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City of West Linn

Memorandum

Date: April 1, 2026

To: West Linn Planning Commission

From: Darren Wyss, Principal Planner

Subject: Post-public hearing written testimony for CUP-25-03/DR-25-03/VAR-25-02 (New Drive-Through Car Wash at 18850 Willamette Drive)

At the March 18, 2026 public hearing, the Planning Commission closed the public testimony portion of the hearing and

1. left the record open for additional written testimony by 5:00pm, Wednesday, March 25, 2026
2. allow all parties to respond to previously submitted written testimony, but not submit any new evidence by 5:00pm, Wednesday, April 1, 2026
3. allow applicant to submit final written argument by 5:00pm, April 8, 2026
4. reconvene on April 15, 2026, at 6:00pm for final deliberations only.

Attached is additional written testimony submitted by the applicant by 5:00pm on April 1st per #2 above.

As always, please contact me with any questions at dwyss@westlinnoregon.gov or 503-742-6064.

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April 1, 2026

West Linn Planning Commission
c/o City Planner Darren Wyss
City of West Linn
22500 Salamo Road
West Linn, OR 97068

Re: CUP-25-03/DR-25-03/VAR-25-02 / DR-25-03 / VAR-25-02
Kaady Car Wash, 18850 Willamette Drive

As you know, this firm represents the applicant Kaady Car Wash and its owner Charles (Chuck) Kaady. This letter and its attachments provide a brief response to the materials submitted by project opponents in the first record period that closed on March 25, 2026.

The applicant will submit a detailed final written argument on April 8, 2026.

We appreciate your time and consideration. Please include this letter in the record of the above-mentioned matter.

1. Response to Noise Allegations

As demonstrated in the acoustic reports presented by the applicant's acoustical engineer, the proposal meets all noise standards. The City's "Design Review Standards" at CDC 55.100(D) "Privacy and Noise" requires the following:

> *4. Businesses or activities that can reasonably be expected to generate noise in excess of the noise standards contained in West Linn Municipal Code Section 5.487 shall undertake and submit appropriate noise studies and mitigate as necessary to comply with the code. (See CDC 55.110(B)(11) and 55.120(M).)*

The West Linn Municipal Code at 5.487(2) prohibits "*unreasonably* loud, disturbing, or raucous noise" as well as noise that "*unreasonably* annoys, disturbs, injures, or endangers the comfort, repose, health, safety, or peace of reasonable persons of ordinary sensitivity" and "noise which is so harsh, prolonged, unnatural, or unusual in time or place as to occasion *unreasonable* discomfort" or "*unreasonably* interfere with the peace and comfort of neighbors or their guests, or operators or customers in places of business" or that "detrimentally or adversely affect[s] such residences or places of business." (Emphasis supplied.)

WLMC 5.487(3) provides "[t]he standard for judging loud, disturbing and unnecessary noises" and states that standard "shall be that of an *average, reasonable person with ordinary sensibilities* after taking into consideration:

(a) The proximity of the sound to sleeping facilities, whether residential or commercial;

(b) The land use, nature, and zoning of the area from which the sound emanates and the area where it is received or perceived;

(c) The time of day or night the sound occurs;

(d) The duration of the sound; and

(e) Whether the sound is recurrent, intermittent, or constant." (Emphasis supplied.)

State law provides a baseline for noise that is reasonable versus unreasonable, measured from "noise sensitive property"[1]:

OAR 340-035-0035
Table 8
New Industrial and Commercial Noise Source Standards
Allowable Statistical Noise Levels in Any One Hour

7:00 a.m. – 10:00 p.m.	10:00 p.m. – 7:00 a.m.
L_{50} – 55 dBA	L_{50} – 50 dBA
L_{10} – 60 dBA	L_{10} – 55 dBA
L_{1} – 75 dBA	L_{1} – 60 dBA

And for noise that exceeds more than 10 dB ambient conditions. The proposal meets both standards – it meets the state's baseline residential standards and does not create noise that is more than 10 dB over ambient conditions.

In this regard, the *only* evidence in the record demonstrates that the proposed car wash facility meets the state standards. Further, the only evidence in the record is that the facility if approved would cause almost no perceptible change to the ambient noise[2] levels that the area

[1] **OAR 340-035-0015(38)** defines noise sensitive property as: "real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries. Property used in industrial or agricultural activities is not Noise Sensitive Property unless it meets the above criteria in more than an incidental manner."

[2] "Ambient [n]oise" is defined in the regulations as "the all-encompassing noise associated with a given environment, being usually a composite of sounds from many sources near and far." OAR 340-035-0015(5). The "ambient antidegradation standard" established in the rule means that a noise source may not "cause or permit" an increase of ambient noise levels by more than 10 dBA (decibels adjusted to human hearing using the A-weighting scale (soft)) in any one hour or exceed the levels specified by the rules at an appropriate measurement point. OAR 340-035-0035(1)(b)(B)(i)." *Matter of Site Certificate for Boardman to Hemingway Transmission Line*, 370 Or. 792, 809, 525 P.3d 864, 876 (2023)

now experiences. The ambient noise levels are shown on the Applicant's acoustical report (Tenor Engineering Group), the most recent of which Reports is Exhibit 8[3] to this letter, and the ambient conditions are graphically shown on its Figure 4. The large circles on the Report's figures including that report's Figure 4, represent the highest sound for the structure and the smaller circles are sound at the particular location of the small circle. The number on the left in the large circles is the highest daytime noise and the number on the right if the highest nighttime noise as defined – nighttime noise is between 10 pm and 7 am and daytime noise is between 7 am and 10 pm.

The proposed facility will only operate during daytime hours from 8 am to 8 pm and so is subject to the daytime hour requirements.

As you can see, the highest daytime ambient sound at the shopping center businesses to the north of the proposed facility experience now is 75 dB due to high levels of traffic noise from Highway 43, and is 64 dB during nighttime hours due to the same traffic noise. Area residences also experience high levels of ambient noise from Highway 43.

With approval of the proposal with its proposed sound mitigation, the noise that will be experienced at area residences (Report's Figure 13), will comply with the required DEQ daytime noise levels. You can also see that the high noise level that is experienced by the shopping center businesses to the north near the highway, does not change with the proposal at all. And as the Applicant's noise report explains "Predicted noise impact to the nearest businesses (to the north) will not be perceptible through the storefront windows and doors, and slightly perceptible above traffic noise at the sidewalk outside the businesses the furthest east from Highway 43." Report p 1. The Report further explains that "The addition of these sound absorptive panels is predicted to reduce noise from the tunnel exit by approximately 3 dBA. This reduction will benefit the eastern businesses in the north commercial property, reducing the car wash noise levels to within 3 dBA of traffic noise levels, which is a barely noticeable difference." Report p 18.

The sound mitigation that does this mitigation work is twofold. Because the Applicant heard concerns about noise, he directed his team to come up with design solutions to mitigate noise. In response a significant design treatment was added to the proposed facility consisting of a 41-foot right turn extension of the wash tunnel. After the hearing, the applicant asked his team if there were additional mitigation treatments reasonably available. That resulted in the additional proposed sound mitigating treatment evaluated in the most recent Tenor Report - the addition of impact resistant sound absorptive panels. *See* Tenor Study, Section 4.4.2. Accordingly, the evidence in the record demonstrates that (1) sound at all noise sensitive receptors meets DEQ standards, (2) ambient levels of sound in the area barely change at all with the approval of the proposed car wash (less than 3 decibels at the highest point on the outside of the shopping center businesses to the northeast) and so would be only "slightly perceptible"

[3] Exhibit 8 includes not only the Tenor Report but also blown-up versions of key figures used in the report for easier reference.

(Tenor Report, p 1), and (3) car wash noise will be inaudible outside the businesses located in the west shopping center area because it will be eclipsed by Highway 43 noise.

It is respectfully submitted that under these circumstances, a reasonable person of ordinary sensitivities would not find sound from a facility that meets all DEQ standards and that is in one location just "slightly perceptible" violates the City's noise standards. Setting a precedent that only "slightly perceptible" sound in one location on a sidewalk in a shopping center and that is inaudible inside the shopping center businesses and that meets all DEQ standards at residences, is nonetheless prohibited noise under the West Linn Municipal Code, would be with all due respect untenable and implausible. It is respectfully submitted that the applicant has met the City's noise requirements.

2. Response to "public benefit" assertions.

The City has a standard at CDC 60.070(A)(3) requiring a finding that "the granting of the proposal will produce a facility that provides an overall benefit to the city." That standard has recently been applied by the City's planning commission to be met where it is demonstrated that a proposed use is listed in the city code as a use permitted outright or conditionally (April 1, 2026 Applicant Exhibit 1, p 3:

> 4. CDC 60.070.A(3) Overall Benefit to the City.
> The Commission found the proposed use compliant with the code. Uses permitted outright, or conditionally, have been determined through the adopted code to be acceptable and compatible in that zoning designation.

The proposal is listed as a conditional use in the GC zone and therefore as in the above case, the proposal here should also be deemed to provide an overall benefit to the City. The City should apply its code consistently and that means the above interpretation should be applied here just as it did in that case.

As a precaution, however, we also note that the overall benefit from the proposal to the City is demonstrated. The property is currently occupied by an abandoned McDonalds restaurant plagued by vandalism as police reports in the record show. Moreover, the record includes one former shopping center business owner's report to the applicant's realtor that the site has been a site of drug dealing. Exhibit 5. Specifically, the realtor involved in the sale transaction has explained that he was advised by the owner of the Backyard Burger Company that the owner "had called the police numerous times to report drug activity in the McDonald parking lot." Exhibit 5. With all due respect, it is hard to imagine how removing the derelict McDonalds structure and replacing it with the proposed Kaady car wash would not be an overall benefit to the City.

We note further that some objectors point out that there is another car wash nearby that they strongly dislike due to its bright neon lights, that they refer to it as a "disco carwash" and other disparaging terms. However, the proposal is not designed with bright neon lights and is a modest well-designed structure.

Some opponents explain that the City does not need and so is not benefitted by another car wash. Demonstrating a public need is a very different standard than demonstrating a proposal is an "overall benefit to the city." There is no "need" standard that applies here. Under state law, only standards codified in the City's code can be applied, and there is no codified need standard. ORS 227.173. Moreover, Kaady would not be seeking to establish its new facility at the site and investing heavily to do so if it had not determined that the site would be well-utilized and profitable.

The anecdotal claims by some opponents that they do not want the proposed car wash is similarly not the codified standard. Those objections express policy preferences and market predictions, not code standards. The applicable criterion concerning 'overall benefit to the City' does not require the applicant to prove unmet market demand, exclusivity, or the absence of nearby competitors.

Instead, as Staff Finding 172 properly concludes, redevelopment of a long-vacant commercial drive-through site with a currently allowed commercial use satisfies the criterion.

3. Response to Claims About Products and SDS Sheets

Some opponents assert that the car wash will use certain products and that those products are harmful to human health and the environment. One attaches to their written submittals some SDS or "Safety Data Sheets" to support his claims and relies on a Kaady.com website to presume the proposed carwash will use the products that are for sale on that website. Those claims are mistaken.

As explained at the hearing and in Mr. Kaady's declaration, Kaady.com is an entirely separate business from Kaady Car Wash, and sells car wash products to others and the Kaady.com website does not contain a listing of product that the proposed car wash will use.

We also note that many household products have SDS sheets that are equally or more dramatic than the SDC sheets opponents point to. For example, the perfume "Chanel No. 5" apparently includes the following "Hazards Identification"[4]:

"Skin Corrosion / Irritation Category 3
Eye Damage / Irritation Category 2
Sensitization - Skin Category 1
Hazardous to the Aquatic Environment - Acute Hazard Category 2
Hazardous to the Aquatic Environment - Long-term Hazard Category 2
H316, Causes mild skin irritation.
H317, May cause an allergic skin reaction.
H319, Causes serious eye irritation.
H411, Toxic to aquatic life with long lasting effects."

[4] The attached SDS sheet is from "Aromatic Fragrances International" and says for the "Product": "Compare to CHANEL # 5 by Coco Chanel ®F21987."

Chanel No. 5's" SDS sheet includes the following "Warning":

"H316, Causes mild skin irritation.
H317, May cause an allergic skin reaction.
H319, Causes serious eye irritation.
H411, Toxic to aquatic life with long lasting effects."

And includes a "Precautionary Statement" stating:

"P261, Avoid breathing vapour or dust."

Chanel No. 5's" SDS sheet section on "Accidental release measures" includes:

"**6.2 Environmental precautions:**

"Keep away from *drains, surface and ground water, and soil.* (Emphasis supplied.)
"6.3 Methods and material for containment and cleaning up:
Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Contain spillage immediately by use of sand or inert powder. Dispose of according to local regulations."

Chanel No. 5's" SDS sheet about "Disposal considerations" states:

"**13.1 Waste treatment methods:**
Dispose of in accordance with local regulations. Avoid disposing into drainage systems and into the environment. Empty containers should be taken to an approved waste handling site for recycling or disposal."

Clearly, everyday products can be harmful in certain circumstances. SDS sheets are not designed in the way opponents are using them. They are hazard communication documents for storage, handling, spills, first aid, worker exposure, and disposal. They do not, by themselves, establish that trace, diluted, post-use residues from a controlled commercial process will enter waters of the state unlawfully or in harmful concentrations.

Thus here, an SDS sheet should not be a basis to deny a proposed commercial development in the GC zone, in a commercial shopping center, that will have with a sophisticated Oregon Environmental Stewardship award winning means of treating and disposing of carwash liquids and solids, for which there is no plausible likelihood of carwash products reaching riparian areas, that proposes to use an enhanced and separate stormwater quality system that will provide specialized and enhanced stormwater treatment and that will then feed into an existing storm water quality system that everyone else in the shopping center uses before ever seeing the City stormwater drainage system.

The SDS packet an opponent, Mr. Kreitzberger, provides is presented as though every warning it contains describes normal, diluted, in-service car-wash runoff. But it does not. Much of the strongest language he cites is spill-response, accidental release, storage, worker-handling, or disposal language for the product as sold, i.e., concentrated or undiluted material, which is not the same thing as properly managed, diluted wash water disposed of in a controlled system that does not comingle with the storm water disposal system. That distinction matters.

A fuller reading of the packet shows that two of the products highlighted most heavily — Ceramic Paint Protection and Clearcoat Shield — are expressly stated to be "not classified" under GHS, with no hazard pictograms, no signal word, and no hazard statements. Their SDS sheets still say, in the accidental-release section, "Dilute with plenty of water" and "Do not allow to enter sewers/surface or ground water," but the ecological section then narrows that point: they are "slightly hazardous for water" and say, more specifically, "Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system." They also say smaller quantities can be disposed of with household waste, subject to applicable regulations. That is a materially more qualified picture than quoting only the spill-warning sentence.
The same problem appears with Split Equipment Cleaner. Its SDS does contain stronger hazard language, including eye irritation, respiratory irritation, and ingredients such as sodium hydroxide. But even there, the ecological section distinguishes between concentrated product and use-level dilution: it warns that a high pH can harm aquatic organisms, yet also states that "in the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous." Again, that does not mean no risk; it means the record is misleading if it cites only the concentrate warnings and omits the SDS's own use-dilution qualifier.

The applicant does not even use many of the products that this opponent cites. As is explained in detail in a companion letter submitted this date by Mr. Li, the proposed car wash will use just 5 products, all of which are modest, all of which . They are: unscented liquid polish, Tire, Wheel and Dody (unscented), Paint Guard, Ceramic Paint Protection and Lemon Fragrance.

A complete reading of the SDC sheets that cover the products actually to be used, at the facility shows two things we hope the planning commission will keep in mind. First, several warnings are aimed at accidental release, concentrate handling, and undiluted disposal. Second, many SDS's expressly say that the use-level diluted waste is much less environmentally concerning than the concentrate. Taking isolated SDS phrases out of context should not be a basis for denial of the proposal.

4. Claims About Stormwater Detention and Treatment

The facility has two distinct liquid disposal systems. One is specific to the interior of the carwash and is specifically designed to deal with process liquids and solids and it captures all car wash related debris and products, runs them through a specialized treatment and disposal system, reclaims some water for reuse, and disposes of the rest of the liquids into the sewer system.

Solids fall to the system's concrete base and are pumped out and collected by truck every 60-90 days or so and disposed of properly elsewhere.

The proposed storm detention system is entirely separate and captures runoff from parking and roof areas and does not collect material or liquid from the car wash process. The proposed storm water treatment system meets all City standards and in fact exceeds them. While the City code only requires basic water quality treatment, in response to concerns, the proposed facility will utilize for STORMWATER an enhanced system called "Filterra Bioretention System". According to the Applicant's engineer this system:

> "utilizes an engineered media blend designed to meet the DOE GULD standards for pollutant removal.
>
> The West Linn Stormwater Management Manual allows for the use of proprietary treatment devices in meeting water quality standards. The manual in Section 3.10 (Proprietary Devices), references the City of Portland's list of approved stormwater treatment technologies. The Filterra system is included on this approved list.
>
> While the system has been evaluated and approved by the Washington State Department of Ecology for operation at hydraulic loading rates up to approximately 324 inches per hour, the design for this project utilizes a more conservative design loading rate of 100 inches per hour, consistent with the City of Portland Stormwater Management Manual. The Washington State Department of Ecology[5] has evaluated this technology under its Technology Assessment Protocol – Ecology (TAPE) program and determined that it meets criteria for Metals Treatment.
>
> Measured pollutant removal performance includes:
> • **Total Suspended Solids (TSS):** ~87% median removal
> • **Total Phosphorus:** ~80% median removal
> • **Total Nitrogen:** ~34% median removal
> • **Total Copper:** ~79% median removal
> • **Dissolved Copper:** ~56% median removal
> • **Total Zinc:** ~70% median removal
> • **Dissolved Zinc:** ~66% median removal
> • **Hydrocarbons:** ~87% median removal
>
> These performance metrics demonstrate effective removal of both particulate-bound pollutants and dissolved metals, which are commonly associated with vehicle-related runoff."

As the declaration of Chuck Kaady explains there is no reasonable possibility that car wash process liquids will find their way to the proposed storm system, let alone Fern Creek.

[5] The State of Washington Department of Environment is the authority that sets the region's highest standards for filtration evaluation.

Opponents assert that there may be some residue of some carwash product after the rinsing process and after going through the blower and 41 feet of acoustical exit. This is unlikely but it is impossible to disprove their negative. Even assuming some minute amount of product drips to the parking lot, it is diluted from the car wash process and is further diluted and further treated in the proposed enhanced treatment system; and, then goes through a second treatment process through the general, basic storm system that serves the businesses in the shopping center, and this all happens before ever being discharged to the City's storm system. It is respectfully submitted that it is implausible that the carwash will contribute dangerous amounts of pollutants to the City's storm drain system to include Fern Creek.

5. Claims About the Willamette River Overlay and Tualatin River Overlay and Chapter 28

Some opponents assert the proposal must demonstrate compliance with CDC Chapter 28 "Willamette and Tualatin River Protection." However, CDC 28.030(A) states that it applies to property within the "overlay zone" that is "identified on the City's zoning map." That mapping is shown on Exhibit 4. The subject property is not within the overlay zone. Therefore, respectfully, Chapter 28 does not apply.

6. Claims About Chapter 32

Some opponents argue that a WRA permit is required. They are mistaken. CDC 32.040(F)(2) specifically exempts from obtaining a WRA permit:

> "2. Existing enclosed or piped sections of streams, including any development at right angles to the enclosed or piped sections."

There should be no reasonable dispute that this exemption applies here.

7. Claims About Per- and polyfluoroalkyl substances PFAS

Some opponents claim that the carwash will use products with PFAS chemicals in them. Kaady car wash does not and will not use any products containing PFAS chemicals. Exhibit 2.

8. Claims About Comprehensive Plan Compliance

<u>Introduction</u>

CDC 60.070(A)(7) requires that "the use will comply with the applicable policies of the Comprehensive Plan." The proposal complies with applicable policies of the Comprehensive Plan as the City's professional staff report explains.

At the outset we note that plan provisions stated to "encourage" action are not mandatory standards that can lead to denial of an application. As LUBA has repeatedly decided "a plan provision that certain uses or activities be encouraged states general objectives, not permit

approval criteria." *Miller v. City of Ashlan*d, 17 Or LUBA 147, 167-68 (1988) (*Miller*); see *Bennett v. City of Dallas*, 17 Or LUBA 450, 456, aff'd 96 Or App 645 (1989); *Urquhart v. LCOG*, 14 Or LUBA 335, 347, *rev'd other grounds* 80 Or App 176 (1986); *McCoy v. Tillamook County*, 14 Or LUBA 108, 118 (1985).

The Comprehensive Plan is also instructive on the role of neighborhood plans, stating:

> "7. Until the City adopts new code provisions consistent with adopted neighborhood plans, the City shall apply appropriate development standards consistent with the existing Community Development Code."

Respectfully, that means what it says that until the City adopts code language implementing the neighborhood plans, that the neighborhood plans do not apply as approval standards, but rather "the City shall apply appropriate development standards consistent with the existing Community Development Code." There is as yet no code language implementing the Robinwood Neighborhood Plan.

This framework is consistent with how the Robinwood Neighborhood Plan is structured. It is not structured as an approval standard for individual development applications but rather as a directive to the City for further work including future code amendments.

Comprehensive Plan and Robinwood Neighborhood Plan Compliance

As noted, CDC 60.070(A)(7) requires a showing that "the use will comply with the applicable policies of the Comprehensive Plan." The proposal satisfies that standard. Opponents, and Mr. Mulkey one of the opponents' lawyer, in particular, misreads both the Comprehensive Plan and the Robinwood Neighborhood Plan by treating the Neighborhood Plan as though it were a complete, self-executing set of project-approval standards that independently overrides the existing Community Development Code. That is not what either document says.

The Robinwood Neighborhood Plan itself distinguishes among three different kinds of provisions. First, the Vision Statement is expressly "aspirational" and "does not bind or commit the City of West Linn to any particular course of action." Second, the Plan states that its goals and policies "will have the same effect as goals and policies of the West Linn Comprehensive Plan" as applied to Robinwood, and that they supplement the Comprehensive Plan. Third, the Plan expressly provides that its action measures are "non-binding recommendations," that the City may choose different actions to implement the goals and policies, and that many action measures identify implementation methods such as CDC amendments, zoning amendments, capital projects, ODOT coordination, and development review.

That structure matters. It defeats the opponents' effort to convert every statement in the Robinwood Plan into an immediately enforceable permit-denial standard. The Plan applies, but it applies as a supplemental planning document within the City's existing legal framework. It is not a substitute for the adopted CDC, and it does not itself supply a hidden parallel code for site-specific review. That reading is confirmed by the Comprehensive Plan. Goal 2, Section 3, Policy

7 mentioned above that states: "Until the City adopts new code provisions consistent with adopted neighborhood plans, the City shall apply appropriate development standards consistent with the existing Community Development Code."

Policy 8 then states that, where appropriate and necessary, the City shall incorporate individualized neighborhood design standards as overlay zones within the CDC. Those provisions make plain that neighborhood plans guide and inform City action, but that site-specific review proceeds under the existing CDC unless and until new implementing code is adopted.

The Robinwood Plan itself confirms that understanding. For many of the policies opponents cite, the Plan's own identified implementation method is not denial of individual applications, but later legislative or regulatory action. For example, under Policy 2.1, the Plan proposes strengthening existing design review standards and adopting CDC provisions concerning parking layout. Under Policy 2.2, it contemplates mixed-use zoning changes and CDC provisions allowing first-story and upper-story residential uses in mixed-use development. Under Policy 2.3, it contemplates possible CDC provisions regarding building height along portions of Willamette Drive.

Under Policy 2.4, it calls for a Robinwood Main Street design review manual and CDC amendments. Under Policy 2.5, it calls for CDC amendments to prohibit certain listed uses. Under Policy 3.5, it calls for CDC amendments concerning building height, floor area ratio, bulk, mass, and possible infill design review. Those are classic implementation measures calling for future refinement of the code, not proof that the Plan already functions as a self-executing permit code.

Opponents also err in suggesting that the Robinwood Plan is fundamentally hostile to commercial redevelopment on Willamette Drive. The opposite is true. The Vision Statement expressly recognizes that Robinwood's "business district" exists along Highway 43 and contemplates locally owned businesses thriving there.

Goal 2 states that Willamette Drive shall serve as the Robinwood "Main Street." Policy 2.2 expressly encourages "additional commercial and mixed-use development" along with small parks and gathering places within the gaps. The Robinwood Main Street Area map on page 14 shows that the corridor is an identified planning area for precisely that sort of main-street-style commercial and mixed-use evolution. The Plan therefore cannot fairly be read as a categorical objection to redevelopment of an existing commercial site for another commercial use.

Nor does the Robinwood Plan identify car washes as a prohibited or categorically incompatible use. This is especially clear from Policy 2.5, "Allow only commercial uses that are compatible with the main street concept." The action measure associated with that policy proposes future CDC amendments to prohibit "inappropriate automotive sales, repair, and storage uses, construction sales and services, industrial manufacturing, warehouse and self-storage uses, and super stores" in commercially zoned areas. Notably absent from that list is automotive cleaning or car wash use. The existing CDC separately defines "automotive and equipment, cleaning" to include "auto laundries or car washes." If the Plan's drafters intended

car washes to be prohibited as inherently incompatible with the Robinwood Main Street concept, this is the obvious place they would have said so. They did not.

The proper reading, then, is this: the Robinwood Plan applies to provide policy guidance, but it does not itself prohibit this proposal, and it does not displace the current CDC standards governing this application. The relevant question under CDC 60.070(A)(7) is whether the proposal complies with the applicable policies of the Comprehensive Plan, including the supplemental Robinwood policies as properly understood and as applied through the existing code framework. On this record, it does.

That is particularly true for the policies opponents most heavily rely on, summarized below.

Plan Goal 2, Section 3, Policy 3

Policy 3 states that a portion of the Robinwood District is designated in Metro's 2040 Design Map as a corridor and that "[t]he neighborhood plan for Robinwood shall guide future changes to this area." Properly read in context, that is area-planning language, not a self-executing prohibition on all site-specific redevelopment unless opponents subjectively approve of the proposal. The background section of the Comprehensive Plan explains that the Metro designations are tentative pending neighborhood planning, and that the future evolution of these commercial districts is to be resolved through the neighborhood planning process and, where appropriate, later amendments to Metro designations and the CDC. City Plan, Goal 2: Land Use Planning, Section 3: Mixed Use/Commercial Development, under Background and Findings, at page 25 of 93

The proposal here is not a rezoning, not a Metro designation amendment, and not a legislative rewrite of the corridor. It is a site-specific application to redevelop an existing commercial site under the current zoning with a use the CDC expressly allows with a conditional use permit. That is exactly the sort of review Policy 7 says proceeds under the existing CDC until new implementing code is adopted.

Plan Goal 2, Section 3, Policy 4(e)

Policy 4(e) requires that redevelopment of existing land or buildings be completed in a manner that conforms to the adopted neighborhood plan. The proposal satisfies that requirement. The Robinwood Plan envisions Willamette Drive as a Main Street corridor with commercial and mixed-use activity, not as an area frozen against redevelopment. It encourages additional commercial and mixed-use development, envisions pedestrian-oriented development along the corridor, and seeks buffering and standards to protect nearby residential areas. The application does not conflict with that framework. To the contrary, it redevelops a long-vacant commercial site within the corridor, under existing zoning, using the City's adopted review standards. And where the Plan identifies more detailed future refinements—design manuals, use restrictions, height reductions, and other code changes—it repeatedly directs the City to accomplish those

through later legislative implementation, not by treating the unimplemented recommendation itself as an automatic basis for denial.

Plan Goal 2, Section 3, Policy 4(f)

Policy 4(f) requires the City to integrate aesthetically pleasing commercial development with residential uses. That is what the proposal does. As the record and Staff Report explain, the project retains landscape features and buffering along the site edges, places the well-designed building within the existing commercial site rather than pressing new intensity against residential lots, and includes design and noise-mitigation features responsive to neighboring uses. The Robinwood Plan itself does not require denial of all commercial redevelopment near residences. Rather, its approach is to require compatibility, buffering, and standards-based review. That is the review occurring here.

Plan Goal 2, Section 3, Policies 4(g) and 4(h)

Policies 4(g) and 4(h) address ingress, egress, and traffic patterns. Nothing in the Robinwood Plan converts those into generalized objections to redevelopment. To the contrary, Goal 1 and the associated action measures repeatedly contemplate transportation improvements, intersection work, signal evaluation, and coordination with ODOT and City engineers. Those are system-level planning responses. For this application, the operative question is whether the site functions safely and adequately under the existing code and review standards. The application uses an existing commercial site with existing access context, and the traffic evidence in the record addresses the operational impacts of the proposal. The policies do not require denial merely because opponents prefer a different commercial use.

Plan Goal 2, Section 3, Policy 4(j)

Policy 4(j) calls for safe and convenient pedestrian and bicycle paths and crossings. Again, the Plan envisions continued development along Willamette Drive with enhanced pedestrian and bicycle facilities. Goal 1 and its action measures repeatedly call for sidewalks, crossings, bike lanes, transit amenities, and related corridor improvements. Those are not anti-development directives; they are planning goals for making redevelopment and the corridor function better. The proposal works within the existing pedestrian and bicycle network along Willamette Drive and does not foreclose the City's longer-term corridor objectives.

Robinwood Plan Goal 3, Policies 3.5 and 3.8

Opponents rely heavily on Policies 3.5 and 3.8, but those provisions do not help them in the way they suggest. Policy 3.5 addresses oversized infill residences and neighboring commercial development; Policy 3.8 addresses ensuring that commercial development along Willamette Drive does not negatively impact nearby single-family neighborhoods. The associated action measures are revealing. For Policy 3.5, the Plan calls for future CDC amendments addressing height, floor area ratio, bulk, mass, and possible infill design review, and for development review to prevent unacceptable impacts. For Policy 3.8, the action measures are to enforce noise standards and provide physical buffering between single-family neighborhoods

and mixed-use/commercial areas. Those provisions support standards-based mitigation and buffering, not a free-floating veto untethered to the City's adopted noise, design, and development criteria. Here, the application addresses noise through the professional acoustical evidence and mitigation measures in the record, and addresses physical compatibility through the project design and existing buffering context. That is precisely the type of review contemplated by the Plan.

Robinwood Plan Goal 4, Policy 4.1

Opponents' natural-resource arguments are similarly overstated. Policy 4.1 seeks to preserve riparian corridors and enhance wildlife habitat. But the associated action measures are to implement Metro's stream-corridor standards and require natural-area setbacks along Willamette River frontage. Again, the Plan channels those concerns through adopted regulatory mechanisms and development review, not through speculation untethered to the City's actual WRA, stormwater, and overlay standards. The proposal must satisfy the applicable adopted standards, and opponents do not convert generalized concerns into noncompliance merely by invoking the policy at a high level of abstraction.

In sum, the Robinwood Neighborhood Plan does not impose the requirements on the applicant here that opponents claim. It does not ban commercial redevelopment on Willamette Drive. It expressly envisions Willamette Drive as Robinwood's Main Street and encourages additional commercial and mixed-use development there. It does not identify car washes as prohibited or incompatible. And where it seeks tighter controls or different design outcomes, it repeatedly calls for later CDC amendments, zoning changes, design manuals, capital improvements, and enforcement of existing standards. That structure defeats the claim that the Plan itself supplies a hidden set of self-executing permit-denial rules beyond the current Comprehensive Plan and Community Development Code. Under the proper reading of the Comprehensive Plan, the Robinwood Neighborhood Plan, and CDC 60.070(A)(7), the proposal complies with the applicable plan policies.

An example of the Robinwood Plan structure that illustrates this is below:

Goal #1: Willamette Drive shall provide superior transportation facilities for all modes of transportation.

Neighborhood Plan Policies		Action Measures	Partners for Implementation: Robinwood N.A. AND	Implementation Methods for Action Measure
1.1	Provide continuous and wide pedestrian facilities on both sides of Willamette Drive.	Provide 6 to 12 foot wide concrete sidewalks on both sides of Willamette Drive, with landscaped areas between the sidewalk and street where right of way width permits it.	Oregon Department of Transportation and City Engineers	• Coordination with ODOT • Capital Improvement Project List
1.2	Reconcile the competing interests of cross-traffic onto and over Willamette Drive with the needs of through traffic.	Restrict access to Highway 43 from Robinwood Way, by limiting it to right turns in and out.	Oregon Department of Transportation and City Engineers	• Capital Improvement Project List • Coordination with ODOT
		Determine whether a signal light at the intersection of Highway 43 and Walling Way/Walling Circle is still necessary and appropriate.	Oregon Department of Transportation and City Engineers	• Coordination with ODOT • Capital Improvement Project List
		Realign the intersection of Cedaroak Drive and the entrance to the Robinwood Shopping Center to create a four-way intersection.	Oregon Department of Transportation, City Engineers, Commercial Property Owners	• Coordination with ODOT • Development review process • TSP Amendments

LUBA cases confirm that plan policies set up as the Robinwood Plan is - where the plan states its policies are implemented in specific ways that are listed as nonbinding or otherwise inapplicable, do not constitute approval criteria for development applications. *See Murphey v. City of Ashland*, 19 Or LUBA 182 (1990), *Benjamin v. City of Ashland*, 20 Or LUBA 265 (1990). The Robinwood Plan is arranged in nearly the same way as the City of Ashland Plan in the *Murphey* and *Benjamin* cases in that it specifically states how each policy is to be implemented – by nonbinding Action Items. If policies are implemented by expressly nonbinding action measures then tautologically, the policy is non-binding and not a mandatory standard.

For these reasons, the Comprehensive Plan policies cited in the opposition comments do not support denial. To the contrary, the Staff Report and record evidence support an affirmative finding that the proposal complies with all applicable plan standards.

9. Conclusion

It is respectfully submitted that the proposal should be approved.

Very truly yours,

Wendie L. Kellington

WLK:wlk
CC: Clients

WEST LINN PLANNING COMMISSION
FINAL DECISION AND ORDER
FILE NO. CUP-25-01/DR-25-01

IN THE MATTER OF A PROPOSAL FOR A CONDITIONAL USE PERMIT AND CLASS II DESIGN REVIEW AT 1553 11TH STREET

I. Overview

At its meeting on November 19, 2025, the West Linn Planning Commission ("Commission") held a public hearing to consider a request by David Lawrence to approve a Conditional Use Permit and Class II Design for an eight-unit food cart pod, new dining/restroom structure, and conversion of existing space into a taproom. The approval criteria are found in Chapters 34, 44, 46, 48, 54, 55, 59, 96, and 99 of the Community Development Code (CDC). The hearing was conducted pursuant to the provisions of CDC Chapter 99.

The hearing commenced with a staff report presented by Darren Wyss, Principal Planner. Jessica Iselin, project architect, presented on the applicant's behalf and the applicant, David Lawrence, answered questions from the Commission. Oral testimony in opposition to the proposal was provided by Kathi Halicki, President of the Willamette Neighborhood Association (WNA), Beau Genot, Lance Finnefrock, Paul Reim, and Ian Brown. Written testimony in opposition of the proposal was submitted by Katie Zabrocki.

The primary concerns raised at the public hearing included:

1. No onsite parking for vendors.
2. Proximity to roundabout is a safety issue.
3. Overflow parking into the neighborhood and school property.
4. Increase in traffic congestion, effect on emergency response, and conflict with primary school pickup.
5. Effect on existing businesses.
6. Noise levels.
7. Serving alcohol in close proximity to a day care and primary school.
8. Child safety and drunk driving.
9. Greenlight traffic memo did not account for proximity to the school or observe the traffic/parking issues at the other food cart pod.
10. Potential for attracting rodents.
11. Overall benefit to the city.

Jessica Iselin and David Lawrence provided applicant rebuttal. Principal Planner Wyss answered questions from the commission.

The public hearing was closed and the Commission entered deliberations. The Commission discussed restricting operating hours to non-school hours, policing of people not the

Commission's responsibility, parking availability, regulating the number of restaurants not the Commission's responsibility, noise is regulated by the West Linn Municipal Code, benefit of restoring the curb at closed west access drive, and the need to widen the existing driveway.

After deliberations a motion was made by Commissioner Evans and seconded by Commissioner Schulte-Hillen to approve the application with modified recommended conditions of approval from the November 19, 2025 staff report. This included retaining Staff recommended Conditions of Approval 1, 2, 5, and 6, rewording Staff recommended Condition of Approval 3 to "work with staff to find a solution to separate the access drive for safety purposes, possibly by using bollards, planters, or signage", and removing Staff recommended Condition of Approval 4. The motion passed five (5) in favor (Commissioners Jones, Evans, Watton, Schulte-Hillen, and Chair Metlen) and one (1) opposed (Commissioner Walvatne).

II. The Record

The record was finalized at the November 19, 2025, hearing. The record includes the entire file from CUP-25-01/DR-25-01.

Findings of Fact

1) The Overview set forth above is true and correct.
2) The applicant is David Lawrence.
3) The Commission finds that it has received all information necessary to make a decision based on the Staff Report and attached findings; public comment, if any; and the evidence in the whole record, including any exhibits received at the hearing.

III. Findings

The Commission adopts the Staff Report for CUP-25-01/DR-25-01, with attachments, as its findings, which are incorporated by this reference with five conditions of approval. With the incorporated findings and the supplemental findings below, the Commission concludes that all required approval criteria are met subject to the following conditions of approval:

Supplemental Findings:

1. <u>CDC 59.060(8) – Eating and Drinking Establishments as Conditional Uses</u>
   The Commission found the proposed use compliant with the code. The Commission does not have the authority or responsibility to manage the number of similar businesses in a commercial area.

2. <u>CDC 46.090 Off-Street Parking Spaces</u>
   The Commission found the applicant is not required to provide vendor parking spaces, nor is it the Commission's responsibility to manage on-street parking in the neighborhood.

3. CDC 55.100.D(4) Privacy and Noise.
   The Commission found that future noise issues will be enforced through the West Linn Municipal Code and no noise study or additional screening was necessary.

4. CDC 60.070.A(3) Overall Benefit to the City.
   The Commission found the proposed use compliant with the code. Uses permitted outright, or conditionally, have been determined through the adopted code to be acceptable and compatible in that zoning designation.

5. CDC 46.150.A(4) and (9) Access Drive Safety
   The Commission found alternative solutions are acceptable to separate the access drive for safety purposes and the post/cable fence is not necessary. The Commission found using bollards, planters, or signage will meet the code.

6. CDC 48.040.A(1) and CDC 60.070.C(5) Vehicle Access
   The Commission found the existing 18 ft. 8 in. access drive to be sufficient to serve the existing Pool/Spa Supply business as it has sufficient width to accommodate two-way traffic.

IV. Order

The Commission orders that CUP-25-01/DR-25-01 is approved based on the Record, Findings of Fact, and Findings above.

1. Approved Plans. With the exception of modifications required by these conditions, the project shall substantially conform to all Tentative Plan Sheets.

2. Engineering Standards. All public improvements and facilities associated with the approved site design, including but not limited to street improvements, driveway approaches, curb cuts, utilities, grading, onsite and offsite stormwater, street lighting, easements, easement locations, and connections for future extension of utilities are subject to conformance with the City Municipal Code and Community Development Code. These must be designed, constructed, and completed prior to final building certificate of occupancy. Public Works may coordinate with the applicant to complete additional, voluntary, off-site improvements.

3. Service Drive Barrier. To maximize safety of pedestrians associated with the food cart pod and tap room, the applicant shall work with staff to find a solution to separate the access drive for safety purposes, possibly by using bollards, planters, or signage.

4. Closed Driveway Approach. The applicant will close the west access drive from Willamette Fall Drive by removing the existing driveway approach and installing a curb and pavers to match the existing improvements on Willamette Falls Drive.

5. Refuse/Recycling Enclosure. The applicant shall install a continuous, curbed landscape area at least three feet in width on the sides and rear of the enclosure. Landscaping shall include a continuous hedge maintained at a height of 36 inches.

_____ 11/20/25
JOEL METLEN, CHAIR DATE
WEST LINN PLANNING COMMISSION

This decision may be appealed to the City Council pursuant to the provisions of Chapter 99 of the Community Development Code and any other applicable rules and statutes. This decision will become effective 14 days from the date of mailing of this final decision as identified below.

Mailed this 21 day of November, 2025.

Therefore, this decision becomes effective at 5 p.m., December 5, 2025.

From: Chuck Kaady <ckaady@kaady.com>
Sent: Wednesday, April 1, 2026 2:35 PM
To: Wendie Kellington <wk@klgpc.com>
Subject: Re:PFAS

Hello Wendy,

Kaady Car Wash does not use any PFAS in any of our car wash products. I am contacting our manufacturer to send us a letter to support this fact.

Let me know if you need anything else.

Charles Kaady

Custom Formulating and Compounding

CERTIFICATION

To Whom It May Concern:

This is to certify that none of the Chemical Compounding Company products and Kaady Chemical Corporation products contain Per- and polyfluoroalkyl substances (PFAS)

This certification is being issued for whatever purpose it may serve.

Sincerely,

William B. Hulsey
Chemical Compounding Company
Date: 04/01/2026

Chuck Kaady
Kaady Chemical Corporation
Date: 04/01/2026

791 66th Ave. -- Oakland, CA 94621
Phone: (510) 430-2792 Fax: (510) 430-2896
email: sales@chemicalcompounding.com

CITY OF West Linn
PLANNING AND DEVELOPMENT

STAFF REPORT
PLANNING DIRECTOR DECISION

DATE: March 9, 2012

FILE NO.: DR-12-06

REQUEST: Class I Design Review for changes at the Robinwood Shopping Center (19133 Willamette Drive) for the benefit of Walmart, the principal tenant of the site. Proposed changes include:

1. the addition of five shopping cart corrals in the parking lot;
2. a 12 X 45 foot bale and pallet area with a 90-foot long sound wall at the rear or west side of the building;
3. a new drive aisle to improve circulation near the Wells Fargo Bank;
4. painted/striped shopping cart corridors leading to the main Walmart entry;
5. reconfiguration and reduction of parking spaces near the loading docks to facilitate deliveries;
6. new lighting;
7. a new planter strip adjacent to the new driveway / aisle near Wells Fargo Bank; and
8. screening of rooftop heating, ventilation and air conditioning (HVAC) units.

PLANNER: Peter Spir, Associate Planner

TABLE OF CONTENTS

EXHIBITS

SPECIFIC DATA

OWNER:	William More-Robinwood Shopping Center, LLC 222 Rampart Street, New Orleans, LA 70112
APPLICANT/ CONSULTANT:	Shawn Nguy, PACLAND, 6400 SE Lake Road, Ste 300, Portland, OR 97222 (representing Walmart)
SITE LOCATION:	19133 Willamette Drive
SITE SIZE:	6.2 acres
LEGAL DESCRIPTION:	Assessor's Map 2S-1E-23AD Tax Lot 6101
ZONING:	General Commercial (GC)
COMP PLAN DESIGNATION:	Commercial
APPROVAL CRITERIA:	CDC Chapter 55 Design Review
120-DAY RULE:	The application became complete on February 14, 2012. The 120-day period therefore ends on June 13, 2012.
PUBLIC NOTICE:	Notice was mailed to property owners within 100 feet of the subject property and all neighborhood associations including the Robinwood Neighborhood Association on February 22, 2012. The notice was also posted on the City's website. Therefore, public notice requirements of Community Development Code Chapter 99 have been met.

BACKGROUND

The Robinwood Shopping Center was developed in 1971 and, over the years, it has hosted a number of anchor grocery store tenants (e.g. Zupan's, Bale's) in the nearly 40,000 square foot space that Walmart will occupy.

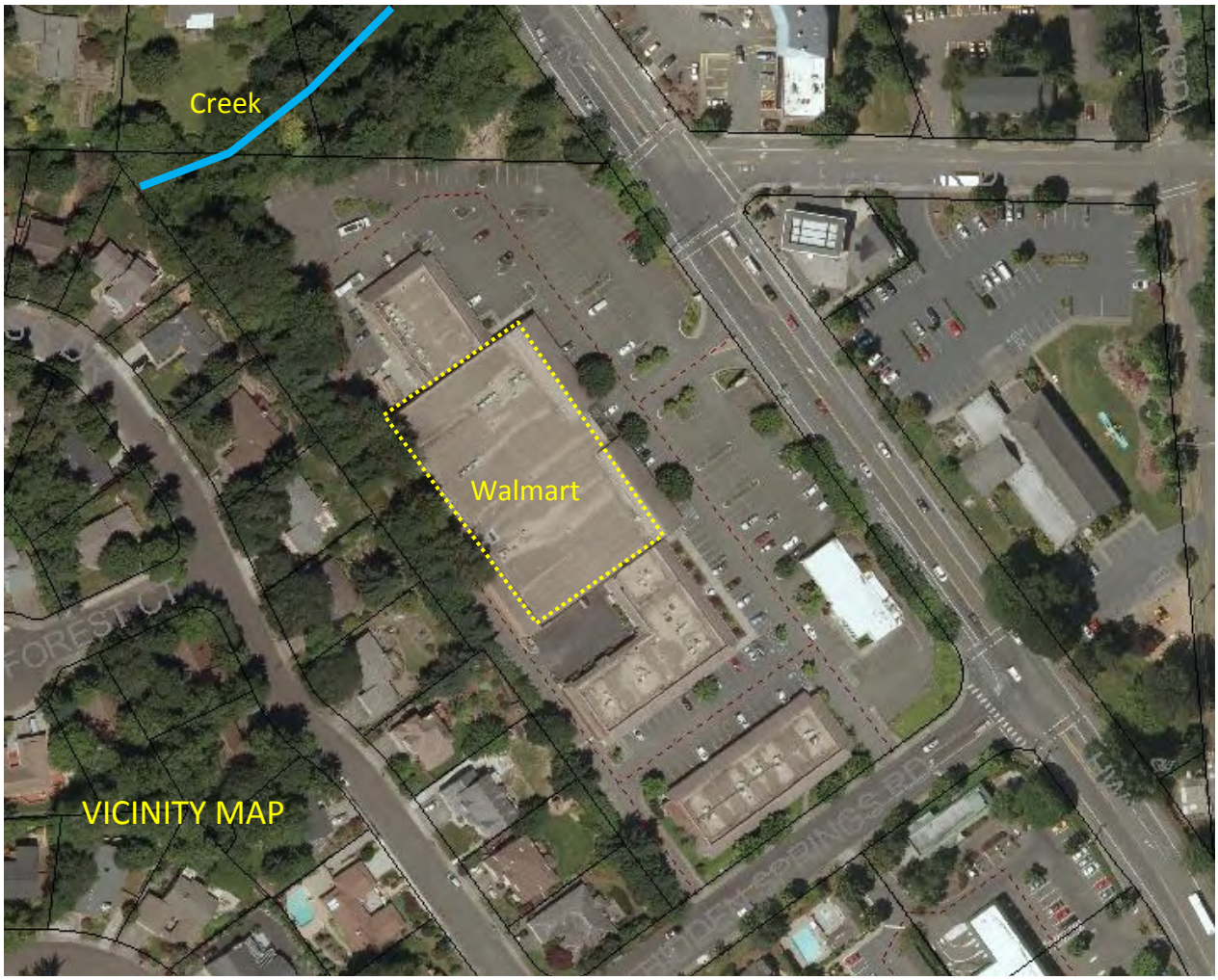
Initial work at the site by Walmart did not trigger land use permitting and review since it only involved "replacement in kind" projects, which are specifically exempt per CDC Section 55.025. Projects under this category included replacing the concrete curbs surrounding the landscape islands in the parking lot, an asphaltic overlay of the parking lot, re-painting the parking lot stall stripes, selected replacement of building trim as needed with matching/identical materials and painting the building using the existing color scheme.

Walmart's plans also included a complete interior remodel which did not trigger anything more than a building permit.

The next phase of Walmart's exterior/site improvements does, however, trigger Class I Design Review. Walmart proposes the following changes:

1. the addition of five shopping cart corrals in the parking lot;
2. a 12 X 45 foot bale and pallet area and 90-foot long sound wall at the rear or west side of the building;
3. a new drive aisle to improve circulation near the Wells Fargo Bank;
4. painted/striped shopping cart corridors leading to the main entry of Walmart;
5. reconfiguration and reduction of parking spaces near the loading docks to facilitate deliveries;
6. new lighting;
7. a new planter strip adjacent to the new driveway / aisle near Wells Fargo Bank; and
8. screening of rooftop heating, ventilation and air conditioning (HVAC) units.

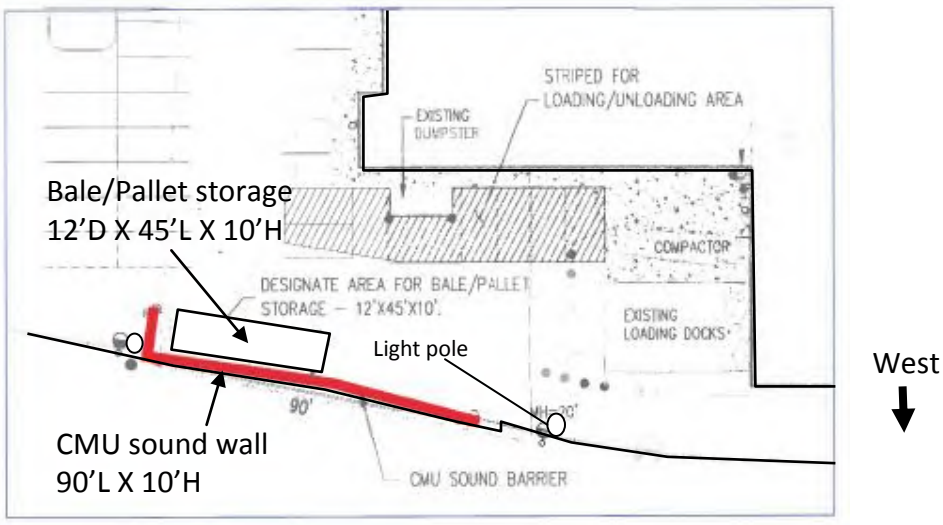
Site Conditions. The site is substantially unchanged since it was graded and developed in 1971. The developer retained natural buffer areas to the north and west. To the north, a tributary of Robin Creek runs west to east through a 60 to 300 foot wide corridor of conifers and deciduous trees (see the photograph on the following page). CDC Chapter 32: Water Resource Areas, requires that development keep at least 57.5 feet away from the creek. In this case, the 57.5 foot transition and setback extend into the northwest portion of the parking lot and, for that reason, the applicant is proposing no changes or development in that area. The west or rear boundary of the site comprises a narrow 15 to 60 foot wide embankment that rises up six to 12 feet towards residential properties on Wilderness Drive. The embankment has a collection of conifer and deciduous trees which provide a useful visual screen of the commercial site. No encroachment into this embankment area will occur. The ten-foot high by 90-foot long sound wall (noise mitigation) at the rear of the bale and pallet storage area will run along the existing curb at the lower edge of the embankment.



Project Description.

1. The applicant proposes the addition of five shopping cart corrals in the parking lot. Currently there are none at the commercial center. They are an expected feature at most large retailers and will be distributed around the front parking lot for the customers' convenience. They will displace five parking spaces but as the applicant's submittal demonstrates, the site has 30 parking spaces more than the CDC requires.

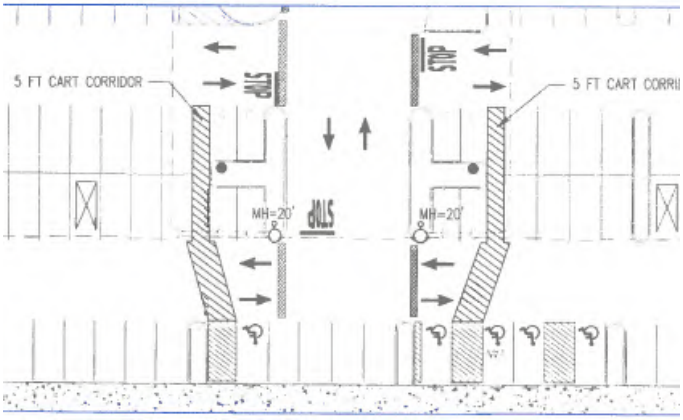
2. For short term storage of recyclable pallets and shipping material, the applicant is proposing to build a 12-foot deep by 45-foot long containment area at the rear of the store. A noise study by an acoustic engineer determined that the containment area required a ten-foot high concrete (CMU) noise mitigation wall 90 feet long to meet Oregon DEQ noise standards. The CMU wall will also provide a visual screen of this activity area.



3. The existing parking lot has a dead end near the Wells Fargo Bank which makes for poor parking lot circulation. The applicant proposes to remove six parking spaces to create a driveway for two way traffic.

Existing configuration with a dead end parking aisle

4. In order to allow employees to collect the shopping carts and return them to the store for customer use, two striped shopping cart corridors will be painted leading to the main entrance. They can also be used for pedestrian access.



5. The applicant proposes to reconfigure and reduce parking near the loading docks to facilitate deliveries and also to better accommodate the recycling facility.

6. The applicant proposes to install additional light poles throughout the parking lot and loading areas and retrofit existing ones with new light fixtures to enhance surveillance and public safety.

7. The applicant proposes to install a new planter strip adjacent to the new driveway/aisle near Wells Fargo Bank (see photo "*Proposed configuration with new driveway"* above which shows the planter strip).

8. The applicant replaced existing rooftop HVAC with new equipment. Currently these HVAC units are visible from a few adjacent properties on Wilderness Drive. To meet CDC Chapter 55 screening requirements, the applicant proposes to enclose these HVAC units. The screens will further mitigate noise from the HVAC units which are already operating at levels below DEQ standards.

Zoning Map

(Light Yellow is R-10 Residential District; Red is General Commercial)

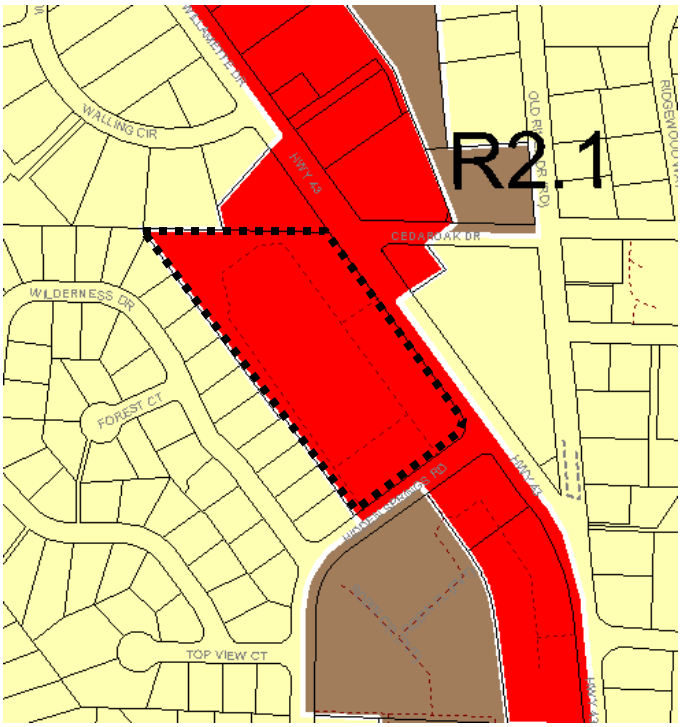


Table 1 Surrounding Land Use and Zoning

DIRECTION FROM SITE	LAND USE	ZONING
North	Single-family residential	R-10
East	General Commercial	GC
South	General Commercial	GC
West	Single-family residential	R-10

PUBLIC COMMENTS

On February 24 and 27, 2012 Roy Kitzmann, of 19480 Wilderness Drive, submitted letters/e-mails into the record expressing concern about modifying the driving aisles near the Wells Fargo, potential glare from new lighting, the noise and visual impact of the HVAC and HVAC screens, plus possible diminution in property values because of the HVAC's impacts on views and noise levels. Staff provided Mr. Kitzmann with a response to each of these points which are incorporated in staff's findings (see Finding 3). Mr. Kitzmann's comments triggered a staff

request of the applicant to modify the existing lights attached to the rear of the building and to have the applicant's acoustic engineer report on whether the noise of the HVAC would be further reduced by the HVAC screens.

On February 27, 2012, Gerry Snavely, of 19486 Wilderness Drive, submitted an e-mail into the record expressing concern about the glare from existing lights on the rear of the building and the hours of truck deliveries. The lighting issue is addressed in Finding 3. Any noise associated with nighttime deliveries is regulated under the Municipal Code which is enforced by the Police Department.

Correspondence received prior to the application being submitted, although helpful, was not included in this report.

DECISION

Based on findings contained in the applicant's submittal in the City record and in staff's supplemental findings, the Planning Director **approves** this application (DR-12-06) subject to the following conditions of approval:

1. Site Plan. The improvements shall conform to the Proposed Site Circulation and Lighting Improvements plan C-10 dated 2/8/12, except as modified by these conditions of approval. All other proposed improvements shall conform to the location and materials specified in the applicant's submittal and supplemental submittal which are part of this record.

2. Roof top HVAC. HVAC screening shall be painted a matte "overcast grey" color. The screening shall be at least equal to the height of the HVAC units that they enclose. The HVAC screening or enclosures shall be equal or superior in design and effectiveness (visual screening and noise diminution) to the product example shown in this report ("Skyline 2"). Screening shall be installed per the applicant's "Screening Exhibit".

3. Noise. Pursuant to CDC 55.100(D)(4), if the City receives credible complaints about noise from the HVAC and/or the pallet recycling and storage area in the first year, the applicant shall provide a noise study by an acoustic engineer to demonstrate whether or not DEQ standards are met. If the study shows that DEQ standards are not met, a noise mitigation program, prepared by an acoustic engineer, shall be prepared and implemented to meet DEQ standards.

4. Landscape Islands. All landscape islands that do not have trees in them shall be replanted with one, four-inch DBH tree and groundcover per CDC Chapter 54.

5. Glare. Lighting fixtures shall not create off-site glare. The applicant shall also replace existing lights on the rear of the building with downward facing fixtures as shown in the applicant's submittal (WST series lighting) so they do not shine into, or towards, homes to the west of the site.

I declare to have no interest in the outcome of this decision due to some past or present involvement with the applicant, the subject property, or surrounding properties, and therefore, can render an impartial decision. The provisions of the Community Development Code Chapter 99 have been met.

John Sonnen March 12, 2012

JOHN SONNEN, Planning Director DATE

Appeals to this decision must be filed with the West Linn Planning Department within 14 days of mailing date. Cost is $400. The appeal must be filed by an individual who has established standing by submitting comments to the Planning Director prior to the decision date.

Mailed this 12th day of March, 2012.
Therefore, the 14-day appeal period ends at 5 p.m., on
March 26, 2012.

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ADDENDUM

SUPPLEMENTAL FINDINGS
DR-12-06

The proposed development requires Class I Design Review approval per CDC 55.020(C), using the criteria of 55.090. Staff recommends adoption of the findings contained within the applicant's submittal, with the following supplemental findings by staff:

CHAPTER 55
DESIGN REVIEW

55.090 APPROVAL STANDARDS – CLASS I DESIGN REVIEW

The Planning Director shall make a finding with respect to the following criteria when approving, approving with conditions, or denying a Class I design review application:

A. The provisions of the following sections shall be met:

1. CDC 55.100(B)(1) through (4), Relationship to the natural and physical environment, shall apply except in those cases where the proposed development site is substantially developed and built out with no remaining natural physical features that would be impacted.

2. CDC 55.100(B) (5) and (6), architecture, et al., shall only apply in those cases that involve exterior architectural construction, remodeling, or changes.

3. Pursuant to CDC 55.085, the Director may require additional information and responses to additional sections of the approval criteria of this section depending upon the type of application.

FINDING NO. 1:
Sections 55.100(B) (1) through (4) do not apply since the site is fully developed with the exception of the north and west buffer areas which will be left untouched. Sections 55.100(B) (5) and (6) apply to the architectural design and shape of the building. Since no changes to the building design are proposed, this criterion is also not applicable.

Pursuant to sections 55.085 and 55.090(3), the Planning "*Director may require additional information and responses to additional sections of the approval criteria of this section depending upon the type of application."* The following findings respond to approval criteria that the Planning Director has determined are necessary to address concerns regarding this application.

C. Compatibility between adjoining uses, buffering, and screening.

1. In addition to the compatibility requirements contained in Chapter 24 CDC, buffering shall be provided between different types of land uses; for example, buffering between single-family homes and apartment blocks. However, no buffering is required between single-family homes and duplexes or single-family attached units. The following factors shall be considered in determining the adequacy of the type and extent of the buffer:

a. The purpose of the buffer, for example to decrease noise levels, absorb air pollution, filter dust, or to provide a visual barrier.

b. The size of the buffer required to achieve the purpose in terms of width and height.

c. The direction(s) from which buffering is needed.

d. The required density of the buffering.

e. Whether the viewer is stationary or mobile.

2. On-site screening from view from adjoining properties of such things as service areas, storage areas, and parking lots shall be provided and the following factors will be considered in determining the adequacy of the type and extent of the screening:

a. What needs to be screened?

b. The direction from which it is needed.

c. How dense the screen needs to be.

d. Whether the viewer is stationary or mobile.

e. Whether the screening needs to be year-round.

3. Rooftop air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.

FINDING NO. 2:

Mr. Roy Kitzmann of 19480 Wilderness Drive expressed concern about the HVAC's visual impact from his house. This speaks directly to approval criterion "*(C) (3) Rooftop air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties."*

Staff asked the applicant to examine the new rooftop HVACs and screening options as it relates to all properties on the site perimeter.

January 2012: View of original HVAC from 19480 Wilderness Drive. Replacement HVAC is taller, but will be screened per CDC.

The applicant conducted a comprehensive study of lines of sight from surrounding properties and rights-of-way looking towards the new rooftop HVAC units. (See: Sight line exhibits and photos in applicant's submittal). The study found that perimeter trees and lines of sight obscure many of the neighbor's views. Some neighbors will, however, see the HVAC. For that reason, screening will be required.

The applicant will install solid screening on the south and west of all HVACs and some on the north side as appropriate. The screening will be equal to the height of the HVAC it encloses.

No views of the HVAC are possible from the east (Willamette Drive) so no screening is required on that side. The solid screens will be painted a grey color to blend in with the roofscape and the dominant overcast skies. Views from Hidden Springs Road are distant and fleeting but will still be screened per code. Consequently, the visual screening requirements of the CDC will be met.

Proposed visual screening product

HVAC as seen from Hidden Springs Road

A final note, Mr. Kitzmann had expressed concern that the HVAC screening could diminish views and could adversely affect property values. Staff finds that there is no approval criterion relating to loss of property value. Regarding short or long range views, such as of Mount Hood, there is nothing in the CDC that requires the protection of the views (except screening HVAC etc.). The CDC allows full utilization of the 35-foot building height envelope. Additionally, rooftop HVAC are excused from that height limit.

D. Privacy and noise.

> *3. Structures or on-site activity areas which generate noise, lights, or glare shall be buffered from adjoining residential uses in accordance with the standards in subsection C of this section where applicable. Businesses or activities that can reasonably be expected to generate noise shall undertake and submit appropriate noise studies and mitigate as necessary. (See CDC 55.110(B) (11) and 55.120(M).)*

FINDING NO. 3:

Regarding noise, staff identified two elements of this application which could produce noise levels in excess of existing or historic noise levels. Those noise sources would be the new rooftop HVAC and the proposed pallet recycling area.

To address the criterion, the acoustic engineer conducted a noise study based on sound monitoring along the rear or west property line at four roughly equidistant points: A, B, C and D, as shown on the photograph below.

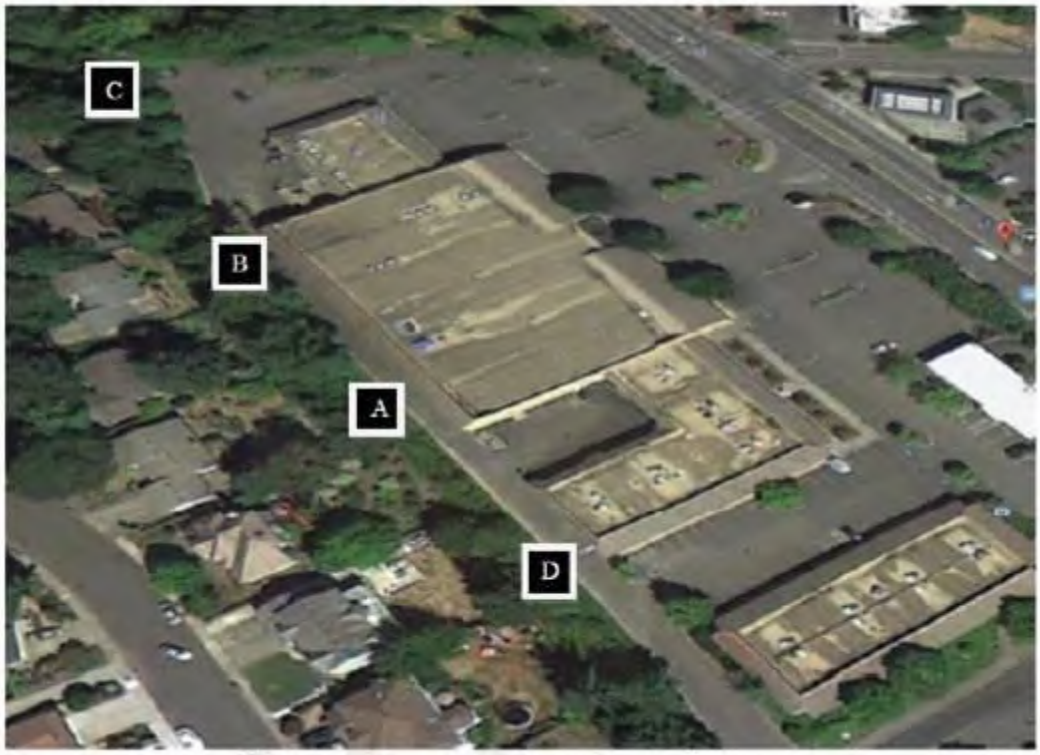


Figure 1: Locations for noise predictions.

The noise study found that noise mitigation will be needed for the pallet recycling area. The acoustic engineer specifically proposes a 90-foot long by ten-foot high CMU (concrete) wall to meet DEQ standards. The acoustic engineer found that the new rooftop HVAC equipment will meet the DEQ standards. His findings are reprinted below. No noise mitigation is required.

Rooftop Mechanical Units

Based on the HVAC plans provided by the project mechanical engineers, the proposed rooftop mechanical unit configuration includes a Muntner AHU, Lennox 3, 5, and 10 ton Packaged Air Handlers, and Bohn 4 and 6 fan Condensers, as depicted in Table A1 in Appendix A.

Noise data has been provided for these units by the mechanical design team, and has been used to predict sound levels at the various locations around the perimeter of the property. Appendix A lists the mechanical unit sound data used in this analysis. The absolute worst-case scenario of every unit operating at all times is assumed in the calculations.

Noise levels were predicted to the various locations at the neighboring properties. Attenuation due to distance and the building parapet acting as a barrier (where applicable) affect the resultant noise level at each of the locations. The results of the predictions are given in Table 5.

DEQ states the receiver location must be either at the property line or 25' from a structure, whichever is furthest from the source. Based on the ODEQ Sound Measurement Procedures Manual NPCS-1, the receiver location is suggested to be located at 4 feet or more above the ground or floor surface. However, for this study, the applicant has chosen a scenario where the receiver location was selected as the property line, at a height of 8' above the grade level. The 8-ft height is comparable to an average height person standing at the property line with a sound meter raised in his hand. This represents a worst case scenario, more stringent than DEQ requirements for the receiver location.

Table 1: Predicted levels due to rooftop mechanical unit noise

Point	Location	Max. Allowed L_{50}, (dBA)	Predicted Level, 1 Hr. L_{eq} (dBA)
A	Residential	50 day / 45 night	44
B	Residential	50 day / 45 night	41
C	Residential	50 day / 45 night	42
D	Residential	50 day / 45 night	43

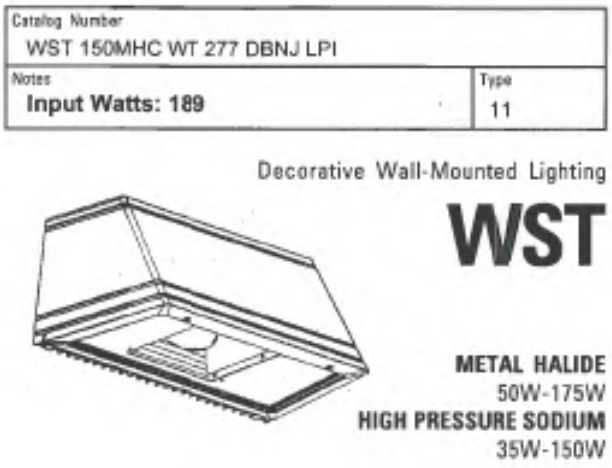
As indicated in Table 5, the maximum allowable nighttime noise levels are not exceeded with the new rooftop equipment at all receiver points. Daytime activities are predicted to be well below the maximum allowable sound levels. No mitigation is required to meet the DEQ sound limits.

Staff followed these findings up with a request that the applicant's acoustic engineer go even further and make findings on the efficacy of the HVAC visual screening in reducing HVAC noise. Those findings, dated March 6, 2012, are shown below, and indicate that the noise will drop an additional three to five decibels (dBA) below the levels listed above in the initial study. These levels are significantly below the DEQ standards. Proposed Condition of Approval 3 would

require, in the event the City receives noise complaints, further acoustical testing and, if warranted, remedial action. The criterion is met.

Point	Location	Max Allowed L50 (dBA)	Predicted Level, 1hr Leq (dBA)
A	Residential	50 day/ 45 night	39-41
B	Residential	50 day/ 45 night	36-38
C	Residential	50 day/ 45 night	37-39
D	Residential	50 day/ 45 night	38-40

Regarding glare, there had been comments from neighboring homeowners Kitzmann and Snavely regarding glare from light fixtures mounted on poles and existing lights on the building which point towards their properties. Staff finds that the applicant's proposed downward pointing shoe box design will screen glare from abutting properties. Also, the applicant (Shawn Nguy) states in a March 6, 2012 e-mail that the existing wall mounted lights will be removed and replaced with downward facing fixtures (WST series shown below) so they will no longer point towards the neighboring properties. Therefore the criterion is met.



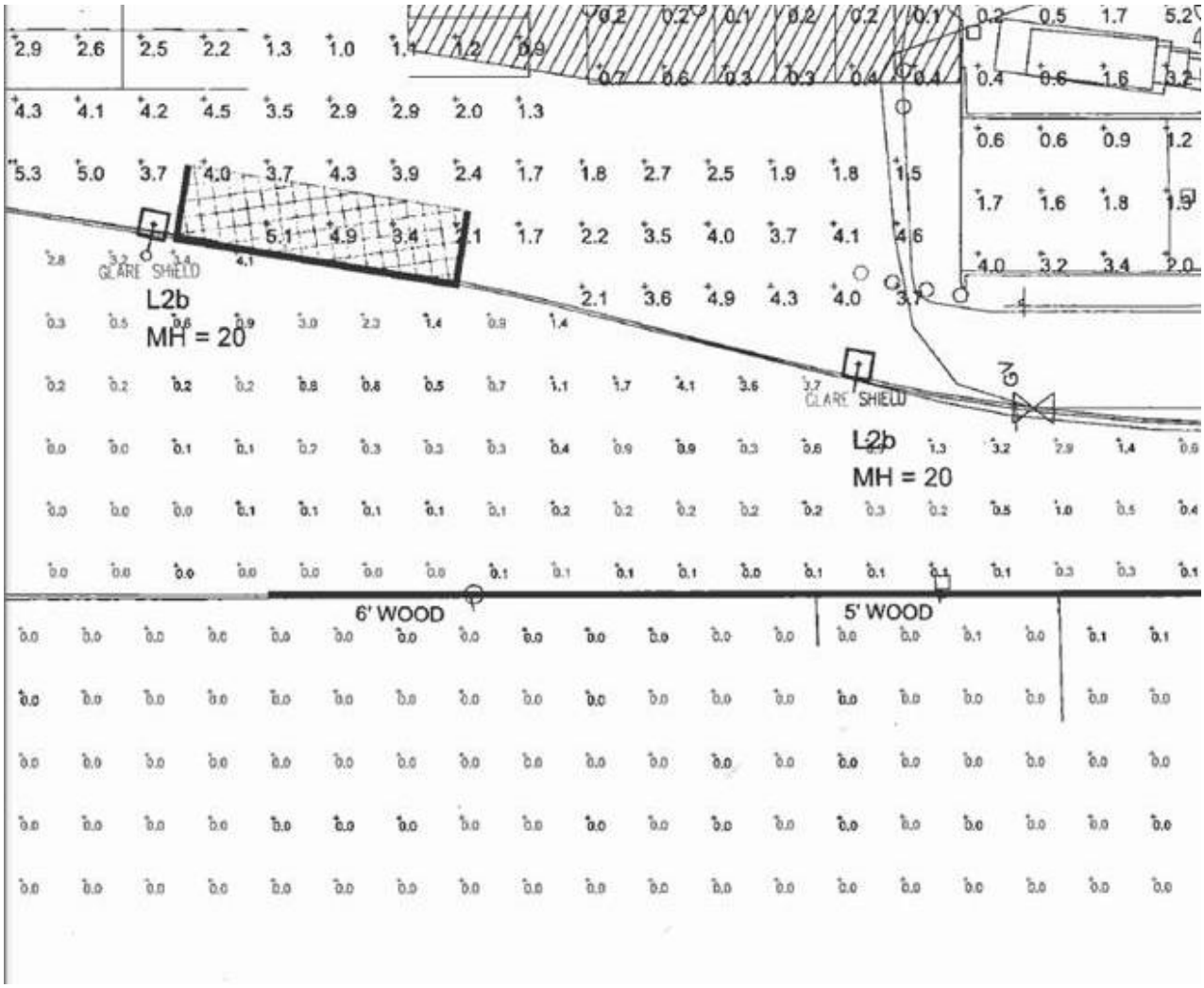
J. Crime prevention and safety/defensible space.

5. Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as parking lots, stairs, ramps, and abrupt grade changes.

6. Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet which is sufficient to illuminate a person. All commercial, industrial, residential, and public facility projects undergoing design review shall use low or high pressure sodium bulbs and be able to demonstrate effective shielding so that the light is directed downwards rather than omni-directional. Omni-directional lights of an ornamental nature may be used in general commercial districts only.

7. Lines of sight shall be reasonably established so that the development site is visible to police and residents.

FINDING NO. 4:
Fourteen new light poles will be added to provide broader more effective illumination of the customer parking areas and the loading areas at the rear of the store. Two new poles will be installed to replace the one existing pole and light fixture to provide broader, more effective illumination of the loading areas and increase safety and surveillance opportunities. The applicant has supplied a photometric study (below) which shows that illumination levels range from 5.1 adjacent to the light fixtures to zero the further away from the lights one gets. The top of the embankment near the rear property lines shows illumination levels of 0.0 to 0.3 which represents extremely low illumination. Ten feet west of the rear property line of homes on Wilderness Drive, all readings are at zero/0.0. All light fixtures are of a box or shoebox designs which direct the light downward and screen off site glare. As previously noted, existing wall mounted fixtures will be replaced with downward facing types.



46.090 Parking (C) (2) General retail store, except as provided below

One space for every 240 sq. ft. of gross floor area.

FINDING NO. 5:
There have been concerns expressed about trip generation and the adequacy of parking at this site. Staff's analysis of trip generation was based on the latest Institute of Traffic Engineers (ITE) trip generation tables and produced the following findings:

Walmart stores range from small scale neighborhood grocery stores with a limited range of products to superstores averaging about 185,000 square feet that offer a wide spectrum of goods and services (e.g., groceries, electronics, auto supplies, recreation equipment, and clothing). The proposed Walmart is relatively small with a 39,800 square foot grocery store with a pharmacy. The ITE Trip Generation Manual classifies such sub-40,000 square foot grocery stores as "850 Supermarket". That classification also applies to similar sized Safeway, Albertsons and Market of Choice stores. These uses have an average Saturday peak hour trip generation rate of 10.85 vehicle trip ends per 1,000 square feet of gross floor area.

A sub category of supermarkets, called "854 Discount Supermarkets", that offer the same products as supermarkets but at discounted prices, such as WinCo, have a slightly lower average Saturday peak hour trip generation rate than supermarkets at 10.46 vehicle trip ends per 1,000 square feet of gross floor area. By comparison, a Wal-Mart super store is classified as "813 Free-Standing Discount Superstore". These uses generate a lower average Saturday peak hour trip generation rate of 5.64 vehicle trip ends per 1,000 square feet of gross floor area.

Based on the ITE tables, staff finds that Walmart's trip generation will be the same other similar sized grocery stores.

On the subject of parking, the applicant's parking table (see applicant's submittal) makes it clear that the site exceeds the required parking per CDC Chapter 46; even with the elimination of parking spaces in the loading area, to the area north of the Wells Fargo Bank and the cart coral areas. Staff conducted a separate review of parking spaces and also found that the proposed site design will exceed the amount required. Therefore the criterion is met.

Sidebar: Mr. Kitzmann had expressed concern in his February 24, 2012 letter that driveway modifications might include the driveway exits onto Willamette Drive or Hidden Springs Road. The only driveway being altered is an internal driveway within the parking lot next to Wells Fargo Bank and is for the benefit of safer and more convenient internal circulation only. No exits to adjacent streets will be modified.

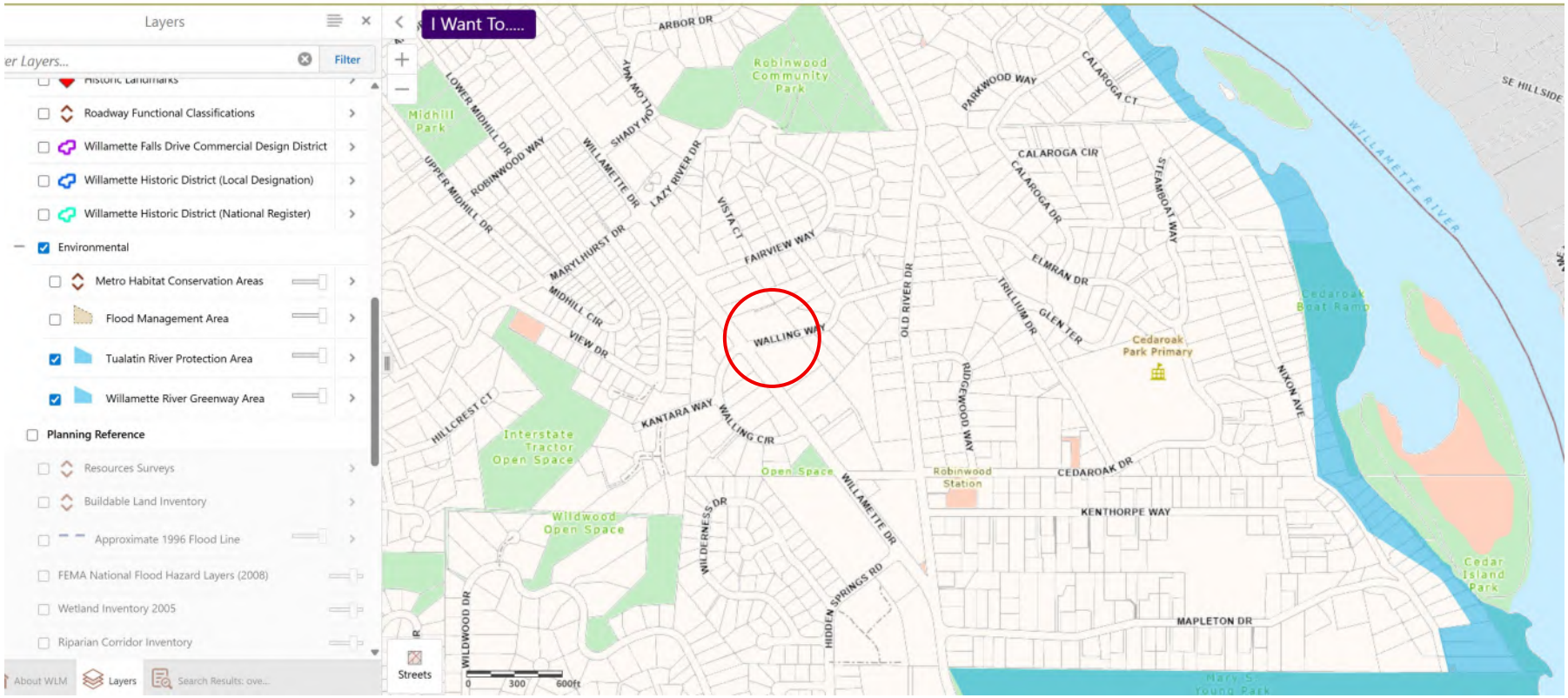
CITY OF West Linn
PLANNING AND DEVELOPMENT

FILE NO.: DR-12-06

REQUEST: CLASS I DESIGN REVIEW FOR SELECT CHANGES IN THE WALMART PARKING LOT, SCREENING THE HVAC SYSTEM AND A PALLET RECYCLING AREA AT 19133 WILLAMETTE DRIVE

APPLICANT'S SUBMITTAL

EXHIBITS


Layers
Filter
Roadway Functional Classifications
Willamette Falls Drive Commercial Design District
Willamette Historic District (Local Designation)
Willamette Historic District (National Register)
Environmental
Metro Habitat Conservation Areas
Flood Management Area
Tualatin River Protection Area
Willamette River Greenway Area
Planning Reference
Resources Surveys
Buildable Land Inventory
Approximate 1996 Flood Line
FEMA National Flood Hazard Layers (2008)
Wetland Inventory 2005
Riparian Corridor Inventory
About WLM
Layers
I Want To.....
Streets
ARBOR DR
Robinwood Community Park
Midhill Park
LOWER MIDHILL DR
UPPER MIDHILL DR
ROBINWOOD WAY
WILLAMETTE DR
SHADY HOLLOW WAY
LAZY RIVER DR
VISTA CT
FAIRVIEW WAY
MARYLHURST DR
MIDHILL CIR
VIEW DR
WALLING WAY
OLD RIVER DR
PARKWOOD WAY
CALAROGA CT
CALAROGA CIR
CALAROGA DR
STEAMBOAT WAY
ELMRAN DR
TRILLIUM DR
GLEN TER
Cedaroak Park Primary
Cedaroak Boat Ramp
SE HILLSIDE
WILLAMETTE RIVER
RIDGEWOOD WAY
NIXON AVE
HILLCREST CT
KANTARA WAY
WALLING CIR
Interstate Tractor Open Space
Open Space
Robinwood Station
CEDAROAK DR
KENTHORPE WAY
Wildwood Open Space
WILDERNESS DR
HIDDEN SPRINGS RD
WILDWOOD DR
MAPLETON DR
Cedar Island Park
Harry S. Young Park
0
300
600ft

SAFETY DATA SHEET

In accordance with UN GHS latest edition

Product: Compare To CHANEL # 5 by Coco Chanel ® F21987

Version: 7

Section 1. Identification of the substance or the mixture and of the supplier

1.1 Product Identifier

Product identifier: Compare To CHANEL # 5 by Coco Chanel ® F21987(Contains:3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde, Acetyl cedrene, Benzyl salicylate, Isoeugenol)

Other identifiers: None

1.2 Relevant identified uses of the substance of mixture and uses advised against

Product uses: Fragrances

1.3 Details of the supplier of the safety data sheet

Company name: Aromatic Fragrances International, Inc

Company address: 85 Wansley Drive SE
Cartersville
GA 30121
USA

Contact: Regulatory Affairs

E-Mail address: regulatory@afi-usa.com

Company phone: 770-334-3906

1.4 Emergency telephone number

Emergency phone: 770-334-3906

Section 2. Hazards identification

2.1 Classification of the substance or mixture

Class and category of danger: Skin Corrosion / Irritation Category 3
Eye Damage / Irritation Category 2
Sensitization - Skin Category 1
Hazardous to the Aquatic Environment - Acute Hazard Category 2
Hazardous to the Aquatic Environment - Long-term Hazard Category 2
H316, Causes mild skin irritation.
H317, May cause an allergic skin reaction.
H319, Causes serious eye irritation.
H411, Toxic to aquatic life with long lasting effects.

2.2 Label elements

Signal word: Warning

Hazard statements: H316, Causes mild skin irritation.
H317, May cause an allergic skin reaction.
H319, Causes serious eye irritation.
H411, Toxic to aquatic life with long lasting effects.

Precautionary statements: P261, Avoid breathing vapour or dust.

SAFETY DATA SHEET

In accordance with UN GHS latest edition

Product: Compare To CHANEL # 5 by Coco Chanel ® F21987

Version: 7

P264, Wash hands and other contacted skin thoroughly after handling.

P272, Contaminated work clothing should not be allowed out of the workplace.

P273, Avoid release to the environment.

P280, Wear protective gloves/eye protection/face protection.

P302/352, IF ON SKIN: Wash with plenty of soap and water.

P305/351/338, IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333/313, If skin irritation or rash occurs: Get medical advice/attention.

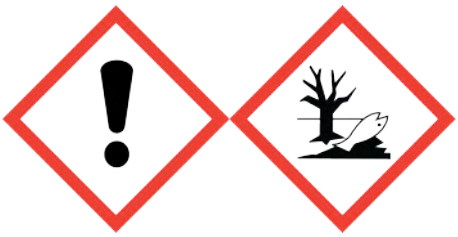
P337/313, If eye irritation persists: Get medical advice/attention.

P363, Wash contaminated clothing before reuse.

P391, Collect spillage.

P501, Dispose of contents/container to approved disposal site, in accordance with local regulations.

Pictograms:



2.3 Other hazards

Other hazards: None

Section 3. Composition / information on ingredients

3.2 Mixtures

Contains:

Name	CAS	%	GHS Classification
Benzyl salicylate	118-58-1	5-<10%	Acute Tox. 5-Eye Irrit. 2B-Skin Sens. 1B-Aquatic Acute 2-Aquatic Chronic 3;H303-H317-H320-H401-H412
Acetyl cedrene	32388-55-9	5-<10%	Acute Tox. 5-Skin Sens. 1B-Aquatic Acute 1-Aquatic Chronic 1;H303-H317-H410
3 and 4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde	31906-04-4	5-<10%	Skin Sens. 1A-Aquatic Acute 3;H317-H402
3-(5,5,6-Trimethylbicyclo[2.2.1] hept-2-yl)cyclohexan-1-ol	3407-42-9	5-<10%	Eye Irrit. 2A-Aquatic Acute 1-Aquatic Chronic 2;H319-H400-H411
alpha-iso-Methylionone	127-51-5	5-<10%	Skin Sens. 1B-Aquatic Acute 2-Aquatic Chronic 2; H317-H411
Hydroxycitronellal	107-75-5	1-<5%	Eye Irrit. 2A-Skin Sens. 1B-Aquatic Acute 3;H317-H319-H402
Geraniol	106-24-1	1-<5%	Acute Tox. 5-Skin Irrit. 2-Eye Dam. 1-Skin Sens. 1-Aquatic Acute 3;H303-H315-H317-H318-H402
Benzyl acetate	140-11-4	1-<5%	Acute Tox. 5-Aquatic Acute 2-Aquatic Chronic 3;H303-H401-H412
Phenethyl alcohol	60-12-8	1-<5%	Acute Tox. 4-Eye Irrit. 2A;H302-H313-H319
Eugenol	97-53-0	0.1-<1%	Acute Tox. 5-Eye Irrit. 2A-Skin Sens. 1B-Aquatic Acute 2;H303-H317-H319-H401

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Cinnamyl alcohol	104-54-1	0.1-<1%	Acute Tox. 4-Skin Sens. 1B-Aquatic Acute 2;H302-H317-H401
alpha-Terpineol	98-55-5	0.1-<1%	Flam. Liq. 4-Acute Tox. 5-Skin Irrit. 2-Eye Irrit. 2A-Aquatic Acute 2;H227-H303-H315-H319-H401
Isoeugenol	97-54-1	0.1-<1%	Acute Tox. 4-Acute Tox. 4-Acute Tox. 4-Skin Irrit. 2-Eye Irrit. 2A-Skin Sens. 1A-STOT SE 3-Aquatic Acute 2;H302-H312-H315-H317-H319-H332-H335-H401
Linalyl acetate	115-95-7	0.1-<1%	Flam. Liq. 4-Skin Irrit. 2-Eye Irrit. 2B-Skin Sens. 1B-Aquatic Acute 3;H227-H315-H317-H320-H402
Allyl alpha-ionone	79-78-7	0.1-<1%	Skin Sens. 1B-Aquatic Acute 2-Aquatic Chronic 2;H317-H411
10-Undecenal	112-45-8	0.1-<1%	Flam. Liq. 4-Skin Sens. 1B-Aquatic Acute 2-Aquatic Chronic 3;H227-H317-H401-H412
Coumarin	91-64-5	0.1-<1%	Acute Tox. 4-Skin Sens. 1B-Aquatic Acute 3;H302-H317-H402
Geranyl acetate	105-87-3	0.1-<1%	Skin Irrit. 2-Skin Sens. 1B-Aquatic Acute 2-Aquatic Chronic 3;H315-H317-H401-H412
alpha-Amylcinnamaldehyde	122-40-7	0.1-<1%	Acute Tox. 5-Skin Sens. 1B-Aquatic Acute 2-Aquatic Chronic 2;H303-H317-H411
beta-Caryophyllene	87-44-5	0.1-<1%	Skin Sens. 1B-Asp. Tox 1-Aquatic Chronic 4;H304-H317-H413
CLOVE LEAF OIL	8000-34-8	0.1-<1%	Acute Tox. 5-Eye Irrit. 2-Skin Sens. 1-Asp. Tox 1;H303-H304-H317-H319
alpha-Hexylcinnamaldehyde	101-86-0	0.1-<1%	Acute Tox. 5-Skin Sens. 1B-Aquatic Acute 1-Aquatic Chronic 2;H303-H317-H400-H411

Substances with workplace exposure limits, not listed above:

Not Applicable

Section 4. First-aid measures

4.1 Description of first aid measures

Inhalation: Remove from exposure site to fresh air, keep at rest, and obtain medical attention.

Eye exposure: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin exposure: IF ON SKIN: Wash with plenty of soap and water.

Ingestion: Rinse mouth with water and obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Causes mild skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

None expected, see Section 4.1 for further information.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable media: Carbon dioxide, Dry chemical, Foam.

SAFETY DATA SHEET

In accordance with UN GHS latest edition

Product: Compare To CHANEL # 5 by Coco Chanel ® F21987

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5.2 Special hazards arising from the substance or mixture

In case of fire, may be liberated: Carbon monoxide, Unidentified organic compounds.

5.3 Advice for fire fighters:

In case of insufficient ventilation, wear suitable respiratory equipment.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Avoid inhalation. Avoid contact with skin and eyes. See protective measures under Section 7 and 8.

6.2 Environmental precautions:

Keep away from drains, surface and ground water, and soil.

6.3 Methods and material for containment and cleaning up:

Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Contain spillage immediately by use of sand or inert powder. Dispose of according to local regulations.

6.4 Reference to other sections:

Also refer to sections 8 and 13.

Section 7. Handling and storage

7.1 Precautions for safe handling:

Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use personal protective equipment as required. Use in accordance with good manufacturing and industrial hygiene practices. Use in areas with adequate ventilation Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

7.3 Specific end use(s):

Fragrances: Use in accordance with good manufacturing and industrial hygiene practices.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits: Not Applicable

8.2 Exposure Controls

Eye / Skin Protection

Wear protective gloves/eye protection/face protection

Respiratory Protection

Under normal conditions of use and where adequate ventilation is available to prevent build up of excessive vapour, this material should not require special engineering controls. However, in conditions of high or prolonged use, or high

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temperature or other conditions which increase exposure, the following engineering controls can be used to minimise exposure to personnel: a) Increase ventilation of the area with local exhaust ventilation. b) Personnel can use an approved, appropriately fitted respirator with organic vapour cartridge or canisters and particulate filters. c) Use closed systems for transferring and processing this material.

Also refer to Sections 2 and 7.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Free flowing liquid without sediment
Odour:	Characteristic
Odour threshold:	Not determined
pH:	Not determined
Melting point / freezing point:	Not determined
Initial boiling point / range:	Not determined
Flash point:	> 93 °C
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Upper/lower flammability or explosive limits:	Product does not present an explosion hazard
Vapour pressure:	Not determined
Vapour density:	Not determined
Relative density:	1.0090 - 1.0190
Solubility(ies):	Not determined
Partition coefficient: n-octanol/water:	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined
Explosive properties:	Not expected
Oxidising properties:	Not expected

9.2 Other information:

Refractive Index @ 20C:	1.4764 - 1.4864
Flash Point (Fahrenheit):	> 200 °F
Calculated VOC:	0.00
Color Range:	3 Very Pale Yellow - 5 Pale Yellow

Section 10. Stability and reactivity

10.1 Reactivity:

Presents no significant reactivity hazard, by itself or in contact with water.

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In accordance with UN GHS latest edition

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10.2 Chemical stability:

Good stability under normal storage conditions.

10.3 Possibility of hazardous reactions:

Not expected under normal conditions of use.

10.4 Conditions to avoid:

Avoid extreme heat.

10.5 Incompatible materials:

Avoid contact with strong acids, alkalis or oxidising agents.

10.6 Hazardous decomposition products:

Not expected.

Section 11. Toxicological information

11.1 Information on toxicological effects

This mixture has not been tested as a whole for health effects. The health effects have been calculated using the methods outlined in UN GHS.

Acute Toxicity:	Based on available data the classification criteria are not met.
Acute Toxicity Oral	>5000
Acute Toxicity Dermal	>5000
Acute Toxicity Inhalation	Not Available
Skin corrosion/irritation:	Skin Corrosion / Irritation Category 3
Serious eye damage/irritation:	Eye Damage / Irritation Category 2
Respiratory or skin sensitisation:	Sensitization - Skin Category 1
Germ cell mutagenicity:	Based on available data the classification criteria are not met.
Carcinogenicity:	Based on available data the classification criteria are not met.
Reproductive toxicity:	Based on available data the classification criteria are not met.
STOT-single exposure:	Based on available data the classification criteria are not met.
STOT-repeated exposure:	Based on available data the classification criteria are not met.
Aspiration hazard:	Based on available data the classification criteria are not met.

Information about hazardous ingredients in the mixture

Ingredient	CAS	LD50/ATE Oral	LD50/ATE Dermal	LC50/ATE Inhalation	LC50 Route
Acetyl cedrene	32388-55-9	4500	Not available	Not available	Not available
Benzyl acetate	140-11-4	2490	Not available	Not available	Not available
Benzyl salicylate	118-58-1	2200	Not available	Not available	Not available
Geraniol	106-24-1	3600	Not available	Not available	Not available
Phenethyl alcohol	60-12-8	1610	2500	Not available	Not available

Refer to Sections 2 and 3 for additional information.

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In accordance with UN GHS latest edition

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Version: 7

Section 12. Ecological information

12.1 Toxicity:

Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability: Not available

12.3 Bioaccumulative potential: Not available

12.4 Mobility in soil: Not available

12.5 Other adverse effects: Not available

Section 13. Disposal considerations

13.1 Waste treatment methods:

Dispose of in accordance with local regulations. Avoid disposing into drainage systems and into the environment. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. Transport information

	14.1 UN number:	14.2 UN Proper Shipping Name:	14.3 Transport hazard class (es):	Sub Risk:	14.4. Packing Group:
UN Model Regulations	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Acetyl cedrene, 3-(5,5,6-Trimethylbicyclo[2.2.1] hept-2-yl)cyclohexan-1-ol)	9	-	III
IMDG	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Acetyl cedrene, 3-(5,5,6-Trimethylbicyclo[2.2.1] hept-2-yl)cyclohexan-1-ol) MARINE POLLUTANT	9	-	III
ADR,RID,ADN	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Acetyl cedrene, 3-(5,5,6-Trimethylbicyclo[2.2.1] hept-2-yl)cyclohexan-1-ol)	9	-	III
ICAO TI	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Acetyl cedrene, 3-(5,5,6-Trimethylbicyclo[2.2.1] hept-2-yl)cyclohexan-1-ol)	9	-	III

14.5 Environmental hazards: This is classified as an environmentally hazardous substance under the UN Model Regulations. This is classified as a Marine Pollutant under the IMDG Code.

14.6 Special precautions for user: None additional

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Not applicable

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Version: 7

Section 15. Regulatory information

Essential Oil Components:

Name	CAS	%
CLOVE LEAF OIL	8000-34-8	0.1-<1%
YLANG YLANG OIL # 3	999999-01-7	<0.1%
ORANGE OIL FLORIDA	8028-48-6	<0.1%

Additional formulation properties

Name	CAS	%
Vanillin	121-33-5	0.1-<1%

Components listed on California's SB312

Name	CAS	%
BENZYL SALICYLATE (R)	118-58-1	5-<10%
LYRAL	31906-04-4	5-<10%
METHYL IONONE GAMMA	127-51-5	5-<10%
HYDROXYCITRONELLAL	107-75-5	1-<5%
GERANIOL 980	106-24-1	1-<5%
EUGENOL	97-53-0	0.1-<1%
CINNAMIC ALCOHOL (R)	104-54-1	0.1-<1%
LINALOOL	78-70-6	0.1-<1%
COUMARIN (C)	91-64-5	0.1-<1%
BENZYL BENZOATE	120-51-4	0.1-<1%
AMYL CINNAMIC ALDEHYDE	122-40-7	0.1-<1%
HEXYL CINNAMIC ALDEHYDE (R)	101-86-0	0.1-<1%
CITRAL	5392-40-5	<0.1%
CINNAMIC ALDEHYDE	104-55-2	<0.1%

US Department Of Transport Bulk Packing Group: -

Naturally-Occuring Materials on Prop65:

Name	CAS	%
Myrcene	123-35-3	

Section 16. Other information

Concentration % Limits: SCI 3=27.31% EDI 2A=29.46% SS 1=1.27% EH A2=16.74% EH A3=1.66% EH C2=27.96% EH C3=2.77% EH C4=87.75%

Total Fractional Values: SCI 3=3.66 EDI 2A=3.39 SS 1=78.60 EH A2=5.97 EH A3=60.19 EH C2=3.58 EH C3=36.16 EH C4=1.14

Key to revisions:

SECTION 3: Composition/information on ingredients

SAFETY DATA SHEET

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Product: Compare To CHANEL # 5 by Coco Chanel ® F21987

Version: 7

Key to abbreviations:

Abbreviation	Meaning
Acute Tox. 4	Acute Toxicity - Oral Category 4
Acute Tox. 4	Acute Toxicity - Dermal Category 4
Acute Tox. 4	Acute Toxicity - Inhalation Category 4
Acute Tox. 5	Acute Toxicity - Oral Category 5
Aquatic Acute 1	Hazardous to the Aquatic Environment - Acute Hazard Category 1
Aquatic Acute 2	Hazardous to the Aquatic Environment - Acute Hazard Category 2
Aquatic Acute 3	Hazardous to the Aquatic Environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the Aquatic Environment - Long-term Hazard Category 1
Aquatic Chronic 2	Hazardous to the Aquatic Environment - Long-term Hazard Category 2
Aquatic Chronic 3	Hazardous to the Aquatic Environment - Long-term Hazard Category 3
Aquatic Chronic 4	Hazardous to the Aquatic Environment - Long-term Hazard Category 4
Asp. Tox 1	Aspiration Hazard Category 1
Eye Dam. 1	Eye Damage / Irritation Category 1
Eye Irrit. 2	Eye Damage / Irritation Category 2
Eye Irrit. 2A	Eye Damage / Irritation Category 2A
Eye Irrit. 2B	Eye Damage / Irritation Category 2B
Flam. Liq. 4	Flammable Liquid, Hazard Category 4
H227	Combustible liquid.
H302	Harmful if swallowed.
H303	May be harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H313	May be harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H320	Causes eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H401	Toxic to aquatic life.
H402	Harmful to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.
P210	Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P261	Avoid breathing vapour or dust.

SAFETY DATA SHEET

In accordance with UN GHS latest edition

Product: Compare To CHANEL # 5 by Coco Chanel ® F21987

Version: 7

P264	Wash hands and other contacted skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/eye protection/face protection.
P301/310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301/312	IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell.
P302/352	IF ON SKIN: Wash with plenty of soap and water.
P304/340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P330	Rinse mouth.
P331	Do not induce vomiting.
P332/313	If skin irritation occurs: Get medical advice/attention.
P333/313	If skin irritation or rash occurs: Get medical advice/attention.
P337/313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P370/378	In case of fire: Use carbon dioxide, dry chemical, foam for extinction.
P391	Collect spillage.
P403/233	Store in a well-ventilated place. Keep container tightly closed.
P403/235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to approved disposal site, in accordance with local regulations.
STOT SE 3	Specific Target Organ Toxicity (Single Exposure) Category 3
Skin Irrit. 2	Skin Corrosion / Irritation Category 2
Skin Sens. 1	Sensitization - Skin Category 1
Skin Sens. 1A	Sensitization - Skin Category 1A
Skin Sens. 1B	Sensitization - Skin Category 1B

The information in this safety data sheet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.

From: Adam Wilde
To: Wendie Kellington
Cc: Chuck Kaady
Subject: Response to former Kaady employees
Date: Tuesday, March 31, 2026 4:36:37 PM

Good afternoon Wendie,

My name is Adam Wilde, and I am the General Manager of Kaady Car Washes. Mr. Kaady asked me to respond to claims made by former employees.

Mr. Kaady confirmed that all concerns regarding noise levels and water runoff have been reviewed and addressed the experts.

Regarding the claims made by Roxanna Khorsravi and Lyra Harbour about employees being present in the wash bay during operational hours, our company policy strictly prohibits this. Employees are only permitted to enter the car wash area when the equipment is off. All cleaning tasks and inspections are conducted exclusively while the car wash is not in operation.

With respect to Lyra Harbour's concerns about noise levels:

Concerning the allegation that noise levels frequently exceed OSHA's 8-hour exposure limits, we adhere to all OSHA requirements. This includes conducting baseline audiometric hearing tests at the time of employment and requiring annual follow-up testing. We also provide and require hearing protection for all employees. Additionally, all employees are required to wear approved non-slip footwear at all times.

For context, Lyra Harbour was employed with us for less than one week and worked only four shifts. She was still in training when she stopped showing up for work.

Please let know if there is anything else you need.

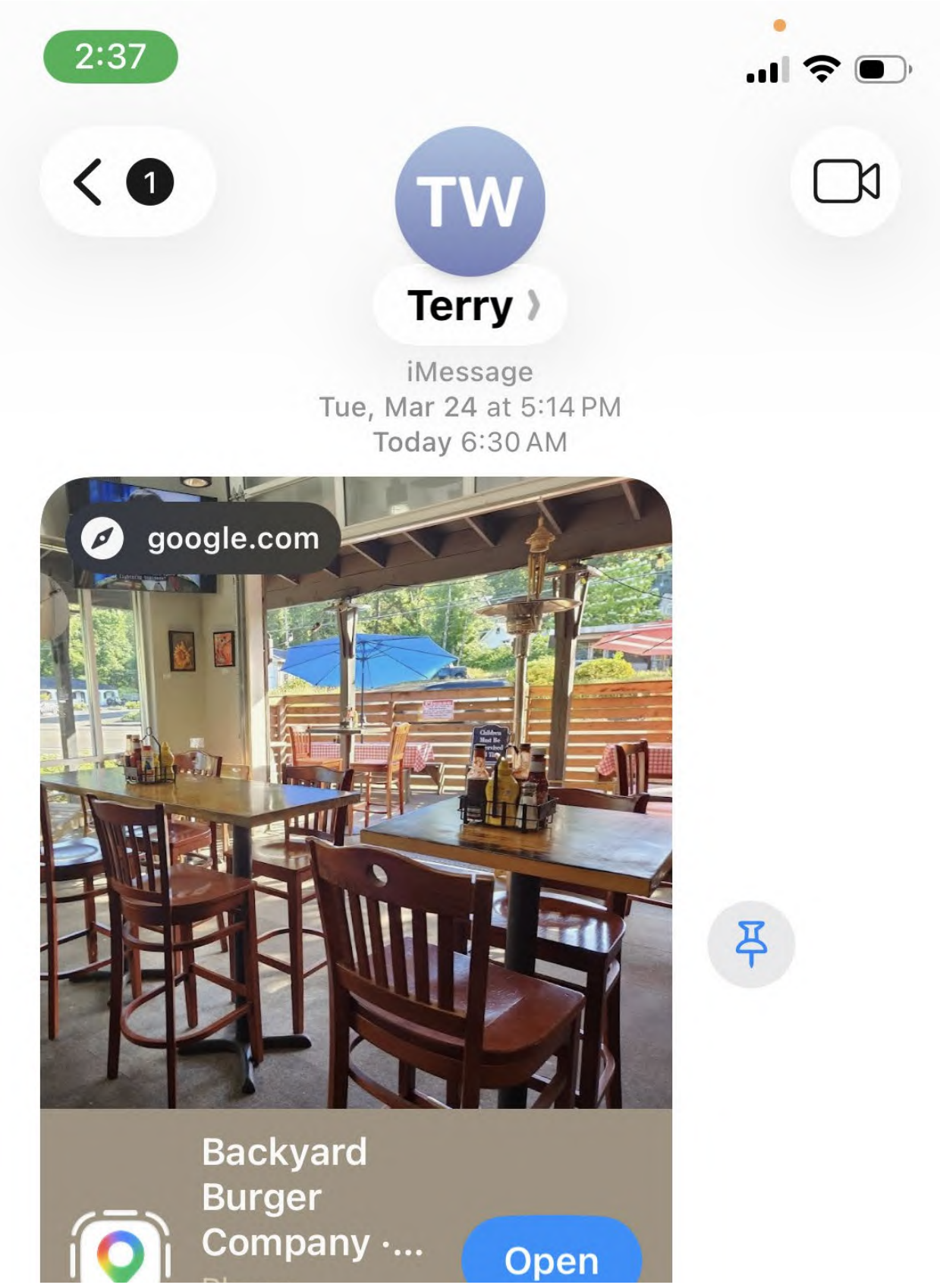
Regards,

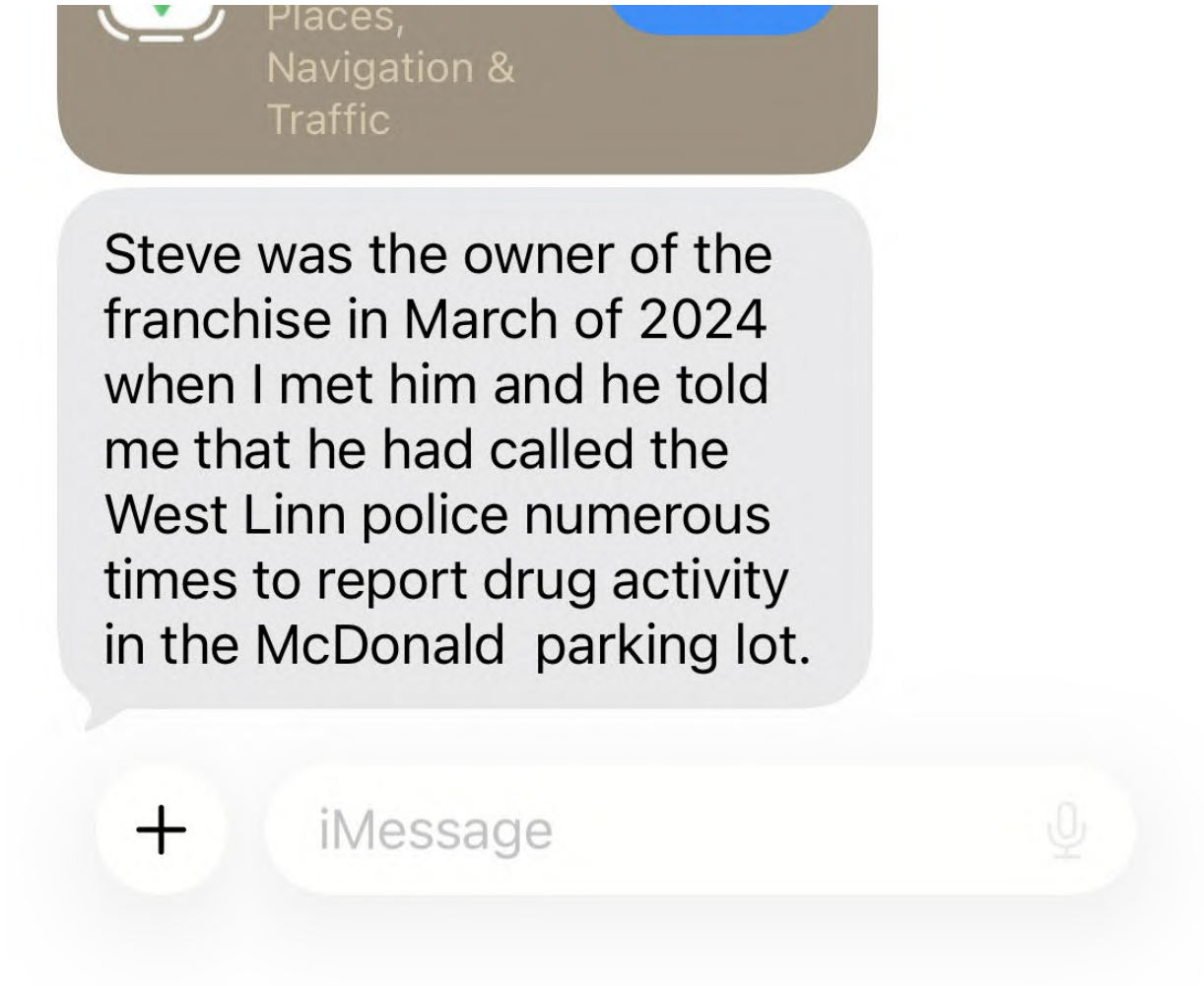
ADAM WILDE
General Manager of Operations

KAADY CAR WASHES
2545 SW SPRING GARDEN STREET SUITE 200
PORTLAND, OR 97219

503.793.1397 Cell
503.246.7735 Office
503.245.0851 Fax
awilde@kaady.com

From: Chuck Kaady
To: Wendie Kellington
Date: Tuesday, March 31, 2026 2:44:28 PM
Attachments: IMG_0452.PNG





Sent from my iPhone

Wendie Kellington

Subject: FW: Cars in McDonalds parking lot 2024

From: Terry Ward <terrywardre@gmail.com>
Sent: Tuesday, March 31, 2026 6:02 PM
To: mike.berrey@berreyproperties.com <mike.berrey@berreyproperties.com>; Chuck Kaady <ckaady@kaady.com>
Subject: Cars in McDonalds parking lot 2024

Mike and Chuck,

I had spoken in December 2024 to the previous owner of the BACKYARD BURGER COMPANY Franchisee Steve located at 18750 Willamette Dr. West Linn Oregon. He said that he would like to see the McDonalds site occupied by another business as soon as possible as he had made numerous calls to the West Linn Police to report on suspicious drug activity in the parking lot of other cars comings and goings to a parked car doing business as soon as the sun set. I called December 18, 2024 and left word on Mike Berrey's (owner of the retail center north of McDonalds') answer machine of this activity.

Terry

Tenor | Elevating acoustical design.

WEST LINN – KAADY CAR WASH

ENVIRONMENTAL NOISE IMPACT STUDY

Submitted to:

Kaady Car Washes
2545 SW Spring Garden St
Portland, OR 97219

TVA Architects
1750 SW Yamhill St Suite 150
Portland, OR 97205

Prepared by:

Tenor Engineering Group
811 1st Ave, Suite 466
Seattle, WA 98104

April 1, 2026

KAADY CAR WASHES

TABLE OF CONTENTS

1 Executive Summary

This report is a summary of the environmental noise impact assessment for the proposed Kaady Car Wash located at 18850 Willamette Drive in West Linn, Oregon. This facility, a one-story, 3,190 square foot automatic drive-through car wash with supplemental vacuum cleaning stations, is proposed for a site previously occupied by a McDonald's drive-through restaurant.

As required by the West Linn Community Development Code (CDC) 5.487, this assessment evaluates potential acoustical impacts by comparing predicted noise emissions from the proposed equipment against pertinent regulations established by the City of West Linn This study also evaluates predicted noise emissions under the administrative rules of the State of Oregon Department of Environmental Quality (DEQ).

The evaluation utilizes ambient sound level data obtained from the existing site as well as acoustic testing of car wash and vacuum systems performed at three other Kaady Car Washes in the Portland area. This data was then used to create a software model that predicts noise from the proposed car wash to adjacent areas and properties that considers the varying CMU height and topography.

As a result of the evaluation, it is determined that:

1. Predicted noise from the proposed facility will meet the West Linn noise ordinance to all sensitive receptors.
2. Predicted noise from the proposed facility will meet the OAR DEQ daytime and nighttime L50 noise limit to all residential receivers, though the business will only operate during daytime hours.
3. Predicted noise impact will make the business operations barely or not perceptible to any residential neighbor.
4. Predicted noise impact to the nearest businesses (to the north) will not be perceptible through the storefront windows and doors, and slightly perceptible above traffic noise at the sidewalk outside the businesses the furthest east from Highway 43.

Based on questions and input from the planning commission meeting, Kaady Car Wash specific vacuum hose noise measurements were completed on March 21, 2026, and integrated into the noise impact predictions; the sound level at the nearest building facades and residences did not change. The sound transmission performance for glass wall/façade panels, in lieu of CMU or metal panels, to the south and west was evaluated to demonstrate no acoustical difference due to the primary paths of noise being at the car wash tunnel exit and entrance. Adding sound absorptive wall panels to the modified tunnel exit was evaluated and showed an additional 3 dBA noise reduction to the northeastern shopping center businesses, to make the planned car wash blowers barely audible above the traffic noise from Highway 43 at those northeastern shopping center businesses.

2 Noise Code

2.1 West Linn Municipal Code (WLMC Section 5.487)

The WLMC Section 5.487 explicitly finds that low and moderate ambient noise levels are a significant City amenity and establishes standards to protect the livability, health, comfort, and welfare of its residents.

2.1.1 General Prohibition and Factors

WLMC 5.487 generally prohibits any unreasonably loud, disturbing, or raucous noise, or any noise that unreasonably annoys, disturbs, or endangers the comfort, repose, health, safety, or peace of reasonable persons of ordinary sensitivity.
Factors considered in judging whether a sound is unreasonably loud, disturbing, and unnecessary include:

1. The proximity of the sound to sleeping facilities, whether residential or commercial.
2. The land use, nature, and zoning of the area where the sound emanates and where it is received or perceived.
3. The time of day or night the sound occurs.
4. The duration of the sound.
5. Whether the sound is recurrent, intermittent, or constant.

2.1.2 Prohibited Hours

The operation of the proposed car wash, running from 8:00 AM to 8:00 PM, falls entirely within the permissible hours for general operational noise in West Linn, which prohibits unreasonably loud and raucous noise between 9:00 PM and 7:00 AM.

2.2 Clackamas County Noise Control (Chapter 6.05)

The Clackamas County noise regulations apply to the unincorporated areas of Clackamas County. The proposed facility will be established within incorporated City of West Linn. Therefore, the Clackamas County noise regulations do not apply. Regardless, it is noted that

County Code section 6.05.060(F) specifies that sounds caused by industrial or commercial organizations or workers during their normal operations are exempted from the provisions of Chapter 6.05. Therefore, the Clackamas County code would not apply in any event because all sound produced by the proposed facility will caused by a commercial organization during normal operations.

2.3 Oregon Administrative Rules (OAR 340-035)

Oregon Administrative Rules (OAR), Department of Environmental Quality (DEQ), Chapter 340, Division 35: Noise Control Regulations dictate overall noise guidelines, while OAR 340-035-0035: Noise Control Regulations for Industry and Commerce more specifically applies to the West Linn car wash site. The proposed car wash facility falls under the classification of a "New Industrial or Commercial Noise Source" per OAR 340-035-0015: Definitions. Because the site was previously utilized commercially (McDonald's drive-through restaurant), the appropriate reference criteria are generally found under the standards for new noise sources located on previously used sites, as defined by 340-035-0035.

Noise levels from industrial or commercial sources are measured at an appropriate measurement point on Noise Sensitive Property. Noise Sensitive Property includes real property normally used for sleeping, or normally used as schools, churches, hospitals, or public libraries. Measurement procedures must conform to the guidelines set forth in the Sound Measurement Procedures Manual (NPCS-1).

2.3.1 New Industrial and Commercial Noise Source Standards

The allowable statistical noise levels for new industrial and commercial noise sources, applicable in any one hour, are detailed below:

DEQ State of Oregon Department of Environmental Quality

OAR 340-035-0035
Table 8
New Industrial and Commercial Noise Source Standards
Allowable Statistical Noise Levels in Any One Hour

7:00 a.m. – 10:00 p.m.	10:00 p.m. – 7:00 a.m.
L_{50} – 55 dBA	L_{50} – 50 dBA
L_{10} – 60 dBA	L_{10} – 55 dBA
L_1 – 75 dBA	L_1 – 60 dBA

Note: L50 is the noise level equaled or exceeded 50% of the time, L10 is exceeded 10% of the time (or 6 minutes in any hour), and L1 is exceeded 1% of the time (or 36 seconds in any hour).

> (B)(i) No person owning or controlling a new industrial or commercial noise source located on a previously unused industrial or commercial site shall cause or permit the operation of that noise source if the noise levels generated or indirectly caused by that noise source increase the ambient statistical noise levels, L10 or L50, by more than 10 dBA in any one hour, or exceed the levels specified in Table 8, as measured at an appropriate measurement point, as specified in subsection (3)(b) of this rule.

3 Environmental Noise Site Assessment

3.1 Proposed Site

The site at 18550 Willamette Dr is a General Commercial (GC) zoned parcel situated on a topographic bench along the east side of Highway 43. The site is characterized by a relatively flat paved surface that terminates at a Concrete Masonry Unit (CMU) wall and a distinct grade break on the eastern boundary, where the terrain slopes steeply downward toward the Willamette River. The CMU wall performance was evaluated based on the varying height along the property line and the topography of the site and adjacent properties; the barrier was modeled at 6’-0” from the proposed tunnel to the north and 4’-0” aligned with the sloping topography to the south.

To the east and southeast lie the residential properties of Walling Way and Rose Way. These lots are terraced significantly below the commercial grade, placing the residential rooftops and backyards well below the elevation of the parking lot. Notably, the slope and residential lots are covered in dense, mature vegetation and tree canopy, which largely visually screens the CMU wall from the residents below.

Surrounding properties and areas are zoned as follows:

- **West (across roadway):** Highway 43 and properties immediately west are zoned GC (commercial) with the properties further west up the slope being zoned for Low-Medium Density Residential (R-10 or R-8.5).
- **East (shared property line with CMU wall):** The zoning shifts to Low-Medium Density Residential (R-10/R-15). This boundary is critical for noise ordinances, as it directly borders a noise-sensitive residential zone.
- **North/South:** Commercial/Office strips zoned GC.

Figure 1 below shows the general layout of the existing site, while Figure 3 shows the zoning.

Figure 1: Existing Site and Neighboring Area Layout

Site boundaries

Ambient sound monitoring location

Figure 2: Zoning Boundaries and Types

General Commercial(GC)

Low-Medium Density Residential

From a noise impact standpoint, the CMU wall with the existing topography provides the primary noise reduction from the site to the residential neighbors. The construction of the wall uses high-mass (CMU) and is continuous which blocks the direct line-of-sight between noise sources on the lot and from the west (such as automobile traffic on Highway 43) and the lower-elevation residences. This creates an acoustical shadow immediately behind the wall, preventing direct sound transmission, so that the primary sound energy is diffracted over the barrier based on the source – path – receiver geometry.

While the dense vegetation provides a visual buffer, its acoustic impact is much more limited in comparison to the CMU wall. The effectiveness of vegetation as a barrier is based on the year-round thickness and the overall depth of the foliage the sound energy travels through. In general, it takes more than 100 feet of thick vegetation to reduce sound energy by 15% (~3 dB). The sound reduction of the existing vegetation was not considered in this acoustical impact study due to the limited thickness.

3.2 Ambient Noise Assessment

An environmental noise monitor was deployed on the site of the proposed future car wash tunnel entrance on Monday, November 3, 2025, during daytime business hours (8:00 am - 3:25 pm) above the eastern CMU wall dividing the existing site parking lot from residential properties. The approximate location is shown in Figure 2. Measurements were used to calibrate the ambient traffic noise in the environmental computer noise impact model. The hourly average sound level ranged from 56 to 62 dBA; the primary noise sources were vehicle traffic on Willamette Drive to the west / southwest and Walling Way to the south / southeast. The loudest hourly increment (62 dBA) occurred from 1:00 pm to 2:00 pm.

Additional ambient sound readings were also taken that morning on Walling Way to better understand existing conditions in the residential area to the east of the site. The measurements were taken from the site's south parking lot exit onto Walling and east to the intersection with Rose Way. The sound levels ranged from 57 to 44 dBA as distance from Willamette Drive (the primary noise generator) increased.

Project site looking north

Noise Monitoring location near ladder

Handheld measurements of Highway 43

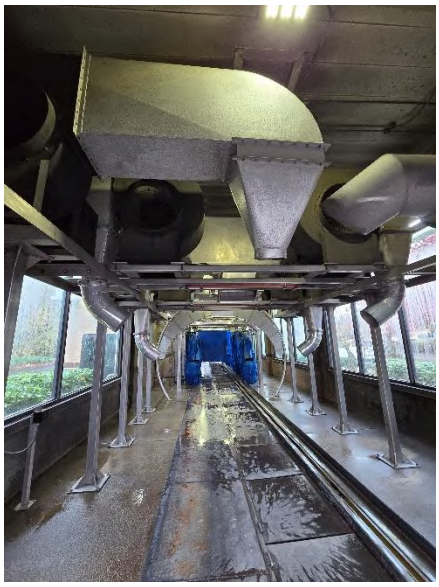
4 Environmental Noise Impact

4.1 Noise Emission from Proposed Equipment

Our 3D computer model of the sound emission and analysis used sound data from measurements at existing Kaady Car Washes and Sonny's Car Washes in Phoenix, Arizona. The measured sound data is shown in the table below.

Measured Equipment and Sources	Sound Pressure Level, Leq (dBA)
Centrifugal Blowers *Source: Kaady, W Burnside St, Portland*	79 dBA @ 36-feet from tunnel exit
Wash Systems (no blowers) *Source: Kaady, W Burnside St, Portland*	68 dBA @ 27-feet from tunnel entrance
Centrifugal Vacuum Producer *Source: Kaady, Hillsboro*	68 dBA @ 5-feet from equipment room louver
Vacuum Hoses *Source: Kaady, Hillsboro*	82 dBA @ 2-ft
Cars and Trucks idling in line *Source: Sonny's Car Wash, Phoenix*	< 55 dBA @ 30-feet

Pictures from testing of comparable Kaady Car Wash systems to integrate into 3D topographical noise impact computer model.



End of Tunnel at Tualatin

Blower equipment at Tualatin

Vacuum Collector Doghouse

Vacuum Collector at Hillsboro

Vacuum Hose (3/21/26)

Tunnel at Hillsboro

4.2 Computer Noise Impact Model and Prediction

Noise from the car wash was modeled using the DataKustik CadnaA noise prediction software and predicted to all adjacent property lines. The predicted car wash noise levels are compared to the predicted daytime average ambient noise levels due to traffic at each of these receiver locations; calibrated from on-site environmental noise monitoring. The modeled noise sources include the entrance and exit of the car wash with blowers inside the tunnel, (2) vacuum producer units, and vacuums at each parking stall.

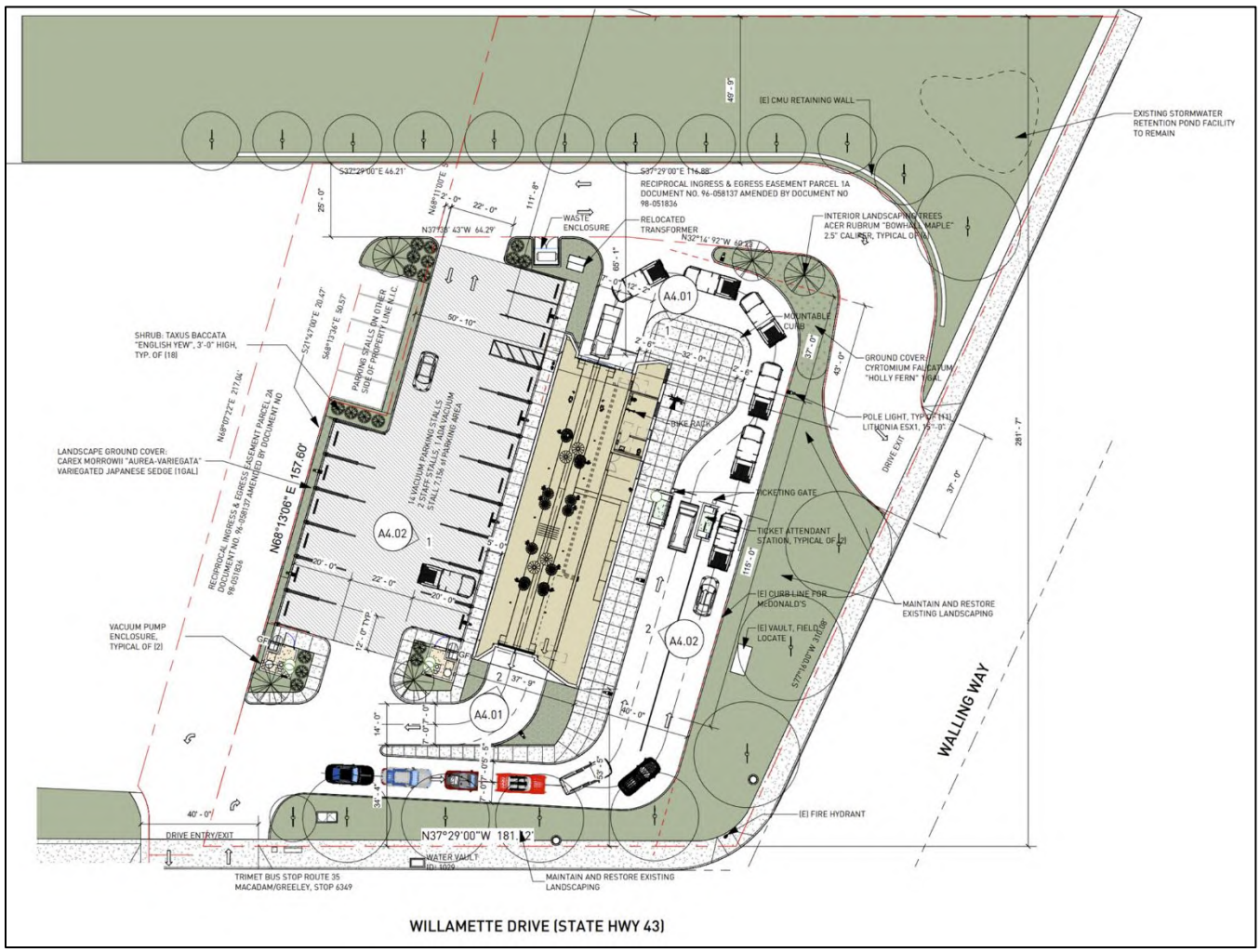


Figure 3: Proposed Car Wash Site Plan

4.3 Initial Design (Without Mitigation)

The following shows the predicted noise impact of the preliminary car wash design without noise mitigation measures.

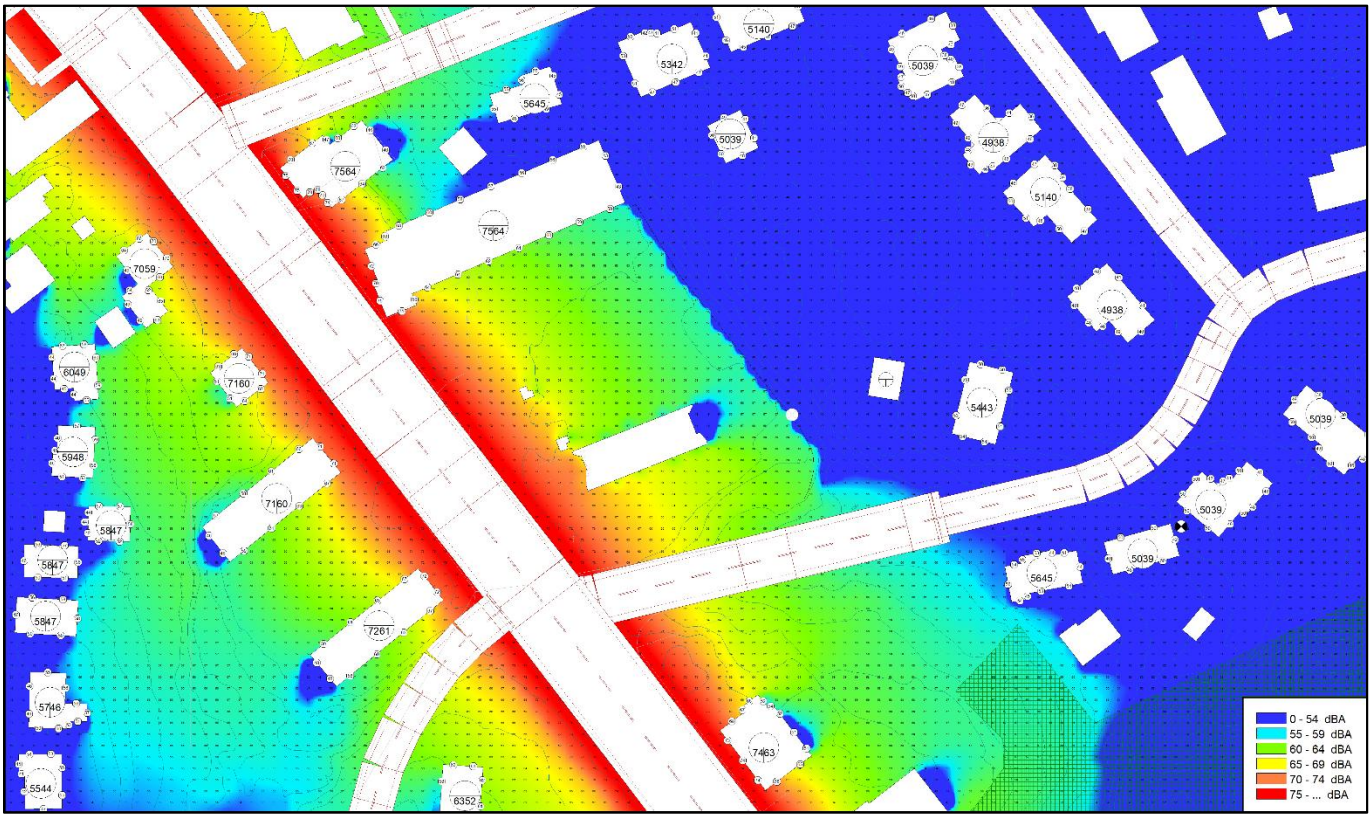


Figure 4: Background Traffic Noise Impact at Proposed Car Wash Site (Car Wash OFF)

Figure 4 shows existing traffic noise impact at the site location. The traffic noise was modeled using traffic data from the Oregon Traffic Monitoring System and calibrated with the daytime sound level measurements taken on the east boundary of the site. Traffic noise was modeled for Willamette Drive / Highway 43, but not for the residential street, Walling Way, due to a lack of available traffic data and observations of less than a few vehicles during the on-site assessment. Traffic noise is most commonly associated with major roadways and arterials.

The predicted noise is color mapped to coded (**red** depicts sound levels greater than 75 dBA, **blue** depicts sound levels less than 54 dBA). Buildings may have a circle two numbers inside. The left number is the loudest predicted daytime hourly noise level at any point on the building's facade. The right number is the loudest predicted hourly nighttime noise level at any point on the building's facade.

Existing background noise is predicted to be around 70 dBA at the proposed exit to the car wash site from traffic from Willamette Drive / Highway 43 before operating any car wash equipment.

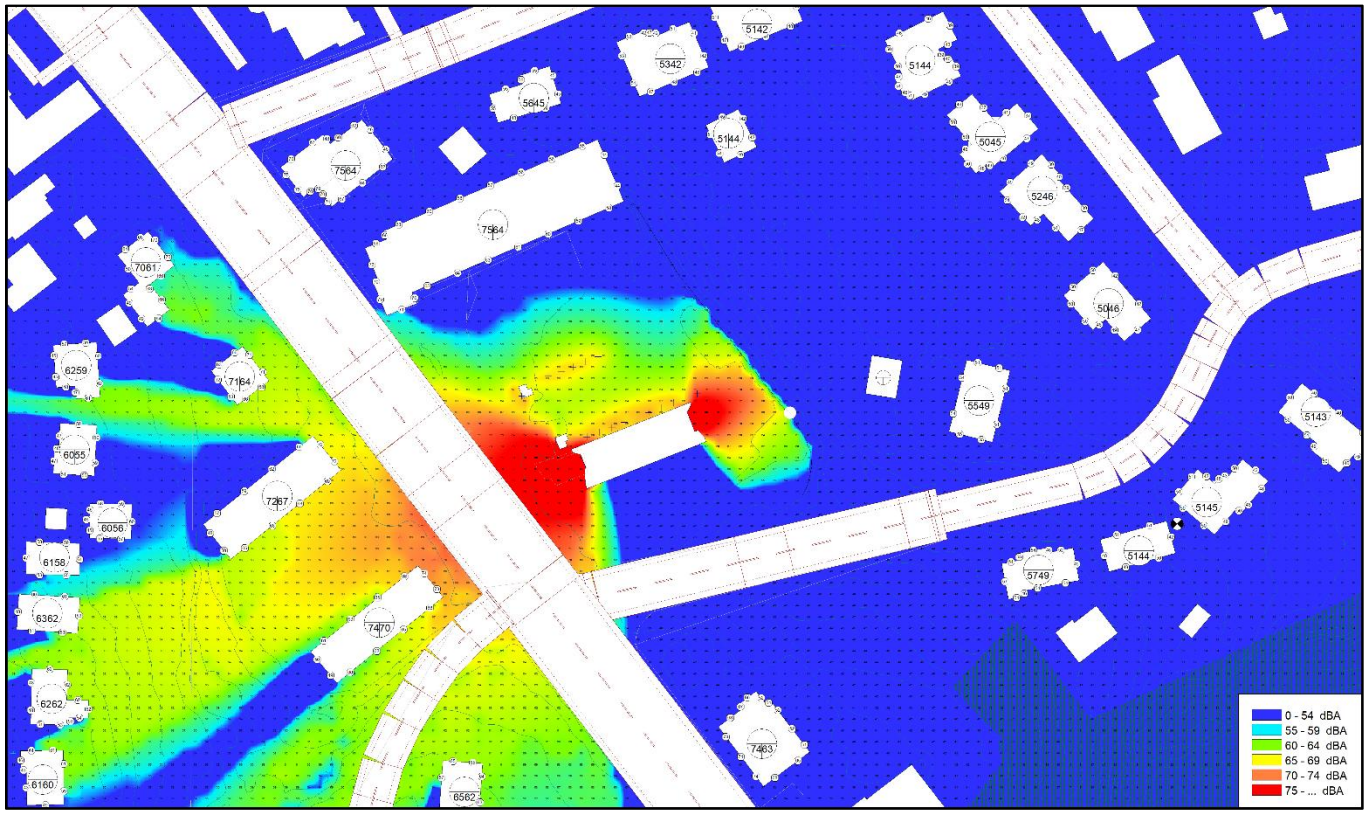


Figure 5: Predicted Noise Impact from Car Wash Activities Without Mitigation (not including traffic noise)

Figure 5 shows the predicted sound impact from the car wash system (including blowers) and enclosed vacuum collectors, excluding traffic noise. This noise impact model assumes sound levels coming from the tunnel are comparable to those measured at the existing Kaady Car Wash locations used as reference and include the continuous operation of two (2) vacuum producers and fifteen (15) vacuum hoses running simultaneously.

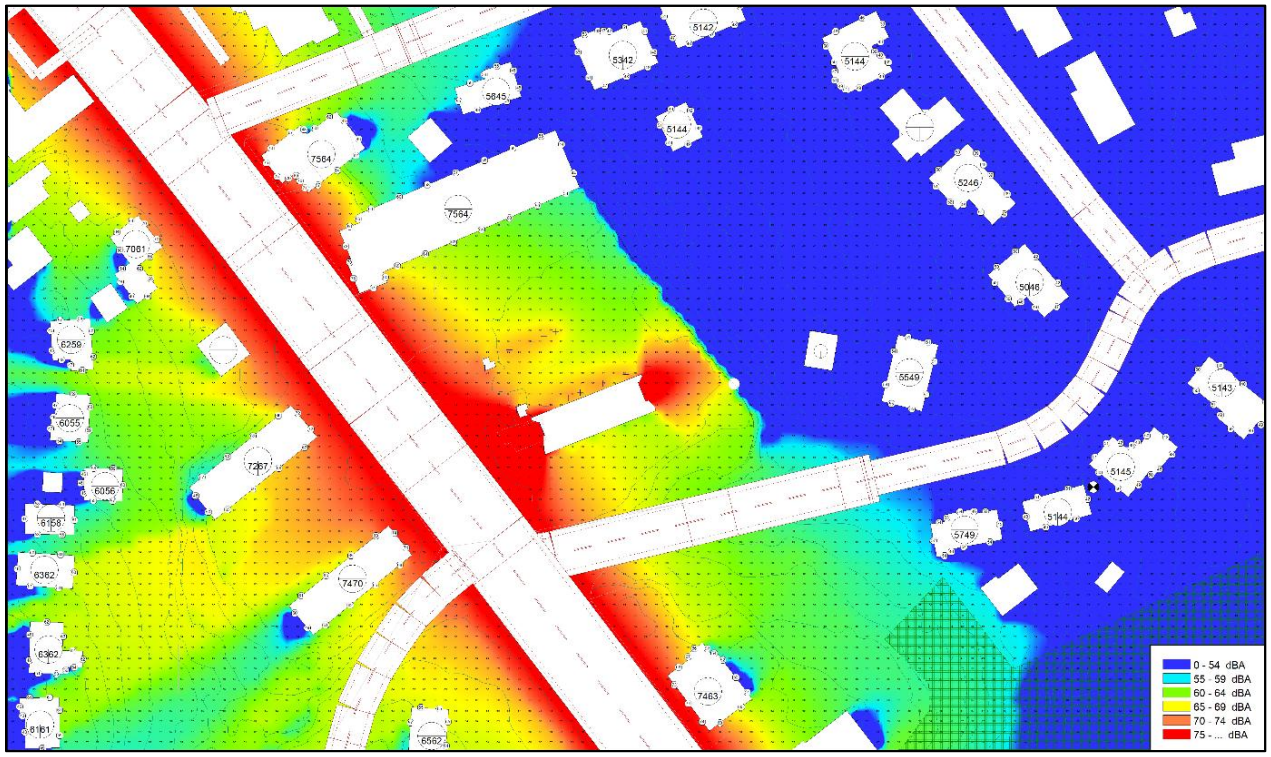


Figure 6: Predicted Noise Impact from Car Wash Activities Without Mitigation, Including Traffic Noise

Figure 6 shows the combined predicted noise impact of car wash activities and traffic noise. This noise impact model sums the car wash operations with daytime traffic noise.

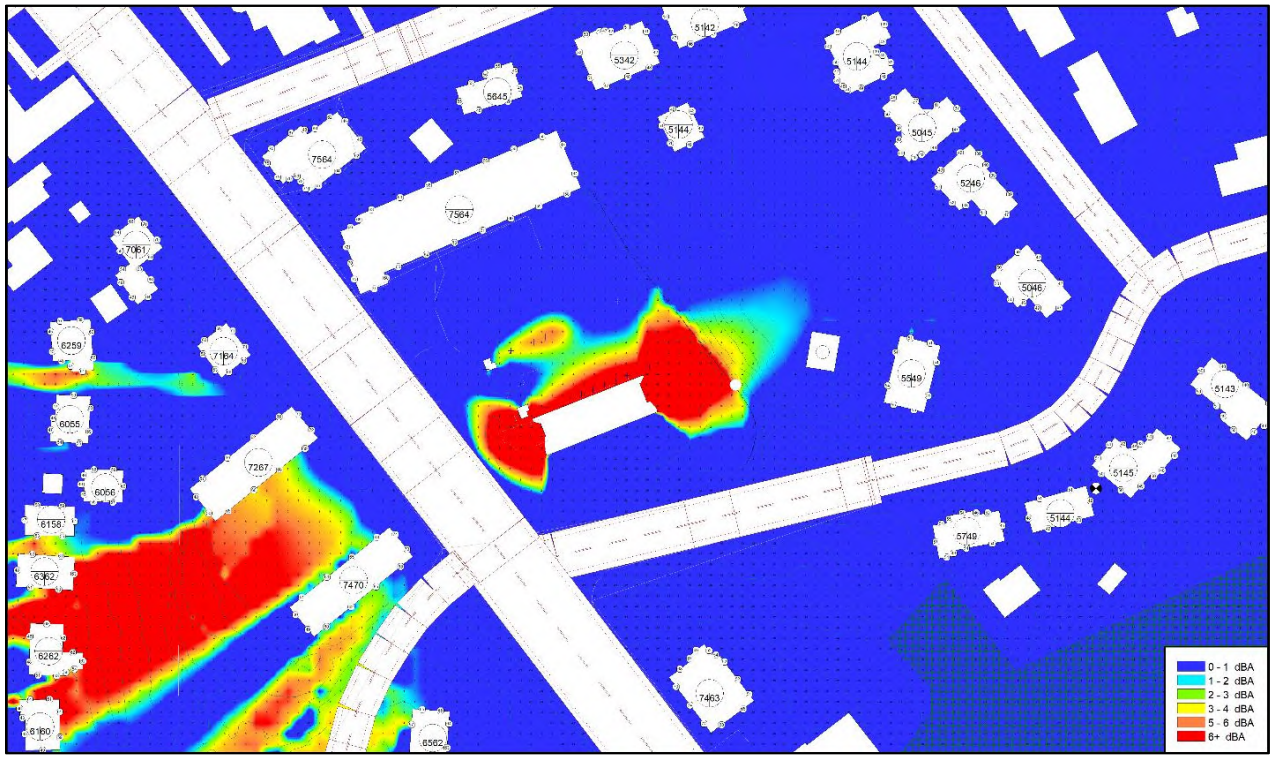


Figure 7: Predicted Noise Level Difference with Addition of Car Wash Without Mitigation to Existing Traffic Noise

Figure 7 shows the predicted overall change in noise with the addition of the car wash to the existing traffic noise before additional mitigation. The yellow, orange, and red colors on the map represent decibel level increases of 3 to more than 6 dB, which might be perceptible to these property owners and users when the car wash systems are operating at 100% without noise controls.

4.4 Noise Control Plan

The following noise control plan has been engineered to further reduce the noise impact shown on the above figures to meet the Oregon Administrative Rules L50 statistical noise levels for new commercial noise sources.

4.4.1 Redesigned Tunnel Exit

To address the noise impact to the residences to the west up the hill, an enclosed turn to the west end of the car wash tunnel was engineered. The following is the proposed coordinated design by TVA Architects.

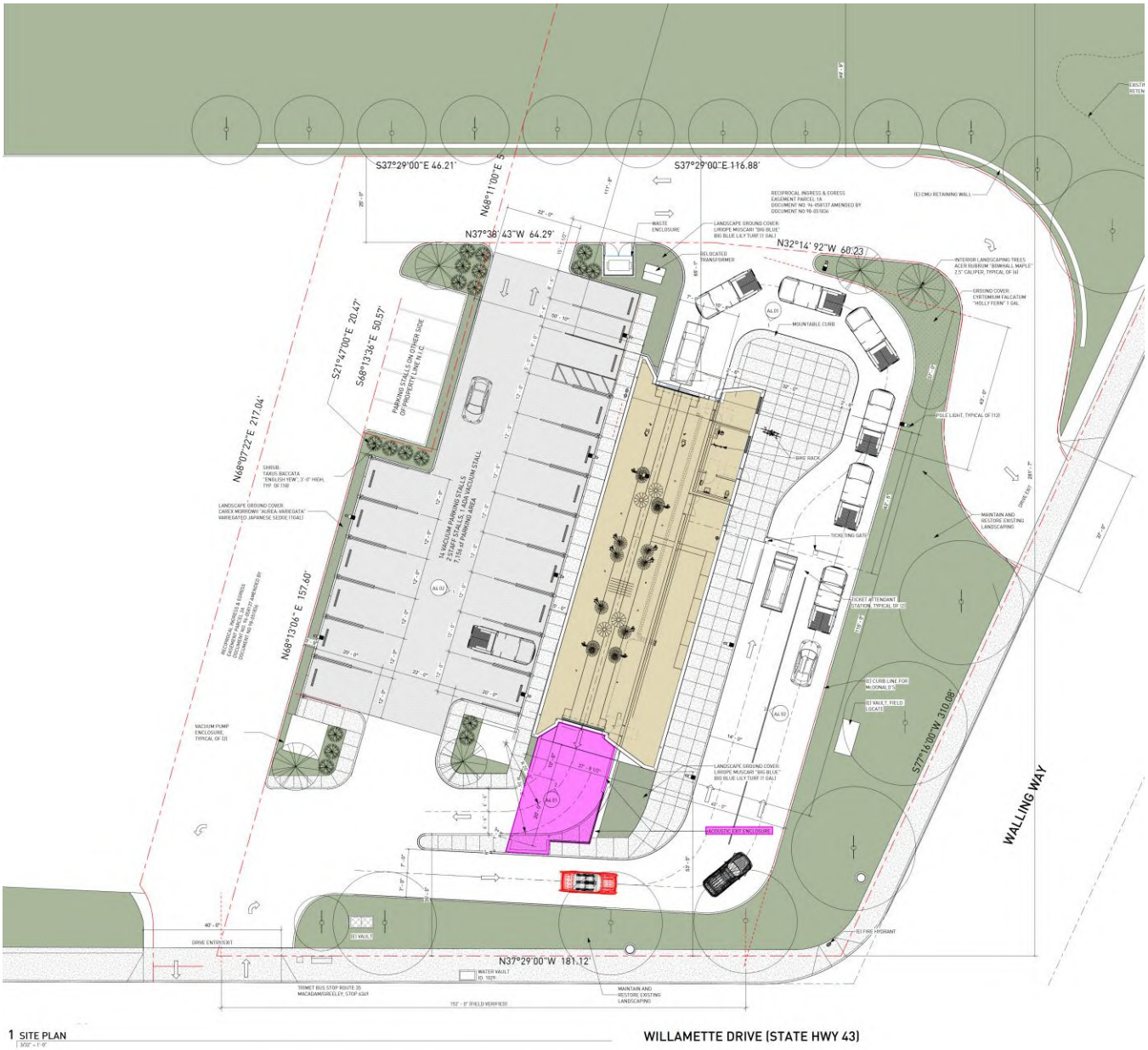


Figure 8: Updated Site Plan

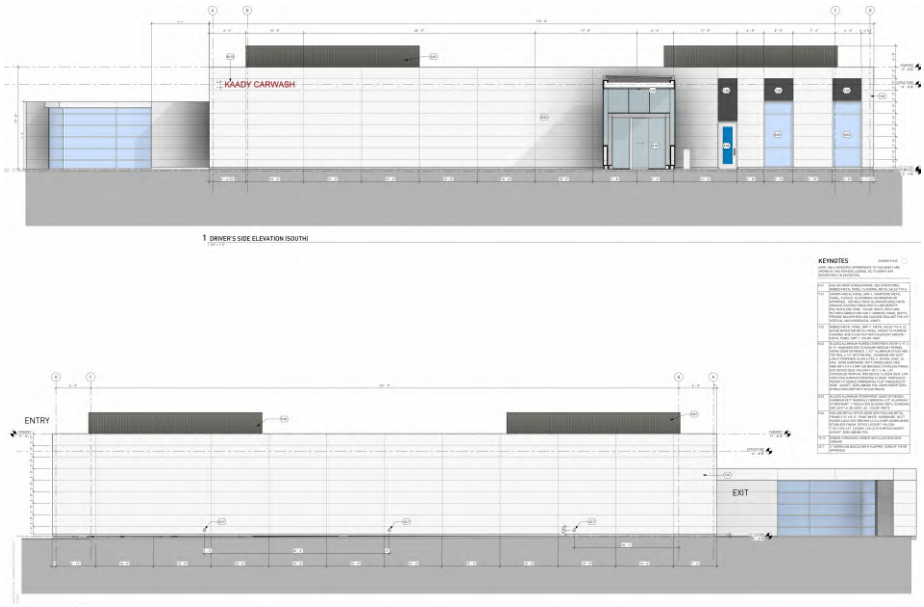


Figure 9: Exterior Elevation Drawings (TVA Architects)

Figure 10 shows the predicted noise impact from the tunnel exit modification to the surrounding properties without traffic noise. Noise from the tunnel exit modification is predicted to be less than 55 dBA at the western residences, less than 60 dBA at the commercial properties across the street, and up to 65 dBA at the sidewalk outside the nearest north commercial storefronts.

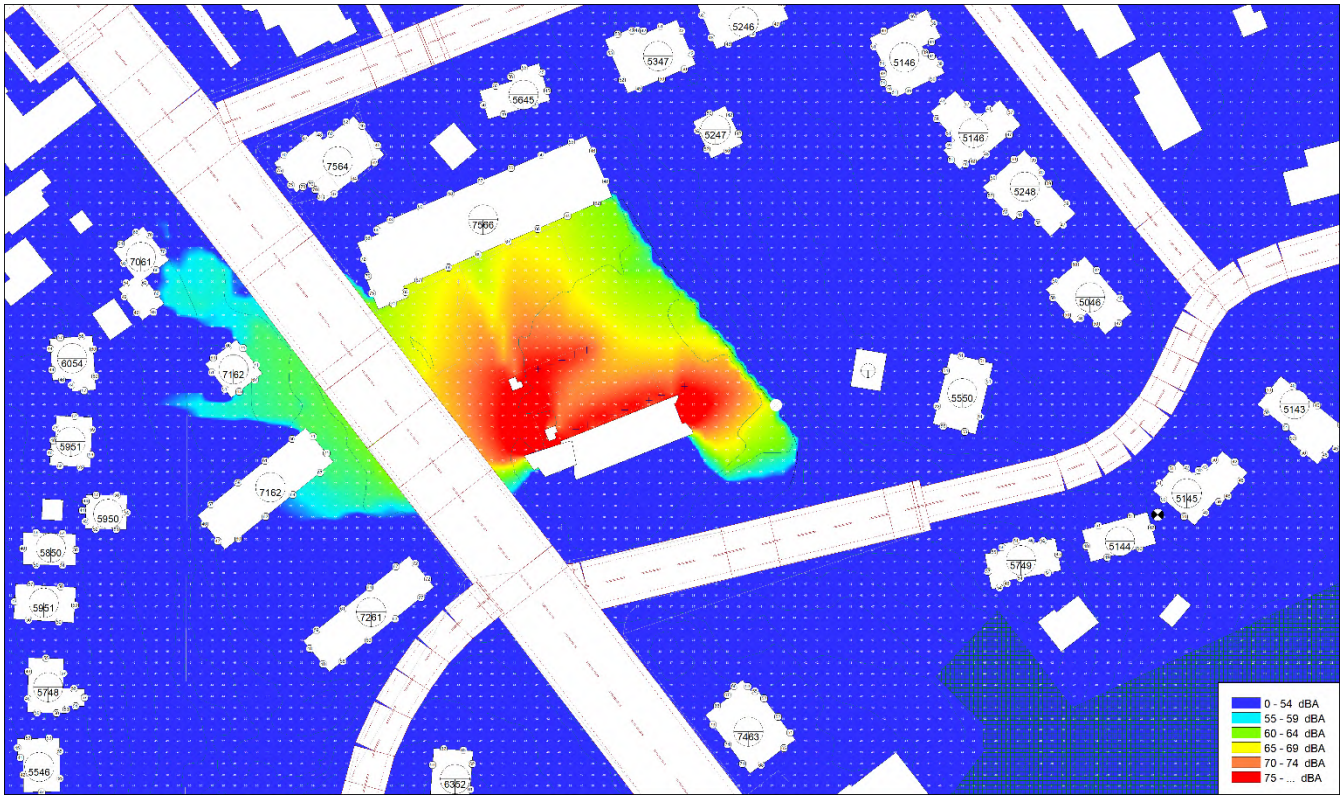


Figure 10: Predicted Noise Level Impact with Tunnel Exit Modification

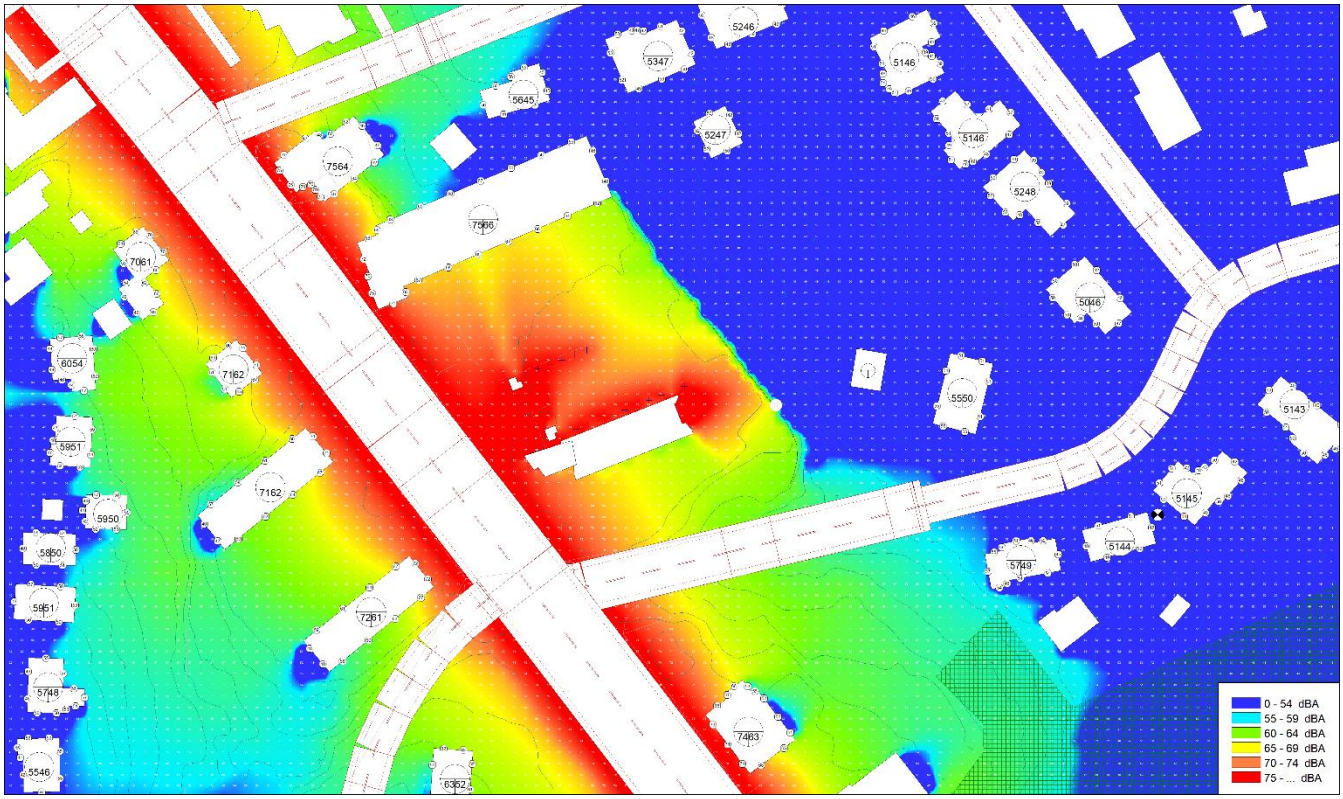


Figure 11: Predicted Noise Impact from Car Wash Activities, Including Traffic Noise, with Tunnel Exit Modification

Figure 11 shows the combined predicted noise impact from the tunnel exit modification to the surrounding properties and traffic noise. The following provides a description of the expected noise impact based on the modeling results of the noise control plan.

4.4.1.1 North, Northwest, South, and Southeast - General Commercial Zones

The noise impact model predicts that the sound level at the nearest commercial properties around the proposed car wash will be not perceptible (western portion of strip mall, and all properties across a roadway from the site) to somewhat perceptible (eastern portion of the strip mall) with respect to existing traffic noise based on the traffic volumes and the planned orientation of the car wash tunnel.

4.4.1.2 East / Northeast Residential Zone

The noise impact model predicts that the sound level at the nearest residential properties to the east, northeast, and southeast are predicted to be less than 55 dBA, which meets the OAR 340-035-0035 limit of 55 dBA (L_{50}) to noise-sensitive properties. Pre-construction ambient levels in this area were modeled in the 48–52 dBA range. The car wash operations might be barely perceptible in the furthest west portions of the yards for the residential properties to the east, but will not be perceptible at any residential building, or within a residence with the windows open.

4.4.1.3 West / Southwest Commercial and Residential Zones

The noise impact model predicts that the sound level at the nearest commercial properties will not exceed traffic noise.

The noise impact model predicts that the sound level at the nearest residential properties to the west up the hill are predicted to be less than 55 dBA, which meets the OAR 340-035-0035 limit of 55 dBA (L_{50}) to noise-sensitive properties, and are predicted to be equal to or less than existing traffic noise.

The noise control plan was required to reduce the noise impact to the west due to the lack of visible and acoustic screens; the terrain elevation increases to the west (note topographic lines toward the lower left of the figures). The modeling did not include any noise reduction factors from the existing foliage and the modeling showed that the shape of the commercial buildings on the west side of Willamette Drive did not provide effective noise reduction to these residences.

4.4.2 Redesigned Tunnel Enhancement

Figure 12 shows the predicted noise impact from the tunnel exit modification with impact resistant sound absorptive panels for 50% of the tunnel walls to the surrounding properties without traffic noise. The addition of these sound absorptive panels is predicted to reduce noise from the tunnel exit by approximately 3 dBA. This reduction will benefit the eastern businesses in the north commercial property, reducing the car wash noise levels to within 3 dBA of traffic noise levels, which is a barely noticeable difference.

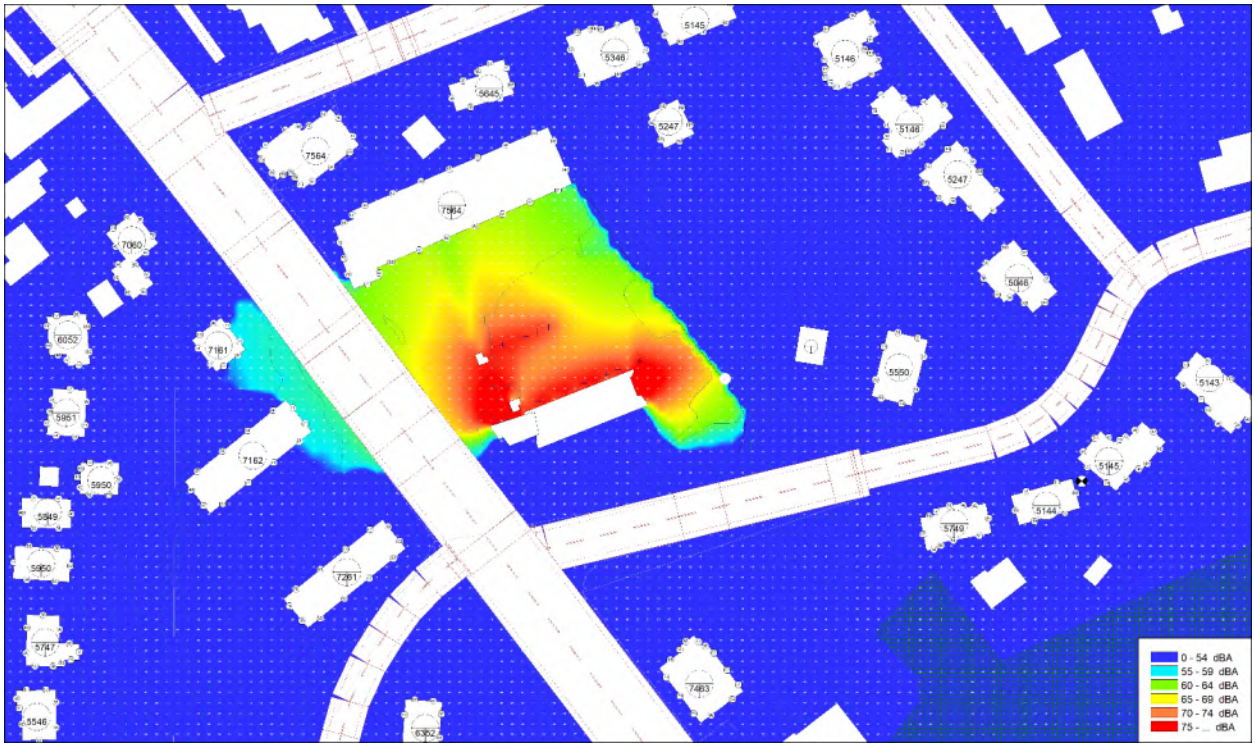


Figure 12: Predicted Noise Level Impact with Tunnel Exit Modification with Sound Absorptive Panels

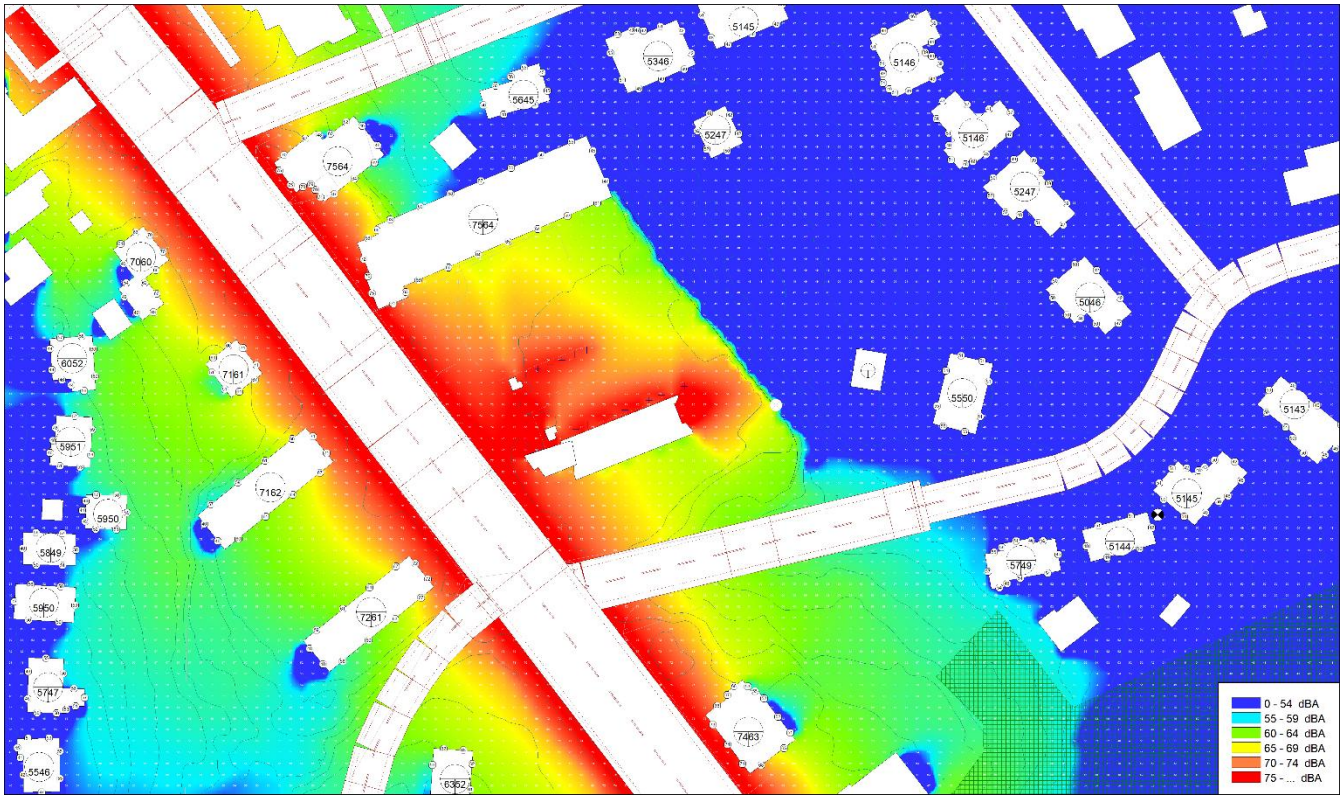


Figure 13: Predicted Noise Impact from Car Wash Activities, Including Traffic Noise, with Tunnel Exit Modification with Sound Absorptive Panels

Figure 13 shows the combined predicted noise impact from the tunnel exit modification with sound absorptive panels within the new tunnel extension to the surrounding properties and traffic noise.

Suggested Sound Absorptive Panels:
Install perforated metal facing panels with 2" core (e.g., Price Industries AP, Kinetics KNP, Eckel EFP, Noise Barriers Industrial QuietPerf, or approved alternate) for the left-hand side wall area between 2'-0" and 7'-0".

5 Conclusion

The proposed noise control plan with the modified tunnel will meet the noise ordinance and not be a noise impact in comparison to Willamette Drive / Highway 43 at this site. At no property will the noise increase by more than 3 dBA in comparison to ambient noise conditions, which satisfies the DEQ (1)(B)(i) limit of 10 dBA or less in any one hour.

With the level of background noise associated with traffic from Willamette Drive / Highway 43 it is not feasible to measure the independent contributing sound from the car wash without stopping traffic. This means the measured sound level at the nearest properties will always be a combination of traffic noise and the car wash activity noise.

Please contact us with any questions or additional coordination.

All the best,

Drew Lodarek
Acoustical Consultant

Grant Scheffner
Staff Consultant

Erik Miller-Klein, PE, INCE Bd. Cert.
Principal of Acoustical Engineering

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RENEWAL DATE: 12/31/2026

Appendix A. Descriptors

To better understand the relevant acoustics, here is a brief overview of sound and vibration properties, descriptors, and terms.

Both Interior and exterior noise, or sound, is often measured as an A-weighted sound level in units of decibels, symbolized as dBA. The A-weighting is a specific weighting filter in a sound level meter that corresponds approximately to the sensitivity of human hearing at the various frequencies for quiet levels near the human threshold of hearing. The terms “noise” and “sound” are more descriptions of perceived quality and are the same fundamental quantity.

Sound levels vary significantly, depending on location and activities. People normally experience sound levels between about 30 and 90 dBA, depending on their activity. For example, a nearby noisy vehicle, loud stereo, or power tool may produce 90 dBA; normal conversation is about 55 to 65 dBA; and a bedroom or quiet office is about 30 to 40 dBA when no one is talking or playing music.

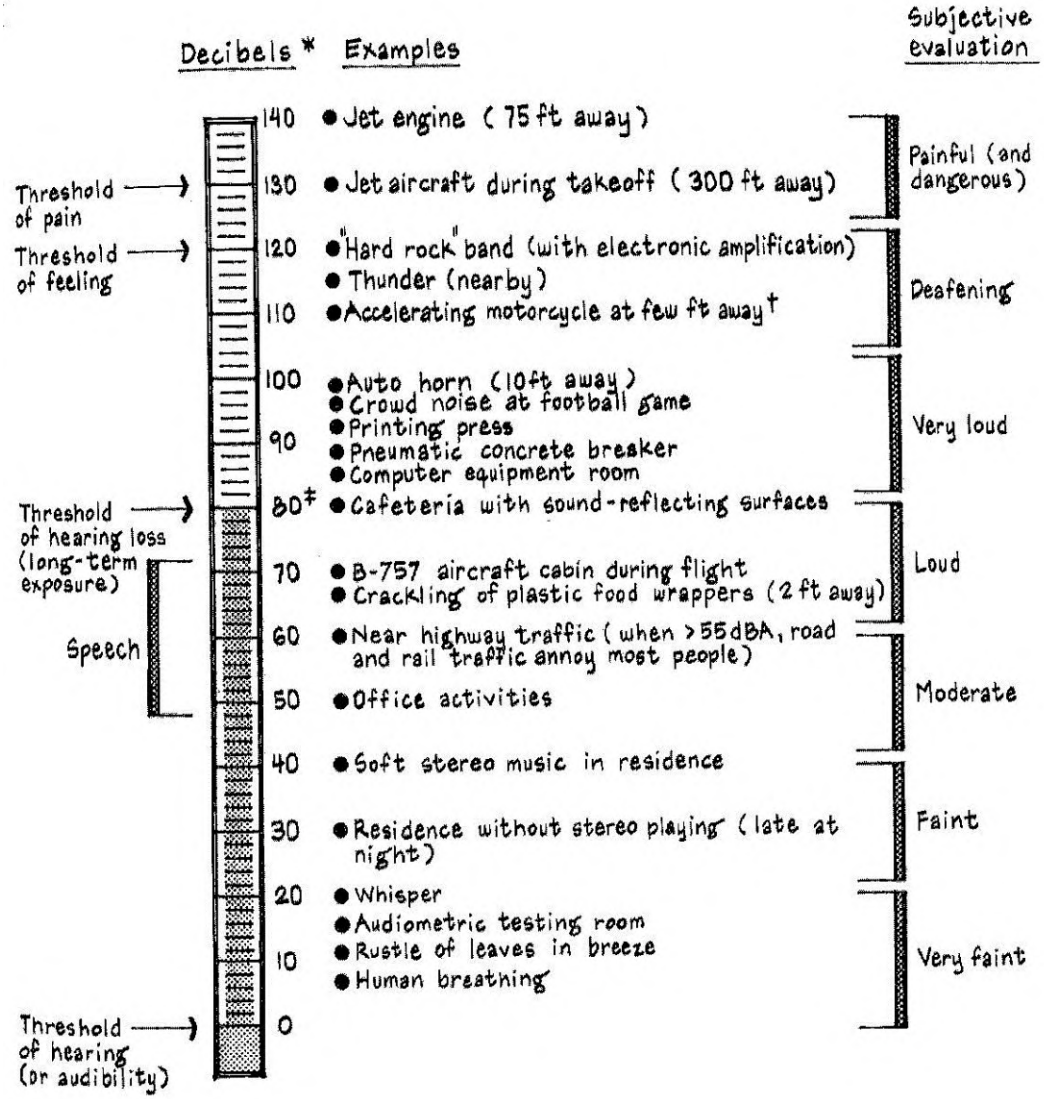


Figure 14: Architectural Acoustics, Egan © 1988

Sound – is vibration in an elastic medium, and the one more commonly measured and perceived is through air. That is defined by both amplitude (pressure change) and frequency (hertz / cycles per second). The term noise often refers to the perception of sound described as disruptive, a nuisance, or potentially harmful to health and well-being.

Decibel (dB) – Logarithmic quantity of sound amplitude proportional to human perception of sound energy. This is the human scale of pressure changes associated with sound and the unit of measurement for sound and noise. The normal human threshold is 20 micro-Pascals, which is equivalent to 0 dB.

A-Weighting (dBA) – is the summed sound level that weighs for the sensitivity of the human ear as a function of frequency for relatively quiet levels of sound. In effect, the A-weighting is based on the 40-phon Fletcher–Munson curves which represented an early determination of the equal-loudness contour for human hearing.

C-Weighting (dBC) – is the summed sound level that weighs for the sensitivity of human hearing for loud sound levels. This weighting follows the inverted shape of the equal-loudness contour passing through 100 dB at 1 kHz. It effectively describes the contribution of low-frequency noise with a single summed value.

Z-Weighting / Unweighted (dBZ) – is the non-weighted summed sound level and is usually used for sound level reporting for one-third and single octave bands.

Sound Pressure Level, L_p – specifies the perceived sound at a receiver or measurement location that is dependent on distance and environmental conditions. This is what a person hears or microphone measures in a location in space, referenced to 20 micro-Pascals.

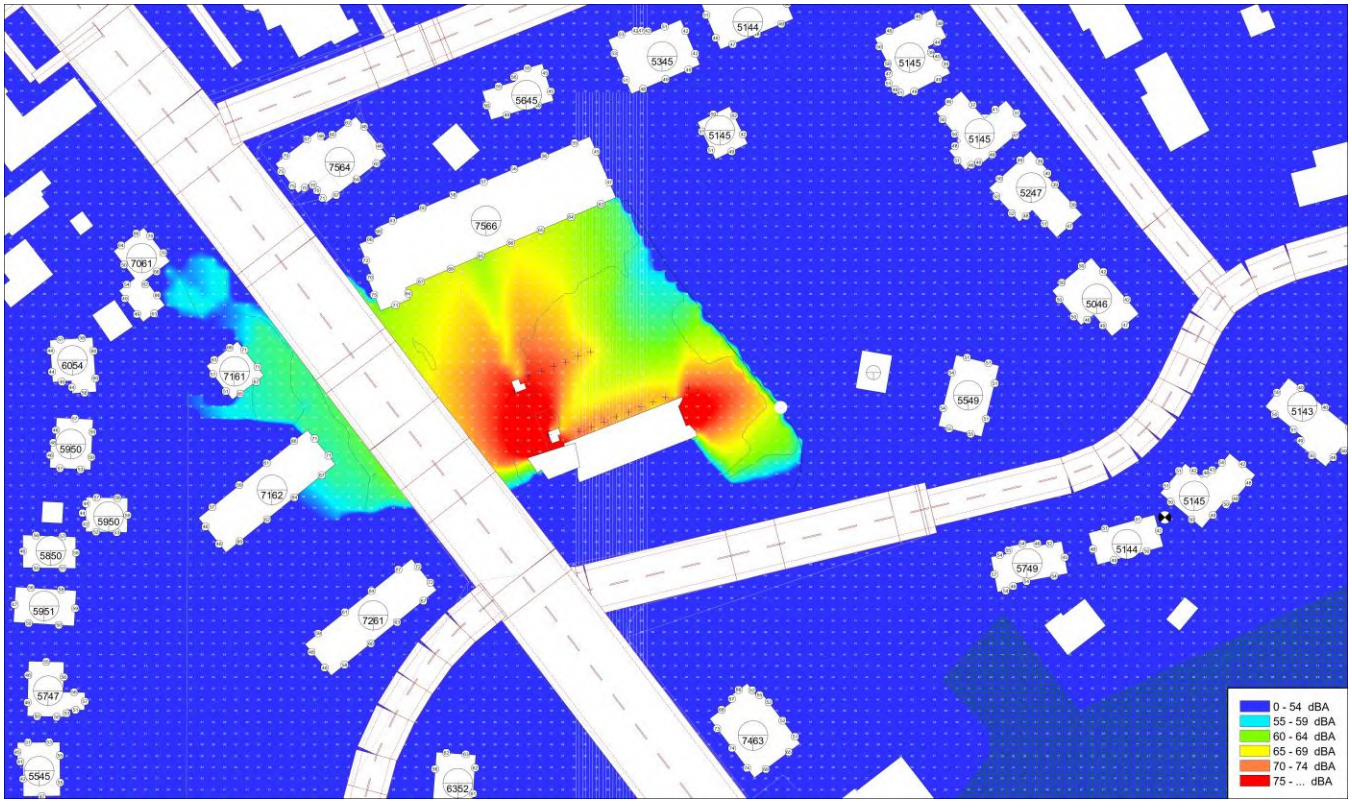
Sound Power Level, L_w – specifies the sound emission from a source independent of distance and environmental conditions. It is the potential acoustic energy of a source that is calculated and measured based on sound emission and emitting area, referenced to one picowatt.

Average Noise Level (Leq) – is the time-average sound level documented in decibels that is noted with the measured time interval.

Maximum Sound Level (Lmax) – is the highest sound level measured during a single noise event and is documented with the time response (Slow – 1 second, Fast – 0.125 second, Impulse – 0.035 second). Lmin is the quietest sound level measured during a single time interval of measurement.

Sound waves, similar to light waves, will expand hemispherically from a point source above the ground, losing 6 dB per doubling of distance—referred to as the inverse square law. Other effects that are considered in the acoustical computer modeling software include ground absorption, air absorption, barrier effects (diffraction, reflection, and diffusion). The amount of these affects are based on the geometry from the source to the listener and the type of materials (i.e., sound reflective vs. sound absorptive).

APPENDIX B. Model Output Explanation



The CadnaA environmental noise emission model estimates the noise impact to the adjacent properties using international calculation standards. The colors represent the predicted noise level range in the areas around the building emitting the noise; areas in **royal blue** are below the daytime OAR DEQ limit of 55 dBA. The small circles around the envelope of each building show the predicted noise level from the noise sources being assessed (for the example above, only the car wash) to this location on the building façade. The larger circles in the center of each building use a European environmental noise standard to show the predicted loudest position on the envelope from all noise emission sources in the model; the bottom left is the daytime noise level based on traffic volumes and daytime noise sources, and the bottom right is the nighttime noise level based on traffic volumes.

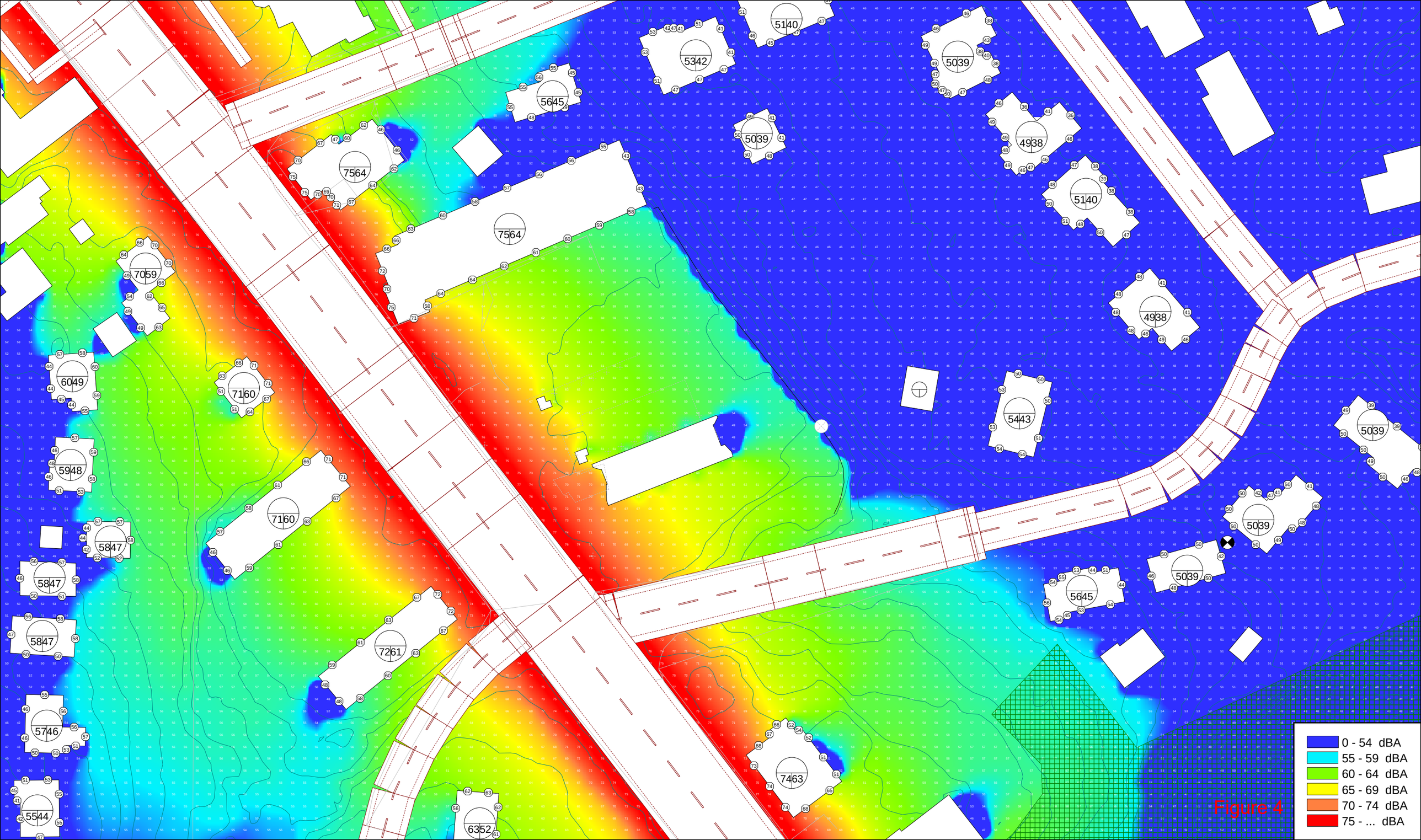


Figure 4

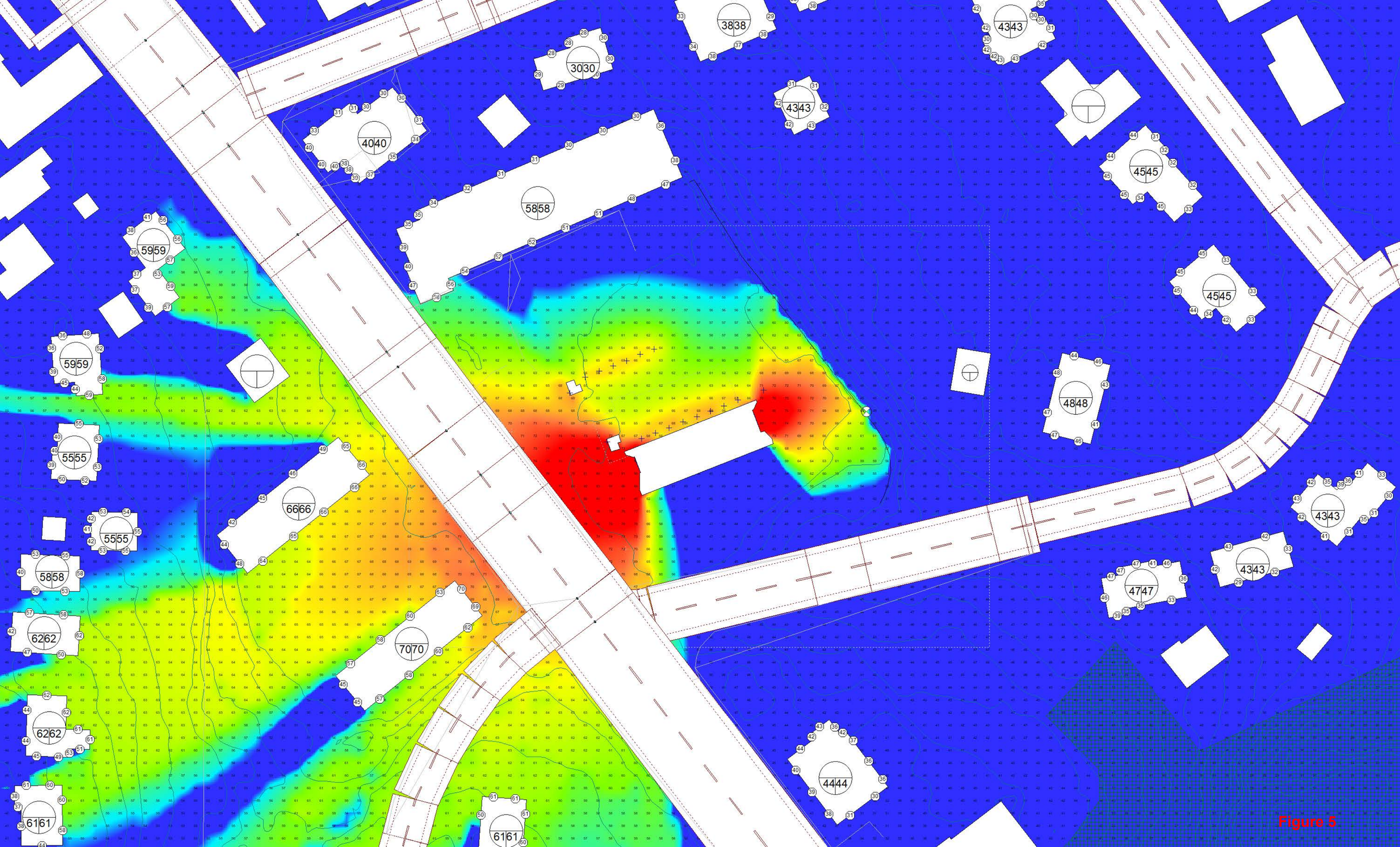

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Figure 5

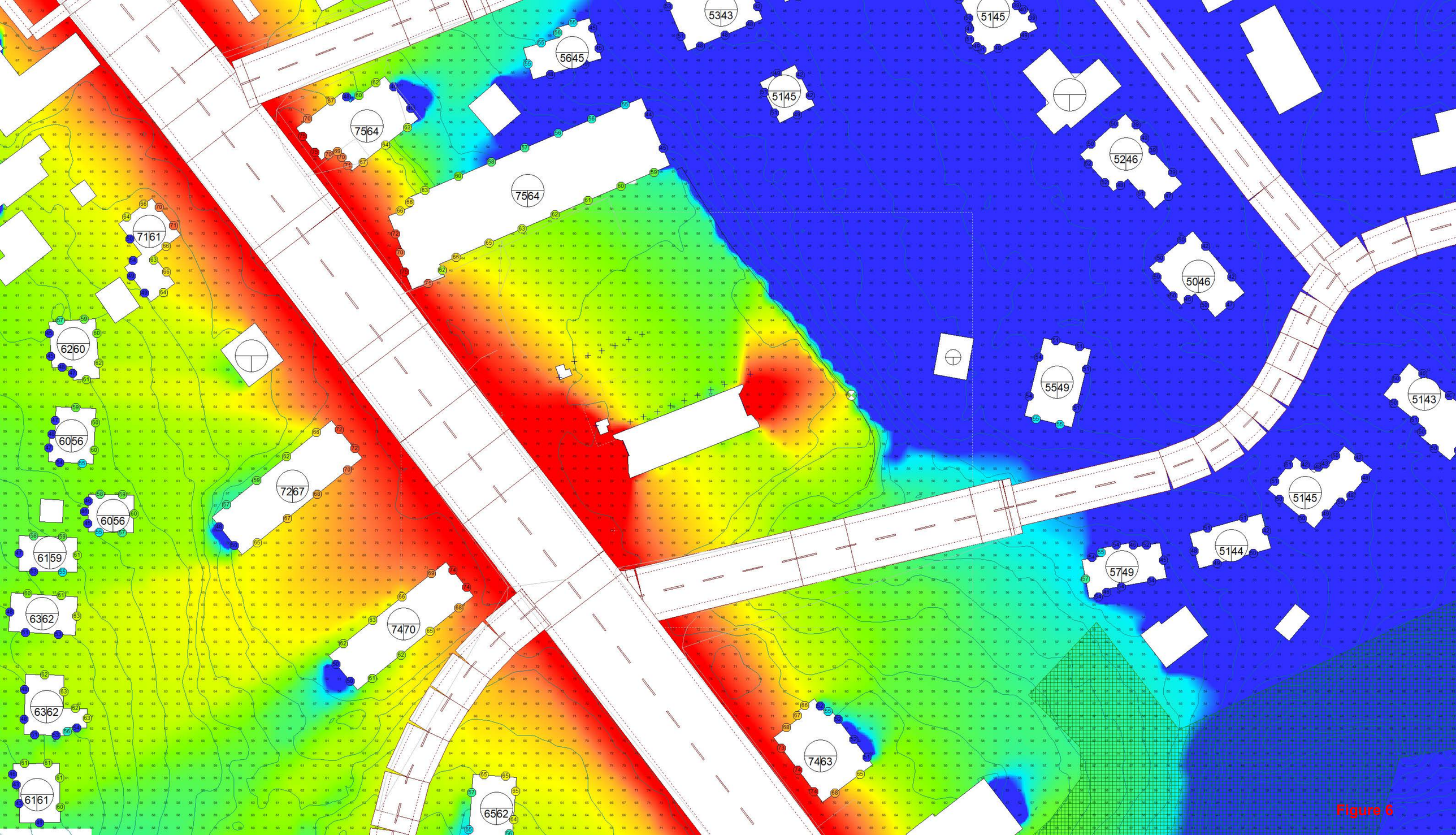
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Figure 6

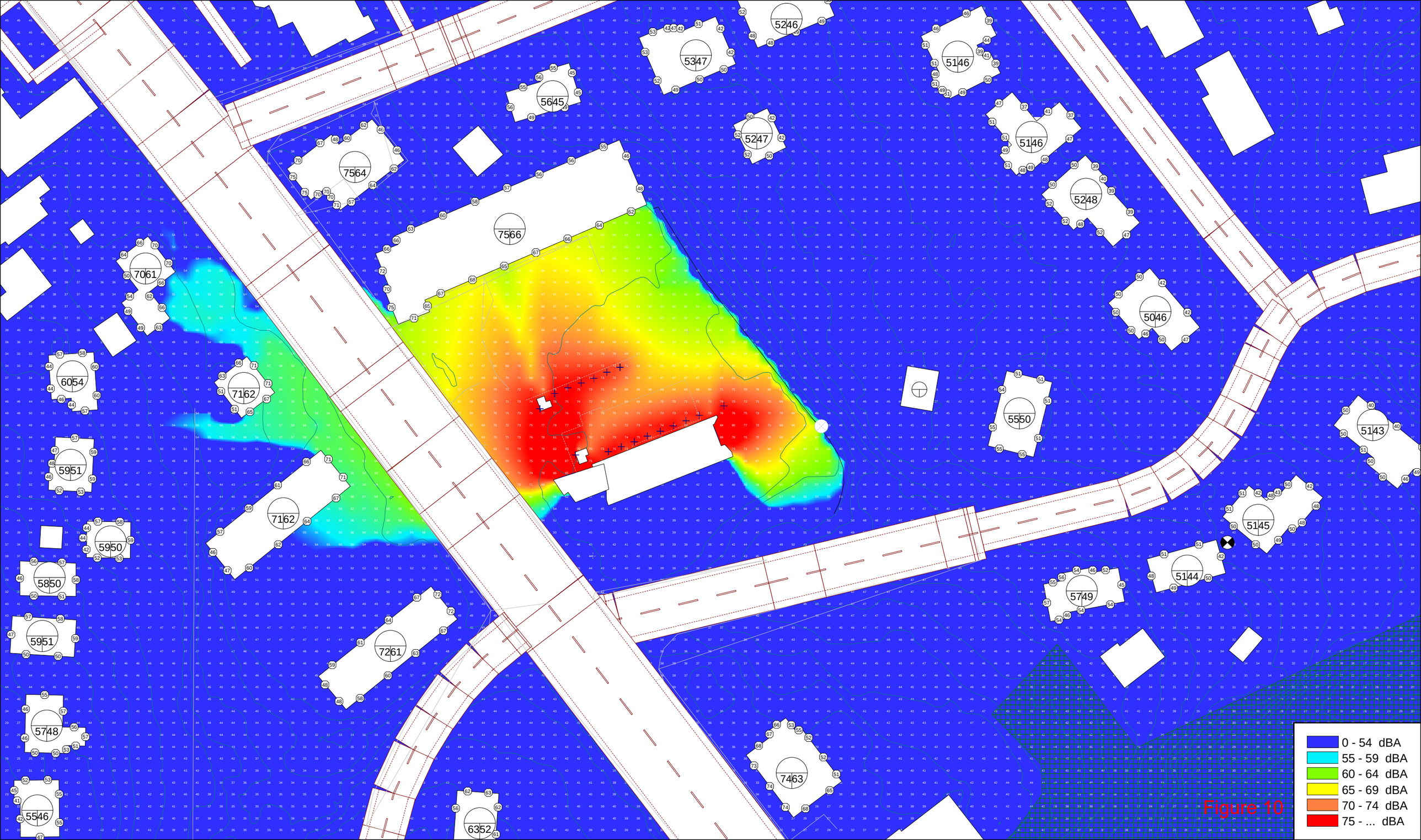
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Figure 10

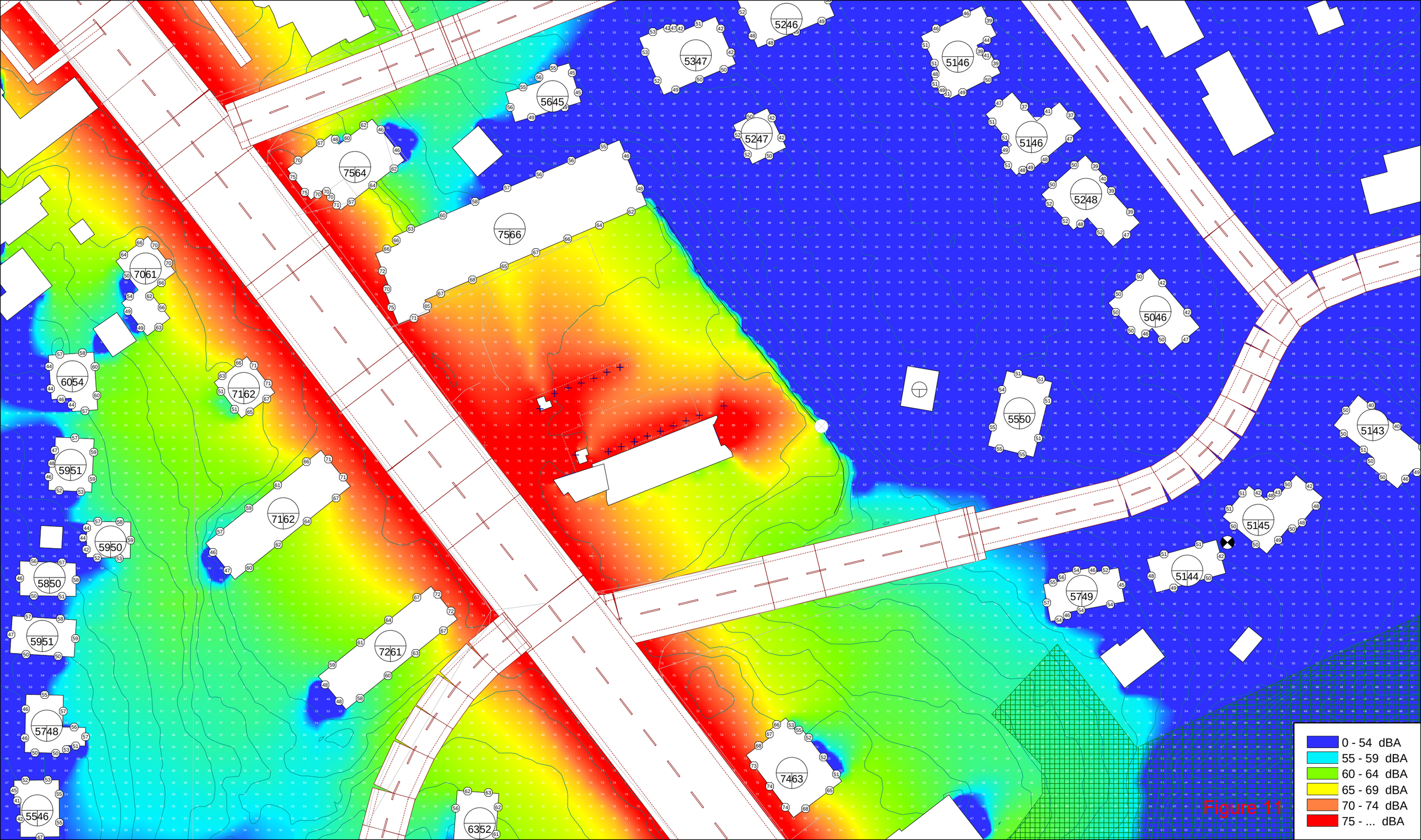
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Figure 11

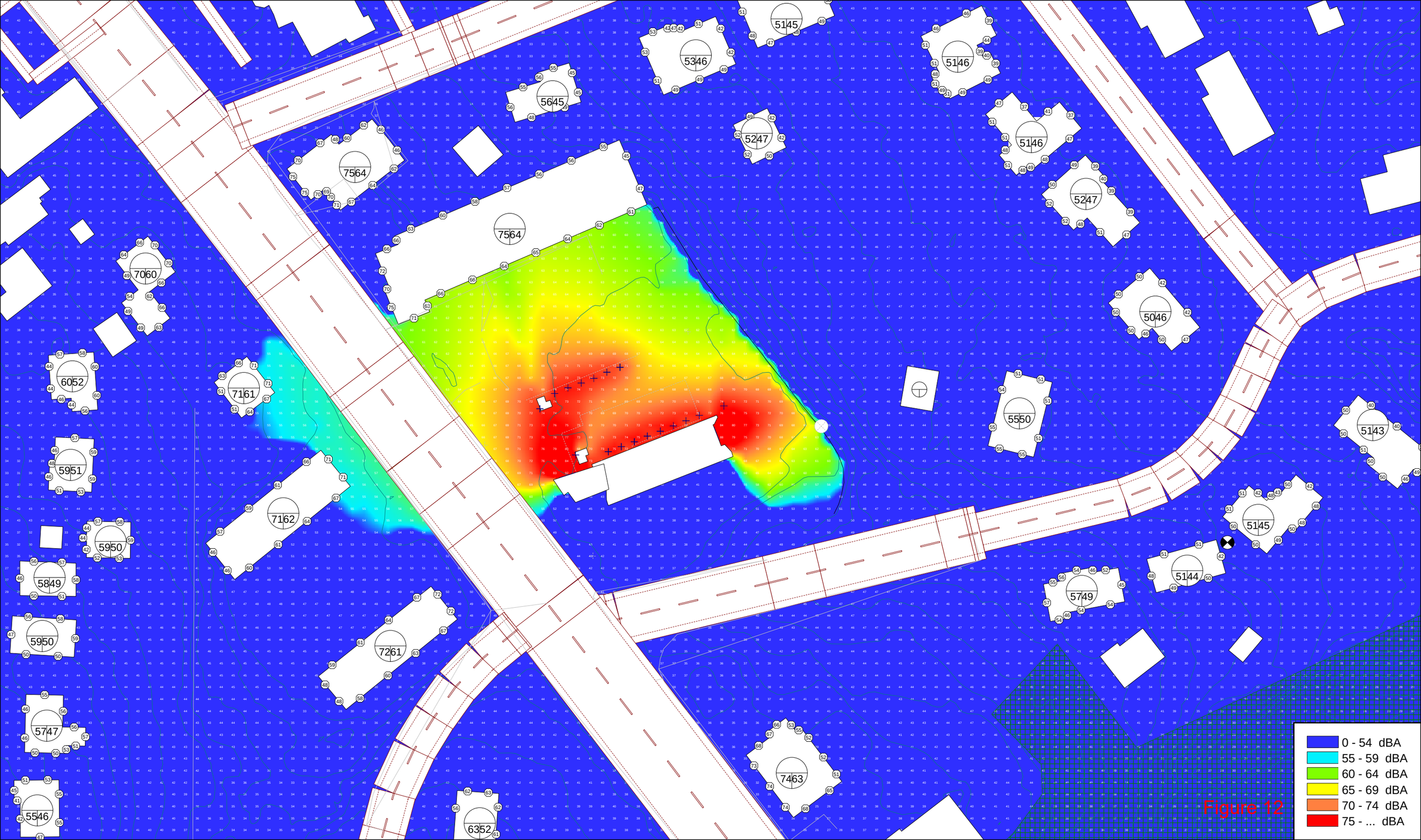
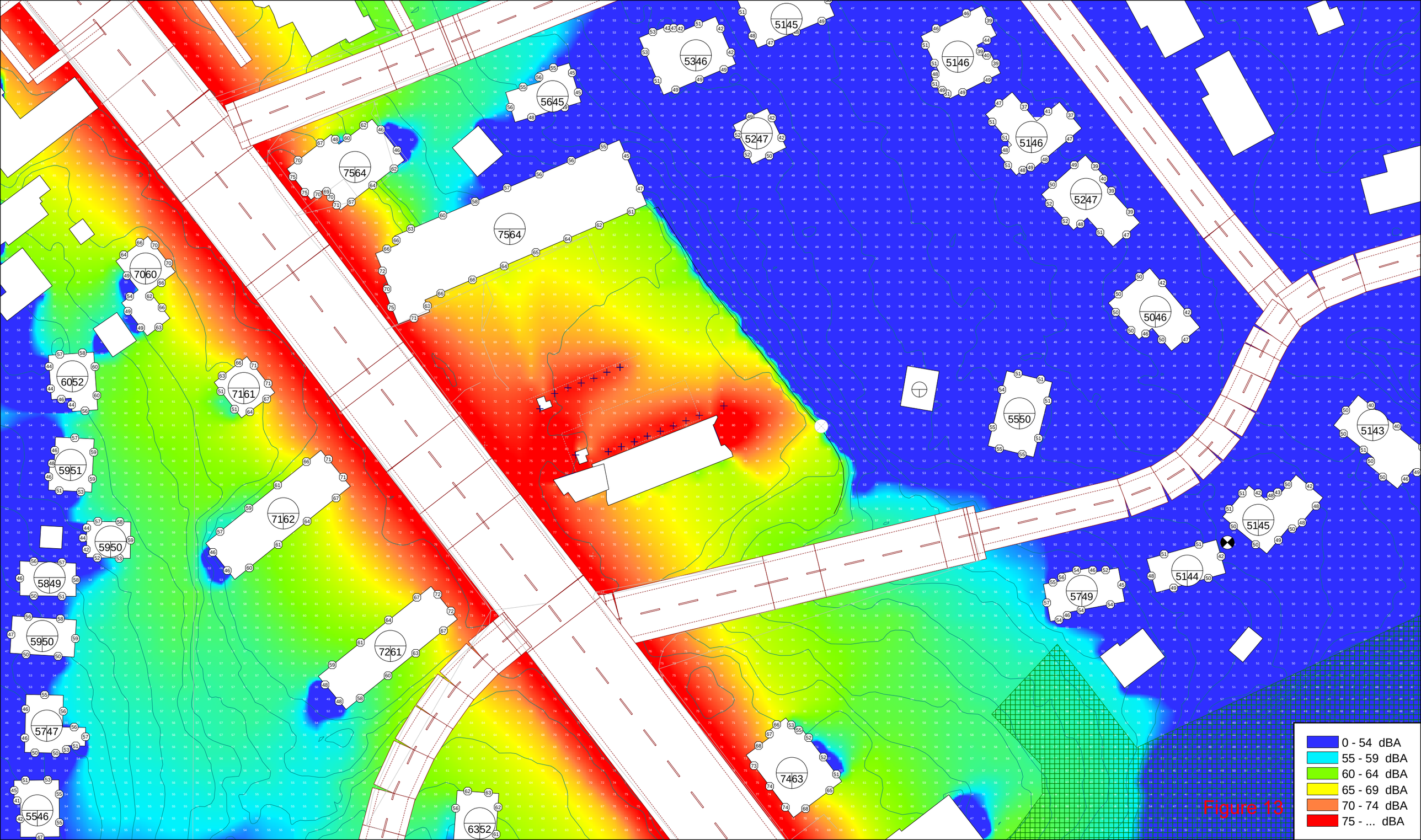


Figure 12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65 - 69 dBA
70 - 74 dBA
75 - ... dBA

Figure 13

21370 SW Langer Farms Pkwy
Suite 142, Sherwood, OR 97140

Technical Memorandum

To: West Linn Planning Commission

From: Michael Ard, PE

Date: April 1, 2026

Re: CUP-25-03/DR-25-03/VAR-25-02 – Response to Open Record Public Comments

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This memorandum is written to provide responses to public comments received during the one-week open-record period following the public hearing on March 18, 2026.

Queuing Data Sources and Analysis

Several public comments again asserted that the traffic study relied on data from Kansas City banks, and at least one even added an assertion that the study also used data from coffee shops in Minnesota and Kansas City. These assertions are wholly false; however, we can also understand the source of the confusion.

To clarify, since the Institute of Transportation Engineers does not collect or compile queuing data for specific land uses, the first step in our investigation was to search online for any and all relevant information and material that was rigorously collected by a qualified transportation engineer. We found only one study that examined queueing for car wash facilities. Since that study, led by Mike Spack, PE of Spack Engineering, contained data for several different land uses including car washes, we excerpted the relevant car wash queueing data and included it in our technical appendix.

Where land use data is available for engineering use, it is commonly compiled in documents and manuals that include data for various land uses. Indeed, the ITE *Trip Generation Manual*, which serves as the source of peak-hour traffic data for traffic studies, contains 180 different land use categories. But traffic studies use only the data for the actual land use(s) proposed. We used the Spack data in precisely the same manner.

It should be noted that the start of Section 3.2 of the Spack report titled, "Car Washes" was indeed preceded by a section of the report regarding banks, which included data from sites in Kansas. Further, after the conclusion of the data on car washes, the next section of the full Spack report was Section 3.3, "Coffee Shops." We could have chosen to redact those paragraphs from the appendix pages, but doing so would allow some doubt as to whether we were removing, excluding, or censoring relevant data regarding car wash facilities. The fact that data for other land uses exists does not mean that irrelevant data was used.

To be 100% clear, the only data from the Spack report that was actually used or referenced anywhere in the transportation analysis was the data for car wash facilities. Looking at the excerpted appendix pages, you will even see that the data we referenced was from *"Table 3.2 – Drive-Through Car Wash Maximum Queue Statistics"* and *"Figure 3.2 – Drive-Through Car Wash Maximum Queue Frequency."* Neither of these data

sets include any data from observations conducted at non-car-wash land uses. Accordingly, all opposition assertions that we used bank of coffee shop data are entirely false.

Supplemental Data

In instances where limited data is available for a particular land use, two choices are available:

1) Use the limited data as the "best available" data; or
2) Supplement that available data with local data.

Generally, automated car washes in the United States have some underlying similarities regardless of which state they are located in, and the queuing characteristics of typical car wash facilities hasn't changed substantially in many years since the design of the facilities remains similar, with an automated tunnel pushing vehicles through at a pre-determined speed optimized for cleaning. As such, the Minnesota data is not wholly irrelevant, and it would be irresponsible to exclude available data from our report. However, we also chose to supplement the online data with current, local observations.

It should be noted that it is unusual to collect local data, since deploying cameras and converting 24-hour video surveillance to useful, compiled data is expensive. In the rare instance where we collect local data, both the timeframes for data collection and the sites chosen for observation are vetted in advance with the reviewing authority. In this instance, that authority was the Oregon Department of Transportation, who requested the queuing analysis to ensure that traffic would not back up onto Highway 43. They agreed to the number, duration, and locations of data collection before cameras were deployed, and upon completion of our study they reviewed the technical analysis. No other organization has greater expertise for vetting the appropriateness and accuracy of the data collection and analysis.

ODOT specifically reviewed our study and concurred that queuing is not a problem given the nature of the proposed use and the design of the site. The only improvement ODOT recommended was reconstruction of the existing pedestrian ramp at the corner of Highway 43 and Walling Way to meet current ADA (Americans with Disabilities Act) standards. Technically, this request is disproportionate to our transportation impacts since the proposed use generates fewer vehicle and pedestrian trips than the prior permitted use of the site. However, Kaady has generously agreed to voluntarily make that improvement.

Required Traffic Analysis

In his written comments dated March 25, 2026, Mr. David Robison incorrectly cited West Linn's CDC Section 85.170(B)(2)(d) regarding the requirements for a traffic impact study in the City of West Linn. This section 85.170 is titled, "*Traffic impact analysis (dwellings)"* and applies only to residential development. The more relevant citation would have been to CDC Section 85.170(B)(2)(c), which applies to "*Traffic impact analysis (no dwellings)*" and reads as follows:

c) *Traffic Impact Analysis (no dwellings). For development applications that do not propose any new dwelling units, a traffic impact analysis may be required to be submitted to the City with a land use application, when the following conditions apply*:"

A) A change in zoning or a plan amendment designation; or

B) Any proposed development or land use action that ODOT states may have operational or safety concerns along a State Highway; and

C) The development shall cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers Trip Generation Manual, and information and studies provided by the local reviewing jurisdiction and/or ODOT:

1) An increase in site traffic volume generation by 250 average daily trips (ADT) or more (or as required by the City Engineer); or

2) An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or

3) The location of the access driveway does not meet minimum intersection sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or

4) The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or

5) *A change in internal traffic patterns that may cause safety problems, such as backup onto the highway or traffic crashes in the approach area.*

In this instance, subsection (A) does not apply since there is no change in zoning and no plan amendment included in the application. Similarly, subsection (B) does not apply since the only operational or safety concern expressed by ODOT relates to an existing pedestrian ramp that the applicant has volunteered to replace with something that meets current ADA standards.

Subsection (C)(1) could arguably be interpreted as triggering the need for a traffic study; however, as explicitly directed and acknowledged by City of West Linn staff (Darren Wyss), the property owner already has a vested right to re-occupy and use the existing building for a fast food restaurant without requiring any additional traffic analysis or mitigation. A fast food restaurant is not simply one of many hypothetical land

uses that are allowable under the zoning as some opposition comments have suggested. Rather, it is a specific site use that has already obtained the necessary land use approvals to operate on this property specifically. Accordingly, it was reasonable for both city staff and the applicant to conclude that the current application results in a net reduction in site trips as compared to the already formally permitted use of the site and therefore cannot degrade operation of any area roadways or intersections as compared to what can be done on the site if the conditional use request was denied.

Subsection (C)(2) did not apply, since the site does not accommodate large trucks and will not generate 10 or more vehicles over 10,000 pounds per day.

Subsection (C)(3) did not trigger the need for a full traffic study since the access driveways already exist and staff have acknowledged that they meet the intersection sight distance requirements. Additionally, there are no restricted turning movements, and we provided an analysis showing that queues will not back up onto the highway. The presence of the center two-way left-turn lane also ensures that people can "queue or hesitate on the State highway" without creating a safety hazard.

Subsection (C)(4) did not trigger the need for a full traffic study since there are no new accesses proposed in conjunction with the development and any use of the site (including the already-permitted fast food use) would utilize the same access driveways.

Subsection (C)(5) also did not trigger the need for a full traffic study, since we provided an analysis satisfying ODOT and the city that site operation will not cause safety problems, specifically including queues backing up onto the highway.

This detailed examination of the West Linn Community Development Code and the events that trigger the need for a full traffic study demonstrates why a full traffic impact study was not requested by City staff or ODOT, and why the applicant initially only prepared a trip generation analysis to demonstrate that the site will generate fewer trips than the land use already authorized on the site and an entry queuing analysis to address concerns about queues backing up onto Highway 43.

Despite all of the above, in response to public comments at the hearing we subsequently prepared a full traffic impact study to demonstrate that even if some relevant section of West Linn code was misinterpreted by city staff, the affected intersections will operate acceptably and fully meet the approval criteria with the proposed car wash in place. This added analysis accounted for both the traffic generated by the proposed car wash and background growth in traffic on Highway 43. Having now conducted a full traffic study, the conclusions remain the same. The proposed development is projected to operate safely and efficiently, and operation of affected roadways and intersections meets the approval standards.

Queuing Analysis

Some opposition testimony focused on queues exiting the subject property or potential conflicts within Highway 43. The intersection of Highway 43 at Walling Way is an offset intersection, with striping lines that terminate prior to reaching the closer west leg of the intersection. This results in vehicles queuing to make southbound left turns from Highway 43 onto Walling Way well past the striping as shown in Figure 1 below.

Figure 1 – Southbound vehicle queuing position on Highway 43

Using Google Earth software, we measured the effective queue storage length between the existing shopping center entrance driveway and the point where southbound vehicles begin queuing to turn onto Walling Way. The distance was 322 feet, as shown in Figure 2 on the following page. With a typical queue length of 25 feet per vehicle, this provides sufficient space for up to 13 passenger vehicles to queue between the intersections. Since the actual 95th percentile queues experienced within the turn lane are less than one vehicle, it is clear that there is sufficient space between the site access and the nearby public intersection to accommodate two-stage left turns within the center median.

Figure 2 – Southbound Left-Turn Queueing Distance between Walling Way and Site Access

The maximum queue actually observed between the intersections was 2 vehicles on a few occasions. The Highway Capacity Manual analysis of the intersection shows a 95th percentile queue length of less than one vehicle, indicating that more than 95 percent of the time there is no vehicle waiting to make that turn during the peak hours. The distance between the intersections provides ample storage to accommodate two-stage left turns out from the site access even while vehicles are waiting to make southbound left turns at Walling Way.

There was also some testimony regarding the perceived safety issue of drivers making left turns from Walling Way onto Highway 43 needing to wait for a gap in northbound traffic prior to turning into the center two-way left-turn lane, then waiting for a gap in southbound traffic to merge into the southbound travel lane. These are referred to as “two-stage left turns” and are a permitted and intentional design. Most drivers turning left onto Highway 43 utilize two-stage left turns, since doing so greatly reduces delays for turning movements. Notably, the volume of traffic observed making northbound left turns from Highway 43 onto Walling Way was just one vehicle during the morning and evening peak hours. Dedicated left turn lanes serving only one travel direction are generally not provided when there are fewer than 10 vehicles

making left turns per hour. That is why the median striping on Highway 43 south of Walling Way is yellow on both sides (indicating a two-way left-turn lane) rather than being similar to the southbound approach, which has a while line on the right side and arrows in the lane indicating that it is a dedicated left-turn lane.

If there are safety concerns remaining concerning the presence of a standard two-stage left-turn refuge within Highway 43, those are answered by the crash data that was included in our analysis. The crash data demonstrated that the intersection is not experiencing any unusual or high crash patterns. Accordingly, the two-way left-turn lane is operating acceptably with respect to safety, as expected.

Mr. Robison also stated that he conducted a "Monte Carlo simulation" to estimate queues exiting from the site access. He projected that the exit would have one car waiting 38% of the time, two cars waiting 5% of the time, and 3 cars waiting 3% of the time. He did not provide any supplemental data that shows his calculations or detailed methodology; however, his results match the projections based on the analysis methods used in the Highway Capacity Manual remarkably closely. We showed the approach as operating with a v/c of 0.32 (i.e., there will be one or more cars waiting to exit the site during 32 percent of the evening peak hour), and the projected 95th percentile queue length was 2 to 3 vehicles. Figure 3 below shows how this could work with 1 vehicle in the driveway throat and 1-2 additional vehicles waiting to exit.

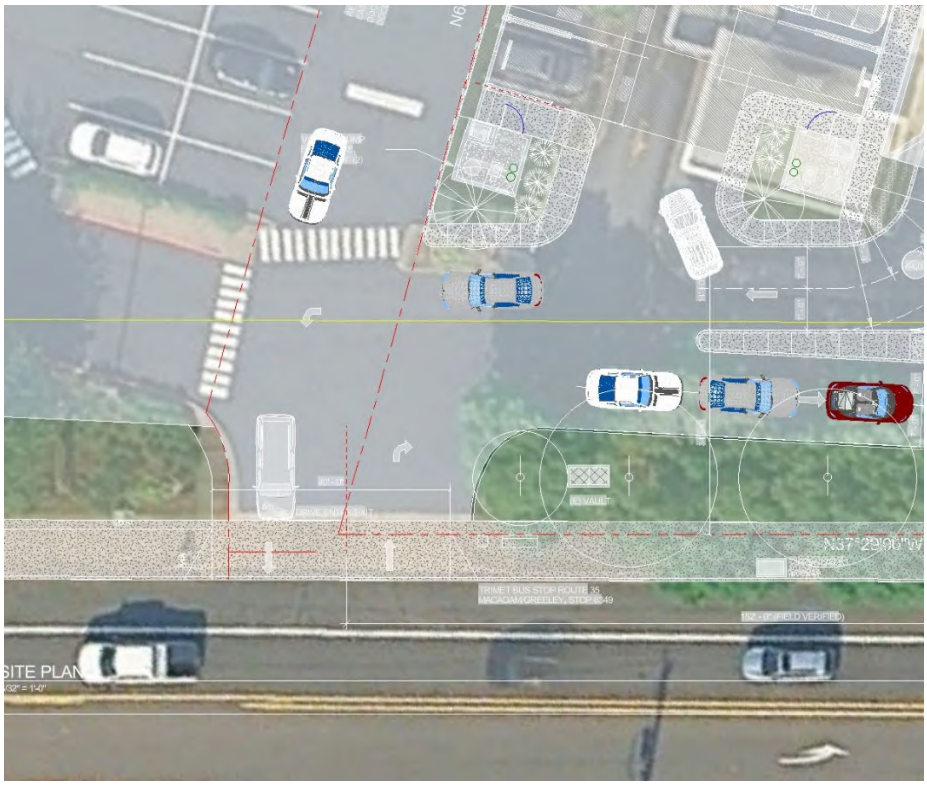


Figure 3 – On-Site Queuing with 3 Exiting Vehicles

The queues shown are not excessive or problematic and can easily be accommodated within the site. If there are concerns regarding the potential for vehicles to queue within the space required for unobstructed entry, a stop bar can be added for westbound vehicles exiting the car wash facility, and if a problem persists, diagonal white striping can be added to the areas needed for ingress. However, based on the analysis and the historical uses of the site, it is not anticipated that these measures will be necessary.

One final comment referred to concerns that customers are pushed through the car wash and exit without control over whether or when they can pull forward. Notably, the exit feeds into the location where most drivers will turn right into the vacuum bays to complete cleaning of their vehicles. But some customers will exit the site without using those facilities. Notably, both our analysis and the Monte Carlo simulation analysis prepared by Mr. Robison demonstrate that most of the time there will be no vehicles waiting within the driveway throat to turn onto Highway 43. If an exiting vehicle is unable to move forward, sensors stop the forward motion of the automated car wash and alert attendants, with forward progress halted until the system is reset to ensure that drivers can exit the site safely. Cameras also monitor the exit to ensure that attendants are aware of any exiting obstructions and can respond accordingly. This system is necessary both for public safety and since Kaady could be held liable for damages associated with any "automated" crashes if drivers were forced forward with no place to go.

What Happens if the Car Wash Gets More Customers than Projected?

There were also some concerns expressed regarding what would happen if the proposed car wash location were extraordinarily busy. These concerns are a bit ironic in light of the testimony by a former employee that the prior Kaady Car Wash in West Linn was the "slowest in the district" and the fact that opponents have frequently pointed out that another car wash is operating in the site vicinity and asserted that the car wash would not benefit the City of West Linn. There is no good reason to assume that this site will operate with extraordinarily high traffic demands for an automated car wash. However, we can also calculate the available capacity to serve traffic at the study intersections based on the volume of traffic and the v/c ratios to determine how much traffic could patronize this location without exceeding the v/c standards.

During the morning peak hour, the site access is projected to operate with a v/c ratio of 0.10 with 20 exiting vehicles. This indicates that the actual capacity of the approach is approximately 10 times the projected exiting volume, or about 200 total exiting vehicles per hour during the morning peak hour.

During the evening peak hour, the site access is projected to operate with a v/c ratio of 0.32 with 98 exiting vehicles. This indicates that the actual capacity of the approach during the evening peak hour is approximately three times the projected exiting volume, slightly more than 300 vehicles per hour. The capacity is actually slightly higher during the evening peak hour since there are more gaps in the lighter northbound travel stream that allow access to the center two-way left-turn lane. (This fact also likely

contributed to why the McDonalds restaurant previously reported concerns during the morning peak hour but not during the evening peak hour.)
Assuming that the car wash services relatively high traffic volumes of 80 additional vehicles per hour during the peak hours, the site access would operate with a v/c ratio of 0.50 during the morning peak hour and 0.58 during the evening peak hour. Note that this is 80 *additional* exiting vehicles, meaning that the total volume served by the car wash would be approximately 95 vehicles during the morning peak hour (more than 6 times the observed exiting traffic rate at comparable Kaady Car Wash facilities in the Portland Metro area), and 119 vehicles during the evening peak hour (more than 3 times the typical traffic volume served by automated car wash facilities per the ITE Trip Generation Manual.)

Based on the analysis there is ample capacity to handle busy days and short-term demand spikes, even if they coincide with the highest-volume commute periods of traffic on Highway 43.

Conclusions

The applicant has gone far beyond the minimum requirements and the requests of ODOT and City of West Linn staff to provide a robust transportation analysis that fully addresses operational and safety concerns raised by affected citizens in addition to the actual requirements of the Community Development Code. Based on the analysis, the proposed automated car wash can operate safely and efficiently on the site. No additional operational or safety mitigations are necessary or recommended in conjunction with the proposed development.

FROELICH
ENGINEERS

(Land Use) Stormwater Management Report

Kaady Car Wash – West Linn

18850 Willamette Dr
West Linn, OR 97068

Prepared by: Evan Eykelbosch, PE, and Ben Ullmann, PE
Froelich Engineers
17700 SW Upper Boones Ferry Rd, Suite 115
Portland, OR 97224
Froelich Project Number: 25-C007
Date: 8/1/2025
Revised: 4/1/2026

Contents

I. Project Overview and Description

This stormwater report has been prepared in accordance with the City of West Linn's Stormwater Management Manual (WLSWMM) to support the Building Permit application for the proposed project improvements.

Kaady Car Wash – West Linn is a site redevelopment project to convert an existing fast food site. The site is located on tax lot 6900 in the Clackamas County tax map 21E14DD. The existing development will be removed and a new automatic drive thru car wash, with a queuing line and vacuum equipped parking stalls will be constructed. There are no expected frontage improvements to be required with this on-site work.

Existing Conditions

Onsite
This site is located at 18850 Willamette Dr. West Linn, Oregon (See Appendix A: Vicinity Map) and is zoned for General Commercial use (GC). The existing site is approximately 1.30 acres and currently consists of a non-operational McDonalds drive-thru and parking lot. The topography of the majority of the site is a north to south sloping topography with a perpendicular running retaining wall along the north side of the drive aisle. The slope increases significantly beyond the retaining wall. The site is accessible by driveway on Willamette Drive and a driveway along Walling Way. The existing soil is classified as Cascade silt loam with 8 to 15 percent slopes based on a Soil Resource Report for the NRCS with a **Group C** type soil (See Appendix D: Soil Resource Report). Stormwater from the existing site is collected in a series of catch basins and is conveyed into an on-site water quality vault and detention pond. Runoff is managed through a flow control structure and then discharged into the stormwater main in Walling Way. The stormwater is then conveyed into Fern Creek which then outfalls to the Willamette River. The site is within the Willamette River watershed.

'Table 1A: Predeveloped Catchment Basins' provides the predeveloped basin characteristics for the various catchment areas under the predeveloped conditions.

Proposed Conditions

Onsite
The proposed development will construct water quality, water quantity, and storm water detention facilities to meet the requirements in WLSWMM. The onsite development will collect and manage stormwater through trench drains, roof drains, and a catch basin. The captured runoff is then be conveyed through a water quality vault and then piped into a buried detention structure. The proposed stormwater system will tie into the existing onsite downstream stormwater manhole.

'Table 1B: Proposed Catchment Basins' provides the proposed basin characteristics for the various catchment areas under the proposed conditions.

A proposed condition Basin Map is provided in Appendix B: Basin Maps and Areas.

II. Methodology

The WLSWMM requires that all new construction resulting in at least 10,000 square feet of impervious area created or replaced to comply with stormwater requirements. Infiltration on site is not feasible due to existing soil conditions and steep slope conditions.

The water quality requirements consist of providing stormwater treatment for the water quality event of 1 inch per 24-hour period for a time of concentration of 10 minutes for the impervious area. This is roughly 80% of the average annual rainfall for the City of West Linn.

Although only basic water quality treatment is required per the West Linn Stormwater Management Manual, the project proposes implementing an enhanced treatment system that meets the Washington Department of Ecology (DOE) General Use Level Designation (GULD) standard for Basic and Metals Treatment. The proposed enhanced system is the Filterra Bioretention System, which utilizes an engineered media blend designed to meet the DOE GULD standards for pollutant removal.

The West Linn Stormwater Management Manual allows for the use of proprietary treatment devices in meeting water quality standards. The manual in Section 3.10 (Proprietary Devices), references the City of Portland's list of approved stormwater treatment technologies. The Filterra system is included on this approved list.

While the system has been evaluated and approved by the Washington State Department of Ecology for operation at hydraulic loading rates up to approximately 324 inches per hour, the design for this project utilizes a more conservative design loading rate of 100 inches per hour, consistent with the City of Portland Stormwater Management Manual.

The Washington State Department of Ecology has evaluated this technology under its Technology Assessment Protocol – Ecology (TAPE) program and determined that it meets criteria for Metals Treatment.

'Table 4: Median Removal Efficiency' provides the median removal efficiency for pollutants of concern.

The flow control requirements consist of limiting the 2-year, 10-year, and 25-year post development peak flows to their respective pre-development peak. Predeveloped flows are based on a grassland/forested topography with a time of concentration of 5 minutes.

A summary of the stormwater treatment requirements facilities is provided in 'Table 2: Catchment and Facility Table' and a summary of the flow rate results is provided in 'Table 3: Pre- vs Post-Construction Stormwater Flow Rate Table.'

The conveyance calculations were designed for the 25-year storm event (3.9 in/24-hr). See Appendix H: Conveyance Calculations for conveyance sizing calculations.

III. Analysis

The analysis for the onsite stormwater system design is based on Santa Barbara Urban Hydrograph (SBUH) Method using a NRCS Type 1A rainfall distribution for a 24-hour storm. The system was designed using HydroCAD software.

The proprietary water quality vault design and sizing is based on 'Table 5: Filterra Sizing to Meet City of Portland Pollution Reduction Requirements' and manufacturer recommendations.

The detention facility design is based on the 2-year, 10-year, and 25-year storm events, using HydroCAD. The WLSSMM requires that detention systems be designed with concrete detention pipes unless the use

of such pipe is not practical. Due to the footprint size of using concrete pipes, the project was required to explore the use of an alternative product. The proposed system is currently shown using the ADS SC-800 Chamber Detention system. An analysis of a concrete pipe detention system with a similar depth was considered, and an exhibit for the use of the concrete pipe is provided. (See Appendix G: Water Quantity Calculations.) The proposed detention system will be lined to limit infiltration into the soils.

Conveyance calculations are based on the Manning Formula for uniform pipe flow (See Appendix I: Stormwater Conveyance Calculations). The peak runoff event can be conveyed by an 6-inch pipe with a minimum slope of 1.50% and an 8-inch pipe with a minimum slope of 1.00%.

Table 1A: Predeveloped Catchment Basins

Predeveloped

Basin	Area				Total	
	Pervious		Impervious			
	sf	ac	sf	ac	sf	ac
Basin A	31,100	0.714	0	0.000	31,100	0.714

Table 1B: Proposed Catchment Basins

Proposed

Basin	Area				Total		Flow Q (25-YR)
	Pervious		Impervious				
	sf	ac	sf	ac	sf	ac	cfs
Basin A	314	0.007	30,786	0.707	31,100	0.714	0.65

Table 2: Catchment and Facility table

Catchment/ Facility ID	Drainage Source	Area Managed (sf)	Ownership (private/ public)	Facility Type	Facility Size
WQV 7'x13'-1	Basin A	30,786	Private	Water Quality VAULT	7'x13' Vault with 7'x10' (70 sf) Filter Media
ADS SC-800 Detention System	Basin A	31,100	Private	Underground Detention Chambers	25.3'x89.3'x3.8' (60) ADS SC-800 Chambers

Table 3: Pre- vs Post-Construction Stormwater Flow Rate Table

Catchment/ Facility ID	Peak Flow Rate (cfs) for a 24-hour storm					
	2-year		10-year		25-year	
	Pre	Post	Pre	Post	Pre	Post
Basin A	0.02	0.02	0.11	0.09	0.15	0.12

Table 4: Median Removal Efficiency

POLLUTANT OF CONCERN	MEDIAN REMOVAL EFFICIENCY	MEDIAN EFFLUENT CONCENTRATION (MG/L)
Total Suspended Solids (TSS)	87%[1]	8.0[2]
Total Phosphorus - TAPE (TP)	80%	0.05
Total Nitrogen (TN)	34%	0.33
Total Copper (TCu)	79%	0.011
Total Dissolved Copper	56%	0.007
Total Zinc (TZn)	70%	0.04
Total Dissolved Zinc	66%	0.02
Hydrocarbons[3]	87%	0.71

Each batch of Filterra® media has been extensively tested to ensure consistent performance every time.

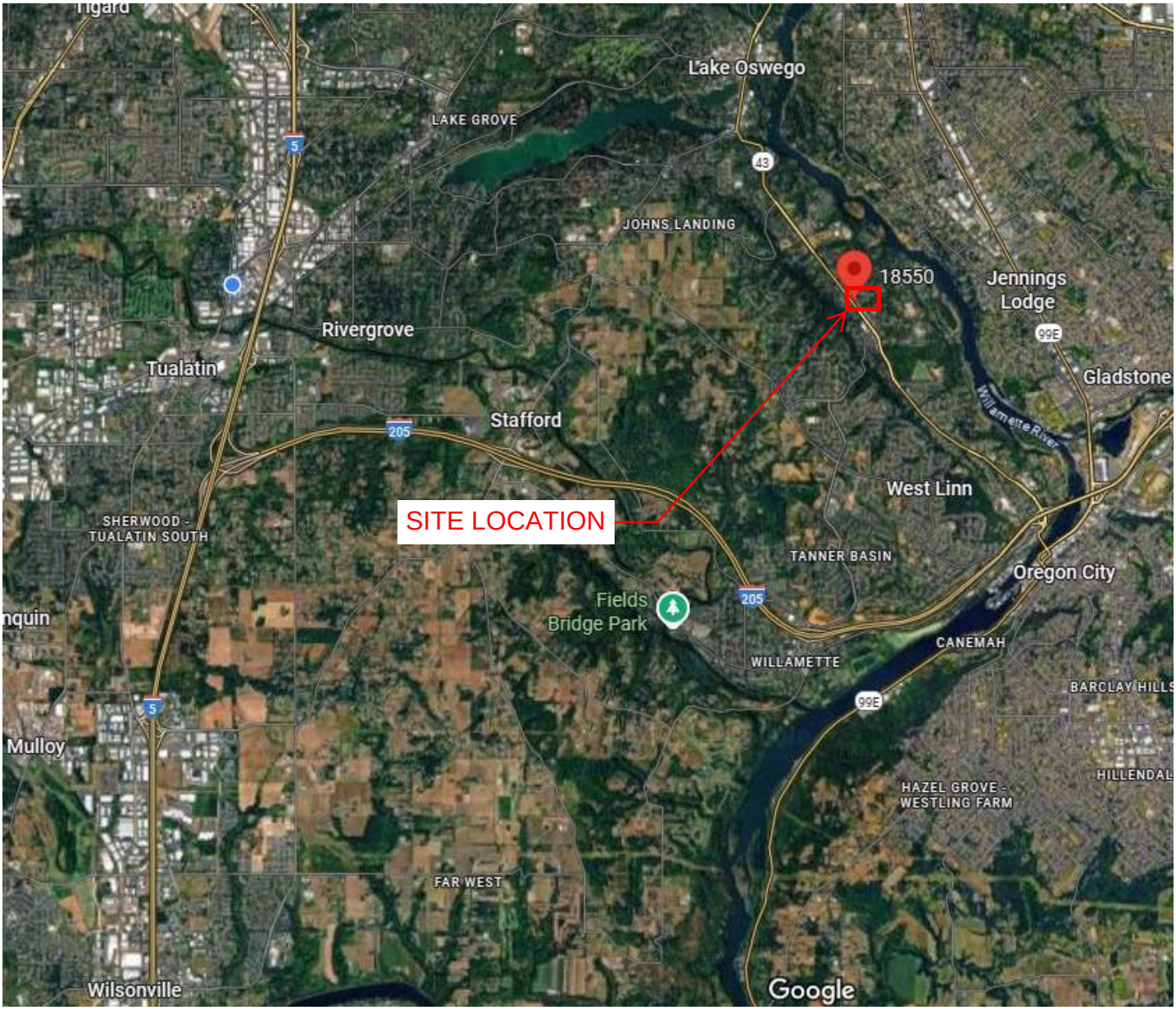
Source: Contech (TAPE) 2024
1. 2024 TAPE Results for influent concentrations 100-200 mg/L
2. 2024 TAPE Results for influent concentrations <100 mg/L
3. Source: Herrera (TAPE) 2009

IV. Engineering Conclusion

Based on the requirements of the City of West Linn, all facilities and conveyance components have enough capacity to manage the runoff from the required storm event and should be approved as designed.

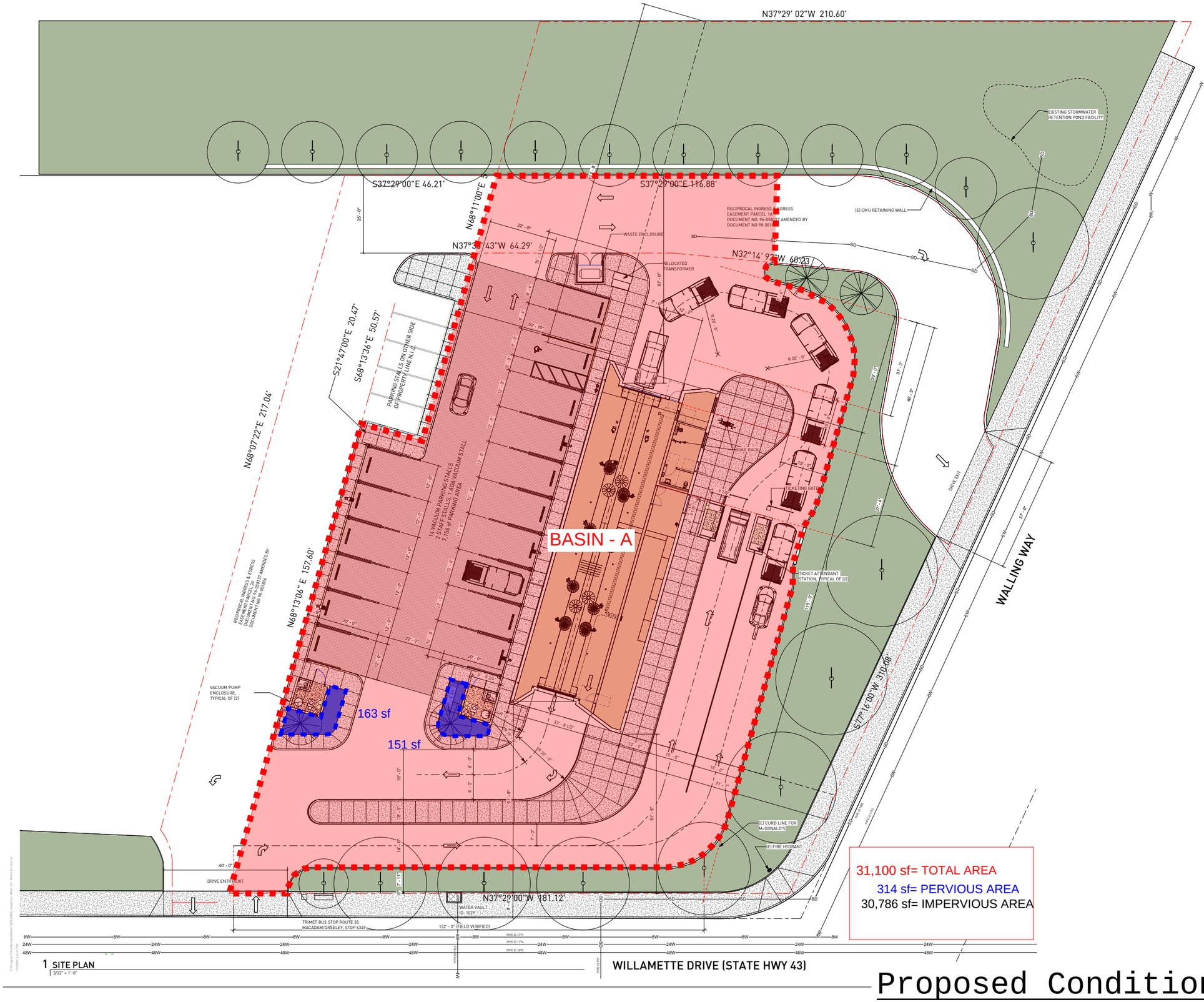
V. Appendices

Appendix A: Vicinity Map



Appendix B: Basin Maps and Areas

Proposed Conditions Basin Map



Appendix C: Assumptions

Santa Barbara Unit Hydrograph (SBUH) Assumptions:
(used for Water Quality, Flow Control, Conveyance)

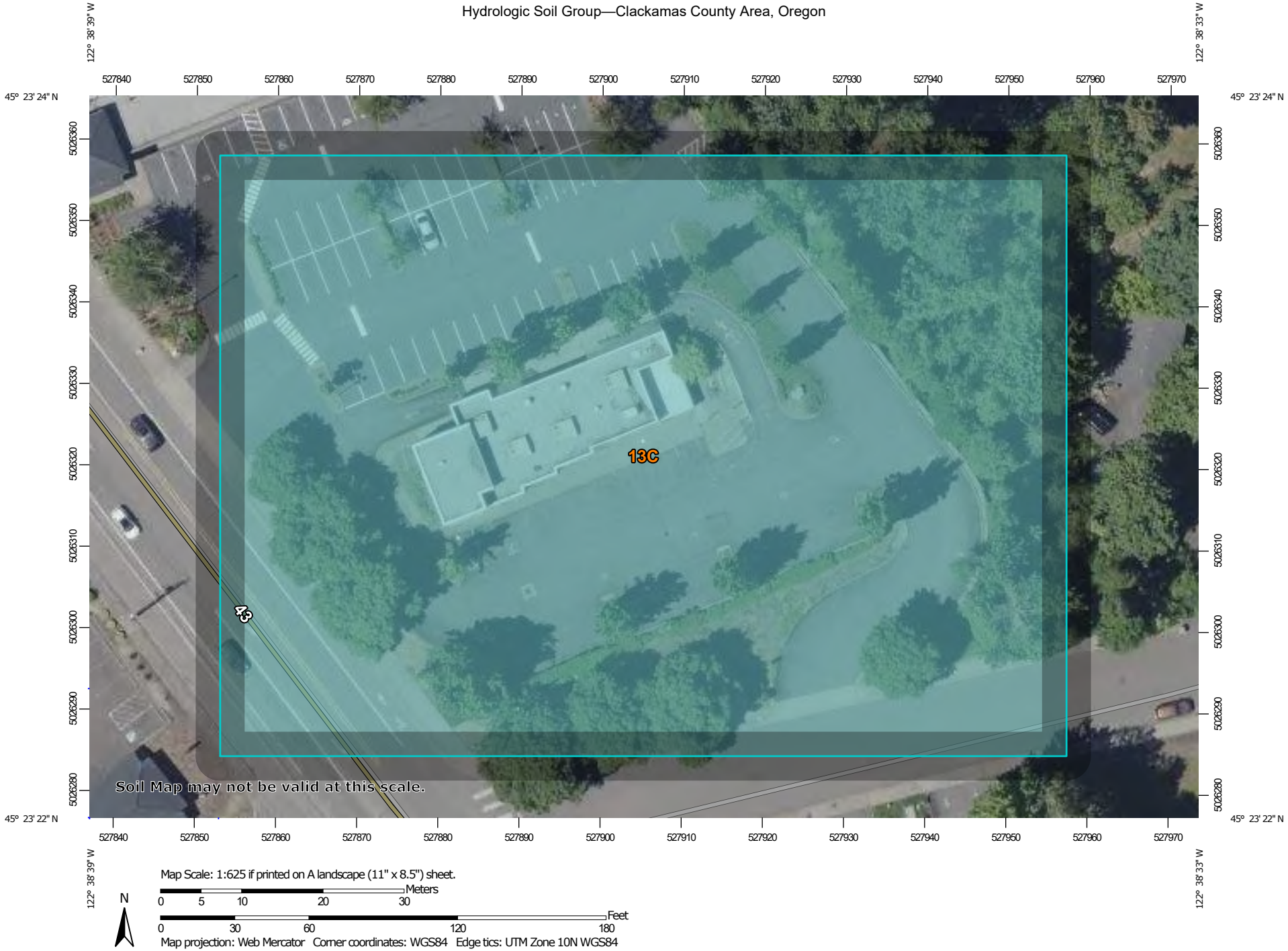
Storm Events:

Water Quality (WQ) Storm Event* =	**1.00***	in/24-hours per West Linn Design Standards 5/25
2-year Storm Event =	**2.50**	in/24-hours per West Linn Design Standards 5/25
10-year Storm Event =	**3.45**	in/24-hours per West Linn Design Standards 5/25
25-year Storm Event =	**3.90**	in/24-hours per West Linn Design Standards 5/25
		*80% of Average Annual Runoff for West Linn
Time of Concentration	**10.0**	minutes
Roughness Coefficient	**0.013**	

Curve Number Assumptions:

NRSC Soil Group =	**C**	
Impervious Area =	**98**	per West Linn Design Standards 5/25
Existing Pervious Area =	**86**	per West Linn Design Standards 5/25
Proposed Pervious Area =	**74**	per West Linn Design Standards 5/25
Pre-development Area =	**70**	per West Linn Design Standards 5/25

Appendix D: Soil Resource Report



Map Scale: 1:625 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 21, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
13C	Cascade silt loam, 8 to 15 percent slopes	C	1.9	100.0%
Totals for Area of Interest			**1.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

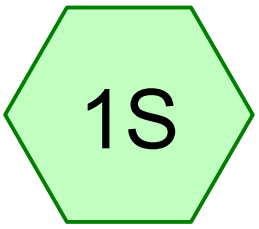
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

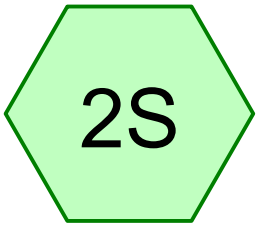
Appendix E: Geotechnical Report

To be provided in final stormwater report

Appendix F: Water Quality Calculations



Total Site (PreDev)



Total Site (PostDev)

Subcat Reach Pond Link

Routing Diagram for 25-C007 Kaady Car Wash
Prepared by Froelich Engineers, Printed 7/23/2025

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Total Site (PreDev) Runoff Area=31,100 sf 0.00% Impervious Runoff Depth=0.00"
Tc=10.0 min CN=70/0 Runoff=0.00 cfs 0.000 af

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=0.78"
Tc=5.0 min CN=74/98 Runoff=0.14 cfs 0.047 af

water quality flow

Summary for Subcatchment 1S: Total Site (PreDev)

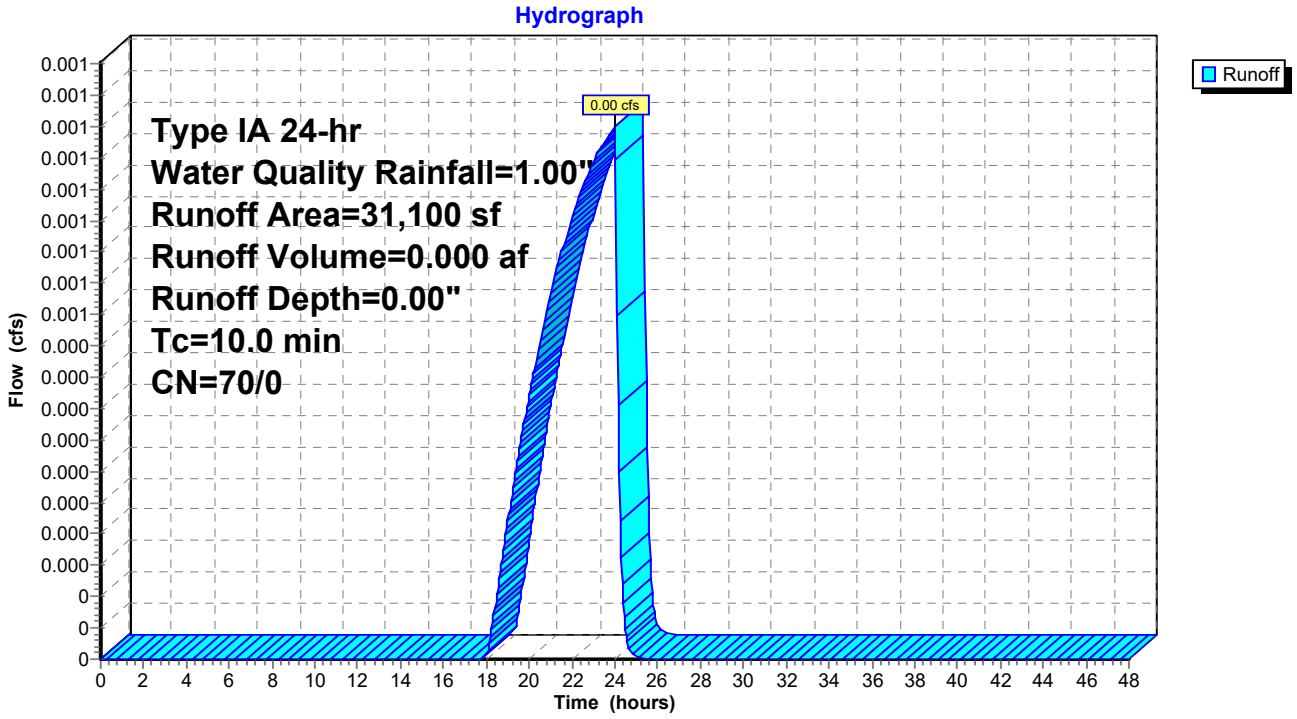
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr Water Quality Rainfall=1.00"

	Area (sf)	CN	Description
*	31,100	70	
	31,100	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Total Site (PreDev)



Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

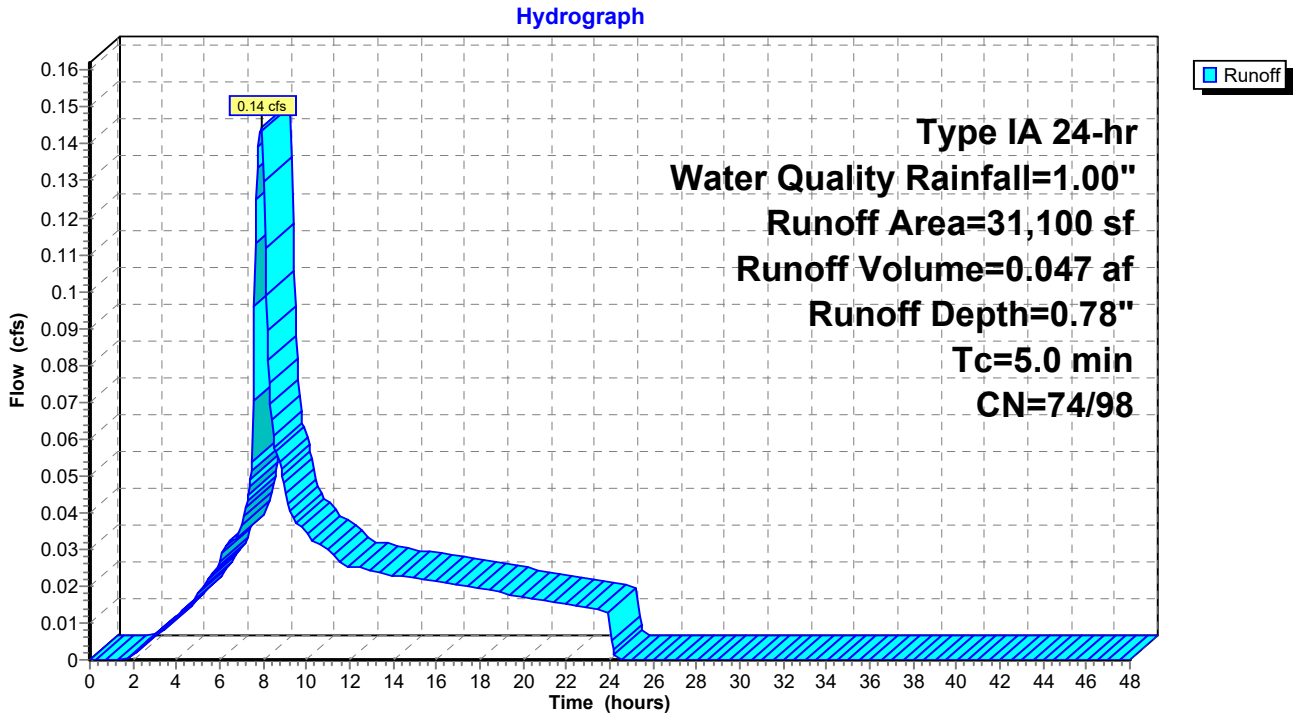
Runoff = 0.14 cfs @ 7.92 hrs, Volume= 0.047 af, Depth= 0.78"
Routed to Pond 3P : Det SC-800

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr Water Quality Rainfall=1.00"

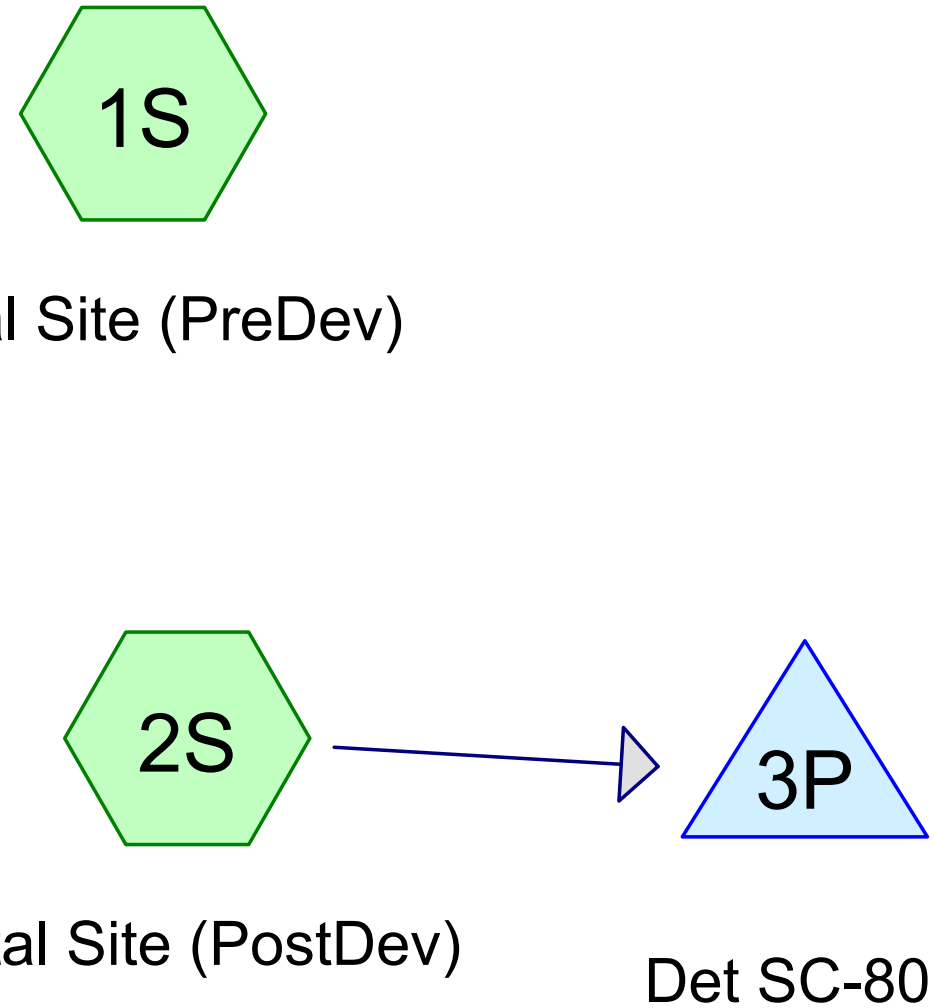
	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Appendix G: Water Quantity Calculations



Subcat Reach Pond Link

Routing Diagram for 25-C007 Kaady Car Wash
Prepared by Froelich Engineers, Printed 7/29/2025

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type IA 24-hr		Default	24.00	1	2.50	2
2	10-Year	Type IA 24-hr		Default	24.00	1	3.45	2
3	25-Year	Type IA 24-hr		Default	24.00	1	3.90	2

predev flowrate

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Total Site (PreDev) Runoff Area=31,100 sf 0.00% Impervious Runoff Depth=0.46"
Tc=10.0 min CN=70/0 Runoff=0.02 cfs 0.027 af

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=2.25"
Tc=5.0 min CN=74/98 Runoff=0.41 cfs 0.134 af

Pond 3P: Det SC-800 Peak Elev=103.24' Storage=0.109 af Inflow=0.41 cfs 0.134 af
Outflow=0.02 cfs 0.057 af

Total Runoff Area = 1.428 ac Runoff Volume = 0.161 af Average Runoff Depth = 1.35"
50.50% Pervious = 0.721 ac 49.50% Impervious = 0.707 ac

Summary for Subcatchment 1S: Total Site (PreDev)

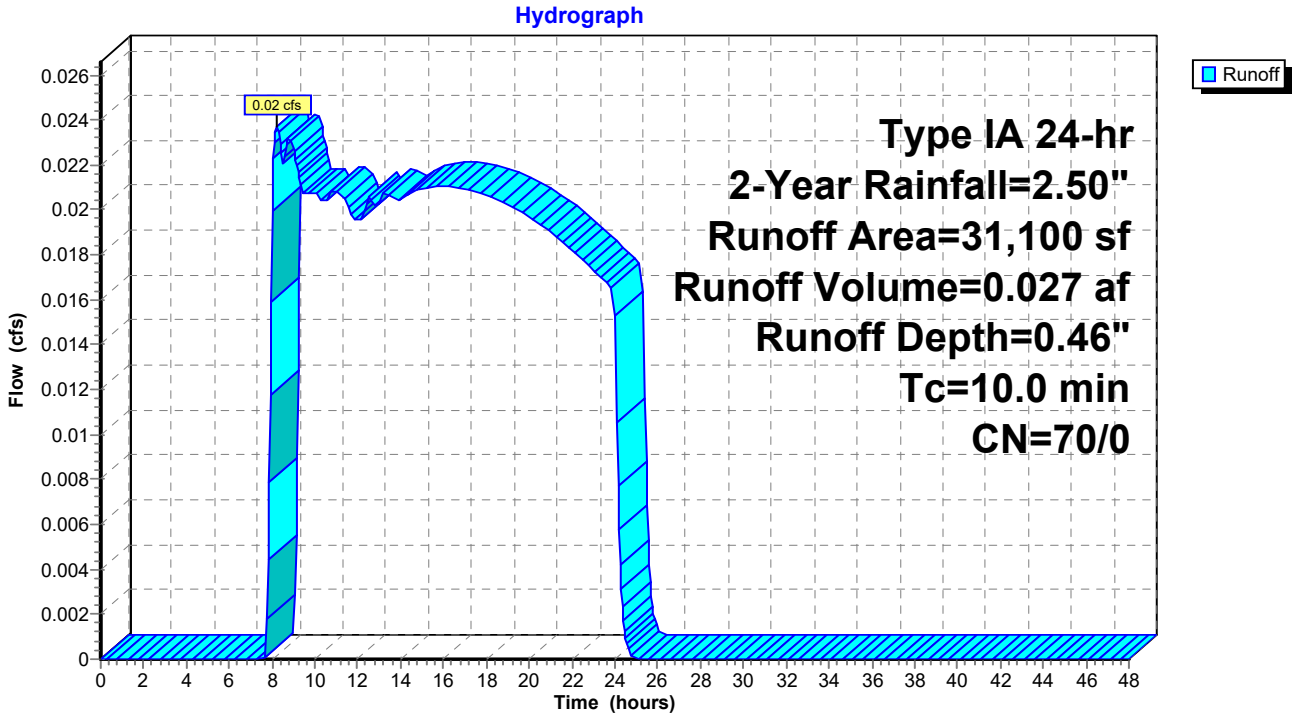
Runoff = 0.02 cfs @ 8.23 hrs, Volume= 0.027 af, Depth= 0.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-Year Rainfall=2.50"

	Area (sf)	CN	Description
*	31,100	70	
	31,100	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Total Site (PreDev)



Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

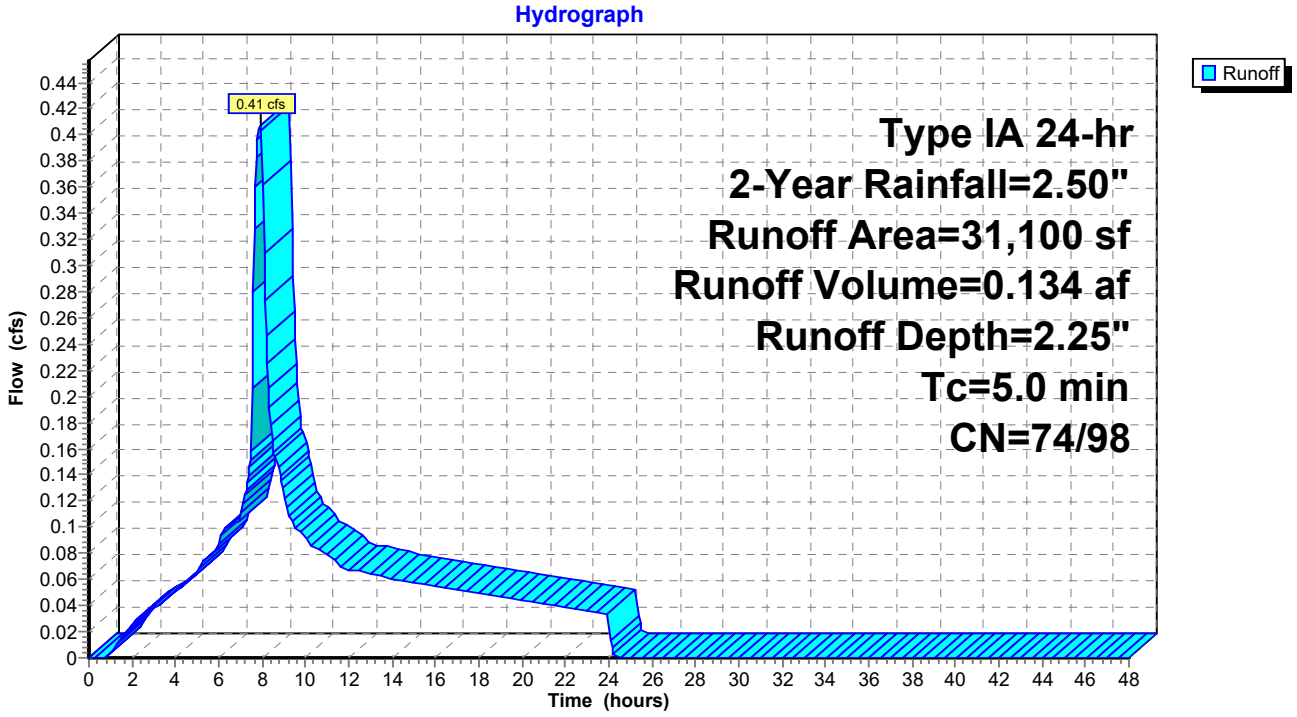
Runoff = 0.41 cfs @ 7.90 hrs, Volume= 0.134 af, Depth= 2.25"
Routed to Pond 3P : Det SC-800

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-Year Rainfall=2.50"

	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Summary for Pond 3P: Det SC-800

Inflow Area = 0.714 ac, 98.99% Impervious, Inflow Depth = 2.25" for 2-Year event
Inflow = 0.41 cfs @ 7.90 hrs, Volume= 0.134 af
Outflow = 0.02 cfs @ 24.08 hrs, Volume= 0.057 af, Atten= 95%, Lag= 971.0 min
Primary = 0.02 cfs @ 24.08 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 103.24' @ 24.08 hrs Surf.Area= 0.052 ac Storage= 0.109 af

Plug-Flow detention time= 1,215.7 min calculated for 0.057 af (43% of inflow)
Center-of-Mass det. time= 930.2 min (1,604.6 - 674.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.00'	0.049 af	**25.25'W x 89.17'L x 3.75'H Field A** 0.194 af Overall - 0.070 af Embedded = 0.123 af x 40.0% Voids
#2A	100.50'	0.070 af	**ADS_StormTech SC-800 +Cap** x 60 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 60 Chambers in 5 Rows Cap Storage= 3.4 cf x 2 x 5 rows = 34.2 cf
		0.120 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**0.625" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	103.65'	**8.000" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 24.08 hrs HW=103.24' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 8.63 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 3P: Det SC-800 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-800 +Cap (ADS StormTech®SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 5 rows = 34.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

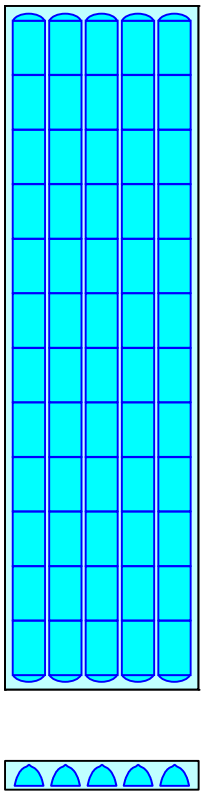
12 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 87.17' Row Length +12.0" End Stone x 2 = 89.17' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

60 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 5 Rows = 3,069.7 cf Chamber Storage

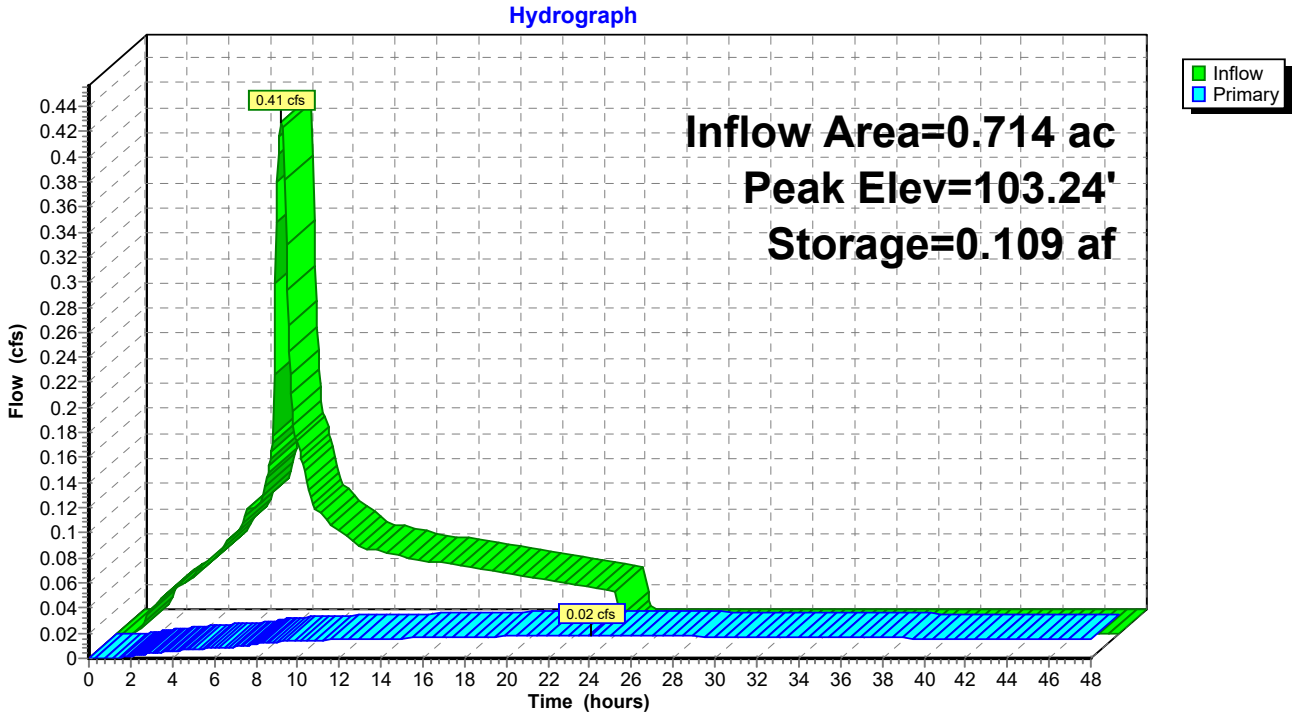
8,443.0 cf Field - 3,069.7 cf Chambers = 5,373.2 cf Stone x 40.0% Voids = 2,149.3 cf Stone Storage

Chamber Storage + Stone Storage = 5,219.0 cf = 0.120 af
Overall Storage Efficiency = 61.8%
Overall System Size = 89.17' x 25.25' x 3.75'

60 Chambers
312.7 cy Field
199.0 cy Stone



Pond 3P: Det SC-800



predev flowrate

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Total Site (PreDev) Runoff Area=31,100 sf 0.00% Impervious Runoff Depth=0.98"
Tc=10.0 min CN=70/0 Runoff=0.11 cfs 0.058 af

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=3.20"
Tc=5.0 min CN=74/98 Runoff=0.57 cfs 0.190 af

Pond 3P: Det SC-800 Peak Elev=103.69' Storage=0.119 af Inflow=0.57 cfs 0.190 af
Outflow=0.09 cfs 0.106 af

Total Runoff Area = 1.428 ac Runoff Volume = 0.248 af Average Runoff Depth = 2.09"
50.50% Pervious = 0.721 ac 49.50% Impervious = 0.707 ac

Summary for Subcatchment 1S: Total Site (PreDev)

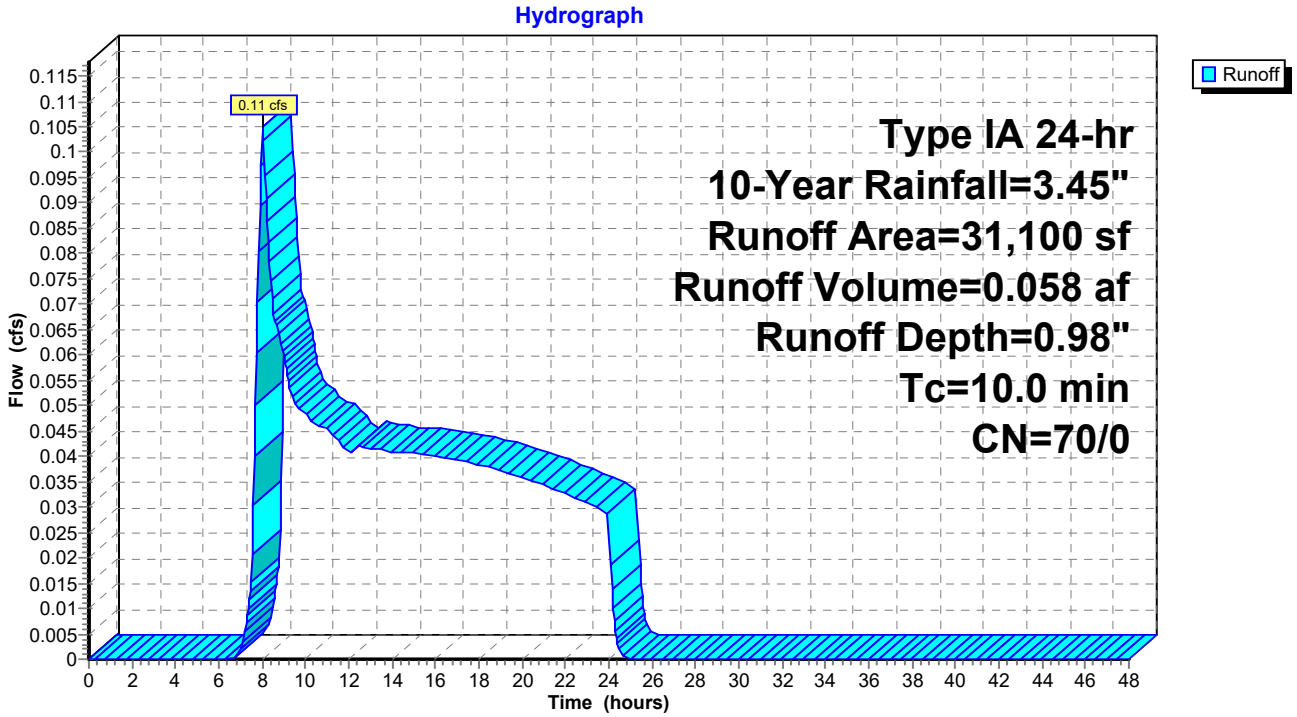
Runoff = 0.11 cfs @ 8.03 hrs, Volume= 0.058 af, Depth= 0.98"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-Year Rainfall=3.45"

	Area (sf)	CN	Description
*	31,100	70	
	31,100	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Total Site (PreDev)



Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

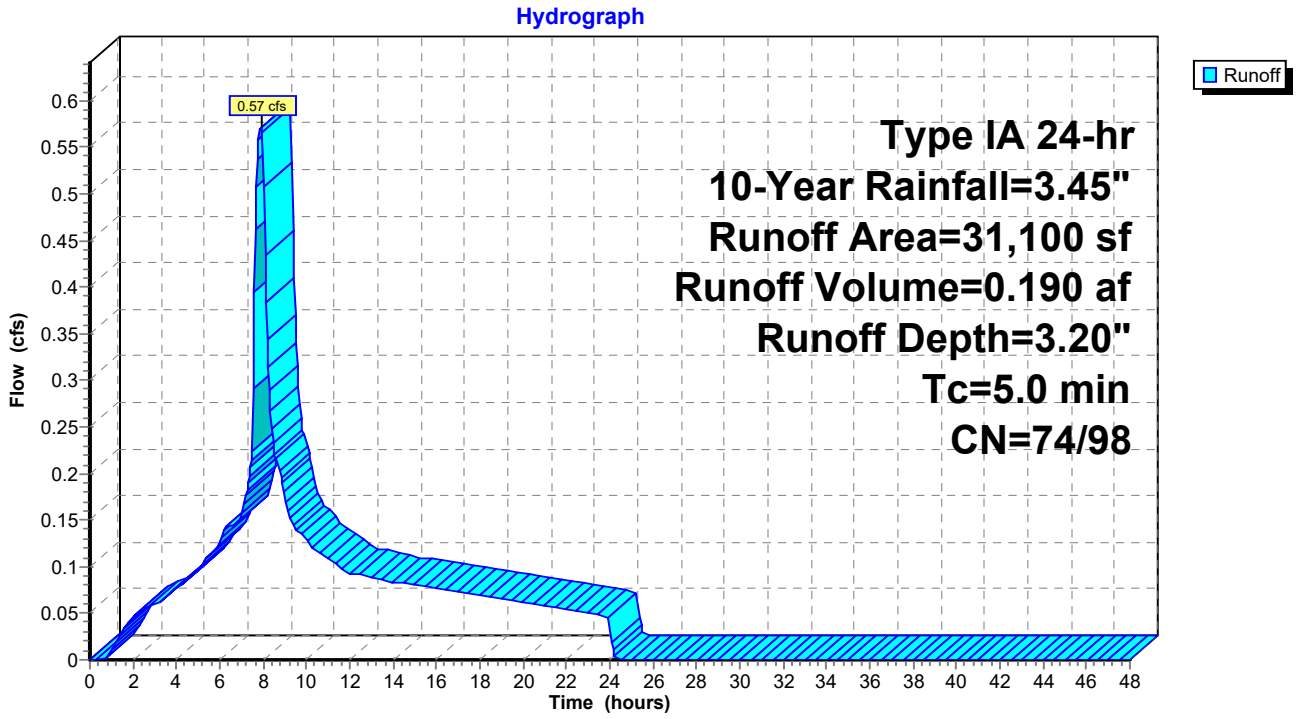
Runoff = 0.57 cfs @ 7.90 hrs, Volume= 0.190 af, Depth= 3.20"
Routed to Pond 3P : Det SC-800

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-Year Rainfall=3.45"

	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Summary for Pond 3P: Det SC-800

Inflow Area = 0.714 ac, 98.99% Impervious, Inflow Depth = 3.20" for 10-Year event
Inflow = 0.57 cfs @ 7.90 hrs, Volume= 0.190 af
Outflow = 0.09 cfs @ 13.62 hrs, Volume= 0.106 af, Atten= 85%, Lag= 343.6 min
Primary = 0.09 cfs @ 13.62 hrs, Volume= 0.106 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 103.69' @ 13.62 hrs Surf.Area= 0.052 ac Storage= 0.119 af

Plug-Flow detention time= 945.2 min calculated for 0.106 af (56% of inflow)
Center-of-Mass det. time= 700.6 min (1,365.7 - 665.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.00'	0.049 af	**25.25'W x 89.17'L x 3.75'H Field A** 0.194 af Overall - 0.070 af Embedded = 0.123 af x 40.0% Voids
#2A	100.50'	0.070 af	**ADS_StormTech SC-800 +Cap** x 60 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 60 Chambers in 5 Rows Cap Storage= 3.4 cf x 2 x 5 rows = 34.2 cf
		0.120 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**0.625" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	103.65'	**8.000" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 13.62 hrs HW=103.69' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.02 cfs @ 9.22 fps)
2=Orifice/Grate (Weir Controls 0.06 cfs @ 0.68 fps)

Pond 3P: Det SC-800 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-800 +Cap (ADS StormTech®SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 5 rows = 34.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

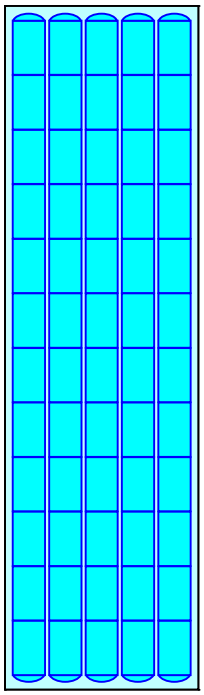
12 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 87.17' Row Length +12.0" End Stone x 2 = 89.17' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

60 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 5 Rows = 3,069.7 cf Chamber Storage

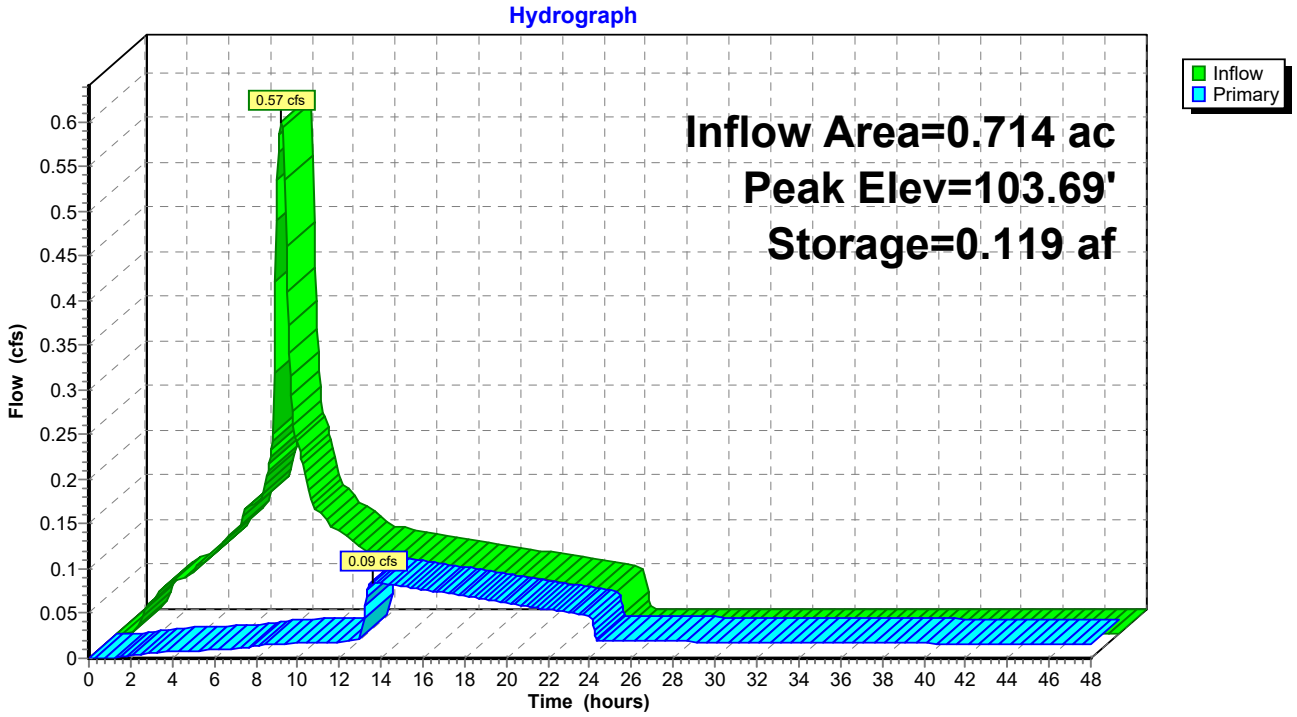
8,443.0 cf Field - 3,069.7 cf Chambers = 5,373.2 cf Stone x 40.0% Voids = 2,149.3 cf Stone Storage

Chamber Storage + Stone Storage = 5,219.0 cf = 0.120 af
Overall Storage Efficiency = 61.8%
Overall System Size = 89.17' x 25.25' x 3.75'

60 Chambers
312.7 cy Field
199.0 cy Stone



Pond 3P: Det SC-800



predev flowrate

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Total Site (PreDev) Runoff Area=31,100 sf 0.00% Impervious Runoff Depth=1.26"
Tc=10.0 min CN=70/0 Runoff=0.15 cfs 0.075 af

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=3.64"
Tc=5.0 min CN=74/98 Runoff=0.65 cfs 0.217 af

Pond 3P: Det SC-800 Peak Elev=103.71' Storage=0.119 af Inflow=0.65 cfs 0.217 af
Outflow=0.12 cfs 0.133 af

Total Runoff Area = 1.428 ac Runoff Volume = 0.292 af Average Runoff Depth = 2.45"
50.50% Pervious = 0.721 ac 49.50% Impervious = 0.707 ac

Peak flowrate for conveyance

Summary for Subcatchment 1S: Total Site (PreDev)

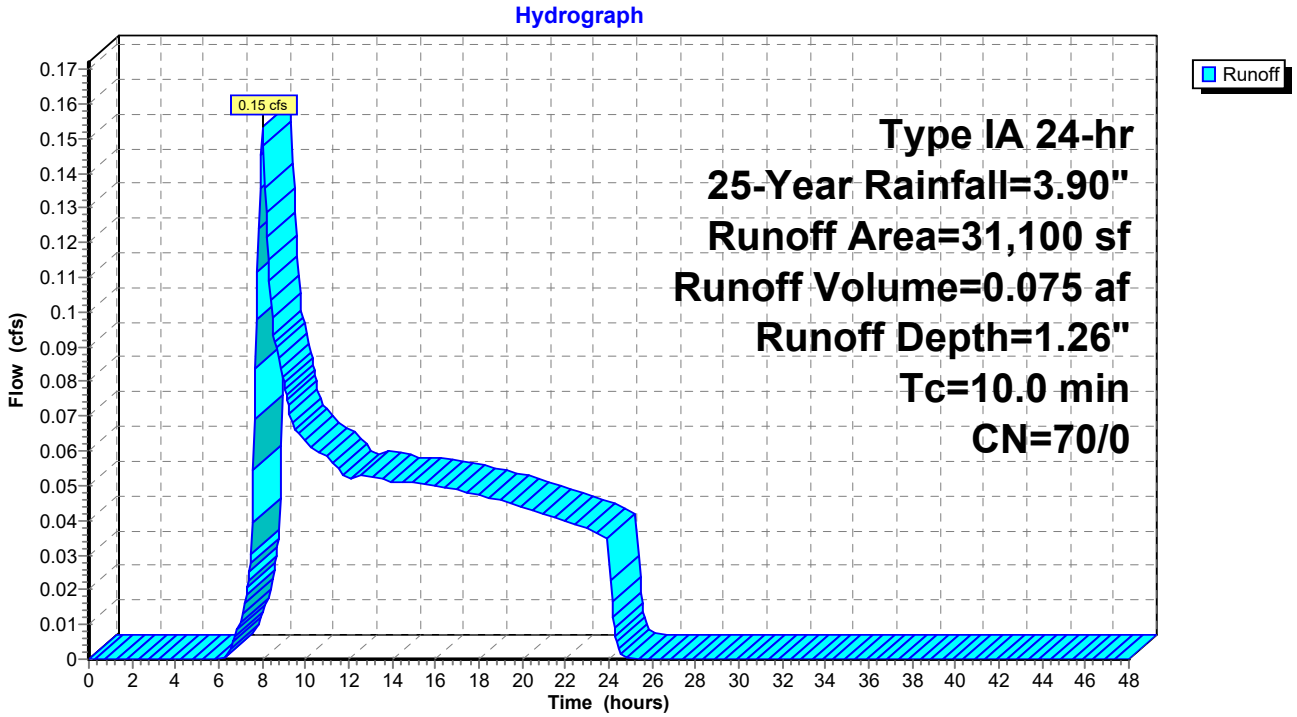
Runoff = 0.15 cfs @ 8.02 hrs, Volume= 0.075 af, Depth= 1.26"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	31,100	70	
	31,100	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Total Site (PreDev)



Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

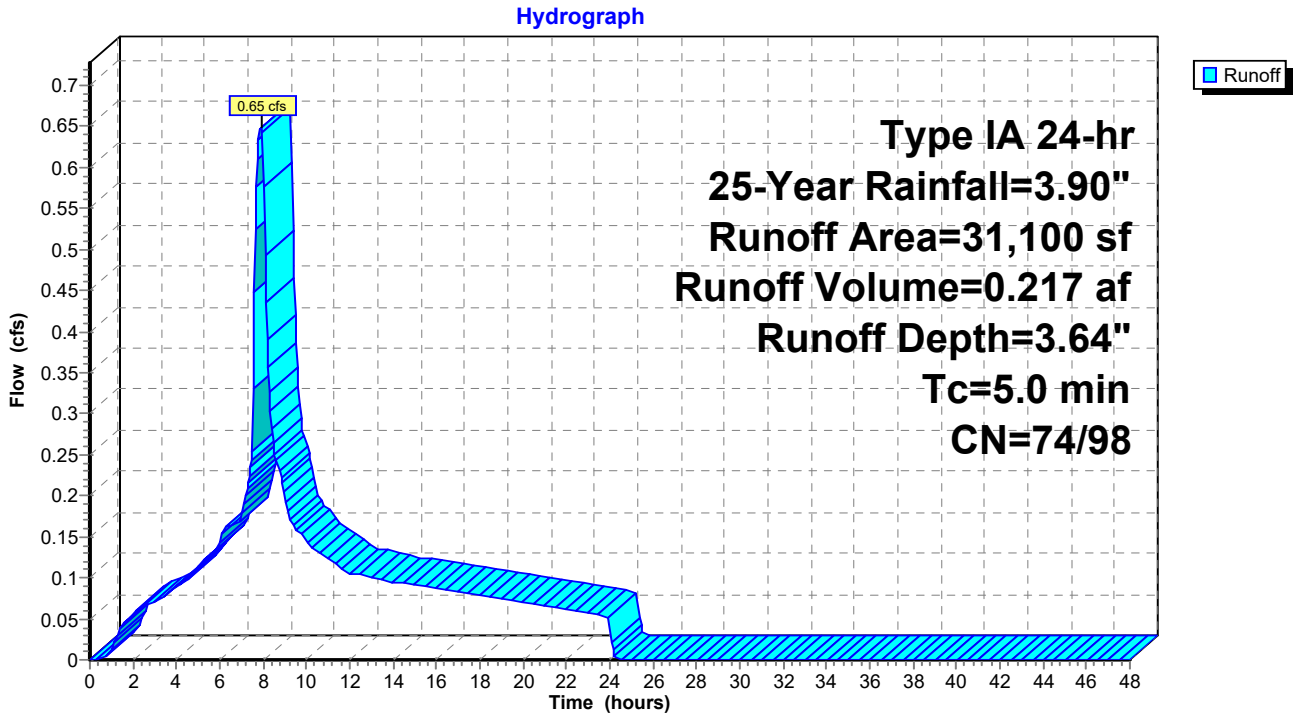
Runoff = 0.65 cfs @ 7.90 hrs, Volume= 0.217 af, Depth= 3.64"
Routed to Pond 3P : Det SC-800

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Summary for Pond 3P: Det SC-800

Inflow Area = 0.714 ac, 98.99% Impervious, Inflow Depth = 3.64" for 25-Year event
Inflow = 0.65 cfs @ 7.90 hrs, Volume= 0.217 af
Outflow = 0.12 cfs @ 11.21 hrs, Volume= 0.133 af, Atten= 82%, Lag= 198.8 min
Primary = 0.12 cfs @ 11.21 hrs, Volume= 0.133 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 103.71' @ 11.21 hrs Surf.Area= 0.052 ac Storage= 0.119 af

Plug-Flow detention time= 819.7 min calculated for 0.133 af (61% of inflow)
Center-of-Mass det. time= 595.3 min (1,257.4 - 662.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.00'	0.049 af	**25.25'W x 89.17'L x 3.75'H Field A** 0.194 af Overall - 0.070 af Embedded = 0.123 af x 40.0% Voids
#2A	100.50'	0.070 af	**ADS_StormTech SC-800 +Cap** x 60 Inside #1 Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap 60 Chambers in 5 Rows Cap Storage= 3.4 cf x 2 x 5 rows = 34.2 cf
		0.120 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**0.625" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	103.65'	**8.000" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.12 cfs @ 11.21 hrs HW=103.71' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 9.24 fps)
└**2=Orifice/Grate** (Weir Controls 0.10 cfs @ 0.80 fps)

Pond 3P: Det SC-800 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-800 +Cap (ADS StormTech®SC-800 with cap volume)
Effective Size= 45.0"W x 33.0"H => 7.11 sf x 7.12'L = 50.6 cf
Overall Size= 51.0"W x 33.0"H x 7.55'L with 0.43' Overlap
Cap Storage= 3.4 cf x 2 x 5 rows = 34.2 cf

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

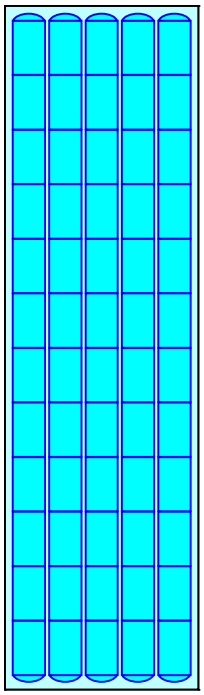
12 Chambers/Row x 7.12' Long +0.88' Cap Length x 2 = 87.17' Row Length +12.0" End Stone x 2 = 89.17' Base Length
5 Rows x 51.0" Wide + 6.0" Spacing x 4 + 12.0" Side Stone x 2 = 25.25' Base Width
6.0" Stone Base + 33.0" Chamber Height + 6.0" Stone Cover = 3.75' Field Height

60 Chambers x 50.6 cf + 3.4 cf Cap Volume x 2 x 5 Rows = 3,069.7 cf Chamber Storage

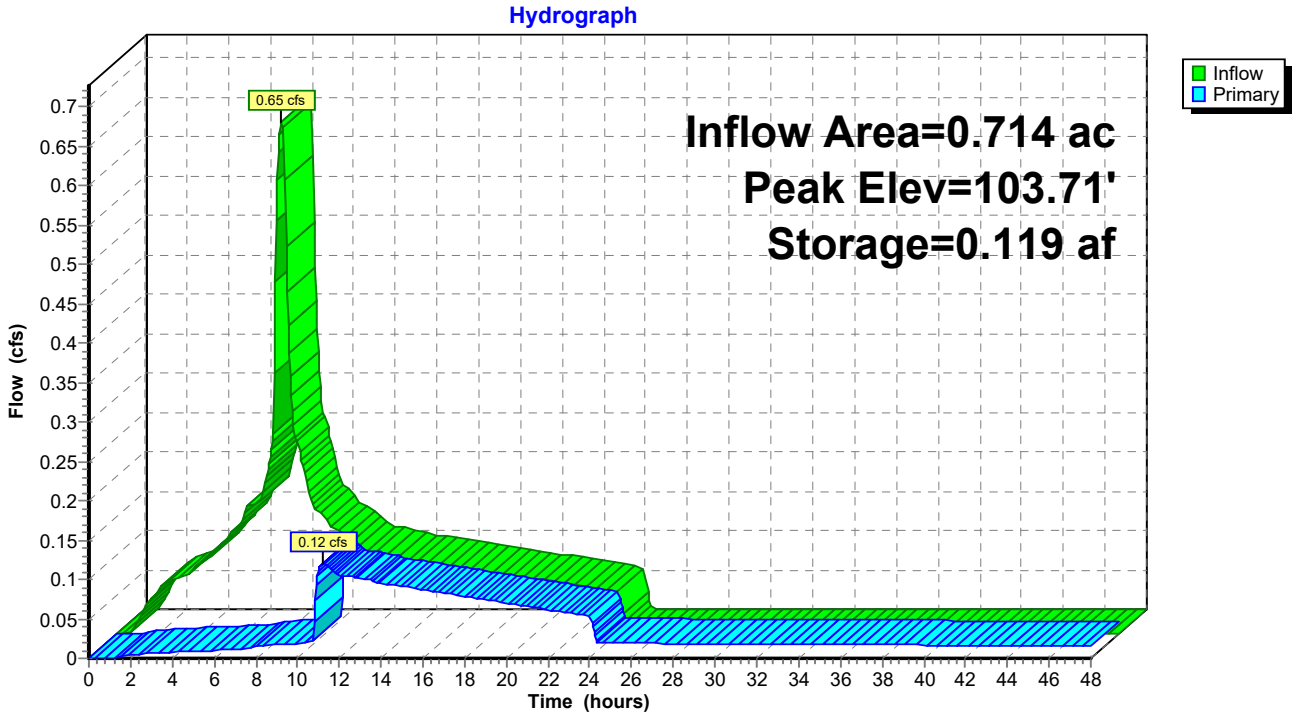
8,443.0 cf Field - 3,069.7 cf Chambers = 5,373.2 cf Stone x 40.0% Voids = 2,149.3 cf Stone Storage

Chamber Storage + Stone Storage = 5,219.0 cf = 0.120 af
Overall Storage Efficiency = 61.8%
Overall System Size = 89.17' x 25.25' x 3.75'

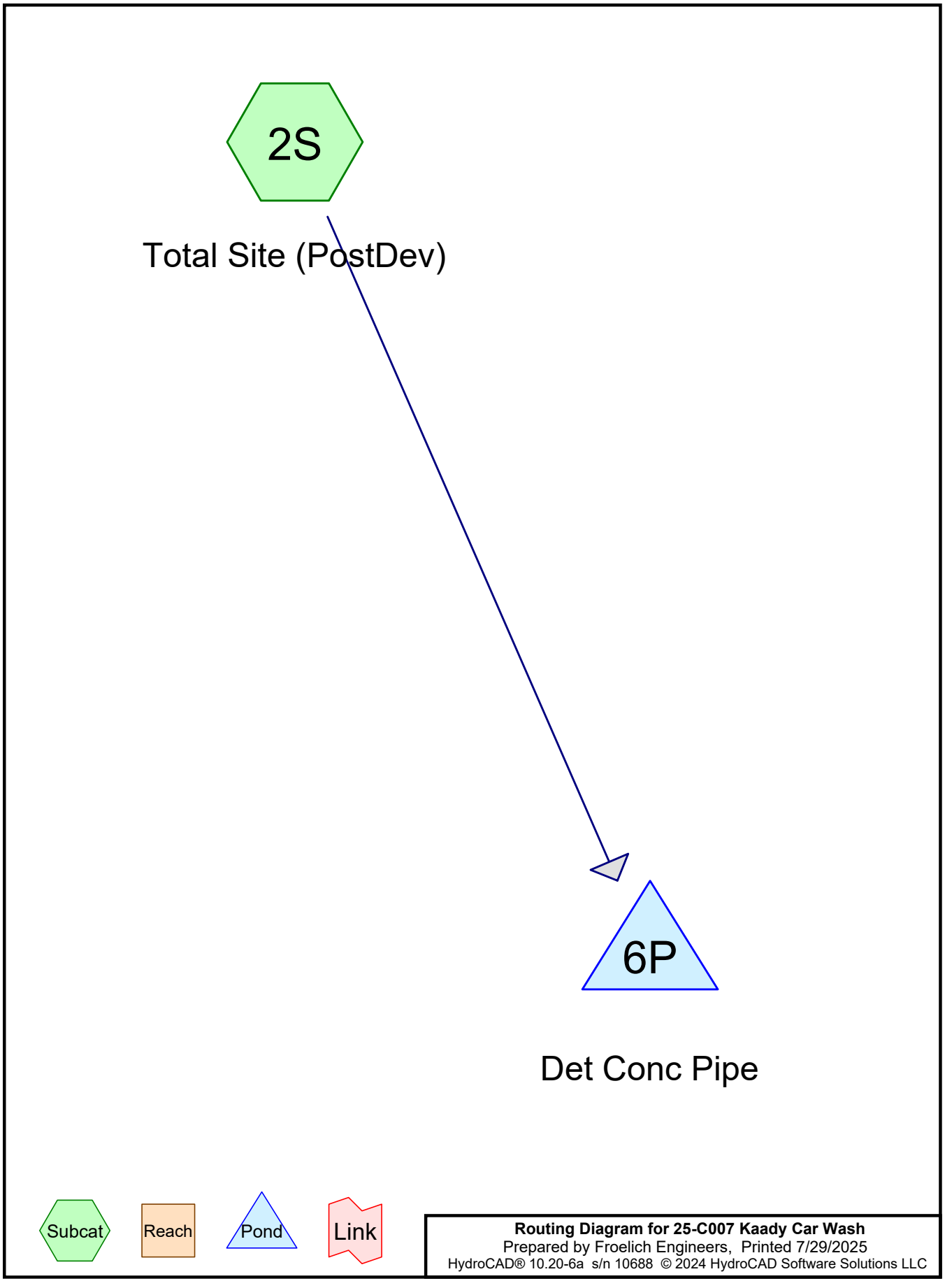
60 Chambers
312.7 cy Field
199.0 cy Stone



Pond 3P: Det SC-800



CONCRETE DETENTION PIPE ANALYSIS



Routing Diagram for 25-C007 Kaady Car Wash
Prepared by Froelich Engineers, Printed 7/29/2025

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type IA 24-hr		Default	24.00	1	2.50	2
2	10-Year	Type IA 24-hr		Default	24.00	1	3.45	2
3	25-Year	Type IA 24-hr		Default	24.00	1	3.90	2

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=2.25"
Tc=5.0 min CN=74/98 Runoff=0.41 cfs 0.134 af

Pond 6P: Det Conc Pipe Peak Elev=102.63' Storage=0.105 af Inflow=0.41 cfs 0.134 af
Outflow=0.02 cfs 0.066 af

Total Runoff Area = 0.714 ac Runoff Volume = 0.134 af Average Runoff Depth = 2.25"
1.01% Pervious = 0.007 ac 98.99% Impervious = 0.707 ac

Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

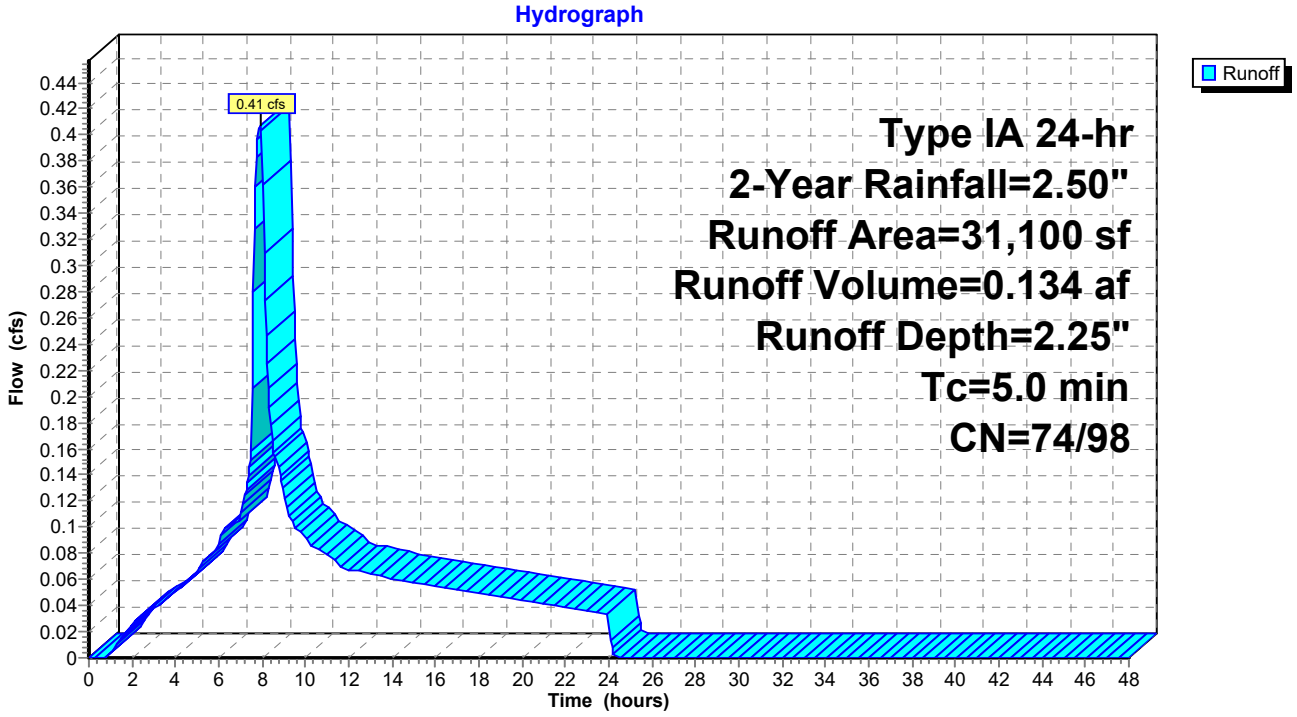
Runoff = 0.41 cfs @ 7.90 hrs, Volume= 0.134 af, Depth= 2.25"
Routed to Pond 6P : Det Conc Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-Year Rainfall=2.50"

	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Summary for Pond 6P: Det Conc Pipe

Inflow Area = 0.714 ac, 98.99% Impervious, Inflow Depth = 2.25" for 2-Year event
Inflow = 0.41 cfs @ 7.90 hrs, Volume= 0.134 af
Outflow = 0.02 cfs @ 24.07 hrs, Volume= 0.066 af, Atten= 95%, Lag= 970.2 min
Primary = 0.02 cfs @ 24.07 hrs, Volume= 0.066 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 102.63' @ 24.07 hrs Surf.Area= 0.065 ac Storage= 0.105 af

Plug-Flow detention time= 1,181.4 min calculated for 0.066 af (49% of inflow)
Center-of-Mass det. time= 915.5 min (1,590.0 - 674.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.00'	0.028 af	**22.00'W x 129.00'L x 3.08'H Field A** 0.201 af Overall - 0.132 af Embedded = 0.069 af x 40.0% Voids
#2A	100.00'	0.087 af	**RCP Round 30** x 96 Inside #1 Inside= 30.0"W x 30.0"H => 4.91 sf x 8.00'L = 39.3 cf Outside= 37.0"W x 37.0"H => 7.46 sf x 8.00'L = 59.7 cf 96 Chambers in 6 Rows
		0.114 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**0.700" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.90'	**8.000" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 24.07 hrs HW=102.63' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 7.76 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 6P: Det Conc Pipe - Chamber Wizard Field A

Chamber Model = RCP Round 30 (Round Reinforced Concrete Pipe)
Inside= 30.0"W x 30.0"H => 4.91 sf x 8.00'L = 39.3 cf
Outside= 37.0"W x 37.0"H => 7.46 sf x 8.00'L = 59.7 cf

37.0" Wide + 6.0" Spacing = 43.0" C-C Row Spacing

16 Chambers/Row x 8.00' Long = 128.00' Row Length +6.0" End Stone x 2 = 129.00' Base Length
6 Rows x 37.0" Wide + 6.0" Spacing x 5 + 6.0" Side Stone x 2 = 22.00' Base Width
37.0" Chamber Height = 3.08' Field Height

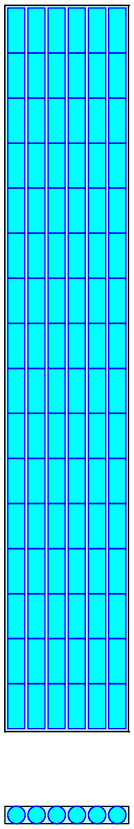
96 Chambers x 39.3 cf = 3,769.9 cf Chamber Storage
96 Chambers x 59.7 cf = 5,732.0 cf Displacement

8,750.5 cf Field - 5,732.0 cf Chambers = 3,018.5 cf Stone x 40.0% Voids = 1,207.4 cf Stone Storage

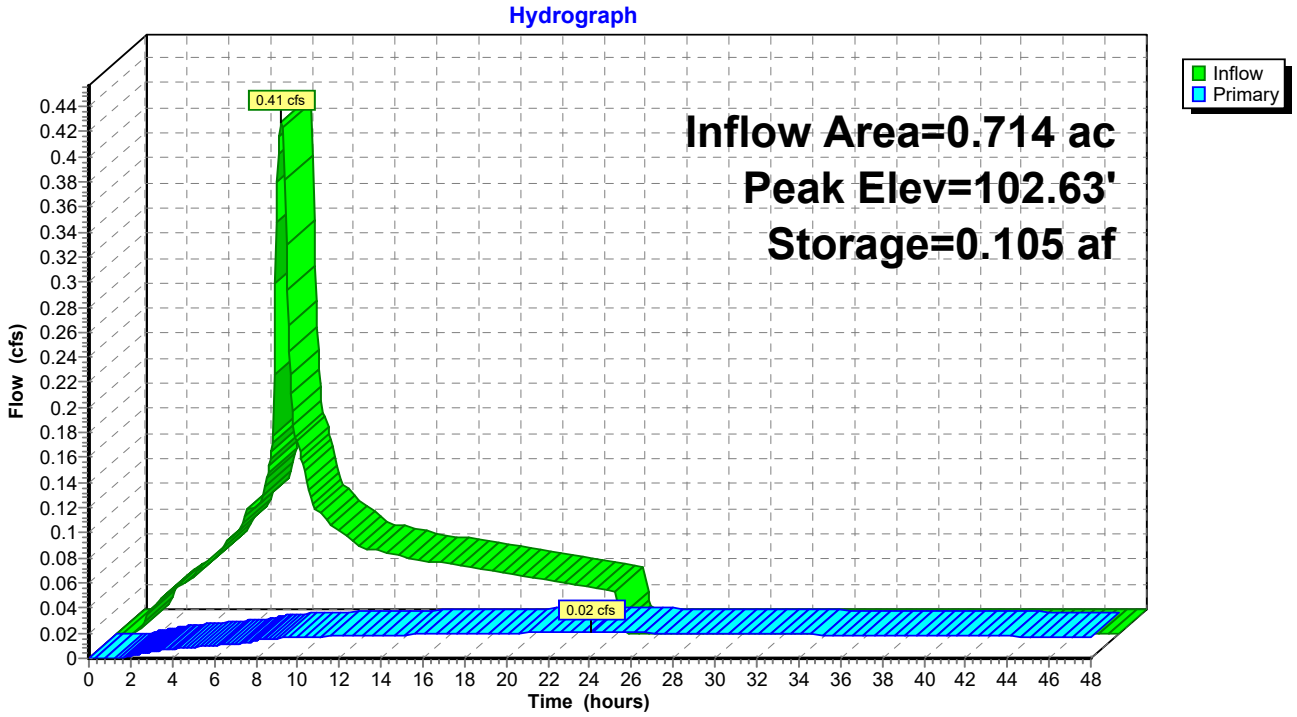
Chamber Storage + Stone Storage = 4,977.3 cf = 0.114 af
Overall Storage Efficiency = 56.9%
Overall System Size = 129.00' x 22.00' x 3.08'

OVERALL SIZE

96 Chambers
324.1 cy Field
111.8 cy Stone



Pond 6P: Det Conc Pipe



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=3.20"
Tc=5.0 min CN=74/98 Runoff=0.57 cfs 0.190 af

Pond 6P: Det Conc Pipe Peak Elev=102.95' Storage=0.111 af Inflow=0.57 cfs 0.190 af
Outflow=0.09 cfs 0.117 af

Total Runoff Area = 0.714 ac Runoff Volume = 0.190 af Average Runoff Depth = 3.20"
1.01% Pervious = 0.007 ac 98.99% Impervious = 0.707 ac

Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

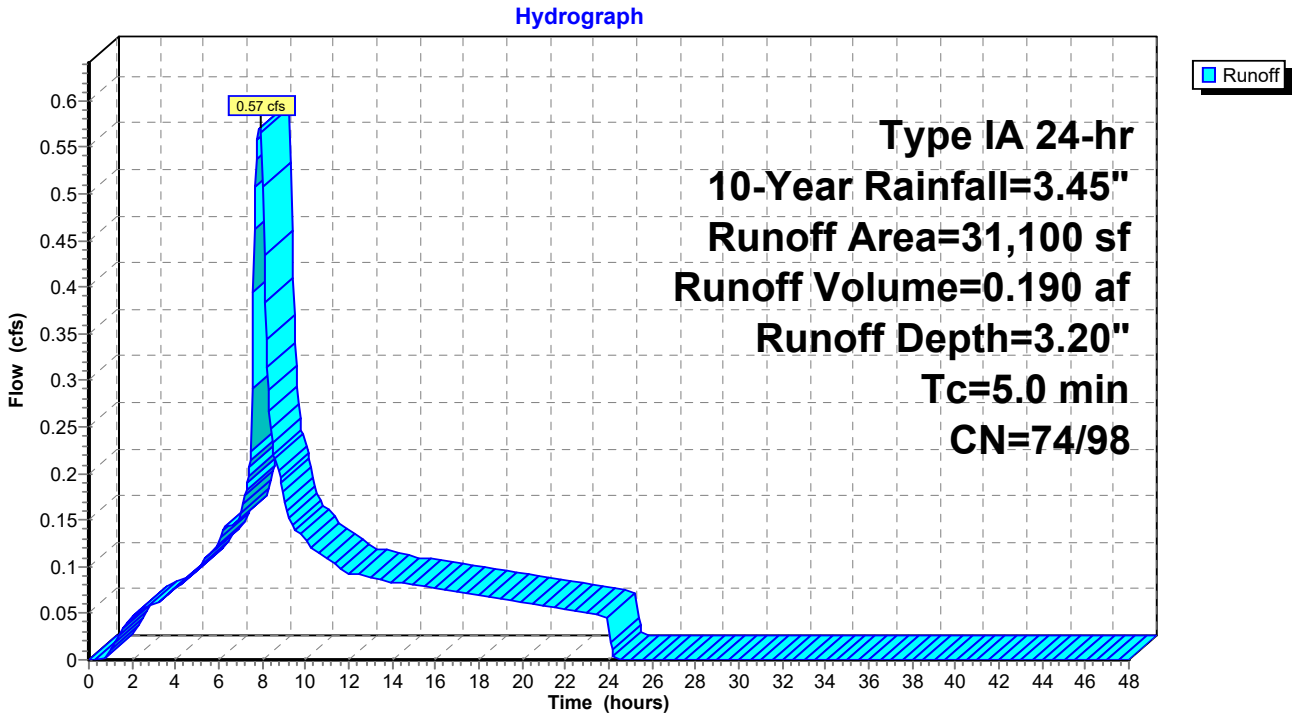
Runoff = 0.57 cfs @ 7.90 hrs, Volume= 0.190 af, Depth= 3.20"
Routed to Pond 6P : Det Conc Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-Year Rainfall=3.45"

	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Summary for Pond 6P: Det Conc Pipe

Inflow Area = 0.714 ac, 98.99% Impervious, Inflow Depth = 3.20" for 10-Year event
Inflow = 0.57 cfs @ 7.90 hrs, Volume= 0.190 af
Outflow = 0.09 cfs @ 12.65 hrs, Volume= 0.117 af, Atten= 84%, Lag= 285.2 min
Primary = 0.09 cfs @ 12.65 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 102.95' @ 12.65 hrs Surf.Area= 0.065 ac Storage= 0.111 af

Plug-Flow detention time= 908.7 min calculated for 0.117 af (62% of inflow)
Center-of-Mass det. time= 684.7 min (1,349.8 - 665.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.00'	0.028 af	**22.00'W x 129.00'L x 3.08'H Field A** 0.201 af Overall - 0.132 af Embedded = 0.069 af x 40.0% Voids
#2A	100.00'	0.087 af	**RCP Round 30** x 96 Inside #1 Inside= 30.0"W x 30.0"H => 4.91 sf x 8.00'L = 39.3 cf Outside= 37.0"W x 37.0"H => 7.46 sf x 8.00'L = 59.7 cf 96 Chambers in 6 Rows
		0.114 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**0.700" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.90'	**8.000" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 12.65 hrs HW=102.95' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 8.22 fps)
└**2=Orifice/Grate** (Weir Controls 0.07 cfs @ 0.70 fps)

Pond 6P: Det Conc Pipe - Chamber Wizard Field A

Chamber Model = RCP Round 30 (Round Reinforced Concrete Pipe)
Inside= 30.0"W x 30.0"H => 4.91 sf x 8.00'L = 39.3 cf
Outside= 37.0"W x 37.0"H => 7.46 sf x 8.00'L = 59.7 cf

37.0" Wide + 6.0" Spacing = 43.0" C-C Row Spacing

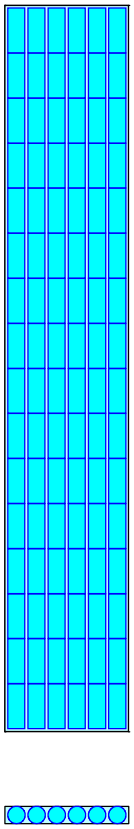
16 Chambers/Row x 8.00' Long = 128.00' Row Length +6.0" End Stone x 2 = 129.00' Base Length
6 Rows x 37.0" Wide + 6.0" Spacing x 5 + 6.0" Side Stone x 2 = 22.00' Base Width
37.0" Chamber Height = 3.08' Field Height

96 Chambers x 39.3 cf = 3,769.9 cf Chamber Storage
96 Chambers x 59.7 cf = 5,732.0 cf Displacement

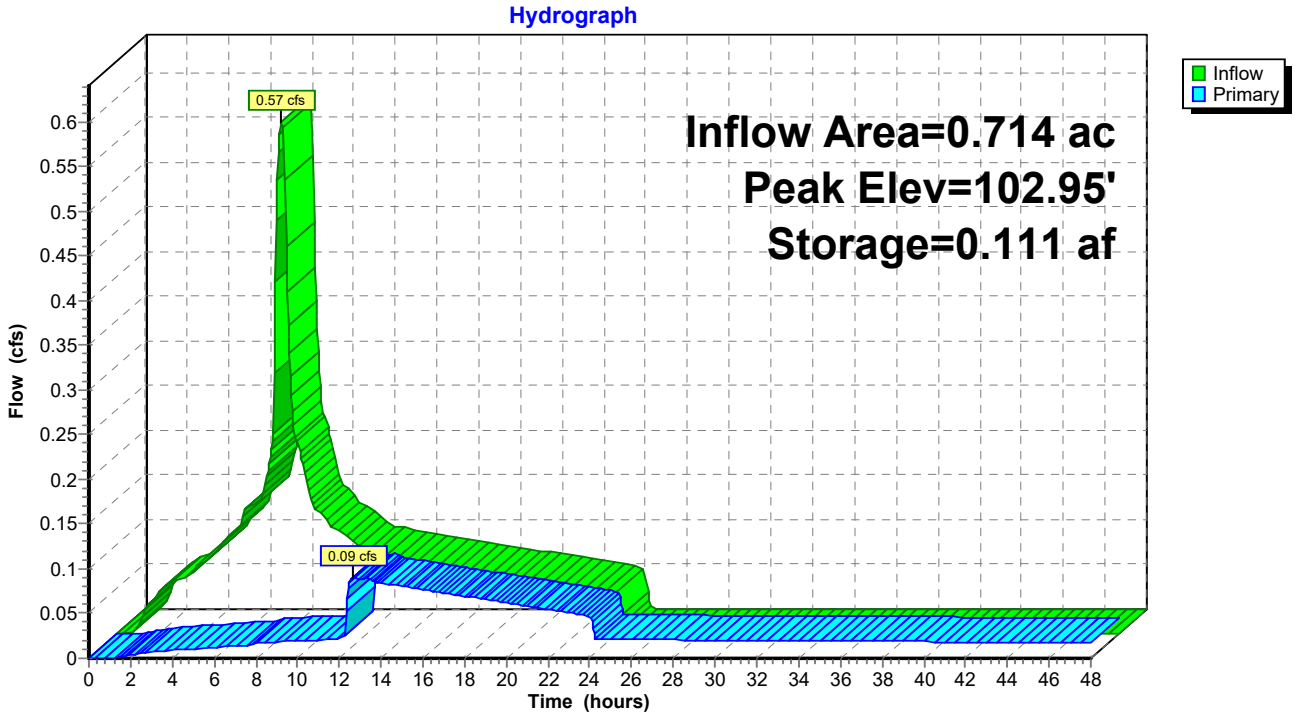
8,750.5 cf Field - 5,732.0 cf Chambers = 3,018.5 cf Stone x 40.0% Voids = 1,207.4 cf Stone Storage

Chamber Storage + Stone Storage = 4,977.3 cf = 0.114 af
Overall Storage Efficiency = 56.9%
Overall System Size = 129.00' x 22.00' x 3.08'

96 Chambers
324.1 cy Field
111.8 cy Stone



Pond 6P: Det Conc Pipe



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment2S: Total Site (PostDev) Runoff Area=31,100 sf 98.99% Impervious Runoff Depth=3.64"
Tc=5.0 min CN=74/98 Runoff=0.65 cfs 0.217 af

Pond 6P: Det Conc Pipe Peak Elev=102.96' Storage=0.112 af Inflow=0.65 cfs 0.217 af
Outflow=0.13 cfs 0.144 af

Total Runoff Area = 0.714 ac Runoff Volume = 0.217 af Average Runoff Depth = 3.64"
1.01% Pervious = 0.007 ac 98.99% Impervious = 0.707 ac

Summary for Subcatchment 2S: Total Site (PostDev)

[49] Hint: Tc<2dt may require smaller dt

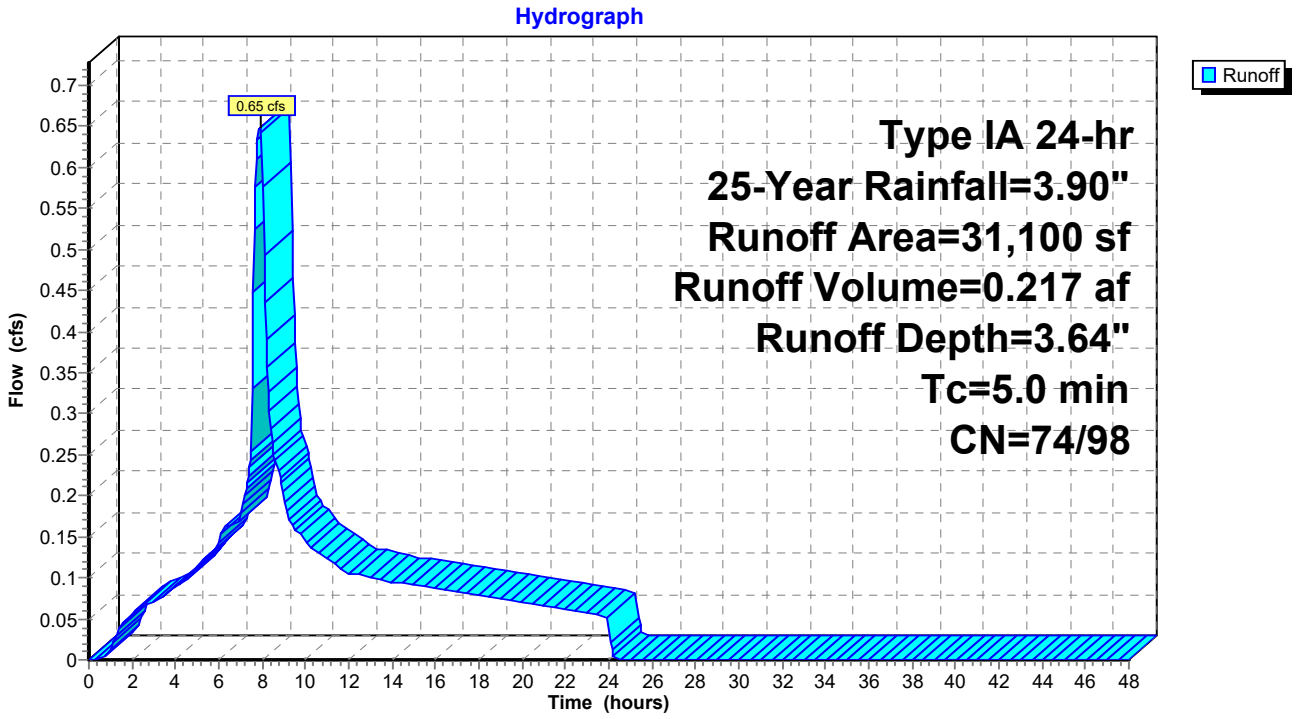
Runoff = 0.65 cfs @ 7.90 hrs, Volume= 0.217 af, Depth= 3.64"
Routed to Pond 6P : Det Conc Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25-Year Rainfall=3.90"

	Area (sf)	CN	Description
*	30,786	98	
*	314	74	
	31,100	98	Weighted Average
	314	74	1.01% Pervious Area
	30,786	98	98.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2S: Total Site (PostDev)



Summary for Pond 6P: Det Conc Pipe

Inflow Area = 0.714 ac, 98.99% Impervious, Inflow Depth = 3.64" for 25-Year event
Inflow = 0.65 cfs @ 7.90 hrs, Volume= 0.217 af
Outflow = 0.13 cfs @ 10.69 hrs, Volume= 0.144 af, Atten= 80%, Lag= 167.5 min
Primary = 0.13 cfs @ 10.69 hrs, Volume= 0.144 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 102.96' @ 10.69 hrs Surf.Area= 0.065 ac Storage= 0.112 af

Plug-Flow detention time= 789.5 min calculated for 0.144 af (66% of inflow)
Center-of-Mass det. time= 585.3 min (1,247.4 - 662.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.00'	0.028 af	**22.00'W x 129.00'L x 3.08'H Field A** 0.201 af Overall - 0.132 af Embedded = 0.069 af x 40.0% Voids
#2A	100.00'	0.087 af	**RCP Round 30** x 96 Inside #1 Inside= 30.0"W x 30.0"H => 4.91 sf x 8.00'L = 39.3 cf Outside= 37.0"W x 37.0"H => 7.46 sf x 8.00'L = 59.7 cf 96 Chambers in 6 Rows
		0.114 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**0.700" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	102.90'	**8.000" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.13 cfs @ 10.69 hrs HW=102.96' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 8.25 fps)
└—**2=Orifice/Grate** (Weir Controls 0.11 cfs @ 0.82 fps)

Pond 6P: Det Conc Pipe - Chamber Wizard Field A

Chamber Model = RCP Round 30 (Round Reinforced Concrete Pipe)
Inside= 30.0"W x 30.0"H => 4.91 sf x 8.00'L = 39.3 cf
Outside= 37.0"W x 37.0"H => 7.46 sf x 8.00'L = 59.7 cf

37.0" Wide + 6.0" Spacing = 43.0" C-C Row Spacing

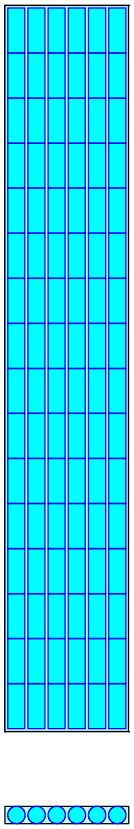
16 Chambers/Row x 8.00' Long = 128.00' Row Length +6.0" End Stone x 2 = 129.00' Base Length
6 Rows x 37.0" Wide + 6.0" Spacing x 5 + 6.0" Side Stone x 2 = 22.00' Base Width
37.0" Chamber Height = 3.08' Field Height

96 Chambers x 39.3 cf = 3,769.9 cf Chamber Storage
96 Chambers x 59.7 cf = 5,732.0 cf Displacement

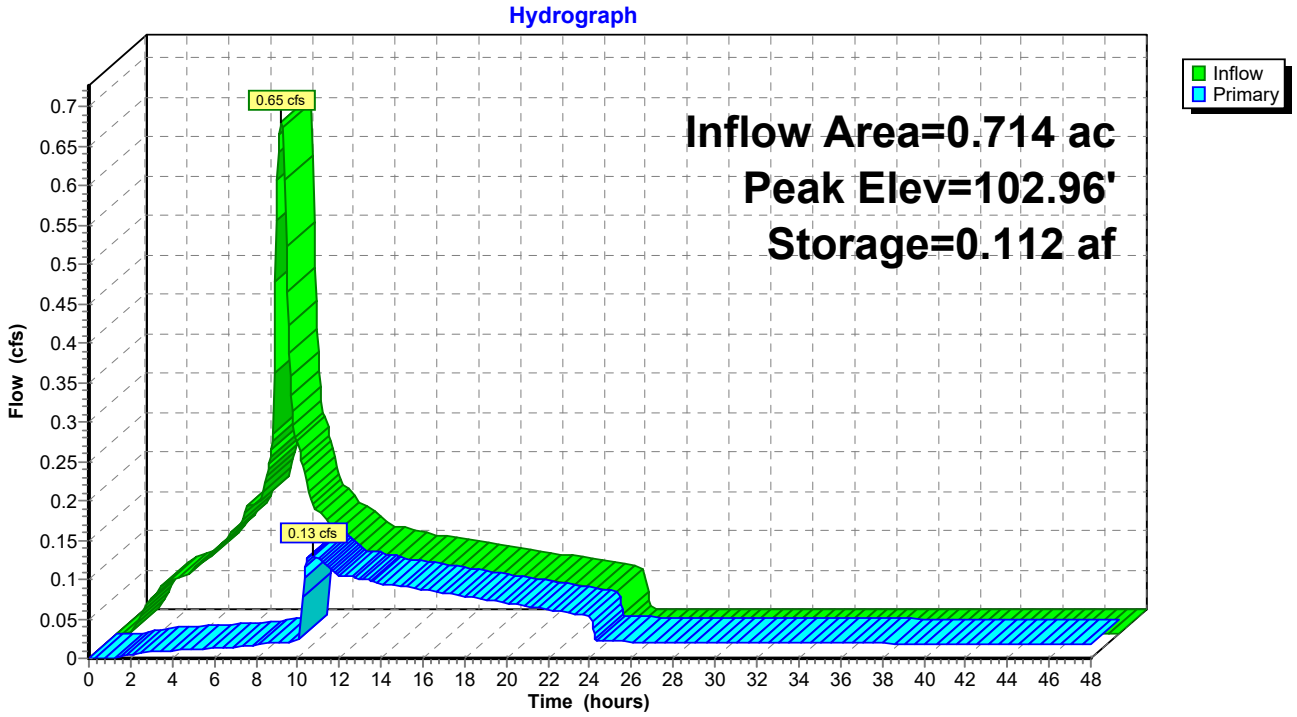
8,750.5 cf Field - 5,732.0 cf Chambers = 3,018.5 cf Stone x 40.0% Voids = 1,207.4 cf Stone Storage

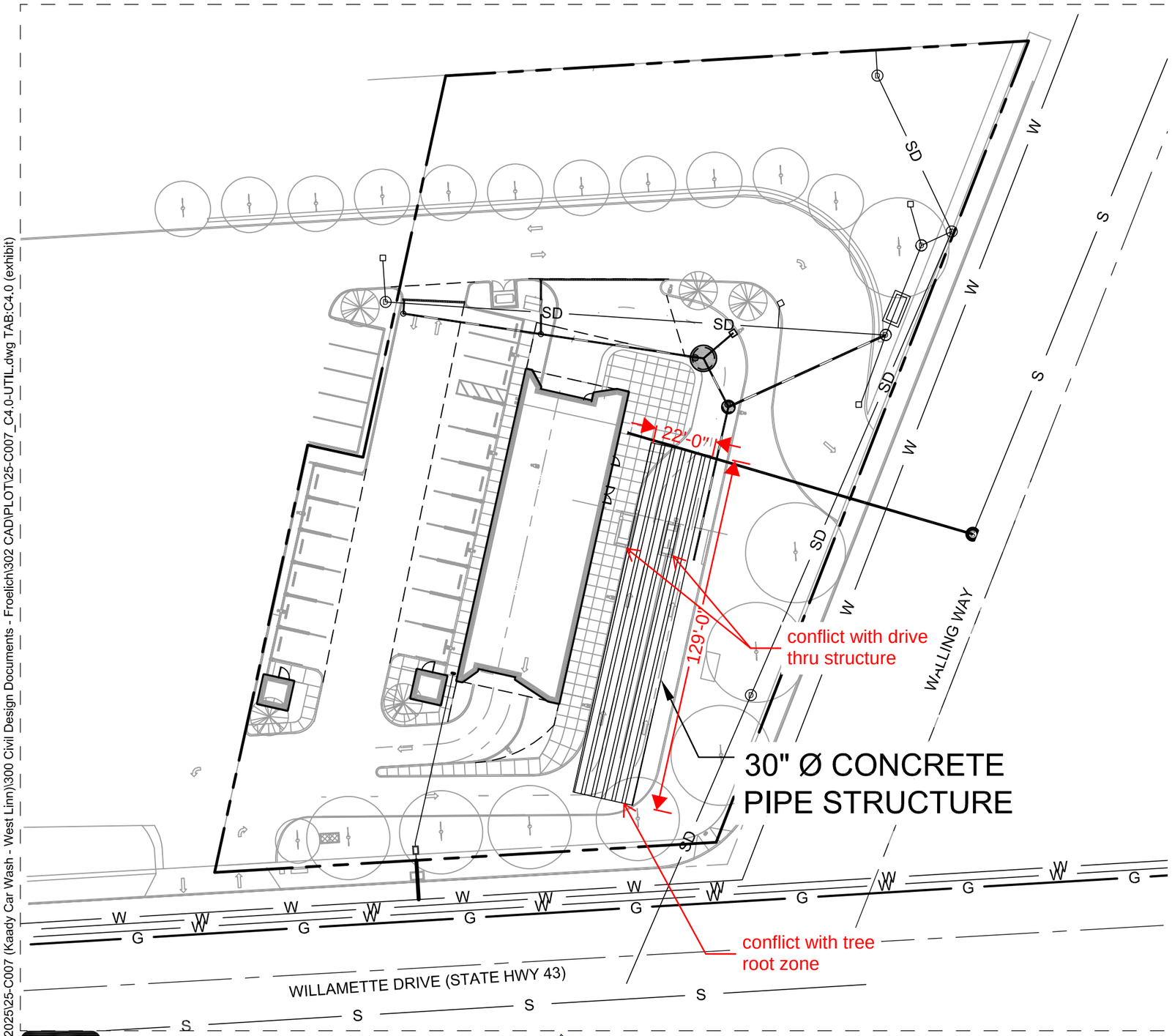
Chamber Storage + Stone Storage = 4,977.3 cf = 0.114 af
Overall Storage Efficiency = 56.9%
Overall System Size = 129.00' x 22.00' x 3.08'

96 Chambers
324.1 cy Field
111.8 cy Stone



Pond 6P: Det Conc Pipe





SCALE 1 INCH = 40 FEET

40 0 40 80

File: P:\2025\25-C007 (Kaady Car Wash - West Linn)\300 Civil Design Documents - Froelich\302 CAD\PLOT\25-C007_C4.0-UTIL.dwg TAB:C4.0 (exhibit)

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Plotted: 7/31/25 at 4:08pm By: atomlinson

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APPENDIX G EXHIBIT
UTILITY PLAN

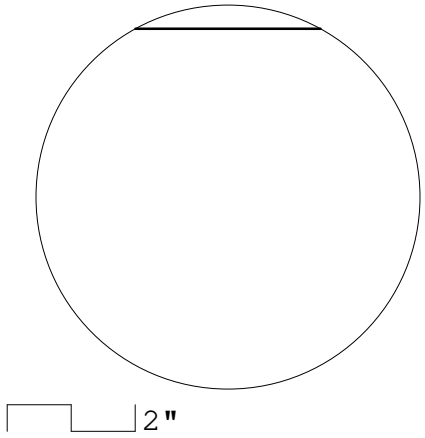
KAADY CAR WASH - WEST LINN

18850 WILLAMETTE DRIVE WEST LINN, OR

Appendix H: Stormwater Conveyance Calculations

Project 25-C007
Kaady Car Wash

GRAVITY PIPE FLOW (Chezy-Manning)
6-inch Pipe @ 1.5%

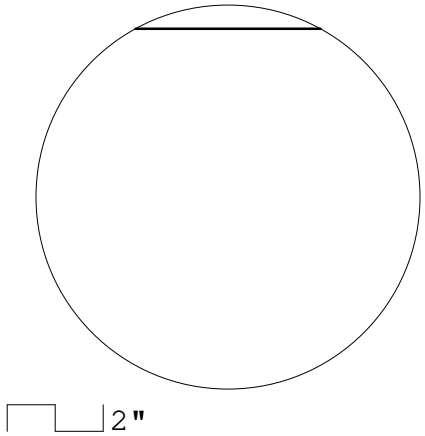


diameter = 6.0"
slope = 1.50%
material: ABS, PVC
Manning's n = 0.013
depth of flow = 93.82% of diameter (max)

wetted perimeter = 1.32'
area = 0.19 s.f.
hydraulic radius = 0.14'
velocity = 3.87 fps
flow = 0.74 cfs

Project 25-C007
Kaady Car Wash

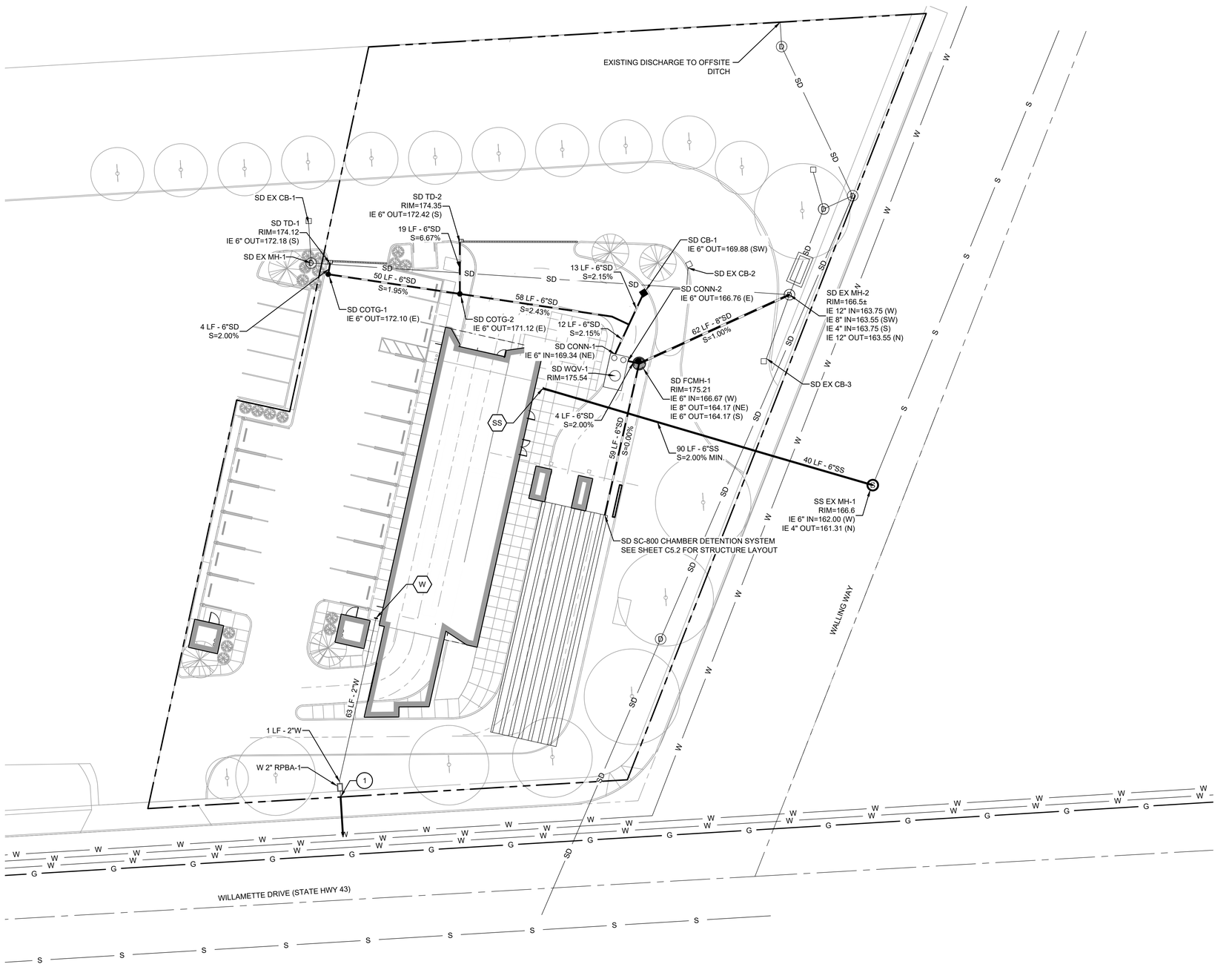
GRAVITY PIPE FLOW (Chezy-Manning)
8-inch Pipe @ 1.0%



diameter = 8.0"
slope = 1.00%
material: ABS, PVC
Manning's n = 0.013
depth of flow = 93.82% of diameter (max)

wetted perimeter = 1.76'
area = 0.34 s.f.
hydraulic radius = 0.19'
velocity = 3.83 fps
flow = 1.30 cfs

Appendix I: Utility Plan / Details



SHEET NOTES

1. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE DONE PER DETAIL X/C5.X.
2. STRUCTURES LOCATIONS ARE BASED ON CENTER OF STRUCTURE.
3. INSTALL TRUST BLOCK ON FIRE AND WATER LINES PER DETAIL X & X/CX.X.

KEY NOTES

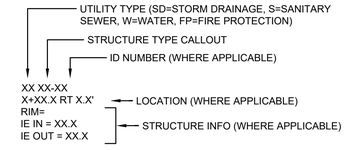
1 COORDINATE WATER SERVICE POINT OF CONNECTION TO EXISTING X" LATERAL WITH CITY OF WEST LINN.

2 FIELD VERIFY LOCATION AND IE OF EXISTING XX" XXXXX LATERAL PRIOR TO CONSTRUCTION.

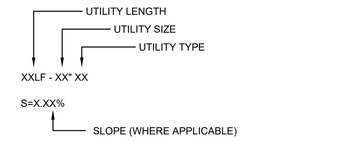
3 IRRIGATION BACKFLOW ASSEMBLY VAULT, SEE LANDSCAPE PLANS.

UTILITY LABEL LEGEND

STRUCTURE LABEL



PIPE LABEL



STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
BEND	BEND, USE FITTING IF APPLICABLE	
BWV	BACKWATER VALVE	
CB	TRAPPED CATCH BASIN	
CO	CLEANOUT TO GRADE	
CONN	CONNECTION	
DW	DRYWELL	
FCMH	FLOW CONTROL MANHOLE	
FD	FOUNDATION DRAINAGE POINT OF CONN.	
FH	FIRE HYDRANT	
GV	GATE VALVE	
OF	OUTFALL	
OV	OVERFLOW INLET	
SDMH	48" DIA. STORM DRAIN MH	
TD	TRENCH DRAIN	
TEE	TEE CONNECTION	
WYE	WYE CONNECTION	
WQV	WATER QUALITY VAULT	

SHEET LEGEND

SS CONNECT TO WASTE LINE. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.

RD CONNECT TO STORM DRAIN/ROOF DRAIN. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AND IE AS NOTED.

W CONNECT TO COLD WATER SYSTEM. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.

II UTILITY CROSSING. PROVIDE 12" MIN. CLEARANCE, U.N.O.

SCALE 1 INCH = 20 FEET

20 0 20 40

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KAADY CAR WASH
WEST LINN, OREGON

Revisions

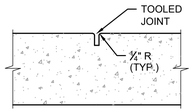
LAND-USE SET

UTILITY PLAN

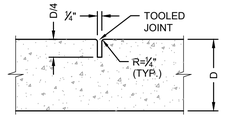
Project 22005

C4.0

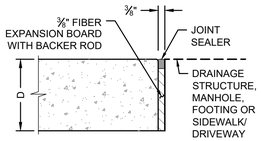
Date: 7.9.2025



SCORE JOINT



CONTRACTION JOINT



EXPANSION / ISOLATION JOINT

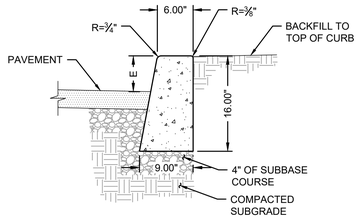
JOINT INTERVALS TABLE

TYPE	SPACING	OR AT ...
SCORE	5' TYP	LOCATIONS SHOWN ON PLANS
CONTRACTION	15' MAX	END OF RAMPS AND DRIVEWAYS
EXPANSION/ ISOLATION	200' *	POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY OR OTHER FIXED OBJECTS

* MONOLITHIC CURB AND SIDEWALK SHALL BE 45' MAX

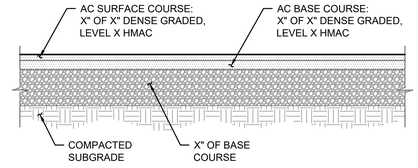
NOTES:
1. CONTRACTION JOINTS MAY BE USED IN PLACE OF SCORE JOINTS.
2. CONSTRUCTION COLD JOINTS MAY BE USED IN PLACE OF CONTRACTION JOINTS.
3. PROVIDE MEDIUM BROOM FINISH WITH NO TOOL MARKS.

X SIDEWALK JOINTS
SCALE: NTS

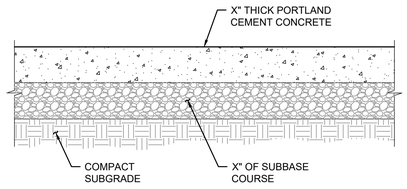


NOTES:
1. CURB EXPOSURE 'E' = 6", TYP. VARY AS SHOWN ON PLANS OR AS DIRECTED.
2. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
3. TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% UNLESS OTHERWISE SHOWN OR AS DIRECTED.
4. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM WITH CURB MACHINE AS APPROVED BY THE ENGINEER.

X STANDARD CONCRETE CURB
SCALE: NTS

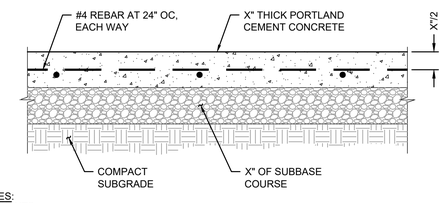


X ASPHALT PAVEMENT SECTION
SCALE: NTS



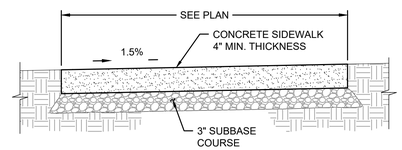
NOTES:
1. - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
   - CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

X CONCRETE PAVEMENT SECTION
SCALE: NTS



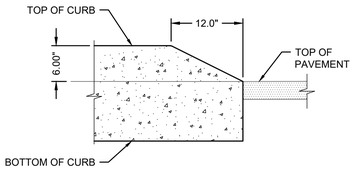
NOTES:
1. JOINTS:
   - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
   - CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

X REINFORCED CONCRETE PAVEMENT SECTION
SCALE: NTS

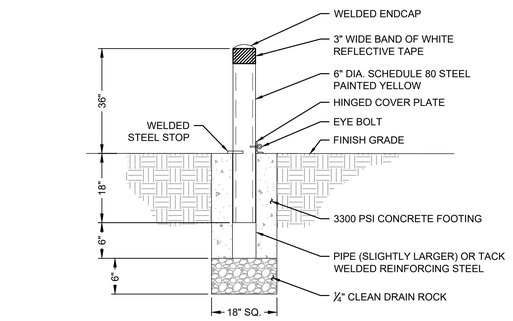


NOTES:
1. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING, AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY, UNLESS NOTED OTHERWISE.

X CONCRETE SIDEWALK
SCALE: NTS

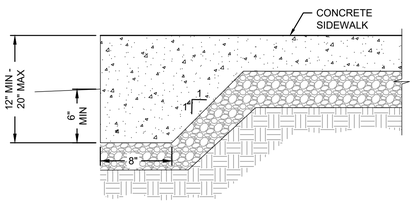


X CONCRETE CURB ENDING
SCALE: NTS

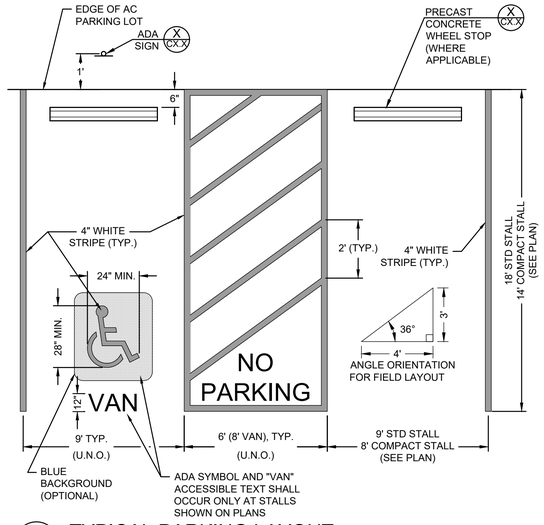


SECTION

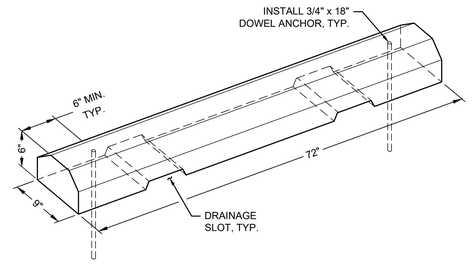
X REMOVABLE PIPE BOLLARD
SCALE: NTS



X THICKENED CONCRETE EDGE
SCALE: NTS



X TYPICAL PARKING LAYOUT
SCALE: NTS



NOTES:
1. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM TO MANUFACTURER'S PRODUCTS APPROVED BY ENGINEER.

X PRECAST CONCRETE WHEEL STOP
SCALE: NTS

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KAADY CAR WASH
WEST LINN, OREGON

Revisions

LAND-USE SET

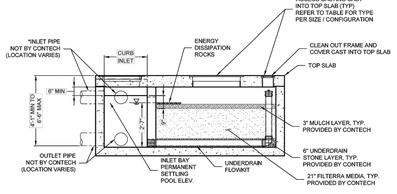
DETAILS

Project 22005

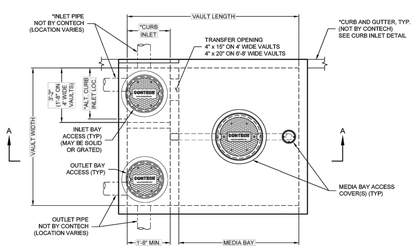
C5.0

Date: 7.9.2025

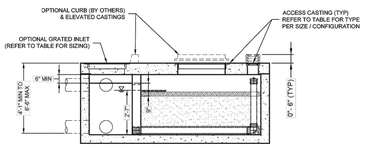
*IF REQUIRED



SECTION A-A1
(SHALLOW CONFIGURATION WITH THROAT INLET AND/OR PIPE INLET "-ST")



PLAN VIEW
(SHALLOW CONFIGURATION "-S")



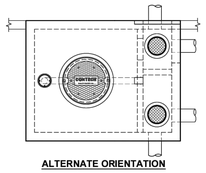
SECTION A-A2
(SHALLOW CONFIGURATION WITH GRATE AND/OR PIPE INLET "-SG")

UNTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION

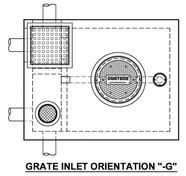
FTPD-UGS CONFIGURATION
(OPTIONS: THROAT INLET "-T", PIPE INLET "-P", GRATE INLET "-G", THROAT & PIPE INLET "-TP", GRATE & PIPE INLET "-GP", ALTERNATE HATCH "-H")

MODEL NAME	PART NUMBER	SHALLOW CONFIG AVAILABILITY	MEDIA AREA (SF)	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR / CURB LENGTH	ACCESS CONFIG IN-OUT BAY / MEDIA BAY[1]	GRATE SIZE WITH "-G" CONFIG
FTPD-UGS 4x4 (4x6 VAULT)	FTPD0404-UGS	ALL	16	4 x 4	4 x 6	1'-8"	(2) Ø12" / Ø30" & Ø7"	12"
FTPD-UGS 4x6 (4x8 VAULT)	FTPD0406-UGS	ALL (EXCEPT DE, MD, NJ, PA, VA, WV)	24	4 x 6	4 x 8	1'-8"	(2) Ø12" / Ø30" & Ø7"	12"
FTPD-UGS 6x4 (6x6 VAULT)	FTPD0604-UGS	ALL (EXCEPT CA, TX)	24	6 x 4	6 x 6	1'-8"	(2) Ø12" / Ø30" & Ø7"	24"
FTPD-UGS 4.5X5.8 (4.5x7.8 VAULT)	FTPD045058-UGS	DE, MD, NJ, PA, VA, WV ONLY	26	4.5 x 5.83	4.5 x 7.83	1'-8"	(2) Ø12" / Ø30" & Ø7"	24"
FTPD-UGS 6x6 (6x8 VAULT)	FTPD0606-UGS	ALL	36	6 x 6	6 x 8	1'-8"	(2) Ø12" / Ø30" & Ø7"	24"
FTPD-UGS 6x8 (6x10 VAULT)	FTPD0608-UGS	ALL (EXCEPT CA, TX)	48	6 x 8	6 x 10	1'-8"	(2) Ø12" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x7 (8x10 VAULT)	FTPD0807-UGS	ALL (EXCEPT OR, WA)	56	8 x 7	8 x 10	2'-6"	(2) Ø24" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 6x10 (8x12 VAULT)	FTPD0610-UGS	ALL (EXCEPT CA, TX)	60	6 x 10	6 x 12	1'-8"	(2) Ø12" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 7x10 (7x13 VAULT)	FTPD0710-UGS	ALL (EXCEPT CA, TX)	70	7 x 10	7 x 13	2'-6"	(2) Ø12" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x9 (8x12 VAULT)	FTPD0809-UGS	ALL (EXCEPT OR, WA)	72	8 x 9	8 x 12	2'-6"	(2) Ø24" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x10.5 (8x14 VAULT)	FTPD08105-UGS	ALL	84	8 x 10.5	8 x 14	3'-0"	(2) Ø24" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x12.5 (8x16 VAULT)	FTPD08125-UGS	ALL (EXCEPT OR, WA)	100	8 x 12.5	8 x 16	3'-0"	(2) Ø24" / (2) 3'x3' HATCH & Ø7"	24"
FTPD-UGS 9x11.5 (9x15 VAULT)	FTPD09115-UGS	OR, WA ONLY.	103	9 x 11.5	9 x 15	3'-0"	(2) Ø24" / (2) 3'x3' HATCH & Ø7"	24"

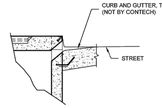
SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE BYPASS CAPACITY
[1] IF REQUIRED BY LOCAL JURISDICTION. ON SIZES WITHOUT A HATCH AS STANDARD. ACCESS OVER THE MEDIA BAY MAY BE ALTERNATED WITH A 36"x36" HATCH FOR AN ADDITIONAL CHARGE.



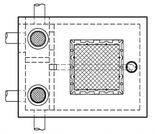
ALTERNATE ORIENTATION



GRATE INLET ORIENTATION "-G"



CURB INLET DETAIL



STANDARD FTPD0608-UGS & LARGER
(HATCH "-H" FOR SMALLER SIZES - ADDITIONAL CHARGE)

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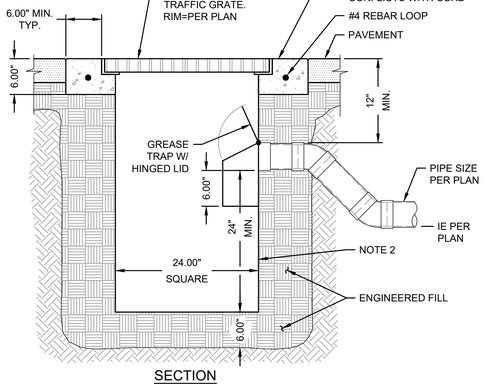
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA PEAK DIVERSION - UNDERGROUND SHALLOW (FTPD-UGS)
6'-6" OR LESS RIM TO OUTLET
CONFIGURATION DETAIL

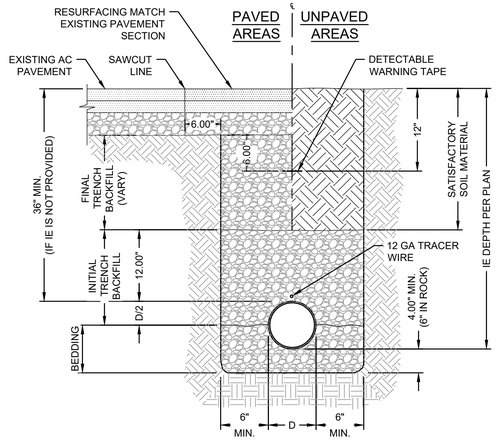
filterra
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP



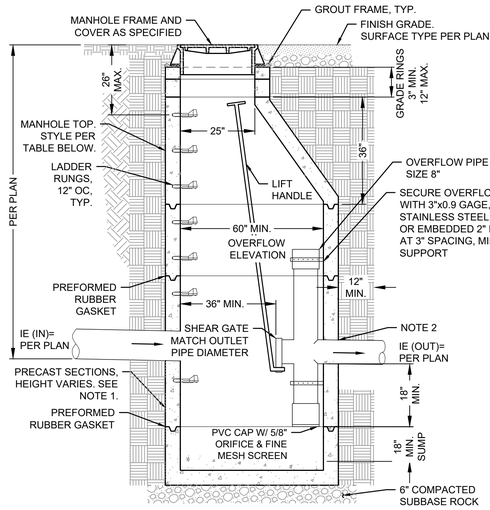
SECTION

NOTES:
1. CONTRACTOR TO WIDEN EXCAVATION AS REQUIRED TO OBTAIN COMPACTION WITH CONTRACTORS COMPACTION EQUIPMENT.
2. 1/4" STEEL PLATE, BITUMINOUS COATED. AS MANUFACTURED BY GIBSON STEEL BASINS OR APPROVED EQUAL.

X TRAPPED CATCH BASIN
SCALE: NTS

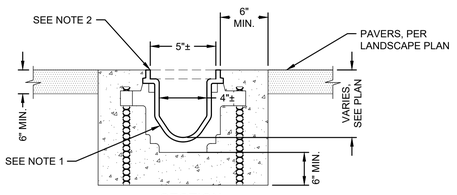


X TYPICAL PIPE BEDDING AND BACKFILL
SCALE: NTS



NOTES:
1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.
2. ALL CONNECTING PIPES SHALL HAVE FLEXIBLE, GASKETED AND UNRESTRAINED JOINT WITHIN 18" OF MANHOLE VAULT. PIPE SIZES NOTED ON PLANS. PIPE CONNECTION TO MANHOLES SHALL HAVE KOR-N-SEAL BOOT OR APPROVED EQUAL.
3. ORIFICE AND OVERFLOW ELEVATIONS ARE RELATIVE TO IE (OUT)

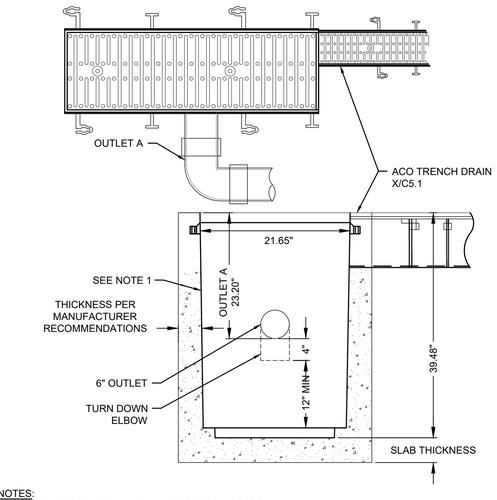
X FLOW CONTROL MANHOLE
SCALE: NTS



SECTION

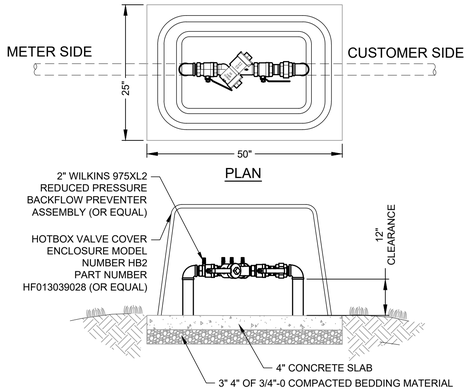
NOTES:
1. TRENCH DRAIN SHALL BE PRE-SLOPED 4" WIDE ZURN OR ACO TRENCH DRAIN OR APPROVED EQUAL.
2. TRENCH DRAINS GRATE SHALL BE LOCKABLE HEAVY DUTY TRENCH GRATE - CLASS C.
3. TRENCH SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

X TRENCH DRAIN - 4 INCH WIDE
SCALE: NTS



NOTES:
1. CATCH BASIN SHALL BE ACO K1-632 CATCH BASIN.
2. GRATE TYPE SEE DETAIL X/C5.1.

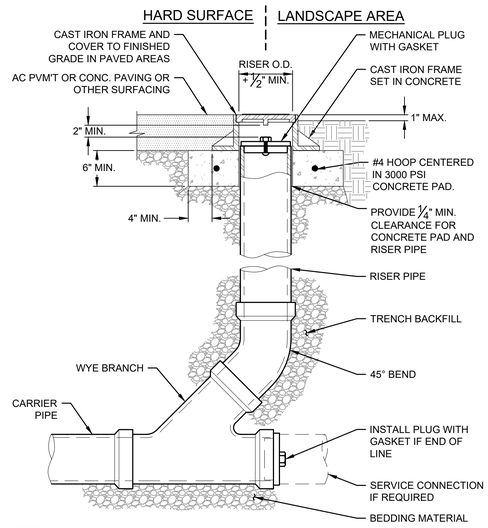
X TRENCH DRAIN CATCH BASIN
SCALE: NTS



NOTE: ELEVATION

1. HOTBOX ENCLOSURE SHALL BE INSULATED AND HEATED. COORDINATE WITH ELECTRICAL PLANS FOR CONNECTION.
2. RPBA SHALL BE ACCESSIBLE BY VERTICALLY LIFTING OFF ENCLOSURE. CONTRACTOR TO VERIFY ACCESSIBILITY PRIOR TO CONSTRUCTION.

X REDUCED PRESSURE BACKFLOW ASSEMBLY
SCALE: NTS



NOTES:
1. CAST IRON FRAME AND COVER SHALL MEET H-20 LOAD REQUIREMENT.
2. FOR CARRIER PIPE SIZE 6"Ø AND LESS, PROVIDE RISER PIPE SIZE TO MATCH CARRIER PIPE.
3. FOR CARRIER PIPE SIZE 8"Ø AND LARGER, RISER PIPE SHALL BE 6"Ø.
4. RISER PIPE MATERIAL TO MATCH CARRIER PIPE MATERIAL.

X STANDARD CLEANOUT (COTG)
SCALE: NTS

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83693PE
OREGON
JULY 14, 2005
TIMOTHY ANDREW FYKELBOSCH
RENEWS: 12/31/

KAADY CAR WASH
WEST LINN, OREGON

Revisions

LAND-USE SET

DETAILS

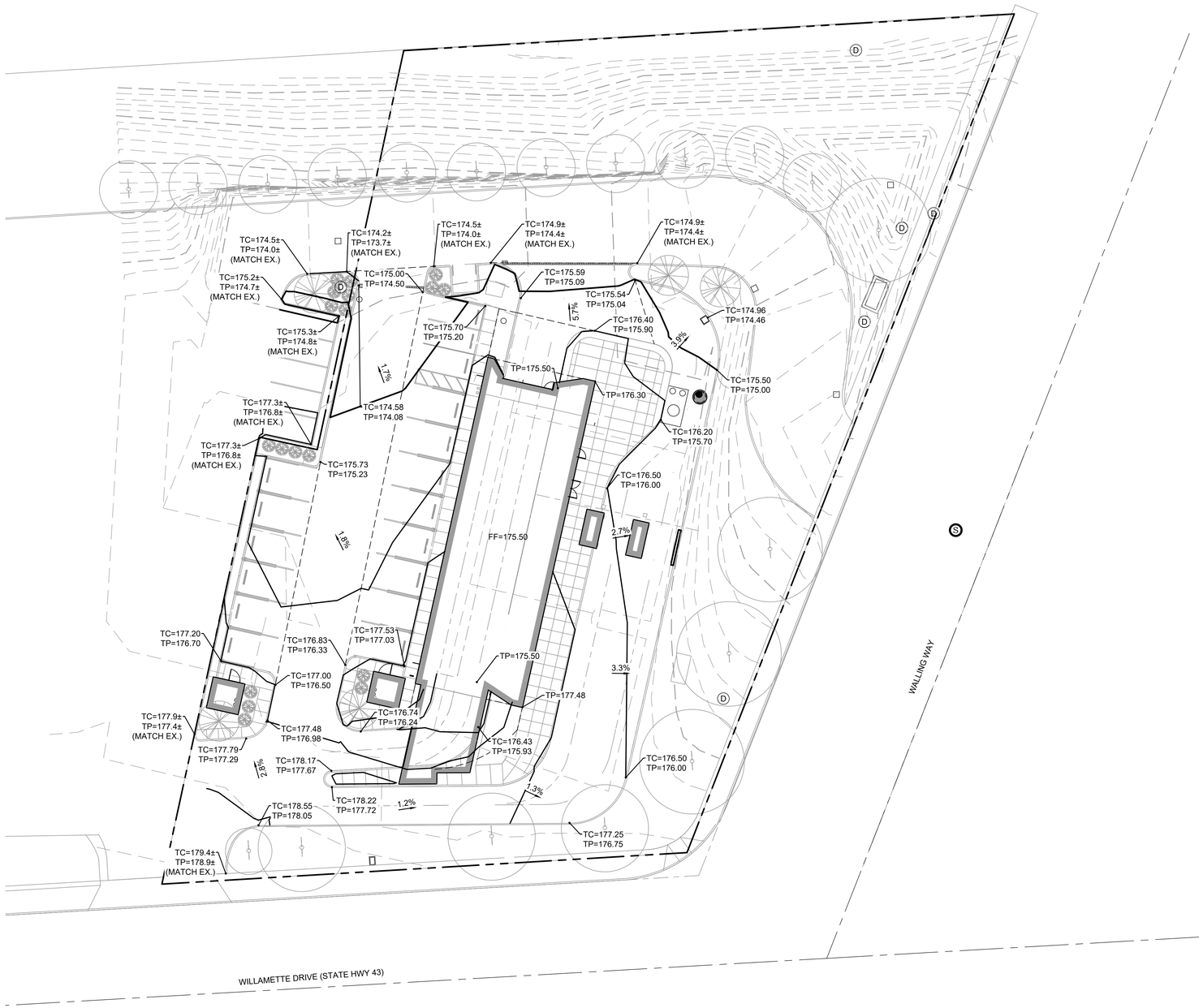
Project 22005

C5.1

Date: 7.9.2025

Appendix J: Operations and Maintenance Plan

to be provided in final stormwater report



SHEET NOTES

1. SLOPES PROVIDED ON SLOPE ARROW ARE FOR REFERENCE ONLY.
2. LANDINGS ON ACCESSIBLE ROUTES SHALL NOT EXCEED 1.5% IN ANY DIRECTION.
3. ALL ACCESSIBLE ROUTES SHALL COMPLY WITH CURRENT ADA ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (ADAAG).
4. ALL WALKWAYS FROM ACCESSIBLE UNITS ARE DESIGNED TO NOT REQUIRE HANDRAILS. THEREFORE, RAMPS WITH SLOPES STEEPER THAN 5.0% AND LESS THAN 8.33% SHALL NOT EXCEED 0.5' RISE OR 6.0' LENGTH.
5. TOP OF CONCRETE OUTSIDE DOOR = FF ELEV. MINUS 0.02' SLOPE LANDING 1.5% AWAY FROM BLDG.

KEY NOTES

1 XXXXXXXXXX

GRADING LABEL LEGEND

CALLOUT	DESCRIPTION
X.X% →	GRADING SLOPE AND DIRECTION (DOWNHILL)

XX.XX XX
- SPOT ELEVATION
- DESCRIPTION LISTED BELOW. NO DESCRIPTION MEANS TP OR TG

BOS	BOTTOM OF SWALE
BOW	BACK OF WALK
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
EG	EXISTING GRADE
FF	FINISHED FLOOR
FL	FLOW LINE
G	GUTTER
HP	HIGH POINT
LP	LOW POINT
RIM	RIM OF STRUCTURE
TC	TOP OF CURB
TG	TOP OF GROUND
TP	TOP OF PAVEMENT
TS	TOP OF STEP
TW	TOP WALL

SHEET LEGEND

- DRAINAGE FLOW DIRECTION
- GRADE BREAK
- 49 EX. CONTOUR MINOR
- 50 EX. CONTOUR MAJOR
- 49 CONTOUR MINOR (FG)
- 50 CONTOUR MAJOR (FG)
- > CONVEYANCE SWALE

SCALE 1 INCH = 20 FEET
20 0 20 40

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KAADY CAR WASH
WEST LINN, OREGON

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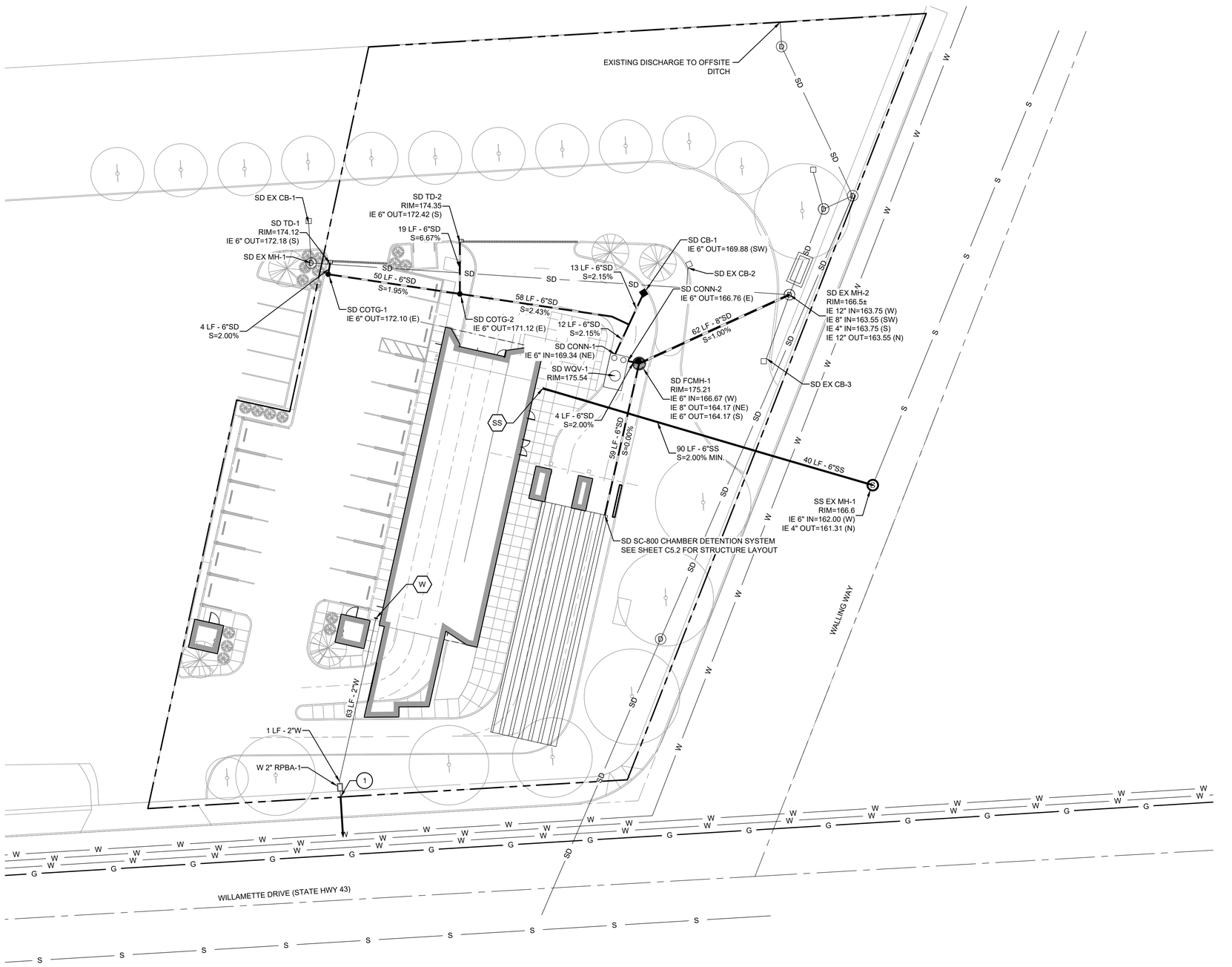
GRADING PLAN

Project 22005

C3.0

Date: 7.9.2025



SHEET NOTES

1. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE DONE PER DETAIL X/C5.X.
2. STRUCTURES LOCATIONS ARE BASED ON CENTER OF STRUCTURE.
3. INSTALL TRUST BLOCK ON FIRE AND WATER LINES PER DETAIL X & X/CX.X.

KEY NOTES

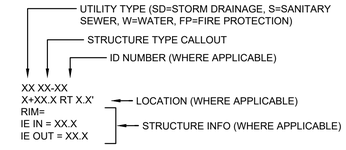
1 COORDINATE WATER SERVICE POINT OF CONNECTION TO EXISTING X" LATERAL WITH CITY OF WEST LINN.

2 FIELD VERIFY LOCATION AND IE OF EXISTING XX" XXXXX LATERAL PRIOR TO CONSTRUCTION.

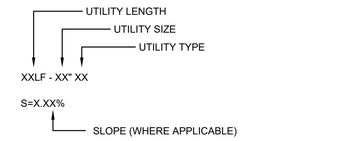
3 IRRIGATION BACKFLOW ASSEMBLY VAULT, SEE LANDSCAPE PLANS.

UTILITY LABEL LEGEND

STRUCTURE LABEL



PIPE LABEL



STRUCTURE TYPE

CALLOUT	DESCRIPTION	DETAIL REF.
BEND	BEND, USE FITTING IF APPLICABLE	
BWV	BACKWATER VALVE	
CB	TRAPPED CATCH BASIN	
CO	CLEANOUT TO GRADE	
CONN	CONNECTION	
DW	DRYWELL	
FCMH	FLOW CONTROL MANHOLE	
FD	FOUNDATION DRAINAGE POINT OF CONN.	
FH	FIRE HYDRANT	
GV	GATE VALVE	
OF	OUTFALL	
OV	OVERFLOW INLET	
SDMH	48" DIA. STORM DRAIN MH	
TD	TRENCH DRAIN	
TEE	TEE CONNECTION	
WYE	WYE CONNECTION	
WQV	WATER QUALITY VAULT	

SHEET LEGEND

SS CONNECT TO WASTE LINE. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.

RD CONNECT TO STORM DRAIN/ROOF DRAIN. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AND IE AS NOTED.

W CONNECT TO COLD WATER SYSTEM. SEE PLUMBING PLANS FOR CONTINUATION. SIZE AS NOTED.

II UTILITY CROSSING. PROVIDE 12" MIN. CLEARANCE, U.N.O.

SCALE 1 INCH = 20 FEET

20 0 20 40

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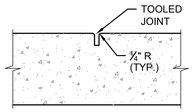
LAND-USE SET

UTILITY PLAN

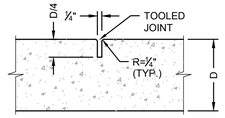
Project 22005

C4.0

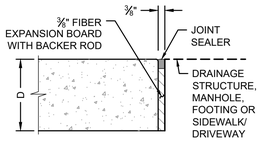
Date: 7.9.2025



SCORE JOINT



CONTRACTION JOINT



EXPANSION / ISOLATION JOINT

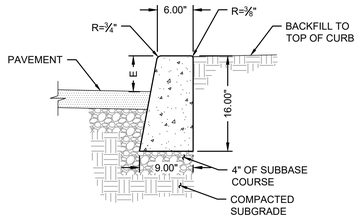
JOINT INTERVALS TABLE

TYPE	SPACING	OR AT ...
SCORE	5' TYP	LOCATIONS SHOWN ON PLANS
CONTRACTION	15' MAX	END OF RAMPS AND DRIVEWAYS
EXPANSION/ ISOLATION	200' *	POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY OR OTHER FIXED OBJECTS

* MONOLITHIC CURB AND SIDEWALK SHALL BE 45' MAX

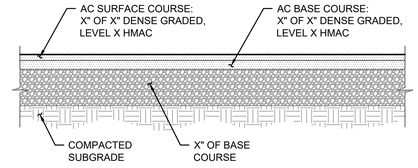
NOTES:
1. CONTRACTION JOINTS MAY BE USED IN PLACE OF SCORE JOINTS.
2. CONSTRUCTION COLD JOINTS MAY BE USED IN PLACE OF CONTRACTION JOINTS.
3. PROVIDE MEDIUM BROOM FINISH WITH NO TOOL MARKS.

X SIDEWALK JOINTS
SCALE: NTS

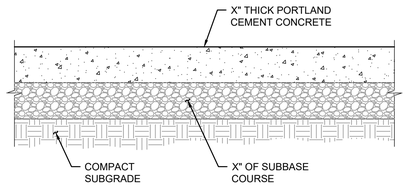


NOTES:
1. CURB EXPOSURE 'E' = 6", TYP. VARY AS SHOWN ON PLANS OR AS DIRECTED.
2. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
3. TOPS OF ALL CURBS SHALL SLOPE TOWARD THE ROADWAY AT 2% UNLESS OTHERWISE SHOWN OR AS DIRECTED.
4. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM WITH CURB MACHINE AS APPROVED BY THE ENGINEER.

X STANDARD CONCRETE CURB
SCALE: NTS

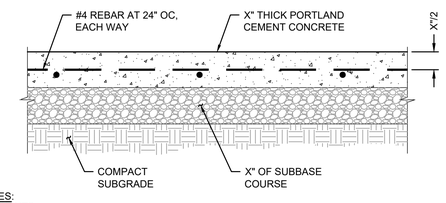


X ASPHALT PAVEMENT SECTION
SCALE: NTS



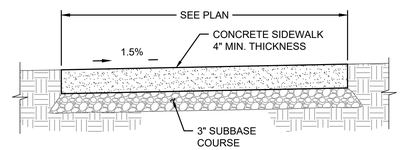
NOTES:
1. - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
   - CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

X CONCRETE PAVEMENT SECTION
SCALE: NTS



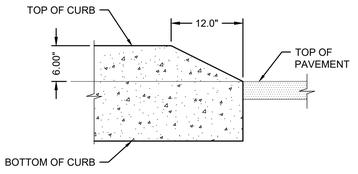
NOTES:
1. JOINTS:
   - CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS.
   - CONSTRUCT EXPANSION JOINTS AT 200' MAX. SPACING AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY.
2. PROVIDE MEDIUM TO COARSE BROOM FINISH.

X REINFORCED CONCRETE PAVEMENT SECTION
SCALE: NTS

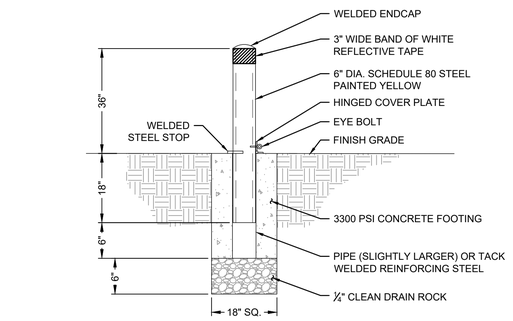


NOTES:
1. CONSTRUCT CONTRACTION JOINTS AT 15' MAX. SPACING AND AT RAMPS. CONSTRUCT EXPANSION JOINTS AT 200' MAX SPACING, AT POINTS OF TANGENCY AND AT ENDS OF EACH DRIVEWAY, UNLESS NOTED OTHERWISE.

X CONCRETE SIDEWALK
SCALE: NTS

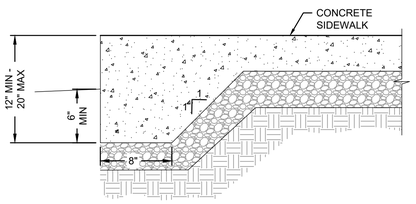


X CONCRETE CURB ENDING
SCALE: NTS

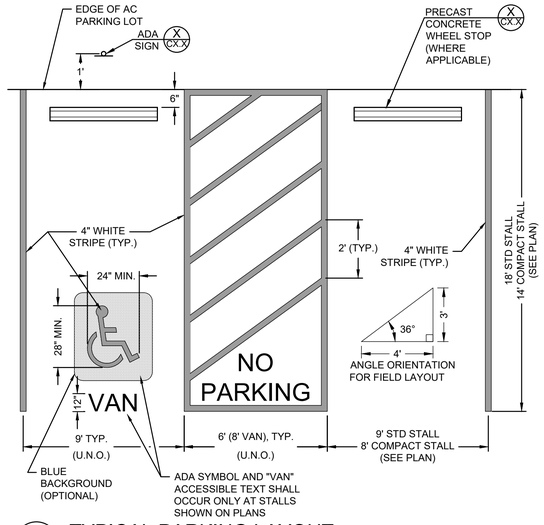


SECTION

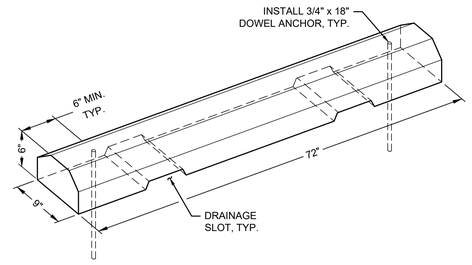
X REMOVABLE PIPE BOLLARD
SCALE: NTS



X THICKENED CONCRETE EDGE
SCALE: NTS



X TYPICAL PARKING LAYOUT
SCALE: NTS



NOTES:
1. DIMENSIONS ARE NOMINAL AND MAY VARY TO CONFORM TO MANUFACTURER'S PRODUCTS APPROVED BY ENGINEER.

X PRECAST CONCRETE WHEEL STOP
SCALE: NTS

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C5.0

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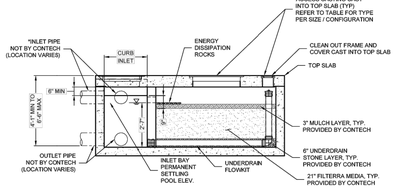
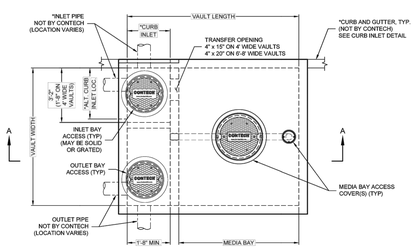
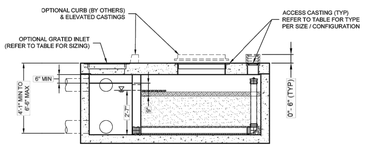
*IF REQUIRED



SECTION A-A1
(SHALLOW CONFIGURATION WITH THROAT INLET AND/OR PIPE INLET "-ST")



PLAN VIEW
(SHALLOW CONFIGURATION "-S")



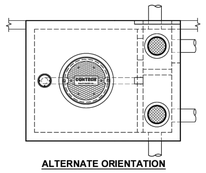
SECTION A-A2
(SHALLOW CONFIGURATION WITH GRATE AND/OR PIPE INLET "-SG")

UNTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION

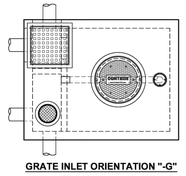
FTPD-UGS CONFIGURATION
(OPTIONS: THROAT INLET "-T", PIPE INLET "-P", GRATE INLET "-G", THROAT & PIPE INLET "-TP", GRATE & PIPE INLET "-GP", ALTERNATE HATCH "-H")

MODEL NAME	PART NUMBER	SHALLOW CONFIG AVAILABILITY	MEDIA AREA (SF)	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR / CURB LENGTH	ACCESS CONFIG IN-OUT BAY / MEDIA BAY[1]	GRATE SIZE WITH "-G" CONFIG
FTPD-UGS 4x4 (4x6 VAULT)	FTPD0404-UGS	ALL	16	4 x 4	4 x 6	1'-8"	(2) Ø12" / Ø30" & Ø7"	12"
FTPD-UGS 4x6 (4x8 VAULT)	FTPD0406-UGS	ALL (EXCEPT DE, MD, NJ, PA, VA, WV)	24	4 x 6	4 x 8	1'-8"	(2) Ø12" / Ø30" & Ø7"	12"
FTPD-UGS 6x4 (6x6 VAULT)	FTPD0604-UGS	ALL (EXCEPT CA, TX)	24	6 x 4	6 x 6	1'-8"	(2) Ø12" / Ø30" & Ø7"	24"
FTPD-UGS 4.5X5.8 (4.5x7.8 VAULT)	FTPD045058-UGS	DE, MD, NJ, PA, VA, WV ONLY	26	4.5 x 5.83	4.5 x 7.83	1'-8"	(2) Ø12" / Ø30" & Ø7"	24"
FTPD-UGS 6x6 (6x8 VAULT)	FTPD0606-UGS	ALL	36	6 x 6	6 x 8	1'-8"	(2) Ø12" / Ø30" & Ø7"	24"
FTPD-UGS 6x8 (6x10 VAULT)	FTPD0608-UGS	ALL (EXCEPT CA, TX)	48	6 x 8	6 x 10	1'-8"	(2) Ø12" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x7 (8x10 VAULT)	FTPD0807-UGS	ALL (EXCEPT OR, WA)	56	8 x 7	8 x 10	2'-6"	(2) Ø24" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 6x10 (8x12 VAULT)	FTPD0610-UGS	ALL (EXCEPT CA, TX)	60	6 x 10	6 x 12	1'-8"	(2) Ø12" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 7x10 (7x13 VAULT)	FTPD0710-UGS	ALL (EXCEPT CA, TX)	70	7 x 10	7 x 13	2'-6"	(2) Ø12" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x9 (8x12 VAULT)	FTPD0809-UGS	ALL (EXCEPT OR, WA)	72	8 x 9	8 x 12	2'-6"	(2) Ø24" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x10.5 (8x14 VAULT)	FTPD08105-UGS	ALL	84	8 x 10.5	8 x 14	3'-0"	(2) Ø24" / 3'x3' HATCH & Ø7"	24"
FTPD-UGS 8x12.5 (8x16 VAULT)	FTPD08125-UGS	ALL (EXCEPT OR, WA)	100	8 x 12.5	8 x 16	3'-0"	(2) Ø24" / (2) 3'x3' HATCH & Ø7"	24"
FTPD-UGS 9x11.5 (9x15 VAULT)	FTPD09115-UGS	OR, WA ONLY.	103	9 x 11.5	9 x 15	3'-0"	(2) Ø24" / (2) 3'x3' HATCH & Ø7"	24"

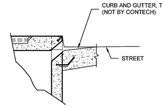
SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE BYPASS CAPACITY
[1] IF REQUIRED BY LOCAL JURISDICTION. ON SIZES WITHOUT A HATCH AS STANDARD. ACCESS OVER THE MEDIA BAY MAY BE ALTERNATED WITH A 36"x36" HATCH FOR AN ADDITIONAL CHARGE.



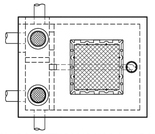
ALTERNATE ORIENTATION



GRATE INLET ORIENTATION "-G"



CURB INLET DETAIL

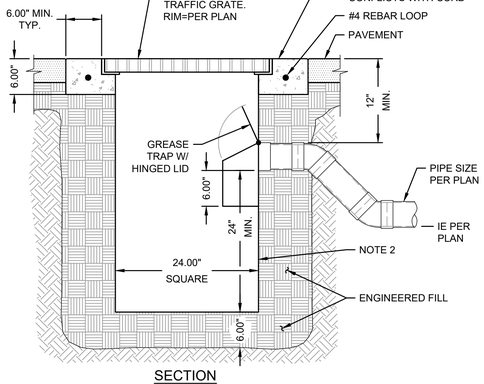


STANDARD FTPD0608-UGS & LARGER
(HATCH "-H" FOR SMALLER SIZES - ADDITIONAL CHARGE)

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA PEAK DIVERSION - UNDERGROUND SHALLOW (FTPD-UGS)
6'-6" OR LESS RIM TO OUTLET
CONFIGURATION DETAIL

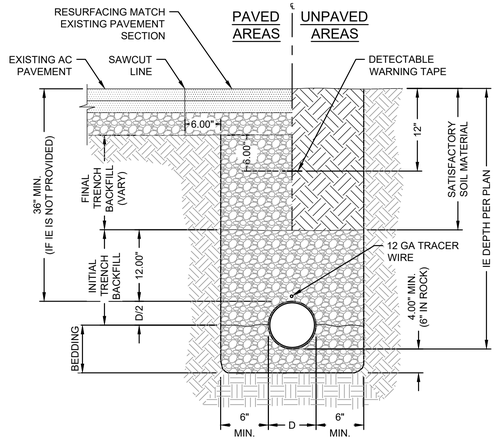
filterra
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP



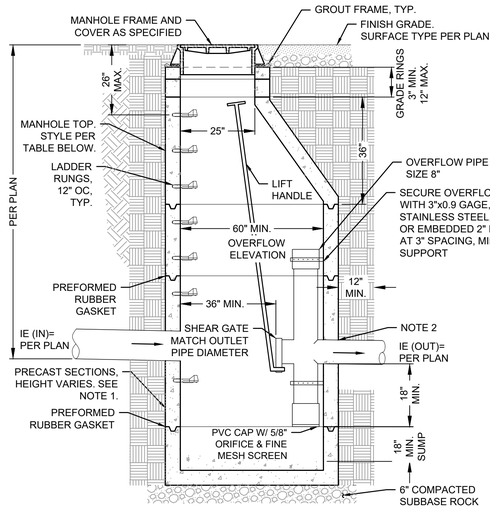
SECTION

NOTES:
1. CONTRACTOR TO WIDEN EXCAVATION AS REQUIRED TO OBTAIN COMPACTION WITH CONTRACTORS COMPACTION EQUIPMENT.
2. 1/4" STEEL PLATE, BITUMINOUS COATED. AS MANUFACTURED BY GIBSON STEEL BASINS OR APPROVED EQUAL.

X TRAPPED CATCH BASIN
SCALE: NTS

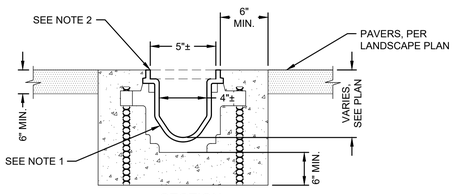


X TYPICAL PIPE BEDDING AND BACKFILL
SCALE: NTS



NOTES:
1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.
2. ALL CONNECTING PIPES SHALL HAVE FLEXIBLE, GASKETED AND UNRESTRAINED JOINT WITHIN 18" OF MANHOLE VAULT. PIPE SIZES NOTED ON PLANS. PIPE CONNECTION TO MANHOLES SHALL HAVE KOR-N-SEAL BOOT OR APPROVED EQUAL.
3. ORIFICE AND OVERFLOW ELEVATIONS ARE RELATIVE TO IE (OUT)

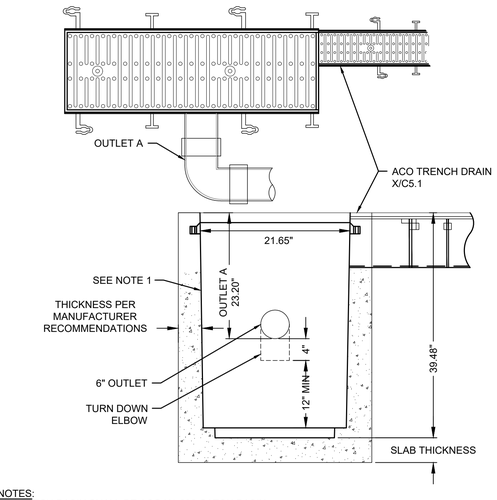
X FLOW CONTROL MANHOLE
SCALE: NTS



SECTION

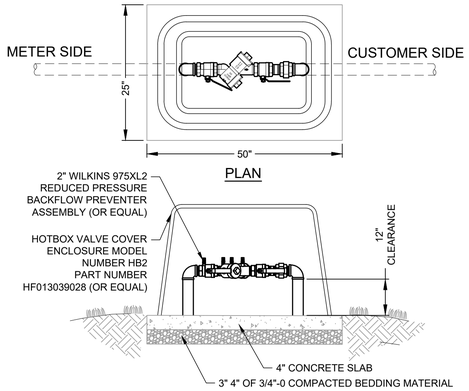
NOTES:
1. TRENCH DRAIN SHALL BE PRE-SLOPED 4" WIDE ZURN OR ACO TRENCH DRAIN OR APPROVED EQUAL.
2. TRENCH DRAINS GRATE SHALL BE LOCKABLE HEAVY DUTY TRENCH GRATE - CLASS C.
3. TRENCH SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

X TRENCH DRAIN - 4 INCH WIDE
SCALE: NTS



NOTES:
1. CATCH BASIN SHALL BE ACO K1-632 CATCH BASIN.
2. GRATE TYPE SEE DETAIL X/C5.1.

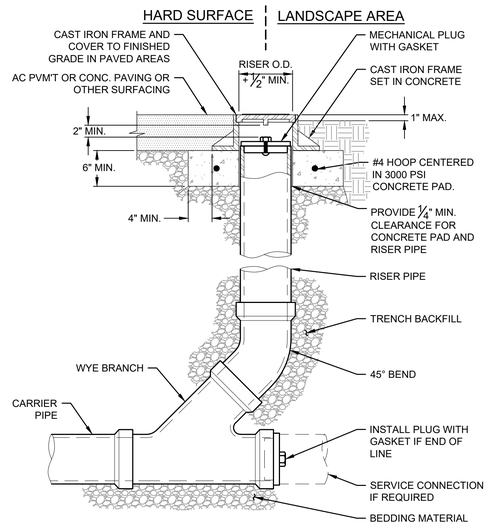
X TRENCH DRAIN CATCH BASIN
SCALE: NTS



NOTE: ELEVATION

1. HOTBOX ENCLOSURE SHALL BE INSULATED AND HEATED. COORDINATE WITH ELECTRICAL PLANS FOR CONNECTION.
2. RPBA SHALL BE ACCESSIBLE BY VERTICALLY LIFTING OFF ENCLOSURE. CONTRACTOR TO VERIFY ACCESSIBILITY PRIOR TO CONSTRUCTION.

X REDUCED PRESSURE BACKFLOW ASSEMBLY
SCALE: NTS



NOTES:
1. CAST IRON FRAME AND COVER SHALL MEET H-20 LOAD REQUIREMENT.
2. FOR CARRIER PIPE SIZE 6"Ø AND LESS, PROVIDE RISER PIPE SIZE TO MATCH CARRIER PIPE.
3. FOR CARRIER PIPE SIZE 8"Ø AND LARGER, RISER PIPE SHALL BE 6"Ø.
4. RISER PIPE MATERIAL TO MATCH CARRIER PIPE MATERIAL.

X STANDARD CLEANOUT (COTG)
SCALE: NTS

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OREGON
JULY 14, 2005
TIMOTHY ANDREW FYKELBOSCH
RENEWS: 12/31/

KAADY CAR WASH
WEST LINN, OREGON

Revisions

LAND-USE SET

DETAILS

Project 22005

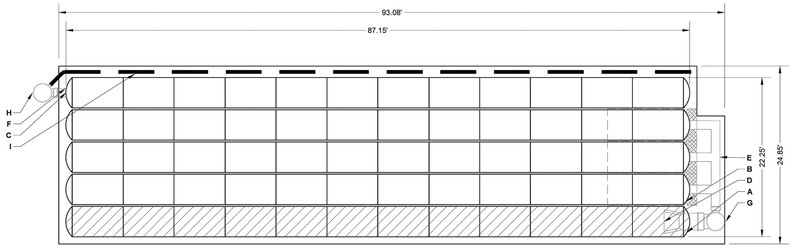
C5.1

Date: 7.9.2025

PROPOSED LAYOUT		PROPOSED ELEVATIONS	
60	STORMTECH SC-800 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	111.75
10	STORMTECH SC-800 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	105.75
6	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	104.75
6	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	104.25
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	104.25
5272	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	111.75
		TOP OF SC-800 CHAMBER:	103.25
		12" x 12" TOP MANIFOLD INVERT:	111.75
		24" ISOLATOR ROW PLUS INVERT:	103.69
2286	SYSTEM AREA (SF)	12" BOTTOM CONNECTION INVERT:	103.63
235.9	SYSTEM PERIMETER (ft)	BOTTOM OF SC-800 CHAMBER:	100.50
423	THERMOPLASTIC LINER (SY) (20% OVERAGE)	UNDERDRAIN INVERT:	100.50
		BOTTOM OF STONE:	100.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED EZ END CAP	A	24" BOTTOM PREFABRICATED EZ END CAP. PART#: SC800ECEZ / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.30"	
PRE-CORED END CAP	B	12" TOP PRE-CORED END CAP. PART#: SC800EPE12TPC / TYP OF ALL 12" TOP CONNECTIONS	14.40"	
PRE-CORED END CAP	C	12" BOTTOM PRE-CORED END CAP. PART#: SC800EPE12BPC / TYP OF ALL 12" BOTTOM CONNECTIONS	1.60"	
FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: SC80024RAMP		
MANIFOLD	E	12" x 12" TOP MANIFOLD, ADS N-12	14.40"	
PIPE CONNECTION	F	12" BOTTOM CONNECTION	1.60"	
NYLOPLAST (INLET W/ ISO PLUS ROW)	G	30" DIAMETER (24.00" SUMP MIN)		5.9 CFS IN
NYLOPLAST (OUTLET)	H	30" DIAMETER (DESIGN BY ENGINEER)		2.0 CFS OUT
UNDERDRAIN	I	8" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS825 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

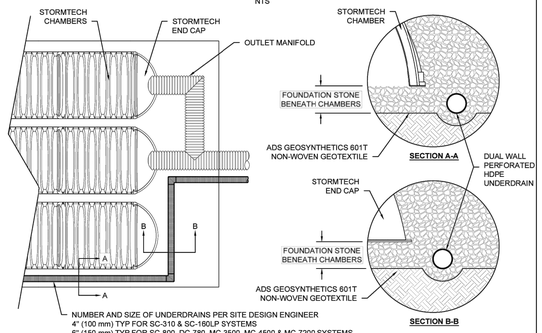
THERMOPLASTIC LINER (SEE TECH NOTE #6.50 PROVIDED BY OTHERS / DESIGN BY OTHERS)

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION**: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

UNDERDRAIN DETAIL

NTS

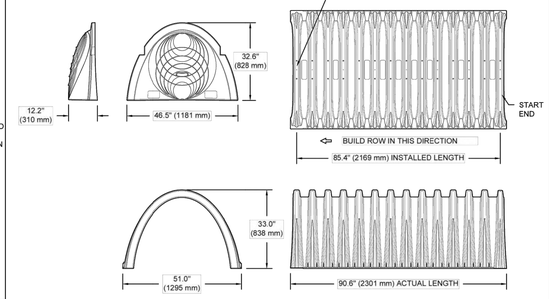


4 UNDERDRAIN DETAIL

SPACE INTENTIONALLY LEFT BLANK

SC-800 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	78.4 CUBIC FEET	(2.22 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

NOMINAL END CAP SPECIFICATIONS

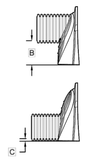
SIZE (W X H X INSTALLED LENGTH)	46.5" X 32.6" X 10.5"	(1181 mm X 828 mm X 267 mm)
END CAP STORAGE	3.4 CUBIC FEET	(0.09 m³)
MINIMUM INSTALLED STORAGE**	14.7 CUBIC FEET	(0.42 m³)
WEIGHT	15.7 lbs.	(7.1 kg)

* ASSUMES 6" (150 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS, 3" (75 mm) BETWEEN CHAMBERS
**ASSUMES 6" (150 mm) STONE ABOVE AND BELOW END CAPS, 3" (150 mm) BETWEEN ROWS, 12" (300 mm) BEYOND END CAPS

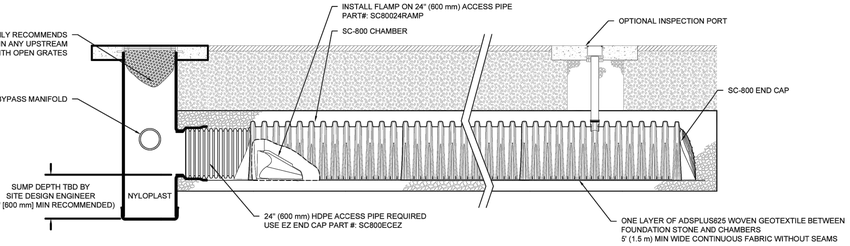
PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"
PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24BPC	24" (600 mm)	---	2.3" (58 mm)
SC800EPE	NONE	SOLID END CAP	

NOTE: ALL DIMENSIONS ARE NOMINAL



2 SC-800 TECHNICAL SPECIFICATION



SC-800 ISOLATOR ROW PLUS DETAIL
NTS

3 SC-800 ISOLATOR ROW PLUS DETAIL

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INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

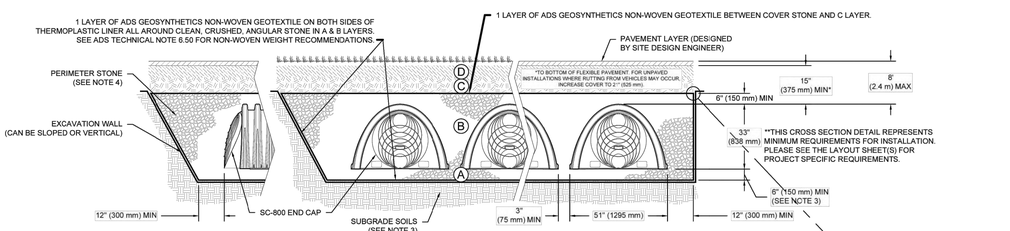
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

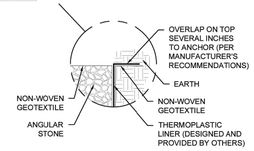
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[4] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 750 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



THERMOPLASTIC LINER DETAIL

1 SC-800 CROSS SECTION DETAIL

DRAWN: CC | DATE: 07/25/2025
CHECKED: N/A | PROJECT #:
REV: | NOT TO SCALE

25-C007 KAADY
WEST LINN, OR, USA

StormTech® Chamber System

4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

ADS

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS/STORMTECH UNDER THE DIRECTION OF THE PROJECT'S ENGINEER OF RECORD ("EOR") OR OTHER PROJECT REPRESENTATIVE. THIS DRAWING IS NOT INTENDED FOR USE IN BIDDING OR CONSTRUCTION WITHOUT THE EOR'S PRIOR APPROVAL. EOR SHALL REVIEW THIS DRAWING PRIOR TO BIDDING AND/OR CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE EOR TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

SHEET 1 OF 1

tva

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FROELICH ENGINEERS CIVIL · STRUCTURAL
Portland, OR. | Bend, OR. | Denver, CO.
(503) 624-7005

REGISTERED PROFESSIONAL ENGINEER 83693PE OREGON JULY 31, 2015 PRELIMINARY NOT FOR CONSTRUCTION JAMES P. KELBOSCH
RENEWS: 12/31

KAADY CAR WASH
WEST LINN, OREGON

Revisions

LAND-USE SET

DETAILS

Project 22005

C5.2

Date: 7.9.2025

April 1, 2026

Re: CUP-25-03 / DR-25-03 / VAR-25-02 Kaady Car Wash
18850 Willamette Drive – Clarifying the Car Wash Process Water

In the public statements, one of the opponents to this proposal included a series of chemicals as a claim to imply pollution risks to the environment, and the community due to the products that are being used in the car wash process. These claims are greatly overstated relative to the potential risks provided by the products used in the car wash process.

UNDERSTANDING SDS FORMS
OSHA requires all chemicals provide safety data sheets to determine the hazardous properties of all products. This information is used to protect workers handling the products, firefighters entering buildings where these products are stored, the environment, and the public at large. Section 2 of the SDS forms identifies the hazards of the chemical presented, along with any warning information associated with these hazards. Pictograms of the hazard symbols are applied for any products that identified with even mild warnings.

Note that for all of the products used in the car wash, some have an exclamation mark identification. This indicates irritants, skin sensitizers, acute toxicity, narcotic effects, and respiratory tract irritants. While these conditions seem alarming, these same identifications apply to many household cleaning products and even products like shampoos and perfumes. (See Kellington issuance for a breakdown of Chanel No. 5) For example, Head and Shoulders shampoo carries an irritant of level 2B, same as the car polish used in the car wash.

Also notable is that these identifications are for undiluted products as they are stored, not as they are applied. We have included SDS forms for comparison to common household products, including car wash products that residents use that wash into the driveways.

There is a higher level of concern that none of the products that are being used in our facility reach. None of the products carry a Health Hazard (carcinogens, mutagenicity, reproductive toxicity, respiratory sensitizer, and Aspiration toxicity), Flammability, Corrosion, or ENVIRONMENT (Aquatic Toxicity) identification label.

Furthermore, these products have been reviewed and screened by the State of Oregon DEQ for the EcoBiz certification, and all of Kaady Car Wash's Oregon Facilities have been certified EcoLogical.

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Tim Wybenga, LEED AP | Pamela Saftler, AIA, IIDA | Mandy Butler, AIA, LEED AP, CSI CDT

SECTION 6 OF THE SDS FORMS

Section 6: Accidental Release Measures has some information stating "Do not allow undiluted product or large quantities of it to reach ground water, water course, or sewage system." This is intended to be applied for large quantities of undiluted product. The same statement can be found in common household products. For Example: Head and Shoulders, but also Chlorox, Rain-X, Armor-All, and several other products we have identified.

It should be noted that all of the bulk products that are used in the car wash are stored within the filtration bay that has a floor drain that connects directly to the process water filtration system. No spillage of bulk product can exit out the storage room, let alone the stormwater system.

THE PRODUCTS USED IN THE CAR WASH

Not all of the chemicals listed in the submitted safety data sheets (SDS) that were provided by Mr. Kreitzberg are used in the car wash process. Some of these products are sold by Kaady as a part of a retail distribution program but are not actually used in the wash.
These are the products used in the car Wash, along with their SDS identified hazardous identifications. These products are being included as a supplement to this letter.

- Unscented Liquid Polish. Identified as a
  - Mild skin irritant 2, and eye irritant 2B
- Tire Wheel & Body (Unscented)
  - Oral Acute Toxic 4, Skin Irritation 2, Eye Irritation 2A
- Paint Guard
  - Health Hazard 1 (mild)
- Ceramic Paint Protection
  - Health Hazard 1 (mild)
- Lemon Fragrance
  - Health Hazard 1
  - Fire Hazard 1

THE WATER RECLAIM AND FILTRATION PROCESS

The process water used for the car wash is captured within an internal trench that slopes internally towards a water reclaim pit, that has a series of concrete baffles that assists in making the solids and debris to settle out. (Leaves, dirt, and loose road debris) The gray water level that has been strained out in this filtration pit gets siphoned off for re-use within the car wash. Every three to four months, a DEQ certified waste management company will vacuum out the filtration pit. This process has been reviewed and certified by the DEQ's EcoBiz program.

All car wash products are stored in the water filtration room, and it has an internal floor drain that connects to the stormwater filter and sanitary sewer. No product can leave the storage room, and if it does it gets captured in the water reclamation trench. No product spills can reach the stormwater system. See the attached A1.00, A5.00, and A5.01 drawings for reference.

STORMWATER SYSTEM

This system is fully described in the Froelich stormwater report. To summarize, the Contech Filterra system being used on this site is a larger, enhanced treatment system that meets the highest regional standard (Washington DOE) and General Use Level Disgnation (GULD) for basic and metals treatment, which is more than is required by the basic filtration systems than meets code.

In addition to this system, this water gets sent to a shared filtration vault co-owned by the ownership of the shopping mall adjacent to this property. It then gets a third filtration and containment when entering into an existing storm water pond, that has been designated to be re-planted and rehabilitated in this scope of work. The size and capacity of this pond remains as exists.

SUMMARY

The products used in the car wash, when reviewed as SDS sheets may appear alarming, but recognize that the SDS forms do not consider the applied use in diluted quantities as the product is intended. (For example, review the common household products.) Furthermore, this product is not subject to the stormwater system. It is fully contained within the car wash. This particular car wash has the added benefit of the acoustic enclosure, which prevents wind tunnel effects, and provides additional drainage back into the car wash. (An additional 38'-0" beyond the end of the drying process.)

The products are as benign as common consumer products, and there are many layers of protection preventing quantities of product that Section 6 of the SDS forms would be concerned about from reaching water ways or the storm sewer system.

Thank you for your consideration

Sincerely,

Eric Li, Senior Associate
TVA Architects

KEYNOTES

SHOWN THUS ⬡

NOTE: ONLY KEYNOTES APPROPRIATE TO THIS SHEET ARE SHOWN IN THIS KEYNOTE LEGEND. GC TO VERIFY ANY DISCREPANCY IN KEYNOTING.

3.01	8" POURED-IN-PLACE CONCRETE WASH BAY SLAB. SEE STRUCTURAL FOR REINFORCING. HARD TROWEL FINISH. SLOPE 1" OVER 30'-0" FROM ENTRANCE TO EXIT. (100'-0"). COUNTER-SLOPE TO DRAIN TO CONVEYOR SHELF. PROVIDE MASTERPOLYHEED 980 MID-RANGE WATER-REDUCING CONCRETE ADMIXTURE AND FINISH WITH W.R. MEADOWS SEAL CURE-25 CONCRETE CURING AND SEALING COMPOUND.
3.02	8" POURED-IN-PLACE CONCRETE CONVEYOR SHELF SLAB. SEE STRUCTURAL FOR REINFORCING. HARD TROWEL FINISH. SLOPE IS PARALLEL TO WASH BAY SLAB. COUNTER SLOPE TO DRAINAGE TRENCH. PROVIDE MASTERPOLYHEED 980 MID-RANGE WATER-REDUCING CONCRETE ADMIXTURE. FINISH WITH W.R. MEADOWS SEAL CURE-25 CONCRETE CURING AND SEALING COMPOUND. COORDINATE INSTALLATION OF CONVEYOR SYSTEM WITH OWNER. PROVIDE STEEL ANGLES FOR OWNER PROVIDED FIBERGLASS TRENCH GRATING.
3.03	6" POURED-IN-PLACE CONCRETE DRAINAGE TRENCH SLAB. SEE STRUCTURAL FOR REINFORCING. HARD TROWEL FINISH SMOOTH. PROVIDE MASTERPOLYHEED 980 WATER-REDUCING ADMIXTURE. FINISH WITH W.R. MEADOWS SEAL CURE-25 CONCRETE CURING AND SEALING COMPOUND. SLOPE TOWARDS CROSS-TRENCH, SEE PLAN FOR SLOPE. COORDINATE APPLICATION OF OWNER PROVIDED TRENCH COVER PLATING.
3.04	4" POURED-IN-PLACE CONCRETE OFFICE SLAB. SEE STRUCTURAL FOR REINFORCING. SLOPE PARALLEL TO MATCH BAY FLOOR SLAB. NO CROSS SLOPE. HARD TROWEL SMOOTH FINISH. PROVIDE MASTERPOLYHEED 980 MID-RANGE WATER-REDUCING CONCRETE ADMIXTURE. FINISH WITH W.R. MEADOWS SEAL CURE-25 CONCRETE CURING AND SEALING COMPOUND.
3.05	FILTRATION PIT: 6" POURED-IN-PLACE CONCRETE SLAB ON GRADE, WITH 4" THICK CONCRETE BAFFLE PARTITIONS STAGGERED AS INDICATED ON DRAWINGS. HARD TROWEL FINISH. PROVIDE MASTERPOLYHEED 980 MID-RANGE WATER-REDUCING CONCRETE ADMIXTURE. FINISH WITH W.R. MEADOWS SEAL CURE-25 CONCRETE CURING AND SEALING COMPOUND.
3.06	L3X3X1/4" EMBEDDED ANGLE WITH 3/8" DIA. X 3" SHEAR ANCHORS @ 16" O.C.
8.01	GLAZED ALUMINUM STOREFRONT ENTRY 3'-0" X 8'-0": KAWNEER 350T STANDARD MEDIUM THERMAL SWING DOOR ENTRANCE. 3 1/2" ALUMINUM STILES AND TOP RAIL, & 1/2" BOTTOM RAIL. GUARDIAN SNX 62/27 LOW-E TEMPERED GLASS LITES, U .28 MAX, SHGC .26 MAX. DOOR HARDWARE: BUTT HINGES (4EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, EXIT DEVICE: FALCON F-25-R-L-NL-LAT RIM DEVICE, CLOSER: LCN 4020 CUSH SURFACE MOUNTED CLOSER. THRESHOLD: PEMKO 171 SERIES COMMERCIAL FLAT THRESHOLD 5" WIDE. GASKET: ZERO 488SBK PSA. DOOR SWEEP ZERO 8198AA RAIN DRIP WITH NYLON BRUSH.

KEYNOTES

SHOWN THUS ⬡

NOTE: ONLY KEYNOTES APPROPRIATE TO THIS SHEET ARE SHOWN IN THIS KEYNOTE LEGEND. GC TO VERIFY ANY DISCREPANCY IN KEYNOTING.

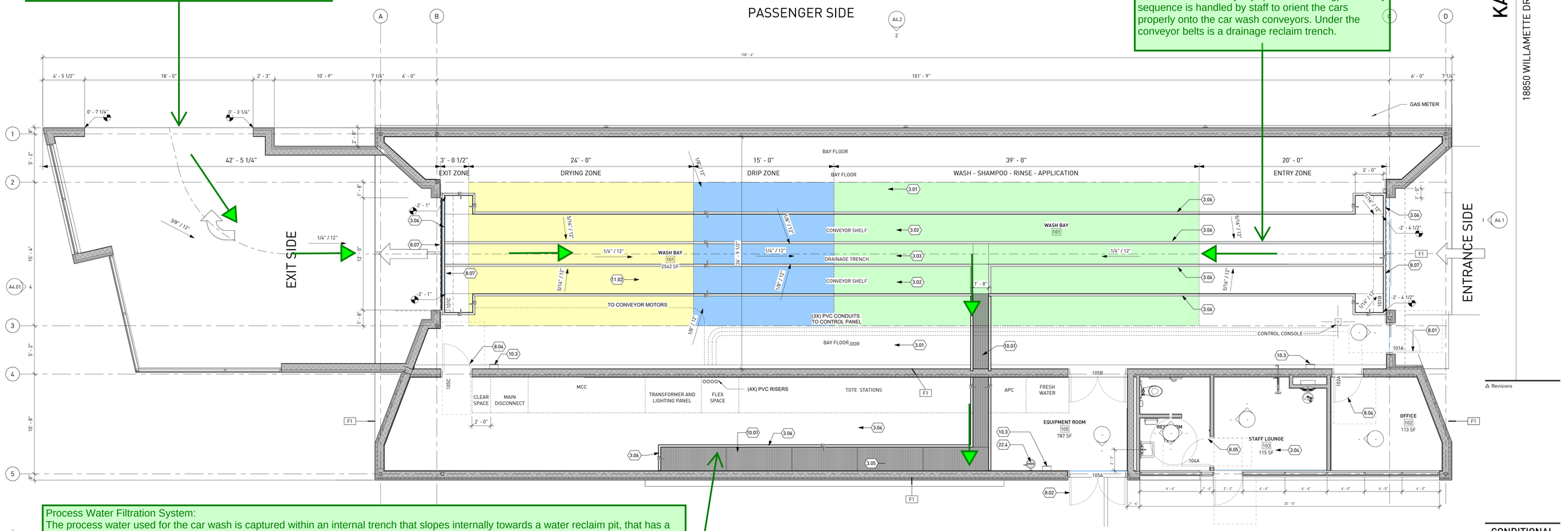
8.02	GLAZED ALUMINUM PAIRED STOREFRONT ENTRY 6'-0" X 8'-0": KAWNEER 350T STANDARD MEDIUM THERMAL SWING DOOR ENTRANCE. 3 1/2" ALUMINUM STILES AND TOP RAIL, & 1/2" BOTTOM RAIL. GUARDIAN SNX 62/27 LOW-E TEMPERED GLASS LITES, U .28 MAX, SHGC .26 MAX. DOOR HARDWARE: BUTT HINGES (8EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, EXIT DEVICE (2EA): FALCON F-25-C-L-NL-LAT CONCEALED VERTICAL ROD DEVICE. CLOSER (2EA): LCN 4020 CUSH SURFACE MOUNTED CLOSER. THRESHOLD: PEMKO 171 SERIES COMMERCIAL FLAT THRESHOLD 5" WIDE. GASKET: ZERO 488SBK PSA. DOOR SWEEP ZERO 8198AA RAIN DRIP WITH NYLON BRUSH.
8.04	HOLLOW METAL OFFICE DOOR WITH HOLLOW METAL FRAME 3'-0" X 8'-0", PAINT WHITE. HARDWARE: BUTT HINGES (4EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, OFFICE LOCKSET: FALCON T-521-CPN-LAT. CLOSER: LCN 4110 SURFACE MOUNT. GASKET: ZERO 488SBK PSA.
8.05	HOLLOW METAL RESTROOM DOOR IN HOLLOW METAL FRAME 3'-0" X 8'-0", PAINT WHITE. HARDWARE: BUTT HINGES (4EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, BATHROOM PRIVACY LOCKSET WITH OCCUPANCY INDICATOR: FALCON H2171-410-LAT. CLOSER: LCN 4020 SURFACE MOUNT (PUSH SIDE)
8.07	OVERHEAD COILING DOOR: COOKSON MODEL ESD10 MOTORIZED ROLLING SERVICE DOOR. 20 GAUGE PAINTED GALVANIZED STEEL, PAINT WHITE. 12'-0" WIDE X 9'-0" HIGH.
10.01	OWNER FURNISHED 1 1/2" THICK FIBERGLASS TRENCH GRATE. SET ON L2X2X1/8" CONTINUOUS STEEL ANGLES.
10.3	FIRE EXTINGUISHER AND FEC: FIRE EXTINGUISHER: POTTER ROEMER 3010 10# FIRE MARSHAL APPROVED ALTERNATE] MULTIPURPOSE DRY-CHEMICAL TYPE IN STEEL CONTAINER: UL RATED 4A:60BC, 10 LB NOMINCAL CPACITY WITH MONAMMONIUM PHOSPHATE BASED DRY CHEMICAL IN ENAMELED STEEL CONTAINER. CABINET: POTTER ROEMER MODEL 702A SURFACE MOUNTED GALVANNEALED STEEL WITH RECOATABLE WHITE POLYESTER FINISH. ROLLED RADIUS WITH GLASS PANEL DOOR.
11.02	CAR WASH EQUIPMENT PROVIDED BY OWNER, SHOWN FOR REFERENCE ONLY. FINAL LOCATION OF EQUIPMENT TO BE DETERMINED BY OWNER.
22.4	EYE WASH STATION: BRADLEY MODEL S19224BPT HALO EYEWASH WITH STAINLESSS STEEL BOWL, TAILPIECE & P-TRAP. COMPLIES WITH ANSI/ISEA STANDARD Z358.1. BARRIER FREE DESIGN. MINIMUM FLOW .4 GPM AT 30 PSI.

GENERAL NOTES

1. SITE INFORMATION SHOWN FOR REFERENCE ONLY. SEE SITE PLANS.
2. SEE G SERIES SHEETS FOR CODE COMPLIANCE INFORMATION.
3. ALL DIMENSIONS ARE TO FACE OF FINISH, CENTERLINE OF COLUMN, OR GRID LINE, UNO, EXTERIOR DIMENSIONS ARE TO FACE OF FINISH; DIMENSIONS INDICATED AS "CLR MIN" ARE TO FACE OF FINISH
4. ALL DOOR OPENINGS PERPENDICULAR TO A WALL ARE 5" TO THE WALL UNO.
5. SEE G1.XX FOR TYPICAL WALL TYPES, OTHER ASSEMBLY TYPES, STEEL COLUMN FIRE PROTECTION, UNO.
6. SEE EXTERIOR ELEVATIONS FOR WINDOW TYPES NOT SHOWN HERE.
7. DOOR CLEARANCES ARE SHOWN DASHED AND ARE FOR REFERENCE ONLY .
8. PROVIDE SOLID FRT BLOCKING AT ALL GRAB BARS AND WHERE INDICATED ON INTERIOR ELEVATIONS.
9. THE WASH BAY SLAB AND CONVEYOR SHELF SLAB RUN PARALLEL TO EACH OTHER, 25" APART VERTICALLY. SEE STRUCTURAL FOR POUR SEQUENCE.
10. THE WASH BAY SLAB AND OFFICE SLAB RUN PARALLEL TO AND FLUSH WITH EACH OTHER. THE WASH BAY SLAB IS 8" THICK, AND THE OFFICE BAY SLAB IS 4" THICK. SEE STRUCTURAL. THE WASH BAY SLAB ALSO HAS A CROSS SLOPE THAT DRAINS TO THE CONVEYOR/DRAINAGE TRENCH, WHILE THE OFFICE SLAB DOES NOT HAVE A CROSS SLOPE.
11. ELECTRICAL AND PLUMBING CONDUITS ARE SHOWN FOR REFERENCE ONLY. SEE ELECTRICAL AND PLUMBING DRAWINGS FOR EXACT LOCATIONS AND ADDITIONAL INFORMATION.
12. SINCE SITE CONDITIONS WILL VARY, THE DIRECTIONAL INFORMATION IS DESCRIBED BY FUNCTION: ENTRANCE, EXIT, DRIVER'S SIDE, AND PASSENGER'S SIDE. CARDINAL DIRECTIONS WILL BE REFERENCED ON SITE PLANS AND CIVIL DOCUMENTS.
13. CAR WASH EQUIPMENT IS SHOWN FOR REFERENCE ONLY EXACT COMPONENTS TO BE OWNER FURNISHED AND LOCATED.

The Acoustic Enclosure:
This addition was provided at the end of the car wash at this location to protect the neighboring residences to the west from being impacted from the sound in the car wash. It also diverts wind around the building, reducing the effects of wind into the tunnel. It also ramps down at 1/4" per foot back towards the water reclaim trench, to prevent residual water runoff onto the site.

Since the LUR hearing on 3/18/26, the design team is proposing lining the enclosure walls and ceiling with acoustic dampening panels to further reduce the perceived noise from the building.



Process Water Filtration System:
The process water used for the car wash is captured within an internal trench that slopes internally towards a water reclaim pit, that has a series of concrete baffles that assists in making the solids and debris to settle out. The gray water level that has been strained out in this filtration pit gets siphoned off for re-use within the car wash. Every three to four months, a DEQ certified waste management company will vacuum out the filtration pit. This process has been reviewed and certified by the DEQ's EcoBiz program.

The car wash process:
Cars are guided onto the conveyor belts. At this point the cars are nominally dry. (If it's not raining) The entry sequence is handled by staff to orient the cars properly onto the car wash conveyors. Under the conveyor belts is a drainage reclaim trench.

WATER FLOW DIRECTION

1 FLOOR PLAN
1/4" = 1'-0"

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NOT FOR CONSTRUCTION

KAADY CAR WASH

18850 WILLAMETTE DRIVE, WEST LINN, OREGON 97068

Revisions

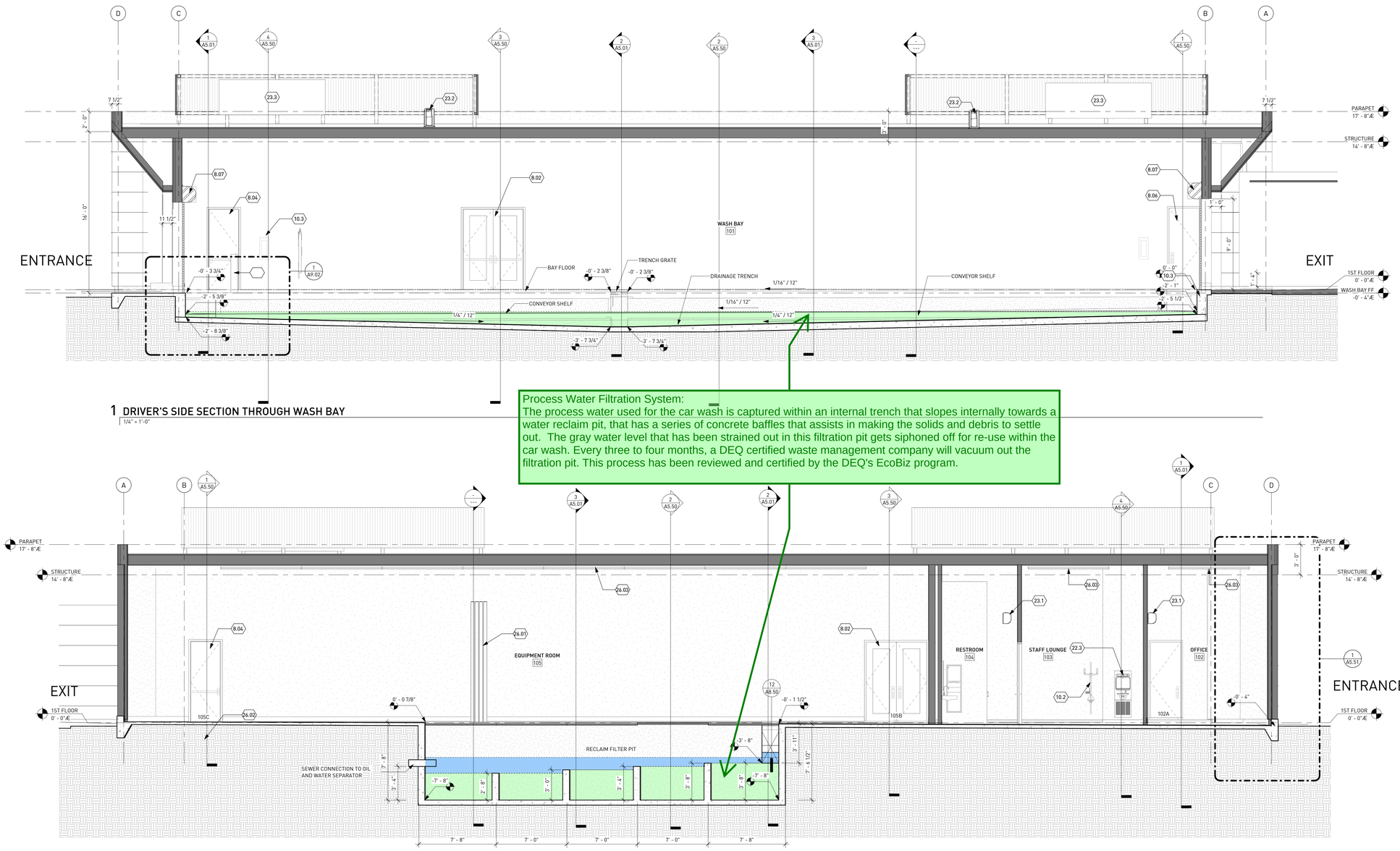
CONDITIONAL USE PERMIT

FLOOR PLAN
LEVEL 01

Project # 22005

A1.00

Date: 7.23.25



1 DRIVER'S SIDE SECTION THROUGH WASH BAY
1/4" = 1'-0"

Process Water Filtration System:
The process water used for the car wash is captured within an internal trench that slopes internally towards a water reclaim pit, that has a series of concrete baffles that assists in making the solids and debris to settle out. The gray water level that has been strained out in this filtration pit gets siphoned off for re-use within the car wash. Every three to four months, a DEQ certified waste management company will vacuum out the filtration pit. This process has been reviewed and certified by the DEQ's EcoBiz program.

2 SECTION THROUGH OFFICE BAY AND AND RECLAIM FILTER PIT
1/4" = 1'-0"

GENERAL NOTES

1. -

KEYNOTES

SHOWN THUS ⬡

NOTE: ONLY KEYNOTES APPROPRIATE TO THIS SHEET ARE SHOWN IN THIS KEYNOTE LEGEND. GC TO VERIFY ANY DISCREPANCY IN KEYNOTING.

8.02	GLAZED ALUMINUM PAIRED STOREFRONT ENTRY 6'-0" X 8'-0": KAWNEER 350T STANDARD MEDIUM THERMAL SWING DOOR ENTRANCE. 3 1/2" ALUMINUM STILES AND TOP RAIL, 6 1/2" BOTTOM RAIL. GUARDIAN SNX 62/27 LOW-E TEMPERED GLASS LITES, U .28 MAX, SHGC .26 MAX. DOOR HARDWARE: BUTT HINGES (8EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, EXIT DEVICE (2EA): FALCON F-25-C-L-NL-LAT CONCEALED VERTICAL ROD DEVICE. CLOSER (2EA): LCN 4020 CUSH SURFACE MOUNTED CLOSER. THRESHOLD: PEMKO 171 SERIES COMMERCIAL FLAT THRESHOLD 5" WIDE. GASKET: ZERO 488SBK PSA. DOOR SWEEP ZERO 8198AA RAIN DRIP WITH NYLON BRUSH.
8.04	HOLLOW METAL OFFICE DOOR WITH HOLLOW METAL FRAME 3'-0" X 8'-0", PAINT WHITE. HARDWARE: BUTT HINGES (4EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, OFFICE LOCKSET: FALCON T-521-CPN-LAT. CLOSER: LCN 4110 SURFACE MOUNT. GASKET: ZERO 488SBK PSA.
8.06	HOLLOW METAL STORAGE ROOM DOOR IN HOLLOW METAL FRAME 3'-0" X 8'-0", PAINT WHITE. HARDWARE: BUTT HINGES (4EA): IVES 5BB1HW 4.5 X 4.5 NRP 630 BRUSHED STAINLESS FINISH, PASSAGE LEVER SET INDICATOR: FALCON H2171-101-LAT. CLOSER: LCN 4020 SURFACE MOUNT (PUSH SIDE)
8.07	OVERHEAD COILING DOOR: COOKSON MODEL ESD10 MOTORIZED ROLLING SERVICE DOOR. 20 GAUGE PAINTED GALVANIZED STEEL, PAINT WHITE. 12'-0" WIDE X 9'-0" HIGH.
10.2	WALL MOUNTED BICYCLE RACK: BASIS OF DESIGN TREE TOP "VERTICAL", COLOR BLACK
10.3	FIRE EXTINGUISHER AND FEC: FIRE EXTINGUISHER: POTTER ROEMER 3010 (OR FIRE MARSHAL APPROVED ALTERNATE) MULTIPURPOSE DRY-CHEMICAL TYPE IN STEEL CONTAINER: UL RATED 4A:60BC, 10 LB NOMINCAL CPACITY WITH MONAMMONIUM PHOSPHATE BASED DRY CHEMICAL IN ENAMELED STEEL CONTAINER. CABINET: POTTER ROEMER MODEL 7024 SURFACE MOUNTED GALVANNEALED STEEL WITH RECOATABLE WHITE POLYESTER FINISH. ROLLED RADIUS WITH GLASS PANEL DOOR.
22.3	DRINKING FOUNTAIN - BOTTLE FILLER: ELKAY ENHANCED EZH2O BOTTLE FILLING STATION & SINGLE ADA COOLER REFRIGERATOR STAINLESS HIGH CAPACITY LEAD REDUCTION QUICK FILTER CHANGE. LZS8WSSP
23.1	AIR CONDITIONING HEAD UNIT: RAMSOND 740WI 24000 BTU 16.0 SEER DUCTLESS MINI SPLIT AC + HEAT PUMP
23.2	AIR CONDITIONING OUTDOOR CONDENSING UNIT: RAMSOND 740WI 24000 BTU 16.0 SEER DUCTLESS MINI SPLIT AC + HEAT PUMP
23.3	ROOF TOP HEATING UNIT: CAMBRIDGE S-1200, 950 LBS, 1000 MBUH, GAS FIRED HEATER, 3 HP MOTOR
26.01	PVC POWER AND COMMUNICATION CONDUITS, COORDINATE WITH OWNER, SEE ELECTRICAL DOCUMENTS FOR EXACT LOCATIONS AND SIZES.
26.02	MAIN ELECTRICAL PANELS AND SHUTOFF. SEE ELECTRICAL DOCUMENTS FOR EXACT SIZE, AMPERAGE, VOLTAGE, AND RESISTANCE.
26.03	SURFACE MOUNTED LED STRIP LIGHT

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NOT FOR CONSTRUCTION

KAADY CAR WASH

18850 WILLAMETTE DRIVE, WEST LINN, OREGON 97068

△ Revisions

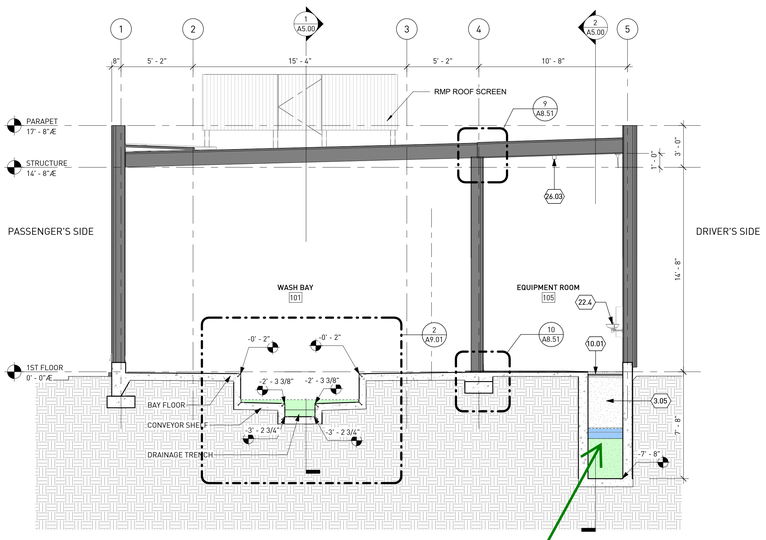
CONDITIONAL USE PERMIT

BUILDING SECTIONS

Project # 22005

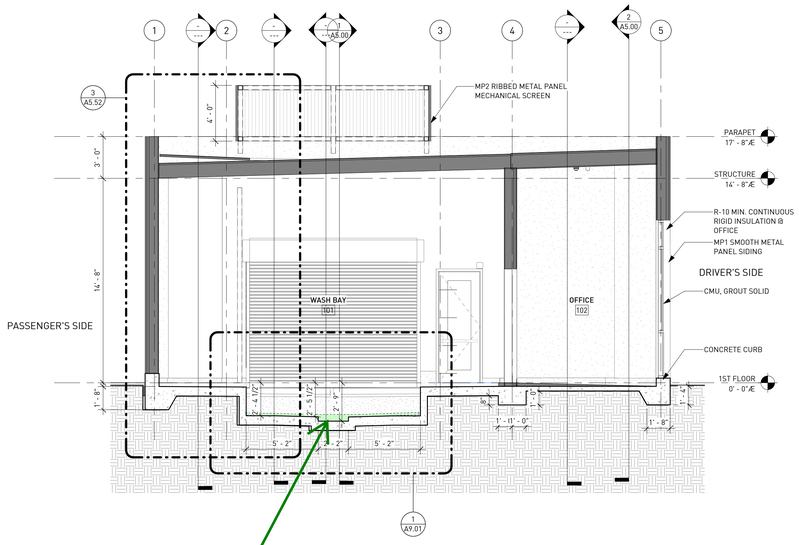
A5.00

Date: 7.23.25



3 BUILDING SECTION AT FILTER PIT

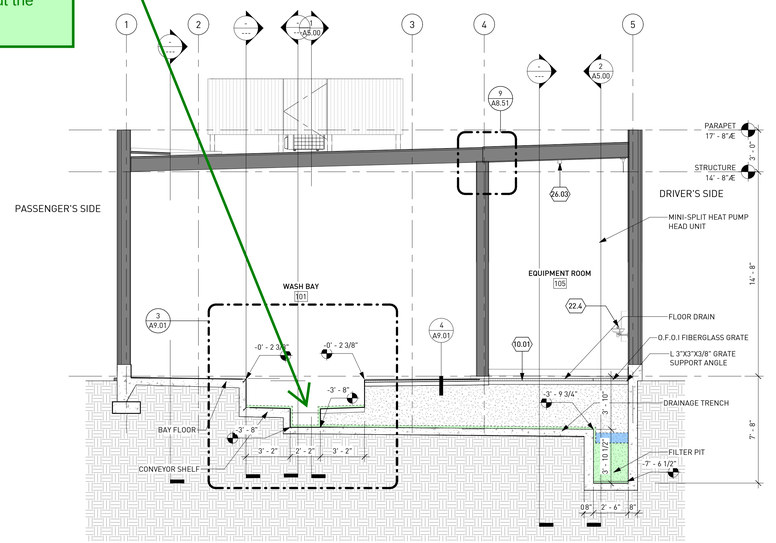
1/4" = 1'-0"



1 BUILDING SECTION AT END OF CONVEYOR

1/4" = 1'-0"

Process Water Filtration System:
The process water used for the car wash is captured within an internal trench that slopes internally towards a water reclaim pit, that has a series of concrete baffles that assists in making the solids and debris to settle out. The gray water level that has been strained out in this filtration pit gets siphoned off for re-use within the car wash. Every three to four months, a DEQ certified waste management company will vacuum out the filtration pit. This process has been reviewed and certified by the DEQ's EcoBiz program.



2 BUILDING SECTION AT DRAIN TROUGH

1/4" = 1'-0"

tva architects inc.
1750 sw yamhill st. suite 150
portland, oregon 97205
phone: 503 220 0668
www.tvaarchitects.com

NOT FOR CONSTRUCTION

KAADY CAR WASH

18850 WILLAMETTE DRIVE, WEST LINN, OREGON 97068

△ Revisions

CONDITIONAL USE PERMIT

BUILDING SECTIONS

Project # 22005

A5.01

Date: 7.23.25

P:\2022\1 - Kaady Car Wash Pursuit\1 - ADD\22005_Kaady Car Wash Prototype with Sound Enclosure V20.rvt
4/7/2025 2:33:16 PM

The attached SDS forms represent the only products that are being used in the Kaady Car Wash process. Comparative products for common household objects are also provided for comparison, including common domestic car wash products.

A description of how to read SDS forms from OSHA is also included

Eric Li, TVA Architects

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/18/2024 Reviewed on 1/22/2025

1 Identification

· **Product identifier**

· **Trade name:** Unscented Liquid Polish *(Color Varies)*

· **Article number:** K-59

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Kaady Chemical Corp.
2545 SW SPRING GARDEN ST STE 120
PORTLAND, OR 97219
+1-510-562-9788
www.kaadychemical.com

· **Information department:** Product safety department
· **Emergency telephone number:**
CHEMTREC 800-424-9300
ACCT# 12158

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS07

Skin Irrit. 2 H315 Causes mild skin irritation.

Eye Irrit. 2B H320 Causes eye irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning
· **Hazard statements**
Causes skin and eye irritation.
· **Precautionary statements**
Wash thoroughly after handling.
Wear protective gloves.
If on skin: Wash with plenty of water.
Specific treatment (see on this label).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
If eye irritation persists: Get medical advice/attention.

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Safety Data Sheet
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Trade name: Unscented Liquid Polish (Color Varies)

(Contd. of page 1)

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **HMIS-ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
67-63-0	propan-2-ol	<10%

· **Additional information:**
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of 1910.1200 of 29 CFR 1910.1200 Trade Secrets.

*
4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:**
Rinse opened eyes for at least several minutes under running water.
If easy to do so, remove contact lenses if worn.
If eye irritation persists, see medical advice.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: Unscented Liquid Polish *(Color Varies)*

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with the skin or eyes.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Avoid contact with the eyes, skin and clothing.
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67-63-0	propan-2-ol	400 ppm

· **PAC-2:**		
67-63-0	propan-2-ol	2000* ppm

· **PAC-3:**		
67-63-0	propan-2-ol	12000** ppm

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Safety Data Sheet
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Trade name: Unscented Liquid Polish (Color Varies)

*

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

*

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
All ventilation should be disigned in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

· **Components with limit values that require monitoring at the workplace:**	
67-63-0 propan-2-ol	
PEL	Long-term value: 980 mg/m³, 400 ppm
REL	Short-term value: 1225 mg/m³, 500 ppm Long-term value: 980 mg/m³, 400 ppm
TLV	Short-term value: 400 ppm Long-term value: 200 ppm BEI, A4

· **Ingredients with biological limit values:**	
67-63-0 propan-2-ol	
BEI	40 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Acetone (background, nonspecific)

· **Additional information:** The lists that were valid during the creation were used as basis.

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: Unscented Liquid Polish (Color Varies)

(Contd. of page 4)

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	According to product specification
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value at 20 °C (68 °F):**	7-8
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	82 °C (179.6 °F)
· **Flash point:**	Not applicable.

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Trade name: Unscented Liquid Polish *(Color Varies)*

(Contd. of page 5)

· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	425 °C (797 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density (Specific Gravity):**	Not determined.
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	-* %
Water:	PROPRIETARY %
VOC content:	-* %
	-*
Solids content:	0.0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

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Safety Data Sheet
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Trade name: Unscented Liquid Polish (Color Varies)

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*
11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
67-63-0 propan-2-ol		
Oral	LD50	5,045 mg/kg (rat)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
67-63-0	propan-2-ol	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

*
12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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US

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Trade name: Unscented Liquid Polish (Color Varies)

(Contd. of page 7)

· **Other adverse effects** No further relevant information available.

*
13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

*
14 Transport information

· **UN-Number**	non regulated
· **UN proper shipping name**	non regulated
· **Transport hazard class(es)**	non regulated
· **Packing group**	non regulated
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	not regulated

*
15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-63-0	propan-2-ol

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

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Trade name: Unscented Liquid Polish (Color Varies)

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· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

67-63-0	propan-2-ol	A4
140-11-4	benzyl acetate	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning
· **Hazard statements**
Causes skin and eye irritation.
· **Precautionary statements**
Wash thoroughly after handling.
Wear protective gloves.
If on skin: Wash with plenty of water.
Specific treatment (see on this label).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
If eye irritation persists: Get medical advice/attention.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally

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Trade name: Unscented Liquid Polish (Color Varies)

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valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Department issuing SDS:** *Environment protection department.*
· **Contact:** -
· **Date of preparation / last revision** *12/18/2024 / -*
· **Abbreviations and acronyms:**
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
· * **Data compared to the previous version altered.**

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/03/2026 Reviewed on 02/03/2026

* 1 Identification

· **Product identifier**

· **Trade name: TIRE WHEEL & BODY (UNSCENTED)**

· **Article number:** K-45-834-9

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Kaady Chemical Corp.
2545 SW SPRING GARDEN ST STE 120
PORTLAND, OR 97219
+1-510-562-9788
www.kaadychemical.com

· **Information department:** Product safety department
· **Emergency telephone number:**
800-424-9300 (CHEMTREC)
Acct# 12158

* 2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS07

Acute Toxicity - Oral 4	H302 Harmful if swallowed.
Skin Irritation 2	H315 Causes skin irritation.
Eye Irritation 2A	H319 Causes serious eye irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
2-butoxyethanol
· **Hazard statements**
Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Avoid breathing dust/fume/gas/mist/vapors/spray

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Trade name: TIRE WHEEL & BODY (UNSCENTED)

(Contd. of page 1)

Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves / eye protection / face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
If on skin: Wash with plenty of water.
Specific treatment (see on this label).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
If eye irritation persists: Get medical advice/attention.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **HMIS-ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
111-76-2	2-butoxyethanol	1-5%

· **Additional information:**
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of 1910.1200 of 29 CFR 1910.1200 Trade Secrets.

*
4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
If skin irritation occurs, seek medical advice.
Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

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Trade name: TIRE WHEEL & BODY (UNSCENTED)

(Contd. of page 2)

· **After eye contact:**
Rinse opened eyes for at least several minutes under running water.
If easy to do so, remove contact lenses if worn.
If eye irritation persists, see medical advice.
· **After swallowing:**
Rinse out mouth and drink plenty of water or milk.
Do not induce vomiting without medical advice.
If vomiting does occur, repeat fluid administration.
If irritation or discomfort occurs, seek medical advice.
Immediately call a doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with the skin or eyes.

*

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Avoid contact with the eyes, skin and clothing.
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**
None of the ingredients is listed.

· **PAC-2:**
None of the ingredients is listed.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 3)

· **PAC-3:**
None of the ingredients is listed.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**
All ventilation should be disigned in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.
· **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/03/2026 Reviewed on 02/03/2026

Trade name: TIRE WHEEL & BODY (UNSCENTED)

(Contd. of page 4)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Protective work clothing

*
9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Green
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined
· **pH-value:**	12>
· **Change in condition**	
Melting point/Melting range:	Undetermined
Boiling point/Boiling range:	100 °C (212 °F)
· **Flash point:**	Not applicable
· **Flammability:**	Not applicable
· **Auto igniting:**	240 °C (464 °F)
· **Decomposition temperature:**	Not determined
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined
Upper:	Not determined
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)

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Trade name: TIRE WHEEL & BODY (UNSCENTED)

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· **Density (Specific Gravity):**	Not determined
· **Relative density**	Not determined
· **Vapor density**	Not determined
· **Evaporation rate**	Not determined
· **Solubility in / Miscibility with Water:**	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined
· **Viscosity:**	
Dynamic:	Not determined
Kinematic:	Not determined
· **Solvent content:**	
Organic solvents:	1-5 %
Water:	- %
VOC content:	1-5 %
Solids content:	0.0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

*
11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimate)		
Oral	LD50	40,000 mg/kg (ATE)
Inhalative	LC50/4 h	100 mg/l (ATE)

111-76-2 2-butoxyethanol		
Oral	LD50	1,200 mg/kg (ATE)
Inhalative	LC50/4 h	3 mg/l (ATE)

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Trade name: TIRE WHEEL & BODY (UNSCENTED)

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· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

*
12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **Other adverse effects** No further relevant information available.

*
13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Observe all federal, state and local environmental regulations when disposing of this material.

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Trade name: TIRE WHEEL & BODY (UNSCENTED)

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· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

*
14 Transport information

· **UN-Number** · **DOT, ADN, IMDG, IATA**	not regulated
· **UN proper shipping name** · **DOT, ADN, IMDG, IATA**	not regulated
· **Transport hazard class(es)** · **DOT, ADN, IMDG, IATA** · **Class**	not regulated
· **Packing group** · **DOT, IMDG, IATA**	not regulated
· **Environmental hazards:**	Not applicable
· **Special precautions for user**	Not applicable
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable
· **UN "Model Regulation":**	not regulated

*
15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

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Trade name: TIRE WHEEL & BODY (UNSCENTED)

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· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
2-butoxyethanol
· **Hazard statements**
Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves / eye protection / face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
Rinse mouth.
If on skin: Wash with plenty of water.
Specific treatment (see on this label).
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
If eye irritation persists: Get medical advice/attention.

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Trade name: TIRE WHEEL & BODY (UNSCENTED)

(Contd. of page 9)

Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*
16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Department issuing SDS:** Environment protection department.
· **Contact: -**
· **Date of preparation / last revision** 02/03/2026 / -
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
· *** Data compared to the previous version altered.**

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acc. to OSHA HCS

Printing date 02/04/2026 Reviewed on 02/04/2026

1 Identification

· **Product identifier**

· **Trade name: PAINT GUARD**

· **Article number:** K-331

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Kaady Chemical Corp.
2545 SW SPRING GARDEN ST STE 120
PORTLAND, OR 97219
+1-510-562-9788
www.kaadychemical.com

· **Information department:** Product safety department
· **Emergency telephone number:**
chemtrec 800-424-9300
acct# 12158

2 Hazard(s) identification

· **Classification of the substance or mixture**
The product is not classified, according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Void
· **Hazard pictograms** Void
· **Signal word** Void
· **Hazard statements** Void
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **HMIS-ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **Other hazards**
· **Results of PBT and vPvB assessment**

· **PBT:**	
-	PROPRIETARY

· **vPvB:**	
-	PROPRIETARY

US

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Trade name: PAINT GUARD

(Contd. of page 1)

* 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
-	PROPRIETARY	<15%
111-76-2	2-butoxyethanol	<15%
61789-77-3	Quaternary ammonium compounds, dicocoalkyldimethyl, chlorides	<15%

· **Additional information:**
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of 1910.1200 of 29 CFR 1910.1200 Trade Secrets.

* 4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:**
Rinse out mouth and drink plenty of water or milk.
Do not induce vomiting without medical advice.
If vomiting does occur, repeat fluid administration.
If irritation or discomfort occurs, seek medical advice.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with the skin or eyes.

* 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Avoid contact with the eyes, skin and clothing.
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.

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· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
111-76-2	2-butoxyethanol	20 ppm

· **PAC-2:**		
111-76-2	2-butoxyethanol	67 ppm

· **PAC-3:**		
111-76-2	2-butoxyethanol	700 ppm

*
7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

*
8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**
All ventilation should be disigned in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

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Trade name: PAINT GUARD

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111-76-2 2-butoxyethanol	
PEL	Long-term value: 240 mg/m³, 50 ppm Skin
REL	Long-term value: 24 mg/m³, 5 ppm Skin
TLV	Long-term value: 97 mg/m³, 20 ppm BEI, A3

· **Ingredients with biological limit values:**	
111-76-2 2-butoxyethanol	
BEI	200 mg/g creatinine Medium: urine Time: end of shift Parameter: Butoxyacetic acid (BAA) (with hydrolysis)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
· **Breathing equipment:** Not required
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Goggles recommended during refilling.

*
9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Color:	Amber colored
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined
· **pH-value:**	12>

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· **Change in condition**	
Melting point/Melting range:	Undetermined
Boiling point/Boiling range:	100 °C (212 °F)
· **Flash point:**	150 °C (302 °F)
· **Flammability:**	Not applicable
· **Decomposition temperature:**	Not determined
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined
Upper:	Not determined
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density (Specific Gravity):**	Not determined
· **Relative density**	Not determined
· **Vapor density**	Not determined
· **Evaporation rate**	Not determined
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined
· **Viscosity:**	
Dynamic:	Not determined
Kinematic:	Not determined
· **Solvent content:**	
Organic solvents:	<15 %
Water:	PROPRIETARY %
VOC content:	<15 %
Solids content:	- %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.

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Trade name: PAINT GUARD

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· **Hazardous decomposition products:** No dangerous decomposition products known.

*
11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Oral	LD50	5,367–5,871 mg/kg
Dermal	LD50	5,714 mg/kg (rab)
Inhalative	LC50/4 h	42.9 mg/l

111-76-2 2-butoxyethanol		
Oral	LD50	1,200 mg/kg (ATE)
		1,480 mg/kg (rat)
Dermal	LD50	400 mg/kg (rab)
Inhalative	LC50/4 h	3 mg/l (ATE)
67-63-0 propan-2-ol		
Oral	LD50	5,045 mg/kg (rat)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
111-76-2	2-butoxyethanol	3
67-63-0	propan-2-ol	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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Trade name: PAINT GUARD

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* 12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**

· **PBT:**	
-	PROPRIETARY

· **vPvB:**	
-	PROPRIETARY

· **Other adverse effects** No further relevant information available.

* 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Smaller quantities can be disposed of with household waste.
Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	not regulated
· **UN proper shipping name**	
· **DOT, IMDG, IATA**	not regulated
· **Transport hazard class(es)**	
· **DOT, ADN, IMDG, IATA**	
· **Class**	not regulated
· **Packing group**	
· **DOT, IMDG, IATA**	not regulated

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Trade name: PAINT GUARD

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· **Environmental hazards:**	Not applicable
· **Special precautions for user**	Not applicable
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable
· **UN "Model Regulation":**	not regulated

* 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

111-76-2	2-butoxyethanol

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

111-76-2	2-butoxyethanol	NL

· **TLV (Threshold Limit Value)**

111-76-2	2-butoxyethanol	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** Void
· **Hazard pictograms** Void

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Trade name: PAINT GUARD

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· **Signal word** Void
· **Hazard statements** Void
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Department issuing SDS:** Environment protection department.
· **Contact:** -
· **Date of preparation / last revision** 02/04/2026 / -
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
· *** Data compared to the previous version altered.**

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acc. to OSHA HCS

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1 Identification

· **Product identifier**

· **Trade name:** CERAMIC PAINT PROTECTION

· **Article number:** K-441

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Kaady Chemical Corp.
2545 SW SPRING GARDEN ST STE 120
PORTLAND, OR 97219
+1-510-562-9788
www.kaadychemical.com

· **Information department:** Product safety department
· **Emergency telephone number:**
chemtrec 800-424-9300
acct# 12158

*
2 Hazard(s) identification

· **Classification of the substance or mixture**
The product is not classified, according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Void
· **Hazard pictograms** Void
· **Signal word** Void
· **Hazard statements** Void
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **HMIS-ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **Other hazards**
· **Results of PBT and vPvB assessment**

· **PBT:**	
-	PROPRIETARY

· **vPvB:**	
-	PROPRIETARY

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Trade name: CERAMIC PAINT PROTECTION

(Contd. of page 1)

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
-	PROPRIETARY	<15%
111-76-2	2-butoxyethanol	<15%
61789-77-3	Quaternary ammonium compounds, dicocoalkyldimethyl, chlorides	<15%

· **Additional information:**
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of 1910.1200 of 29 CFR 1910.1200 Trade Secrets.

*
4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:**
Rinse out mouth and drink plenty of water or milk.
Do not induce vomiting without medical advice.
If vomiting does occur, repeat fluid administration.
If irritation or discomfort occurs, seek medical advice.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with the skin or eyes.

*
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Avoid contact with the eyes, skin and clothing.
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.

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Trade name: CERAMIC PAINT PROTECTION

(Contd. of page 2)

· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
111-76-2	2-butoxyethanol	20 ppm

· **PAC-2:**		
111-76-2	2-butoxyethanol	67 ppm

· **PAC-3:**		
111-76-2	2-butoxyethanol	700 ppm

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**
All ventilation should be disigned in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: CERAMIC PAINT PROTECTION

(Contd. of page 3)

111-76-2 2-butoxyethanol	
PEL	Long-term value: 240 mg/m³, 50 ppm Skin
REL	Long-term value: 24 mg/m³, 5 ppm Skin
TLV	Long-term value: 97 mg/m³, 20 ppm BEI, A3

· **Ingredients with biological limit values:**

111-76-2 2-butoxyethanol	
BEI	200 mg/g creatinine Medium: urine Time: end of shift Parameter: Butoxyacetic acid (BAA) (with hydrolysis)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
· **Breathing equipment:** Not required
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Goggles recommended during refilling.

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Color:	Amber colored
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined
· **pH-value:**	12>

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Trade name: CERAMIC PAINT PROTECTION

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· **Change in condition**	
Melting point/Melting range:	Undetermined
Boiling point/Boiling range:	100 °C (212 °F)
· **Flash point:**	150 °C (302 °F)
· **Flammability:**	Not applicable
· **Decomposition temperature:**	Not determined
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined
Upper:	Not determined
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density (Specific Gravity):**	Not determined
· **Relative density**	Not determined
· **Vapor density**	Not determined
· **Evaporation rate**	Not determined
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined
· **Viscosity:**	
Dynamic:	Not determined
Kinematic:	Not determined
· **Solvent content:**	
Organic solvents:	<15 %
Water:	PROPRIETARY %
VOC content:	<15 %
Solids content:	- %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.

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Trade name: CERAMIC PAINT PROTECTION

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· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Oral	LD50	5,367–5,871 mg/kg
Dermal	LD50	5,714 mg/kg (rab)
Inhalative	LC50/4 h	42.9 mg/l

111-76-2 2-butoxyethanol		
Oral	LD50	1,200 mg/kg (ATE)
		1,480 mg/kg (rat)
Dermal	LD50	400 mg/kg (rab)
Inhalative	LC50/4 h	3 mg/l (ATE)
67-63-0 propan-2-ol		
Oral	LD50	5,045 mg/kg (rat)
Dermal	LD50	12,800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
111-76-2	2-butoxyethanol	3
67-63-0	propan-2-ol	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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Trade name: CERAMIC PAINT PROTECTION

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12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**

· **PBT:**	
-	PROPRIETARY

· **vPvB:**	
-	PROPRIETARY

· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Smaller quantities can be disposed of with household waste.
Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	not regulated
· **UN proper shipping name** · **DOT, IMDG, IATA**	not regulated
· **Transport hazard class(es)** · **DOT, ADN, IMDG, IATA** · **Class**	not regulated
· **Packing group** · **DOT, IMDG, IATA**	not regulated

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Trade name: CERAMIC PAINT PROTECTION

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· **Environmental hazards:**	Not applicable
· **Special precautions for user**	Not applicable
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable
· **UN "Model Regulation":**	not regulated

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

111-76-2	2-butoxyethanol

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

111-76-2	2-butoxyethanol	NL

· **TLV (Threshold Limit Value)**

111-76-2	2-butoxyethanol	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** Void
· **Hazard pictograms** Void

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Trade name: CERAMIC PAINT PROTECTION

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· **Signal word** Void
· **Hazard statements** Void
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Department issuing SDS:** Environment protection department.
· **Contact:** -
· **Date of preparation / last revision** 02/04/2026 / -
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
· ***** Data compared to the previous version altered.**

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

1 Identification

· **Product Identifier**

· **Trade Name: LEMON FRAGRANCE**
· **Product Number:** K-LMFMB
· **Relevant identified uses of the substance or mixture and uses advised against:**
· **Product Description:** Perfume
· **Application of the substance / the mixture:** Automotive Fragrance

· **Details of the Supplier of the Safety Data Sheet:**
· **Manufacturer/Supplier:**
Kaady Chemical Corp.
2545 SW SPRING GARDEN ST STE 120
PORTLAND, OR 97219
1-510-562-9788
www.kaadychemical.com
· **Emergency telephone number:** +1-800-424-9300

2 Hazard(s) Identification

· **Classification of the substance or mixture:**

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
STOT SE 3 H335 May cause respiratory irritation.
Eye Irrit. 2B H320 Causes eye irritation.

· **Label elements:**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

GHS07

· **Signal word:** Warning

· **Hazard-determining components of labeling:**
Amines, coco alkyldimethyl, N-oxides
Trade Secret
· **Hazard statements:**
H302 Harmful if swallowed.
H315+H320 Causes skin and eye irritation.
H335 May cause respiratory irritation.
· **Precautionary statements:**
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P262 Do not get in eyes, on skin, or on clothing.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves / eye protection / face protection.
P281	Wear personal protective equipment/face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P350	IF ON SKIN: Gently wash with plenty of soap and water.
P304+P341	If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical attention.
P337	If eye irritation persists:
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Unknown acute toxicity:**
This value refers to knowledge of known, established toxicological or ecotoxicological values.
0 % of the mixture consists of component(s) of unknown toxicity.

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *1
Fire = 1
Physical Hazard = 0

· **Hazard(s) not otherwise classified (HNOC):** None known

*

3 Composition/Information on Ingredients

· **Non-hazardous components:**

Non-Hazardous Components		>67%

· **Chemical characterization: Mixtures**
· **Description:** Mixture of substances listed below with non-hazardous additions.

· **Dangerous Components:**

61788-90-7	Amines, coco alkyldimethyl, N-oxides Eye Dam. 1, H318; Skin Irrit. 2, H315	<20%

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

	Trade Secret Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	13%

· **Additional information:**
The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures

· **Description of first aid measures:**
· **After inhalation:**
Give oxygen or artificial respiration if needed. If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention.
· **After skin contact:**
Promptly flush skin with water for at least 15 minutes to ensure all chemical is removed. Remove contaminated clothing and wash before reuse. Consult a physician if irritation persists.
· **After eye contact:**
Flush with large amounts of water for at least 15 minutes, lifting upper and lower lids occasionally. Remove contact lenses is present and easy to do so. Get immediate medical attention.
· **After swallowing:**
Rinse mouth with water. Give 3-4 glasses of water or milk to dilute stomach contents. Do NOT induce vomiting. Seek medical attention.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed:**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-Fighting Measures

· **Extinguishing media:**
· **Suitable extinguishing agents:**
CO2, sand, dry chemical, water mist or alcohol resistant foam.
Use fire fighting measures that suit the environment.
· **For safety reasons unsuitable extinguishing agents:** No further relevant information.
· **Special hazards arising from the substance or mixture:**
Carbon oxides
Nitrogen oxides (NOx)
· **Advice for firefighters:**
· **Protective equipment:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

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6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:**
Use personal protective equipment.
Keep from contacting skin or eyes.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

Avoid breathing vapors, mist or gas.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Remove all sources of ignition.

· **Environmental precautions:** Dilute with plenty of water.

· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).
Dispose of the collected material according to regulations.

· **Reference to other sections:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**
None of the ingredients are listed.

· **PAC-2:**
None of the ingredients are listed.

· **PAC-3:**
None of the ingredients are listed.

*

7 Handling and Storage

· **Handling**

· **Precautions for safe handling:**
Avoid breathing vapors or mist.
Avoid contact with eyes, skin, or clothing.
Do not expose containers to open flame, excessive heat, or direct sunlight.
Do not puncture or drop containers.
Handle with care and avoid spillage on the floor (slippage).
Keep material out of reach of children.
Keep material away from incompatible materials.
Wash thoroughly after handling.

· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities:**

· **Storage**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:**
Keep containers tightly closed.
Do not store in direct sunlight.
Keep away from heat, sparks and flames.
Store away from strong acids.
Store away from strong bases.
Store away from strong oxidizing agents.
Keep containers tightly closed.
Do not store in direct sunlight.
Keep away from heat, sparks and flames.
Store away from strong acids.
Store away from strong bases.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

Store away from strong oxidizing agents.
· **Further information about storage conditions:** None.
· **Specific end use(s):** No further relevant information available.

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8 Exposure Controls/Personal Protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters:**
· **Components with occupational exposure limits:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Wash hands before breaks and at the end of work.
· **Breathing equipment:**
Have self-contained breathing apparatus, positive pressure, MSHA/NIOSH (approved or equivalent) available in case of spillage or equipment failure.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Select glove material based on penetration times, rates of diffusion and degradation.
· **Material of gloves:**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
Neoprene, Nitrile or Buma Rubber.
· **Penetration time of glove material:**
The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.
· **Eye protection:**

Safety glasses recommended.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

*

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Clear, Colorleess
· **Odour:**	Lemon
· **Odor threshold:**	Not determined.
· **pH-value @ 20 °C (68 °F):**	8-9
· **Change in condition**	
Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	Not determined.
· **Flash point:**	None
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	Not applicable
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not determined.
· **Density @ 20 °C (68 °F):**	0.983 g/cm³ (8.203 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility in / Miscibility with:**	
Water:	Partially soluble in water.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
VOC content:	49 g/L
Solids content:	0.0 %
· **Other information:**	No further relevant information available.

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10 Stability and Reactivity

· **Reactivity:** No further relevant information available.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

· **Chemical stability:** Stable under normal conditions.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions:** No dangerous reactions known.
· **Conditions to avoid:** Incompatibilities, flames, ignition sources.
· **Incompatible materials:**
Strong Acids, Strong Bases, Strong Oxidizing Agents, Strong Reducing Agents, Acid Chlorides, Acid Anhydrides and Chloroformates.
· **Hazardous decomposition products:** Carbon Oxides, Nitrogen Oxides (NOx).

*

11 Toxicological Information

· **Information on toxicological effects:**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**	
61788-90-7 Amines, coco alkyldimethyl, N-oxides	
Oral	LD50 >2,000 mg/kg (Rat)

· **Primary irritant effect:**
· **On the skin:** No irritating effect.
· **On the eye:** Irritating effect.
· **Additional toxicological information:** Harmful

· **Carcinogenic categories:**

· **IARC (International Agency for Research on Cancer):**
None of the ingredients are listed.
· **NTP (National Toxicology Program):**
None of the ingredients are listed.
· **OSHA-Ca (Occupational Safety & Health Administration):**
None of the ingredients are listed.

12 Ecological Information

· **Toxicity:**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability:** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential:** No further relevant information available.
· **Mobility in soil:** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

· **Results of PBT and vPvB assessment:**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects:** No further relevant information available.

*

13 Disposal Considerations

· **Waste treatment methods:**
· **Recommendation:**
Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packagings**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport Information

· **UN-Number:**	
· **DOT, ADR/ADN, ADN, IMDG, IATA**	Non-Regulated Material
· **UN proper shipping name:**	
· **DOT, ADR/ADN, ADN, IMDG, IATA**	Non-Regulated Material
· **Transport hazard class(es):**	
· **DOT, ADR/ADN, ADN, IMDG, IATA**	
· **Class:**	Non-Regulated Material
· **Packing group:**	
· **DOT, ADR/ADN, IMDG, IATA**	Non-Regulated Material
· **Environmental hazards:**	Not applicable.
· **Special precautions for user:**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:**	Not applicable.
· **UN "Model Regulation":**	Non-Regulated Material

*

15 Regulatory Information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
· **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**
None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**
61788-90-7 Amines, coco alkyldimethyl, N-oxides

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Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

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Trade Name: LEMON FRAGRANCE

· **TSCA new (21st Century Act) (Substances not listed)**
Trade Secret
· **California Proposition 65:**
· **Chemicals known to cause cancer:**
None of the ingredients are listed.
· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients are listed.
· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients are listed.
· **Chemicals known to cause developmental toxicity:**
None of the ingredients are listed.
· **New Jersey Right-to-Know List:**
None of the ingredients are listed.
· **New Jersey Special Hazardous Substance List:**
None of the ingredients are listed.
· **Pennsylvania Right-to-Know List:**
None of the ingredients are listed.
· **Pennsylvania Special Hazardous Substance List:**
None of the ingredients are listed.

· **Carcinogenic categories:**
· **EPA (Environmental Protection Agency):**
None of the ingredients are listed.
· **TLV (Threshold Limit Value established by ACGIH):**
None of the ingredients are listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health):**
None of the ingredients are listed.

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

GHS07

· **Signal word:** Warning

· **Hazard-determining components of labeling:**
Amines, coco alkyldimethyl, N-oxides
Trade Secret
· **Hazard statements:**
H302 Harmful if swallowed.
H315+H320 Causes skin and eye irritation.

(Contd. on page 10)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

H335 May cause respiratory irritation.

· **Precautionary statements:**

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves / eye protection / face protection.
P281	Wear personal protective equipment/face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P350	IF ON SKIN: Gently wash with plenty of soap and water.
P304+P341	If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical attention.
P337	If eye irritation persists:
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

None of the ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision:** 04/07/2018 / 19

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent

(Contd. on page 11)

US

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 04/07/2018 Reviewed on 6/25/2025

Trade Name: LEMON FRAGRANCE

LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· *** Data compared to the previous version altered.**

SDS created by MSDS Authoring Services www.msdsauthoring.com +1-877-204-9106

OSHA® QUICK CARD™

Hazard Communication Standard Pictogram

The Hazard Communication Standard (HCS) requires pictograms on labels to caution users of the chemical hazards that they may be exposed to. A pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification. Each pictogram may only appear once on a label. If multiple hazards require the use of the same pictogram, it may not appear a second time on the label.

HCS Pictograms and Hazards

Health Hazard

- Carcinogen
- Mutagenicity
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity

Flame

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides
- Desensitized Explosives

Exclamation Mark

- Irritant (skin and eye)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Tract Irritant
- Hazard Not Otherwise Classified (non-mandatory)
- Hazardous to Ozone Layer (non-mandatory)

Gas Cylinder

- Gases Under Pressure
- Chemicals Under Pressure

Corrosion

- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals

Exploding Bomb

- Explosives
- Self-Reactives
- Organic Peroxides

Flame Over Circle

- Oxidizers

Environment (non-mandatory)

- Aquatic Toxicity

Skull and Crossbones

- Acute Toxicity (fatal or toxic)

U.S. Department of Labor

For more information:

OSHA® Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

OSHA 3491-08R 2024

HEALTH HAZARD

4	Very short exposure could cause death or serious residual injury even though prompt medical attention is given.
3	Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
2	Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
1	Exposure could cause irritation but only minor residual injury even if no treatment is given.
0	Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

FLAMMABILITY

4	Will rapidly or completely vaporize at normal pressure & temperature, or is readily dispersed in air & will burn readily.
3	Liquids and solids that can be ignited under almost all ambient conditions.
2	Must be moderately heated or exposed to relatively high temperature before ignition can occur.
1	Must be preheated before ignition can occur.
0	Materials that will not burn.

SPECIAL NOTES

The NFPA 704 Standard defines the following symbols:

OX	Oxidizer (e.g., potassium perchlorate, ammonium nitrate, hydrogen peroxide)
W	Reacts with water in an unusual or dangerous manner (e.g., cesium, sodium, sulfuric acid
SA	Simple asphyxiant gas. Limited to the following gases: nitrogen, helium, neon, argon, krypton & xenon

Non-Standard Symbols:

COR	Corrosive; strong acid or base (e.g. sulfuric acid, potassium hydroxide)
BIO	Biological hazard (e.g., smallpox virus)
CYL CRYO	Cryogenic (e.g. liquid nitrogen)
☢	Radioactive (e.g., plutonium, uranium)
POI	Poisonous (e.g. Strychnine)

INSTABILITY

4	Readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.
3	Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation, or reacts explosively with water.
2	Normally unstable and readily undergoes violent decomposition but does not detonate. Also, may react violently with water or may form potentially explosive mixtures with water.
1	Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently. Materials that will not burn.
0	Normally stable, even under fire exposure conditions, and are not reactive with water

Resources: nfpa.org

Comet Disinfectant Cleanser Powder

Environmental Working Group

EWG's air pollution tests found that Comet Disinfectant Cleanser Powder emitted 146 different chemicals, including some that have been linked to cancer, asthma and reproductive disorders. The most toxic chemicals detected - formaldehyde, benzene, chloroform and toluene - are not listed on the label.

SAFETY DATA SHEET

Issuing Date: 09-Jan-2015 **Revision Date:** 07-Apr-2015 **Version** 2

1. IDENTIFICATION

Product Name	Comet® Cleaner with Bleach - Ready to Use
Product Code(s)	3-30
Product ID:	15154199_PROF_NG
Product Type:	Finished Product - Professional Use Only
Recommended Use	Hard Surface Cleaner
Restrictions on Use	Do not mix with other cleaning products or chemicals as irritating fumes may be formed.
Manufacturer	Procter & Gamble Professional 2 P&G Plaza Cincinnati, Ohio 45202 Procter & Gamble Inc. P.O. Box 355, Station A Toronto, ON M5W 1C5 1-800-332-7787
E-mail Address	pgsds.im@pg.com
Emergency Telephone	Transportation (24 HR) CHEMTREC - 1-800-424-9300 (U.S./ Canada) or 1-703-527-3887 Mexico toll free in country: 800-681-9531

2. HAZARD IDENTIFICATION

This product is classifed under 29CFR 1910.1200(d) and the Canadian Hazardous Products Regulation as follows:.

Hazard Category	
Eye Damage / Irritation	Category 2B
Corrosive to metals	Category 1
Signal Word	WARNING
Hazard Statements	Causes eye irritation May be corrosive to metals

Hazard pictograms

Precautionary Statements - Prevention	Wash hands thoroughly after handling Keep only in original container Do not mix with other cleaning products or chemicals as irritating fumes may be formed
Precautionary Statements - Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention IF SWALLOWED: Drink 1 or 2 glasses of water Absorb spillage to prevent material damage
Precautionary Statements - Storage	Store in corrosive resistant container
Precautionary Statements - Disposal	Dispose of contents/container in accordance with local regulation
Hazards not otherwise classified (HNOC)	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients are listed according to 29CFR 1910.1200 Appendix D and the Canadian Hazardous Products Regulation

Chemical Name	Synonyms	Trade Secret	CAS-No	Weight %
Sulfuric acid, monooctyl ester, sodium salt (1:1)	-	No	142-31-4	1 - 5
Sulfuric acid monododecyl ester sodium salt (1:1)	-	No	151-21-3	1 - 5
Sodium hypochlorite	-	No	7681-52-9	1 - 5

4. FIRST AID MEASURES

First aid measures for different exposure routes

Eye contact	Rinse with plenty of water. Get medical attention immediately if irritation persists.
Skin contact	Rinse with plenty of water. Get medical attention if irritation develops and persists.
Ingestion	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Most important symptoms/effects, acute and delayed	None under normal use conditions.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Dry chemical, CO_2, alcohol-resistant foam or water spray.
Unsuitable Extinguishing Media	None.

Special hazard	None known.
Special protective equipment for fire-fighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Specific hazards arising from the chemical	None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment. Do not get in eyes, on skin, or on clothing.
Advice for emergency responders	Use personal protective equipment as required.

Methods and materials for containment and cleaning up

Methods for containment	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Use personal protective equipment as required. Keep container closed when not in use. Never return spills in original containers for re-use. Keep out of the reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store in corrosive resistant container.
Incompatible products	Do not mix with other cleaning products or chemicals as irritating fumes may be formed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines	No exposure limits noted for ingredient(s).

Exposure controls

Engineering Measures	**Distribution, Workplace and Household Settings:** Ensure adequate ventilation **Product Manufacturing Plant (needed at Product-Producing Plant ONLY):** Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction

Personal Protective Equipment

Eye Protection	**Distribution, Workplace and Household Settings:** No special protective equipment required

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Use appropriate eye protection

Hand Protection

Distribution, Workplace and Household Settings:
No special protective equipment required

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Protective gloves

Skin and Body Protection

Distribution, Workplace and Household Settings:
No special protective equipment required

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Wear suitable protective clothing

Respiratory Protection

Distribution, Workplace and Household Settings:
No special protective equipment required

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
In case of insufficient ventilation wear suitable respiratory equipment

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State @20°C	liquid
Appearance	clear
Odor	Scented
Odor threshold	No information available

Property	Values	Note
pH value	12.6 - 13.4	
Melting/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash point	> 93.3 °C / > 200 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limit	No information available	
Lower Flammability Limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	1.045	
Water solubility	100%	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	.
Decomposition temperature	No information available	.
Viscosity of Product	No information available < 10 cps	

Oxidizing properties These substances will accelerate burning when involved in a fire.

VOC Content (%) Products comply with US state and federal regulations for VOC content in consumer products.

10. STABILITY AND REACTIVITY

Reactivity None under normal use conditions.

Stability Stable under normal conditions.

Hazardous polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

Conditions to Avoid None under normal processing.

Materials to avoid Do not mix with other cleaning products or chemicals as irritating fumes may be formed.

Hazardous Decomposition Products None under normal use.

11. TOXICOLOGICAL INFORMATION

Product Information

Information on likely routes of exposure

Inhalation No known effect.
Skin contact No known effect.
Ingestion No known effect.
Eye contact Irritating to eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity No known effect.
Skin corrosion/irritation No known effect.
Serious eye damage/eye irritation Irritating to eyes.
Skin sensitization No known effect.
Respiratory sensitization No known effect.
Germ cell mutagenicity No known effect.
Neurological Effects No known effect.
Reproductive toxicity No known effect.
Developmental toxicity No known effect.
Teratogenicity No known effect.
STOT - single exposure No known effect.
STOT - repeated exposure No known effect.
Target Organ Effects No known effect.
Aspiration hazard No known effect.
Carcinogenicity No known effect.

Component Information

Chemical Name	CAS-No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sulfuric acid monododecyl ester sodium salt (1:1)	151-21-3	977 mg/kg bw (OECD 401; rat)	> 500 mg/kg bw (Read across data C10-16ASO4, NH4; guideline: Standard Procedure #10; fixed dose procedure; rabbit; based on active ingredient)	-
Sodium hypochlorite	7681-52-9	626 mg/kg bw (Similar to OECD 401; standard acute method; rat)	> 20000 mg/kg bw (Guideline: 16 CFR 1500.40 and similar to OECD 402; rabbit)	> 10.5 mg/L air (Similar to OECD 403; rat; 1 h)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms.

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment

Waste from Residues / Unused Products	Products covered by this MSDS, in their original form, when disposed as waste, are corrosive hazardous waste, D002, according to Federal RCRA regulations (40 CFR 261). Disposal should be in accordance with local, state and federal regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.
California Hazardous Waste Codes (non-household setting)	331

14. TRANSPORT INFORMATION

DOT

UN no	UN1760
UN Proper shipping name	Corrosive liquids, n.o.s.
Description	UN1760, Corrosive liquid, n.o.s, (sodium hydroxide, sodium hypochlorite), 8,III , Ltd. Qty.
Hazard Class	8
Packing Group	III

IMDG

UN Number	UN1760
UN Proper shipping name	Corrosive liquid, n.o.s.
Description	UN1760, Corrosive liquid, n.o.s , (sodium hydroxide, sodium hypochlorite), 8, III, MARINE POLLUTANT , Ltd. Qty.
Transport hazard class(es)	8
Packing Group	III

IATA

UN no	UN1760
UN Proper shipping name	Corrosive liquid, n.o.s.
Description	UN1760, Corrosive liquid, n.o.s, (sodium hydroxide, sodium hypochlorite), 8,III , Ltd. Qty.
Hazard Class	8
Packing Group	III

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	CAS-No	Hazardous Substances RQs	Extremely Hazardous Substances RQs	CERCLA/SARA 302 TPQ
Sodium hypochlorite	7681-52-9	100 lb	-	
Sodium hydroxide	1310-73-2	1000 lb	-	

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Clean Water Act
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CAS-No	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hypochlorite	7681-52-9	100 lb	-	-	X
Sodium hydroxide	1310-73-2	1000 lb	-	-	X

California Proposition 65
This product is not subject to warning labeling under California Proposition 65.

U.S. State Regulations (RTK)

Chemical Name	CAS-No	New Jersey
Sodium hypochlorite	7681-52-9	X

Chemical Name	CAS-No	Massachusetts
Sodium hypochlorite	7681-52-9	X

Chemical Name	CAS-No	Pennsylvania
Sodium hypochlorite	7681-52-9	X
Sodium hydroxide	1310-73-2	X

Chemical Name	CAS-No	Rhode Island
Sodium hypochlorite	7681-52-9	X

International Inventories

United States
All intentionally-added components of this product(s) are listed on the US TSCA Inventory.

Canada
This product is in compliance with CEPA for import by P&G.

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CEPA - Canadian Environmental Protection Act

16. OTHER INFORMATION

HMIS Ratings
Health hazard 2
Flammability 1
Physical hazard 0

NFPA Ratings
Health hazard 2
Flammability 1
Instability 0

Issuing Date: 09-Jan-2015
Revision Date: 07-Apr-2015
Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Watch CBS News

Drano Professional Strength Kitchen Crystals Clog Remover

Environmental Working Group

Drano Kitchen Crystals may remain in the drain after use and create an extreme hazard, says the EWG. Using a plunger could cause caustic splashback. Also, pouring any other product down the drain might trigger a dangerous chemical reaction. The label does warn customers about some of the dangers, but the group says people sometimes skim over the details. A warning states the product can severely burn eyes and skin and cause blindness or even death, so parents should be cautious when children are around. Also, the label states that people should "keep water out of can at

Safety Data Sheet

according to Hazard Communication Standard; 29 CFR 1910.1200

DRANO® LIQUID Drain Cleaner

Version 2.0

Print Date 03/06/2018

Revision Date 08/16/2017

SDS Number 350000004298

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Product name	:	DRANO® LIQUID Drain Cleaner
Recommended use	:	Drain Cleaner
Restrictions on use	:	Use only as directed on label
Manufacturer, importer, supplier	:	S.C. Johnson & Son, Inc. 1525 Howe Street Racine WI 53403-2236
Telephone	:	+1-800-558-5252
Emergency telephone number	:	24 Hour Medical Emergency Phone: (866)231-5406 24 Hour International Emergency Phone: (703)527-3887 24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Globally Harmonized System (GHS) Classification

Hazard classification	Hazard category	Hazards identification
Corrosive to metals	Category 1	May be corrosive to metals.
Skin corrosion	Category 1	Causes severe skin burns and eye damage.
Serious eye damage	Category 1	Causes serious eye damage.

Labelling

Hazard symbols
Corrosion

Signal word
Danger

Hazard statements
May be corrosive to metals.
Causes severe skin burns and eye damage.

DRANO® LIQUID Drain Cleaner

Version 2.0

Print Date 03/06/2018

Revision Date 08/16/2017

SDS Number 350000004298

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Immediately call a POISON CENTER/doctor.
Specific treatment (see supplemental first aid instructions on this label).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.
Store locked up.
Store in corrosive resistant polypropylene container with a resistant inner liner.
Store in corrosive resistant polyethylene container with a resistant inner liner.
Store in corrosive resistant stainless steel container with a resistant inner liner.
Store in corrosive resistant aluminium container with a resistant inner liner.
Dispose of contents/ container to an approved incineration plant.
Keep only in original container.
Wear protective gloves.
Do not breathe dust or mist.
Wash hands thoroughly after handling.
Other hazards : None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Weight percent
Sodium hypochlorite	7681-52-9	1.00 - 5.00
Sodium chloride	7647-14-5	1.00 - 5.00
Sodium hydroxide	1310-73-2	1.00 - 5.00
Sodium silicate	1344-09-8	1.00 - 5.00

The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

4. FIRST AID MEASURES

Description of first aid measures

Eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Get medical attention immediately.

Skin contact : IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER/doctor.

Inhalation : IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Ingestion : IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Eyes : Causes serious eye damage.

Skin effect : Causes severe skin burns.
No adverse effects expected when used as directed.

Inhalation : May cause respiratory tract irritation.

Ingestion : Causes digestive tract burns.
No adverse effects expected when used as directed.

Indication of any immediate medical attention and special treatment needed

See Description of first aid measures unless otherwise stated.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards during : Container may melt and leak in heat of fire.

firefighting

Special protective equipment for firefighters	:	Wear suitable protective clothing and gloves.
Further information	:	Wear full protective clothing and positive pressure self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Wear personal protective equipment. Wash thoroughly after handling.
Environmental precautions	:	Outside of normal use, avoid release to the environment.
Methods and materials for containment and cleaning up	:	Dike large spills. Clean residue from spill site. Absorb spillage to prevent material damage.

7. HANDLING AND STORAGE

Handling

Precautions for safe handling	:	Avoid contact with skin, eyes and clothing. For personal protection see section 8. Use only as directed. KEEP OUT OF REACH OF CHILDREN AND PETS. Avoid breathing vapours, mist or gas. Wash thoroughly after handling.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Keep container closed when not in use. Store locked up. Store in original container. Store in corrosive resistant aluminium container with a resistant inner liner.

DRANO® LIQUID Drain Cleaner

Version 2.0

Print Date 03/06/2018

Revision Date 08/16/2017

SDS Number 350000004298

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Components	CAS-No.	mg/m3	ppm	Non-standard units	Basis
Sodium hydroxide	1310-73-2	2 mg/m3	-	-	OSHA TWA
Sodium hydroxide	1310-73-2	2 mg/m3	-	-	ACGIH Ceiling

Personal protective equipment

Respiratory protection : Use only with adequate ventilation.
Substantial amounts of mist/vapors can be controlled with local exhaust ventilation or respiratory protection.

Hand protection : Rubber gloves

Eye protection : Wear splash-resistant Chemical goggles.

Skin and body protection : Protective footwear.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid

Color : clear

Odour : odourless

Odour Threshold : Test not applicable for this product type

pH : 11.5 - 13.4

Melting point/freezing point	:	32 °F
Initial boiling point and boiling range	:	> 93 °C
Flash point	:	does not flash
Evaporation rate	:	Test not applicable for this product type
Flammability (solid, gas)	:	Test not applicable for this product type
Upper/lower flammability or explosive limits	:	Test not applicable for this product type
Vapour pressure	:	Test not applicable for this product type
Vapour density	:	No data available
Relative density	:	1.09 g/cm3 at 25 °C
Solubility(ies)	:	completely soluble
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Test not applicable for this product type
Decomposition temperature	:	Test not applicable for this product type
Viscosity, dynamic	:	< 10 mPa.s
Viscosity, kinematic	:	Test not applicable for this product type

Oxidizing properties	:	Test not applicable for this product type
Volatile Organic Compounds Total VOC (wt. %)*	:	0 % - additional exemptions may apply *as defined by US Federal and State Consumer Product Regulations
Other information	:	None identified

10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	If accidental mixing occurs and toxic gas is formed, exit area immediately. Do not return until well ventilated.
Conditions to avoid	:	Direct sources of heat.
Incompatible materials	:	Do not mix with bleach or any other household cleaners. Strong bases
Hazardous decomposition products	:	Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50 > 5000 mg/kg
Acute inhalation toxicity	:	LC50 > 10 mg/L
Acute dermal toxicity	:	LD50 > 5000 mg/kg

GHS Properties	Classification	Routes of entry

Acute toxicity	No classification proposed	Oral
Acute toxicity	No classification proposed	Dermal
Acute toxicity	No classification proposed	Inhalation - Dust and Mist
Acute toxicity	No classification proposed	Inhalation - Vapour
Acute toxicity	No classification proposed	Inhalation - Gas
Skin corrosion	Category 1	-
Serious eye damage	Category 1	-
Skin sensitisation	No classification proposed	-
Respiratory sensitisation	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single exposure	No classification proposed	-
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : Individuals with chronic respiratory disorders such as asthma, chronic bronchitis, emphysema, etc. may be more susceptible to irritating effects

12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity

The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

Toxicity to fish

Components	End point	Species	Value	Exposure time
Sodium hypochlorite	LC50	Fish	0.06 mg/l	96 h
	NOEC		0.01 - < 0.1 mg/l	28 d
Sodium chloride	flow-through test LC50	Lepomis macrochirus	5,840 mg/l	96 h
	NOEC	Pimephales promelas (fathead minnow)	252 mg/l	33 d
Sodium hydroxide	LC50	Fish	35 - 189 mg/l	96 h
Sodium silicate	LC50	Oncorhynchus mykiss (rainbow trout)	260 - 310 mg/l	96 h

Toxicity to aquatic invertebrates

Components	End point	Species	Value	Exposure time
Sodium hypochlorite	EC50	Ceriodaphnia dubia	0.035 mg/l	48 h
Sodium chloride	static test EC50	Daphnia magna (Water flea)	340.7 -	48 h

	NOEC	Daphnia pulex	469.2 mg/l 314 mg/l	21 d
Sodium hydroxide	EC50	Daphnia magna (Water flea)	40.4 mg/l	48 h
Sodium silicate	static test EC50	Daphnia magna (Water flea)	1,700 mg/l	48 h

Toxicity to aquatic plants

Components	End point	Species	Value	Exposure time
Sodium hypochlorite	ErC50	Pseudokirchneriella subcapitata (green algae)	0.0499 mg/l	
Sodium chloride	IC50	Algae	3,014 mg/l	72 h
Sodium hydroxide	No data available			
Sodium silicate	EC50	Desmodesmus subspicatus (green algae)	> 345.4 mg/l	72 h

Persistence and degradability

Component	Biodegradation	Exposure time	Summary
Sodium hypochlorite	No data available		
Sodium chloride	No data available		
Sodium hydroxide	No data available		
Sodium silicate	No data available		

Bioaccumulative potential

Component	Bioconcentration factor (BCF)	Partition Coefficient n-Octanol/water (log)

Sodium hypochlorite	No data available	-3.42
Sodium chloride	1.09 QSAR	0.54
Sodium hydroxide	0.89 estimated	-1.38
Sodium silicate	No data available	No data available

Mobility

Component	End point	Value
Sodium hypochlorite	No data available	
Sodium chloride	No data available	
Sodium hydroxide	No data available	
Sodium silicate	No data available	

PBT and vPvB assessment

Component	Results
Sodium hypochlorite	Not fulfilling PBT and vPvB criteria
Sodium chloride	Not fulfilling PBT and vPvB criteria
Sodium hydroxide	Not fulfilling PBT and vPvB criteria
Sodium silicate	Not fulfilling PBT and vPvB criteria

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

DRANO® LIQUID Drain Cleaner

Version 2.0

Print Date 03/06/2018

Revision Date 08/16/2017

SDS Number 350000004298

	Land transport	Sea transport	Air transport
UN number	1760	1760	1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S (Sodium hypochlorite)	CORROSIVE LIQUID, N.O.S (Sodium hypochlorite)	CORROSIVE LIQUID, N.O.S (Sodium hypochlorite)
Transport hazard class(es)	8	8	8
Packing group	III	III	III
Environmental hazards	-	-	-
Special precautions for user	Limited quantities derogation may be applicable to this product, please check transport documents.	Limited quantities derogation may be applicable to this product, please check transport documents.	Limited quantities derogation may be applicable to this product, please check transport documents.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Product not transported as bulk.	Product not transported as bulk.	Product not transported as bulk.

15. REGULATORY INFORMATION

Notification status : All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Notification status : All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

DRANO® LIQUID Drain Cleaner

Version 2.0

Print Date 03/06/2018

Revision Date 08/16/2017

SDS Number 350000004298

16. OTHER INFORMATION

HMIS Ratings

Health	3
Flammability	0
Reactivity	0

NFPA Ratings

Health	3
Fire	0
Reactivity	0
Special	-

This information is being provided in accordance with the Occupational Safety and Health Administration (OSHA) regulation (29 CFR 1910.1200). The information supplied is designed for workplaces where product use and frequency of exposure exceeds that established for the labeled consumer use.

Further information

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)

Report for Website

Product Name: Drano MinGel non corrosive Bulk

Specification ID:350000042173

Ingredients	CAS Number	Function
Water	7732-18-5	Water
Sodium hypochlorite	7681-52-9	Bleach
Sodium Hydroxide	1310-73-2	Caustic
SODIUM CAPRYLYL SULFATE	142-31-4	Emulsifier
Amines, C12-18-alkyldimethyl, N-oxides	68955-55-5	Thickener

Environmental Working Group

Inhalants generally have been abused by 1 in 5 American teens and are potentially fatal, according to the Alliance for Consumer Education. Glade's air freshener spray can be abused in this way and has the warning "intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal" on its label.

Safety Data Sheet

According to Australian CoP Preparation of Safety Data Sheets for Hazardous Chemicals, Jul 2020 and New Zealand HSNO

Glade air freshener - Ocean Mist (aerosol)

Version 2.0

Print Date 24.07.2024

Revision Date 18.04.2024

SDS Number 350000037682

GEN_SOF Number 67761

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier	:	**Glade air freshener - Ocean Mist (aerosol)**
Other means of Identification	:	350000037682
Recommended use	:	Air Freshener
Restrictions on use	:	Use only as directed on label
Australia	:	S.C. Johnson & Son Pty. Ltd. ABN 71. 000 021 009 160 Epping Road, Lane Cove, N.S.W. 2066. Australia Telephone: +61 2 9428 9111
New Zealand	:	S.C. Johnson & Son Pty. Ltd 79 Queen Street Auckland 1010 New Zealand Telephone: +64 9 573 2850
Emergency telephone numbers	:	Australia: (8:30am – 17:30pm Mon-Thurs, 8:30am – 17:00pm Fri AEST) +61 2 9428 9111 New Zealand: (9:00am – 14:00pm Mon-Fri NZDT) +64 9 573 2850
Poison Information Contacts	:	Australia: 13 11 26 New Zealand : 0800 764 766 or 0800 POISON

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Statement of Hazardous Nature (Australia)

Globally Harmonized System (GHS) Classification

Hazard classification	Hazard category	Hazards identification
Aerosol	Category 1	Extremely flammable aerosol.

* *Classification not adopted by Australia*

^ *Classification only triggered in Australia if 'Schedule 6 of WHS Regulations' met. Contact SC Consumer*

Glade air freshener - Ocean Mist (aerosol)

Advice number listed on product label if required.

Statement of Hazardous Nature (New Zealand)

HSNO Classification (NZ): : Aerosol CAT 1

Labelling - Australia **

Hazard symbols

Flame

Signal word
Danger

Hazard statements
(H222) Extremely flammable aerosol.
(H229) Pressurised container: May burst if heated.

Precautionary statements
(P102) Keep out of reach of children.
(P410 + P412) Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
(P210) Keep away from heat/sparks/open flames/hot surfaces. No smoking.
(P211) Do not spray on an open flame or other ignition source.
(P251) Pressurized container: Do not pierce or burn, even after use.
Other hazards : None identified

** The information supplied is designed for products predominately used in workplaces; whereas consumer product labels comply with the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) labelling requirements, under The Australian CoP Labelling of Workplace Hazardous Chemicals (March 2015).

Labelling- New Zealand

Refer Australian labelling above.

Glade air freshener - Ocean Mist (aerosol)

Version 2.0 Print Date 24.07.2024

Revision Date 18.04.2024 SDS Number 350000037682

GEN_SOF Number 67761

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS-No.	Weight percent
Butane	106-97-8	5.00 - 10.00
Propane	74-98-6	1.00 - 5.00
Alkyl dimethyl benzyl ammonium chloride	68424-85-1	0.00 - 0.10
Other non-hazardous ingredients	various	Balance to 100

4. FIRST AID MEASURES

Description of first aid measures

Eye contact : No special requirements

Skin contact : No special requirements

Inhalation : No special requirements.

Ingestion : No special requirements

Most important symptoms and effects, both acute and delayed

Indication of any immediate medical attention and special treatment needed : See Description of first aid measures unless otherwise stated.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from substance : Aerosol Product - Containers may rocket or explode in heat of fire.

Special protective equipment and : Fight fire from maximum distance or protected area. Cool and use caution when approaching or handling fire-exposed

precautions for fire fighters	containers. Wear full protective clothing and positive pressure self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Wash thoroughly after handling.
Environmental precautions	:	Outside of normal use, avoid release to the environment.
Methods and materials for containment and cleaning up	:	If damage occurs to aerosol can: Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Use only non-sparking equipment. Dike large spills. Clean residue from spill site.

7. HANDLING AND STORAGE

Handling

Precautions for safe handling	:	Avoid contact with skin, eyes and clothing. For personal protection see section 8. Note: Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. For more information visit www.inhalant.org. Use only as directed. KEEP OUT OF REACH OF CHILDREN AND PETS. Pressurized container. Do not pierce or burn, even after use.
Advice on protection against fire and explosion	:	Keep away from sources of ignition - No smoking. Do not spray on an open flame or other ignition source.

Storage

Requirements for storage areas and containers : Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Keep in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Components	CAS-No.	mg/m3	ppm	Non-standard units	Basis
Butane	106-97-8	1,900 mg/m3	800 ppm	-	NZ_WELTWA

Personal protective equipment

Respiratory protection : No special requirements.

Hand protection : No special requirements.

Eye protection : No special requirements.

Skin and body protection : No special requirements.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form : aerosol

Color : colourless

Odor : Marine/Ozone

Odour Threshold : Test not applicable for this product type

pH	:	Test not applicable for this product type
Melting point/freezing point	:	Test not applicable for this product type
Initial boiling point and boiling range	:	Test not applicable for this product type
Flash point	:	< -7 °C < 19.4 °F Propellant
Evaporation rate	:	Test not applicable for this product type
Flammability (solid, gas)	:	Sustains combustion
Upper/lower flammability or explosive limits	:	
Vapour pressure	:	Test not applicable for this product type
Vapour density	:	Test not applicable for this product type
Relative density	:	0.867 g/cm3
Solubility(ies)	:	slightly soluble
Partition coefficient: n-octanol/water	:	Test not applicable for this product type
Auto-ignition temperature	:	not auto-flammable

Decomposition temperature	:	Hazardous decomposition products formed under fire conditions.
Viscosity, dynamic	:	Test not applicable for this product type
Viscosity, kinematic	:	Test not applicable for this product type
Oxidizing properties	:	Test not applicable for this product type
Other information	:	None identified

10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	No decomposition if stored normally.
Possibility of hazardous reactions	:	Stable under recommended storage conditions.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents None known.
Hazardous decomposition products	:	Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 > 5,000 mg/kg

Acute inhalation toxicity : LC50 > 5.1 mg/L

Acute dermal toxicity : LD50 > 5000 mg/kg

GHS Properties	Classification	Routes of entry
Acute toxicity	No classification proposed	Oral
Acute toxicity	No classification proposed	Dermal
Acute toxicity	No classification proposed	Inhalation - Dust and Mist
Acute toxicity	No classification proposed	Inhalation - Vapour
Acute toxicity	No classification proposed	Inhalation - Gas
Skin corrosion/irritation	No classification proposed	-
Serious eye damage/eye irritation	No classification proposed	-
Skin sensitisation^	No classification proposed	-
Respiratory sensitisation^	No classification proposed	-
Germ cell mutagenicity	No classification proposed	-
Carcinogenicity	No classification proposed	-
Reproductive toxicity	No classification proposed	-
Specific target organ toxicity - single	No classification proposed	-

exposure		
Specific target organ toxicity - repeated exposure	No classification proposed	-
Aspiration hazard	No classification proposed	-

Aggravated Medical Condition : None known.

* *Classification not adopted by Australia*

^ *Classification only triggered in Australia if 'Schedule 6 of WHS Regulations' met. Contact SCJ Consumer Advice number listed on product label if required.*

12. ECOLOGICAL INFORMATION

Product : The product itself has not been tested.

Toxicity
The ingredients in this formula have been reviewed and no adverse impact to the environment is expected when used according to label directions.

Toxicity to fish

Components	End point	Species	Value	Exposure time
Butane	LC50 QSAR	Fish	24.11 mg/l	96 h
Propane	LC50 QSAR	Fish	49.9 mg/l	96 h
Alkyl dimethyl benzyl ammonium chloride	LC50 Measured NOEC	Pimephales promelas (fathead minnow) Pimephales promelas (fathead minnow)	0.28 mg/l 0.032 mg/l	96 h 34 d

Toxicity to aquatic invertebrates

Components	End point	Species	Value	Exposure

				time
Butane	EC50 QSAR	Daphnid	14.22 mg/l	48 h
Propane	LC50	Daphnid	27.14 mg/l	48 h
Alkyl dimethyl benzyl ammonium chloride	EC50 NOEC	Daphnia (water flea) Daphnia magna	0.012 mg/l 0.0042 mg/l	48 h 21 d

Toxicity to aquatic plants

Components	End point	Species	Value	Exposure time
Butane	EC50 QSAR	Green algae	7.71 mg/l	96 h
Propane	EC50	Green algae	11.89 mg/l	96 h
Alkyl dimethyl benzyl ammonium chloride	EC50	Pseudokirchneriella subcapitata (green algae)	0.049 mg/l	72 h

Persistence and degradability

Component	Biodegradation	Exposure time	Summary
Butane	70 %	< 10 d	Readily biodegradable.
Propane	70 %	< 10 d	Readily biodegradable.
Alkyl dimethyl benzyl ammonium chloride	95.5 %	28 d	Readily biodegradable.

Bioaccumulative potential

Component	Bioconcentration factor (BCF)	Partition Coefficient n-Octanol/water (log)
Butane	No data available	2.89
Propane	13	2.36

Alkyl dimethyl benzyl ammonium chloride	79 Measured	0.004

Mobility

Component	End point	Value
Butane	No data available	
Propane	Koc	460
Alkyl dimethyl benzyl ammonium chloride	Koc	-1640329 Measured

PBT and vPvB assessment

Component	Results
Butane	Not fulfilling PBT and vPvB criteria
Propane	Not fulfilling PBT and vPvB criteria
Alkyl dimethyl benzyl ammonium chloride	Not fulfilling PBT and vPvB criteria

Other adverse effects : None known.

13. DISPOSAL CONSIDERATIONS

Safe handling and disposal methods : Consumer may discard empty container in trash, or recycle where facilities exist.

Disposal of any contaminated packaging : Do not re-use empty containers.

14. TRANSPORT INFORMATION

Please refer to the Bill of Lading/receiving documents for up-to-date shipping information.

	Land transport §	Sea transport	Air transport
UN number or identification number	1950	1950	1950
UN proper shipping name	AEROSOLS, flammable	AEROSOLS, flammable	AEROSOLS, flammable
Transport hazard class(es)	2.1	2	2.1
Packing group	-	-	-
Environmental hazards	-	-	-
Special precautions for user	Limited quantities derogation may be applicable to this product, please check transport documents.	Limited quantities derogation may be applicable to this product, please check transport documents.	Limited quantities derogation may be applicable to this product, please check transport documents.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Product not transported as bulk.	Product not transported as bulk.	Product not transported as bulk.

§ ***Land transport***: *Classification based on UN Recommendations on the Transport of Dangerous Goods. Local regulations under the Australian Dangerous Goods Code (ADG) and/or the New Zealand Land Transport Rule Dangerous Goods should be applied prior to transportation of goods.*

15. REGULATORY INFORMATION

Poisons Schedule (Australia): : NOT SCHEDULED

HSNO Classification (NZ): : Aerosol CAT 1

HSNO Approval Number (NZ): : Aerosols (Flammable) Group Standard 2020 | HSR002515

16. OTHER INFORMATION

Revision Date: 18.04.2024

Key abbreviations or acronyms used

ADG: The Australian Code for the Transport of Dangerous Goods by Road and Rail

NZ LTR: The New Zealand Land Transport Rule: Dangerous Goods 2005

HSNO: Hazardous Substances and New Organisms Act 1996 (New Zealand)

IATA: International Air Transport Association

IMDG: International Maritime Dangerous Goods

SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons (Australia)

Further information

This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)

PLEDGE

MATERIAL SAFETY DATA SHEET

JohnsonDiversey
Clean is just the beginning

Pledge Lemon (Aerosol)

HMIS		NFPA	Personal protective equipment
Health	0	0	None Required
Fire Hazard	4	4	
Reactivity	0	0	

Version Number: 1

Preparation date: 2005-07-15

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Pledge Lemon (Aerosol)

MSDS #: 126026008
Product code: 3694028, 94430
Recommended use: Furniture care.

Manufacturer, importer, supplier:

US Headquarters
JohnsonDiversey, Inc.
8310 16th St.
Sturtevant, Wisconsin 53177-0902
Phone: 1-888-352-2249
MSDS Internet Address:
www.johnsondiversey.com

Canadian Headquarters
JohnsonDiversey - Canada, Inc.
2401 Bristol Circle
Oakville, Ontario L6H 6P1
Phone: 1-800-668-3131

Emergency telephone number: 1-800-851-7145 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
WARNING. CONTENTS UNDER PRESSURE. FLAMMABLE LIQUID AND VAPOR.

Principle routes of exposure: Eyes. Skin. Inhalation.
Skin contact: None known.
Eye contact: None known.
Inhalation: None known.
Ingestion: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

Ingredient	CAS #	Weight %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Butane	106-97-8	1 - 5%	Not available	Not available	65.8 g/m³ (rat)
Propane	74-98-6	1 - 5%	Not available	Not available	Not available
Isobutane	75-28-5	1 - 5%	Not available	Not available	Not available

4. FIRST AID MEASURES

Eye contact: Rinse with plenty of water.
Skin contact: Rinse with plenty of water.
Inhalation: No specific first aid measures are required.
Ingestion: No specific first aid measures are required.
Aggravated Medical Conditions: None known.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, water spray, foam, carbon dioxide.
Specific hazards: Aerosol product - Containers may rocket or explode in heat of fire.
Unusual hazards: None known
Specific methods: Aerosol Product - Containers may rocket or expode in heat of fire. Use water spray to keep fire-exposed containers cool.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Extinguishing media which must not be used for safety reasons: None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Remove all sources of ignition. Ensure adequate ventilation.
Environmental precautions and clean-up methods: Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Handling:
Avoid contact with skin and eyes. Avoid breathing vapors or mists. Use only in well-ventilated areas. CONTENTS UNDER PRESSURE. Do not puncture or incinerate. FOR COMMERCIAL AND INDUSTRIAL USE ONLY
Storage:
Store in a cool, dry, well ventilated area away from heat or open flame . Protect from freezing . Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 degrees C or 120 degrees F. Do not pierce or burn, even after use. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
No special ventilation requirements.

Personal Protective Equipment

Eye protection: No special requirements under normal use conditions
Hand protection: No special requirements under normal use conditions
Skin and body protection: No special requirements under normal use conditions
Respiratory protection: No special requirements under normal use conditions
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice

Ingredient	CAS #	ACGIH	OSHA	Mexico
Butane	106-97-8	1000 ppm (TWA)		1900 mg/m^3 (TWA)
Propane	74-98-6	1000 ppm (TWA)	1800 mg/m^3 1000 ppm	
Isobutane	75-28-5	1000 ppm (TWA)		

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Color: White
Odor: Lemon
Specific gravity: 0.917
Dilution pH: No information available
Bulk density: No information available
Vapor density: No information available
Evaporation rate: No information available
Solubility in other solvents: No information available
Viscosity: No information available
Partition coefficient (n-octanol/water): No information available

Appearance: Aerosol
Boiling point/range: Not determined
Melting point/range: Not determined
pH: 7
Density: 7.65
Decomposition temperature: Not determined
Autoignition temperature: No information available
Solubility: Emulsifiable
VOC: 16.96

Flash point: <20 (°F) <-7 (°C)

10. STABILITY AND REACTIVITY

Stability: The product is stable
Polymerization: Hazardous polymerisation does not occur
Hazardous decomposition products: None reasonably foreseeable
Conditions to avoid: Do not freeze. Keep away from open flames, hot surfaces and sources of ignition.

11. TOXICOLOGICAL INFORMATION

Acute toxicity Oral, LD50 estimated to be greater than 5000 mg/kg, Dermal, LD50 estimated to be > 2000 mg/kg.
Component Information: See Section 3

Chronic toxicity: None known

Specific effects

Carcinogenic effects: None known
Mutagenic effects: None known
Reproductive toxicity: None known
Target organ effects: None known

12. ECOLOGICAL INFORMATION

Environmental Information: When used for its intended purpose this product should not cause adverse effects in the environment

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Use up contents if possible before disposal . If possible, recycle empty aerosol cans to the nearest steel recycling center .

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION

International Inventories
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), China (IECSC).

U.S. Regulations
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

Ingredient	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:	ILRTK:	CTRTK:
Water	7732-18-5	-	-	-	-	-	-
Silicones	63148-62-9	-	-	-	-	-	-
Naphtha, petroleum, light alkylate	64741-66-8	-	-	-	-	-	-
Butane	106-97-8	Listed	Listed	Listed	Listed	Listed	Listed
Propane	74-98-6	Listed	Listed	Listed	Listed	Listed	Listed
Isobutane	75-28-5	Listed	Listed	Listed	-	Listed	Listed

CERCLA / SARA

Ingredient	CAS #	Weight %	CERCLA/SARA RQ (lbs)	Section 302 TPQ (lbs)	Section 313
Butane	106-97-8	1 - 5%	100		
Propane	74-98-6	1 - 5%	100		
Isobutane	75-28-5	1 - 5%	100		

CAA HAP/CAA ODS/CWA Priority Pollutants: None
Canada
WHMIS hazard class: A Compressed gases, B5 Flammable aerosol.

16. OTHER INFORMATION

Reason for revision: Not applicable
Prepared by: NAPRAC
Additional advice: None

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Report for Website

Product Name: Pledge® Clean It 1 - Multisurface Everyday Cleaner Antibacterial Fresh Citrus

Specification ID:350000021920

Ingredients	CAS Number	Function
Water	7732-18-5	Water
Isopropanol	67-63-0	Solvent
Nitrogen	7727-37-9	Propellant
Hexoxyethanol	112-25-4	Solublizer
Propylene Glycol	57-55-6	Solublizer
Ethanolamine	141-43-5	Cleaning Agent
Acetic Acid	64-19-7	PH adjuster
Secondary Alcohol Ethoxylate	68131-40-8	Emulsifier
Alkyl C12-18 Dimethylbenzyl Ammonium Chloride	68391-01-5	Active Ingredient
Alkyl C12-18 Dimethyl Ethylbenzyl Ammonium Chloride	68956-79-6	Active Ingredient
Citral	5392-40-5	Contains Fragrance Allergens
Hexyl Cinnamal	101-86-0	Contains Fragrance Allergens
Linalool	78-70-6	Contains Fragrance Allergens
Limonene	5989-27-5	Contains Fragrance Allergens

Ajax, Dynamo and Fab Ultra liquid laundry detergents (Phoenix Brands)

Environmental Working Group

These contain formaldehyde, also known as formalin, classified as a known human carcinogen by the U.S. government and World Health Organization. Formaldehyde can cause asthma and allergies. The company divulges the presence of formaldehyde in the product only on technical disclosures for workers, says the EWG.

Mr. Clean, Easy-Off and Formula 409

Environmental Working Group

These three products - in addition to Lysol, Fantastik, Chlorox and Febreze sprays - contained quaternary ammonium compounds or ethanolamine, ingredients classified as asthmagens by the Association of Occupational and Environmental Clinics. These chemicals can trigger asthma attacks and may

Safety Data Sheet

SDS #637

According to SS586:2014

Formula 409® Antibacterial All-Purpose Cleaner

Version 1.0

Issue date:10/10/2014

Revision date: 10/10/2014 **SDS Record Number: CSSS-TCO-010-115561**

Section 1 Identification of the substance/mixture and of the company/undertaking

Product identifier:

Identification on the label/Trade name:	Formula 409® Antibacterial All-Purpose Cleaner
Additional identification:	Not available
Identification of the product:	See section 3
Index Number:	Not available
REACH registration No.:	Not available

Relevant identified uses of the substance and uses advised against:

Identified uses:

Germicidal Cleaner.

Uses advised against:

Not available.

Details of the supplier of the safety data sheet:

Supplier(Manufacturer):	The Clorox Company
Address:	1221 Broadway Oakland, CA 94612 USA
Contact person(E-mail):	-
Telephone:	1-510-271-7000
Fax:	-

Emergency telephone Number:

For Medical Emergencies call: 1-800-446-1014

Transportation Emergencies, call Chemtrec: 1-800-424-9300

Available outside office hours?	YES		NO	X

Section 2 Hazards Identification

Classification of the substance/mixture:

GHS Classification Not Classified

label elements:

Hazard Pictograms:	No hazard Pictogram is used.
Signal Word(S):	No signal word is used.
Hazard Statement:	Not applicable.
Precautionary statement:	Not applicable.

Other hazards:

Not available.

Section 3 Composition/information on ingredients

Substance/Mixture: Mixture

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration
Lauramine oxide	N/A	1643-20-5	216-700-6	1-5%
Alkyl (C12-16) dimethylbenzylammonium chloride	N/A	270-325-2	231-598-3	0.1-1%

Section 4 First aid measures

Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

In case of inhalation:

Move to fresh air. If symptoms persist, call a physician.

In case of skin contact:

Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

In case of eyes contact:

Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

In case of ingestion:

Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed:

The product is not classified as harmful to human health effect.

Indication of any immediate medical attention and special treatment needed:

Treat symptomatically.

Section 5 Fire-Fighting measures

Extinguishing media:

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: Use of water spray when fighting fire may be inefficient.

Special hazards arising from the substance or mixture: Carbon oxides.

Special fire fighting methods and special protective actions for fire-fighters: As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

For emergency responders: Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.

Environmental Precautions: Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods for Containment and Cleaning up: Prevent further leakage or spillage if safe to do so. Collect and transfer to properly

labeled containers.

Reference to other sections: See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

Additional information: Not applicable.

Section 7 Handling and storage

Precautions for safe handling:

Protective measures: Handle in accordance with good industrial hygiene and safety practice. Avoic contact with eyes. Avoid contact with skin. Avoid contact with skin and eyes.

Advice on general occupational hygiene: Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities: Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific end use(s): Not applicable.

Section 8 Exposure Controls/Personal Protection

Control parameters:

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA:

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Singapore Permissible Exposure Limits of Toxic Substances	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

EMERGENCY LIMITS:

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
Singapore	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Lauryldimethylamine oxide	Not Available	Not Available
benzyl-C12-16-alkyldimethylammonium chloride	Not Available	Not Available

Exposure controls:

Appropriate engineering controls: Exhaust ventilation should be designed to prevent accumulation and recirculation ir the workplace and safely remove carbon black from the air.

Individual protection measures, such as personal protective equipment:

Eye/face protection: No special protective equipment required.

Hand protection: No special protective equipment required.

Body protection: No special protective equipment required.

Respiratory protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Thermal hazards: Wear suitable protective clothing to prevent heat.

Environmental exposure controls: According to local regulations, Federal and official regulations.

Section 9 Physical and chemical properties

Information on basic physical and chemical properties:

Appearance:	Liquid
Colour:	Clear Green
Odour:	Floral Citrus
Odour threshold:	Not available
pH:	10.5
Melting point/range (°C):	Not available
Boiling point/range (°C):	Not available
Flash point (°C):	Not available
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Not available
Ignition temperature (°C):	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure (20°C):	Not available
Vapour density:	Not available
Density:	Not available
Bulk density (kg/m^3):	Not available
Water solubility (g/l):	Soluble in water.
n-Octanol/Water (log Po/w):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not available
Explosive properties:	Not available
Oxidising properties:	Not available
Molecular Formula:	Not available
Molecular Weight:	Not available

Other information:

Fat solubility(solvent– oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Oxidation-reduction Potential:	Not available
Specific gravity:	Not available

Section 10 Stability and reactivity

Reactivity:	The substance is stable under normal storage and handling conditions.
Chemical stability:	Stable at room temperature in closed containers under normal storage and handling conditions.
Possibility of hazardous reactions:	No dangerous reactions known.
Conditions to avoid:	Not available.
Incompatible materials:	Not available.
Hazardous decomposition products:	Carbon oxides.

Section 11 Toxicological information

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: Not available

Information on toxicological effects:

Acute toxicity:

LD50(Oral, Rat): Not available

LD50(Dermal, Rabbit): Not available

LC50(Inhalation, Rat): Not available

Skin corrosion/Irritation: Not classified

Serious eye damage/irritation: Not classified

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

STOT- single exposure: Not classified

STOT-repeated exposure: Not classified

Section 12 Ecological information

Toxicity:

Acute toxicity		Time	Species	Method	Evaluation	Remarks
LC50	N/A	96h	Fish	OECD 203	N/A	N/A
EC50	N/A	48h	Daphnia	OECD 202	N/A	N/A
EC50	N/A	72h	Algae	OECD 201	N/A	N/A

Persistence and degradability: Not available.

Bioaccumulative potential: Not available.

Mobility in soil: Not available.

Results of PBT&vPvB assessment: Not available.

Other adverse effects: Not available.

Section 13 Disposal considerations

Waste treatment methods: The material should be disposed of by incineration in a chemical incinerator ir compliance with national and regional requirements.

Product / Packaging disposal: If empty container retains product residues, all label precautions must be observed Return for reuse or dispose according to national or local regulations.

Section 14 Transport information

	Land transport(ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	Not regulated	Not regulated	Not regulated
UN Proper shipping name	Not regulated	Not regulated	Not regulated

Transport hazard Class	Not regulated	Not regulated	Not regulated
Packaging group	Not regulated	I	Not regulated
Environmental hazards	Not regulated	Yes	Not regulated
Special precautions for user	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not regulated	Not regulated	Not regulated

Section 15 Regulation information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Lauramine oxide	Not available.
Alkyl (C12-16) dimethylbenzylammonium chloride	Not available.

Section 16 Other information

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Author: Hangzhou CIRS Co., Limited Website:www.cirs-group.com Tel:0571-87206555 Email:info@cirs-group.com

cause new cases of the disease in people who had been asthma-free. About 1 in 10 children suffer from asthma.

Static Guard

Environmental Working Group

Static Guard contains the chemical DTDMAC, or ditallow dimethyl ammonium chloride, which is so persistent in the environment that it can't be used as a cleaning ingredient in the European Union.

Hagerty Liquid Jewel Clean

SAFETY DATA SHEET

Issuing Date No data available **Revision Date** 18-Mar-2015 **Revision Number** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Static Guard**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Anti-Static Product - Aerosol

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name B&G Foods, Inc.
Supplier Address Four Gatehall Drive
Suite 110
Parsippany
New Jersey
07054
US
Supplier Phone Number Phone:(800) 288-2303
Fax:(973) 630-6550
Contact Phone(973) 630-6414
Supplier Email bwright@bgfoods.com

Emergency telephone number

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Flammable Aerosols	Category 1
Gases under pressure	Compressed gas

GHS Label elements, including precautionary statements

Emergency Overview

Signal word **Danger**

Hazard Statements
Causes serious eye irritation
May cause an allergic skin reaction
Extremely flammable aerosol
Contains gas under pressure; may explode if heated

Appearance Clear **Physical State** Liquid spray Aerosol **Odor** Typical alcohol odor

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Pressurized container: Do not pierce or burn, even after use
Do not spray on an open flame or other ignition source

Precautionary Statements - Response
Specific treatment (see supplemental first aid instructions on this label)

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse

Precautionary Statements - Storage
Protect from sunlight. Store in a well-ventilated place
Do not expose to temperatures exceeding 122°F (50°C)

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity
20.5% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very toxic to aquatic life with long lasting effects
Toxic to aquatic life
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

Interactions with Other Chemicals
Use of alcoholic beverages may enhance toxic effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Alcohol	64-17-5	60 - 100	*
Isobutane	75-28-5	3 - 7	*
Propane	74-98-6	1 - 5	*
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, chlorides	61789-80-8	1 - 5	*
Fragrance (May cause sensitization by skin contact)	Fragrance	0.1 - 1	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice Call 911 or emergency medical service. Remove and isolate contaminated clothing and shoes.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin Contact In case of contact with liquefied gas, thaw frosted parts with lukewarm water.

Inhalation Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Ingestion Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning sensation. Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Keep victim warm and quiet.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing agent suitable for type of surrounding fire. Dry chemical or CO2. Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.

Unsuitable extinguishing media
CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical
Some may burn but none ignite readily. Ruptured cylinders may rocket.

Uniform Fire Code	Sensitizer: Liquid Aerosols: Level III

Hazardous Combustion Products
Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact	No.
Sensitivity to Static Discharge	No.

Protective equipment and precautions for firefighters
Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Do not touch or walk through spilled material. Stop leak if you can do it without risk.
Other Information	Ventilate the area.

Environmental Precautions

Environmental Precautions	Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for Containment	If possible, turn leaking containers so that gas escapes rather than liquid. Allow substance to evaporate.
Methods for cleaning up	Do not direct water at spill or source of leak.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Keep tightly closed in a dry and cool place. Keep in properly labeled containers.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Alcohol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m³	IDLH: 3300 ppm 10% LEL TWA: 1000 ppm TWA: 1900 mg/m³
Isobutane 75-28-5	STEL: 1000 ppm	N/A	N/A
Propane 74-98-6	TWA: 1000 ppm	TWA: 1000 ppm TWA: 1800 mg/m³	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health NIOSH IDLH

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection If splashes are likely to occur:. Wear safety glasses with side shields (or goggles). None required for consumer use.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Liquid spray, Aerosol		
Appearance	Clear	**Odor**	Typical alcohol odor
Color	No information available	**Odor Threshold**	No information available

Property	Values	Remarks Method
pH	UNKNOWN	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Soluble in water	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Heat, flames and sparks.

Incompatible materials
None known based on information supplied.

Hazardous Decomposition Products
Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye Contact Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. May cause redness, itching, and pain. May cause temporary eye irritation.

Skin Contact Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Alcohol 64-17-5	-	-	= 124.7 mg/L (Rat) 4 h
Isobutane 75-28-5	-	-	= 658 mg/L (Rat) 4 h
Propane 74-98-6	-	-	= 658 mg/L (Rat) 4 h
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, chlorides 61789-80-8	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 180 mg/L (Rat) 1 h

Information on toxicological effects

Symptoms May cause redness and tearing of the eyes. Itching. Rashes. Hives.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization of susceptible persons. May cause sensitization by skin contact.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Alcohol 64-17-5	A3	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity No known effect based on information supplied. Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage. Ethanol has been shown to be carcinogenic in long-term studies only when consumed as alcoholic beverage.

Target Organ Effects Eyes. Skin. Blood. Central Nervous System (CNS). Liver. Reproductive System. Respiratory system. Heart.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-gas)
2,739,001.00
ATEmix (inhalation-dust/mist)
132.20 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity
Toxic to aquatic organisms.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Alcohol 64-17-5		96h LC50: > 100 mg/L (Pimephales promelas) 96h LC50: 13400 - 15100 mg/L (Pimephales promelas) 96h LC50: 12.0 - 16.0 mL/L (Oncorhynchus mykiss)	EC50 = 34634 mg/L 30 min EC50 = 35470 mg/L 5 min	48h LC50: 9268 - 14221 mg/L 48h EC50: = 2 mg/L 24h EC50: = 10800 mg/L
Quaternary ammonium compounds, bis(hydrogenated tallow alkyl)dimethyl, chlorides 61789-80-8	72h EC50: = 0.00046 mg/L (Pseudokirchneriella subcapitata) 96h EC50: = 0.1 mg/L (Desmodesmus subspicatus)	96h LC50: = 1.48 mg/L (Brachydanio rerio)		48h EC50: = 0.32 mg/L

Persistence and Degradability
No information available.

Bioaccumulation

Chemical Name	Log Pow
Alcohol 64-17-5	-0.32
Isobutane 75-28-5	2.88
Propane 74-98-6	2.3

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging Dispose of contents/containers in accordance with local regulations.

US EPA Waste Number D001

California Hazardous Waste Codes 331

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Alcohol 64-17-5	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	CONSUMER COMMODITY
Hazard Class	ORM-D
Description	CONSUMER COMMODITY, ORM-D
Emergency Response Guide Number	126

TDG

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Description	UN1950, AEROSOLS, 2.1

MEX

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Description	UN1950, AEROSOLS, 2.1

ICAO

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Description	UN1950, AEROSOLS, 2.1

IATA

UN-No.	UN1950
Proper Shipping Name	AEROSOLS, FLAMMABLE
Hazard Class	2.1
Description	UN1950, AEROSOLS, FLAMMABLE, 2.1

IMDG/IMO

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
EmS-No.	F-D, S-U
Marine Pollutant	Product is a marine pollutant according to the criteria set by IMDG/IMO
Description	UN1950, AEROSOLS, 2.1

RID

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Classification code	5F
Description	UN1950, AEROSOLS, 2.1

ADR

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Classification code	5F
Tunnel restriction code	(D)
Description	UN1950, AEROSOLS, 2.1

ADN

UN-No.	UN1950
Proper Shipping Name	AEROSOLS
Hazard Class	2.1
Classification code	5F

Special Provisions	190, 327, 344, 625
Description	UN1950, AEROSOLS, 2.1
Limited Quantity	1 L
Ventilation	VE01, VE04

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.
IECSC	-

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden release of pressure hazard	Yes
Reactive Hazard	No

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Alcohol - 64-17-5	Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Alcohol 64-17-5	X	X	X		
Hydrofluorocarbon 152a 75-37-6	X	X			
Isobutane 75-28-5	X	X	X		
Propane 74-98-6	X	X	X		

International Regulations

Mexico
National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Alcohol 64-17-5 (60 - 100)		Mexico: TWA= 1900 mg/m³ Mexico: TWA= 1000 ppm

Mexico - Occupational Exposure Limits - Carcinogens

Canada
WHMIS Hazard Class
D2A - Very toxic materials
A - Compressed gases
B5 - Flammable aerosol

16. OTHER INFORMATION

NFPA	**Health Hazards** 2	**Flammability** 4	**Instability** 0	**Physical and Chemical Hazards** -
HMIS	**Health Hazards** 2	**Flammability** 4	**Physical Hazard** 0	**Personal Protection** X

Prepared By
Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

Revision Date 18-Mar-2015
Revision Note No information available

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

Spic and Span Multi-Surface and Floor Cleaner

Environmental Working Group

The cleaner contains nonylphenol ethoxylate, which, when it breaks down to nonylphenol, can disrupt the hormone system. The chemical also persists in the environment and has been found toxic to aquatic life. Products with the substance are already banned for sale in the European Union and has been barred in products manufactured in Calfornia after 2012.

Scrubbing Bubbles - Antibacterial Bathroom Cleaner & Extend-A-Clean Mega Shower Foamer.

P&G Professional™

SAFETY DATA SHEET

Issuing Date: 09-Feb-2015 **Revision Date:** 14-May-2018 **Version** 2

1. IDENTIFICATION

Product Name	Spic and Span® Disinfecting All-Purpose Spray and Glass Cleaner - Concentrated
Product Code(s)	3-05
Product Identifier	92041835_PROF_NG
Product Type:	Finished Product - Professional Use Only
Recommended Use	Antiseptic.
Restrictions on Use	Use only as directed on label.
Details of the supplier of the safety data sheet	Procter & Gamble Professional 1 P&G Plaza Cincinnati, Ohio 45202 Procter & Gamble Inc. P.O. Box 355, Station A Toronto, ON M5W 1C5 1-800-332-7787
E-mail Address	pgsds.im@pg.com
Emergency Telephone	Transportation (24 HR) CHEMTREC - 1-800-424-9300 (U.S./ Canada) or 1-703-527-3887 Mexico toll free in country: 800-681-9531

2. HAZARD IDENTIFICATION

This product is classified under 29CFR 1910.1200(d) and the Canadian Hazardous Products Regulation as follows:.

Hazard Category	
Skin corrosion/irritation	Category 1
Eye Damage / Irritation	Category 1
Flammable Liquids	Category 4

Signal Word DANGER

Hazard Statements
Causes severe skin burns and eye damage
Combustible liquid

Hazard pictograms

Precautionary Statements

Do not breathe mist
Wash hands thoroughly after handling
p80
Use with ventilation.
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Drink 1 or 2 glasses of water
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
In case of fire: Use water, CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal Dispose of contents/container in accordance with local regulation

Hazards not otherwise classified (HNOC) None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients are listed according to 29CFR 1910.1200 Appendix D and the Canadian Hazardous Products Regulation

Chemical Name	Synonyms	Trade Secret	CAS-No	Weight-%
2-(2-Butoxyethoxy ethanol) Diethylene glycol monobutyl ether	Butoxydiglycol	Yes	112-34-5	10 - 30
2-Hexyloxyethanol	Ethanol, 2-(hexyloxy)-	Yes	112-25-4	5 - 10
1-Aminopropan-2-ol	2-Propanol, 1-amino-	Yes	78-96-6	5 - 10
D-Glucopyranose, oligomeric, decyl octyl glycosides	D-Glucopyranose, oligomeric, decyl octyl glycosides	Yes	68515-73-1	1 - 5

Additional information Actual concentrations withheld as trade secret in accordance with Canadian HPR

4. FIRST AID MEASURES

First aid measures for different exposure routes

Eye contact Rinse with plenty of water. Call a physician immediately.

Skin contact Rinse with plenty of water. Get medical attention if irritation develops and persists.

Ingestion Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately if symptoms occur.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed None under normal use conditions.

F. Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media — In case of fire: Use water, CO2, dry chemical, or foam for extinction.

Unsuitable Extinguishing Media — Do not use a solid water stream as it may scatter and spread fire.

Special hazard — Fumes may catch fire.

Special protective equipment for fire-fighters — As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific hazards arising from the chemical — None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions — Use personal protective equipment. Do not get in eyes, on skin, or on clothing.

Advice for emergency responders — Use personal protective equipment as required.

Methods and materials for containment and cleaning up

Methods for containment — Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up — Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling — Keep away from open flames, hot surfaces and sources of ignition. Use personal protective equipment as required. Keep container closed when not in use. Never return spills in original containers for re-use. Keep out of the reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions — Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a cool/low-temperature, well-ventilated, dry place away from heat and ignition sources.

Incompatible products — None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	CAS-No	ACGIH TLV	OSHA PEL	Mexico PEL
2-(2-Butoxyethoxy ethanol) Diethylene glycol monobutyl ether	112-34-5	TWA: 10 ppm inhalable fraction and vapor		

Chemical Name	CAS-No	Alberta	Quebec	Ontario TWAEV	British Columbia
2-(2-Butoxyethoxy ethanol) Diethylene glycol monobutyl	112-34-5			TWA: 10 ppm	

ether					

No relevant exposure guidelines for other ingredients

Exposure controls

Engineering Measures

Distribution, Workplace and Household Settings:
Ensure adequate ventilation

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction

Personal Protective Equipment

Eye Protection

Distribution, Workplace and Household Settings:
Requires Eye Protection

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Wear safety glasses with side shields (or goggles)
If splashes are likely to occur, wear:
Tight sealing safety goggles

Hand Protection

Distribution, Workplace and Household Settings:
Protective gloves

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Protective gloves

Skin and Body Protection

Distribution, Workplace and Household Settings:
Wear suitable protective clothing

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
Wear suitable protective clothing

Respiratory Protection

Distribution, Workplace and Household Settings:
No special protective equipment required

Product Manufacturing Plant (needed at Product-Producing Plant ONLY):
In case of inadequate ventilation wear respiratory protection

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State @20°C	Liquid
Appearance	blue
Odor	Scented
Odor threshold	No information available

Property	Values	Note
pH value	10.4 - 11.2	
Melting Point / Freezing Point	No information available	
Boiling point / boiling range	No information available	
Flash point	72.8 °C / 163 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
Upper flammability limit	No information available	
Lower Flammability Limit	No information available	

Vapor pressure	No information available
Vapor density	No information available
Relative density	1.00
Water solubility	100%
Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	< 10 cps
VOC Content (%)	Products comply with US state and federal regulations for VOC content in consumer products.

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions.
Stability	Stable under normal conditions.
Hazardous polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition.
Incompatible materials	None in particular.
Hazardous Decomposition Products	None under normal use conditions.

11. TOXICOLOGICAL INFORMATION

Product Information

Information on likely routes of exposure

Inhalation	No known effect.
Skin contact	May cause burns.
Ingestion	No known effect.
Eye contact	Risk of serious damage to eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute toxicity	No known effect.
Skin corrosion/irritation	Causes severe burns.
Serious eye damage/eye irritation	Risk of serious damage to eyes.
Skin sensitization	No known effect.
Respiratory sensitization	No known effect.
Germ cell mutagenicity	No known effect.
Neurological Effects	No known effect.
Reproductive toxicity	No known effect.
Developmental toxicity	No known effect.
Teratogenicity	No known effect.
STOT - single exposure	No known effect.
STOT - repeated exposure	No known effect.
Target Organ Effects	No known effect.
Aspiration hazard	No known effect.
Carcinogenicity	No known effect.

Component Information

Chemical Name	CAS-No	Oral LD50	Dermal LD50	Inhalation LC50
2-(2-Butoxyethoxy ethanol) Diethylene glycol monobutyl ether	112-34-5	2410 mg/kg bw (Similar to OECD 401; mouse)	2764 mg/kg bw (Similar to OECD 402; rabbit)	> 14.48 mg/L (Guideline not indicated; rat)
1-Aminopropan-2-ol	78-96-6	2813 mg/kg bw (//OECD 401)	-	> 1.005 mg/L air

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms.

Persistence and degradability	No information available.
Bioaccumulative potential	No information available.
Mobility	No information available.
Other adverse effects	No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Disposal should be in accordance with applicable regional, national and local laws and regulations.
California Hazardous Waste Codes (non-household setting)	331

14. TRANSPORT INFORMATION

DOT

UN no	UN1903
UN Proper shipping name	Disinfectant, liquid, corrosive, n.o.s
Description	UN1903, Disinfectant, liquid, corrosive, n.o.s (2-Hexyloxyethanol, 1-Aminopropan-2-ol), 8, III
Hazard Class	8
Packing Group	III
Special Provisions	IB3, T4, TP1
Packaging Exceptions	154
Bulk packaging	241
Non-bulk Packaging	203
Emergency Response Guide Number	153

IMDG

UN Number	UN1903
UN Proper shipping name	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.
Description	UN1903, Disinfectant, liquid, corrosive, n.o.s. (2-Hexyloxyethanol, 1-Aminopropan-2-ol), III
Transport hazard class(es)	8
Packing Group	III
Environmental Hazards	Marine pollutant
Special precautions for user	223, 274
EmS-No	F-A, S-B

IATA

UN no	UN1903
UN Proper shipping name	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.
Description	UN1903, Disinfectant, liquid, corrosive, n.o.s. (2-Hexyloxyethanol, 1-Aminopropan-2-ol), III
Hazard Class	8
Packing Group	III
ERG Code	8L

Special precautions for user A3, A803

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following substance(s) which are either listed as hazardous air pollutants (HAPS) or VOC's per the Clean Air Act:

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

California Proposition 65
This product is not subject to warning labeling under California Proposition 65.
Ethanol is only a considered a Proposition 65 developmental hazard when it is ingested as an alcoholic beverage.

U.S. State Regulations (RTK)

Chemical Name	CAS-No	New Jersey
1-Aminopropan-2-ol	78-96-6	X

Chemical Name	CAS-No	Massachusetts
1-Aminopropan-2-ol	78-96-6	X

Chemical Name	CAS-No	Pennsylvania
1-Aminopropan-2-ol	78-96-6	X
Ethanol	64-17-5	X

International Inventories

United States
All intentionally-added components of this product(s) are listed on the US TSCA Inventory.

Canada
This product is in compliance with CEPA for import by P&G.

Legend
United States Toxic Substances Control Act Section 8(b) Inventory (TSCA)
CEPA - Canadian Environmental Protection Act

FIFRA
This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain

labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

EPA Registration number: 3573-96
DANGER
Corrosive
Causes irreversible eye damage and skin burns
HARMFUL IF ABSORBED THROUGH SKIN
Harmful if inhaled

16. OTHER INFORMATION

HMIS Ratings

Health hazard	3
Flammability	1
Physical hazard	0

Health hazard	3
Flammability	1
Instability	0

Issuing Date: 09-Feb-2015
Revision Date: 14-May-2018

Disclaimer.

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End of SDS

Environmental Working Group

According to the EWG, these products contain up to 10 percent DEGBE, also called butoxydiglycol, a solvent banned in the European Union at concentrations above 3 percent in aerosol cleaners. The solvent can irritate and inflame the lungs.

MATERIAL SAFETY DATA SHEET

JohnsonDiversey
Clean is just the beginning

SCRUBBING BUBBLES SUPER CONCENTRATE BATHROOM CLEANER (RTD)

HMIS		NFPA	Personal protective equipment
Health	2	2	
Fire Hazard	0	0	
Reactivity	0	0	

Version Number: 1 *Preparation date: 2005-04-15*

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: SCRUBBING BUBBLES SUPER CONCENTRATE BATHROOM CLEANER (RTD)

MSDS #: F-02411001
Product Code: 3719563
Recommended use: Cleaning product.

Manufacturer, importer, supplier:
Consumer Branded Professional Products
JohnsonDiversey, Inc.
8310 16th Street
Sturtevant, Wisconsin 53177-1964
Phone: (888) 352-2249

Emergency telephone number: 1-800-851-7145 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
WARNING. CAUSES EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED . MAY CAUSE SKIN IRRITATION .

Principle routes of exposure: Eye contact. Skin contact. Inhalation.
Eye contact: Severe eye irritation.
Skin contact: Moderately irritating to the skin.
Inhalation: May be irritating to nose, throat, and respiratory tract.
Ingestion: May be irritating to mouth, throat and stomach .

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients

Ingredient(s)	CAS #	Weight %	LD50 Oral - Rat (mg/kg)	LD50 Dermal - Rabbit	LC50 Inhalation - Rat
Potassium dodecylbenzene sulfonate	27177-77-1	5 - 10%	Not available	Not available	Not available
Alcohol ethoxylate	68002-97-1	20 - 30%	2750	Not available	Not available
Citric acid	77-92-9	1 - 5%	3000	Not available	Not available
Propylene glycol	57-55-6	1 - 5%	10400	20800 mg/kg	Not available
Hydroxyacetic acid	79-14-1	1 - 5%	1950	Not available	=7.7 mg/L (4 h)

4. FIRST AID MEASURES

Eye contact: Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention immediately.
Skin contact: Flush immediately with plenty of water for at least 15 minutes. If irritation persists, get medical attention.
Inhalation: If breathing is affected, remove to fresh air. Get medical attention.
Ingestion: Immediately drink one cupful of water or milk. Never give anything by mouth to an unconscious person. Get medical attention.
Aggravated Medical Conditions: Persons with pre-existing skin disorders may be more susceptable to irritating effects

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use dry chemical, CO2, water spray or "alcohol" foam.
Specific hazards: Not applicable
Unusual hazards: None known
Specific methods: No special methods required

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Extinguishing media which must not be used for safety reasons: No information available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment

Environmental precautions and clean-up methods: Prevent product from entering drains. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Use a water rinse for final clean-up.

7. HANDLING AND STORAGE

Handling:
Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Remove and wash contaminated clothing and footwear before re-use. Mix only with water . Do not mix with any other product or chemical . FOR COMMERCIAL AND INDUSTRIAL USE ONLY.

Storage:
Protect from freezing. Keep tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
Good general ventilation should be sufficient to control airborne levels. Respiratory protection is not required if good ventilation is maintained.

Personal Protective Equipment

Eye protection:	Safety glasses with side-shields.
Hand protection:	No special requirements under normal use conditions
Skin and body protection:	No special requirements under normal use conditions
Respiratory protection:	No special requirements under normal use conditions
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
pH:	2.7-3.7
Appearance:	Liquid
Color:	Green
Odor:	
Specific gravity:	1.019
Density:	8.50
VOC:	0% *
Flash point:	>200°F >100°C
Solubility:	Completely Soluble
Viscosity:	No information available

Bulk density:	8.49 lb/gal
Dilution pH:	3.5
Vapor density:	No information available
Evaporation Rate	No information available
Boiling point/range:	>200°F >100°C
Melting point/range:	Not determined
Decomposition temperature:	Not determined
Autoignition temperature:	No information available
Partition coefficient (n-octanol/water):	No information available
Solubility in other solvents:	No information available

* - Title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 8.5, Article 2, Consumer Products, Sections 94508

10. STABILITY AND REACTIVITY

Stability:	The product is stable
Polymerization:	Hazardous polymerization does not occur
Hazardous decomposition products:	None reasonably foreseeable.
Conditions to avoid:	Do not freeze. Do not mix with any other product or chemical .

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Oral LD50 estimated to be between 2000 - 3000 mg/kg.

Component Information: See Section 3

Chronic toxicity: None known

Specific effects

Carcinogenic effects:	None known
Mutagenic effects:	None known
Reproductive toxicity:	None known
Target organ effects:	None known

12. ECOLOGICAL INFORMATION

Environmental Information: No data available

13. DISPOSAL CONSIDERATIONS

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Dispose of according to all federal, state and local applicable regulations
RCRA Hazard Class: Not regulated.

14. TRANSPORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION

International Inventories
All components of this product are listed on the following inventories: U.S.A. (TSCA), Canada (DSL/NDSL).

U.S. Regulations
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:
Dipropylene glycol	25265-71-8	-	-	X	-
Dipropylene glycol n-butyl ether	29911-28-2	-	-	-	-
Propylene glycol	57-55-6	-	-	X	X
Dipropylene glycol n-propyl ether	29911-27-1	-	-	-	-
Water	7732-18-5	-	-	-	-
Potassium dodecylbenzene sulfonate	27177-77-1	-	-	-	-
Alcohol ethoxylate	68002-97-1	-	-	-	-

CERCLA/ SARA
CAA HAP/CAA ODS/CWA Priority Pollutants: None

SARA 311/312 Hazard Categories
Immediate: Yes

Canada
WHMIS hazard class: D2B Toxic materials.

16. OTHER INFORMATION

Reason for revision: Not applicable
Prepared by: NAPRAC
Additional advice: None

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Mop & Glo Multi-Surface Floor Cleaner

Environmental Working Group

This cleaner contains DEGME, also called methoxydiglycol. The United Nations Economic Commission for Europe says DEGME is "suspected of damaging the unborn child." The cleaner had levels of up to 15 times the concentration allowed in cleaners sold in the European Union.

DampRid Mildew Stain Remover Plus Blocker

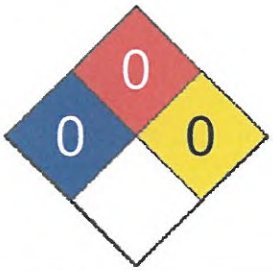
MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name	**MOP & GLO® Multi Floor Surface Cleaner**
CAS #	Mixture
	This MSDS is designed for workplace employees, emergency personnel and for othe conditions and situations where there is a greater potential for large-scale or prolong exposure, in accordance with requirements of the U.S. Government's Occupational Safety and Health Administration (OSHA). **This MSDS is not applicable for consumer use of our products. For consumer use, al precautionary and first aid language is provided on the product label in accordance v the applicable government regulation.**
Product Use	Floor Cleaner
Distributed by	Reckitt Benckiser Morris Corporate Center IV 399 Interpace Parkway P.O. Box 225 Parsippany, NJ 07054-0225 In Case of Emergency: 1-800-338-6167 Transportation Emergencies: 24 Hour Number: North America: CHEMTREC: 1-800-424-9300 Outside North America: 1-703-527-3887

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	0
Flammability	0
Physical Hazard	0
Personal Protection	A



2. Hazards Identification

Emergency overview	There is no known adverse effect from exposure to the recommended use of this product. KEEP OUT OF REACH OF CHILDREN.
Potential short term health effects	
Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Eyes	Slightly irritating to the eyes.
Skin	Slightly irritating to the skin. Not expected to be a skin sensitizer.
Inhalation	None expected during normal conditions of use.
Ingestion	Health injuries are not known or expected under normal use.
Target organs	Eyes.
Chronic effects	The finished product is not expected to have chronic health effects.
Signs and symptoms	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
OSHA Regulatory Status	This product is NOT known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Potential environmental effects	See section 12.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Diethylene glycol monoethyl ether	111-90-0	0.1 - 1

4. First Aid Measures

First aid procedures	
Eye contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for several minutes, occasionally lifting upper and lower eyelids. Get medical attention if symptoms occur.
Skin contact	Wash contaminated skin with soap and water. Get medical attention if symptoms occur.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occurs.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Notes to physician	Treat patient symptomatically.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mist and ensure adequate ventilation.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters. Inform the relevant authorities if the product has caused environmental pollution.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice.

7. Handling and Storage

Handling	Ensure adequate ventilation. Avoid breathing vapors or mists of this product. Avoid contact with eyes, skin and clothing. Do not ingest. Use good industrial hygiene practices in handling this material. When using do not eat or drink. Wash hands before breaks and immediately after handling the product. Do not reuse this container.

Storage	Keep out of reach of children. Do not freeze. Never pour unused material back into the original container. Store in original container in a cool, dry, well-ventilated area inaccessible to children and pets. Store containers upright and closed.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure Limits
Diethylene glycol monoethyl ether	**ACGIH-TLV** TWA: 25 ppm **OSHA-PEL** Not established

Engineering controls	General ventilation normally adequate.
Personal protective equipment	
	Consult the product label for special protection or precautions that have been identif for using this product under directed consumer use conditions. The following recommendations are given for workplace employees, emergency personnel and for other conditions and situations where there is a greater potential for large-scale or prolonged exposure.
Eye / face protection	Not required under normal use conditions. Emergency responders should wear full eye and face protection.
Hand protection	Not required under normal use conditions. Emergency responders should wear impermeable gloves.
Skin and body protection	Usual safety precautions while handling the product will provide adequate protection against this potential effect.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Emergency responders should wear self-contained breathing apparatus (SCBA) to avoid inhalation of vapours generated by this product during a spill or other clean-up operations.
General hygiene considerations	Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Liquid
Color	Tan
Form	aqueous solution
Odor	Citrus
Odor threshold	Not available
Physical state	Liquid
pH	8.0 - 9.0
Freezing point	Not available
Boiling point	Not available
Pour point	Not available
Evaporation rate	Not available
Flash point	> 199.94 °F (> 93.3 °C)
Auto-ignition temperature	Not available
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.009 - 1.011
Octanol/water coefficient	Not available

Viscosity	3 - 10 MPas (3-10 cP)

10. Stability and Reactivity

Reactivity	This product may react with strong oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals. Exposure to moisture. Keep from freezing. Keep away from extreme heat.
Incompatible materials	Ammonia. Do not mix with bleach or any other chemical.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	**LC50**
Diethylene glycol monoethyl ether	5240.0001 mg/l/4h rat

Component analysis - Oral LD50

Ingredient(s)	**LD50**
Diethylene glycol monoethyl ether	5500 mg/kg rat

Effects of acute exposure

Eye	Slightly irritating to the eyes.
Skin	Slightly irritating to the skin. Not expected to be a skin sensitizer.
Inhalation	None expected during normal conditions of use.
Ingestion	Health injuries are not known or expected under normal use.
Sensitization	The finished product is not expected to have chronic health effects.
Chronic effects	The finished product is not expected to have chronic health effects.
Carcinogenicity	The finished product is not expected to have chronic health effects.
Mutagenicity	The finished product is not expected to have chronic health effects.
Reproductive effects	The finished product is not expected to have chronic health effects.
Teratogenicity	The finished product is not expected to have chronic health effects.
Name of Toxicologically Synergistic Products	Not available

12. Ecological Information

Ecotoxicity	See below

Ecotoxicity - Freshwater Fish - Acute Toxicity Data

Diethylene glycol monoethyl ether	111-90-0	96 Hr LC50 Oncorhynchus mykiss: 11400-15700 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 11600-16700 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 10000 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 19100-23900 mg/L [flow-through]; 96 Hr LC50 Salmo gairdneri: 13400 mg/L [flow-through]

Ecotoxicity - Water Flea - Acute Toxicity Data

Diethylene glycol monoethyl ether	111-90-0	48 Hr EC50 Daphnia magna: 3940 - 4670 mg/L

Persistence / degradability	Not available
Bioaccumulation / accumulation	Not available
Mobility in environmental media	Not available
Environmental effects	Not available
Aquatic toxicity	Not available
Partition coefficient	Not available
Chemical fate information	Not available

13. Disposal Considerations

Disposal instructions	Dispose in accordance with all applicable regulations. Empty container can be disposed of as household trash or rinsed and recycled where appropriate.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

UN/ID N.o. Not applicable

U.S. Department of Transportation (DOT): Classification: Not regulated

Proper shipping name	Not applicable
U.S. DOT Hazard Class	Not applicable
Subsidiary Risk	Not applicable
Packing group	Not applicable
DOT RQ (lbs)	Not applicable
ERG NO	Not applicable

Transportation of Dangerous Goods (TDG - Canada): Classification: Not regulated

Proper shipping name	Not applicable
Status	Not applicable
Packing group	Not applicable

IMDG (Marine Transport): Classification: Not regulated

Proper shipping name	Not applicable
Class	Not applicable
Subsidiary Risk	Not applicable
Packing group	Not applicable
IMDG Page	Not applicable
Marine pollutant	Not applicable
EMS	Not applicable
MFAG	Not applicable
Maximum Quantity	Not applicable

IATA/ICAO (Air): Classification: Not regulated

Proper shipping name	Not applicable
Class	Not applicable
Subsidiary Risk:	Not applicable
Packing group	Not applicable
Maximum Quantity	Not applicable

15. Regulatory Information

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical	No
US Federal regulations	This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Product Registration: Product is compliant with CPSC regulatory guidelines; a specific registration is not required for this product.

CERCLA (Superfund) reportable quantity

Ammonium hydroxide: 1000.0000
Potassium hydroxide: 1000.0000
Sodium hydroxide: 1000.0000
2-Ethoxyethanol: 1000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No
Clean Air Act (CAA)	Not available
Clean Water Act (CWA)	Not available
State regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. - Minnesota - Hazardous Substance List

Diethylene glycol monoethyl ether	111-90-0	Present

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer	This product should only be used as directed on the label and for the purpose intended. To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Further information	MOP & GLO® Multi Floor Surface Cleaner - 0041250v11.0
Issue date	27-Aug-2012
Effective date	15-Aug-2012
Prepared by	Reckitt Benckiser Regulatory Department 800-333-3899
Other information	For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document. This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.

Material Safety Data Sheet

Issuing Date: 20-Feb-2013 **Revision Date:** 20-Feb-2013 **Version** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product ID:	92289532
Product Name	Head & Shoulders, Total Care Men 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner
Product Type	Finished Product - Consumer (Retail) Use Only
Recommended use	Personal Beauty Care Product
Uses advised against	All other uses
Synonyms	Head & Shoulders, Smooth & Silky 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92283130) * Head & Shoulders, Refresh Men 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (98932731) * Head & Shoulders, Purely Gentle 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92249050) * Head & Shoulders, Ocean Lift 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92255705) * Head & Shoulders, Itchy Scalp Care With Eucalyptus 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92259509) * Head & Shoulders, Full & Thick Men 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92284743) * Head & Shoulders, Green Apple 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92255782) * Head & Shoulders, Full & Strong 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (99910825) * Head & Shoulders, Extra Volume 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92283264) * Head & Shoulders, Dry Scalp Care Almond Oil 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92259608) * Head & Shoulders, Deep Clean Men 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92284755) * Head & Shoulders, Classic Clean 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92111273) * Head & Shoulders, Citrus Breeze 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (99552920) * Head & Shoulders, Active Sport Men NFL 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92289531) *Head & Shoulders, Active Sport Men MLB 2 In 1, Pyrithione Zinc 2 In 1 Dandruff Shampoo + Conditioner (92289531)
Manufacturer	The Procter & Gamble Company Sharon Woods Innovation Center 11510 Reed Hartman Highway Cincinnati OH 45202
E-mail Address	pgsds.im@pg.com

Emergency telephone

Transportation (24 HR)
CHEMTREC - 1-800-424-9300
(U.S./ Canada) or 1-703-527-3887
Mexico toll free in country: 01-800-681-9531

2. HAZARDS IDENTIFICATION

Emergency Overview

Irritating to eyes

OSHA Regulatory Status

Consumer Products as defined by the U.S. Consumer Product Safety Act which are used as intended (typical consumer duration and frequency) are exempt from the OSHA Hazard Communication Standard. While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

WHMIS

Not subject to WHMIS classification

Principle Routes of Exposure

Eye contact.

General Hazards

This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Sulfuric acid monododecyl ester sodium salt (1:1)	151-21-3	5 - 10
Poly(oxy-1,2-ethanediyl), alpha-sulfo-omega-(dodecyloxy)-, sodium salt (1:1)	9004-82-4	3 - 7
Benzenesulfonic acid, dimethyl-, sodium salt (1:1)	1300-72-7	1 - 5
Zinc, bis[1-(hydroxy-kappaO)-2(1H)-pyridinethionato-kappaS2]-, (T-4)-	13463-41-7	1 - 5

4. FIRST AID MEASURES

General advice	No hazards which require special first aid measures. When symptoms persist or in all cases of doubt seek medical advice.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. If symptoms persist, call a physician.
Skin contact	If skin problems occur, discontinue use. If symptoms persist, call a physician.
Ingestion	Clean mouth with water and afterwards drink plenty of water.
Inhalation	Not an expected route of exposure.
Protection of First-aiders	Use personal protective equipment.
Most important symptoms/effects, acute and delayed	None known.
Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	Not applicable
Suitable Extinguishing Media	Dry chemical, CO_2, water spray or alcohol-resistant foam.
Extinguishing media which shall not be used for safety reasons	No information available
Special Hazard	None known based on information supplied
Special protective equipment for fire-fighters	As in any fire, wear self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	None under normal use conditions.
Advice for emergency responders	Use personal protective equipment.
Environmental precautions	**Household:** Do not discharge product into natural waters without pre-treatment or adequate dilution. **Non-household:** Should not be released into the environment.
Methods for Containment	No information available.
Methods for Cleaning up	No information available.

7. HANDLING AND STORAGE

Advice on safe handling	Keep out of the reach of children. Observe label precautions.
Technical measures/Storage conditions	Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines	Exposure guidelines are not relevant when product is used as intended in a household setting.
Engineering Measures	Not applicable.

Personal Protective Equipment

Eye Protection	No special protective equipment required.
Hand Protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	No special protective equipment required
Thermal hazards	Not applicable.
Hygiene measures	None under normal use condtions.
Environmental Exposure Controls	See Section 6.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State @20°C	liquid
Appearance	Various color by product.
Odor	Characteristic

Property	Values	Note
pH VALUE	5.5 - 8.3	
Melting/freezing point	No information available	
Boiling point/boiling range	> 93 °C / > 200 °F	
Flash Point	Not applicable	
Evaporation rate	No information available	
Flammability (solid, gas)	Not applicable	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	.
Decomposition temperature	No information available	.
Viscosity of Product	No information available	
Bulk Density	No information available	
VOC Content	Products comply with US state and federal regulations for VOC content in consumer products.	
Oxidizing Properties	Not applicable	

10. STABILITY AND REACTIVITY

Reactivity None under normal use conditions.

Stability Stable under normal conditions.

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

Conditions to Avoid None under normal processing.

Materials to Avoid None in particular.

Hazardous Decomposition Products None under normal use.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Principle Routes of Exposure Eye contact.

Inhalation	No known effect based on information supplied.
Skin contact	No known effect based on information supplied.
Ingestion	No known effect based on information supplied.
Eye contact	Irritating to eyes.

Chronic Toxicity

Corrosivity	No known effect.
Sensitization	No known effect.
Neurological Effects	No known effect.
Reproductive toxicity	The product contains no substances known to be hazardous to health in concentrations which need to be taken into account.
Mutagenic Effects	There are no known mutagenic chemicals in this product.
Developmental Toxicity	No known effect.
Teratogenicity	No known effect.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Mobility No information available.

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste from Residues / Unused Products	**Household:** Do not discharge product into natural waters without pre-treatment or adequate dilution. **Non-household:** Should not be released into the environment.
Contaminated packaging	Dispose of in accordance with local regulations.
California Hazardous Waste Codes (non-household setting)	561

14. TRANSPORT INFORMATION

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
IATA	Not regulated
ICAO	Not regulated
IMDG/IMO	Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313
Not applicable for consumer use

SARA 311/312 Hazard Categories

Acute Health Hazard	-
Chronic Health Hazard	-
Fire Hazard	-
Sudden Release of Pressure Hazard	-
Reactive Hazard	-

CERCLA
Not applicable for consumer use

Food and Drug Administration (FDA)
The product described in this Material Safety Data Sheet is regulated under the Federal Food, Drug, and Cosmetics Act and is safe to use as per directions on container, box or accompanying literature (where applicable).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
Not applicable for consumer use

Clean Water Act
Not applicable for consumer use

U.S. State Regulations

California Proposition 65
This product is not subject to warning labeling under California Proposition 65

U.S. State Regulations
Not applicable for consumer use

International Regulations

Canada
WHMIS Hazard Class
Not subject to WHMIS classification

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR. This product is regulated by the Food and Drug Administration of Health Canada and is therefore exempt from the requirements of CEPA.

International Inventories

TSCA	Product is a personal care product and regulated under FDA
DSL	Exempt
NDSL	Exempt

Perfumes contained with the products comply with appropriate IFRA guidance.

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

16. OTHER INFORMATION

Issuing Date:	20-Feb-2013
Revision Date:	20-Feb-2013

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of MSDS

OSHA® BRIEF

Hazard Communication Standard: Safety Data Sheets

The Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012, requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards. The information contained in the SDS is largely the same as the MSDS, except now the SDSs are required to be presented in a consistent user-friendly, 16-section format. This brief provides guidance to help workers who handle hazardous chemicals to become familiar with the format and understand the contents of the SDSs.

The SDS includes information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical. The information contained in the SDS must be in English (although it may be in other languages as well). In addition, OSHA requires that SDS preparers provide specific minimum information as detailed in Appendix D of 29 CFR 1910.1200. The SDS preparers may also include additional information in various section(s).

Sections 1 through 8 contain general information about the chemical, identification, hazards, composition, safe handling practices, and emergency control measures (e.g., fire fighting). This information should be helpful to those that need to get the information quickly. Sections 9 through 11 and 16 contain other technical and scientific information, such as physical and chemical properties, stability and reactivity information, toxicological information, exposure control information, and other information including the date of preparation or last revision. The SDS must also state that no applicable information was found when the preparer does not find relevant information for any required element.

The SDS must also contain Sections 12 through 15, to be consistent with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS), but OSHA will not enforce the content of these sections because they concern matters handled by other agencies.

A description of all 16 sections of the SDS, along with their contents, is presented below:

Section 1: Identification

This section identifies the chemical on the SDS as well as the recommended uses. It also provides the essential contact information of the supplier. The required information consists of:

- Product identifier used on the label and any other common names or synonyms by which the substance is known.
- Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.
- Recommended use of the chemical (e.g., a brief description of what it actually does, such as flame retardant) and any restrictions on use (including recommendations given by the supplier).

Section 2: Hazard(s) Identification

This section identifies the hazards of the chemical presented on the SDS and the appropriate warning information associated with those hazards. The required information consists of:

- The hazard classification of the chemical (e.g., flammable liquid, category[1]).
- Signal word.
- Hazard statement(s).
- Pictograms (the pictograms or hazard symbols may be presented as graphical reproductions of the symbols in black and white or be a description of the name of the symbol (e.g., skull and crossbones, flame).
- Precautionary statement(s).
- Description of any hazards not otherwise classified.
- For a mixture that contains an ingredient(s) with unknown toxicity, a statement describing how much (percentage) of the mixture consists of ingredient(s) with unknown acute toxicity. Please note that this is a total percentage of the mixture and not tied to the individual ingredient(s).

Section 3: Composition/Information on Ingredients

This section identifies the ingredient(s) contained in the product indicated on the SDS, including impurities and stabilizing additives. This section includes information on substances, mixtures, and all chemicals where a trade secret is claimed. The required information consists of:

Substances

- Chemical name.
- Common name and synonyms.
- Chemical Abstracts Service (CAS) number and other unique identifiers.
- Impurities and stabilizing additives, which are themselves classified and which contribute to the classification of the chemical.

Mixtures

- Same information required for substances.
- The chemical name and concentration (i.e., exact percentage) of all ingredients which are classified as health hazards and are:
  - Present above their cut-off/concentration limits or
  - Present a health risk below the cut-off/concentration limits.
- The concentration (exact percentages) of each ingredient must be specified except concentration ranges may be used in the following situations:
  - A trade secret claim is made,
  - There is batch-to-batch variation, or
  - The SDS is used for a group of substantially similar mixtures.

Chemicals where a trade secret is claimed

- A statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

[1] Chemical, as defined in the HCS, is any substance, or mixture of substances.

Section 4: First-Aid Measures

This section describes the initial care that should be given by untrained responders to an individual who has been exposed to the chemical. The required information consists of:

- Necessary first-aid instructions by relevant routes of exposure (inhalation, skin and eye contact, and ingestion).
- Description of the most important symptoms or effects, and any symptoms that are acute or delayed.
- Recommendations for immediate medical care and special treatment needed, when necessary.

Section 5: Fire-Fighting Measures

This section provides recommendations for fighting a fire caused by the chemical. The required information consists of:

- Recommendations of suitable extinguishing equipment, and information about extinguishing equipment that is not appropriate for a particular situation.
- Advice on specific hazards that develop from the chemical during the fire, such as any hazardous combustion products created when the chemical burns.
- Recommendations on special protective equipment or precautions for firefighters.

Section 6: Accidental Release Measures

This section provides recommendations on the appropriate response to spills, leaks, or releases, including containment and cleanup practices to prevent or minimize exposure to people, properties, or the environment. It may also include recommendations distinguishing between responses for large and small spills where the spill volume has a significant impact on the hazard. The required information may consist of recommendations for:

- Use of personal precautions (such as removal of ignition sources or providing sufficient ventilation) and protective equipment to prevent the contamination of skin, eyes, and clothing.
- Emergency procedures, including instructions for evacuations, consulting experts when needed, and appropriate protective clothing.
- Methods and materials used for containment (e.g., covering the drains and capping procedures).
- Cleanup procedures (e.g., appropriate techniques for neutralization, decontamination, cleaning or vacuuming; adsorbent materials; and/or equipment required for containment/clean up).

Section 7: Handling and Storage

This section provides guidance on the safe handling practices and conditions for safe storage of chemicals. The required information consists of:

- Precautions for safe handling, including recommendations for handling incompatible chemicals, minimizing the release of the chemical into the environment, and providing advice on general hygiene practices (e.g., eating, drinking, and smoking in work areas is prohibited).
- Recommendations on the conditions for safe storage, including any incompatibilities. Provide advice on specific storage requirements (e.g., ventilation requirements).

Section 8: Exposure Controls/Personal Protection

This section indicates the exposure limits, engineering controls, and personal protective measures that can be used to minimize worker exposure. The required information consists of:

- OSHA Permissible Exposure Limits (PELs), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- Appropriate engineering controls (e.g., use local exhaust ventilation, or use only in an enclosed system).
- Recommendations for personal protective measures to prevent illness or injury from exposure to chemicals, such as personal protective equipment (PPE) (e.g., appropriate types of eye, face, skin or respiratory protection needed based on hazards and potential exposure).
- Any special requirements for PPE, protective clothing or respirators (e.g., type of glove material, such as PVC or nitrile rubber gloves; and breakthrough time of the glove material).

Section 9: Physical and Chemical Properties

This section identifies physical and chemical properties associated with the substance or mixture. The minimum required information consists of:

- Appearance (physical state, color, etc.);
- Odor;
- Odor threshold;
- pH;
- Melting point/freezing point;
- Initial boiling point and boiling range;
- Flash point;
- Evaporation rate;
- Flammability (solid, gas);
- Upper/lower flammability or explosive limits;
- Vapor pressure;
- Vapor density;
- Relative density;
- Solubility(ies);
- Partition coefficient: n-octanol/water;
- Auto-ignition temperature;
- Decomposition temperature; and
- Viscosity.

The SDS may not contain every item on the above list because information may not be relevant or is not available. When this occurs, a notation to that effect must be made for that chemical property. Manufacturers may also add other relevant properties, such as the dust deflagration index (Kst) for combustible dust, used to evaluate a dust's explosive potential.

Section 10: Stability and Reactivity

This section describes the reactivity hazards of the chemical and the chemical stability information. This section is broken into three parts: reactivity, chemical stability, and other. The required information consists of:

Reactivity

- Description of the specific test data for the chemical(s). This data can be for a class or family of the chemical if such data adequately represent the anticipated hazard of the chemical(s), where available.

Chemical stability

- Indication of whether the chemical is stable or unstable under normal ambient temperature and conditions while in storage and being handled.
- Description of any stabilizers that may be needed to maintain chemical stability.
- Indication of any safety issues that may arise should the product change in physical appearance.

Other

- Indication of the possibility of hazardous reactions, including a statement whether the chemical will react or polymerize, which could release excess pressure or heat, or create other hazardous conditions. Also, a description of the conditions under which hazardous reactions may occur.
- List of all conditions that should be avoided (e.g., static discharge, shock, vibrations, or environmental conditions that may lead to hazardous conditions).
- List of all classes of incompatible materials (e.g., classes of chemicals or specific substances) with which the chemical could react to produce a hazardous situation.
- List of any known or anticipated hazardous decomposition products that could be produced because of use, storage, or heating. (Hazardous combustion products should also be included in Section 5 (Fire-Fighting Measures) of the SDS.)

Section 11: Toxicological Information

This section identifies toxicological and health effects information or indicates that such data are not available. The required information consists of:

- Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact). The SDS should indicate if the information is unknown.
- Description of the delayed, immediate, or chronic effects from short- and long-term exposure.
- The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.
- Description of the symptoms. This description includes the symptoms associated with exposure to the chemical including symptoms from the lowest to the most severe exposure.
- Indication of whether the chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions) or found to be a potential carcinogen by OSHA.

Section 12: Ecological Information (non-mandatory)

This section provides information to evaluate the environmental impact of the chemical(s) if it were released to the environment. The information may include:

- Data from toxicity tests performed on aquatic and/or terrestrial organisms, where available (e.g., acute or chronic aquatic toxicity data for fish, algae, crustaceans, and other plants; toxicity data on birds, bees, plants).
- Whether there is a potential for the chemical to persist and degrade in the environment either through biodegradation or other processes, such as oxidation or hydrolysis.
- Results of tests of bioaccumulation potential, making reference to the octanol-water partition coefficient (K_{ow}) and the bioconcentration factor (BCF), where available.
- The potential for a substance to move from the soil to the groundwater (indicate results from adsorption studies or leaching studies).
- Other adverse effects (e.g., environmental fate, ozone layer depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and/or global warming potential).

Section 13: Disposal Considerations (non-mandatory)

This section provides guidance on proper disposal practices, recycling or reclamation of the chemical(s) or its container, and safe handling practices. To minimize exposure, this section should also refer the reader to Section 8 (Exposure Controls/Personal Protection) of the SDS. The information may include:

- Description of appropriate disposal containers to use.
- Recommendations of appropriate disposal methods to employ.
- Description of the physical and chemical properties that may affect disposal activities.
- Language discouraging sewage disposal.
- Any special precautions for landfills or incineration activities.

Section 14: Transport Information (non-mandatory)

This section provides guidance on classification information for shipping and transporting of hazardous chemical(s) by road, air, rail, or sea. The information may include:

- UN number (i.e., four-figure identification number of the substance)[2].
- UN proper shipping name[2].
- Transport hazard class(es)[2].
- Packing group number, if applicable, based on the degree of hazard[2].
- Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code)).
- Guidance on transport in bulk (according to Annex II of MARPOL 73/78[3] and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code)).
- Any special precautions which an employee should be aware of or needs to comply with, in connection with transport or conveyance either within or outside their premises (indicate when information is not available).

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[2] Found in the most recent edition of the United Nations Recommendations on the Transport of Dangerous Goods.

[3] MARPOL 73/78 means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, as amended.

Section 15: Regulatory Information (non-mandatory)

This section identifies the safety, health, and environmental regulations specific for the product that is not indicated anywhere else on the SDS. The information may include:

- Any national and/or regional regulatory information of the chemical or mixtures (including any OSHA, Department of Transportation, Environmental Protection Agency, or Consumer Product Safety Commission regulations).

Section 16: Other Information

This section indicates when the SDS was prepared or when the last known revision was made. The SDS may also state where the changes have been made to the previous version. You may wish to contact the supplier for an explanation of the changes. Other useful information also may be included here.

Employer Responsibilities

Employers must ensure that the SDSs are readily accessible to employees for all hazardous chemicals in their workplace. This may be done in many ways. For example, employers may keep the SDSs in a binder or on computers as long as the employees have immediate access to the information without leaving their work area when needed and a back-up is available for rapid access to the SDS in the case of a power outage or other emergency. Furthermore, employers may want to designate a person(s) responsible for obtaining and maintaining the SDSs. If the employer does not have an SDS, the employer or designated person(s) should contact the manufacturer to obtain one.

References

OSHA, 29 CFR 1910.1200(g) and Appendix D.

United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), third revised edition, United Nations, 2009.

These references and other information related to the revised Hazard Communication Standard can be found on OSHA's Hazard Communication Safety and Health Topics page, located at: http://www.osha.gov/dsg/hazcom/index.html.

Disclaimer: This brief provides a general overview of the safety data sheet requirements in the Hazard Communication Standard (see 29 CFR 1910.1200(g) and Appendix D of 29 CFR 1910.1200). It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change over time, the reader should consult current OSHA interpretations and decisions by the Occupational Safety and Health Review Commission and the courts for additional guidance on OSHA compliance requirements. Please note that states with OSHA-approved state plans may have additional requirements for chemical safety data sheets, outside of those outlined above. For more information on those standards, please visit: http://www.osha.gov/dcsp/osp/statestandards.html.

This is one in a series of informational briefs highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

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DSG BR-3514 2/2012