MEMORANDUM

SUBJECT: Request for Removal Action Approval at the Brown & Bryant Site, Arvin, Kern County, CA - ACTION MEMORANDUM

CERCLIS ID: CAD052384021
Site ID: H2
Category of Removal: Time Critical
Nationally Significant or Precedent Setting: No

FROM: Christopher C. Weden, On-Scene Coordinator
Emergency Response Section (H-8-3)

TO: Jeff Zelikson, Director
Hazardous Waste Management Division (H-1)

I. PURPOSE

This is to request funding approval for a CERCLA-funded removal action at the subject site. Conditions presently exist at the site which, if not addressed by implementing the response action documented in this Action Memorandum, may lead to the additional off-site migration of contaminants which may pose an imminent and substantial endangerment to the public health or welfare or the environment.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal site evaluation

The facility formulated agricultural chemicals, including pesticides, herbicides, fumigants and fertilizers, from 1960 to 1989. Prior to this time, the site was used as farmland. In July 1980, Brown & Bryant, Inc. (B&B) notified the U.S. Environmental Protection Agency (EPA), in compliance with Resource Conservation Recovery Act (RCRA) requirements, that it generated, transported, treated, stored and disposed of hazardous wastes at the Arvin facility. In April 1981, B&B notified EPA that all hazardous wastes were transferred to the B&B Shafter facility. In May 1983, a RCRA Part A was incorrectly filled out using the wrong EPA ID number. In May 1983, the California
Department of Health Services (DHS) inspected the Arvin site to determine compliance with hazardous waste laws. At the time of the inspection, several violations involving storage, disposal and transportation of hazardous waste were noted. Following the inspection, the DHS directed B&B to correct the violations and to conduct a site assessment. Between 1983 and 1988, B&B conducted site investigations under the supervision of DHS.

The site was listed on the National Priorities List (NPL) on October 4, 1989. The principal threats that formed the basis for EPA involvement were the presence of ground water contamination with potential for migration to Arvin drinking water wells, and the potential for exposure to highly contaminated soils on-site. Also in 1989, B&B ceased operation at the Arvin facility.

In July 1990, EPA's Emergency Response Section began conducting a site assessment to determine if a removal action would be necessary. The results of this extensive work concluded that a wide variety of pesticides was dispersed in soil and ground water beneath the site, and that high contaminant concentrations were migrating offsite and downgradient toward Arvin's Well #1. This potential threat, when coupled to the fact that the way Well #1 is constructed allows shallow contaminants to easily move to the deeper aquifer, makes this an immediate threat.

2. Physical location

B&B was a pesticide formulation and custom applicator facility located in Arvin, California, southeast of Bakersfield. The Arvin facility (the Site) is on a 5-acre parcel of land at 600 South Derby Road in Arvin. The adjacent land is agricultural, light industrial and residential. Arvin is an agricultural community of approximately 8,000 people. The site is located within a one-half mile from Sierra Vista School, Haven Drive School and Di Giorgio County Park.

3. Site characteristics

The Site consists of an abandoned pesticide formulation facility consisting of two metal buildings and numerous tanks of varying structural integrity. The Site is enclosed by a chain-link fence and is normally locked and posted as a hazardous waste site. Except for some surface "hot spots" of dinoseb, the surface soils are relatively uncontaminated. However, both ground water and subsurface soils are contaminated with pesticides used during Brown & Bryant's business operations.

4. Release or threatened releases in to the environment of a hazardous substance or pollutant or contaminant

The Site has two media that are contaminated, ground water and soil. The ground water occurs in three water bearing zones. The first water bearing zone is referred to as the perched zone and is at an approximate depth of 65 to 90 feet below ground sur-
face. This zone is contaminated. Though it is referred to as "perched", the assessment revealed it to be leaky. That is, there is no continuous aquitard underlying the site. The second water-bearing zone between 155 and 180 feet below ground surface, is referred to as the regional unconfined aquifer and appears also to be contaminated. Below this water-bearing zone is an extensive clay layer or aquitard which separates the regional unconfined from the regional confined aquifer, the third zone. The regional confined aquifer provides drinking water for Arvin and irrigation water for agriculture.

There are several soil contamination "hot-spots" on the Site. They are the old wastewater disposal pond in the southeast corner, the dinoseb "hot-spot" midway along the eastern fence, the soil around the two sumps, and the soil around the large tank. Depth of the contamination varies with each location and contaminants have been found to extend to the perched aquifer.

The July 1990 preliminary assessment focused on five contaminants: Ethylene Dibromide (EDB), Dibromochloropropane (DBCP), 1,2-Dichloropropane (1,2-DCP), Trichloropropene (TCP) and Dinitro-sec-butylphenol (Dinoseb) as those posing the greatest health threats and which are the most potentially mobile contaminants found at the site. These are all hazardous substances within the section 101(33) CERCLA definition. Three of these contaminants, EDB, DBCP, and dinoseb were suspended and canceled by EPA prior to 1987 because of overwhelming evidence that they were too dangerous to human health to be used in the United States. Even existing stocks in commerce were banned from use. This regulatory action is quite rare and very few pesticides have been subject to this most stringent regulatory action.

Since the assessment revealed contamination offsite, there is the potential for continued migration both laterally and vertically toward Arvin Well #1. In addition, the contamination in the perched zone has the potential to migrate to the lower (and more critical) water-bearing zones. Currently, there is no way to monitor ground water quality between the Site and well #1, and no way to get an early warning of contaminants moving to threaten Well #1.

Past releases resulted from material transfer spills, formulation and application equipment washing/rinsing, yard drainage, empty pesticide containers, and onsite wastewater disposal to unlined ponds during the period 1960-1989.

5. NPL Status

This Site is on the NPL. Currently an in-house RI/FS is being prepared. The proposed removal action described in this action memo has been carefully coordinated with Remedial Project Manager, Cynthia Wetmore.
B. **Other Actions to Date**

No other actions to date have been taken which have not been previously discussed.

C. **State and Local Authorities Roles**

1. **State and local action to date**

The lead state agency has been DHS. DHS ordered and reviewed the initial contamination investigations conducted by B&B. The Regional Water Quality Control Board (RWQCB) has also been involved mainly with a former waste pond in the southeast corner of the site. DHS oversaw B&B remove contaminated soil from underneath the waste pond and two sumps in 1987 and the installation of a liner in the waste pond. B&B, also under the supervision of DHS, "winterized" the site by collecting and treating rainwater run-off. In 1989, the rainwater treatment system was removed.

2. **Potential for continued State and local response**

There is currently no continued State or local response planned at the Site, nor is any expected.

III. **Threat to Public Health or Welfare or the Environment**

A. **Threats to Public Health or Welfare**

The major media of concern is ground water. The Arvin-Edison Water District maintains six municipal ground water wells within a 1-mile radius. The public well that is believed to be at greatest risk is located just one-third mile (1760 feet) southwest of the site. This well is screened into the deep regional confined aquifer but is gravel-packed to near the surface; therefore, hydraulic connection between the regional unconfined aquifer and the drinking water well is likely. This means that even shallow contaminated ground water which flows into the gravel pack will easily contaminate deeper ground water. The Water District tests this well monthly for some of the more toxic and mobile of the chemicals found on-site and, to date, no contamination has been detected. The agricultural and municipal wells located within a half-mile of the site.

There is no surface water except rain water run-off on or near the property. The site appears to be a local topographic low; therefore, water ponds in some areas on-site after rain. Efforts will be made to ensure no surface water leaves the site and that no offsite rainwater enters the Site.

The preliminary health assessment for B&B was completed by the Agency for Toxic Substances and Disease Registry in October 1989. It concluded a potential health concern existed due to potential contamination of water for drinking and domestic uses.
It also discussed the potential for exposure from contaminated surface soil. In addition, this report indicated the possibility of airborne contamination exposure. The report noted that there was insufficient air monitoring data to determine if air exposure was a concern.

Due to the proximity to a residential area, air transport of contamination is a potential concern. Past air monitoring indicates that airborne contamination is not a concern under present conditions. Air monitoring during the preliminary assessment indicated contaminant presence only near the boreholes.

Past soil investigations discovered surface soil contamination, especially dinoseb. Human contact with the contaminated soil could result in exposures through ingestion, by inhalation of dust, or by dermal contact.

Pursuant to Section 300.415(b)(2) of the National Contingency Plan (NCP) the following conditions necessary for initiating a removal action exist:

1. **Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby pollutions, animals, food chain** -- Exposures to dinoseb on surface soils pose a threat to people or animals who enter the Site.

2. **High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate** -- Soil sampling has revealed pesticides, particularly dinoseb, near the surface which could migrate offsite or to ground water. This near-surface contamination may be a reservoir which is a source for continuing subsurface contamination.

3. **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate when released** -- Rain water naturally drains from adjacent areas onto the site increasing the potential to leach soil contaminants down to ground water.

4. **Availability of other appropriate Federal or State response mechanisms to respond to the release** -- The State has informed EPA that they are unable to conduct site stabilization or other response for the foreseeable future. Though the RI/FS is in progress, no remedial response is expected until 1993.

5. **Actual or potential contamination of drinking water supplies** -- Contaminated ground water under the Site and in the near-offsite area poses the potential to contaminate Well #1, a water supply well critical to the community. Current information indicates contaminants have moved offsite in the direction of this well already.
B. Threats to the Environment

The contamination is primarily underground and poses a substantial threat to the environment in conjunction to the threats to public health and welfare described above.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, and the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. PROPOSED ACTIONS

1. Proposed actions by PRPs under order

   a. Run-on/run-off protection: To prevent rain water run-on and run-off from becoming a source of perched aquifer recharge or offsite contaminant migration, berms will be constructed.

   b. Monitoring/extraction well construction: Approximately 17 wells will be constructed in the vicinity of the Site to monitor contaminants in the perched and unconfined aquifers, and serve as an early warning system for Well #1. Current well placement is inadequate for detecting contaminants as they near Well #1. If significant contamination is detected in these wells, extraction and treatment could begin promptly either under a removal or a remedial action, or pumping rates could be altered in Well #1, thus offering the best safeguard to protect Well #1.

   c. Secure facility: Fix the fence and gates to ensure better security.

2. Proposed action by EPA under removal action

   Shallow soil contaminant treatment: Dinoseb-contaminated soils from the previously sampled "hot spots" will be excavated, washed, and the leachate treated by use of UV/Ozonation. This technology was tested previously and proved effective in eliminating dinoseb concentrations by 90% in heavily-contaminated soils.

3. Contribution to remedial performance

   The RI/FS for B&B is in the initial phases. An RI/FS workplan was completed in December 1990. The remedial project manager worked closely with on-scene coordinator during the site
assessment and in the preparation of this Action Memo. The data gathered during the removal will be very useful to the RI/FS. Since the removal will deal with the more immediate threats, the remedial program is free to focus on long-term site remediation. In addition, the remedial response will be more effective since it can be based, in part, on the results of soil washing, UV/Ozonation and other innovative technologies (soil vapor extraction) to be explored during the removal. Finally, all wells will be suitable for both long-term monitoring and extraction (should the need arise).

4. Description of alternative technologies

Onsite soil washing and treatment with UV/ozonation will clean up the dinoseb "hot spots" and essentially destroy the dinoseb onsite. An ERT treatability study conducted in June 1990 demonstrated a 99% reduction in dinoseb concentrations from the most heavily contaminated areas.

This technology is effective, implementable, and does not appear to be comparably more expensive than excavation, transportation, and offsite treatment.

4. ARARS

The remedial project manager has developed a list of both State and Federal potential ARARs for this Site. After all potential ARARs are identified, the Regional Counsel, RPM, and OSC will analyze each proposed ARAR. As necessary, we would modify our proposed actions to comply with any ARARs deemed applicable.

5. Projected schedule

We expect to mobilize on-Site in April 1991 for the Soil Washing and the UV/Ozonation is scheduled to commence around the beginning of May. The length of this removal is anticipated to last approximately two months.

B. ESTIMATED COSTS

(see Attachment A)

The Total Project Cost is estimated at $536,196. This estimation includes a 20% Project Contingency and it is most likely that the total cost will be below this figure.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

If this removal action is not performed, pesticide contaminants particulates will continue to migrate off-site and will potentially contaminate valuable drinking water supplies in Arvin, CA., exposing the citizens to dangerous pesticides.
VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues.

VIII. ENFORCEMENT

(see Attachment B)

The PRP search at Brown & Bryant has not yet been completed. However, to date, four PRPs have been identified in connection with the Site. The first two PRPs which EPA identified are Brown & Bryant, Inc., which owned and operated the pesticide reformula-
tion plant from 1960 to 1989, and is a current owner of the B&B property, and John Brown, who served as president of B&B and was thus an operator of the facility. EPA is presently involved in negotiations with Brown & Bryant (which is now insolvent), John Brown, and their insurers to secure a cash-out settlement related to their involvement at the Site.

The other two PRPs, Southern Pacific Transportation Company and the Atchison, Topeka & Santa Fe Railway, own a portion of the Site which lies to the immediate west of the B&B plant. In addition to owning this land, the railroads leased a portion of their property to B&B beginning in 1975 for the stated purpose of "parking fertilizer rigs." EPA sent General Notice letters to the railroads in October 1990 which, among other things, invited them to participate in the upcoming removal action planned by EPA. Initially, both railroads cited their past cooperation with EPA, but indicated that they would need more time to study the facts about the operation at the Brown & Bryant plant and the legal basis for their designation as PRPs before they would agree to undertake any response action at the Site. Thereafter, on January 31, 1991, EPA issued a Unilateral Order to the railroads, requiring them to undertake specified removal actions at the Site in order to prevent an imminent and substantial endangerment to public health, welfare or the environment. The removal action ordered by EPA included the installation of 16 monitoring/ extraction wells, construction of a berm around the Site to control rainwater run-on and run-off, repair of a fence, and main-
tenance of Site security. On February 6, 1991, the railroads orally notified EPA of their intention to comply with the removal order.

Additional PRPs may be identified by EPA as the PRP search continues.
IX. RECOMMENDATION

This decision document represents the selected removal actions for the Brown & Bryant Superfund Removal Site, Arvin, Kern County, California in accordance with CERCLA, as amended by SARA, and, to the extent practicable, the National Contingency Plan. This decision is based on the administrative record for the site.

Because conditions at the site meet the NCP section 300.415(b)(2) criteria for removal, I recommend your approval of the proposed removal action.

[Signature]  3-15-91  
Approval Signature  Date

Disapproval Signature  Date

Attachments A, B