



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM

DATE: April 16, 2012

SUBJECT: PCNB, PC Code 56502; Verification Memorandum for SF Bay Species

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THRU: Tom Myers, Team Leader *Tom Myers*
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TO: Rochelle Richardson
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This memorandum provides additional information on the use patterns of PCNB not captured in the LUIS process, for the Endangered Species assessment that EFED will use to characterize the risks to species named in the San Francisco Bay lawsuit (Center for Biological Diversity v. EPA, Case No. 07-2794-JCS (N.D. Cal.)). RD and PRD's roles in the verification process are to fill information gaps and provide Division-appropriate expertise as outlined in the LUIS Verification SOP.

PRD provides information and status regarding changes to the chemical use (such as application parameters, cancellations, or label language) that occurred as a result of the reregistration process. RD provides information regarding changes or expected changes to the chemical use that stem from RD actions, particularly those that have occurred after the date of the LUIS label extraction. In the case that BEAD develops a "Data Doer Only"¹ report, the CRM and PM will ensure that all highest application rates are reflected on the EFED Spreadsheet. A Data Doer Only report has not been conducted for PCNB. The CRM and PM have drafted this Registration and Reregistration Verification memo to clarify knowledge gaps a risk assessor may encounter while using the data contained in the LUIS report.

¹ This type of LUIS report is conducted when the AI of interest has more than 50 products. This report will contain: 1. Products actively registered to the data doer; 2. All technical registrations regardless of registrant; 3. All active California special local needs (SLN) registrations.

If further clarification is needed, please contact Jill Bloom (PRD, 308-8019) and Mary Waller (RD, 308-9354)

Reregistration Verification

Date and Scope of the RED

The RED for PCNB was signed in July 2006.

For the environmental fate and ecological risk assessment, the major metabolites/degradates of PCNB are: pentachloroaniline (PCA) and pentachlorothioanisole (PCTA), and pentachlorobenzene (PCB; which is also present as an impurity); minor degradates are pentachlorothioanisole sulfoxide (PCTASO), and pentachlorothioanisole sulfone (PCTASO₂).²

Risk Mitigation Measures from the RED

The complete package of risk mitigation from the RED has not been implemented at this time. A subset of the RED mitigation measures, addressing excess aggregate risks from dietary exposures and to homeowners and children from the use of PCNB on turf and ornamentals has been implemented. The uses of PCNB on golf course roughs; residential sites including lawns, yards, ornamental plants and gardens around homes and apartments; grounds around day care facilities; school yards; parks (except industrial parks); playgrounds; and athletic fields (except professional and collegiate athletic fields) were terminated for Amvac's PCNB products via the 6(f) process, effective July 15, 2009. All legal sale, distribution, and formulation (from manufacturing-use products) of existing stocks were to have ceased by January 2011, but the sale and distribution of these existing stocks was stopped in August 2010, when OECA issued a Stop Sale, Use, or Removal Order (SSURO) for Amvac's PCNB products based on the failure of Amvac to document the presence of impurities of toxicological concern in its technical grade PCNB.

As noted, the other mitigation measures detailed in the RED have not been implemented. Several subsequent actions outside of reregistration (related to the risks associated with the impurities mentioned above) have resulted in application rate reductions, prohibitions against certain methods of application, and use terminations that have been implemented or requested by the registrant under Section 6(f) of FIFRA. Other such actions are anticipated. All these actions are described below, under "Registration Division Review."

² For the human health assessment, there are over 80 metabolites potentially of concern. The major metabolites are PCA, PCTA, PCB, PCTASO, S-(pentachlorophenyl) malonylcysteine (PCP-MalCys), tetrachloroaniline methyl sulfoxide (TCA sulfoxide isomers), N-malonyl-S-(tetrachloroaminophenyl)-cysteine, pentachlorothiophenol, tetrachlorothioanisole, tetrachlorophenyl methyl sulfoxide (TCPM sulfoxide), tetrachlorophenyl methyl sulfone (TCPM sulfone), N-(pentachloroaniline) glucuronide, tetrachlorobenzenesulfonic acid, trichlorosulfofenyl methyl sulfone, N-malonyl-S-trichloro-(methylsulfonophenyl)-L-cysteine, and glucuronide of NOHPCA (NOHPCA-Gluc).

Product Reregistration

Amvac never implemented the measures laid out in the RED and so its PCNB technical (the sole registered PCNB technical product) is not eligible for reregistration. Because OPP was concerned about the potential impact on any regulatory actions that might be used to force implementation of the RED, the reregistration GDCIs and PDCIs have not been issued. OPP typically uses DCI issuance as the vehicle for requiring submission of product labels to implement the RED risk mitigation measures. The DCIs were never issued, and PCNB product labels responsive to the RED have not been submitted, so product reregistration has not begun.

Registration Division Review

A number of registration actions have been undertaken since the RED was issued that impact the use or use patterns of products containing PCNB.³ These actions are linked to risk assessments for the toxic impurities in PCNB technical and end-use products.

November 23, 2011 Amendments

On November 23, 2011, the Agency approved registration amendments requested by Amvac that resulted in the following amendment to the terms and conditions of the registration.

Amvac agreed not to sell, distribute, or formulate any Technical Grade PCNB (EPA Reg. # 5481-197) with concentrations of dioxin greater than a particular limit.

Amvac agreed to market only three PCNB products (labeled to conform to the other elements of the approved amendments)--Technical Grade PCNB, Turfcide 10% Granular (Reg. # 5481-8988) and Turfcide 4F (Reg. # 5481-8992).

Amvac agreed to request cancellation of all non-liquid/non-granular registrations of PCNB.

Additionally, the following changes are reflected on the most recently approved labels for EPA Reg. #s 5481-197, -8988, and -8992:

At the present time, Technical Grade PCNB (EPA Reg. # 5481-197) may only be formulated into liquid or granular end use formulations for the following uses: golf course turf (tees, greens, and fairways); broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale and mustard greens (in the field); cotton; potatoes; and ornamental bulb soak. PCNB may only be used on collards, kale and mustard greens in Georgia, and therefore should not be included in the San Francisco Bay assessment. Other registered uses which are not currently being marketed due to the ongoing occupational exposure assessment for toxic impurities in PCNB and/or the uses have not been deleted from this label through a 6(f) process are as follows: beans, garlic, peanuts, peppers, tomatoes, seed treatment (barley, beans, corn, cotton, oats, peanuts, peas, rice, safflower, sorghum, soybeans, sugar beets, and wheat), ornamentals (African violets, azaleas, bedding plants, begonias, calendula, camellia, carnation chrysanthemum, gladiolus, hyacinth, iris, larkspur, lilies, narcissus, ornamental flowering plants, woody ornamentals, southern pine seed or seedlings, poinsettias, roses, snapdragon,

³ Not all of these actions directly impact the potential ecological risks associated with the use of PCNB.

southern magnolia trees, sweet peas, tulips), turf on sod farms, industrial parks, and professional and college athletic fields.

At the present time, the granular formulation Reg. # 5481-8988 is only being marketed for the following uses: golf course turf (tees, greens, and fairways); broccoli, Brussels sprouts, cabbage, cauliflower, collards, kale, and mustard greens; cotton; and potato. Other registered uses which are not currently being marketed due to the ongoing occupational exposure assessment for toxic impurities in PCNB and/or the uses have not been deleted from this label through a 6(f) process are as follows: bedding plants, flowering plants, foliage plants, woody ornamentals, peppers, tomatoes, beans, and turf on sod farms, industrial parks and professional and college athletic fields.

At the present time, the flowable formulation Reg. # 5481-8992 is only being marketed for the following uses: golf course turf (tees, greens, and fairways); bulbs (gladiolus, hyacinth, iris, narcissus, tulips, and lilies), broccoli, Brussels sprouts, cabbage, and cauliflower; cotton; and potato. Other registered which are not currently being marketed due to the ongoing dioxin assessment and/or the uses have not been deleted from this label through a 6(f) process are as follows: due to the ongoing occupational exposure assessment for toxic impurities in PCNB bedding plants, flowering plants, foliage plants, woody ornamentals, azaleas, camellias, southern magnolia trees, cut flowers, southern pine seed or seedlings, vegetable bedding plants (broccoli, Brussels sprouts, cabbage, cauliflower, Chinese broccoli, Chinese cabbage, peppers, and tomatoes), beans (dry, snap, and succulent), garlic, peppers, tomatoes, peanuts, turf on sod farms, industrial parks, and professional and college athletic fields.

For both the liquid and granular formulation, all handlers must wear a long-sleeved shirt, long pants, shoes, socks, and chemical-resistant gloves.

Handlers mixing or loading the liquid PCNB formulation for golf course turf applications cannot handle more than 150 gallons of product per day (600 lbs. ai/day).

Handlers mixing or loading the liquid PCNB formulation for cole crop applications cannot handle more than 150 gallons of product per day (600 lbs. ai/day). Applicators cannot apply more than 337 gallons of product per day (1,350 lbs. ai/day).

Aerial and chemigation application are prohibited.

Use of hand-held application equipment is prohibited

Turfcide 4F may be applied by bulb soak or groundboom application only, and Turfcide 10% Granular may be applied by tractor-drawn spreaders only.

For all Turfcide 4F turf golf course applications, the maximum application rate was lowered to 33 lbs/ai/A and a total seasonal application rate of 66 lbs. ai/A/season was added.

For all Turfcide 10% Granular turf applications except professional and college athletic field applications, the maximum single application rate is 43.56 lbs. ai/A and the maximum total seasonal application rate is 87.12 lbs. ai/A. Applications to professional and college athletic fields are only permitted to control pink and gray snow mold. The maximum single application rate was lowered to 33 lbs/ai/A and the maximum total seasonal application rate is 66 lbs. ai/A.

The maximum total seasonal application rate for the cole crops was lowered to 22.5 lbs ai/A.

All applications to golf course turf must be followed by ¼" of irrigation water.

Applications to ornamental bulbs are limited to bulb soak applications only.

Pending Request to Amend PCNB Registrations to Terminate Uses

In conjunction with the November 23, 2011 amendments, Amvac has requested the amendment of EPA Reg. #s 5481-197, -8988, and -8992 to terminate the specific uses identified in the table below. The Agency plans to publish the notice of receipt of requests to amend the registrations in May 2012. The registrant has waived the 180-day comment period, and so the Agency expects to publish the corresponding use termination order in July 2012. The affected uses are captured in the table below.

Request to Amend the Registrations of Several PCNB Products to Terminate Certain Uses

EPA Reg. #	Product Name	Uses with pending requests for amendment
5481-197	Technical Grade PCNB	African violet; azaleas; bedding plants; begonias; calendula; camellia; carnation; chrysanthemum; larkspur; ornamental flowering plants; poinsettia; roses; snapdragon; and sweet peas; Seed treatments on barley, beans, corn, cotton (acid-delinted, fuzzy, reginned, or mechanically-delinted seed), oats, peanuts, peas, rice, safflower, sorghum, soybeans, sugar beets, and wheat
5481-8988	Turfcide 10% Granular	Bedding plants, flowering plants, foliage plants, and bulb crops
5481-8992	Turfcide 4F	Bedding plants, flowering plants, foliage plants, azaleas, camellias, gladiolus (broadcast), and cut flowers

As noted, we expect the 6(f) Notice for this action to be published in May 2012.

Cancellation Order

The Agency published, on May 2, 2012, a cancellation order for 15 PCNB products for which Amvac previously requested cancellation. The cancellation will be effective on the date of publication. The affected products are the non-liquid/non-granular end-use formulations that Amvac does not intend to support. The order will prohibit the sale, distribution, and formulation of existing stocks of the affected products effective upon publication of the order. The following Reg. #s are affected:

5481-279	5481-457	5481-8999
5481-419	5481-8981	5481-9034
5481-438	5481-8983	5481-9036
5481-441	5481-8990	5481-9037
5481-453	5481-8996	5481-9038

Pending Request to Amend Registrations to Market Current Uses

Additionally, on December 12, 2011, Amvac requested the amendment of its PCNB registrations (EPA Reg. #s 5481-197, -8988, and -8992) to market use on: containerized stock of broccoli, Chinese broccoli, Brussels sprouts, cabbage, Chinese cabbage, cauliflower, collards, kale, and mustard; commercial/industrial/residential lawns⁴; sod farms; peanut; beans; garlic; magnolia tree (foliar spray); tomato; pepper; southern pine (seed orchard); and ornamentals (shade trees, herbaceous, woody shrubs, and vines). The PRIA due date for the Agency's decision is August 12, 2012.

Furthermore, Amvac has signaled its intention to request the amendment of its PCNB registrations to terminate these additional uses once the Agency has completed its decision-making on the December 12, 2012 amendment requests from Amvac: seed treatments; forest trees, turf on professional and college athletic fields, and greenhouse and interiorscape use.

As noted above, a decision on the affected uses must be completed on or before August 12, 2012.

Expected Request to Amend Registrations to Terminate Uses

As the last step in finalizing PCNB product labels to address the risks associated with the toxic impurities in PCNB, Amvac has indicated that it will request additional use terminations. This request will be made after the PRIA decision is made for the amendment to market uses described directly above. In addition to any uses that may not be approved from that request, this future request to terminate uses will include the following uses previously identified by Amvac: seed treatments; forest trees; turf (professional and college athletic fields); and greenhouse and interiorscape use. The timing of Amvac's request and the Agency's decision depend on the timing of the Agency's decision on the pending request to amend labels.

Use Closure Memo

The attached Use Closure memo was developed for the RED implementation team and may be useful to EFED and NOAA in conducting a risk assessment and drafting the BiOP. It captures use parameters and related information appearing on the current labels for Reg #s 5481-197, -8988, and -8992.

Application Rate Changes since signature of the RED

Most of the use sites shown in the LUIS report are no longer registered uses of PCNB, or they are associated with product registrations that are not being marketed or for which the registrant has requested or intends to request cancellation or termination of specific use sites. On the other hand, some of the other uses are still being assessed for risks from toxic impurities, and although PCNB is not currently being formulated or marketed for those uses, they may be approved in the future. If they are approved, the approval may be for different maximum application rates on which we cannot speculate at this time.

⁴ The use of PCNB on residential lawns has already been terminated and will not be permitted based on this request for amendment.

For currently approved uses:

For the flowable formulation, the maximum single application rate for golf course turf was lowered to 33 lbs/ai/A and a total seasonal application rate of 66 lbs. ai/A. For the granular formulation, the maximum total seasonal application rate is the same as it was at the time of the RED (87.12 lbs. ai/A), except when used on professional and collegiate playing fields, when the single application maximum is 33 lbs/ai/A and a total seasonal application rate is 66 lbs. ai/A/season.

The maximum seasonal application rate for cole crops was reduced from 30 lbs ai/A to 22.5 lb ai/A.

These changes are not reflected in the LUIS report's EFED Label Data Report.

I am not able at this time to determine if the ornamental bulb application rate has changed, but BEAD is helping to translate the bulb soak application rate into more readily comparable units. In addition, I am not sure ornamental bulbs are produced commercially in CA, but they are produced commercially in the Pacific Northwest (ID, OR, and WA).

Since the flowable and granular formulations are the only PCNB end-use products that can be used, any maximum application rates for other formulations that were higher than these are no longer applicable.

Attachment—Use Closure Memo, February 8, 2012