KLEINFELDER

92 AUG 11 ... 02

transmittal

Date 8/13/92

File 10-1682-08/103

Copies 1

To Mr. Ravi Arulanantham
Ala. Cty Dept. of Env. Health
Hazardous Materials Program
80 Swan Way, Room 200

Subject Oakland, CA. 94621

We are sending ☑ Attached ☐ Under separate cover

The following: copies of draft permit and letter response to RWQCB letter on WDR requirements.

Via:

- ☐ Messenger
- ☑ First Class Mail
- ☐ Air
- ☐ Express
- ☐ United Parcel
- ☐ Air Freight
- ☐ ______

Transmitted:

- ☐ As Requested
- ☐ For Approval
- ☑ For Your Use
- ☑ For Review & Comment

Remarks We'll see you on August 19.

By Barbara Bradley

ꞏE OF CALIFORNIA

IONAL WATER QUALITY CONTROL BOARD
ARTMENT OF HEALTH SERVICES
ꞏID WASTE MANAGEMENT BOARD
ꞏARTMENT OF FORESTRY

APPLICATION FOR: FACILITY PERMIT/WASTE DISCHARGE

FOR OFFICE USE ONLY

Form 200 Rec'd
Fee (HWQCB) (RWMB)
Letter to Discharger ______
Report Rec'd ______
Effective Date ______
CDF Notified ______
DOHS No. ______
SWMB No. ______

This form is to be used for filing a/an: (check all appropriate)

1. [X] REPORT OF WASTE DISCHARGE (pursuant to Division 7 of the State Water Code)
2. [ ] APPLICATION FOR A HAZARDOUS WASTE FACILITY PERMIT (pursuant to Health and Safety Code Section 25200)
3. [ ] APPLICATION FOR A SOLID WASTE FACILITIES PERMIT (pursuant to Government Code Section 66796.30)
4. [ ] APPLICATION FOR A RUBBISH DUMP PERMIT (pursuant to Public Resources Code Sections 4371—4375 and 4438)

I. FACILITY

NAME OF FACILITY: Industrial Asphalt
TELEPHONE #: (510) 846-5125
ADDRESS: 52 El Charro Road, Pleasanton, California 94566
ZIP CODE:

NAME OF LEGAL OWNER OF FACILITY: IA A California Joint Venture Partnership
TELEPHONE #: ( ) Same
ADDRESS:
ZIP CODE:

NAME OF BUSINESS OPERATING FACILITY: Industrial Asphalt
TELEPHONE #: (510) 846-5125
ADDRESS: P.O. Box 636 Pleasanton, California 94566
ZIP CODE:

TYPE OF BUSINESS OPERATING FACILITY:
[ ] Sole Proprietorship [X] Partnership [ ] Corporation [ ] Government Agency

NAME OF OWNER(S) OF BUSINESS OPERATING FACILITY: Same
TELEPHONE #: ( )
ADDRESS WHERE LEGAL NOTICE MAY BE SERVED: P.O. Box
ZIP CODE:

II. REASON FOR FILING

CHECK ALL APPROPRIATE:

- A. [X] New discharge or facility
- B. [X] Existing discharge or facility
- C. [ ] Increase in quantity of discharge
- D. [ ] Change in character of discharge
- E. [ ] Change in place or method of disposal
- F. [ ] Change in design or operation
- G. [ ] Change in business operating facility
- H. [ ] Enlargement of existing facility
- I. [ ] Other (explain below)

New discharge into existing pond

III. TYPE OF OPERATION

CHECK ALL APPROPRIATE:

- A. [ ] Transfer station
- B. [ ] Solid waste disposal site
- C. [ ] Hazardous waste disposal site
- D. [ ] Sewage treatment
- E. [ ] Industry (on-site disposal facility)
- F. [ ] Industry (discharge to sewer)
- G. [ ] Woodwaste site
- H. [X] Other (explain below)

Disposal pond for treated ground water

IV. TYPE OF WASTE

CHECK ALL APPROPRIATE:

- A. [ ] Sewage, sewage sludge, and/or septic tank pumpings
- B. [ ] Industrial wastes
- C. [ ] Municipal solid wastes
- D. [ ] Hazardous wastes
- E. [ ] Agricultural wastes
- F. [ ] Animal wastes
- G. [ ] Forest product wastes
- H. [ ] Construction/demolition wastes
- I. [ ] Inert materials
- J. [ ] Dead animals
- K. [ ] Tires
- L. [X] Other (explain below)

Treated Ground water

V. SITE DESIGN CAPACITY

A. PRESENT POPULATION OR CAPACITY	B. DESIGN POPULATION OR ULTIMATE CAPACITY	C. LIFE EXPECTANCY (YEARS)
None	Ponds R-11 and R-14 will be in use as long as quarry operations exist in area	

ATTACHMENT A

On behalf of Industrial Asphalt, Kleinfelder has prepared this supplement to the Waste Discharge Application. The supplement briefly describes the site location and description, the proposed treatment process, facilities, receiving waters, and proposed discharge levels of contaminants. The information contained herein was acquired from portions of: 1) "Feasibility Study for Soil and Ground Water Remediation, Industrial Asphalt" (Kleinfelder, August 14, 1991), 2) Alameda County Flood Control and Water Conservation District Memorandum, "Mining Area Annual Report 1991 Water Year", November 27, 1991, and 3) Personal communication with Butch Kelly, Operations Manager of Jamieson Company at Pleasanton.

SITE LOCATION AND DESCRIPTION

The Industrial Asphalt facility is located at 52 El Charro Road, Pleasanton, Alameda County, California, near the northwest corner of the intersection of East Stanley Boulevard and El Charro Road. The facility is situated in the Livermore Valley, approximately two miles south of Interstate 580 and 1.5 miles west of the Livermore Airport. Plate 1 is a site location map.

Industrial Asphalt runs its operations on part of a 177 acre parcel leased from the Jamieson Company, 501 El Charro Road, Pleasanton. The parcel is identified by the Alameda County Planning Department as Map Book #946, Block #1350, Parcel #5. The facility property and the surrounding area are zoned A (agricultural), though gravel quarrying is the predominant land use. The A zoning designation specifies a maximum population density of one residence per 100 acres. The nearest urban residential areas to the Industrial Asphalt facility are located approximately one mile west in the City of Pleasanton.

Land use for the Industrial Asphalt site and vicinity is gravel and sand quarrying. The area is designated as a significant regional mineral resource area under the California Surface Mining and Reclamation Act. Quarry operators in the area are granted long-term operating permits by the Alameda County Planning Department and must submit reclamation plans for long-term restoration. The Industrial Asphalt facility is located on a parcel of land which is permitted by

Alameda County for gravel quarry operations. Jamieson Company holds the permit which runs through December 31, 2030.

SITE CHARACTERISTICS

The Livermore Valley is generally surrounded by hilly to mountainous terrain. Topography of the Industrial Asphalt facility is nearly level, with a slight downward slope from the southwest corner to the northeast corner of the site. The approximate elevations range from 380 feet above mean sea level in the southwest corner to 376 feet above mean sea level in the northeast corner.

The site stratigraphy generally resembles an alluvial fan deposit, with interfingered beds containing varying amounts of clay, silt, sand, and gravel. Fine-grained material (silty clay and silt), identified as fill, is found to varying depths (60 feet maximum) below ground surface. Unconsolidated silty-clayey gravel deposits are found below the fill material to depths of 130 feet below ground surface.

Interfingered with the silty-clayey gravel deposits are discontinuous water-bearing zones of silty-sandy gravel, typically found at 90 to 110 feet below ground surface. At some locations, the gravel becomes increasingly clayey with depth; this clayey gravel has been identified as having aquitard properties. At other locations, a four foot thick layer of silt is found at 110 feet below ground surface. This deposit is also classified as having aquitard properties. At 120 feet below ground surface, a deeper water-bearing zone is found. Sand and gravel content increases with depth in the water-bearing deposits. Onsite borings have not advanced deeper than 130 feet below grade.

SITE HYDROGEOLOGY

Ground water at the Industrial Asphalt facility is located in the Livermore Valley Basin, as defined by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). The Livermore Valley Basin has been subdivided by the California Department of Water Resources based on fault traces and hydrologic discontinuities, so that the Industrial Asphalt facility is located in the Amador Subbasin. RWQCB has assigned the following beneficial uses of ground water for the Livermore Valley Basin: municipal supply, industrial process supply, industrial service supply, and agricultural supply.

The major surface water stream in the vicinity is Arroyo Mocho, located approximately 1500 feet east of the Industrial Asphalt facility. Arroyo Valle is located approximately 0.5 miles south-southeast of the facility. Stream flows in Arroyo Mocho and Arroyo Valle vary due to climatic (seasonal) effects. Reaches of both streams in the vicinity of the Industrial Asphalt facility are used for ground water recharge by the Alameda County Flood Control and Water Conservation District, Zone 7 (ACFCWCD). Sources of water used in these recharge operations include the South Bay aqueduct of the California State Water Project and dewatering operations at various local gravel pits. The horizontal direction of ground water flow is generally to the northeast, though flow towards the north has been observed. The most recent ground water survey indicates that the level of ground water is approximately 75 feet below grade. Both the horizontal flow direction and level of ground water appear to be affected by seasonal variations, operations at nearby water supply wells, and recharge operations at Arroyo Mocho. There is no surface drainage system at the Industrial Asphalt facility.

A nearby surface water impoundment is used by Jamieson for percolation of ground water extracted from active pits. The impoundment is designated as Pond R11 (R11) by ACFCWCD and is located about 1,400 feet east of the Industrial Asphalt facility. Industrial Asphalt proposes to discharge treated ground water from their ground water remediation system directly into R11. Water from R11 is frequently pumped to Pond R14 (R14) which is located about 1000 feet east of R11. R14 is also used for percolation of ground water from active pits. A brief description of Jamieson Company water conveyance system is provided below (extracted from ACFCWCD memo, ref).

> "Jamieson Company has an extensive system of pipes and pumps which move water around their entire operation. In water year 1991, water was pumped from the mining pit R16 into R19. From R19 water was pumped into the R4 storage pond for use in the plant or into R11 and R14 for repercolation into the ground water basin. Silt-laden wash water from the plant was returned to R17 and R19 for decanting prior to reuse. Ground water seeping into pit R3 (primarily from K30) was pumped into pit R4".

Jamieson pumps ground water from active pits to R11 for about 3 to 4 months per year during periods when seepage into the pits is greatest. During these periods, ground water is pumped to R11 about three days per week at a rate of about 1600 gpm. As the water level in R11 rises to the desired level, water is pumped from R11 to R14.

Both R11 and R14 were formed by excavating out rectangularly-shaped cavities down to a gravelly layer. The original ground level elevation at Pond R11 was 390 feet. The deepest excavated depth elevation is 370 feet. The bottom of the pond intersects a coarse gravel layer which facilitates percolation. The pond bottom is fairly level and is about 20 feet deep. The surface area of the excavation is estimated by ACFCWCD to be about 5 acres. In 1991, the water surface elevation of Pond R11 ranged from 380 to 385 feet in elevation. 1991 estimates of water surface area ranged from 1 to 3 acres. The estimated capacity of R11 is nearly 32.6 million gallons. R11 appears to have high transmissivity as a result of intersecting the gravel layer. Actual percolation rates or transmissivity values have not been established for the pond.

At R14, the original ground elevation was 400 feet. The deepest depth of excavation is at an elevation of about 380 feet. The pond bottom slopes from about fifteen feet deep at one end to about twenty feet at the other end. In 1991, water surface elevations ranged from 378 to 385 feet. The excavated pond area was estimated by ACFCWCD in 1991 to be 10 acres. The water surface area was estimated to range from 3 to 5 acres. The estimated capacity of R14 is about 57.0 million gallons. Percolation and transmissivity rates have not been established for the pond but are observed to be higher than for R11.

Mr. Kelly of Jamieson Company has indicated that R11 and R14 have never exceeded capacity. R14 has apparently never reached capacity because infiltration occurs at a higher rate than flow into the pond.

GROUND WATER REMEDIATION SYSTEM

The recommended ground water remediation system for attaining remedial objectives at the Industrial Asphalt facility comprises: (1) extraction wells to pump ground water; (2) a Granular Activated Carbon (GAC) system to remove petroleum hydrocarbons and PCBs from the extracted ground water; (3) discharge of treated water to R11.

Extraction System -- Data collected from a pumping test at an onsite extraction well were analyzed. Average transmissivity and storativity values were calculated to be 2,500 gpd/ft (330 feet^2/day) and 0.0017 ft/ft, respectively. During the test, a sustained yield of 2.5 gpm was maintained with 15 feet of drawdown. Estimates of capture zone dimensions for this pumping rate are 23 feet in the downgradient direction with a width of 145 feet.

It is assumed that a flowrate of 3 gpm will be sustainable from a properly designed extraction well. Eleven ground water extraction wells will be maintained onsite to intercept ground water in the upper water-bearing zone, i.e. 85 to 110 feet below grade. Electric submersible pumps with automatic level controls will pump water to the treatment system which will be located on a small concrete pad located at the northern edge of the facility. Treated water will be discharged to R11 via a pipe laid along the Arroyo Mocho Creek bed. The eleven extraction wells pumping at a rate of 3 gpm each equates to approximately 33 gpm total ground water extraction rate. Extraction of ground water will provide hydrodynamic control of the site, thereby reducing the mobility of petroleum hydrocarbons and PCBs through ground water.

Remediation System -- Treating extracted ground water with GAC will remove petroleum hydrocarbons and PCBs from the ground water, thereby reducing the amount of these chemicals in the subsurface. Plate 2 shows the piping and instrument diagram for the GAC system. For simplicity of controls, extracted ground water is first pumped into an oil/water separator which will reduce concentrations to 10 mg/l. Oil product will collect in one sump and water in a second sump. A transfer pump then pumps the ground water from the sump into the treatment system at a higher pumping rate than the extraction wells pump into the sump. This allows the extraction wells to pump continuously while the transfer pump operates in response to the water level in the sump. The continuous pumping of the extraction wells allows greater hydrodynamic control of the ground water. The transfer pump discharges the ground water through a filter to remove sediments and through a UV-lamp sterilizer to reduce biological fouling. The water then passes through four 1,000-pound GAC vessels (in two parallel series of two) and is piped to R11 for discharge. The periodic discharge rate from the treatment system into R11 will be greater than the extraction rate of the wells into the equalization tank, but the average discharge rate will be equal to the ground water extraction rate, i.e. up to 35 gpm.

Carbon mass consumption is conservatively estimated at ten times the estimated mass of compounds, i.e. the first two parallel carbon vessels would be depleted after 200 pounds of compounds were adsorbed to the carbon surfaces. Twenty pounds of adsorbed hydrocarbons converts to $9x10^7$ mg. If the system operates continuously at maximum design flow, then ground water will be treated at a rate of 35 gpm or 190,800 l/day. The concentration of hydrocarbons entering the GAC vessels will be 10 mg/*l* or less, i.e. the discharge concentration from the oil/water separator. The time to depletion of the first set of carbon wells, i.e. two 1,000-pound vessels would be as follows:

$$9\text{x}10^7 \text{ mg x } 1\ l/10 \text{ mg x } 1 \text{ day}/\ 190{,}800\ l = 47.2 \text{ days}$$

However, break through of hydrocarbons will occur much earlier. It is forecast that when breakthrough concentrations reach 20% of influent concentrations then the first vessel will be replaced. Actual time to break through and the acceptable concentrations at change-out will be established during system start up. At change-out of the first vessel, the second vessel in the series would become the first unit in the series and a new vessel would become the polishing unit.

The treatment system is equipped with controls to automatically shut off operations if a variety of conditions were to occur. The extraction well and treatment system pumps will shut off if either the oil or the water level in the oil/water separator sumps reach high levels. Similarly, the pumps will shut off if the pressure reaches high levels in the filters or GAC vessels. Pumps will also shut off if high levels are reached in the equalization tank.

The GAC vessels are sized to handle chemical concentrations much higher than 10 mg/*l* in the event that the level switch in the oil sump fails and higher concentrations come through the separator. As part of regular maintenance procedures, operations personnel will be inspecting equipment and observe levels in sumps and tanks. If the oil level is high in the sump, the condition can be spotted and corrected. Also, through regular monitoring of water quality at the GAC intermediate ports, an increase in the carbon consumption rate can alert personnel to increased hydrocarbons in water.

Thus, these three approaches to safe guarding water quality will work together to maintain discharge limits.

TREATMENT SYSTEM DISCHARGE LEVELS

Treatment system discharge levels are determined by RWQCB and must comply with their "nondegradation" policy. Discharge limits for petroleum hydrocarbons, PCBs and potential VOCs would likely be non-detectable levels.

WATER BALANCE FOR THE RECEIVING WATERS

Because R11 and R14 water levels are interrelated, i.e., water from R11 is pumped to R14, an estimate of the water balance includes both ponds. There would be three sources of influent water to the ponds during the treatment system operation: Jamieson ground water, Industrial Asphalt ground water, and rainfall. The primary source of influent to the ponds is from Jamieson Company. Butch Kelly has indicated that the Jamieson contribution occurs at a flow rate of 1600 gpm for approximately three working days per week over a sixteen-week period, Jamieson's influent would be nearly 37 million gallons. Influent contributed by Industrial Asphalt at 35 gpm on a continuous basis would reach about 4.5 million gallons in the same four months. Because Jamieson pumps water to the ponds during periods of increased water in the active pits, it is likely that much of this water is a result of rainfall during the wet season. Assuming that Jamieson pumps water to the ponds from December through March, the contribution to the influent by rainfall would be about 13.59 inches total, or 5.5 million gallons. This estimate is based on ten years of annual precipitation recorded by ACFCWCD from Livermore and Pleasanton from 1981 to 1991. Please refer to Table 1: Average Annual Rainfall. The estimate of rainfall contribution assumes that the rainy season occurs from October 1 through April 1 with two-thirds of the rainfall occurring from December through March. Rainfall at Industrial Asphalt is conservatively estimated to be the same as rainfall for Pleasanton, i.e., an annual average of 20.39 inches or 13.59 inches from December through March. Total combined influent to both ponds from all sources over a four-month period would be about 46.5 million gallons.

Effluent water flows are limited to evaporation and percolation through the gravel layer. Evaporation was estimated at 7 inches or 1.5 million gallons for the months of December through March. This estimate is based on evaporation rates recorded at the nearby Livermore Water Reclamation Plant from 1967 through 1991. Pan evaporation means for the months of December through March were multiplied by monthly pan-to-lake coefficients developed for Lake Del Valle by ACFCWCD. These coefficients reduce the evaporation rate to adjust for the depth and thermal gradation of Lake Del Valle. Because Ponds R11 and R14 are very much smaller than Lake Del Valle, the estimated volume of water evaporated from the ponds is probably lower than the actual amount, thus the estimate is conservative.

Since 1990 the water surface elevation in R11 has fluctuated from about 379 to about 385 feet. Available freeboard has ranged from 20 feet (empty) to about 5 feet. When remaining freeboard is reduced to about five feet by discharge from Jamieson's working pit, the pump in

R11 is turned on and water is diverted to R14. The level in R14 does not exceed a depth of approximately six feet at the shallow end because the infiltration rate is so high. Freeboard in R14 ranges from total depth (15 to 20 feet) to 10 feet.

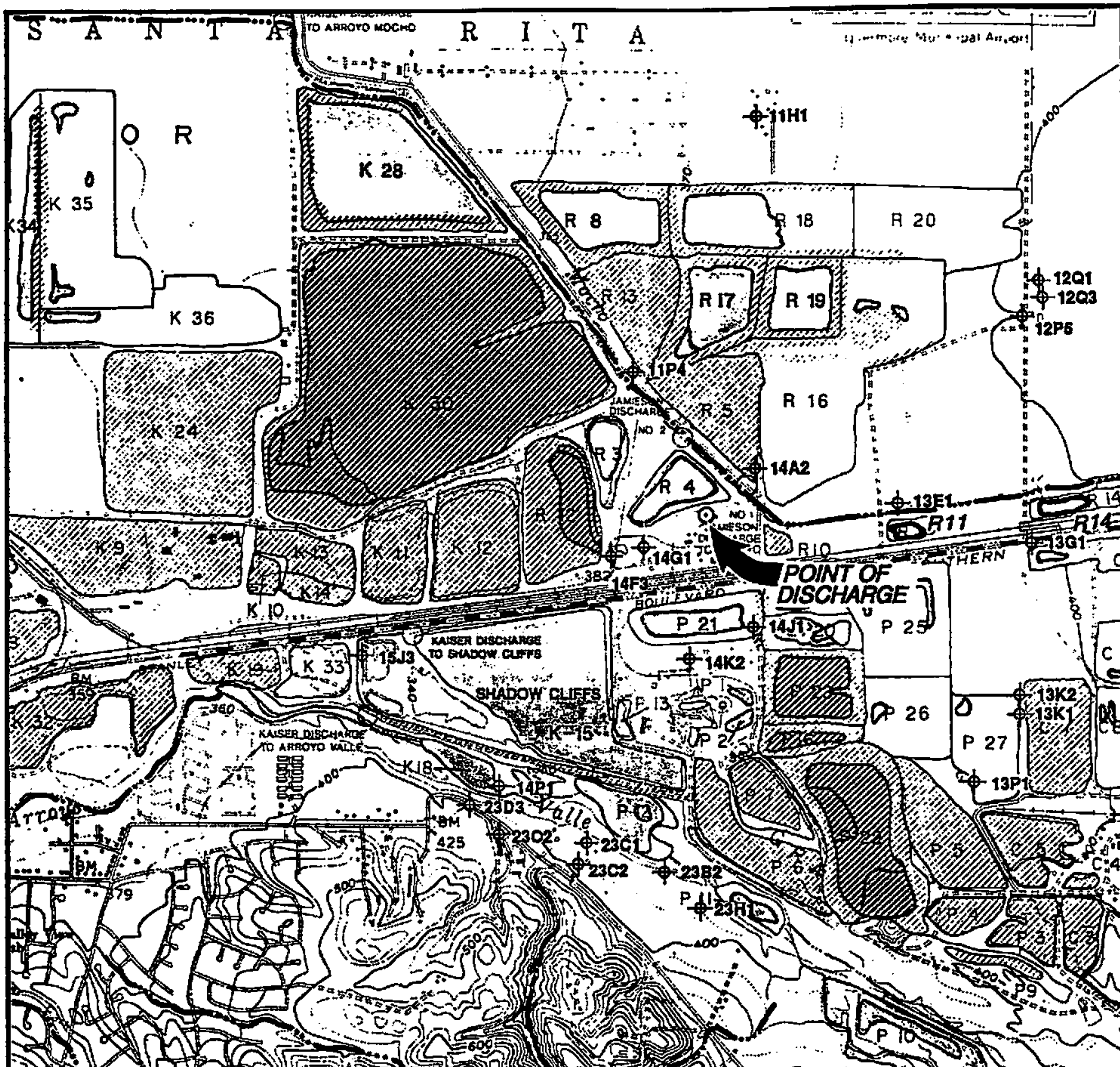
Percolation through the ground is estimated based on these observations by Jamieson personnel. The influent to the ponds does not cause water levels to rise above fifteen feet in R11 or above six to eleven feet in R14. Thus percolation from the ponds appears to be the major factor influencing the water balance of R11 and R14. It appears that ample freeboard will be sustained during the Industrial Asphalt remediation period.

TABLE 1
AVERAGE ANNUAL RAINFALL
1981 TO 1991

Year	Pleasanton	Livermore
1981	14.42	10.30
1982	34.13	24.38
1983	44.77	31.88
1984	18.14	12.96
1985	17.69	12.59
1986	27.46	19.79
1987	12.61	8.89
1988	11.66	8.69
1989	14.71	11.15
1990	13.37	9.35
1991	15.33	11.32
Average	20.39	14.66
Maximum	44.77	31.88
Minimum	11.66	8.69

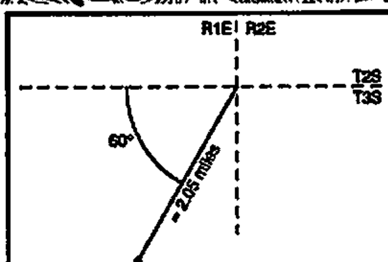
Source:

Alameda Flood Control and Water Conservation District, Zone 7



⊙	POINT OF DISCHARGE
⌖	WATER WELL
▬▬	DRAINAGE COURSE

Outline of pit
P 4 — Pit Number
Clay



Pt. of Discharge
Latitude 37°40' 32.78"
Longitude 121° 49' 41.25"

N

0 1000 2000
FEET

BASEMAP:
U.S.G.S. 7.5' Topographic Series,
Livermore Quadrangle, California Quadrangles.

KLEINFELDER

POINT OF DISCHARGE LOCATION MAP

INDUSTRIAL ASPHALT
52 EL CHARRO ROAD
PLEASANTON, CALIFORNIA

PLATE 1

DRAFTED BY: L. Sue	DATE: 2-25-92	
CHECKED BY: B. Bradley	DATE: 2-25-92	PROJECT NUMBER 10-1862-08