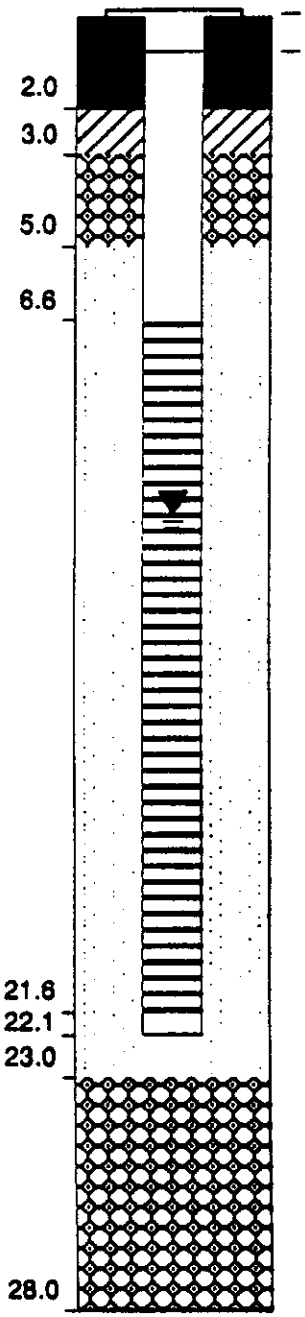
MONITORING WELL LOG

WELL NO. MW-6

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/16/91 to 03/18/91
Date Developed 3/24/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 2.88' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 22.1'
Total Depth of Boring 28.0'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-25.5' (continuous)

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 6.6'

Screen
Material Sch 40 PVC Diameter 4" ID
Slot Size 0.020" Length 15.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 10 Bags Interval 5.0'-23.0'

Seal(s)
Type Bentonite Pellets Interval 23.0'-25.5'
Type Bentonite Pellets Interval 3.0'-5.0'
Type Cement Grout Interval 2.0'-3.0'
Locking Casing YES

Notes: Augered to 25.5'. Used 1.75 pails of bentonite pellets, 1 bag of cement, and 2 bags of concrete. Shelby Tube: 25.5'-28.0'.

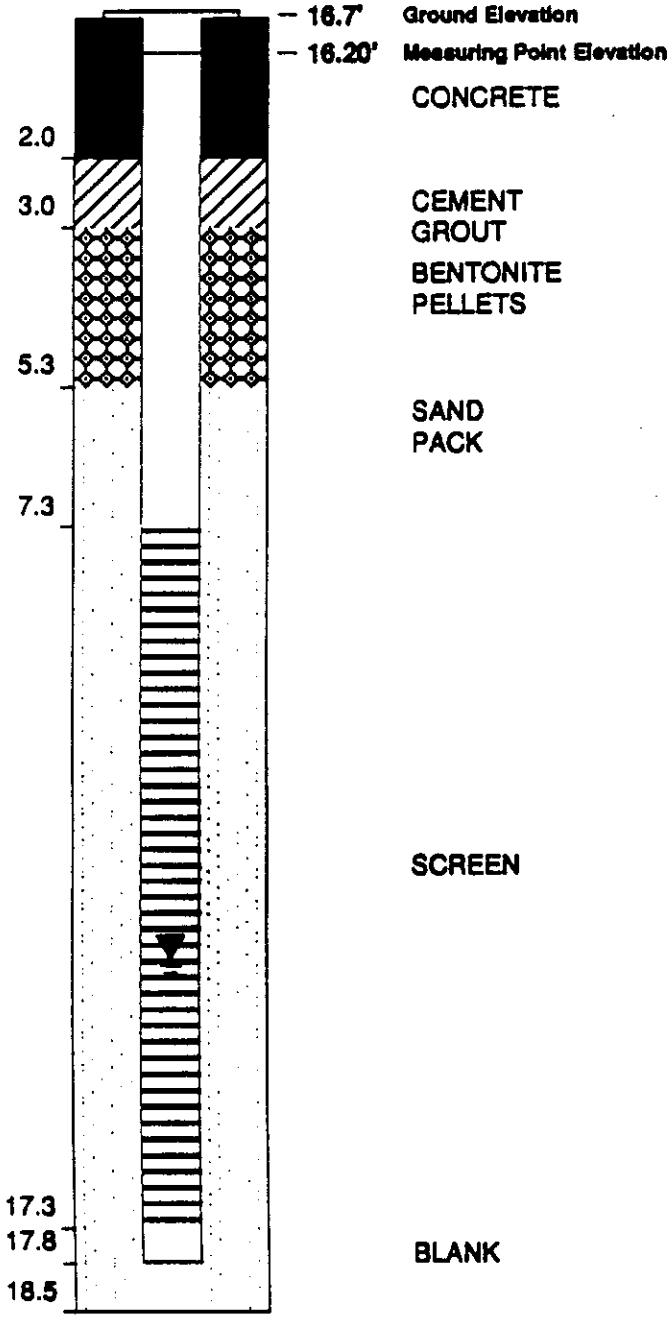
MONITORING WELL LOG

WELL NO. MW-7

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/18/91 to 03/18/91
Date Developed 3/25/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 3.16' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 17.8'
Total Depth of Boring 18.5'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-18.5' (continuous)

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 7.3'

Screen
Material Sch 40 PVC Diameter 4" ID
Slot Size 0.020" Length 10.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 7 Bags Interval 5.3'-18.5'

Seal(s)
Type Bentonite Pellets Interval 3.0'-5.3'
Type Cement Grout Interval 2.0'-3.0'
Type Interval

Locking Casing YES

Notes: Used 1.5 pails of bentonite pellets, 1 bag of cement, and 2 bags of concrete.

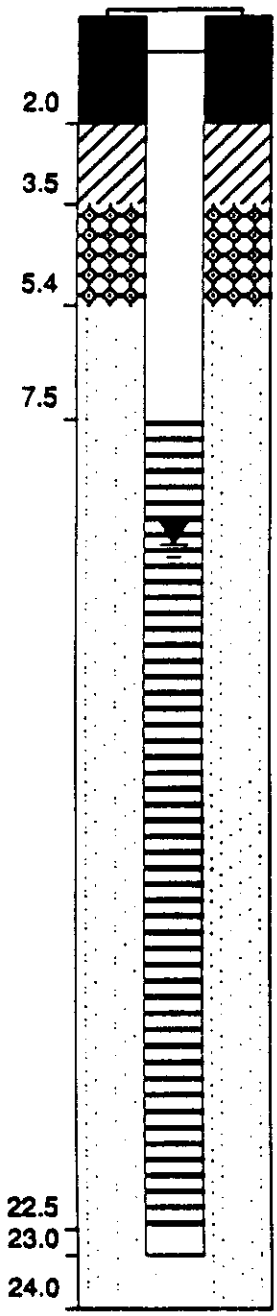
MONITORING WELL LOG

WELL NO. MW-9

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12206
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/19/91 to 03/20/91
Date Developed 3/24/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 2.24' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 23.0'
Total Depth of Boring 24.0'

Drilling Method
Type Hollow Stem Auger Diameter 6 5/8" ID
Casing HSA

Sampling Method
Type CS/SS Diameter 2.5"/2" OD
Weight 140 # Fall 30"
Interval 1.0'-24.0' (continuous)

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 4" ID
Joint Type Flush Threaded Length 7.0'

Screen
Material Sch 40 PVC Diameter 4" ID
Slot Size 0.020" Length 15.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 9 Bags Interval 5.4'-24.0'

Seal(s)
Type Bentonite Pellets Interval 3.5'-5.4'
Type Cement Grout Interval 2.0'-3.5'
Type Interval

Locking Casing YES

Notes: Augered to 23.0'. Used 1.5 pails of bentonite pellets, 2 bags of cement, and 2 bags of cement.

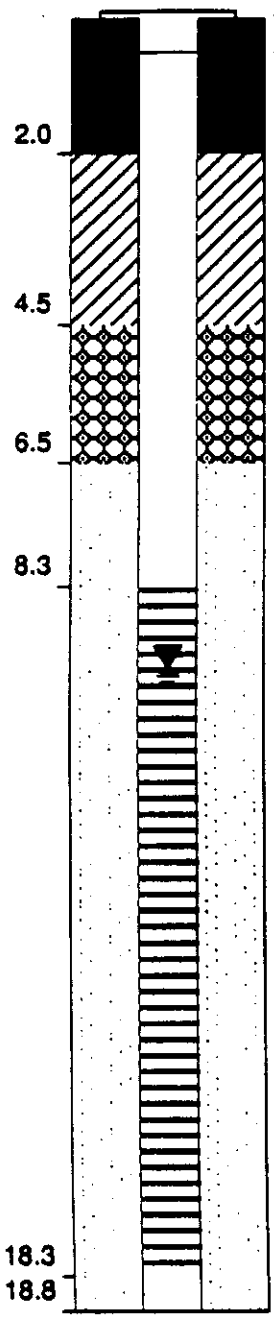
MONITORING WELL LOG

WELL NO. MW-13

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12206
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 03/26/91 to 03/26/91
Date Developed 3/27/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Excaltech Drilling

Type of Well Groundwater Monitoring
Static Water Level Elev. 9.15' Date 4/16/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 18.8'
Total Depth of Boring 18.8'

Drilling Method
Type Hollow Stem Auger Diameter 4 1/4" ID
Casing HSA

Sampling Method
Type CS Diameter 2.5" OD
Weight 140 # Fall 30"
Interval 3.0'-7.5', 9.5'-11.0'

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 2" ID
Joint Type Flush Threaded Length 8.3'

Screen
Material Sch 40 PVC Diameter 2" ID
Slot Size 0.020" Length 10.0'
Strat. Unit Screened

Filter Pack
Sand X Gravel Natural
Grade LONESTAR #2/12
Amount 4 Bags Interval 6.5'-18.8'

Seal(s)
Type Bentonite Pellets Interval 4.5'-6.5'
Type Cement Grout Interval 2.0'-4.5'
Type Interval

Locking Casing YES

Notes: Flush mount protective casing. Used 1.5 pails of bentonite pellets, 1 bag of cement, and 1.5 bags concrete.

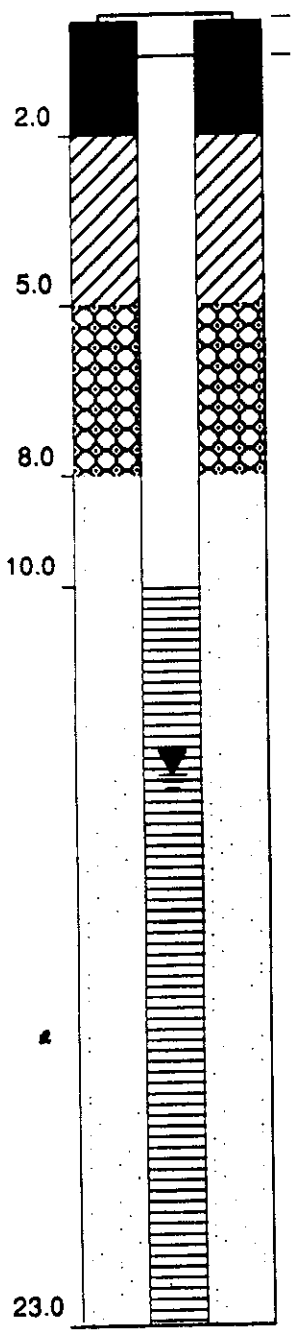
MONITORING WELL LOG

WELL NO. TW-1

DUNN GEOSCIENCE CORPORATION
ALBANY, NY 12205
(518) 458-1313

Project OAKLAND SUBSURFACE INVEST.
Client AMERICAN NATIONAL CAN COMPANY
Location OAKLAND, CA PLANT
Project No. 02345-01983
Date Drilled 09/26/91 to 09/26/91
Date Developed 10/4/91

WELL CONSTRUCTION DETAIL



INSPECTION NOTES

Inspector Walter Howard
Drilling Contractor Exceltech Drilling

Type of Well Test Well
Static Water Level Elev. 4.73' Date 10/21/91
Measuring Point (M.P.) Top of PVC
Total Depth of Well 23.0'
Total Depth of Boring 23.0'

Drilling Method
Type Hollow Stem Auger Diameter 8 5/8"-ID
Casing HSA

Sampling Method
Type CS Diameter 3" OD
Weight 140 # Fall 30"
Interval Standard/Continuous

Riser Pipe Left in Place
Material Sch 40 PVC Diameter 6 ID" ID
Joint Type Flush Thread Length 10.0'

Screen
Material Sch 40 PVC Diameter 6 ID" ID
Slot Size 0.020" Length 13.0'
Strat. Unit Screened (Fluvial)

Filter Pack
Sand X Gravel Natural
Grade RMSLonestr#2/12
Amount 11 Bags Interval 8.0-23.0'

Seal(s)
Type Bentonite Pellets Interval 5.0-8.0'
Type Interval
Type Interval

Locking Casing Yes

Notes: